

Engineering

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Planning

Land/Site Development

Planning Application Management

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Landscape Architecture

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Recreation

Community &

Residential

Commercial &

Institutional

Environmental Restoration

1200 Maritime Way

Transportation Impact Assessment



RESIDENTIAL DEVELOPMENT 1200 MARITIME WAY

TRANSPORTATION IMPACT ASSESSMENT

Prepared For:



Prepared By:



Suite 200, 240 Michael Cowpland Drive Ottawa, Ontario K2M 1P6

> March 30, 2021 Novatech File: 120144 Ref: R-2021-018



March 30, 2021

City of Ottawa Planning and Growth Management Department 110 Laurier Ave. W., 4th Floor, Ottawa, Ontario K1P 1J1

Attention: Ms. Josiane Gervais

Project Manager, Infrastructure Approvals

Dear Ms. Gervais:

Reference: Claridge Homes Residential Development – 1200 Maritime Way

Transportation Impact Assessment Report

Novatech File No. 120144

We are pleased to submit the following Transportation Impact Assessment Report in support of Zoning By-law Amendment and Site Plan Control applications for Claridge's residential development at 1200 Maritime Way. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

If you have any questions or comments regarding this report, please feel free to contact the undersigned.

Yours truly,

NOVATECH

Brad Byvelds, P. Eng.

B. Byvelde

Project Coordinator | Transportation/Traffic



TIA Plan Reports

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

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

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

CERTIFICATION

- 1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
- 2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- 3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- 4. I am either a licensed¹ or registered² professional in good standing, whose field of expertise [check $\sqrt{\text{appropriate field(s)}}$] is either transportation engineering \square or transportation planning \square .

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

Dated at	Ottawa	this _	30	_ day of	March	, 2021 .		
	(City)							
Name:				Brad By	yvelds			
				(Please	Print)			
Professional Title:		P. Eng Project Coordinator						
				B. Byvel	ds			
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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) Forecasting Report has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for Claridge's residential development at 1200 Maritime Way.

The subject site is surrounded by the following:

- Maritime Way and Townplace Suites by Marriott hotel at 1251 Maritime Way to the north;
- Highway 417 and future Bus Rapid Transit(BRT)/Light Rail Transit (LRT) to the south;
- Vacant land to the east; and
- Timberwalk retirement residence at 1250 Maritime Way to the west.
- Holiday Inn at 101 Kanata Avenue to the south and across Kanata Avenue
- Kanata Centrum Retail Development to the west

The proposed development consists of two residential buildings providing a total of 632 units. The buildings are connected by an underground parking garage with 632 vehicle spaces and 301 bicycle spaces. At ground level between the buildings are 30 surface visitor parking spaces and 15 visitor bicycle stalls. Access to the proposed development will be located on Maritime Way. The proposed development is anticipated to be constructed in one phase with an assumed buildout year of 2028.

The conclusions and recommendations of this TIA can be summarized as follows:

Development Design and Parking

- Pedestrian facilities will be provided between the main building entrances, and the existing sidewalk along Maritime Way. On-site pathways will also be provided between the main building entrances and the surface parking areas. Due to grading constraints, pathway connections to Kanata Avenue are not proposed.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- A cul-de-sac drop-off area will be provided near the main building entrances. The cul-de-sac will have a 12m centreline radius, conforming to fire route requirements. Garbage collection will be conducted on-site.

Parking

• The proposed vehicular and bicycle parking spaces adhere to the requirements of the City's ZBL.

Boundary Street Design

- All roadways meet the target BLOS and TkLOS. However, none of the roadways meet the target PLOS A.
- To achieve the target PLOS A along Kanata Avenue and Maritime Way, a reduction in the curbside lane AADT to less than 3000vpd is required. This is identified for the City's consideration as funding becomes available.

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Access Intersections Design

- A new access is also proposed to Maritime Way. The proposed access will be approximately 6.7m in width and located 6m from the western property line and 51m from the east property line.
- The width, location, and grading of the proposed access will adhere to the requirements of the PABL and ZBL.
- Based on the projected traffic volumes at the access, the access is anticipated to operate acceptably under side street stop control.

Transportation Demand Management

- The proposed development conforms to the City's TDM initiatives by providing easy access to the local pedestrian, bicycle and transit systems
- The following measures will be implemented within the proposed development:
 - 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 carshare vehicles and promote their use by residents:
 - Unbundle parking from monthly rent;
 - o Provide multimodal travel option information package to new residents; and
 - Offer personalized trip planning to new residents.

Neighbourhood Traffic Management

- As there is sufficient capacity along Maritime Way to accommodate traffic generated by the development, no changes to the existing roadway classification are required.
- No mitigation measures are recommended to offset the impacts of the development generated traffic.

Transit

- The proposed development is anticipated to generate 166 transit trips (40 in, 126 out) during the weekday AM peak hour and 207 transit trips (128 in, 79 out) during the weekday PM peak hour at build-out.
- As transit improves in the area and the existing Terry Fox Transit station is converted to LRT, the development is anticipated to generate 271 transit trips (65 in, 206 out) during the weekday AM peak hour and 336 transit trips (208 in, 128 out) during the weekday PM peak hour.
- The proposed development is located within a 600m walking distance of the Terry Fox Transit Station (future LRT Station). The Terry Fox Transit Station serves numerous Frequent Routes, Rapid Routes, Peak Hour Routes, and Local Routes, which provide comprehensive transit coverage across the City of Ottawa. The future conversion to LRT is anticipated to provide more reliable transit service and increased transit capacity at the Terry Fox Transit Station. Based on the foregoing, no transit capacity problems are anticipated in the vicinity of the site.

Network Concept

 The eastbound and westbound lanes along Campeau Drive east of Maritime Way are anticipated to operate above capacity during the AM peak hour under the 2038 background traffic condition.

- Additional capacity is available along Katimavik Road to accommodate the additional traffic volumes if capacity is realized along Campeau Drive.
- The City's 2013 TMP's 2031 Network Concept includes the widening of Campeau Drive from two to four lanes between Didsbury Road and March Road. This widening would alleviate projected capacity deficiency along Campeau Drive.
- The southbound lane along Castlefrank Road south of Katimavik Road is anticipated to operate above capacity during the PM peak hour under the 2038 background traffic condition.
- Traffic generated by the proposed development is anticipated to have a negligible impact on the lane capacity along the roadways within the study area.

MMLOS Analysis

Kanata Avenue/Earl Grey Drive:

- The Kanata Avenue/Earl Grey Drive intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- As part of the Kanata Avenue road widening project, the crossing distance on the all legs
 of the intersection are anticipated to be reduced and zebra striped crosswalks will be
 implemented. This is anticipated to improve the PLOS at this intersection.
- As part of the Kanata Avenue road widening project, cycle tracks will be provided on Kanata Avenue and this intersection will be converted into a protected intersection design. This modification will improve the BLOS at this intersection.
- Since Earl Grey Drive is not classified as a truck route, the provided TkLOS E is considered acceptable.

Kanata Avenue/Maritime Way/Lord Byng Way:

- The Kanata Avenue/Maritime Way/Lord Byng Way intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- As part of the Kanata Avenue road widening project, the crossing distance on the east and west legs of the intersection (Maritime Way/Lord Byng Way) are anticipated to be reduced and zebra striped crosswalks will be implemented on all legs. This is anticipated to improve the PLOS at this intersection.
- As part of the Kanata Avenue road widening project, cycle tracks will be provided on Kanata Avenue and this intersection will be converted into a protected intersection design. This modification will improve the BLOS at this intersection.
- since Maritime Way and Lord Byng Way are not classified as a truck route, the provided TkLOS E is considered acceptable.

Kanata Avenue/Highway 417 Westbound Off-Ramp:

- The Kanata Avenue/Highway 417 Westbound Off-Ramp intersection currently meets the City's target TkLOS D and Auto LOS E. As bicycles are not permitted on Highway 417, the BLOS was excluded from this analysis. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

Kanata Avenue/Highway 417 Eastbound On-Ramp:

• The Kanata Avenue/Highway 417 Eastbound On-Ramp intersection currently meets the City's target TkLOS D and Auto LOS E. As bicycles are not permitted on Highway 417,

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- the BLOS was excluded from this analysis. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

Kanata Avenue/Castlefrank Road/Aird Place:

- The Kanata Avenue/Castlefrank Road/Aird Place intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.
- To achieve the target BLOS B, the implementation of two-stage northbound/southbound left turn bike boxes is required. This is identified for the City's consideration.

Castlefrank Road/Katimavik Road:

- The Castlefrank Road/Katimavik Road intersection currently meets the target Auto LOS
 E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS
 or TkLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.
- To achieve the target BLOS B, the implementation of two-stage left turn bike boxes is required on all legs of the intersection. This is identified for the City's consideration.

Campeau Drive/Maritime Way/Knudson Drive:

- The Campeau Drive/Maritime Way/Knudson Drive intersection currently meets the target BLOS B and Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.
- This intersection currently meets the target BLOS B. However it is noted that cyclists are required to dismount and use the pedestrian crosswalks on the north, east, and west legs of the intersection.

Background Intersection Operations

- All intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.
- The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour.
- An increased cycle length and traffic signal optimization at the Highway 417 Westbound
 Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To
 achieve the MTO target, two northbound through lanes and two westbound right turn lanes
 are required.
- Modifications or replacement of the existing bridge structure are anticipated to be required to accommodate a four-lane cross section along Kanata Avenue. Widening of the existing off-ramp is anticipated to be required to accommodate two westbound right turn lanes. This is identified for the City's consideration.

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Total Intersection Operations

- Under the 2028 build-out year, the additional pedestrians and vehicles volumes at the Kanata Avenue/Maritime Way/Lord Byng Way intersection are anticipated to result in a LOS F. PM peak hour traffic signalization with an increased cycle length of 120 seconds is anticipated to yield the target LOS E at this intersection.
- The Kanata Avenue road widening project is anticipated to alleviate the LOS F identified at the Kanata Avenue/Maritime Way/Lord Byng Way intersection under the 2028 traffic conditions.
- Under total traffic conditions, all other intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.
- To achieve the MTO target at the Kanata Avenue/Highway 417 Westbound Off-ramp intersection, two northbound through lanes and two westbound right turn lanes are required. This is consistent with the background traffic conditions.
- As the site generated traffic is anticipated to be negligible compared to the background traffic volumes, the mitigation measures identified at the Kanata Avenue/Highway 417 Westbound Off-ramp intersection are identified for City consideration and are not attributable to the proposed development.

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1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) Forecasting Report has been prepared in support of Zoning By-law Amendment and Site Plan Control applications for Claridge's residential development at 1200 Maritime Way.

The subject site is surrounded by the following:

- Maritime Way and Townplace Suites by Marriott hotel at 1251 Maritime Way to the north;
- Highway 417 and future Bus Rapid Transit(BRT)/Light Rail Transit (LRT) to the south;
- Vacant land to the east; and
- Timberwalk retirement residence at 1250 Maritime Way to the west.
- Holiday Inn at 101 Kanata Avenue to the south and across Kanata Avenue
- Kanata Centrum Retail Development to the west

A view of the subject site is provided in **Figure 1.**



1.2 Proposed Development

The site is currently in two zones – the western part is Mixed Use Centre sub-zone 5 with a height limit (MC5 H[35]). The eastern part is Mixed Use Centre sub-zone 15 with an exception and a hold (MC15[2165]-h). The current zoning accommodates a broad range of uses including retail, service commercial, offices, residential and institutional uses in mixed-use buildings. However, a Zoning By-law Amendment is required to accommodate the 28 and 30-storey height of the proposed buildings.

The proposed development consists of two residential buildings providing a total of 632 units. The buildings are connected by an underground parking garage with 632 vehicle spaces and 301 bicycle spaces. At ground level between the buildings are 30 surface visitor parking spaces and 15 visitor bicycle stalls. Access to the proposed development will be located on Maritime Way. The proposed development is anticipated to be constructed in one phase with an assumed buildout year of 2028.

A copy of the site plan is included in **Appendix A**.

1.3 Screening Form

The City's 2017 TIA Guidelines identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form. The trigger results are as follows:

- Trip Generation Trigger The development is anticipated to generate over 60 peak hour person trips; further assessment is required based on this trigger.
- Location Trigger The development is located in a Transit Oriented Development (TOD)
 zone (within 600m of the Terry Fox Transit Station) and a Design Priority Area; further
 assessment is required based on this trigger.
- Safety Trigger No safety triggers outlined in the TIA Screening Form are met; no further assessment is required based on this trigger.

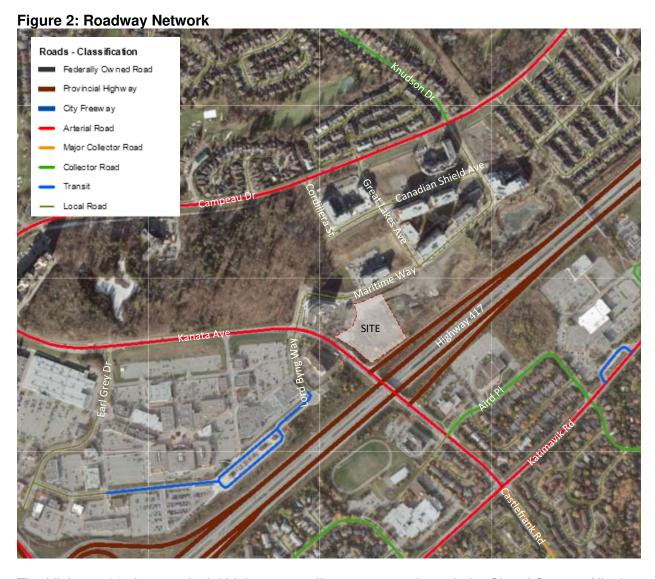
The proposed development satisfies the Trip Generation and Location Triggers for completing a TIA. A copy of the TIA screening form is included in **Appendix B**.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

The roadway network of the greater area surrounding the subject site is illustrated in Figure 2.



The Highway 417 is a provincial highway travelling east-west through the City of Ottawa. All other roadways within the study area fall under the jurisdiction of the City of Ottawa.

Kanata Avenue is an arterial roadway and generally runs on a northwest-southeast alignment within the study area. It has a two-lane undivided urban cross section with a posted speed limit of 50km/hr in the vicinity of the subject site. Kanata Avenue is designated as a truck route permitting full loads. The City of Ottawa Official Plan (OP) identifies a 44.5 right-of-way (ROW) to be protected along Kanata Avenue between Campeau Drive and Aird Place. No right-of-way widening is required as part of this application.

Castlefrank Road is the extension of Kanata Avenue south of Highway 417 that travels from Aird Place to Terry Fox Drive. It is classified as an arterial roadway north of Aird Place and a major collector roadway south of Katimavik Road. It has a two-lane undivided urban cross section with a posted speed limit of 50km/hr.

Campeau Drive is an arterial roadway that generally runs on an east-west alignment within the study area. Campeau Drive has a two-lane undivided urban cross section with a posted speed limit of 60km/hr.

Katimavik Road is an arterial roadway that runs on an east-west alignment between Terry Fox Drive and Eagleson Road. It has a two-lane undivided urban cross section and a posted speed limit of 50km/hr.

Maritime Way is a local roadway that runs between Kanata Avenue and Campeau Drive. Maritime Way has a two-lane divided urban cross section from Kanata Avenue to approximately 70m east of the 90-degree bend where it transitions to an undivided cross section. Maritime Way has a posted speed limit of 50km/hr.

Lord Byng Way is a local road that commences along Kanata Avenue and terminates approximately 160m to the south. Lord Byng Way provides access to the Holiday Inn Hotel, the Kanata Centrum Shopping Centre, and the Terry Fox Transit Station.

Earl Grey Drive is a local roadway that commences along Kanata Avenue and terminates approximately 530m to the south. Earl Grey Drive provides access to the Kanata Centrum Shopping Centre.

Aird Place travels from west of Castlefrank Road to Katimavik Road and is classified as a local roadway west of Castlefrank Road and a collector roadway east of Castlefrank Road. Aird Place has a two-lane undivided urban cross section with a posted speed limit of 40km/hr.

Knudson Drive is a collector roadway that travels between Kanata Avenue and Campeau Drive. It has a two-lane undivided urban cross section with a posted speed limit of 40km/hr.

2.1.2 Intersections

Kanata Ave/Earl Grey Dr

- Signalized intersection
- East approach: One through lane and one left turn lane
- West approach: One through lane and one right turn lane
- South approach: One left turn lane and one right turn lane
- Standard crosswalks are provided on all approaches
- Bike lanes are provided on the east and west approaches



Kanata Ave/Maritime Way/Lord Byng Way

- Signalized intersection
- South, east, and west approaches: one left turn lane and one shared through/right turn lane
- North approach: one shared left/through/right turn lane on north approach
- Due to a wide lane width, the north approach functions as a two-lane approach.
- Standard crosswalks are provided on all approaches
- A bike lane is provided on the south approach



Kanata Ave/Highway 417 Westbound Off-Ramp

- Signalized intersection
- North approach: two through lane
- South approach: one through lanes
- East approach: one left turn lane and one right turn lane
- Standard crosswalks are provided on north and east approaches
- Bike lanes are provided on the north and south approaches



Kanata Ave/Highway 417 Eastbound On-Ramp

- Signalized intersection
- North approach: one through lane and one left turn lane
- South approach: one through lane and one right turn lane
- Standard crosswalks are provided on south and east approaches
- Bike lanes are provided on the north and south approaches



Kanata Ave/Castlefrank Rd/Aird Pl

- Signalized intersection
- East and west approaches: one shared left/through/right turn lane
- North and south approaches: one left turn lane and one shared through/right turn lane
- Textured crosswalks are provided on the east and west approaches
- Standard sidewalks are provided on the north and south approaches
- Bike lanes are provided on the north and south approaches



Castlefrank Rd/Katimavik Rd

- Signalized intersection
- East, west, and south approaches: one left turn lane and one shared through/right turn lane
- North approach: one left turn lane, one right turn lane, and one through lane
- Textured crosswalks are provided on all approaches
- A bike lane is provided on the north approach



Campeau Dr/Maritime Way/Knudson Dr

- Signalized intersection
- All approaches: one left turn lane and one shared through/right turn lane
- Standard crosswalks are provided on all approaches
- Separated cycling facilities are provided on the north, east and west approaches



2.1.3 Driveways

In accordance with the City's 2017 TIA guidelines, a review of adjacent driveways along the boundary roads (within 200m of the subject site) are provided as follows:

Maritime Way, north side:

 One driveway to Townplace Suites Hotel at 1251 Maritime Way

Maritime Way, south side:

- One all movement access to the Timberwalk retirement home at 1250 Maritime Way
- One right-in right-out access to pickup/drop-off lay-by to the Timberwalk retirement home at 1250 Maritime Way

2.1.4 Pedestrian and Cycling Facilities

The existing pedestrian and cycling infrastructure provided in the greater area surrounding the subject site is illustrated in **Figure 3**.



Sidewalks are currently provided on both sides of Maritime Way, Castlefrank Road, and Campeau Drive. Sidewalks are provided on both sides of Kanata Avenue south/east of Maritime Way, and the north side west of Maritime Way. Sidewalks are also provided on the north side of Aird Place and the west side of Knudson Drive. A multi-use-pathway (MUP) is provided on the north side of Katimavik Road.

Bike lanes are currently provided along Kanata Avenue, Campeau Drive, Knudson Drive, and Castlefrank Road north of Katimavik Road. A north-south pedestrian/cyclist crossing of Highway 417 is provided connecting Gray Crescent to Whitney Drive. Campeau Drive is identified as a spine cycling route, and Kanata Avenue, Castlefrank Road, Katimavik Road, Maritime Way, Knudson Drive and Lord Byng Way are identified as local cycling routes in the City's Ultimate Cycling Network.

2.1.5 Transit

The subject site is located within approximately a 350m radius or a 485m walking distance, of the Terry Fox Transit Station, which provides access to numerous transit routes. OC Transpo Bus Stops #0431 and #0432 are located along Lord Byng Way south of Kanata Avenue, a walking distance of 350m from the subject site via Maritime Way. These bus stops serve OC Transpo Routes: 61, 62, 88, 161, 162, 164, 165, 167, 168, and 264.

Bus stops have been constructed along the length of Maritime Way but are not currently in use. Transit service will become available along Maritime Way as development increases within the Kanata Town Centre. Bus stops to the future transit route are located along Maritime Way west of the subject site.

The location of the aforementioned transit facilities in relation to the subject site is shown in **Figure 4**. Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.



2.1.6 Existing Area Traffic Management Measures

Speed cushions have been implemented along Knudson Drive. On-road messaging (SLOW pavement markings) have been implemented along Maritime Way and Great Lakes Avenue, and all-way stop control was recently implemented at the Maritime Way/Great Lakes Avenue intersection. A raised median is provided along Maritime Way approaching Kanata Avenue. No other area traffic management measures have been implemented within the study area.

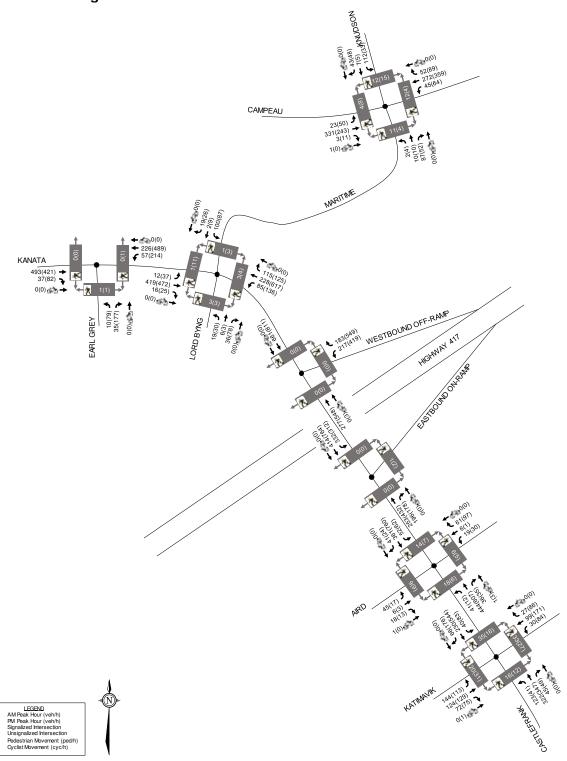
2.1.7 Existing Traffic Volumes

Weekday traffic counts were obtained from the City of Ottawa at the study area intersections to determine the existing pedestrian, cyclist and vehicular traffic volumes. The traffic counts were completed on the following dates:

•	Kanata Venue/Earl Grey Drive	November 28, 2018
•	Kanata Avenue/Maritime Way/Lord Byng Way	March 20, 2018
•	Kanata Avenue/Highway 417 WB Off-ramp	December 6, 2017
•	Kanata Avenue/Highway 417 EB On-ramp	November 27, 2018
•	Kanata Avenue/Castlefrank Road/Aird Place	April 11, 2018
•	Castlefrank Road/Katimavik Road	March 30, 2017
•	Campeau Drive/Maritime Way/Knudson Drive	March 10, 2020

Existing traffic volumes along the study area roadways are shown in **Figure 5**. Peak hour summary sheets of the above traffic counts are included in **Appendix D**.

Figure 5: Existing Traffic Volumes



2.1.8 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersection. Copies of the collision summary report are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The following summarizes the number of collisions at each intersection from January 1, 2014 to December 31, 2018.

Table 1: Reported Collisions

Table 1. Reported Collision		Total					
Intersection	Angle	Sideswipe	Rear End	Turning Movement	Approach	SMV ¹ / Other	Number of Collisions
Kanata Avenue/ Earl Grey Drive	0	0	8	2	0	1	11
Kanata Avenue/Maritime Way/Lord Byng Way	2	3	28	2	1	4	40
Kanata Avenue/Highway 417 WB Off-ramp	18	1	14	1	0	4	38
Kanata Avenue/Highway 417 EB On-ramp	1	0	6	2	0	1	10
Kanata Avenue/ Castlefrank Road/ Aird Place	2	0	13	0	0	0	15
Castlefrank Road/ Katimavik Road	9	2	8	8	0	2	29
Campeau Drive/Maritime Way/Knudson Drive	1	1	2	1	0	1	6
Maritime Way between Kanata Avenue and Campeau Drive	0	0	0	0	0	4	0
Kanata Avenue between Earl Grey Drive and Maritime Way	1	0	10	0	0	0	11
Kanata Avenue between Maritime Way and HWY 417 WB Off Ramp	0	0	2	0	0	0	2
Kanata Avenue between HWY 417 WB Off-Ramp and EB On-Ramp	0	0	1	0	0	0	1
Kanata Avenue between HWY 417 EB ON-Ramp and Aird Place	0	0	3	0	0	0	3
Castlefrank Road between Aird Place and Katimavik Road	0	0	3	0	0	0	3

^{1.} SMV = Single Motor Vehicle

Kanata Avenue/Earl Grey Drive

A total of 11 collisions were reported at this intersection over the last five years. Of the 11 collisions, eight were rear-end impacts, two were turning movement impacts, and one was a single motor vehicle impact. Ten of the total collisions caused property damage only, while the

remaining collision caused personal injuries but no fatalities. None of the collisions involved pedestrians or cyclists.

Five of the eight rear-end impacts involved eastbound vehicles, two involved northbound vehicles, and one involved southbound vehicles. All of the rear-end impacts caused property damage only. Four of the rear-end impacts occurred under poor environmental conditions.

Kanata Avenue/Maritime Way/Lord Byng Way

A total of 40 collisions were reported at this intersection over the last five years. Of the 40 collisions, 28 were rear-end impacts, four were single motor vehicle/other impacts, three were sideswipe impacts, two were angle impacts, two were turning movement impacts, and one was an approach impact. Thirty-two of the total collisions caused property damage only, while the remaining eight caused personal injuries but no fatalities. Fourteen of the collisions occurred under poor environmental conditions. One of the collisions involved a pedestrian and none involved cyclists.

Twelve of the 28 rear-end impacts involved northbound vehicles, six involved southbound vehicles, six involved westbound vehicles, and four involved eastbound vehicles. Twenty-three of the rear-end impacts caused property damage only, while the remaining five caused personal injuries but no fatalities. Twelve of the rear-end impacts occurred under poor environmental conditions.

Kanata Avenue/Highway 417 Westbound Off-ramp

A total of 38 collisions were reported at this intersection over the last five years. Of the 38 collisions, 18 were angle impacts, 14 were rear-end impacts, four were single motor vehicle/other impacts, one was a sideswipe impact, and one was a turning movement impact. Thirty-two of the total collisions caused property damage only, while the remaining six caused personal injuries but no fatalities. Eight of the collisions occurred under poor environmental conditions. One of the collisions involved a pedestrian and none involved cyclists.

Eleven of the 18 angle impacts involved northbound and westbound vehicles, while the remaining eight involved southbound and westbound vehicles. Fifteen of the angle impacts caused property damage only, while the remaining three caused personal injuries but no fatalities. Two of the angle impacts occurred under poor environmental conditions. Twelve of the angle impacts were attributable to a vehicle disobeying the traffic signal control.

Eight of the 14 rear-end impacts involved westbound vehicles, four involved northbound vehicles, and two involved southbound vehicles. Thirteen of the rear-end impacts caused property damage only, while one caused personal injuries but no fatalities. Three of the rear-end impacts occurred under poor environmental conditions.

Kanata Avenue/Highway 417 Eastbound On-ramp

A total of ten collisions were reported at this intersection over the last five years. Of the ten collisions, six were rear-end impacts, two were turning movement impacts, one was an angle impact, and one was a single motor vehicle impact. All of the collisions caused property damage only and five of the collisions occurred under poor environmental conditions. None of the collisions involved a pedestrian or cyclists.

Kanata Avenue/Castlefrank Road/Aird Place

A total of 15 collisions were reported at this intersection over the last five years. Of the 15 collisions, 13 were rear-end impacts and two were angle impacts. Thirteen of the total collisions caused property damage only, while the remaining two caused personal injuries but no fatalities. None of the collisions involved a pedestrian or cyclists.

Ten of the 13 rear-end impacts involved southbound vehicles, and three involved northbound vehicles. Twelve of the rear-end impacts caused property damage only, while one caused personal injuries but no fatalities. Five of the rear-end impacts occurred under poor environmental conditions.

Castlefrank Road/Katimavik Road

A total of 29 collisions were reported at this intersection over the last five years. Of the 29 collisions, nine were angle impacts, eight were rear-end impacts, eight were turning movement impacts, two were sideswipe impacts, and two were single motor vehicle impacts. Eleven of the collisions occurred under poor environmental conditions. Twenty of the total collisions caused property damage only, while the remaining nine caused personal injuries but no fatalities. One of the collisions involved a pedestrian and one involved a cyclist.

Three of the angle impacts involved northbound and westbound vehicles, three involved southbound and westbound vehicles, two involved northbound and eastbound vehicles, and one involved a southbound and eastbound vehicle. Six of the angle impacts caused property damage only, and three caused personal injuries but no fatalities. Four of the angle impacts occurred under poor environmental conditions.

Four of the rear-end impacts involved southbound vehicles, two involved northbound vehicles, and two involved eastbound vehicles. All of the rear-end impacts caused property damage only. Two of the rear-end impacts occurred under poor environmental conditions.

Four of the turning movement impacts involved southbound left turning vehicles, one involved a westbound left turning vehicle, one involved an eastbound left turning vehicle, one involved a northbound left turning vehicle and a cyclist. Five of the turning movement impacts caused property damage only, while the remaining three caused personal injuries but no fatalities. Three of the turning movement impacts occurred under poor environmental conditions.

Campeau Drive/Maritime Way/Knudson Drive

A total of six collisions occurred at this intersection over the last five years. Of the six collisions, two were rear-end impacts, one was an angle impact, one was a sideswipe impact, one was a turning movement impact, and one was a single motor vehicle impact. Five of the collisions caused property damage only, while one caused personal injuries but no fatalities. One of the collisions occurred under poor environmental conditions. None of the collisions involved a pedestrian and one involved a cyclist.

Maritime Way between Kanata Avenue and Campeau Drive

A total of four mid-block collisions occurred along Maritime Way between Kanata Avenue and Campeau Drive. All four of the collisions were single motor vehicle impacts and occurred under poor surface or environmental conditions.

Kanata Avenue between Earl Grey Drive and Maritime Way

A total of eleven mid-block collisions occurred along Kanata Avenue between Earl Grey Drive and Maritime Way. Ten of the eleven collisions were rear-end impacts and one was an angle impact. Seven of the eleven collisions occurred under poor surface or environmental conditions.

Kanata Avenue between Maritime Way and Highway 417 westbound off-ramp

A total of two mid-block collisions occurred along Kanata Avenue between Maritime Way and the Highway 417 westbound off-ramp. Both of the collisions were rear-end impacts and occurred under good surface or environmental conditions.

Kanata Avenue between Highway 417 westbound off-ramp and eastbound on-ramp

One mid-block collisions occurred along the Highway 417 westbound off-ramp and eastbound onramp. This collisions was a rear-end impact that occurred under poor surface or environmental conditions.

Kanata Avenue between Highway 417 eastbound on-ramp and Aird Place

A total of three mid-block collisions occurred along Kanata Avenue between the Highway 417 eastbound on-ramp and Aird Place. All three of the collisions were rear-end impacts and two occurred under good surface or environmental conditions.

Castlefrank Road between Aird Place and Katimavik Road

A total of three mid-block collisions occurred along Castlefrank Road between Aird Place and Katimavik Road. All three of the collisions were rear-end impacts and two occurred under good surface or environmental conditions.

2.2 Planned Conditions

The City of Ottawa's Transportation Master Plan (TMP) 2031 Affordable Road Network identifies the widening of Kanata Avenue from two to four lanes between Highway 417 and Campeau Drive. This widening will fulfill the urban design initiatives ongoing in the vicinity of the Kanata Town Centre. Based on the TMP, the widening of Kanata Avenue is anticipated between 2020 and 2025. However, based on discussions with City staff this widening will not be constructed until approximately 2031. The TMP's 2031 Network Concept also includes the widening of Campeau Drive from two to four lanes between Didsbury Road and March Road.

The TMP's Affordable Rapid Transit and Transit Priority Network identifies exclusive and at-grade Bus Rapid Transit (BRT) between the Terry Fox and Eagleson Transit Stations. The Rapid Transit Network Concept will include exclusive BRT between Fernbank Road and Eagleson Transit Stations.

Construction for Phase 2 of the Light Rail Transit (LRT) began in 2019. Phase 2 of LRT will extend the Confederation Line east and west and will extend the Trillium Line further south. The Confederation Line Extension West will travel from the Tunney's Pasture Transit Station to the Moodie and Baseline Transit Stations and is anticipated to be completed by 2025. The proposed western Confederation Line extension is shown in **Figure 6**.

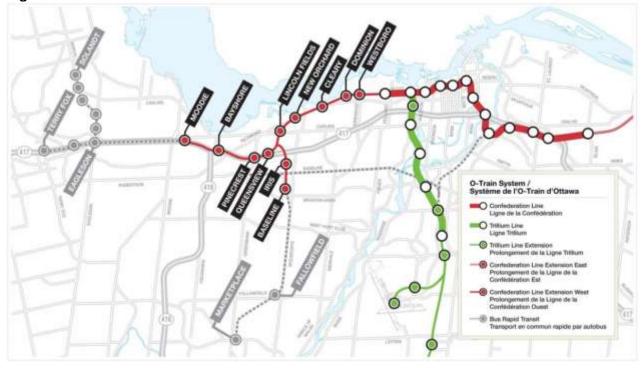


Figure 6: LRT Phase 2 - Confederation Line Extension West

The TMP's Ultimate Transit Network Concept will extend light rail transit from the Moodie Transit Station to the Hazeldean Transit Station. This project will convert the Terry Fox Transit Station to LRT.

The City of Ottawa's 2013 Ottawa Pedestrian Plan identifies a new sidewalk along the east side of Knudson Drive north of Campeau Drive as a Phase 3 project with implementation between 2026 and 2031.

Other area development includes:

- The Timberwalk retirement home containing 154 units was recently constructed at 1250
 Maritime Way, immediately west of the subject site. A Revised Transportation Brief was
 prepared by Novatech, dated May 2017, in support of this development.
- A six-storey apartment building containing 144 units and an eight-storey apartment building containing 154 units are proposed at 1088 and 1136 Maritime Way. A Transportation Brief was prepared by Novatech, dated March 2017 in support of this development. The apartment building at 1136 Maritime Way is currently under construction, while no timing has been identified for the 1088 Maritime Way building.
- A subdivision containing 1,544 residential dwelling units are proposed at 7000 Campeau Drive, which is currently occupied by the Kanata Golf & Country Club. A Transportation Impact Assessment was prepared by BA Group, dated June 2020 in support of this development. This development is anticipated to be constructed by 2024 but is subject to a legal challenge.

- A mixed-use development containing 798 residential units and 431m² of commercial is proposed at 6301 Campeau Drive. A Transportation Impact Assessment was prepared by Trans-Plan Transportation Engineering, dated November 2020 in support of this development. Phase 1 of this development is anticipated to be constructed by 2021 with the timing for Phase 2 to be determined.
- A retail/office development is proposed at 255 Kanata Avenue, within the Kanata Centrum lands. A Planning Rationale was prepared by Fotenn, dated June 2015, in support of this development. No transportation studies were submitted to the City in support of this development. The development appears to be have been put on hold indefinitely.
- A Mandarin Restaurant was recently constructed at 150 Katimavik Road. A Transportation Brief was prepared by Parsons, dated October 2016 in support of this development.

2.3 Study Area and Time Periods

A boundary street review will be conducted for Kanata Avenue and Maritime Way. The study area intersections include the proposed access and following intersections:

- Kanata Avenue/Earl Grey Drive
- Kanata Avenue/Maritime Way/Lord Byng Way
- Kanata Avenue/Highway 417 WB Off-ramp
- Kanata Avenue/Highway 417 EB On-ramp
- Kanata Avenue/Castlefrank Road/Aird Place
- Castlefrank Road/Katimavik Road
- Campeau Drive/Maritime Way/Knudson Drive

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2028 build-out year and the 5-year (2033) and 10-year (2038) horizon years per Ministry of Transportation Ontario (MTO) standards.

2.4 Exemptions Review

This module reviews possible exemptions from the final TIA, as outlined in the TIA Guidelines. The applicable exemptions for this site are shown in **Table 3**.

Table 2: TIA Exemptions

Module	Element	Exemption Criteria	Exemption Applies
Design Review	Component		
4.1	4.1.2 Circulation and Access	Only required for site plans	Not Exempt
Development Design	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
4.2	4.2.1 Parking Supply	Only required for site plans	Not Exempt
Parking	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
Network Impact	Component		
4.5 Transportation Demand Management	All elements	 Not required for non-residential site plans expected to have fewer than 60 employees and/or students on location at any given time 	Not Exempt
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	Not Exempt
4.8 Network Concept	All elements	 Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning 	Not Exempt

As the subject site is located within 600m of the Terry Fox Transit Station, the parking rates for Area X in the City's Zoning By-law apply to the development. Based on Area X, a minimum of 0.5 vehicle parking spaces per unit for residents and 0.1 parking spaces per unit for visitors (no more than 30 spaces per building) are required. This equates to a minimum requirement of 379 vehicle parking spaces. As the proposed 662 vehicle parking spaces exceed the required parking under the Zoning By-law, Module 4.2.2 is exempt from the analysis.

Based on the foregoing, the following modules will be included in the TIA report:

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design
- Module 4.5: Transportation Demand Management
- Module 4.6: Neighbourhood Traffic Management
- Module 4.7: Transit
- Module 4.8: Network Concept
- Module 4.9: Intersection Design

3.0 FORECASTING

3.1 Development-Generated Traffic

3.1.1 Trip Generation

The proposed development consisting of two residential buildings, will provide a total of 689 dwelling units.

Trips generated by the proposed development during the weekday AM and PM peak hours have been estimated using the relevant recommended rates outlined in the 2009 TRANS *Trip Generation Manual*. The vehicle trip generation rates, taken from Table 6.3 of the TRANS report, correspond to High-Rise Apartments (10+ floors) in the Suburban Area (outside the greenbelt). The vehicle trip generation using the aforementioned rates have been converted to person trips using the assumed modal shares in the in Table 3.13 of the TRANS report. The directional split between inbound and outbound trips are based on the blended splits presented in Table 3.17 of the TRANS report.

Estimates of the person trips generated by the proposed development are summarized in **Table 3**.

Table 3: Person Trip Generation

Land Use	Units	AM Peak			PM Peak			
Land USE	Ullits	In	Out	Total	In	Out	Total	
High-Rise Apartments (10+ Floors)	632	100	316	416	321	197	518	

The 2011 TRANS O-D Survey Report indicates that the study area lies within the Kanata/Stittsville district. Additionally, the site is located within 600m of the Terry Fox Transit Station and is therefore considered a Transit-Oriented Development (TOD). In TOD zones, the transit share is assumed to increase significantly compared to any TRANS O-D district.

Using the 2011 TRANS O-D Survey Report, the typical residential commuter pattern is represented by all observed trips from/within a district in the AM peak hour and all observed trips to/within a district in the PM peak hour. A comparison of the assumed modal shares for a TOD, and the modal shares for commuter trips in the Kanata/Stittsville District, is presented in **Table 4**.

Table 4: Modal Shares by District/Zone

Travel Mode	TOD Zone	Kanata/Stittsville		
Auto Driver	15%	60%		
Auto Passenger	5%	20%		
Transit	65%	10%		
Non-Auto	15%	10%		

Given the sites proximity to Terry Fox Transit Station, the proposed development is anticipated to have a lower auto-modal share and a higher transit modal share compared to the Kanata/Stittsville District. However, as the subject site is located within a suburban context, the

City's TOD modal share targets may not be achievable. As such, the TOD modal share targets have been adjusted to reflect a higher auto-modal share associated with the Kanata/Stittsville District. The assumed modal shares for the proposed development at build-out are summarized as follows:

- 30% Auto Driver
- 20% Auto Passenger
- 40% Transit
- 10% Non-Auto

As transit improves in proximity of the proposed development, it is anticipated that the developments modal shares will change, and an increased transit ridership will be realized. Although the timing for the Kanata LRT extension is unknown at this time, the modal shares for the 2038 horizon year have been adjusted to reflect a TOD zone. This is considered representative of the anticipated modal shares if LRT is extended to Kanata and the Terry Fox Transit Station is upgraded to LRT by the 2038 horizon year.

A full breakdown of the projected site-generated person trips by modal share is shown in **Table 5**.

Table 5: Person Trips by Modal Share

		, ilioaai oii	u. 0					
Troval Made	Modal	AM Peak			PM Peak			
Travel Mode	Share	In	Out	Total	In	Out	Total	
2028 Build-out Condition								
Total Pers	on Trips	100	316	416	321	197	518	
Auto Driver	30%	30	95	125	96	59	155	
Auto Passenger	20%	20	63	83	64	40	104	
Transit	40%	40	126	166	128	79	207	
Non-Auto	10%	10	32	42	32	20	52	
2038 Horizon Yea	ar Conditi	on						
Total Person Trips		100	316	416	321	197	518	
Auto Driver	15%	15	47	62	48	30	78	
Auto Passenger	5%	5	16	21	16	10	26	
Transit	65%	65	206	271	208	128	336	
Non-Auto	15%	15	47	62	48	30	78	

3.1.2 Trip Distribution

Site generated traffic was distributed based on the peak hour traffic patterns within the study area. The distribution can be described as follows:

- 25% to/from the west via Kanata Avenue
- 10% to/from the west via Katimavik Road
- 10% to/from the south via Castlefrank Road
- 10% to/from the east via Katimavik Road
- 25% to/from the east via Highway 417
- 20% to/from the east via Campeau Drive

Traffic generated by the proposed development during the weekday AM and PM peak hours under the 2028 build-out year and 2038 horizon year are shown in **Figure 7** and **8**.

Figure 7: Site Generated Traffic (2028 Build-out year)

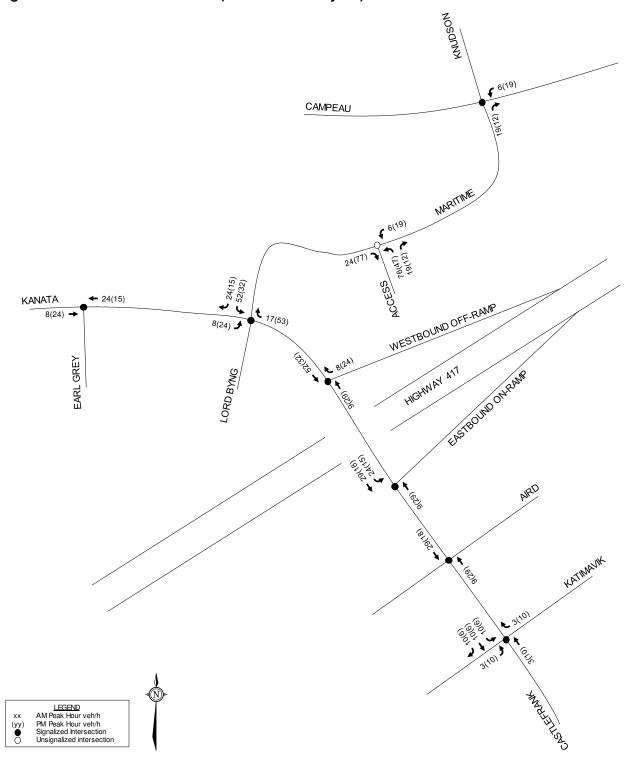
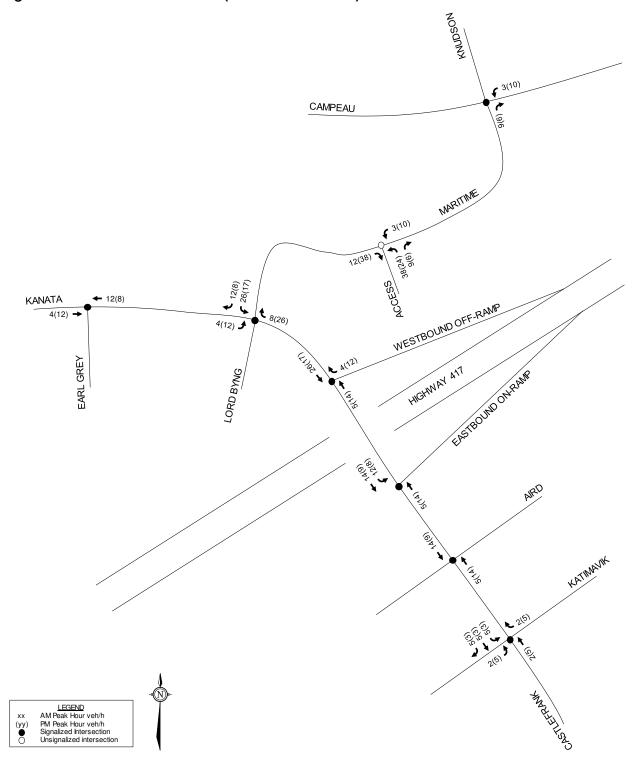


Figure 8: Site Generated Traffic (2038 Horizon Year)



3.2 Background Traffic

3.2.1 General Background Growth Rate

A review of snapshots from the City's Long-Range Transportation Model have been reviewed to determine an appropriate background growth rate in the area. Based on the 2011 and 2031 long-range model snapshots, Kanata Avenue and Maritime Way are anticipated to grow at a rate of 2% per annum, traffic on the Highway 417 on-ramp is anticipated to grow at a rate of 1% per annum, Katimavik Road and Campeau Drive are not anticipated to grow, and traffic on the Highway 417 off-ramp is anticipated to decrease.

A further review of historic traffic counts at the Kanata Avenue/Maritime Way/Lord Byng Way (2014 and 2018 counts), Campeau Drive/Maritime Way/Knudson Drive (2015 and 2020 counts) has been conducted. Based on the annual average daily traffic (AADT), traffic at the Kanata Avenue/Maritime Way intersection has grown at a rate of 3% per annum, while traffic at the Campeau Drive/Maritime Way intersection has not grown significantly.

For the purposes of this analysis, a 2% per annum growth rate has been applied to traffic along Maritime Way and Kanata Avenue. Consistent with the 7000 Campeau Drive and 6301 Campeau Drive TIA's, a 2% per annum growth rate has also been conservatively applied to the Campeau Drive/Maritime Way/Knudson Drive intersection. Consistent with the City's long-range transportation model, no growth has been applied to Katimavik Road.

Historical AADT traffic counts were obtained from MTO for the Highway 417 Off-ramp (2014 and 2018 counts) and Highway 417 On-ramp (2014 and 2019 counts) along Kanata Avenue. Based on the ramp counts, the Highway 417 off-ramp grew at a rate of 6% per annum while the on-ramp grew at a rate of 3% per annum. Due to the extended build-out and horizon period, and since background traffic generated by other area developments is accounted for separately, MTO has advised that a 2% per annum growth rate is to be applied to the Highway 417 on and off ramps along Kanata Avenue.

3.2.2 Other Area Development

A description of other study area developments is included in Section 2.2.

Excerpts of site generated traffic figures from the respective traffic studies for the above developments are included in **Appendix F**.

Traffic generated by other area developments is shown in **Figure 9**. Background traffic volumes for the 2028 build-out and the 2033 and 2038 horizon years are shown in **Figures 10** to **12**. Total traffic volumes for the 2028 build-out and the 2033 and 2038 horizon years are shown in **Figures 13** to **15**.

Figure 9: Traffic Generated by Other Area Developments

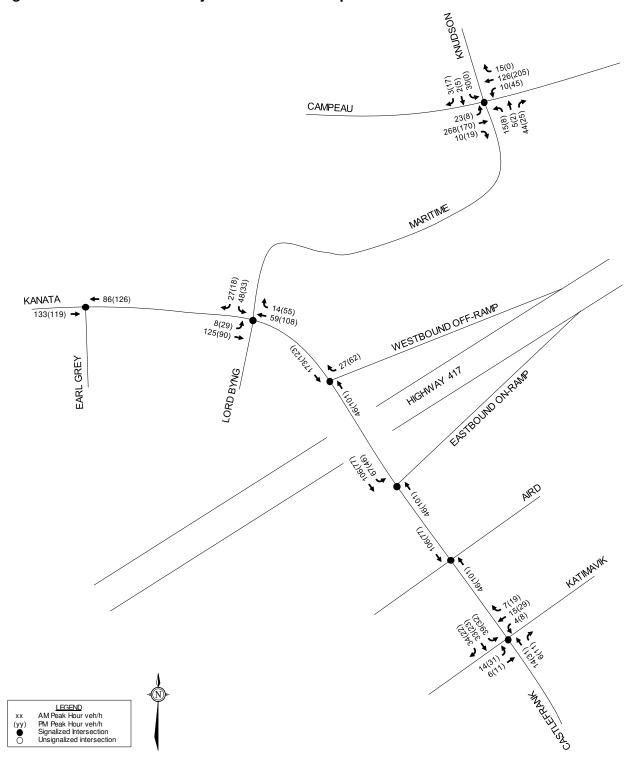


Figure 10: 2028 Background Traffic

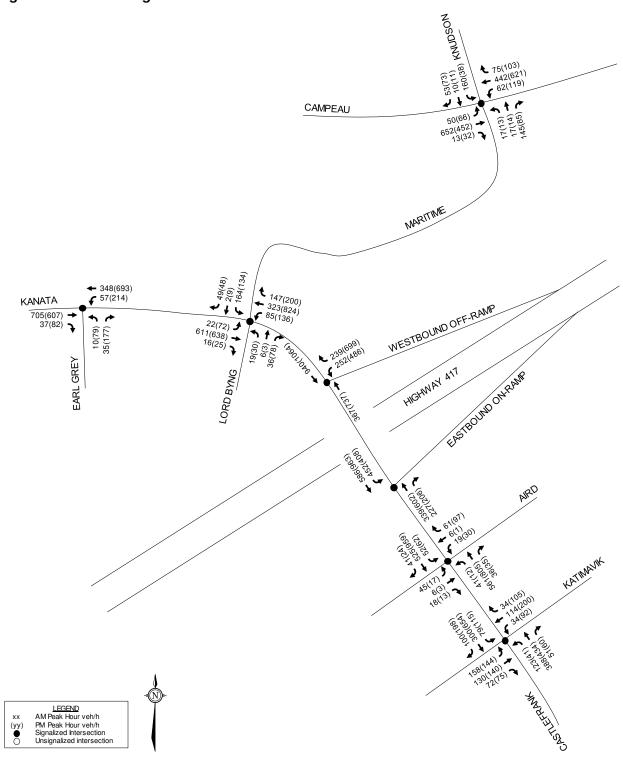


Figure 11: 2033 Background Traffic

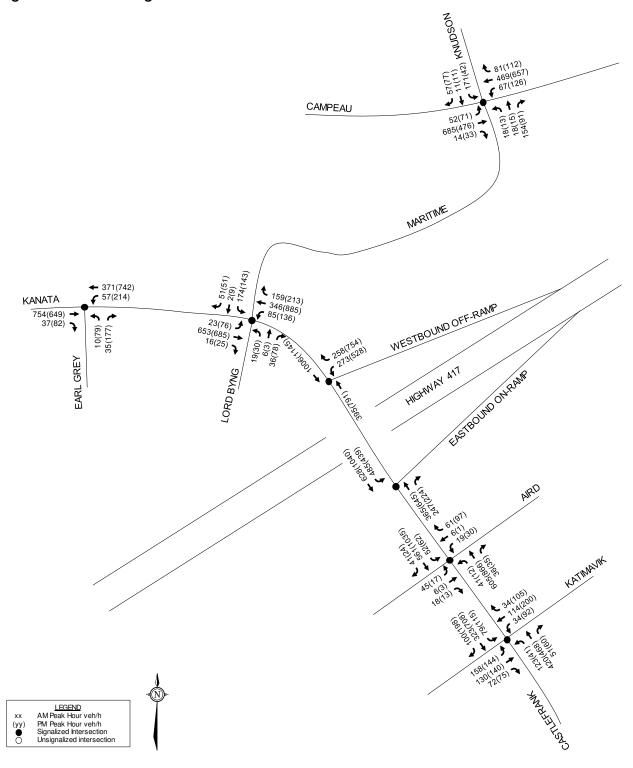


Figure 12: 2038 Background Traffic

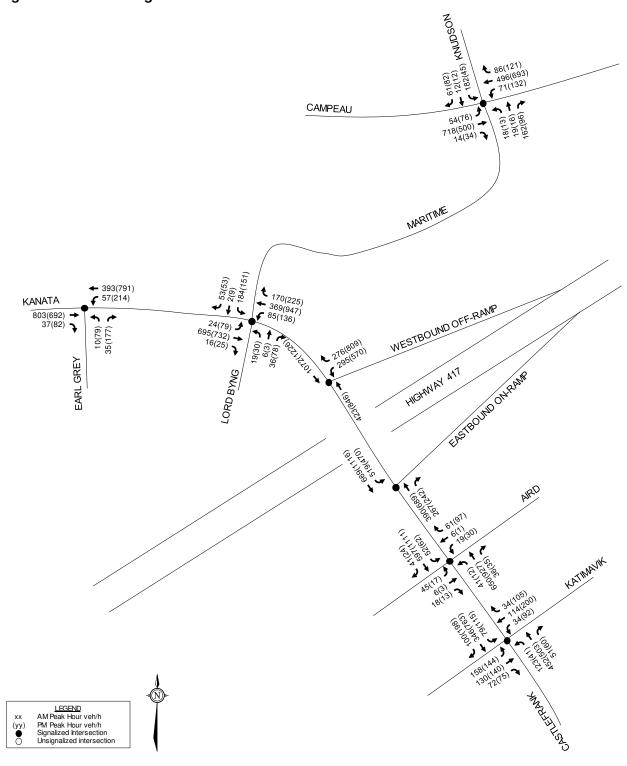


Figure 13: 2028 Total Traffic

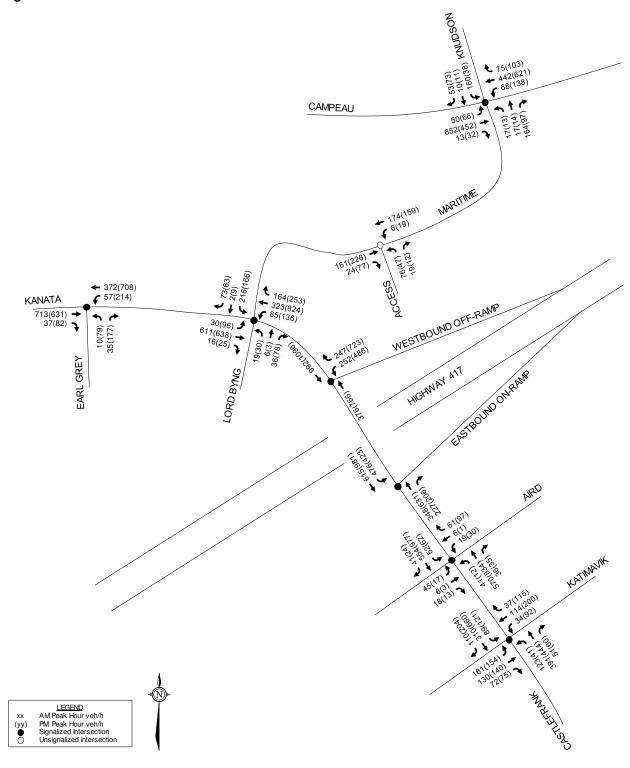


Figure 14: 2033 Total Traffic

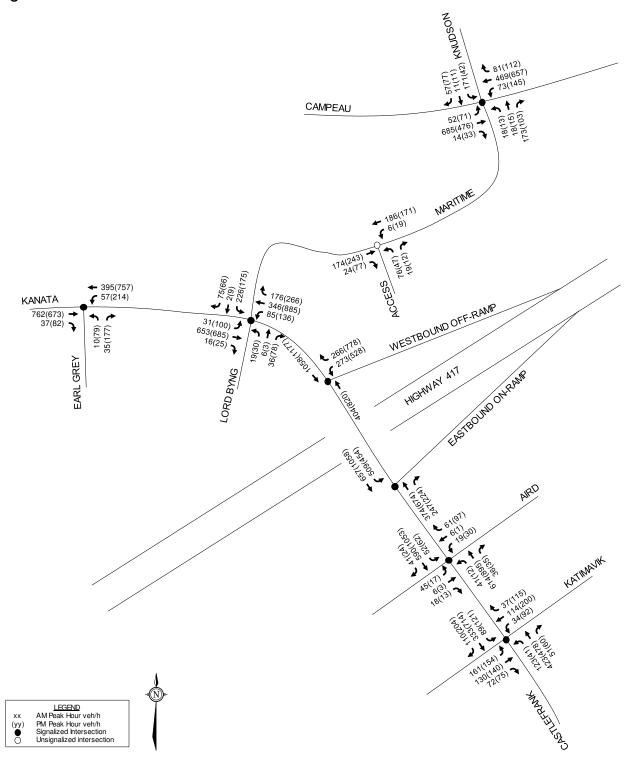
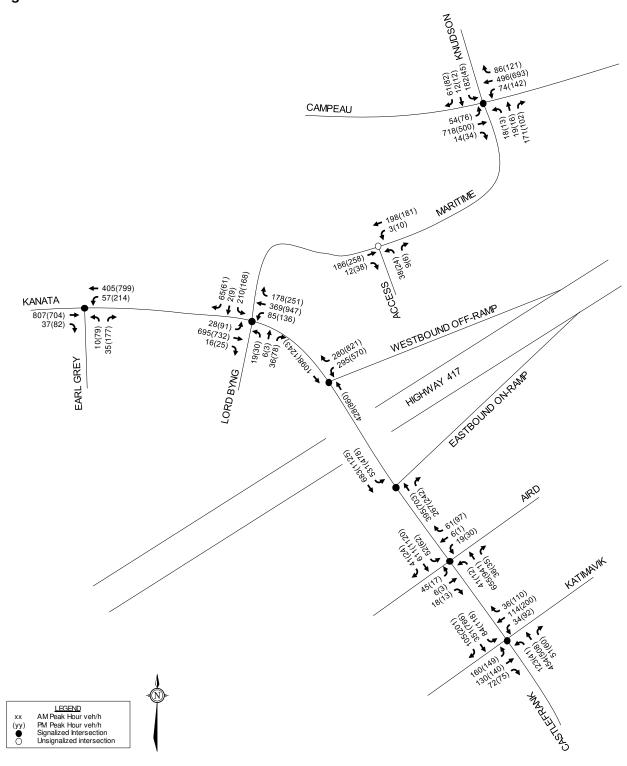


Figure 15: 2038 Total Traffic



3.3 Demand Rationalization

A review of the background intersection operations has been conducted to determine if and when the projected background traffic will exceed the capacity within the study area. For City intersections, the target Auto LOS corresponds to a vehicle-to-capacity (v/c) ratio of 1.0 or better (0.9 or better for the Campeau Drive/Knudson Drive/Maritime Way intersection). For the Highway 417 ramp terminals, MTO's target Auto LOS corresponds to a v/c ratio 0.85 or better for intersection approaches and 0.75 or better for ramp approaches. Consistent with the 2014 MTO TIA Guidelines, mitigation measures have been identified for all movements at the Kanata Avenue/Highway 417 ramp terminals that do not meet the target operations. The intersection parameters used in the analysis are consistent with the City of Ottawa's TIA guidelines (saturated flow rate: 1800 vphpl, Existing PHF: 0.9, Future PHF: 1.0).

3.3.1 Existing Traffic

Intersection capacity analysis has been completed for the existing traffic conditions. The lane configurations at the study area intersections are based on the existing conditions presented in Section 2.1. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix G**.

Table 6: Existing Intersection Operations

rable o. Existing intersect	AM Peak			PM Peak			
Intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt	
Kanata Avenue/ Earl Grey Drive	0.41	А	EBT	0.57	А	NBR	
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	0.57	Α	WBL	0.63	В	NBT/R	
Kanata Avenue/ Highway 417 WB Off Ramp	0.70	В	WBL	0.90	D	WBR	
Kanata Avenue/ Highway 417 EB On Ramp	0.42	Α	SBL	0.51	Α	SBT	
Kanata Avenue/ Aird Place	0.48	Α	EB	0.65	В	SBT/R	
Kanata Avenue/ Castlefrank Road/ Katimavik Road	0.62	В	EBL	0.77	С	WBT/R	
Campeau Drive/ Knudson Drive/ Maritime Way	0.58	Α	SBL	0.42	А	WBT/R	

^{1.} Kanata Avenue is considered the north-south roadway

All intersections within the City's jurisdiction currently meet the target Auto LOS during the AM and PM peak hours.

The Kanata Avenue/Highway 417 Eastbound On-ramp currently meets the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp currently exceed the MTO target during the PM peak hour. The maximum (i.e. 95th percentile) northbound queue at the Highway 417 Westbound Off-ramp is currently 170m during the PM peak hour and extends through the Highway 417 Eastbound On-ramp intersection. The maximum queue on the westbound approach to this intersection is currently 115m during the PM peak hour and does not extend onto the highway.

PM peak hour traffic signal optimization at the Kanata Avenue/Highway 417 Westbound On-ramp is anticipated to yield an improved v/c ratio of 0.75 for the ramp. However, optimization would

result in a v/c ratio of 0.90 for the northbound through movement. To achieve the MTO target, widening to two northbound through lanes is required. A further review of mitigation measures at this intersection is conducted below.

3.3.2 2028 Background Traffic

Intersection capacity analysis has been completed for the 2028 background traffic conditions. The lane configurations at the study area intersections are based on the existing conditions presented in Section 2.1. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix G**.

Table 7: Intersection Operations – 2028 Background Traffic

Intersection		AM Peak		PM Peak			
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt	
Kanata Avenue/ Earl Grey Drive	0.53	Α	EBT	0.60	Α	EBT	
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	0.72	С	WBL	0.86	D	NBT/R	
Kanata Avenue/	0.71	0	WDI	0.97	E	WBR	
Highway 417 WB Off Ramp	Off Ramp 0.71 C WBL	0.95	E	NB			
Kanata Avenue/ Highway 417 EB On Ramp	0.53	Α	SBL	0.60	А	SBL	
Kanata Avenue/ Aird Place	0.45	Α	NBT/R	0.73	С	SBT/R	
Kanata Avenue/ Castlefrank Road/ Katimavik Road	0.61	В	EBL	0.79	С	WBT/R	
Campeau Drive/ Knudson Drive/ Maritime Way	0.68	В	SBL	0.61	В	WBT/R	

^{1.} Kanata Avenue is considered the north-south roadway

All intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.

The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour. The maximum northbound queue at the Highway 417 Westbound Off-ramp is anticipated to be 190m during the PM peak hour and extend through the Highway 417 Eastbound On-ramp intersection. The maximum queue on the westbound approach to this intersection is anticipated to be 175m and does not extend onto the highway. The maximum southbound queue at the Highway 417 Eastbound On-ramp is anticipated to be 110m during the PM peak hour and extend through the Highway 417 Westbound Off-ramp intersection.

An increased cycle length and traffic signal optimization at the Highway 417 Westbound Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To achieve the MTO target, two northbound through lanes and two westbound right turn lanes are required. The existing Kanata Avenue bridge structure is 21m in width, and consists of three 3.5m travel lanes, 1.75m bike lanes, a 2m sidewalk on the east side and a 5m sidewalk on the west side. The required four travel lanes along Kanata Avenue cannot be accommodated within the existing road platform. Modifications or replacement of the existing bridge structure are anticipated to be required to accommodate a four-lane cross section along Kanata Avenue. Widening of the existing off-ramp is anticipated to be required to accommodate two westbound right turn lanes.

This is identified for the City's consideration as the aforementioned mitigations are required as a result of background traffic.

Operations at the Kanata Avenue/Highway 417 Westbound Off-ramp with two northbound through lanes and two westbound right turn lanes are summarized in the following table.

Table 8: Mitigated Intersection Operations – 2028 Background Traffic

Interception		AM Peak			PM Peak			
Intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt		
Kanata Avenue/ Highway 417 WB Off Ramp	0.69	В	WBL	0.75	С	WBL		

Per the City of Ottawa's 2017 TIA guidelines, a review of demand rationalization has been conducted to determine the required reduction in traffic to achieve the target v/c ratios at this intersection under the existing lane configuration. To achieve the MTO target operations at this intersection during the PM peak hour, a reduction of approximately 210 westbound right turning vehicles and 60 northbound through vehicles are required.

3.3.3 2033 Background Traffic

Intersection capacity analysis has been completed for the 2033 background traffic conditions. The lane configurations at the Kanata Avenue/Earl Grey Drive and Kanata Avenue/Maritime Way/Lord Byng Way intersections are based on the functional design provided in the Kanata Avenue Environmental Assessment, included in **Appendix H**. The lane configurations at all other study area intersections are based on the existing conditions presented in Section 2.1. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix G**.

Table 9: Intersection Operations – 2033 Background Traffic

Intersection		AM Peak		PM Peak			
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt	
Kanata Avenue/ Earl Grey Drive	0.30	Α	EBT	0.55	Α	NBR	
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	0.61	В	WBL	0.68	В	SB	
Kanata Avenue/	0.70	(WDI	1.05	F	NB	
Highway 417 WB Off Ramp	mp 0.73 C WBL	1.04	F	WBR			
Kanata Avenue/ Highway 417 EB On Ramp	0.58	Α	SBL	0.66	В	SBL	
Kanata Avenue/ Aird Place	0.48	Α	NBT/R	0.79	С	SBT/R	
Kanata Avenue/ Castlefrank Road/ Katimavik Road	0.61	В	EBL	0.84	D	NBT/R	
Campeau Drive/ Knudson Drive/ Maritime Way	0.72	С	SBL	0.65	В	WBT/R	

^{1.} Kanata Avenue is considered the north-south roadway

Consistent with the 2028 background traffic condition, all intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.

The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway

417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour. The maximum northbound queue at the Highway 417 Westbound Off-ramp is anticipated to be 210m during the PM peak hour and extend through the Highway 417 Eastbound On-ramp intersection. The maximum queue on the westbound approach to this intersection is anticipated to be 200m and does not extend onto the highway. The maximum southbound queue at the Highway 417 Eastbound On-ramp is anticipated to be 240m during the PM peak hour and extend through the Highway 417 Westbound Off-ramp intersection.

An increased cycle length and traffic signal optimization at the Highway 417 Westbound Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To achieve the MTO target, two northbound through lanes and two westbound right turn lanes are required, consistent with the 2028 background traffic condition. As noted previously, widening of the existing road platform to accommodate four travel lanes is limited by the existing bridge structure. This is identified for the City's consideration as the aforementioned mitigations are required as a result of background traffic.

Operations at the Kanata Avenue/Highway 417 Westbound Off-ramp with two northbound through lanes and two westbound right turn lanes are summarized in the following table.

Table 10: Mitigated Intersection Operations – 2033 Background Traffic

Intersection	AM Peak			PM Peak			
Intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt	
Kanata Avenue/ Highway 417 WB Off Ramp	0.72	С	WBL	0.75	С	WBL	

A further review of demand rationalization has been conducted to determine the required reduction in traffic to achieve target v/c ratios at this intersection under the existing lane configuration. To achieve the MTO target operations at this intersection during the PM peak hour, a reduction of approximately 260 westbound right turning vehicles and 110 northbound through vehicles are required.

3.3.4 2038 Background Traffic

Intersection capacity analysis has been completed for the 2038 background traffic conditions. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix G**.

Table 11: Intersection Operations – 2038 Background Traffic

Intersection		AM Peak			PM Peak	
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Kanata Avenue/ Earl Grey Drive	0.32	Α	EBT	0.58	Α	WBT/L
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	0.65	В	WBL	0.73	С	SB
Kanata Avenue/	0.74	С	WBL	1.13	F	WBR
Highway 417 WB Off Ramp	0.74)	WDL	1.12	F	NB
Kanata Avenue/ Highway 417 EB On Ramp	0.62	В	SBL	0.77	С	NBT
Kanata Avenue/ Aird Place	0.51	Α	NBT/R	0.85	D	SBT/R
Kanata Avenue/ Castlefrank Road/ Katimavik Road	0.61	В	EBL	0.89	D	NBT/R

Intersection	AM Peak			PM Peak		
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Campeau Drive/ Knudson Drive/ Maritime Way	0.74	С	SBL	0.69	В	WBT/R

1. Kanata Avenue is considered the north-south roadway

Consistent with the 2028 and 2033 background traffic condition, all intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.

The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour. The maximum northbound queue at the Highway 417 Westbound Off-ramp is anticipated to be 240m during the PM peak hour and extend through the Highway 417 Eastbound On-ramp intersection. The maximum queue on the westbound approach to this intersection is anticipated to be 225m and does not extend onto the highway. The maximum southbound queue at the Highway 417 Eastbound On-ramp is anticipated to be 275m during the PM peak hour and extend through the Highway 417 Westbound Off-ramp intersection.

An increased cycle length and traffic signal optimization at the Highway 417 Westbound Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To achieve the MTO target, two northbound through lanes and two westbound right turn lanes are required, consistent with the 2028 and 2033 background traffic condition. As noted previously, widening of the existing road platform to accommodate four travel lanes is limited by the existing bridge structure. This is identified for the City's consideration as the aforementioned mitigations are required as a result of background traffic.

Operations at the Kanata Avenue/Highway 417 Westbound Off-ramp with two northbound through lanes and two westbound right turn lanes are summarized in the following table.

Table 12: Mitigated Intersection Operations – 2038 Background Traffic

Intersection	AM Peak			PM Peak			
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt	
Kanata Avenue/	0.74	C	WBL	0.85	D	SBT	
Highway 417 WB Off Ramp	0.74	C	VVDL	0.75	С	WBL	

A further review of demand rationalization has been conducted to determine the required reduction in traffic to achieve target v/c ratios at this intersection under the existing lane configuration. To achieve the MTO target operations at this intersection during the PM peak hour, a reduction of approximately 320 westbound right turning vehicles, 180 northbound through, and 40 westbound left turning vehicles are required.

Background traffic at this intersection could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate times to travel for drivers to make use of off-peak capacity, and alternate routes of travel. A further description of each option is provided below.

Increased use of Non-Auto Modes

As identified in Section 2.2, construction of Phase 2 LRT began in 2019 and the western extension to Moodie Station is anticipated to be complete by 2025. The City's TMP Network Concept identifies the extension of LRT from Moodie Station to Hazeldean Station, and will convert the

Terry Fox Station to LRT. The aforementioned projects are anticipated to provide more reliable transit between Kanata and the downtown core. This is anticipated to increase the transit modal share and decrease the auto modal share, thereby reducing traffic volumes within the study area.

As part of the Kanata Avenue road widening project, cycle tracks will be provided along Kanata Avenue between Campeau Drive and south of Maritime Way/Lord Byng Way. This project will improve the bicycle level of service within the study area and may result in an increased cycling modal share.

Alternate Travel Times

As congestion increases at this intersection, some motorists may alter their travel times to occur outside of the peak hours. This shift in travel times may result in a reduction of peak hour traffic volumes.

Alternate Routes of Travel

As congestion increases at this intersection, some motorists may choose alternate routes of travel. Alternate east-west routes of travel in vicinity of the study area include Campeau Drive and Katimavik Road.

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Pedestrian facilities will be provided between the main building entrances, and the existing sidewalk along Maritime Way. On-site pathways will also be provided between the main building entrances and the surface parking areas. Due to grading constraints, pathway connections to Kanata Avenue are not proposed.

Bicycle parking for the proposed development will be in accordance with the minimum requirement of the City's Zoning By-law (ZBL), as described in Section 6.2.

A review of the Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure Checklist has been conducted. A copy of the TDM checklist is included in **Appendix I**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. Measures proposed for the site that go above and beyond the basic requirements include:

- Locate building close to the street and do not locate parking areas between the street, and building entrances.
- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort.
- Provide safe, direct and attractive walking routes from building entrances to nearby transit stops.
- Ensure that walking routes to transit stops are secure, visible, lighted, shaded and windprotected wherever possible.

4.1.2 Circulation and Access

A cul-de-sac drop-off area will be provided near the main building entrances. The cul-de-sac will have a 12m centreline radius, conforming to fire route requirements. Garbage collection will be conducted on-site.

4.2 Parking

The subject site is located in Area C on Schedule 1 and Area X on Schedule 1A of the City of Ottawa's Zoning By-Law (ZBL). Minimum vehicular and bicycle parking rates for the proposed development are identified in the ZBL and are summarized in the following table.

Table 13: Parking Requirements

Land Use	Minimum Parking Rate	Units	Required	Provided
Vehicle Parking				
Mid-Rise	Resident: 0.5 per unit in excess of 12	632	310	602
Apartments	Visitor: 0.1 per unit in excess of 12 (no more than 30 per building)	032	60	60
Bicycle Parking				
Apartment Building	0.5 per unit	632	316	316

As the proposed development is also located within 600 metres of a rapid transit station, the number of vehicle parking spaces provided for a use must not exceed the maximum limits set out in the Section 103 of the City's ZBL. Based on the ZBL, a maximum of 1.75 parking spaces are permitted per unit (combined total of resident and visitor), equating to a maximum of 1206 on-site parking spaces. The proposed 662 vehicular parking spaces adhere to the requirements of the City's ZBL.

The proposed number of bicycle parking spaces will adhere to the requirements of the City's ZBL. Fifteen of the bicycle parking spaces will be provided outside near the main building entrances, while the remainder will be located within the underground parking garage.

4.3 Boundary Streets

This section provides a review of the boundary streets using complete streets principles. The Multi-Modal Level of Service (MMLOS) guidelines produced by IBI Group in 2015 were used to evaluate the LOS of the boundary roadways for each mode of transportation. Schedule 'B' of the City of Ottawa's Official Plan indicates that Maritime Way and Kanata Avenue are located within a Mixed-Use Centre. Maritime Way and Kanata Avenue adjacent to the site are also located within 600m of a rapid transit station.

Targets for the Pedestrian Level of Service (PLOS), Bicycle Level of Service (BLOS), Transit Level of Service (TLOS) and Truck Level of Service (TkLOS) for the study area roadways are based on the targets for roadways within 600m of a rapid transit station, as identified in Exhibit 22 of the MMLOS guidelines.

A summary of the results of the segment MMLOS analysis for the boundary roadways is provided in the following table. Detailed segment MMLOS calculations can be found in **Appendix J**.

Table 14: Segment MMLOS Summary

Segment	PLOS	BLOS	TLOS	TkLOS
Kanata Avenue	В	А	D	С
Target	Α	В	-	D
Maritime Way	В	В	Е	В
Target	A	В	-	-

Based on the foregoing, all roadways meet the target BLOS and TkLOS. However, none of the roadways meet the target PLOS A. To achieve the target PLOS A along Kanata Avenue and Maritime Way, a reduction in the curbside lane AADT to less than 3000vpd is required. This is identified for the City's consideration as funding becomes available.

4.4 Access Intersections Design

A new access is also proposed to Maritime Way. The proposed access will be approximately 6.7m in width and located 6m from the western property line and 51m from the east property line.

Section 25 (c) of the City of Ottawa's Private Approach By-law (PABL) identifies a requirement for two-way accesses to have a width no greater than 9m, as measured at the street line. Section 107 (1)(a) of the ZBL identifies a minimum width of 6.0m for a two-way driveway to a parking garage. The width of the proposed access will adhere to the requirements of the PABL and ZBL.

Section 25 (p) of the PABL identifies a minimum spacing requirement of 3.0m between the nearest limit of a private approach and the property line, as measured at the street line. The location of the proposed access meets the requirements of the City's PABL.

For parking lots containing 50 or more parking spaces, Section 25 (u) of the PABL identifies a maximum grade of 6% for a distance of 9m within the property. A maximum grade of 6% will be provided for the first 9m within the property, adhering to the requirements of the PABL.

Based on the projected traffic volumes at the access, the access is anticipated to operate acceptably under side street stop control. Detailed Synchro reports for the access are included in **Appendix K**.

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development will contain of 632 residential units consisting of 381 one-bedroom units and 251 two-bedroom units.

4.5.2 Need and Opportunity

The proposed development is located within a TOD Zone as it is within a 600m walking distance of the Terry Fox Transit station (future LRT station). As described in Section 3.1, the TOD modal share targets have been adjusted to reflect a higher auto-modal share associated with the Kanata/Stittsville District. The target mode shares are: 30% auto driver, 20% auto passenger, 40% transit, and 10% non-auto.

Using the 2011 TRANS O-D Survey Report, the typical residential commuter pattern in the Kanata/Stittsville district are represented by all observed trips from/within the district during the AM peak hour and all observed trips to/within the district in the PM peak hour. Based TRANS O-D Survey Report data, typical residential modal shares in the Kanata/Stittsville district equate to approximately 60% auto driver, 20% passenger, 10% transit, 10% non-auto.

The proposed modal shares represent an increased transit modal share and a reduced auto driver/passenger modal share compared to the Kanata/Stittsville district. Should the development only meet the Kanata/Stittsville district modal shares, the ultimate development is anticipated to generate an additional 125-156 vehicle trips two-way during the peak hours.

4.5.3 TDM Program

The proposed development conforms to the City's TDM initiatives by providing easy access to the local pedestrian, bicycle and transit systems as outlined in **Section 6.1**. A review of the TDM – Measures Checklist has been conducted for the residential component of the development and is included in **Appendix I.** The following measures will be implemented within the proposed development:

- 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 carshare vehicles and promote their use by residents;
- Unbundle parking from monthly rent;
- Provide multimodal travel option information package to new residents; and
- Offer personalized trip planning to new residents.

4.6 Neighbourhood Traffic Management

Maritime Way is classified as a local roadway and provides access to the subject site. As vehicular access along Kanata Avenue is limited by the Highway 417 overpass, access to the subject site is proposed along Maritime Way. The following table summarizes 2038 background traffic, proposed additional traffic, and total traffic along Maritime Way.

Table 15: Neighbourhood Traffic Impacts

		AM Peak			PM Peak		
Roadway	2038 Bkgd	Site	Total	2038 Bkgd	Site	Total	
Maritime Way at Kanata Avenue							
Northbound	200	12	212	307	38	345	
Southbound	239	38	277	213	25	238	
Two-way	373	50	489	520	63	583	
Maritime Way at Campeau Drive							
Northbound	199	9	208	125	6	131	
Southbound	97	3	100	178	10	188	
Two-way	296	12	308	303	16	319	

The City of Ottawa Area Traffic Management (ATM) guidelines identify a maximum threshold of 1,000 vehicles per day, or 120 vehicles during the peak hour for local roadways. The 2033 background and total traffic volumes along Maritime Way at Kanata Avenue and Campeau Drive exceed the ATM threshold. However, it is noted that the overall capacity of a local roadway is estimated at 400 vehicles per hour per lane based on the City's TRANS Long Range Transportation Model. Total peak hour, peak directional traffic volumes along Maritime Way at Kanata Avenue equate to a volume to capacity (v/c) ratio of 0.69 (LOS B) during the AM peak hour and 0.86 (LOS D) during the PM peak hour. Total peak hour, peak directional traffic along Maritime Way at Campeau Drive equate to a v/c ratio of 0.52 (LOS A) during the AM peak hour and 0.47 (LOS A) during the PM peak hour.

As there is sufficient capacity along Maritime Way to accommodate traffic generated by the development, no changes to the existing roadway classification are required. Based on the foregoing, no mitigation measures are recommended to offset the impacts of the development generated traffic. A further review of intersection operations at the Kanata Avenue/Maritime Way/Lord Byng Way and Campeau Drive/Maritime Way/Knudson Drive intersections is provided in Section 4.9.

4.7 Transit

Based on the trip generation presented in Section 3.1, the proposed development is anticipated to generate 166 transit trips (40 in, 126 out) during the weekday AM peak hour and 207 transit trips (128 in, 79 out) during the weekday PM peak hour at build-out. As transit improves in the area and the existing Terry Fox Transit station is converted to LRT, the development is anticipated to generate 271 transit trips (65 in, 206 out) during the weekday AM peak hour and 336 transit trips (208 in, 128 out) during the weekday PM peak hour.

The proposed development is located within a 600m walking distance of the Terry Fox Transit Station (future LRT Station). The Terry Fox Transit Station currently serves numerous Frequent Routes, Rapid Routes, Peak Hour Routes, and Local Routes, which provide comprehensive transit coverage across the City of Ottawa. The future conversion to LRT is anticipated to provide more reliable transit service and increased transit capacity at the Terry Fox Transit Station. Based on the foregoing, no transit capacity problems are anticipated in the vicinity of the site.

4.8 Network Concept

A review of the existing lane capacity for the City of Ottawa roadways along the north, south, east, and west study area boundaries has been conducted to determine if additional lane capacity is required. The existing lane capacity along the area roadways has been estimated based on the City's criteria for the Long-Range Transportation Model.

4.8.1 2038 Background Traffic

A summary of the lane capacity analysis for the 2038 background traffic condition is provided in the following table.

Table 16: 2038 Background Traffic - Screenline Analysis

Road	Directional Capacity (vph)	Traffic Volume AM <i>(PM)</i>	V/C Ratio AM (PM)	LOS AM <i>(PM)</i>	Capacity Deficiency AM (PM)
North Screenline					
Kanata Ave					
north of Earl Grey Dr					
Northbound	1,600	403 <i>(870)</i>	0.25 <i>(0.54)</i>	A (A)	0 (0)
Southbound	1,600	840 <i>(774)</i>	0.53 (0.48)	A (A)	0 (0)
South Screenline					
Castlefrank Rd					
South of Katimavik Rd					
Northbound	800	626 <i>(604)</i>	0.78 <i>(0.76)</i>	C <i>(C)</i>	0 (0)
Southbound	800	452 <i>(930)</i>	0.57 (1.16)	A (F)	0 (130)
East Screenline					
Campeau Dr					
East of Maritime Way					
Eastbound	800	1,062 <i>(641)</i>	1.33 <i>(0.80)</i>	F (C)	262 <i>(0)</i>
Westbound	800	653 <i>(946)</i>	0.82 (1.18)	D (F)	0 (146)
Katimavik Rd					
East of Castlefrank Rd					
Eastbound	800	260 <i>(315)</i>	0.33 (0.39)	A (A)	0 (0)
Westbound	800	182 <i>(397)</i>	0.23 (0.50)	A (A)	0 (0)
West Screenline					
Katimavik Rd					
West of Castlefrank Rd					
Eastbound	800	360 <i>(359)</i>	0.45 <i>(0.45)</i>	A (A)	0 (0)
Westbound	800	337 <i>(439)</i>	0.42 <i>(0.55)</i>	A (A)	0 (0)

The eastbound and westbound lanes along Campeau Drive east of Maritime Way are anticipated to operate above capacity during the AM peak hour under the 2038 background traffic condition. It is noted that additional capacity is available along Katimavik Road to accommodate the additional traffic volumes if capacity is realized along Campeau Drive. It is noted that the City's 2013 TMP's 2031 Network Concept includes the widening of Campeau Drive from two to four lanes between Didsbury Road and March Road. This widening would alleviate projected capacity deficiency along Campeau Drive.

The southbound lane along Castlefrank Road south of Katimavik Road is anticipated to operate above capacity during the PM peak hour under the 2038 background traffic condition. Options to displace background traffic along Castlefrank Road include increased use of non-auto modes of

transportation, alternative time of travel for drivers using the corridor to make use of off-peak capacity, and alternative routes of travel (i.e. Terry Fox Drive or Eagleson Road).

4.8.2 2038 Total Traffic

A summary of the lane capacity analysis for the 2038 total traffic condition is provided in the following table.

Table 17: 2038 Total Traffic - Screenline Analysis

Table 17: 2038 Total Traffic – Screenline Analysis								
Road	Directional Capacity (vph)	Traffic Volume AM <i>(PM)</i>	V/C Ratio AM (PM)	LOS AM <i>(PM)</i>	Capacity Deficiency AM (PM)			
North Screenline								
Kanata Ave								
north of Earl Grey Dr								
Northbound	1,600	415 <i>(878)</i>	0.26 <i>(0.55)</i>	A <i>(A)</i>	0 (0)			
Southbound	1,600	844 <i>(786)</i>	0.53 <i>(0.49)</i>	A (A)	0 (0)			
South Screenline								
Castlefrank Rd								
South of Katimavik Rd								
Northbound	800	628 <i>(609)</i>	0.79 <i>(0.76)</i>	C <i>(C)</i>	0 (0)			
Southbound	800	457 <i>(933)</i>	0.57 <i>(1.17)</i>	A (F)	0 (133)			
East Screenline			<u> </u>					
Campeau Dr								
East of Maritime Way								
Eastbound	800	1,071 <i>(647)</i>	1.34 <i>(0.81)</i>	F (D)	271 <i>(0)</i>			
Westbound	800	629 <i>(956)</i>	0.79 (1.20)	C (F)	0 (156)			
Katimavik Rd								
East of Castlefrank Rd								
Eastbound	800	265 <i>(318)</i>	0.33 (0.40)	A <i>(A)</i>	0 (0)			
Westbound	800	184 <i>(402)</i>	0.23 <i>(0.50)</i>	A (A)	0 (0)			
West Screenline			<u> </u>					
Katimavik Rd								
West of Castlefrank Rd								
Eastbound	800	362 <i>(364)</i>	0.45 <i>(0.46)</i>	A <i>(A)</i>	0 (0)			
Westbound	800	342 <i>(442)</i>	0.43 <i>(0.55)</i>	A (A)	0 (0)			

Based on the foregoing, traffic generated by the proposed development is anticipated to have a negligible impact on the lane capacity along the roadways within the study area. A further review of the impacts of the proposed development on the study area intersections is provided in Section 4.9.

4.9 Network Intersections

4.9.1 Existing Intersection MMLOS Analysis

This section provides a review of the study area intersections using the complete streets principles. The MMLOS guidelines produced by IBI Group in October 2015 were used to evaluate the LOS of all signalized study area intersections for each mode of transportation. Schedule 'B' of the City of Ottawa's Official Plan indicates that all study area intersections are located in the Mixed-Use Centre. Additionally all intersections along Kanata Avene/Castlefrank Road are located within 600m of the Terry Fox Transit Station.

Aerial photos of the study area intersections are provided in Section 4.1.2.

A summary of the results of the intersection MMLOS analysis for the study area intersections is provided in the following table. Detailed intersection MMLOS calculations can be found in **Appendix J**.

Table 18: Intersection MMLOS Summary

Intersection	PLOS	BLOS	TLOS	TkLOS	Auto LOS
Kanata Avenue/ Earl Grey Drive	F	D	С	E	Α
Target	Α	В	-	D	E
Kanata Avenue/ Maritime Way/ Lord Byng Way	F	D	С	E	В
Target	Α	В	-	D	E
Kanata Avenue/ Highway 417 Westbound Off-Ramp	С	-	С	С	D
Target	Α	В	-	D	E
Kanata Avenue/ Highway 417 Eastbound On-Ramp	E	-	В	С	А
Target	Α	В	-	D	E
Kanata Avenue/ Castlefrank Road/ Aird Place	F	С	В	E	В
Target	Α	В	-	-	E
Castlefrank Road/ Katimavik Road	F	D	F	E	С
Target	Α	В	-	-	E
Campeau Drive/ Maritime Way/ Knudson Drive	F	В	E	F	Α
Target	С	В	-	-	D

Kanata Avenue/Earl Grey Drive

The Kanata Avenue/Earl Grey Drive intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor, no target TLOS is identified.

This intersection does not currently meet the target PLOS A. As part of the Kanata Avenue road widening project, the crossing distance on the all legs of the intersection are anticipated to be reduced and zebra striped crosswalks will be implemented. This is anticipated to improve the PLOS at this intersection.

This intersection does not currently meet the target BLOS B. As part of the Kanata Avenue road widening project, cycle tracks will be provided on Kanata Avenue and this intersection will be converted into a protected intersection design. This modification will improve the BLOS at this intersection.

This intersection does not currently meet the target TkLOS D. However, since Earl Grey Drive is not classified as a truck route, the provided TkLOS E is considered acceptable. As part of the Kanata Avenue road widening project, two receiving lanes will be provided for the northbound right turn movement and will improve the TkLOS for this movement.

Kanata Avenue/Maritime Way/Lord Byng Way

The Kanata Avenue/Maritime Way/Lord Byng Way intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor, no target TLOS is identified.

This intersection does not currently meet the target PLOS A. As part of the Kanata Avenue road widening project, the crossing distance on the east and west legs of the intersection (Maritime Way/Lord Byng Way) are anticipated to be reduced and zebra striped crosswalks will be implemented on all legs. This is anticipated to improve the PLOS at this intersection.

This intersection does not currently meet the target BLOS B. As part of the Kanata Avenue road widening project, cycle tracks will be provided on Kanata Avenue and this intersection will be converted into a protected intersection design. This modification will improve the BLOS at this intersection.

This intersection does not currently meet the target TkLOS D. However, since Maritime Way and Lord Byng Way are not classified as a truck route, the provided TkLOS E is considered acceptable. As part of the Kanata Avenue road widening project, two receiving lanes will be provided for the eastbound and westbound right turn movement and will improve the TkLOS for these movements.

Kanata Avenue/Highway 417 Westbound Off-Ramp

The Kanata Avenue/Highway 417 Westbound Off-Ramp intersection currently meets the City's target TkLOS D and Auto LOS E. As bicycles are not permitted on Highway 417, the BLOS was excluded from this analysis. As this intersection is not along a transit priority corridor, no target TLOS is identified.

This intersection does not currently meet the target PLOS A. A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection. However, based on the existing intersection operations, a reduction in the number of travel lanes is not recommended.

Kanata Avenue/Highway 417 Eastbound On-Ramp

The Kanata Avenue/Highway 417 Eastbound On-Ramp intersection currently meets the City's target TkLOS D and Auto LOS E. As bicycles are not permitted on Highway 417, the BLOS was excluded from this analysis. As this intersection is not along a transit priority corridor, no target TLOS is identified.

This intersection does not currently meet the target PLOS A. A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection. Based on the existing northbound right turning volumes (170-195 vehicles during

peak hours), removal of the northbound right turn lane is not recommended. As the width of the east leg (Highway 417 eastbound on-ramp) is required to accommodate turning movements of heavy vehicles, a reduction in width is not recommended.

Kanata Avenue/Castlefrank Road/Aird Place

The Kanata Avenue/Castlefrank Road/Aird Place intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.

This intersection does not currently meet the target PLOS A. A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

This intersection does not currently meet the target BLOS B. To achieve the target BLOS B, the implementation of two-stage northbound/southbound left turn bike boxes is required. This is identified for the City's consideration.

Castlefrank Road/Katimavik Road

The Castlefrank Road/Katimavik Road intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.

This intersection does not currently meet the target PLOS A. A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

This intersection does not currently meet the target BLOS B. To achieve the target BLOS B, the implementation of two-stage left turn bike boxes is required on all legs of the intersection. This is identified for the City's consideration.

Campeau Drive/Maritime Way/Knudson Drive

The Campeau Drive/Maritime Way/Knudson Drive intersection currently meets the target BLOS B and Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.

This intersection does not currently meet the target PLOS A. A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

This intersection currently meets the target BLOS B. However it is noted that cyclists are required to dismount and use the pedestrian crosswalks on the north, east, and west legs of the intersection.

4.9.2 2028 Total Intersection Operations

Intersection capacity analysis has been completed for the 2028 total traffic conditions. The intersection parameters used in the analysis are consistent with the TIA guidelines (saturation flow rate: 1800 vphpl, PHF: 1.0). The results of the synchro analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

Table 19: Intersection Operations – 2028 Total Traffic

Intersection	AM Peak			PM Peak		
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Kanata Avenue/ Earl Grey Drive	0.54	Α	EBT	0.62	Α	EBT
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	0.93	Е	WBL	1.09	F	SBL
Kanata Avenue/	0.71	С	WBL	0.99	E	WBR
Highway 417 WB Off Ramp	0.71	C	VVDL	1.01	F	NB
Kanata Avenue/ Highway 417 EB On Ramp	0.56	Α	SBL	0.63	В	SBL
Kanata Avenue/ Aird Place	0.45	А	NBT/R	0.75	С	SBT/R
Kanata Avenue/ Castlefrank Road/ Katimavik Road	0.63	В	EBL	0.81	D	NBT/R
Campeau Drive/ Knudson Drive/ Maritime Way	0.72	С	SBL	0.61	В	WBT/R

The additional pedestrian and vehicle volumes at the Kanata Avenue/Maritime Way/Lord Byng Way intersection are anticipated to result in a LOS F. All other intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.

PM peak hour traffic signalization with an increased cycle length of 120 seconds is anticipated to yield the target LOS E at the Kanata Avenue/Maritime Way/Lord Byng Way intersection. However, it is noted that the intersections along Kanata Avenue are coordinated, and an increased cycle length would be required at all intersections along the corridor. Projected operations at this intersection with an increased cycle are summarized in **Table 20** below.

The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour.

An increased cycle length and traffic signal optimization at the Highway 417 Westbound Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To achieve the MTO target, two northbound through lanes and two westbound right turn lanes are required, consistent with the 2028 background traffic condition. However, widening of the existing road platform to accommodate four travel lanes is limited by the existing bridge structure.

Operations at the Kanata Avenue/Highway 417 Westbound Off-ramp with two northbound through lanes and two westbound right turn lanes are summarized in the following table.

Table 20: Mitigated Intersection Operations – 2028 Total Traffic

Interception	AM Peak			PM Peak		
Intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	-	-	-	0.92	Е	WBL
Kanata Avenue/ Highway 417 WB Off Ramp	0.69	В	WBL	0.75	С	WBL

The proposed development is anticipated to generate 85 new vehicle trips at the Kanata Avenue/Highway 417 Westbound Off-ramp intersection, resulting in an overall traffic volume

increase of approximately 3% compared to the 2028 background traffic volumes. As the site generated traffic is anticipated to be negligible compared to the background traffic volumes, the aforementioned mitigation measures are identified for City consideration and are not attributable to the proposed development.

4.9.3 2033 Total Intersection Operations

Intersection capacity analysis has been completed for the 2033 total traffic conditions. The intersection parameters used in the analysis are consistent with the TIA guidelines (saturation flow rate: 1800 vphpl, PHF: 1.0). The results of the synchro analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

Table 21: Intersection Operations - 2033 Total Traffic

Intersection		AM Peak		PM Peak		
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Kanata Avenue/ Earl Grey Drive	0.30	Α	EBT	0.56	Α	WBT/L
Kanata Avenue/ Maritime Way/ Lord Byng Way ¹	0.86	D	WBL	0.86	D	SB
Kanata Avenue/	0.70		WDI	1.08	F	NB
Highway 417 WB Off Ramp	0.73	С	WBL	1.08	F	WBR
Kanata Avenue/ Highway 417 EB On Ramp	0.61	В	SBL	0.68	В	SBL
Kanata Avenue/ Aird Place	0.49	Α	NBT/R	0.80	С	SBT/R
Kanata Avenue/ Castlefrank Road/ Katimavik Road	0.63	В	EBL	0.87	D	NBT/R
Campeau Drive/ Knudson Drive/ Maritime Way	0.75	С	SBL	0.65	В	WBT/R

^{1.} Kanata Avenue is considered the north-south roadway

Traffic generated by the proposed development is not anticipated to have a significant impact on the intersection operations within the study area. All intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours. It is noted that the Kanata Avenue road widening project is anticipated to alleviate the LOS F previously identified at the Kanata Avenue/Maritime Way/Lord Byng Way intersection under the 2028 traffic conditions.

The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour.

An increased cycle length and traffic signal optimization at the Highway 417 Westbound Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To achieve the MTO target, two northbound through lanes and two westbound right turn lanes are required, consistent with the 2033 background traffic condition. However, widening of the existing road platform to accommodate four travel lanes is limited by the existing bridge structure.

Operations at the Kanata Avenue/Highway 417 Westbound Off-ramp with two northbound through lanes and two westbound right turn lanes are summarized in the following table.

Table 22: Mitigated Intersection Operations – 2033 Total Traffic

Intersection	AM Peak			PM Peak		
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Kanata Avenue/	0.71)	WBL	0.75	С	WBL
Highway 417 WB Off Ramp	0.71	C	VVDL	0.76	С	SBT

Consistent with the 2028 total traffic conditions, traffic generated by the proposed development is anticipated to be negligible compared to the background traffic volumes. The aforementioned mitigation measures are identified for City consideration and are not attributable to the proposed development.

4.9.4 2038 Total Intersection Operations

Intersection capacity analysis has been completed for the 2038 total traffic conditions. The intersection parameters used in the analysis are consistent with the TIA guidelines (saturation flow rate: 1800 vphpl, PHF: 1.0). The results of the synchro analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

Table 23: 2038 Total Intersection Operations

	AM Peak			PM Peak		
Intersection	Max V/C or Delay	Los	Mvmt	Max V/C or Delay	LOS	Mvmt
Kanata Avenue/ Earl Grey Drive	0.32	Α	EBT	0.59	Α	WBT/L
Kanata Avenue/ Maritime Way/ Lord Byng Way	0.80	С	WBL	0.89	D	SB
Kanata Avenue/ Highway 417 Westbound Off-Ramp	0.74	С	WBL	1.15 1.14	F F	WBR NBT
Kanata Avenue/ Highway 417 Eastbound On-Ramp	0.63	В	SBL	0.79	С	NBT
Kanata Avenue/ Castlefrank Road/ Aird Place	0.52	Α	NBT/R	0.85	D	SBT/R
Castlefrank Road/ Katimavik Road	0.62	В	EBL	0.91	Е	NBT/R
Campeau Drive/ Maritime Way/ Knudson Drive	0.76	С	SBL	0.69	В	WBT/R

Traffic generated by the proposed development is not anticipated to have a significant impact on the intersection operations within the study area. All intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.

The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour.

An increased cycle length and traffic signal optimization at the Highway 417 Westbound Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To achieve the MTO target, two northbound through lanes and two westbound right turn lanes are required, consistent with the 2038 background traffic condition. However, widening of the existing road platform to accommodate four travel lanes is limited by the existing bridge structure.

Operations at the Kanata Avenue/Highway 417 Westbound Off-ramp with two northbound through lanes and two westbound right turn lanes are summarized in the following table.

Table 24: Mitigated Intersection Operations – 2038 Total Traffic

Intersection	AM Peak			PM Peak		
intersection	V/C Ratio	LOS	Mvmt	V/C Ratio	LOS	Mvmt
Kanata Avenue/	0.74	C	WBL	0.84	D	SBT
Highway 417 WB Off Ramp	0.74	C	VVDL	0.75	С	WBL

As transit improves in the vicinity of the subject site, the developments impacts to the area intersections is anticipated to be reduced. Based on the 2033 site generated traffic projections, the proposed development is anticipated to generate 43 vehicle trips at this intersection, resulting in an overall traffic volume increase of approximately 1% compared to the 2038 background traffic volumes. As the site generated traffic is anticipated to be negligible compared to the background traffic volumes, the aforementioned mitigation measures are identified for City consideration and are not attributable to the proposed development.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

Development Design and Parking

- Pedestrian facilities will be provided between the main building entrances, and the existing sidewalk along Maritime Way. On-site pathways will also be provided between the main building entrances and the surface parking areas. Due to grading constraints, pathway connections to Kanata Avenue are not proposed.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- A cul-de-sac drop-off area will be provided near the main building entrances. The cul-de-sac will have a 12m centreline radius, conforming to fire route requirements. Garbage collection will be conducted on-site.

Parking

 The proposed vehicular and bicycle parking spaces adhere to the requirements of the City's ZBL.

Boundary Street Design

- All roadways meet the target BLOS and TkLOS. However, none of the roadways meet the target PLOS A.
- To achieve the target PLOS A along Kanata Avenue and Maritime Way, a reduction in the curbside lane AADT to less than 3000vpd is required. This is identified for the City's consideration as funding becomes available.

Access Intersections Design

- A new access is also proposed to Maritime Way. The proposed access will be approximately 6.7m in width and located 6m from the western property line and 51m from the east property line.
- The width, location, and grading of the proposed access will adhere to the requirements of the PABL and ZBL.

• Based on the projected traffic volumes at the access, the access is anticipated to operate acceptably under side street stop control.

<u>Transportation Demand Management</u>

- The proposed development conforms to the City's TDM initiatives by providing easy access to the local pedestrian, bicycle and transit systems
- The following measures will be implemented within the proposed development:
 - 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 carshare vehicles and promote their use by residents;
 - Unbundle parking from monthly rent;
 - Provide multimodal travel option information package to new residents; and
 - o Offer personalized trip planning to new residents.

Neighbourhood Traffic Management

- As there is sufficient capacity along Maritime Way to accommodate traffic generated by the development, no changes to the existing roadway classification are required.
- No mitigation measures are recommended to offset the impacts of the development generated traffic.

Transit

- The proposed development is anticipated to generate 166 transit trips (40 in, 126 out) during the weekday AM peak hour and 207 transit trips (128 in, 79 out) during the weekday PM peak hour at build-out.
- As transit improves in the area and the existing Terry Fox Transit station is converted to LRT, the development is anticipated to generate 271 transit trips (65 in, 206 out) during the weekday AM peak hour and 336 transit trips (208 in, 128 out) during the weekday PM peak hour.
- The proposed development is located within a 600m walking distance of the Terry Fox Transit Station (future LRT Station). The Terry Fox Transit Station serves numerous Frequent Routes, Rapid Routes, Peak Hour Routes, and Local Routes, which provide comprehensive transit coverage across the City of Ottawa. The future conversion to LRT is anticipated to provide more reliable transit service and increased transit capacity at the Terry Fox Transit Station. Based on the foregoing, no transit capacity problems are anticipated in the vicinity of the site.

Network Concept

- The eastbound and westbound lanes along Campeau Drive east of Maritime Way are anticipated to operate above capacity during the AM peak hour under the 2038 background traffic condition.
- Additional capacity is available along Katimavik Road to accommodate the additional traffic volumes if capacity is realized along Campeau Drive.
- The City's 2013 TMP's 2031 Network Concept includes the widening of Campeau Drive from two to four lanes between Didsbury Road and March Road. This widening would alleviate projected capacity deficiency along Campeau Drive.

- The southbound lane along Castlefrank Road south of Katimavik Road is anticipated to operate above capacity during the PM peak hour under the 2038 background traffic condition.
- Traffic generated by the proposed development is anticipated to have a negligible impact on the lane capacity along the roadways within the study area.

MMLOS Analysis

Kanata Avenue/Earl Grey Drive:

- The Kanata Avenue/Earl Grey Drive intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- As part of the Kanata Avenue road widening project, the crossing distance on the all legs
 of the intersection are anticipated to be reduced and zebra striped crosswalks will be
 implemented. This is anticipated to improve the PLOS at this intersection.
- As part of the Kanata Avenue road widening project, cycle tracks will be provided on Kanata Avenue and this intersection will be converted into a protected intersection design. This modification will improve the BLOS at this intersection.
- Since Earl Grey Drive is not classified as a truck route, the provided TkLOS E is considered acceptable.

Kanata Avenue/Maritime Way/Lord Byng Way:

- The Kanata Avenue/Maritime Way/Lord Byng Way intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- As part of the Kanata Avenue road widening project, the crossing distance on the east and west legs of the intersection (Maritime Way/Lord Byng Way) are anticipated to be reduced and zebra striped crosswalks will be implemented on all legs. This is anticipated to improve the PLOS at this intersection.
- As part of the Kanata Avenue road widening project, cycle tracks will be provided on Kanata Avenue and this intersection will be converted into a protected intersection design. This modification will improve the BLOS at this intersection.
- since Maritime Way and Lord Byng Way are not classified as a truck route, the provided TkLOS E is considered acceptable.

Kanata Avenue/Highway 417 Westbound Off-Ramp:

- The Kanata Avenue/Highway 417 Westbound Off-Ramp intersection currently meets the City's target TkLOS D and Auto LOS E. As bicycles are not permitted on Highway 417, the BLOS was excluded from this analysis. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

Kanata Avenue/Highway 417 Eastbound On-Ramp:

- The Kanata Avenue/Highway 417 Eastbound On-Ramp intersection currently meets the City's target TkLOS D and Auto LOS E. As bicycles are not permitted on Highway 417, the BLOS was excluded from this analysis. As this intersection is not along a transit priority corridor, no target TLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.

Kanata Avenue/Castlefrank Road/Aird Place:

- The Kanata Avenue/Castlefrank Road/Aird Place intersection currently meets the target Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.
- To achieve the target BLOS B, the implementation of two-stage northbound/southbound left turn bike boxes is required. This is identified for the City's consideration.

Castlefrank Road/Katimavik Road:

- The Castlefrank Road/Katimavik Road intersection currently meets the target Auto LOS
 E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS
 or TkLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.
- To achieve the target BLOS B, the implementation of two-stage left turn bike boxes is required on all legs of the intersection. This is identified for the City's consideration.

Campeau Drive/Maritime Way/Knudson Drive:

- The Campeau Drive/Maritime Way/Knudson Drive intersection currently meets the target BLOS B and Auto LOS E. As this intersection is not along a transit priority corridor or a truck route, no target TLOS or TkLOS is identified.
- A reduction in the crossing distance on all legs of the intersection would provide the greatest improvement to the PLOS at this intersection.
- This intersection currently meets the target BLOS B. However it is noted that cyclists are required to dismount and use the pedestrian crosswalks on the north, east, and west legs of the intersection.

Background Intersection Operations

- All intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.
- The Kanata Avenue/Highway 417 Eastbound On-ramp is anticipated to meet the MTO target during the AM and PM peak hours. However, critical movements at the Kanata Avenue/Highway 417 Westbound Off-ramp are anticipated to exceed the MTO target during the PM peak hour.
- An increased cycle length and traffic signal optimization at the Highway 417 Westbound
 Off-ramp intersection is not anticipated to yield MTO's target during the PM peak hour. To
 achieve the MTO target, two northbound through lanes and two westbound right turn lanes
 are required.
- Modifications or replacement of the existing bridge structure are anticipated to be required to accommodate a four-lane cross section along Kanata Avenue. Widening of the existing off-ramp is anticipated to be required to accommodate two westbound right turn lanes. This is identified for the City's consideration.

Total Intersection Operations

- Under the 2028 build-out year, the additional pedestrians and vehicles volumes at the Kanata Avenue/Maritime Way/Lord Byng Way intersection are anticipated to result in a LOS F. PM peak hour traffic signalization with an increased cycle length of 120 seconds is anticipated to yield the target LOS E at this intersection.
- The Kanata Avenue road widening project is anticipated to alleviate the LOS F identified at the Kanata Avenue/Maritime Way/Lord Byng Way intersection under the 2028 traffic conditions.
- Under total traffic conditions, all other intersections within the City's jurisdiction are anticipated to meet the target Auto LOS during the AM and PM peak hours.
- To achieve the MTO target at the Kanata Avenue/Highway 417 Westbound Off-ramp intersection, two northbound through lanes and two westbound right turn lanes are required. This is consistent with the background traffic conditions.
- As the site generated traffic is anticipated to be negligible compared to the background traffic volumes, the mitigation measures identified at the Kanata Avenue/Highway 417 Westbound Off-ramp intersection are identified for City consideration and are not attributable to the proposed development.

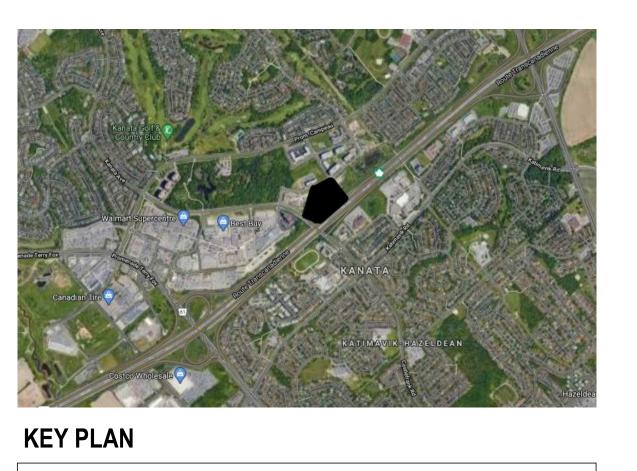
NOVATECH

Prepared by:



Brad Byvelds, P. Eng. Project Coordinator | Transportation/Traffic

APPENDIX A Proposed Site Plan



ZONE AM10 REQUIRED PROVIDED PROVISION Min Lot Width +/- 69.65 m no minimum +/- 12 808 m² Min Lot Area no minimum Max Building Height +/- 93.5 m Min Front Yard Setback 3.05 m / 3.09 m no mininum Min Corner Side Yard Setback 16.74 m no minimum Min FSI +/- 4.88 Min Interior Side Yard Setback 14.70 m / 15.13 m no minimum SITE AREA: +/- 12 808 sq.m. (To be confirmed by surveyor)

+/- 2 207 m² (East Tower)

+/- 1 968 m² (West Tower) Total = $\pm -4 \ 175 \ \text{m}^2 = 32.6 \ \%$ +/- 2 298 m² = **17.9**% GROUND PARKING AREA: LANDSCAPED AREA (EXCLUDING PARKING): +/- 6 335 m² = **49.5** %

RENTAL - EAST TOWER

SITE COVERAGE

PROPOSED GROSS FLOOR AREA: +/- 21 964 m² BASEMENT G.F.A. : +/- 0m² GROUND FLOOR G.F.A. : +/- 635 m² RENTAL FLOORS G.F.A. (2nd to 30th floor): +/- 21 329 m² PRIVATE AMENITY AREA (G.F.A.) : +/- 1 953 m² COMMUNAL AMENITY AREA: + /- 925 m² NUMBER OF FLOORS AND BUILDING HEIGHT 28 FLOORS + MECH. / +/- 87.50m DWELLING UNITS: PARKING STALLS : 315 (300 INSIDE / 15 VISITORS OUTSIDE) PROVIDED BICYCLE STALLS : **150** (142 INSIDE / 8 OUTSIDE)

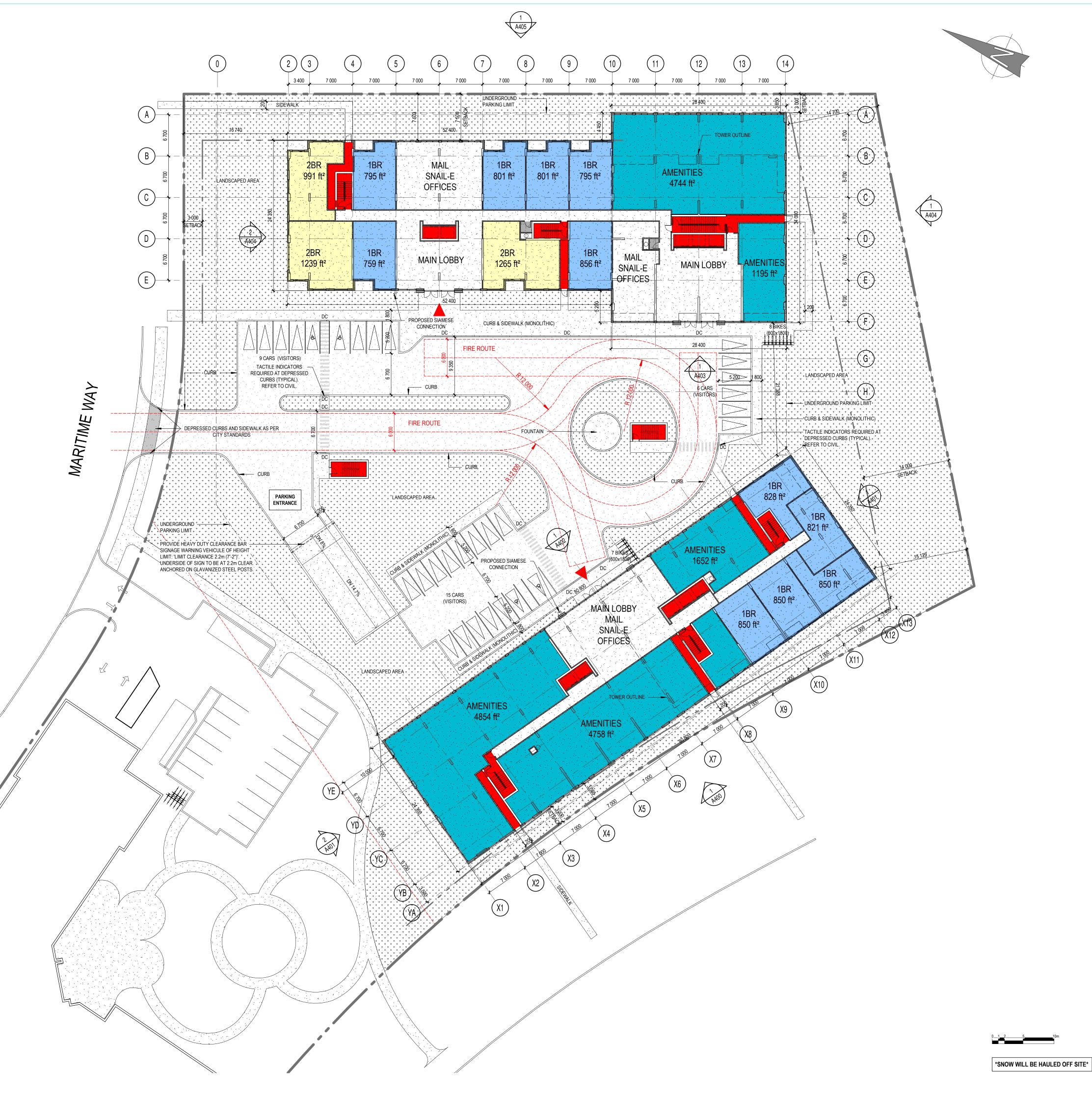
NUMBER OF SUITES REQUIRED TO BE BARRIER-FREE: 300 UNITS = **45 UNITS** HAVE TO BE BARRIER-FREE THEY WILL BE DISTRIBUTED BETWEEN THE 28 FLOORS

RENTAL - WEST TOWER

PROPOSED GROSS FLOOR AREA: +/- 30 179 m² BASEMENT G.F.A. : +/- 0m² GROUND FLOOR G.F.A. : +/- 375 m² RENTAL FLOORS G.F.A. (2nd to 30th floor): +/- 29 804 m² PRIVATE AMENITY AREA (G.F.A.): +/- 2 247 m² COMMUNAL AMENITY AREA: + /- 1 045 m² NUMBER OF FLOORS AND BUILDING HEIGHT 30 FLOORS + MECH. / +/- 93.50m DWELLING UNITS: **347** (332 INSIDE / 15 VISITORS OUTSIDE) **166** (159 INSIDE / 7 OUTSIDE) PARKING STALLS : PROVIDED BICYCLE STALLS:

NUMBER OF SUITES REQUIRED TO BE BARRIER-FREE 332 UNITS = **50 UNITS** HAVE TO BE BARRIER-FREE THEY WILL BE DISTRIBUTED BETWEEN THE 30 FLOORS

> FOR EXISTING SITE CONDITIONS, SEE SURVEY PLAN BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD., SUBMITTED SEPARATELY; FOR NEW GRADES AND SITE SERVICES, SEE CIVIL ENGINEERING PLAN BY NOVATECH ENGINEERING CONSULTANTS, SUBMITTED SEPARATELY; FOR PROPOSED VEGETATION AND LANDSCAPE INFORMATION, SEE LANDSCAPE PLAN BY JAMES B. LENNOX & ASSOCIATES, SUBMITTED SEPARATELY.



NOTES GÉNÉRALES General Notes

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 - 3 Veuillez aviser l'architecte de toute dimension erreur et/ou divergences entre ces documents et ceux des autres professionnels. / The architect must be notified of all errors, omissions and discrepancies between these documents and those of the others
 - 4 Les dimensions sur ces documents doivent être lues et non mesurées. / The dimensions on these documents must be read and

STRUCTURE Structural Goodeve Structural Inc. 18-77, Auriga Drive, Ottawa ON K2E 7Z7 T 613 226 4558 goodevestructural.ca

ARCHITECTURE DE PAYSAGE Landscape Architect James B. Lennox & Associates 3332, Carling Avenue, Ottawa ON K2H 5A8 T 613 722 5168 jbla.ca

Novatech Eng. Consultants Ltd. 240, Michael Cowpland Drive, Suite 200, Ottawa ON K2M 1P6 T 613 234 9643 novatech-eng.com

ARCHITECTES Architect NEUF architect(e)s SENCRL 630, boul. René-Lévesque O. 32e étages, Montréal QC H3B 1S6 T 514 847 1117 NEUFarchitectes.com

SCEAU / Seal







OUVRAGE Project

1200 MARITIME WAY (KANATA RENTAL)

EMPLACEMENT Location OTTAWA

12371.00

1:300

10	RÉVISION	DATE (aa-mm-jj)
Ą	FOR COMMENTS	2020.05.28
В	FOR COMMENTS	2020.06.05
С	FOR COMMENTS	2020.07.23
D	IN PROGRESS	2020.09.16
E	SITE PLAN COORDINATION	2020.12.08
F	SITE PLAN COORDINATION	2020.12.16

VÉRIFIÉ PAR Checked DESSINÉ PAR Drawn by DATE (aa.mm.jj) ÉCHELLE Scale

05/28/20 TITRE DU DESSIN Drawing Title

SITE PLAN AT **GROUND FLOOR LEVEL**

NO. DESSIN Dwg Number



APPENDIX B TIA Screening Form



City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	1200 Maritime Way
Description of Location	South side of Maritime Way, West of Great Lakes Ave
Land Use Classification	Residential
Development Size (units)	689 Residential Units
Development Size (m²)	
Number of Accesses and Locations	One on Maritime Way
Phase of Development	
Buildout Year	

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

2. Trip Generation 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 m²
Destination retail	1,000 m²
Gas station or convenience market	75 m²

^{*} 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.

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.

Transportation Impact Assessment Screening Form

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?		х
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).

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

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

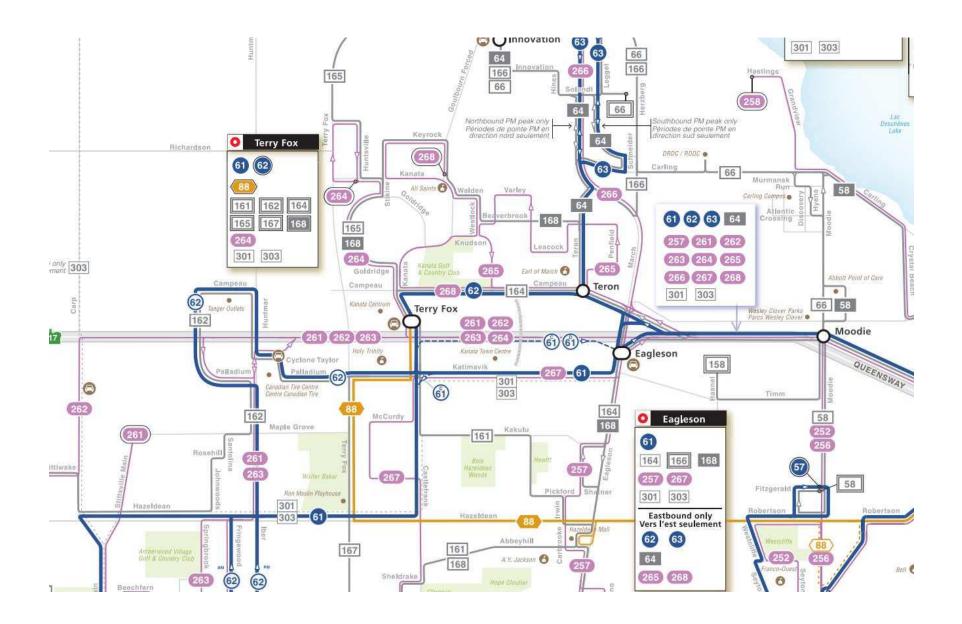
If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

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?		X

If none of the triggers are satisfied, <u>the TIA Study is complete</u>. If one or more of the triggers is satisfied, <u>the TIA Study must continue into the next stage</u> (Screening and Scoping).

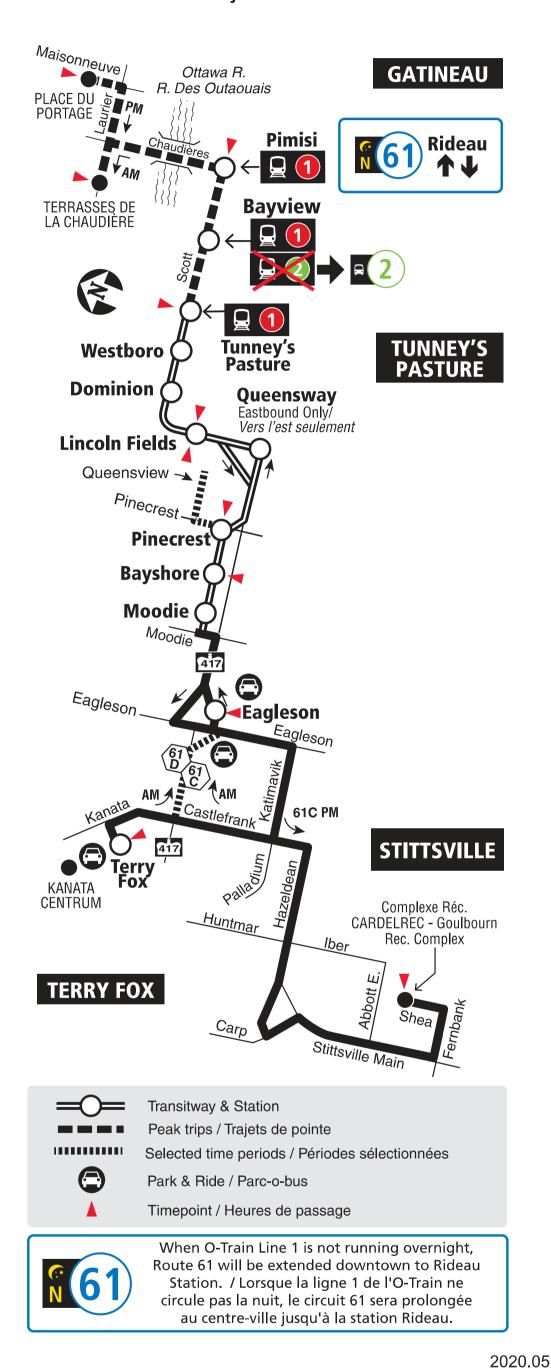






7 days a week / 7 jours par semaine

All day service and limited overnight Service toute la journée et limité la nuit

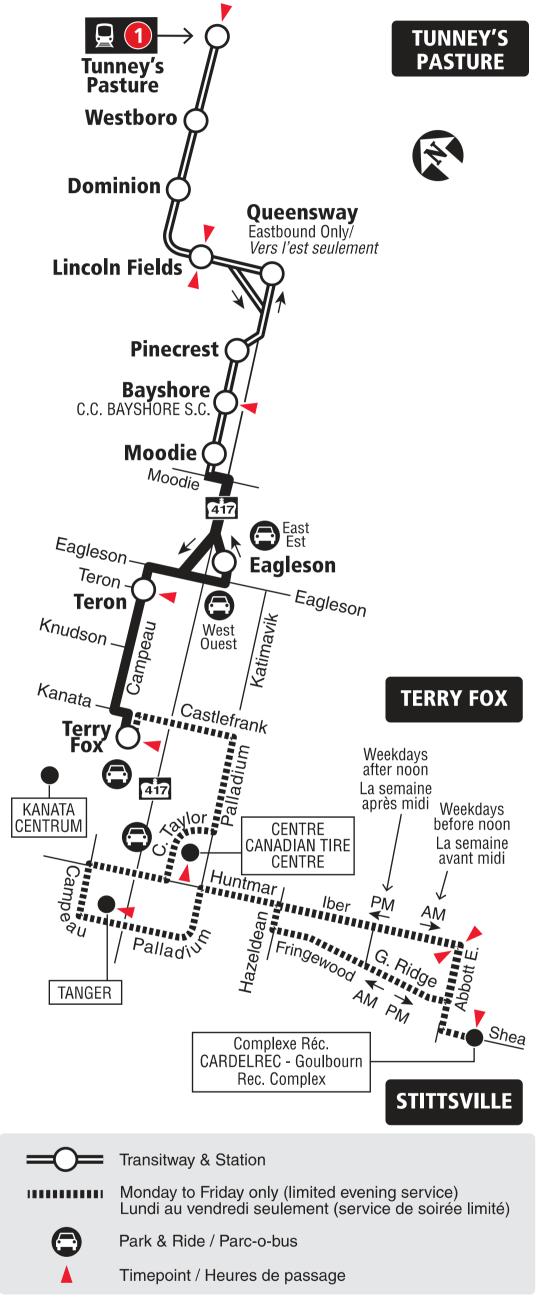






7 days a week / 7 jours par semaine

All day service Service toute la journée





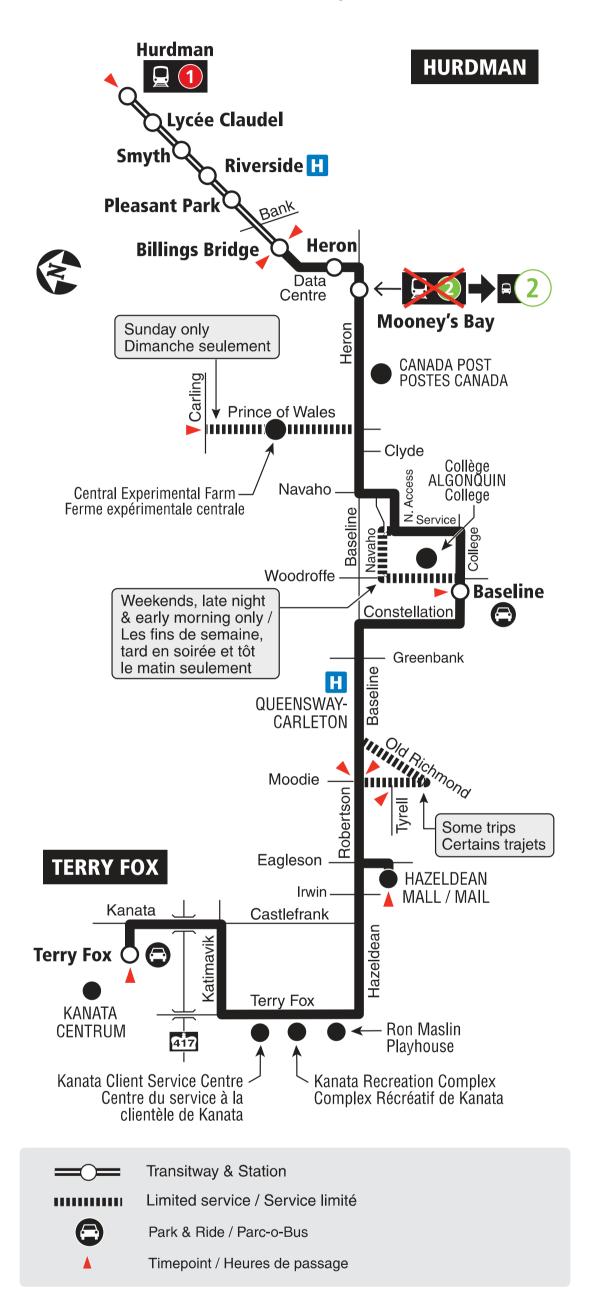




Fréquent

7 days a week / 7 jours par semaine

All day service Service toute la journée





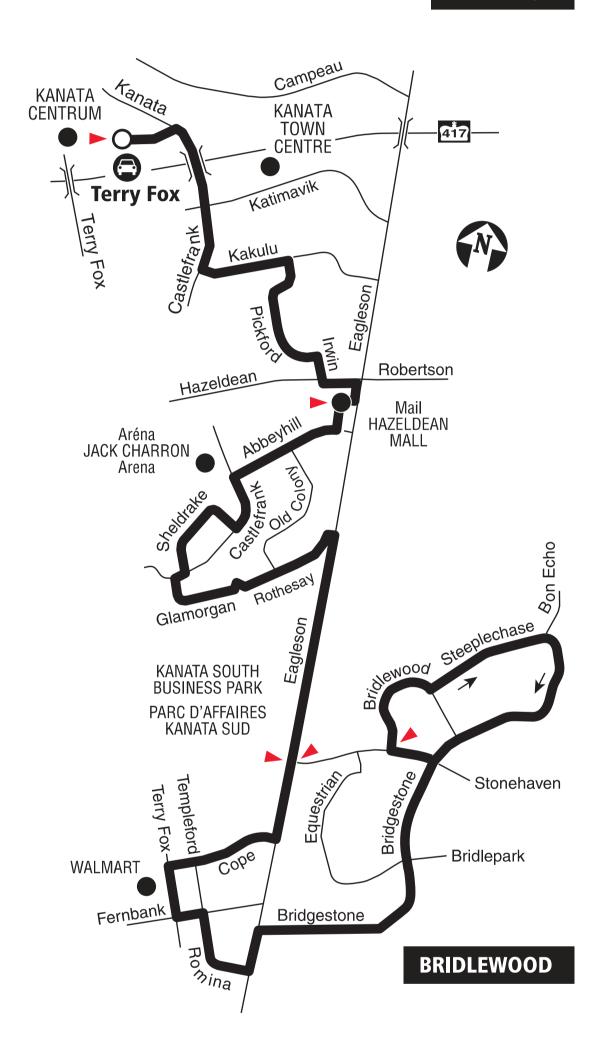
TERRY FOX BRIDLEWOOD

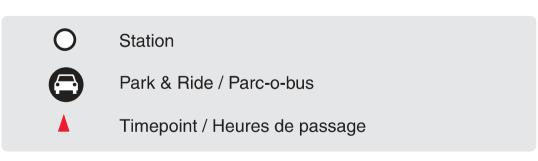
Local

Monday to Friday/ Lundi au vendredi

All day service. No weekend service Service toute la journée. Aucun service les fins de semaine

TERRY FOX





2019.06

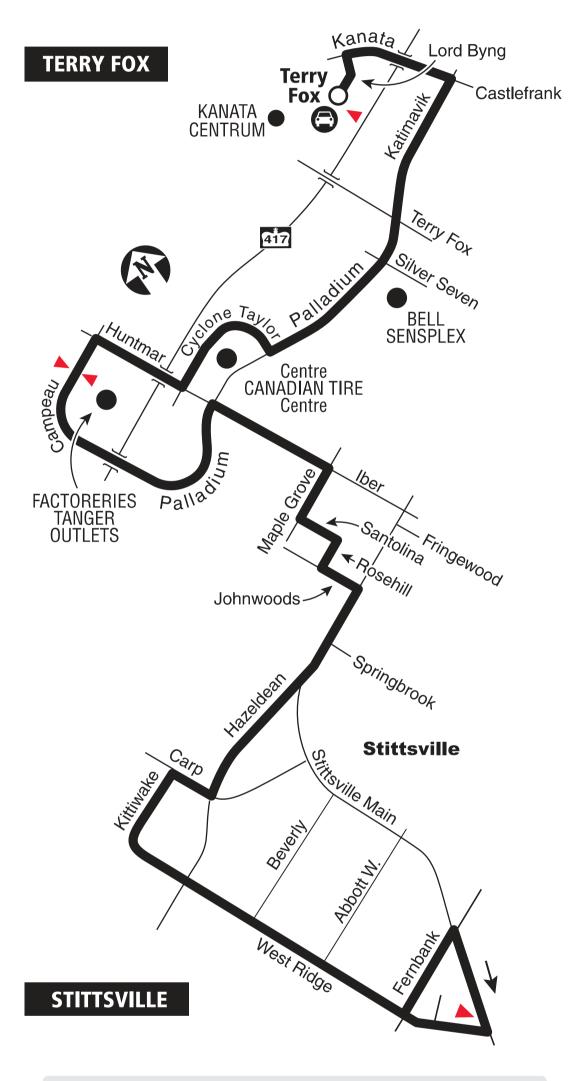


TERRY FOX STITTSVILLE

Local

Monday to Friday/ Lundi au vendredi

Selected trips Mon. to Fri. All day on weekends / Service limité du lun. au ven. Toute la journée les fins de semaine



Transitway Station / Station du Transitway

Park & Ride / Parc-o-bus

Timepoint / Heures de passage

raik & filde / raic-o-bus



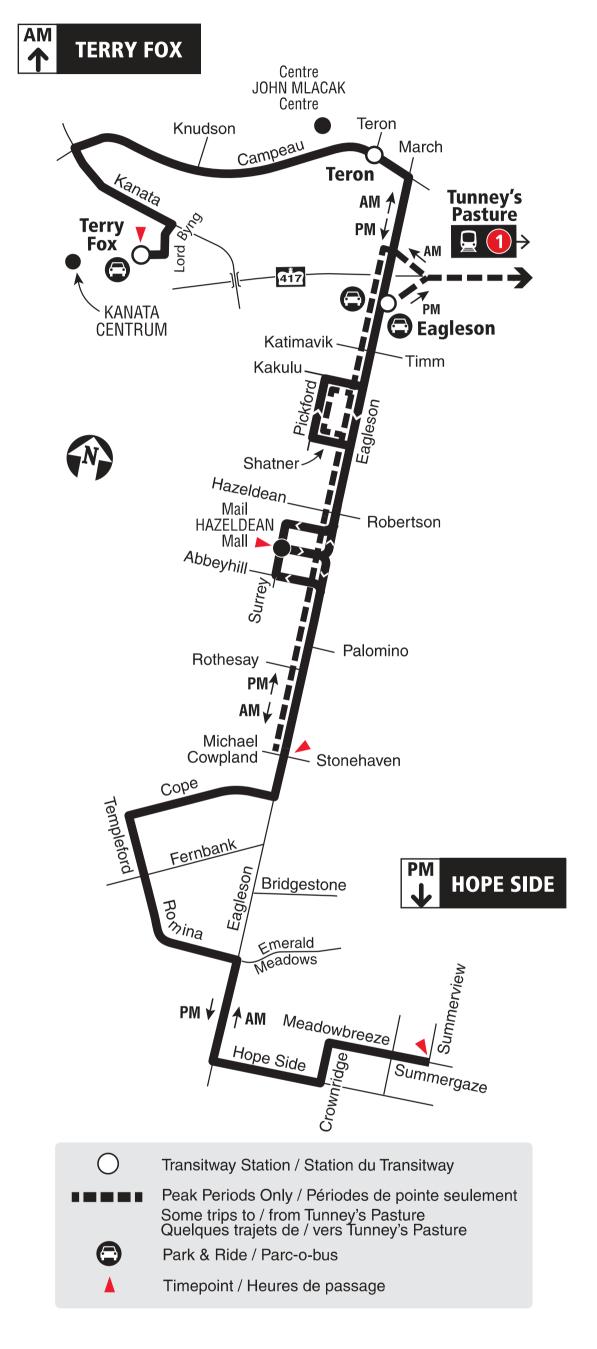


TERRY FOX HOPE SIDE

Local

Monday to Friday/ Lundi au vendredi

Peak periods only Périodes de pointe seulement





TERRY FOX

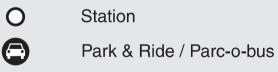
Local

Monday to Friday/ Lundi au vendredi

Selected time periods Périodes sélectionnées

INNOVATION March Klondike Shirley's Brook Morgans-Grant Terry Fox **Innovation** Complexe récréatif RICHCRAFT Recreation Complex Keyrock Terry Fox Kanata Campeau Lord Byng Kanata Centrum **Terry Fox** 417

TERRY FOX



Timepoint / Heures de passage



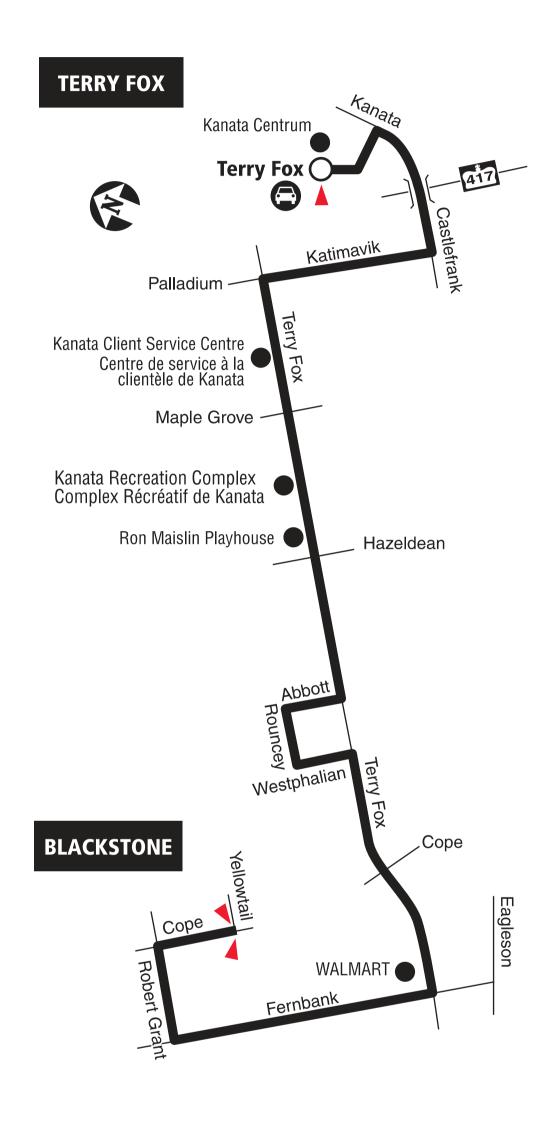


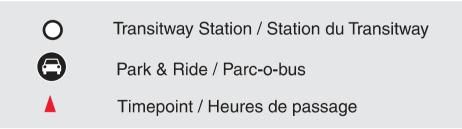
TERRY FOX BLACKSTONE

Local

Monday to Friday/ Lundi au vendredi

Selected time periods Périodes selectionnées





2019.06

octranspo.com

C Transpo

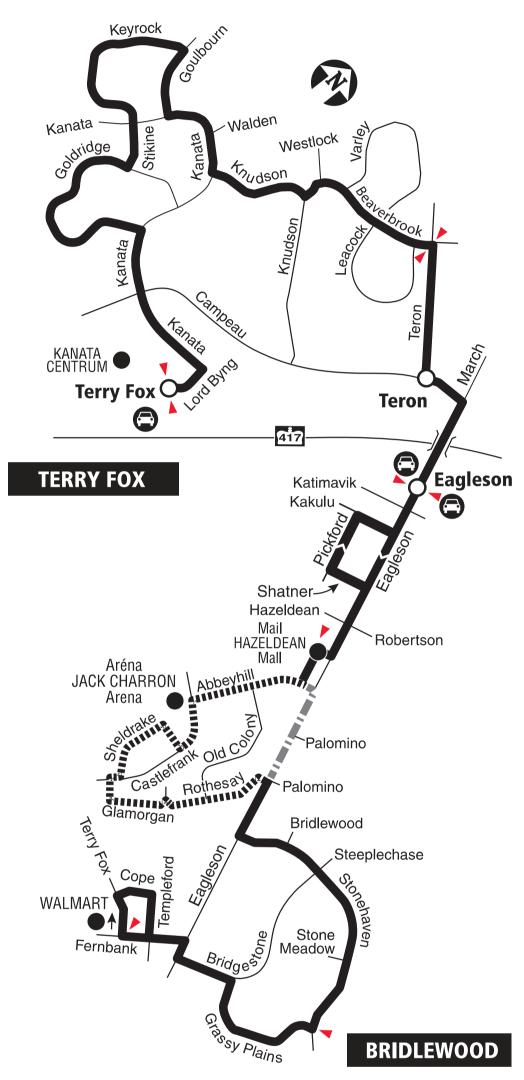


BRIDLEWOOD

Local

7 days a week / 7 jours par semaine

All day service Service toute la journée



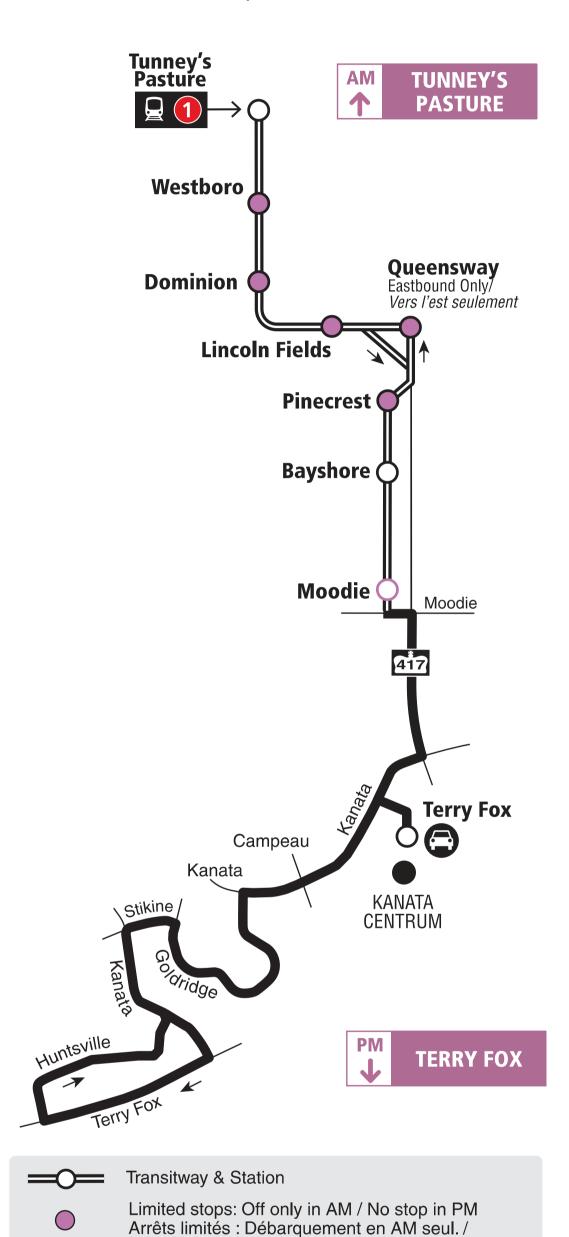






Monday to Friday / Lundi au vendredi

Peak periods only Périodes de pointe seulement





Future route after O-Train Line 1 is open Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train

Lost and Found / Objets perdus..... **613-563-4011**Security / Sécurité...... **613-741-2478**

CC Transpo

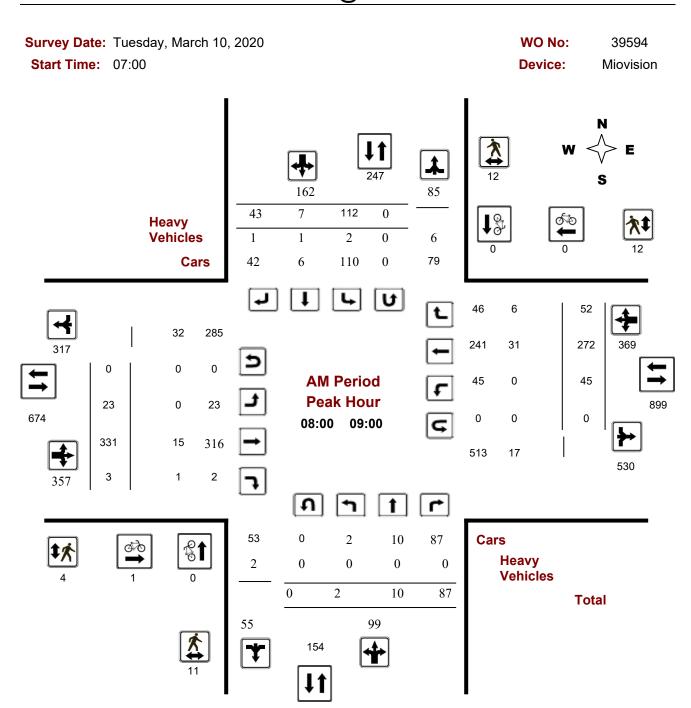
INFO 613-741-4390 octranspo.com





Turning Movement Count - Peak Hour Diagram

CAMPEAU DR @ KNUDSON DR



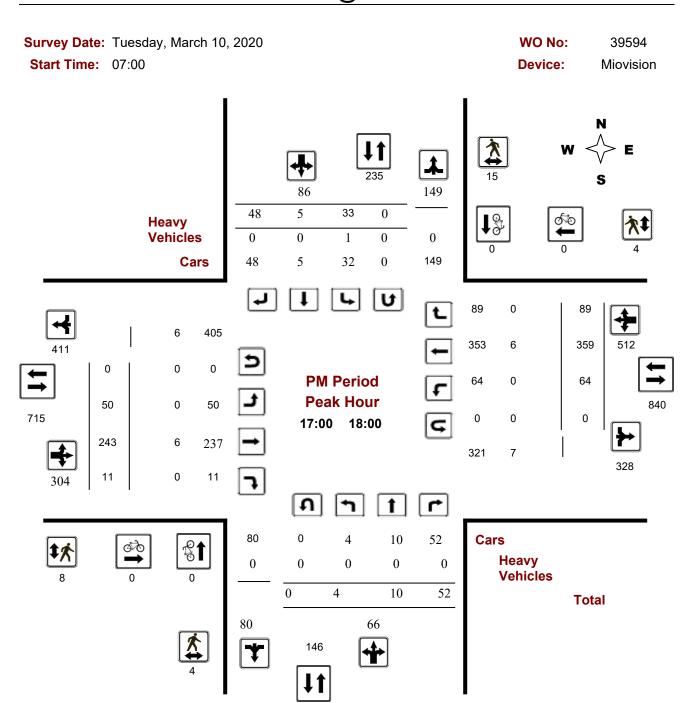
Comments 5479344 - MAR 10 2020 - 8HRS - LORETTA

2020-Mar-27 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

CAMPEAU DR @ KNUDSON DR



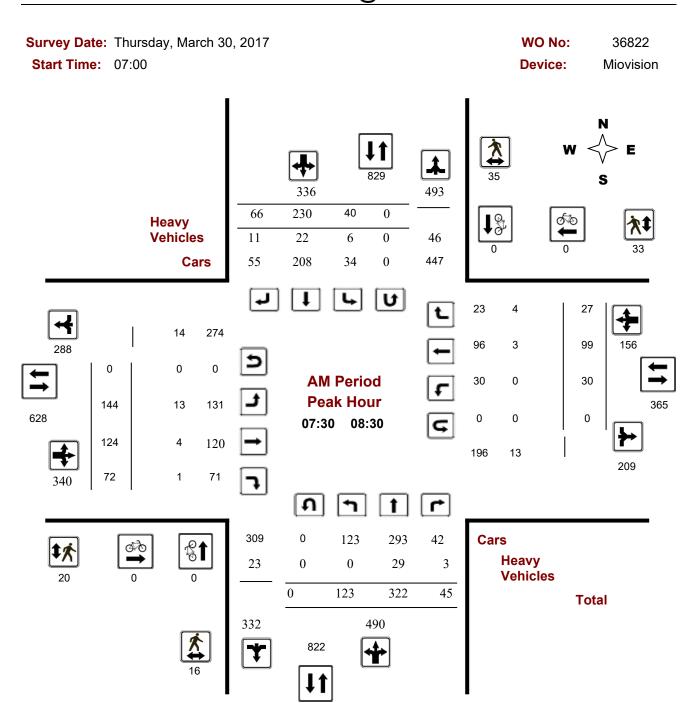
Comments 5479344 - MAR 10 2020 - 8HRS - LORETTA

2020-Mar-27 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

CASTLEFRANK RD @ KATIMAVIK RD



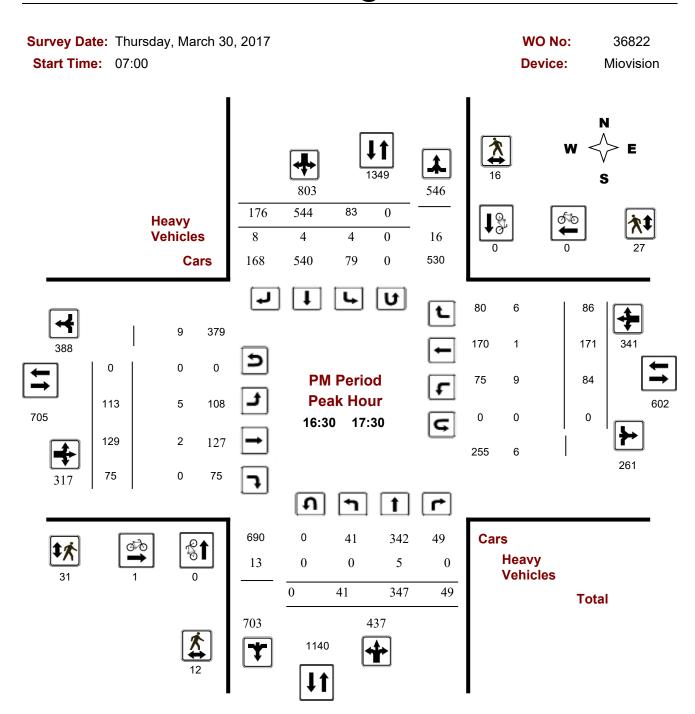
Comments

2020-Sep-01 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

CASTLEFRANK RD @ KATIMAVIK RD



Comments

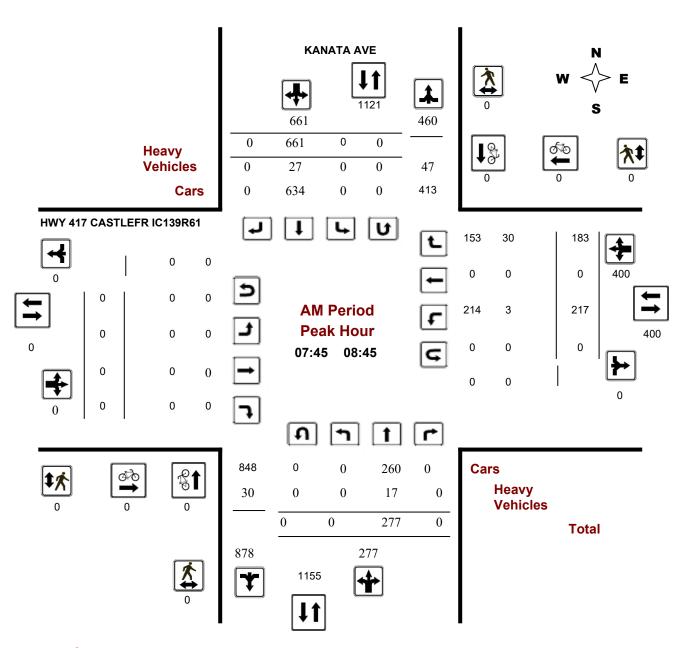
2020-Sep-01 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Survey Date: Wednesday, December 06, 2017 WO No: 37364
Start Time: 07:00 Device: Miovision



Comments

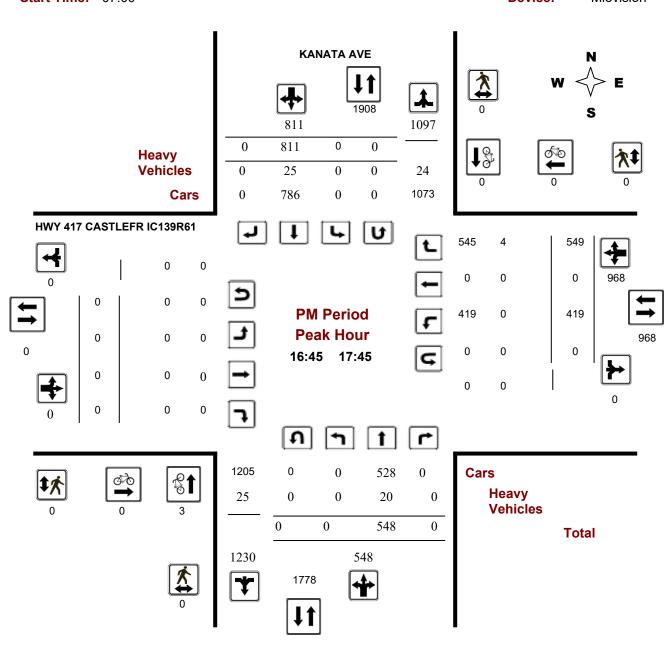
2020-Sep-02 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Survey Date: Wednesday, December 06, 2017 WO No: 37364
Start Time: 07:00 Device: Miovision



Comments

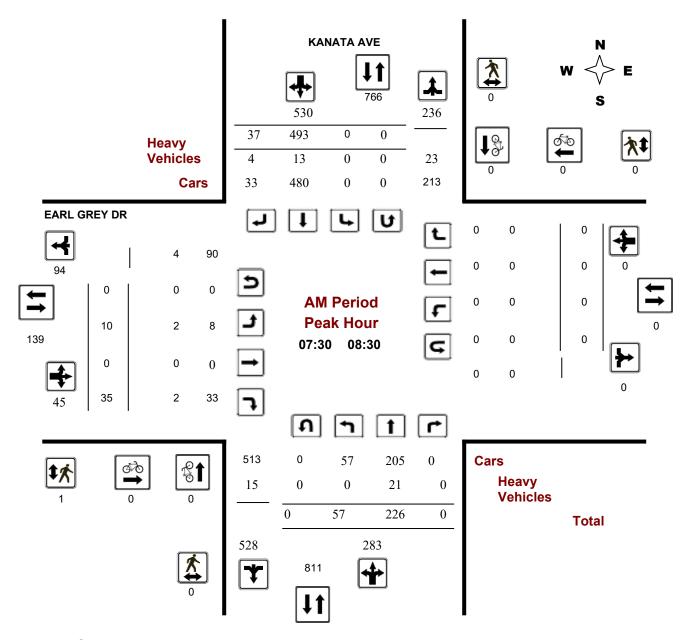
2020-Sep-02 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

KANATA AVE @ EARL GREY DR

Survey Date: Wednesday, November 28, 2018 WO No: 38176
Start Time: 07:00 Device: Miovision



Comments

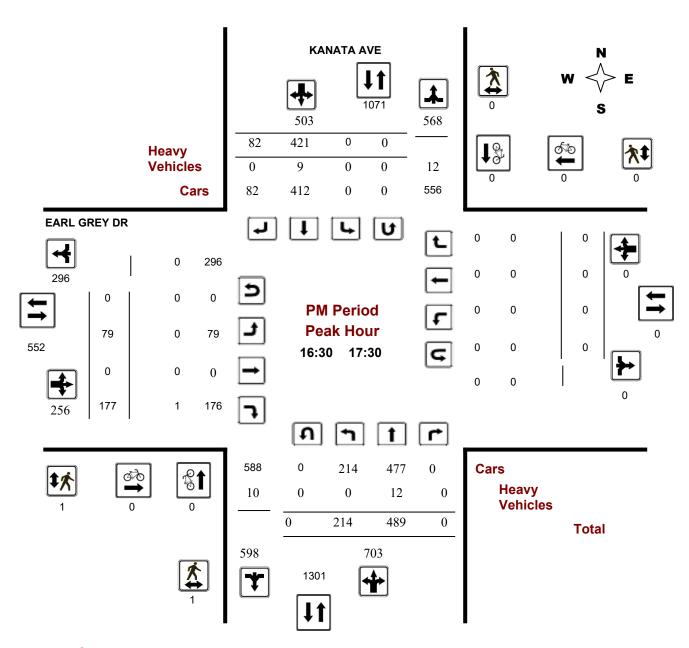
2020-Sep-01 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

KANATA AVE @ EARL GREY DR

Survey Date: Wednesday, November 28, 2018 WO No: 38176
Start Time: 07:00 Device: Miovision



Comments

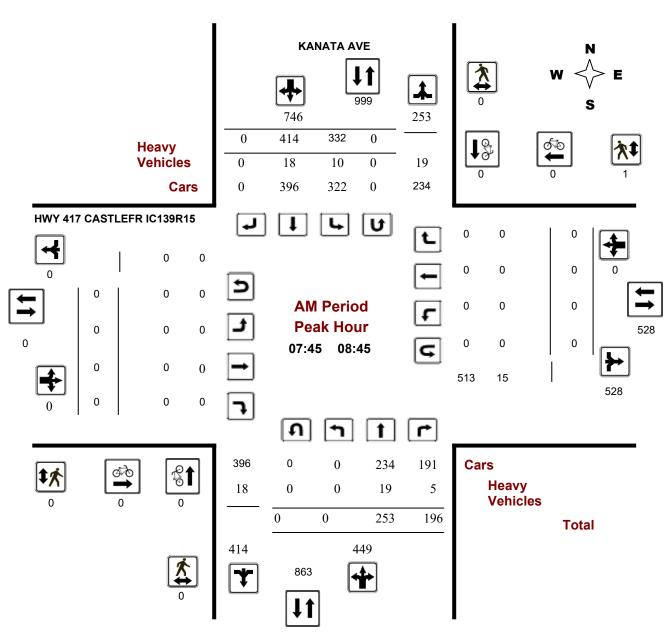
2020-Sep-01 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

KANATA AVE @ HWY 417 CASTLEFR IC139R15

Survey Date: Tuesday, November 27, 2018 WO No: 38168
Start Time: 07:00 Device: Miovision



Comments

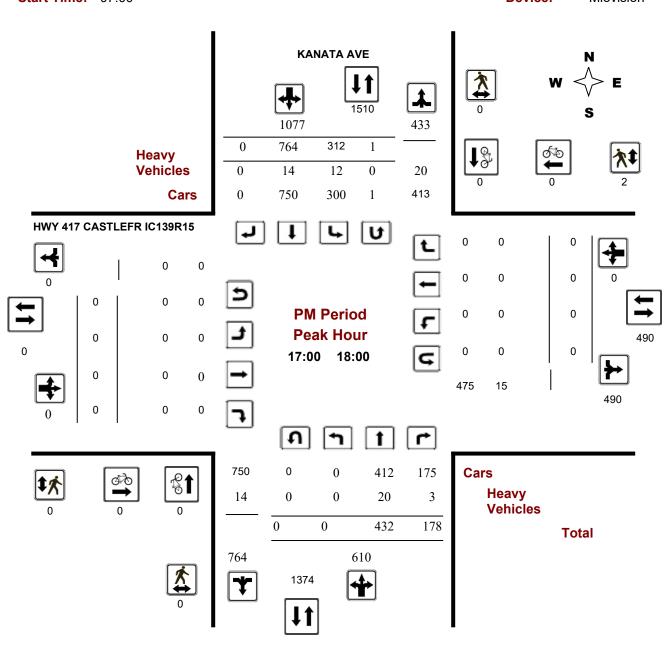
2020-Sep-01 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

KANATA AVE @ HWY 417 CASTLEFR IC139R15

Survey Date: Tuesday, November 27, 2018 WO No: 38168
Start Time: 07:00 Device: Miovision



Comments

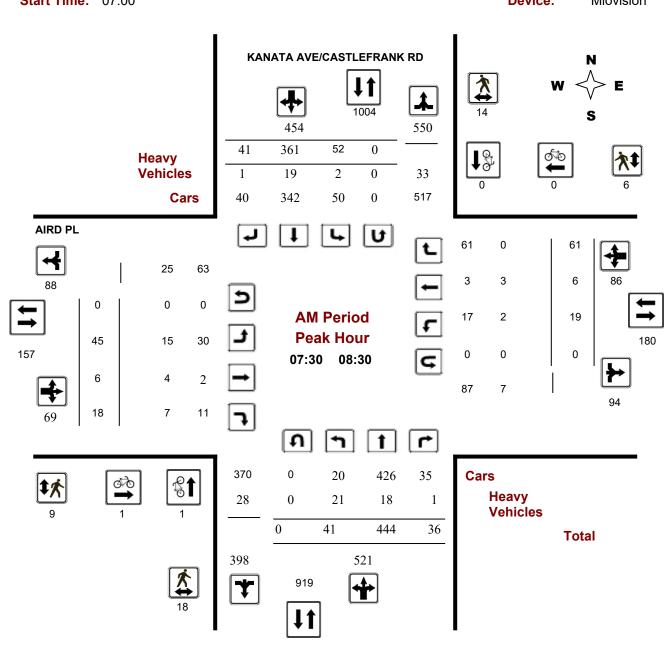
2020-Sep-01 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

KANATA AVE/CASTLEFRANK RD @ AIRD PL

Survey Date: Wednesday, April 11, 2018 WO No: 37727
Start Time: 07:00 Device: Miovision



Comments

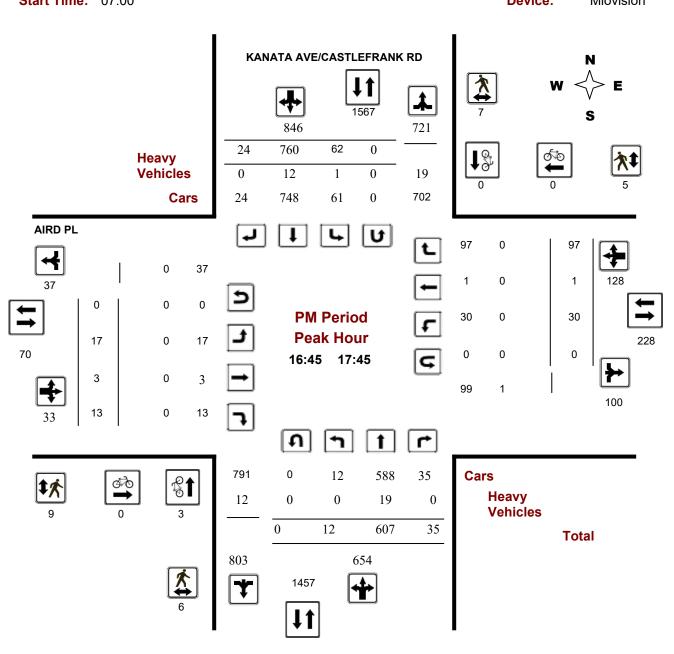
2020-Sep-01 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

KANATA AVE/CASTLEFRANK RD @ AIRD PL

Survey Date: Wednesday, April 11, 2018 WO No: 37727
Start Time: 07:00 Device: Miovision



Comments

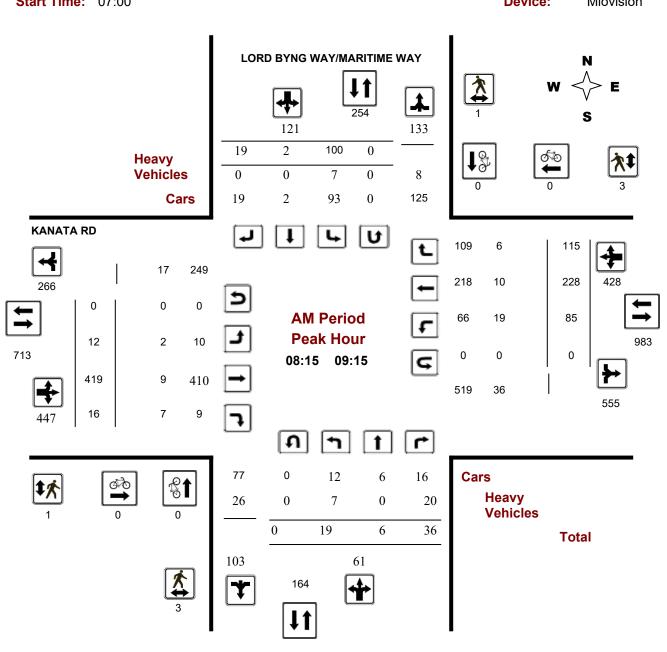
2020-Sep-01 Page 3 of 3



Turning Movement Count - Peak Hour Diagram

KANATA RD @ LORD BYNG WAY/MARITIME WAY

Survey Date: Tuesday, March 20, 2018 WO No: 37606
Start Time: 07:00 Device: Miovision



Comments

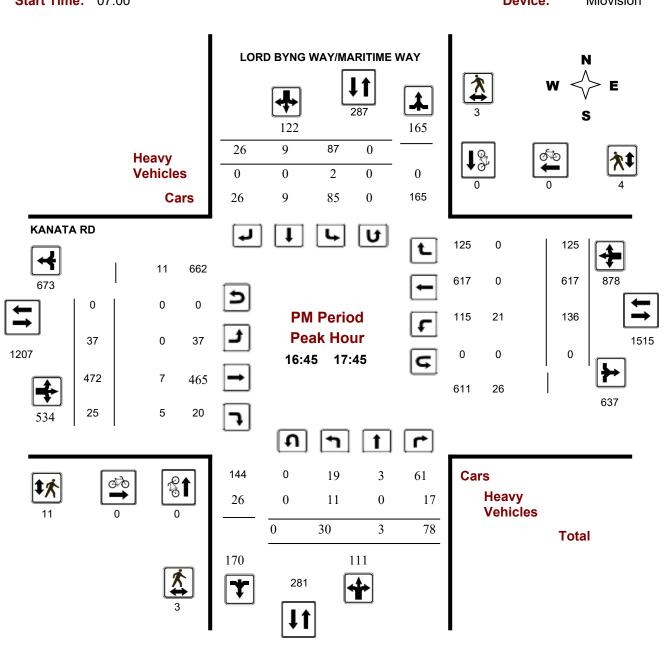
2020-Sep-01 Page 1 of 3



Turning Movement Count - Peak Hour Diagram

KANATA RD @ LORD BYNG WAY/MARITIME WAY

Survey Date: Tuesday, March 20, 2018 WO No: 37606
Start Time: 07:00 Device: Miovision



Comments

2020-Sep-01 Page 3 of 3



Public Works - Traffic Services

Work Order

34386

Turning Movement Count - Full Study Summary Report

CAMPEAU DR @ KNUDSON DR

Survey Date: Thursday, February 26, 2015

Total Observed U-Turns

AADT Factor

0 Northbound: Eastbound:

Southbound: 0 Westbound:

0

.90

Full Study

_	N	orthbo	ound		S	outhb	ound		-		Eastbo	ound			Westb	ound			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Gran Tota
07:00 08:00	5	2	24	31	135	0	21	156	187	28	206	1	235	7	160	24	191	426	613
08:00 09:00	7	0	22	29	156	2	57	215	244	39	302	5	346	17	235	65	317	663	907
09:00 10:00	12	2	25	39	78	4	37	119	158	20	141	12	173	10	202	27	239	412	570
11:30 12:30	14	0	14	28	46	0	40	86	114	40	225	14	279	24	272	50	346	625	739
12:30 13:30	20	0	20	40	58	4	37	99	139	44	235	23	302	16	250	55	321	623	762
15:00 16:00	8	4	25	37	52	4	44	100	137	47	274	10	331	31	316	99	446	777	914
16:00 17:00	10	1	24	35	72	4	43	119	154	48	277	7	332	29	349	113	491	823	977
17:00 18:00	4	5	16	25	69	2	52	123	148	59	262	6	327	38	378	123	539	866	1014
Sub Total	80	14	170	264	666	20	331	1017	1281	325	1922	78	2325	172	2162	556	2890	5215	6496
U Turns				0				0	0				0				0	0	0
Total	80	14	170	264	666	20	331	1017	1281	325	1922	78	2325	172	2162	556	2890	5215	6496
EQ 12Hr	111	19	236	367	926	28	460	1414	1781	452	2672	108	3232	239	3005	773	4017	7249	9030
Note: These v	alues ar	e calcul	lated by	/ multiply	ying the	totals b	y the ap	opropriat	e expans	ion fact	tor.		•	1.39					
AVG 12Hr	100	18	213	330	833	25	414	1272	1602	407	2404	98	2909	215	2705	696	3615	6524	8126
Note: These v	olumes a	are calc	culated	by multi _l	plying th	e Equiv	alent 1	2 hr. tota	ls by the	AADT	factor.			.90					
AVG 24Hr	131	23	279	433	1091	33	542	1667	2100	533	3150	128	3810	282	3543	911	4736	8546	10646
Note: These v	olumes a	are calc	culated	by multi _l	plying th	e Avera	ige Dail	ly 12 hr.	totals by	12 to 2	4 expans	sion fac	tor.	1.31					

Comments:

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

2016-Jul-28 Page 1 of 1



Public Works - Traffic Services

Work Order 35042

Turning Movement Count - Full Study Summary Report

KANATA RD @ LORD BYNG WAY/MARITIME WAY

Survey Date: Friday, July 31, 2015

Total Observed U-Turns

AADT Factor

0 Northbound: Eastbound: 0

Southbound: Westbound:

0 0 .90

Full Study

	L	ORD	BYNG	WAY/	MARI	ΓIME V	VAY					ŀ	(ANA	ra RD					
-	N	lorthb	ound		S	outhbo	ound		_		Eastb	ound			Westb	ound			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	13	8	43	64	18	2	3	23	87	5	325	11	341	42	114	29	185	526	613
08:00 09:00	11	3	44	58	24	1	3	28	86	2	552	10	564	43	230	34	307	871	957
09:00 10:00	18	5	52	75	25	2	13	40	115	9	437	16	462	55	320	39	414	876	991
11:30 12:30	19	3	64	86	45	7	19	71	157	17	512	16	545	114	578	53	745	1290	1447
12:30 13:30	16	8	79	103	31	9	9	49	152	28	602	15	645	106	411	34	551	1196	1348
15:00 16:00	25	8	75	108	9	0	2	11	119	13	569	19	601	128	549	53	730	1331	1450
16:00 17:00	26	7	78	111	27	3	5	35	146	19	559	11	589	128	572	38	738	1327	1473
17:00 18:00	30	6	67	103	2	0	0	2	105	24	575	11	610	1 10	421	43	574	1184	1289
Sub Total	158	48	502	708	181	24	54	259	967	117	4131	109	4357	726	3195	323	4244	8601	9568
U Turns				0				0	0				0				0	0	0
Total	158	48	502	708	181	24	54	259	967	117	4131	109	4357	726	3195	323	4244	8601	9568
EQ 12Hr	220	67	698	984	252	33	75	360	1344	163	5742	152	6056	1009	4441	449	5899	11955	13299
Note: These v	alues are	e calcul	ated by	/ multiply	ing the	totals by	the ap	propriate	e expans	ion fact	tor.		•	1.39					
AVG 12Hr	198	60	628	886	226	30	68	324	1210	146	5168	136	5451	908	3997	404	5309	10760	11970
Note: These v	olumes a	are calc	ulated	by multip	lying th	e Equiva	alent 12	hr. tota	ls by the	AADT 1	factor.			.90					
AVG 24Hr	259	79	823	1160	297	39	88	424	1584	192	6770	179	7140	1190	5236	529	6955	14095	15679
Note: These v	olumes a	are calc	ulated i	by multip	lying th	e Avera	ge Daily	/ 12 hr. t	otals by	12 to 24	4 expans	ion fac	tor.	1.31					

Comments:

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



Turning Movement Count - Study Results

CAMPEAU DR @ KNUDSON DR

Survey Date: Tuesday, March 10, 2020 WO No: 39594

Start Time: 07:00 Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 10, 2020 Total Observed U-Turns AADT Factor

Northbound: 1 Southbound: 0 1.00

Eastbound: 0 Westbound: 1

	Nor	thbou	nd		Sou	uthbou	ınd			Е	astbou	nd		٧	√estboı	und			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	1	6	50	57	92	2	19	113	170	10	186	4	200	10	121	14	145	345	515
08:00 09:00	2	10	87	99	112	7	43	162	261	23	331	3	357	45	272	52	369	726	987
09:00 10:00	13	8	42	63	46	9	37	92	155	20	159	7	186	30	164	25	219	405	560
11:30 12:30	8	4	39	51	37	4	36	77	128	35	217	2	254	44	291	36	371	625	753
12:30 13:30	7	3	47	57	27	10	31	68	125	37	204	5	246	36	217	28	281	527	652
15:00 16:00	8	11	48	67	46	7	35	88	155	43	222	13	278	57	360	71	488	766	921
16:00 17:00	7	10	50	67	37	5	49	91	158	52	243	8	303	58	359	68	485	788	946
17:00 18:00	4	10	52	66	33	5	48	86	152	50	243	11	304	64	359	89	512	816	968
Sub Total	50	62	415	527	430	49	298	777	1304	270	1805	53	2128	344	2143	383	2870	4998	6302
U Turns				1				0	1				0				1	1	2
Total	50	62	415	528	430	49	298	777	1305	270	1805	53	2128	344	2143	383	2871	4999	6304
EQ 12Hr	70	86	577	734	598	68	414	1080	1814	375	2509	74	2958	478	2979	532	3991	6949	8763
Note: These v	alues ar	e calcu	lated by	/ multiply	ing the	totals b	y the a	opropriate	e expans	ion fact	tor.			1.39					
AVG 12Hr	66	81	544	692	563	64	390	1018	1814	354	2365	69	2788	451	2807	502	3761	6949	8763
Note: These v	olumes	are calc	culated	by multip	olying th	e Equiv	alent 1	2 hr. total	ls by the	AADT	factor.			1					
AVG 24Hr	86	106	712	906	738	84	511	1333	2239	463	3098	91	3652	590	3678	657	4927	8579	10818
Note: These v	olumes	are calc	culated	by multip	olying th	e Avera	ige Dai	ly 12 hr. t	otals by	12 to 2	4 expans	sion fac	ctor.	1.31					

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

March 27, 2020 Page 3 of 8



Turning Movement Count - Study Results

KANATA RD @ LORD BYNG WAY/MARITIME WAY

Survey Date: Tuesday, March 20, 2018 WO No: 37606

Start Time: 07:00 Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 20, 2018 Total Observed U-Turns AADT Factor

Northbound: 0 Southbound: 0

1.00

Eastbound: 0 Westbound: 2

	LO	RD BY	/NG V	VAY/M	ARITIN	ME WA	٩Y					K/	ANATA	RD					
	Nor	thbou	nd		Sou	uthbou	ınd			Е	astbou	ınd		٧	Vestbo	und			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	15	1	50	66	81	2	24	107	173	2	482	12	496	44	163	65	272	768	941
08:00 09:00	18	6	35	59	92	4	20	116	175	14	423	14	451	79	214	119	412	863	1038
09:00 10:00	11	5	55	71	69	1	33	103	174	15	323	14	352	57	256	67	380	732	906
11:30 12:30	14	3	54	71	79	6	38	123	194	28	355	12	395	87	432	70	589	984	1178
12:30 13:30	12	3	60	75	76	4	20	100	175	17	451	12	480	77	416	74	567	1047	1222
15:00 16:00	15	5	75	95	93	4	27	124	219	27	397	18	442	99	533	116	748	1190	1409
16:00 17:00	24	3	93	120	101	8	34	143	263	26	448	21	495	122	598	130	850	1345	1608
17:00 18:00	24	7	82	113	91	9	29	129	242	39	458	21	518	144	617	120	881	1399	1641
Sub Total	133	33	504	670	682	38	225	945	1615	168	3337	124	3629	709	3229	761	4699	8328	9943
U Turns				0				0	0				0				2	2	2
Total	133	33	504	670	682	38	225	945	1615	168	3337	124	3629	709	3229	761	4701	8330	9945
EQ 12Hr	185	46	701	931	948	53	313	1314	2245	234	4638	172	5044	986	4488	1058	6534	11579	13824
Note: These	values ar	e calcu	lated by	y multipl	ying the	totals b	y the a	ppropriat	e expans	ion fac	tor.			1.39					
AVG 12Hr	174	43	660	878	893	50	295	1238	2245	220	4371	162	4754	929	4230	997	6158	11579	13824
Note: These	volumes	are calc	culated	by multi	plying th	ne Equiv	/alent 1	2 hr. tota	ls by the	AADT	factor.			1					
AVG 24Hr	228	57	865	1150	1170	65	386	1622	2772	288	5727	213	6228	1217	5541	1306	8067	14295	17067
Note: These	volumes	are calc	culated	by multi	plying th	ne Avera	age Dai	ly 12 hr.	totals by	12 to 2	4 expan	sion fac	ctor.	1.31					

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

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Turning Movement Count - Study Results

KANATA AVE @ HWY 417 CASTLEFR IC139R15

Survey Date: Friday, July 24, 2015 WO No: 35007

Start Time: 07:00 Device: Jamar Technologies, Inc

Full Study Summary (8 HR Standard)

Survey Date: Friday, July 24, 2015 Total Observed U-Turns AADT Factor

Northbound: 0 Southbound: 0 .90

Eastbound: 0 Westbound: 0

			KAN	ATA	AVE					H	HWY 4	17 C	ASTLE	FR IC1	39R1	5			
	No	rthbou	nd		So	uthbou	nd			Ea	astbou	nd		W	estbou	ınd			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	98	213	311	534	324	0	858	1169	0	0	0	0	0	0	0	0	0	1169
08:00 09:00	0	193	216	409	979	469	0	1448	1857	0	0	0	0	0	0	0	0	0	1857
09:00 10:00	0	254	162	416	649	570	0	1219	1635	0	0	0	0	0	0	0	0	0	1635
11:30 12:30	0	339	180	519	670	999	0	1669	2188	0	0	0	0	0	0	0	0	0	2188
12:30 13:30	0	292	136	428	788	1171	0	1959	2387	0	0	0	0	0	0	0	0	0	2387
15:00 16:00	0	342	131	473	333	909	0	1242	1715	0	0	0	0	0	0	0	0	0	1715
16:00 17:00	0	441	134	575	409	1139	0	1548	2123	0	0	0	0	0	0	0	0	0	2123
17:00 18:00	0	385	155	540	554	1138	0	1692	2232	0	0	0	0	0	0	0	0	0	2232
Sub Total	0	2344	1327	3671	4916	6719	0	11635	15306	0	0	0	0	0	0	0	0	0	15306
U Turns	0			0	0			0	0	0			0	0			0	0	0
Total	0	2344	1327	3671	4916	6719	0	11635	15306	0	0	0	0	0	0	0	0	0	15306
EQ 12Hr	0	3258	1845	5103	6833	9339	0	16172	21275	0	0	0	0	0	0	0	0	0	21275
Note: These v	alues a	re calcu	lated by	/ multipl	ying the	e totals b	y the a	ppropria	te expans	ion facto	or.			1.39					
AVG 12Hr	0	2932	1660	4592	6150	8405	0	14555	19147	0	0	0	0	0	0	0	0	0	19147
Note: These v	olumes	are cal	culated	by multi	plying t	he Equiv	alent 1	2 hr. tota	als by the	AADT fa	actor.			.90					
AVG 24Hr	0	3841	2175	6016	8056	11011	0	19067	25083	0	0	0	0	0	0	0	0	0	25083

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. 1.

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

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Turning Movement Count - Study Results

KANATA AVE @ HWY 417 CASTLEFR IC139R15

Survey Date: Tuesday, November 27, 2018 WO No: 38168

Start Time: 07:00 Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, November 27, 2018 Total Observed U-Turns AADT Factor

Northbound: 0 Southbound: 1

1.00

Eastbound: 0 Westbound: 0

			KAN	ATA	AVE					ŀ	HWY 4	17 C	ASTLE	FR IC1	39R1	5			
	No	rthbou	ınd		So	uthbou	nd			Ea	astbou	nd		W	estbou	ınd			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	137	264	401	393	312	0	705	1106	0	0	0	0	0	0	0	0	0	1106
08:00 09:00	0	282	169	451	328	386	0	714	1165	0	0	0	0	0	0	0	0	0	1165
09:00 10:00	0	199	151	350	265	388	0	653	1003	0	0	0	0	0	0	0	0	0	1003
11:30 12:30	0	277	147	424	236	419	0	655	1079	0	0	0	0	0	0	0	0	0	1079
12:30 13:30	0	312	136	448	268	449	0	717	1165	0	0	0	0	0	0	0	0	0	1165
15:00 16:00	0	356	158	514	259	637	0	896	1410	0	0	0	0	0	0	0	0	0	1410
16:00 17:00	0	432	182	614	284	668	0	952	1566	0	0	0	0	0	0	0	0	0	1566
17:00 18:00	0	432	178	610	312	764	0	1076	1686	0	0	0	0	0	0	0	0	0	1686
Sub Total	0	2427	1385	3812	2345	4023	0	6368	10180	0	0	0	0	0	0	0	0	0	10180
U Turns				0				1	1				0				0	0	1
Total	0	2427	1385	3812	2345	4023	0	6369	10181	0	0	0	0	0	0	0	0	0	10181
EQ 12Hr	0	3374	1925	5299	3260	5592	0	8853	14152	0	0	0	0	0	0	0	0	0	14152
Note: These v	alues a	ire calcu	ılated b	y multip	lying the	totals by	y the a	ppropriat	te expans	ion facto	or.			1.39					
AVG 12Hr	0	3179	1814	4994	3072	5270	0	8343	14152	0	0	0	0	0	0	0	0	0	14152
Note: These v	olumes	are cal	culated	by mult	iplying t	he Equiv	alent 1	2 hr. tota	als by the	AADT fa	actor.			1					
AVG 24Hr	0	4165	2377	6542	4024	6904	0	10930	17472	0	0	0	0	0	0	0	0	0	17472
AVG 24Hr Note: These v							-						ıc						

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. 1.3

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

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Turning Movement Count - Study Results

HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Survey Date: Tuesday, March 03, 2015 WO No: 34391

Start Time: 07:00 Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 03, 2015 Total Observed U-Turns AADT Factor

Northbound: 0 Southbound: 0

1.00

Eastbound: 0 Westbound: 0

			KAN	ATA	VE					ŀ	HWY 4	17 C	ASTLE	FR IC	139R6	61			
	No	rthbou	nd		So	uthbou	ınd			Ea	astbou	ınd		W	'estbo	und			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	143	0	143	0	560	0	560	703	0	0	0	0	132	0	94	226	226	929
08:00 09:00	0	266	0	266	0	587	0	587	853	0	0	0	0	150	0	125	275	275	1128
09:00 10:00	0	212	0	212	0	465	0	465	677	0	0	0	0	131	0	112	243	243	920
11:30 12:30	0	302	0	302	0	463	0	463	765	0	0	0	0	174	0	248	422	422	1187
12:30 13:30	0	292	1	293	0	499	0	499	792	0	0	0	0	134	0	227	361	361	1153
15:00 16:00	0	372	0	372	0	575	0	575	947	0	0	0	0	276	0	350	626	626	1573
16:00 17:00	0	361	0	361	0	557	0	557	918	0	0	0	0	364	0	368	732	732	1650
17:00 18:00	0	408	0	408	0	578	0	578	986	0	0	0	0	323	0	329	652	652	1638
Sub Total	0	2356	1	2357	0	4284	0	4284	6641	0	0	0	0	1684	0	1853	3537	3537	10178
U Turns	0			0	0			0	0	0			0	0			0	0	0
Total	0	2356	1	2357	0	4284	0	4284	6641	0	0	0	0	1684	0	1853	3537	3537	10178
EQ 12Hr	0	3275	1	3276	0	5955	0	5955	9231	0	0	0	0	2341	0	2576	4917	4917	14148
Note: These v	alues a	re calcu	lated by	y multiply	ing the	totals b	y the ap	propria	te expans	ion facto	or.			1.39					
AVG 12Hr	0	3275	1	3276	0	5955	0	5955	9231	0	0	0	0	2341	0	2576	4917	4917	14148
Note: These v	olumes	are calc	culated	by multip	olying t	he Equiv	alent 1	2 hr. tota	als by the	AADT f	actor.			1.00					
AVG 24Hr	0	4290	1	4291	0	7801	0	7801	12092	0	0	0	0	3067	0	3375	6442	6442	18534
Note: These v	olumes	are calc	culated	by multip	olying t	he Avera	age Dail	y 12 hr.	totals by	12 to 24	expans	sion fac	tor.	1.31					

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

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Turning Movement Count - Study Results

HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Survey Date: Wednesday, December 06, 2017 WO No: 37364

Start Time: 07:00 Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, December 06, Total Observed U-Turns AADT Factor

2017

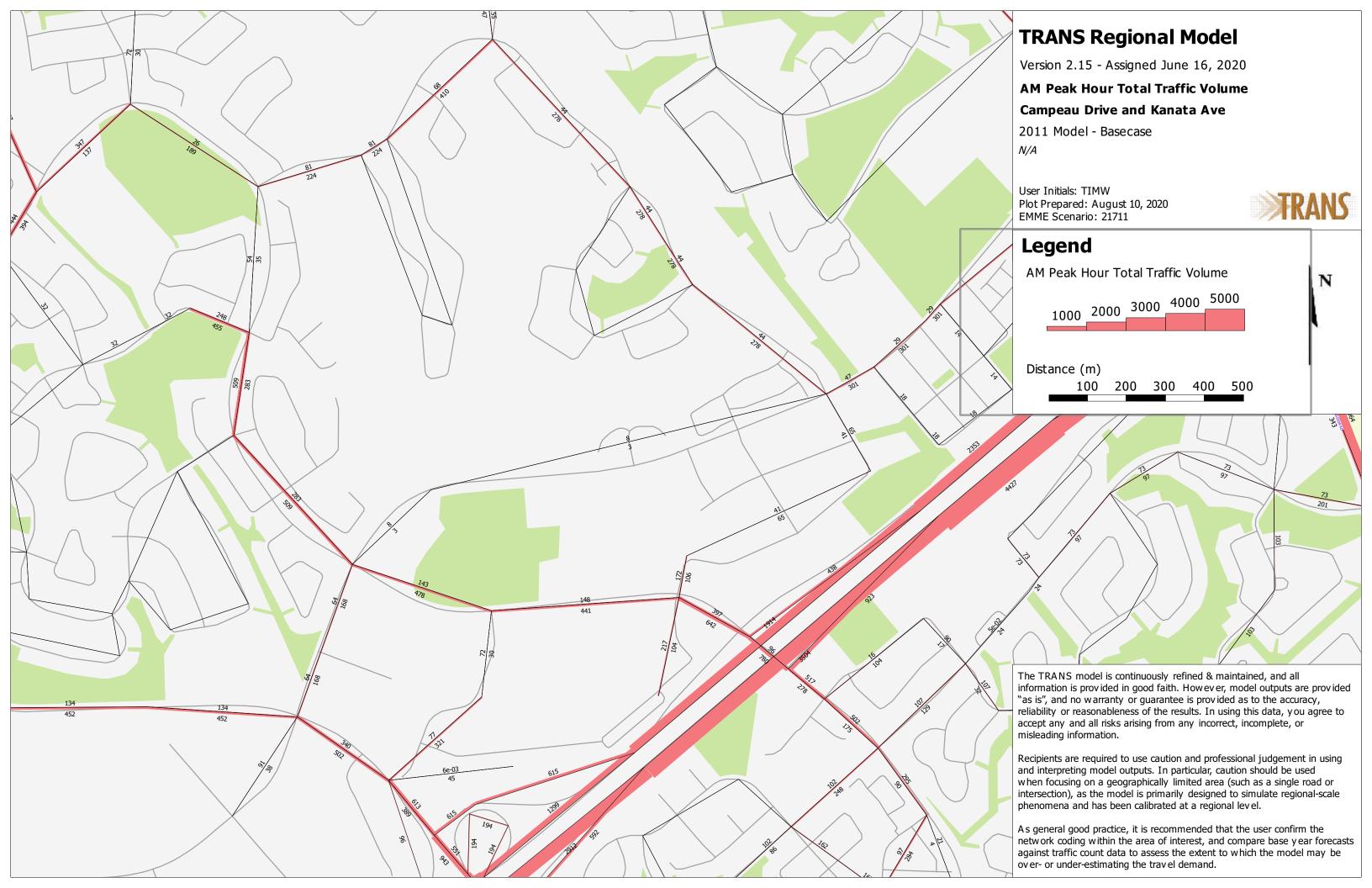
Northbound: 0 Southbound: 0

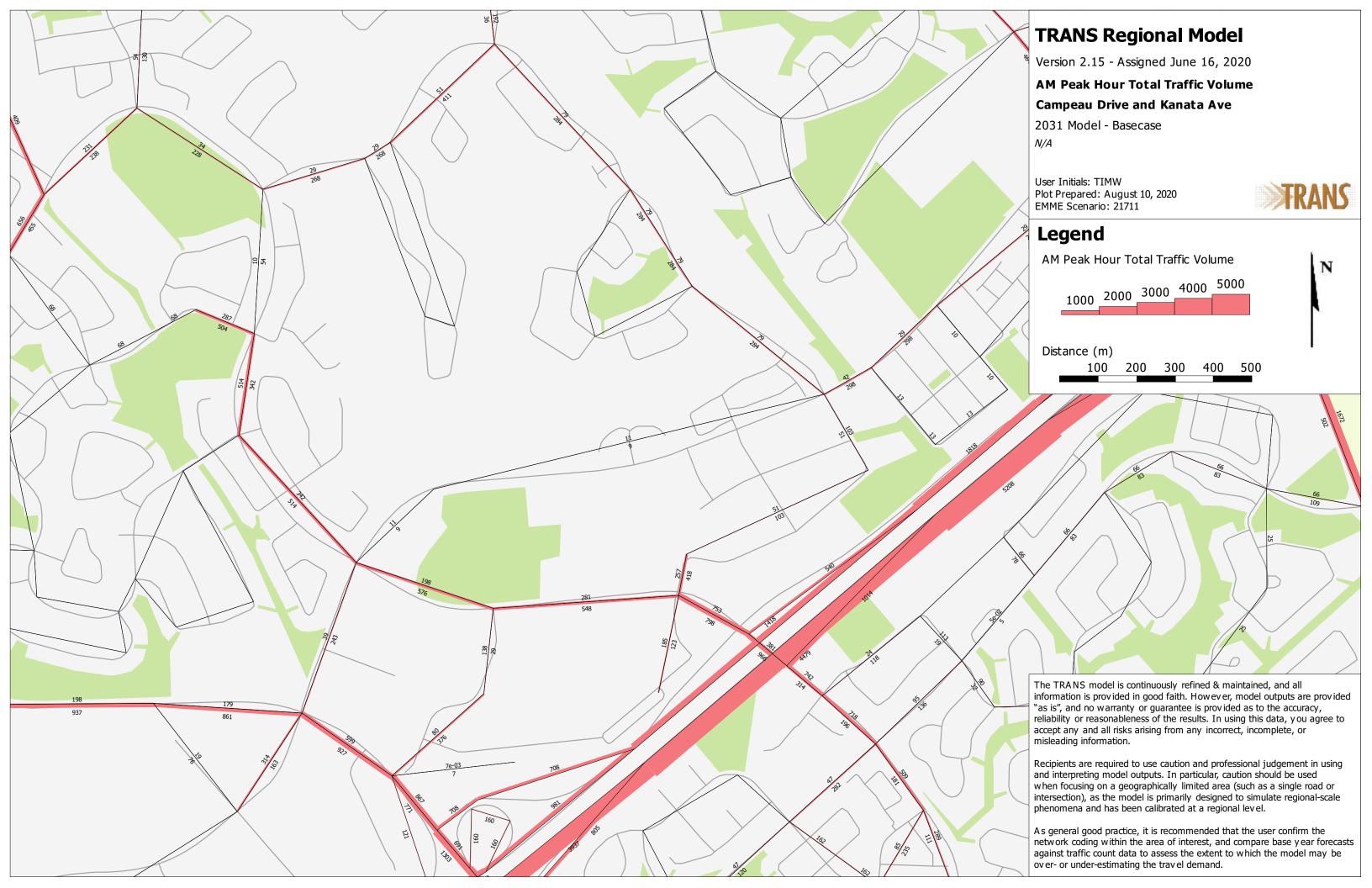
Eastbound: 0 Westbound: 0 1.00

			KAN	A ATA	VE					H	HWY 4	17 C	ASTLE	FR IC	139R6	31			
	No	rthbou	nd		So	uthbou	ınd			Ea	astbou	nd		W	estbo'	und			
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	Grand Total
07:00 08:00	0	149	0	149	0	642	0	642	791	0	0	0	0	170	0	153	323	323	1114
08:00 09:00	0	310	0	310	0	620	0	620	930	0	0	0	0	203	0	186	389	389	1319
09:00 10:00	0	272	0	272	0	577	0	577	849	0	0	0	0	162	0	206	368	368	1217
11:30 12:30	0	397	0	397	0	610	0	610	1007	0	0	0	0	188	0	399	587	587	1594
12:30 13:30	0	387	0	387	0	663	0	663	1050	0	0	0	0	206	0	329	535	535	1585
15:00 16:00	0	405	0	405	0	645	0	645	1050	0	0	0	0	495	0	569	1064	1064	2114
16:00 17:00	0	423	0	423	0	708	0	708	1131	0	0	0	0	422	0	475	897	897	2028
17:00 18:00	0	556	0	556	0	810	0	810	1366	0	0	0	0	409	0	526	935	935	2301
Sub Total	0	2899	0	2899	0	5275	0	5275	8174	0	0	0	0	2255	0	2843	5098	5098	13272
U Turns				0				0	0				0				0	0	0
Total	0	2899	0	2899	0	5275	0	5275	8174	0	0	0	0	2255	0	2843	5098	5098	13272
EQ 12Hr	0	4030	0	4030	0	7332	0	7332	11362	0	0	0	0	3134	0	3952	7086	7086	18448
Note: These v	alues a	re calcul	lated by	/ multiply	ing the	totals b	y the ap	propriat	te expansi	ion facto	or.			1.39					
AVG 12Hr	0	3798	0	3798	0	6910	0	6910	11362	0	0	0	0	2954	0	3724	6678	7086	18448
Note: These v	olumes	are calc	culated	by multip	olying t	he Equiv	alent 12	2 hr. tota	als by the	AADT fa	actor.			1					
AVG 24Hr	0	4975	0	4975	0	9052	0	9052	14027	0	0	0	0	3870	0	4879	8749	8749	22776
Note: These v	olumes	are calc	culated	by multip	olying t	he Avera	ige Dail	y 12 hr.	totals by	12 to 24	expans	sion fac	tor.	1.31					

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

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Traffic Signal Timing

City of Ottawa, Transportation Services Department

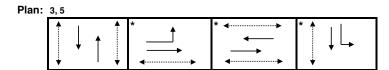
Traffic Signal Operations Unit

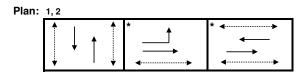
Intersection:	Main:	Castlefrank	Side:	Katimavik
Controller:	MS 320	0	TSD:	5995
Author:	Matthey	v Anderson	Date:	16-Oct-2020

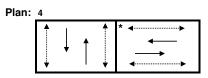
Existing Timing Plans[†]

	Plan					Ped Min	imum T	ime
	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	90	75	90	60	85			
Offset	25	19	25	Х	12			
NB Thru	40	33	35	30	32	7	16	3.3+2.9
SB Thru	40	33	47	30	43	7	16	3.3+2.9
EB Left	12	12	12	-	12	-	-	3.3+3.4
EB Thru	50	42	43	30	42	7	16	3.3+3.4
WB Thru	38	30	31	30	30	7	16	3.3+3.4
SB Left	-	-	12	-	11	-	-	3.3+2.9

Phasing Sequence[‡]







Note: 1) For plan 4, if the EB pedestrian phase is not acuated, the EB movement will force off after 13s

Schedule

Weekday	
Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
19:00	2
23:00	4

	Saturda	y
ı	Time	Plan
	0:10	4
_	9:00	5
Ī	22:30	4

Sunday	
Time	Plan
0:10	4
8:00	5
22:30	4

Notes

Asterisk (*) Indicates actuated phase (fp): Fully Protected Left Turn

Cost is \$58.78 (\$52.02 + HST)

^{†:} Time for each direction includes amber and all red intervals

^{‡:} Start of first phase should be used as reference point for offset

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection:	Main:	Campeau	Side:	Knudson / Maritime		
Controller:	MS 3200		TSD:	6548		
Author:	Matthew	Matthew Anderson		16-Oct-2020		

Existing Timing Plans[†]

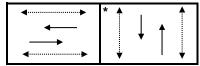
Plan

Ped Minimum Time

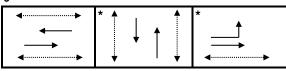
	AM Peak	Off Peak	PM Peak	Night 4	Walk	DW	A+R
Cycle	80	60	90	60			
Offset	0	0	0	Х			
EB Thru	45	35	66	max=45.7	7	15	3.7+2.0
WB Thru	45	35	51	max=45.7	7	15	3.7+2.0
NB Thru	35	25	24	max=26	7	10	3.0+3.0
SB Thru	35	25	24	max=26	7	10	3.0+3.0
EB Left	-	-	15	-	-	-	3.7+2.0

Phasing Sequence[‡]

Plan: 1, 2, & 4



Plan: 3



Schedule

Weekday

Time	Plan
0:10	4
6:30	2
7:00	1
9:30	2
15:30	3
18:00	2
20:00	4

Weekend

Time	Plan
0:10	4
10:00	2
19:00	4

notes

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

∢..... Pedestrian signal

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection: 417 WB Ramp Main: Kanata Side:

Controller: TSD: MS 3200 6556

Author: Date: 16-Oct-2020 Matthew Anderson

Existing Timing Plans[†]

Plan

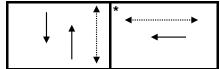
Ped Minimum Time

	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	90	75	90	60	85			
Offset	35	15	32	Х	19			
NB Thru	53	38	45	35	45	7	15	3.3+2.8
SB Thru	53	38	45	35	45	-	-	3.3+2.8
WB Thru	37	37	45	25	40	7	11	3.3+1.7

Phasing Sequence[‡]

Plan: All





Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
19:00	2
23:00	4

Saturday

Time	Plan
0:10	4
9:00	5
22:30	4

Sunday

Time	Plan
0:15	4
8:00	5
22:00	4

Notes

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn Pedestrian signal

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection: Main: Kanata Side: 417 EB Ramp

Controller: ATC 3 TSD: 6557

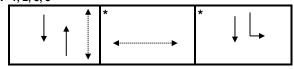
Author: Matthew Anderson Date: 16-Oct-2020

Existing Timing Plans[†]

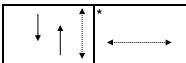
Plan **Ped Minimum Time** AM Peak Walk DW Off Peak PM Peak Night Weekend 90 75 60 85 Cycle 90 27 27 Χ 19 Offset 42 NB Thru 50 35 45 3.3+2.4 3.3+2.4 SB Thru 62 47 62 32 57 EW Ped 28 28 28 28 15 3.0+2.0 SB Left 12 12 12 12 3.3+2.4

Phasing Sequence[‡]





Plan: 4



Schedule

Weekday

ooaa,				
Time	Plan			
0:15	4			
6:30	1			
9:30	2			
15:00	3			
19:00	2			
23:00	4			

Saturday

Time	Plan
0:10	4
9:00	5
22:30	4

Sunday

Time	Plan
0:15	4
8:00	5
22:00	4

Notes

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

Cost is \$58.78 (\$52.02 + HST)

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection:Main:Kanata / Castlefrankside:AirdController:MS 3200TSD:6582Author:Matthew AndersonDate:16-Oct-2020

Existing Timing Plans[†]

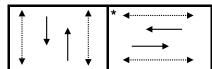
Plan

Ped Minimum Time

	AM Peak	Off Peak	PM Peak	Night	Weekend	Walk	DW	A+R
	1	2	3	4	5			
Cycle	90	75	90	60	85			
Offset	17	11	10	Х	84			
NB Thru	60	45	60	30	55	7	12	3.3+2.4
SB Thru	60	45	60	30	55	7	12	3.3+2.4
EB Thru	30	30	30	30	30	7	15	3.0+3.2
WB Thru	30	30	30	30	30	7	15	3.0+3.2

Phasing Sequence[‡]

Plan: All



Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
19:00	2
23:00	4

Saturday

Time	Plan
0:10	4
9:00	5
22:30	4

Sunday

Time	Plan
0:10	4
8:00	5
22:30	4

Notes

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

^{†:} Time for each direction includes amber and all red intervals

^{‡:} Start of first phase should be used as reference point for offset

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

Intersection: Main: Kanata Side: Lord Byng / Maritime Way

Controller: MS-3200 TSD: 6593

Author: Matthew Anderson Date: 16-Oct-2020

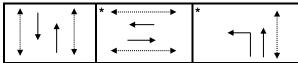
Existing Timing Plans[†]

Plan **Ped Minimum Time** Walk DW Off Peak A+R AM Peak PM Peak Night Weekend 2 4 5 Cycle 90 75 65 85 Offset 40 14 31 Χ 9 3.3+3.0 NB Thru 37 56 20 SB Thru 7 47 37 41 3.3+3.0 48 34 20 EB Thru 28 28 28 28 29 7 15 3.0+3.3 WB Thru 28 28 28 28 29 7 15 3.0+3.3 NB Left 13 15 15 3.3+3.0

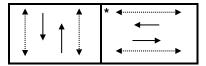
Note: Kanata is considered the NS movement

Phasing Sequence[‡]

Plan: 1,2,3



Plan: 4



Schedule

Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
19:00	2
23:00	4

Saturday

Time	Plan
0:10	4
9:00	5
22:30	4

Sunday

Time	Plan
0:10	4
8:00	5
22:30	4

Notes

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

← Pedestrian signal

Cost is \$58.78 (\$52.02 + HST)

^{†:} Time for each direction includes amber and all red intervals

^{‡:} Start of first phase should be used as reference point for offset

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

 Intersection:
 Main: Kanata
 Side:
 Earl Grey

 Controller:
 ATC-3
 TSD:
 6658

 Author:
 Matthew Anderson
 Date:
 16-Oct-20

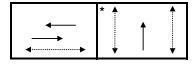
Existing Timing Plans[†]

Plan Ped Minimum Time

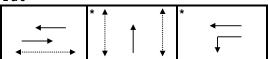
	AM Peak	Off Peak	PM Peak	Night	Walk	DW	A+R
	1	2	3	9			
Cycle	55	80	100	Free			
Offset	0	0	0	Х			
EB Thru	30	55	70	max=56.4	7	16	3.3+3.1
WB Thru	30	43	58	max=56.4	7	16	3.3+3.1
NB Thru	25	25	30	max=40.9	7	12	3.3+2.6
WB Left	-	12	12	-	-	-	3.3+2.5

Phasing Sequence[‡]

Plans: 1 & 9



Plans: 2 & 3



Schedule

Weekday

Time	Plan
0:15	9
6:30	1
9:30	2
15:00	3
18:30	2
22:00	9

Weekend

Time	Plan
0:15	9
8:30	2
22:30	9

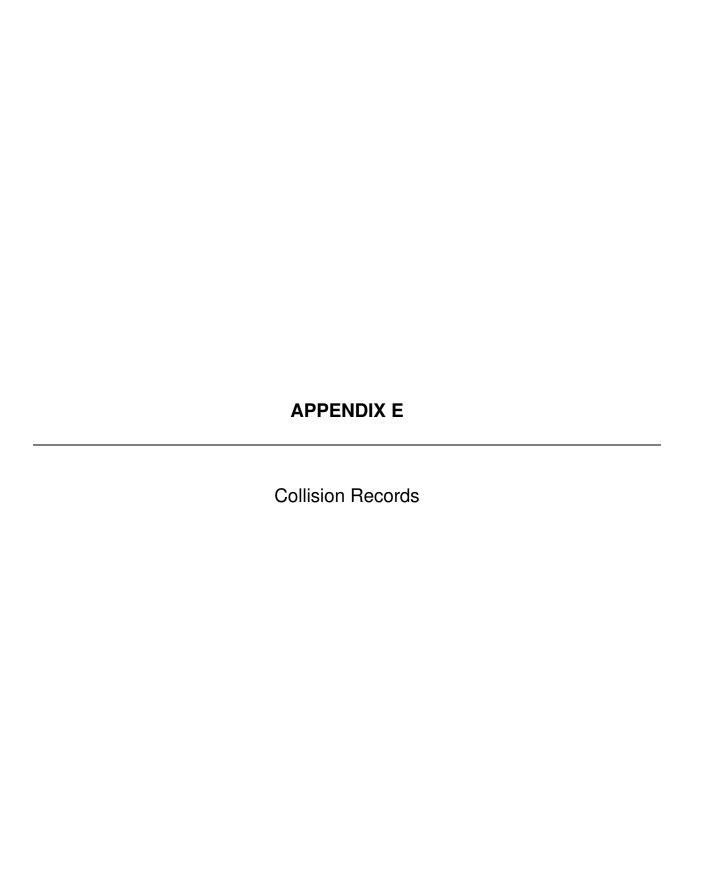
Notes

Asterisk (*) Indicates actuated phase

Cost is \$58.78 (\$52.02 + HST)

^{†:} Time for each direction includes amber and all red intervals

^{‡:} Start of first phase should be used as reference point for offset





Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: CASTLEFRANK RD @ KATIMAVIK RD

Traffic Control: Traffic signal Total Collisions: 29

Trainic Control. Tra	ino oignai						Total Comstons	20	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2014-Mar-06, Thu,11:24	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Passenger van	Other motor vehicle	
2014-Jun-03, Tue,10:00	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2014-Jul-10, Thu,06:49	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Aug-02, Sat,18:57	Clear	Rear end	P.D. only	Dry	East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Sep-10, Wed,12:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2015-Jan-04, Sun,10:07	Drifting Snow	Angle	P.D. only	Ice	South	Slowing or stoppin	g Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-Feb-13, Fri,15:35	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	
2015-Sep-10, Thu,15:55	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	
2015-Sep-24, Thu,08:20	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Pedestrian	1
2015-Sep-29, Tue,18:11	Rain	SMV other	Non-fatal injury	Wet	North	Slowing or stoppin	g Motorcycle	Skidding/sliding	0
2015-Oct-21, Wed,07:59	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2015-Oct-28, Wed,12:24	Rain	Angle	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	

September 04, 2020 Page 1 of 6



Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: CASTLEFRANK RD @ KATIMAVIK RD

Traffic Control: Traffic signal Total Collisions: 29

Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
Clear	Turning movement	Non-fatal injury	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
				East	Turning left	Automobile, station wagon	Other motor vehicle	
Clear	Angle	P.D. only	Slush	North	Going ahead	Pick-up truck	Other motor vehicle	0
				West	Going ahead	Truck - closed	Other motor vehicle	
Drifting Snow	Angle	P.D. only	Packed snow	North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
				East	Going ahead	Pick-up truck	Other motor vehicle	
Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
				South	Turning left	Automobile, station wagon	Other motor vehicle	
Rain	Rear end	P.D. only	Wet	East	Going ahead	Passenger van	Other motor vehicle	0
				East	Stopped	Passenger van	Other motor vehicle	
Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
				South	Going ahead	Passenger van	Other motor vehicle	
Clear	Angle	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
				North	Going ahead	Passenger van	Other motor vehicle	
Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
				North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
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	
Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
	Clear Clear Drifting Snow Clear Rain Clear Clear Clear Clear	Clear Turning movement Clear Angle Drifting Snow Angle Clear Sideswipe Rain Rear end Clear Angle Clear Angle Clear Angle Clear Turning movement Clear Turning movement	Clear Turning movement Non-fatal injury Clear Angle P.D. only Drifting Snow Angle P.D. only Clear Sideswipe P.D. only Rain Rear end P.D. only Clear Angle Non-fatal injury Clear Angle P.D. only Clear Angle P.D. only Turning movement P.D. only	Clear Turning movement Non-fatal injury Wet Clear Angle P.D. only Slush Drifting Snow Angle P.D. only Packed snow Clear Sideswipe P.D. only Dry Rain Rear end P.D. only Wet Clear Angle Non-fatal injury Dry Clear Angle P.D. only Dry Clear Rear end P.D. only Dry Rain Turning movement P.D. only Wet	Clear Turning movement Non-fatal injury Wet West East Clear Angle P.D. only Slush North West Drifting Snow Angle P.D. only Packed snow East Clear Sideswipe P.D. only Dry South South Rain Rear end P.D. only Wet East Clear Angle Non-fatal injury Dry West Clear Angle P.D. only Dry West Clear Angle P.D. only Dry West South Clear Angle P.D. only Dry West North Clear Rear end P.D. only Dry North North Rain Turning movement P.D. only Wet South North	Clear Turning movement Non-fatal injury Wet West Turning right East Turning left Clear Angle P.D. only Slush North Going ahead West Going ahead Drifting Snow Angle P.D. only Packed snow East Going ahead Clear Sideswipe P.D. only Dry South Changing lanes South Turning left Rain Rear end P.D. only Wet East Going ahead Clear Angle Non-fatal injury Dry West Going ahead Clear Angle P.D. only Dry West Going ahead Clear Angle P.D. only Dry West Going ahead Clear Rear end P.D. only Dry West Going ahead Clear Rear end P.D. only Dry West Going ahead Clear Angle P.D. only Dry West Going ahead Clear Angle P.D. only Dry West Going ahead Clear Rear end P.D. only Dry West Going ahead Clear Rear end P.D. only Dry North Slowing or stoppin North Slowing or stoppin	Clear Turning movement Non-fatal injury Wet East Going ahead Pick-up truck Clear Angle P.D. only Dry South Turning left Automobile, station wagon Rain Rear end P.D. only Dry West Going ahead Pick-up truck Clear Angle P.D. only Dry West Going ahead Pick-up truck South Turning left Automobile, station wagon West Going ahead Pick-up truck Clear Sideswipe P.D. only Dry South Changing lanes Automobile, station wagon Rain Rear end P.D. only Wet East Going ahead Passenger van Clear Angle Non-fatal injury Dry West Going ahead Passenger van Clear Angle P.D. only Dry West Going ahead Passenger van Clear Rear end P.D. only Dry West Rear end Passenger van Clear Rear end P.D. only Dry West Rear end Passenger van Clear Rear end P.D. only Dry Rear end Pick-up truck Clear Rear end P.D. only Dry Rear end Pick-up truck Clear Rear end P.D. only Rear end Pick-up truck Clear Rear end	Clear Turning movement Non-fatal injury Wet West Turning right Automobile, station wagon Other motor vehicle East Turning left Automobile, station wagon Other motor vehicle Other motor vehicle Other motor vehicle Other motor vehicle West Going ahead Pick-up truck Other motor vehicle South Changing lanes Automobile, station wagon Other motor vehicle Other Morth Slowing or stopping Automobile, station wagon Other motor vehicle Other Morth Other Morth Other Motor vehicle Other Motor Vehicle Other Motor Vehicle Other

September 04, 2020 Page 2 of 6



Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: CASTLEFRANK RD @ KATIMAVIK RD

Traffic Control: Traffic signal Total Collisions: 29

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2017-Dec-18, Mon,09:34	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stoppin	ng Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stoppin	ng Automobile, station wagon	Other motor vehicle	
					North	Slowing or stoppin	ng Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-09, Fri,19:47	Clear	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-22, Tue,15:52	Rain	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-02, Mon,08:20	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-24, Fri,17:11	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stoppin	ng Automobile, station wagon	Other motor vehicle	
					South	Slowing or stoppin	ng Automobile, station wagon	Other motor vehicle	
2018-Oct-27, Sat,23:17	Snow	Sideswipe	Non-fatal injury	Slush	South	Overtaking	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-29, Mon,15:36	Rain	Turning movement	Non-fatal injury	Wet	North	Turning left	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: KANATA AVE @ EARL GREY DR

Traffic Control: Traffic signal Total Collisions: 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2014-Jan-03, Fri,08:22	Snow	SMV other	Non-fatal injury	Ice	South	Going ahead	Pick-up truck	Pole (utility, power)	0
2014-Feb-10, Mon,14:40	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	g 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, 2014 **To:** December 31, 2018

Location: KANATA AVE @ EARL GREY DR

Traffic Control: Traffic signal Total Collisions: 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2014-Sep-06, Sat,11:48	Rain	Rear end	P.D. only	Wet	East	Slowing or stoppin	g Passenger van	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jan-28, Wed,17:53	Clear	Rear end	P.D. only	Dry	South	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Jun-15, Mon,19:45	Rain	Rear end	P.D. only	Wet	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Mar-22, Tue,18:45	Rain	Rear end	P.D. only	Wet	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	
2016-Aug-12, Fri,16:08	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	
2016-Nov-25, Fri,16:40	Rain	Turning movement	P.D. only	Wet	North	Turning left	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-17, Sat,11:46	Snow	Rear end	P.D. only	Ice	North	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-12, Thu,16:50	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-20, Thu,13:07	Clear	Rear end	P.D. only	Dry	East	Slowing or stoppin	g Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Location: KANATA AVE/CASTLEFRANK RD @ AIRD PL

Traffic Control: Traffic signal Total Collisions: 15

Date/Day/Time	Environment	Impact Type	Classification	Surface	Veh. Dir Vehicle Manoeuver Vehicle type	First Event	No. Ped
Date/Day/Tille	Environment		Classification	Ouriacc	ven. Dii venicie Manocuvei venicie type	I II St L VOIIL	INO. I Cu
				Cond'n			

September 04, 2020 Page 4 of 6



Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: KANATA AVE/CASTLEFRANK RD @ AIRD PL

Traffic Control: Traffic signal Total Collisions: 15

Trainic Control. Tra	ino oignai						Total Combionor	10	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2014-Jan-03, Fri,12:38	Clear	Rear end	P.D. only	Ice	South	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2014-May-12, Mon,10:53	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Municipal transit bus	Other motor vehicle	
2014-Jul-03, Thu,17:23	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2014-Jul-28, Mon,14:06	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2014-Oct-04, Sat,16:30	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Oct-20, Mon,18:46	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-03, Mon,11:47	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Nov-23, Mon,10:06	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-21, Thu,13:09	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: KANATA AVE/CASTLEFRANK RD @ AIRD PL

Traffic Control: Traffic signal Total Collisions: 15

Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Dir Vehicle Manoeuver Vehicle type		First Event	No. Ped
Clear	Rear end	P.D. only	Dry	North	Slowing or stopping Automobile, station wage		Other motor vehicle	0
				North	Stopped	Pick-up truck	Other motor vehicle	
Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
				South	Stopped	Automobile, station wagon	Other motor vehicle	
Rain	Rear end	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
				South	Stopped	Automobile, station wagon	Other motor vehicle	
Clear	Rear end	P.D. only	Dry	South	Going ahead	Delivery van	Other motor vehicle	0
				South	Stopped	Automobile, station wagon	Other motor vehicle	
Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
				North	Stopped	Automobile, station wagon	Other motor vehicle	
Clear	Rear end	P.D. only	Dry	South	Changing lanes	Passenger van	Other motor vehicle	0
				South	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
	Clear Rain Clear Clear	Clear Rear end Clear Rear end Rain Rear end Clear Rear end Clear Rear end Clear Rear end	Clear Rear end P.D. only Clear Rear end P.D. only Rain Rear end P.D. only Clear Rear end P.D. only Clear Rear end P.D. only Clear Rear end P.D. only	Clear Rear end P.D. only Dry Clear Rear end P.D. only Dry Rain Rear end P.D. only Ice Clear Rear end P.D. only Dry Clear Rear end P.D. only Dry Clear Rear end P.D. only Dry	Clear Rear end P.D. only Dry North North Clear Rear end P.D. only Dry South South Rain Rear end P.D. only Ice South South Clear Rear end P.D. only Dry South South Clear Rear end P.D. only Dry South South Clear Rear end P.D. only Dry North North Clear Rear end P.D. only Dry South South	Clear Rear end P.D. only Dry North Slowing or stoppin North Stopped Clear Rear end P.D. only Dry South Slowing or stoppin South Stopped Rain Rear end P.D. only Ice South Going ahead South Stopped Clear Rear end P.D. only Dry South Going ahead South Stopped Clear Rear end P.D. only Dry South Going ahead South Stopped Clear Rear end P.D. only Dry North Going ahead North Stopped Clear Rear end P.D. only Dry South Changing lanes	Clear Rear end P.D. only Dry North Stopped Pick-up truck Clear Rear end P.D. only Dry South Stopped Automobile, station wagon North Stopped Pick-up truck Clear Rear end P.D. only Dry South Stopped Automobile, station wagon Rain Rear end P.D. only Ice South Stopped Automobile, station wagon Clear Rear end P.D. only Dry South Going ahead Delivery van South Stopped Automobile, station wagon North Stopped Automobile, station wagon North Stopped Automobile, station wagon North Stopped Automobile, station wagon Clear Rear end P.D. only Dry South Changing lanes Passenger van	Clear Rear end P.D. only Dry North Stopped Pick-up truck Other motor vehicle Clear Rear end P.D. only Dry South Stopped Automobile, station wagon Other motor vehicle Clear Rear end P.D. only Dry South Going ahead Delivery van Other motor vehicle South Stopped Automobile, station wagon Other motor vehicle South Stopped Automobile, station wagon Other motor vehicle South Stopped Automobile, station wagon Other motor vehicle Automobile, station wagon Other motor vehicle Clear Rear end P.D. only Dry North Going ahead Automobile, station wagon Other motor vehicle North Stopped Automobile, station wagon Other motor vehicle Clear Rear end P.D. only Dry South Changing lanes Passenger van Other motor vehicle

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: CAMPEAU DR @ KNUDSON DR

Traffic Control: Traffic signal Total Collisions: 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	ir Vehicle Manoeuver Vehicle type		First Event	No. Ped
2015-Mar-04, Wed,16:39	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	g Automobile, station wagon	Skidding/sliding	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2015-Dec-02, Wed,15:14	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2016-Jun-08, Wed,21:47	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2017-Apr-27, Thu,08:36	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Cyclist	
2017-Jul-21, Fri,14:23	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Delivery van	Other motor vehicle	
2018-Aug-23, Thu,12:17	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Debris on road	0

Location: HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Traffic Control: Traffic signal Total Collisions: 38

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

August 28, 2020 Page 1 of 9



Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Traffic Control: Traffic signal Total Collisions: 38

Trainic Control. Ha	ilic signal				Total Collisions. 30						
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped		
2014-Jan-30, Thu,13:37	Clear	Angle	P.D. only	Packed snow	West	Turning left	Automobile, station wagon	Other motor vehicle	0		
					North	Going ahead	Automobile, station wagon	Other motor vehicle			
2014-Mar-04, Tue,16:35	Snow	Angle	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Other motor vehicle	0		
					West	Turning left	Passenger van	Other motor vehicle			
2014-Jun-29, Sun,16:31	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0		
					North	Going ahead	Pick-up truck	Other motor vehicle			
2014-Jul-28, Mon,13:38	Rain	SMV other	P.D. only	Wet	West	Going ahead	Passenger van	Curb	0		
2014-Aug-23, Sat,16:27	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0		
					West	Turning left	Pick-up truck	Other motor vehicle			
2014-Sep-19, Fri,10:02	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0		
					South	Going ahead	Pick-up truck	Other motor vehicle			
2015-Jan-21, Wed,08:26	Clear	Angle	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0		
					South	Going ahead	Automobile, station wagon	Other motor vehicle			
2015-Aug-17, Mon,07:29	Clear	Angle	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0		
					North	Going ahead	Municipal transit bus	Other motor vehicle			
2015-Sep-12, Sat,14:21	Rain	Rear end	P.D. only	Wet	North	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0		
					North	Stopped	Automobile, station wagon	Other motor vehicle			
2015-Nov-14, Sat,18:16	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0		
					West	Turning left	Pick-up truck	Other motor vehicle			
2016-Jan-21, Thu,08:17	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0		
					West	Turning left	Automobile, station wagon	Other motor vehicle			
2016-Feb-12, Fri,08:30	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Pick-up truck	Other motor vehicle	0		
					West	Stopped	Automobile, station wagon	Other motor vehicle			

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Traffic Control: Traffic signal Total Collisions: 38

Trainic Control. Trai	Total Collisions. State Collisions.									
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped	
2016-Mar-09, Wed,16:40	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		
2016-Jun-19, Sun,17:16	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0	
					West	Going ahead	Pick-up truck	Other motor vehicle		
2016-Jul-12, Tue,12:45	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		
2016-Aug-11, Thu,14:30	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					West	Turning left	Automobile, station wagon	Other motor vehicle		
2016-Dec-13, Tue,19:27	Clear	Rear end	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					North	Slowing or stopping	ng Automobile, station wagon	Other motor vehicle		
2016-Dec-14, Wed,15:45	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		
2017-Jan-29, Sun,16:12	Clear	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					South	Stopped	Automobile, station wagon	Other motor vehicle		
2017-Mar-17, Fri,21:15	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0	
					West	Turning left	Pick-up truck	Other motor vehicle		
2017-Apr-16, Sun,15:50	Rain	SMV other	P.D. only	Wet	West	Turning left	Automobile, station wagon	Building or wall	0	
2017-May-17, Wed,16:00	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	ng Automobile, station wagon	Other motor vehicle	0	
					North	Stopped	Automobile, station wagon	Other motor vehicle		
2017-Sep-08, Fri,10:42	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0	
					West	Turning left	Automobile, station wagon	Other motor vehicle		
2017-Sep-24, Sun,13:38	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					South	Turning left	Automobile, station wagon	Other motor vehicle		
2017-Nov-02, Thu,18:12	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Pick-up truck	Pole (utility, power)	0	

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Traffic Control: Traffic signal Total Collisions: 38

Trainic Control. Tra	ilic signal				Total Collisions. 30					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped	
2017-Dec-14, Thu,15:27	Clear	Angle	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle	0	
					West	Turning left	Automobile, station wagon	Other motor vehicle		
2018-Jan-06, Sat,15:30	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		
2018-Jan-31, Wed,07:54	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					West	Turning left	Automobile, station wagon	Other motor vehicle		
2018-Mar-17, Sat,12:09	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					West	Turning left	Automobile, station wagon	Other motor vehicle		
2018-Apr-04, Wed,17:44	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0	
					West	Turning right	Automobile, station wagon	Other motor vehicle		
2018-Apr-25, Wed,09:00	Rain	Angle	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0	
					South	Slowing or stoppin	g Municipal transit bus	Other motor vehicle		
2018-May-05, Sat,11:44	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					West	Turning left	Automobile, station wagon	Other motor vehicle		
2018-May-26, Sat,00:11	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0	
					North	Going ahead	Automobile, station wagon	Other motor vehicle		
2018-Jun-08, Fri,11:17	Clear	SMV other	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Pedestrian	1	
2018-Jul-23, Mon,17:29	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0	
					South	Stopped	Automobile, station wagon	Other motor vehicle		
2018-Jul-28, Sat,17:30	Clear	Rear end	P.D. only	Dry	West	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0	
					West	Stopped	Automobile, station wagon	Other motor vehicle		
2018-Nov-24, Sat,13:32	Clear	Rear end	P.D. only	Dry	North	Slowing or stoppin	g Passenger van	Other motor vehicle	0	
					North	Stopped	Automobile, station wagon	Other motor vehicle		

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: HWY 417 CASTLEFR IC139R61 @ KANATA AVE

Traffic Control: Traffic signal Total Collisions: 38

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2018-Dec-19, Wed,18:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	

Location: KANATA AVE @ HWY 417 CASTLEFR IC139R15

Traffic Control: Traffic signal Total Collisions: 10

Date/Day/Time	Environment	Impact Type	Classification	Surface	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
				Cond'n					
2014-Oct-21, Tue,13:06	Rain	Rear end	P.D. only	Wet	North	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-23, Sun,15:50	Clear	Turning movement	P.D. only	Dry	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-29, Sat,17:09	Rain	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Skidding/sliding	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-17, Sat,00:53	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-25, Fri,10:40	Clear	Angle	P.D. only	Slush	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2017-Oct-04, Wed,17:21	Rain	Rear end	P.D. only	Wet	South	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-06, Sat,20:23	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-23, Wed,15:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: KANATA AVE @ HWY 417 CASTLEFR IC139R15

Traffic Control: Traffic signal Total Collisions: 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2018-Oct-16, Tue,18:21	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-28, Sun,03:12	Rain	SMV other	P.D. only	Wet	Unknown	Going ahead	Automobile, station wagon	Ran off road	0

Location: KANATA RD @ LORD BYNG WAY/MARITIME WAY

Traffic Control: Traffic signal Total Collisions: 40

Date/Day/Time	Environment	Impact Type	Classification	Surface	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Pe
•		. ,,		Cond'n			,,		
2014-Jan-02, Thu,15:00	Clear	Rear end	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2014-Jan-07, Tue,14:59	Drifting Snow	Rear end	Non-fatal injury	Ice	North	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Jan-25, Sat,17:20	Drifting Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2014-May-16, Fri,07:10	Rain	Rear end	P.D. only	Wet	East	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Jun-24, Tue,12:27	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2014-Jul-30, Wed,18:35	Rain	Rear end	P.D. only	Wet	North	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Aug-05, Tue,08:28	Clear	Rear end	P.D. only	Dry	North	Slowing or stoppin	g Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2014-Aug-20, Wed,21:05	Rain	Rear end	P.D. only	Wet	South	Slowing or stoppin	g Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: KANATA RD @ LORD BYNG WAY/MARITIME WAY

Traffic Control: Traffic signal Total Collisions: 40

Trainic Control. Tra	illo olgilal						rotal comsions.	10	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2014-Dec-22, Mon,16:10	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Municipal transit bus	Other motor vehicle	
2015-Mar-21, Sat,21:53	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2015-Apr-06, Mon,13:58	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Apr-08, Wed,14:51	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	
2015-Jun-21, Sun,12:32	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-04, Tue,20:02	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Nov-13, Fri,17:29	Rain	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2016-Feb-19, Fri,11:45	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Feb-25, Thu,20:00	Freezing Rain	Sideswipe	P.D. only	Ice	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-25, Thu,21:40	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Sep-13, Tue,13:52	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Pole (sign, parking meter	r) 0
2016-Sep-22, Thu,09:19	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Pedestrian	1
2016-Oct-02, Sun,13:52	Rain	Angle	P.D. only	Wet	North	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: KANATA RD @ LORD BYNG WAY/MARITIME WAY

Traffic Control: Traffic signal Total Collisions: 40

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2016-Dec-14, Wed,18:33	Clear	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-Apr-13, Thu,15:32	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-07, Wed,10:58	Clear	Approaching	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-04, Fri,22:21	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	
2017-Aug-17, Thu,17:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-01, Fri,20:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Sep-04, Mon,17:52	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-16, Sat,17:33	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	g Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Oct-29, Sun,11:45	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-15, Wed,11:53	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2017-Dec-07, Thu,10:13	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Municipal transit bus	Other motor vehicle	

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Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: KANATA RD @ LORD BYNG WAY/MARITIME WAY

Traffic Control: Traffic signal Total Collisions: 40

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Pe
2018-Jan-05, Fri,11:45	Strong wind	Rear end	P.D. only	Ice	North	Going ahead	Pick-up truck	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-05, Fri,17:50	Drifting Snow	Rear end	P.D. only	Slush	South	Going ahead	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-03, Tue,17:00	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-11, Sat,15:32	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	g Automobile, station wagon	Other motor vehicle	
2018-Oct-20, Sat,14:53	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-14, Wed,00:02	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Nov-30, Fri,11:00	Clear	Other	P.D. only	Dry	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-15, Sat,14:44	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	

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Record	Location	х	Υ	Date	Time	Environment	Road_Surface	Traffic_Control	Collision_Location	Light	Collision_Classification	Impact_Type
5387	MARITIME WAY btwn CANADIAN SHIELD AVE & GREAT LAKES AVE	351863.7153	5019596.708	1/25/2014	12:56 0	5 - Drifting Snow	06 - Ice	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	07 - SMV other
8772	MARITIME WAY btwn CANADIAN SHIELD AVE & GREAT LAKES AVE	351863.7153	5019596.708	2/16/2015	6:06 0	L - Clear	06 - Ice	10 - No control	01 - Non intersection	07 - Dark	03 - P.D. only	07 - SMV other
9093	MARITIME WAY btwn CANADIAN SHIELD AVE & GREAT LAKES AVE	351863.7153	5019596.708	1/17/2015	2:08 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	07 - Dark	03 - P.D. only	07 - SMV other
9910	MARITIME WAY btwn CANADIAN SHIELD AVE & GREAT LAKES AVE	351862.588	5019595.75	1/4/2017	15:24 0	3 - Snow	05 - Packed snow	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle
10296	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351322.707	5019326.57	11/1/2014	13:20 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end
13010	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351323.5607	5019327.033	10/18/2014			02 - Wet	10 - No control	04 - At/near private drive	01 - Daylight	03 - P.D. only	02 - Angle
14293	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351197.7998	5019316.379			1 - Freezing Rain	04 - Slush	10 - No control	01 - Non intersection	07 - Dark	03 - P.D. only	03 - Rear end
4044	KANATA AVE btwn EARL GREY DR & MARITIME WAY	350964.7272	5019283.575	6/21/2015	17:17 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end
6919	KANATA AVE btwn EARL GREY DR & MARITIME WAY	350966.212	5019287.066	1/31/2015	14:20 0	L - Clear	06 - Ice	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end
13882	KANATA AVE btwn EARL GREY DR & MARITIME WAY	350965.6271	5019285.924	11/27/2015	16:14 0	2 - Rain	02 - Wet	10 - No control	01 - Non intersection	05 - Dusk	03 - P.D. only	03 - Rear end
8874	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351261.295	5019319.83	5/14/2017	11:45 0	2 - Rain	02 - Wet	10 - No control	04 - At/near private drive	01 - Daylight	03 - P.D. only	03 - Rear end
8875	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351222.528	5019312.66	9/1/2017	21:50 0	2 - Rain	02 - Wet	10 - No control	01 - Non intersection	07 - Dark	03 - P.D. only	03 - Rear end
8876	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351186.384	5019309.48	7/6/2017	7:38 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end
8877	KANATA AVE btwn EARL GREY DR & MARITIME WAY	351401.343	5019331.95	2/3/2017	11:20 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end
18-4253	KANATA AVE btwn EARL GREY DR & MARITIME WAY (3ZBPN5)	351027.673	5019292.45	5/4/2018	23:21 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	07 - Dark	02 - Non-fatal injury	03 - Rear end
9517	KANATA AVE btwn MARITIME WAY & HWY417 IC139 RAMP61	351467.172	5019324.465	8/25/2015			01 - Dry	10 - No control	01 - Non intersection		03 - P.D. only	03 - Rear end
8355	KANATA AVE btwn MARITIME WAY & HWY417 IC139 RAMP61	351609.1982	5019229.343	5/13/2016	18:09 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	02 - Non-fatal injury	03 - Rear end
9143	KANATA AVE btwn HWY417 IC139 RAMP61 & Continuation of KANATA AVE	351656.2998	5019192.177	1/27/2015	18:06 0	L - Clear	01 - Dry	10 - No control	07 - Overpass or bridge	07 - Dark	03 - P.D. only	03 - Rear end
790	KANATA AVE btwn HWY417 IC139 RAMP15 & AIRD PL	351722.7382	5019139.86	1/8/2014			03 - Loose snow	10 - No control	01 - Non intersection		02 - Non-fatal injury	03 - Rear end
1971	KANATA AVE btwn HWY417 IC139 RAMP15 & AIRD PL	351728.8929	5019133.642	7/22/2014			01 - Dry	10 - No control	01 - Non intersection		02 - Non-fatal injury	03 - Rear end
8354	KANATA AVE btwn HWY417 IC139 RAMP15 & AIRD PL	351751.8721	5019117.288	9/2/2016	11:17 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end
2858	CASTLEFRANK RD btwn KANATA AVE & KATIMAVIK RD	351925.8138	5018972.054	1/3/2014			06 - Ice	10 - No control	01 - Non intersection	, ,	03 - P.D. only	03 - Rear end
	CASTLEFRANK RD btwn KANATA AVE & KATIMAVIK RD	351899.2817	5018997.93	6/16/2015			01 - Dry	10 - No control	01 - Non intersection	, .	03 - P.D. only	03 - Rear end
3303	CASTLEFRANK RD btwn KANATA AVE & KATIMAVIK RD	351929.383	5018971.61	7/11/2017	8:25 0	L - Clear	01 - Dry	10 - No control	01 - Non intersection	01 - Daylight	03 - P.D. only	03 - Rear end

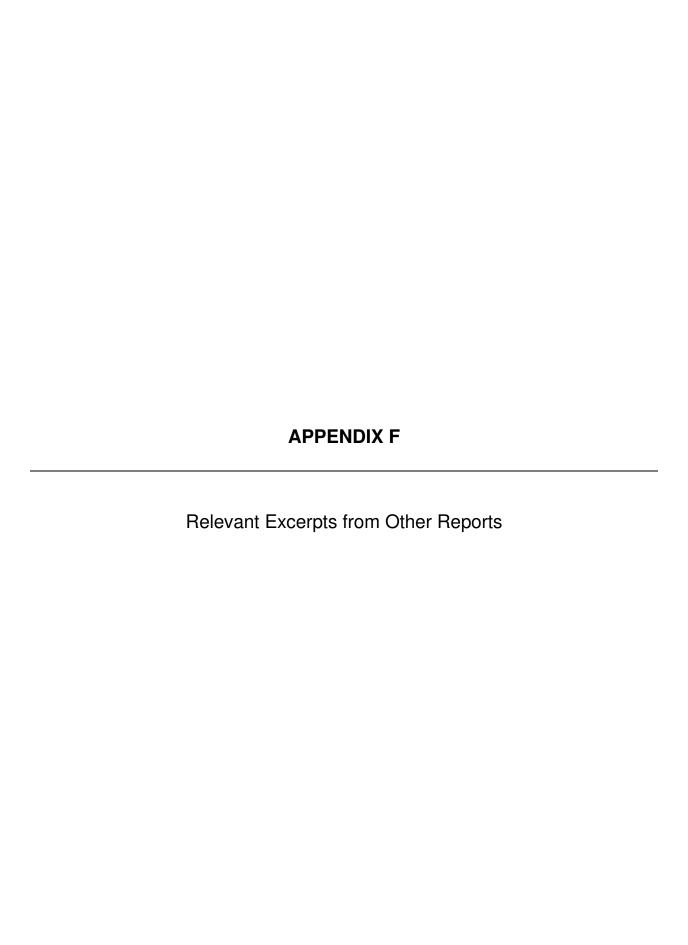


Figure 7: Site Generated Traffic Volumes

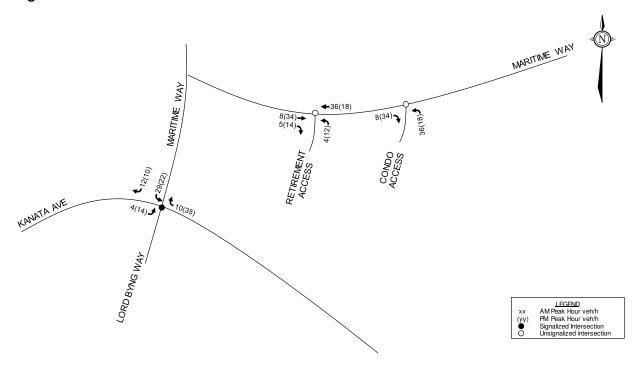
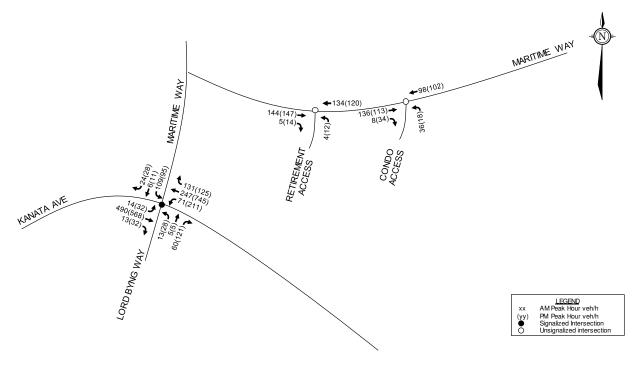


Figure 8: Total Traffic Volumes



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Figure 9: Projected Site-Generated Traffic

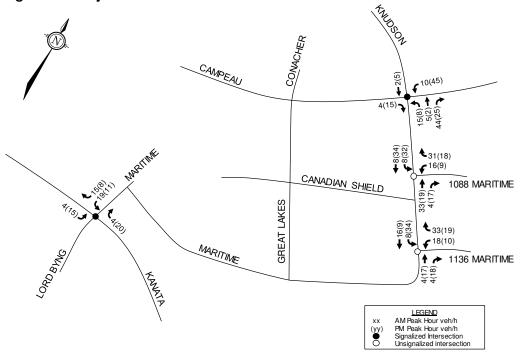
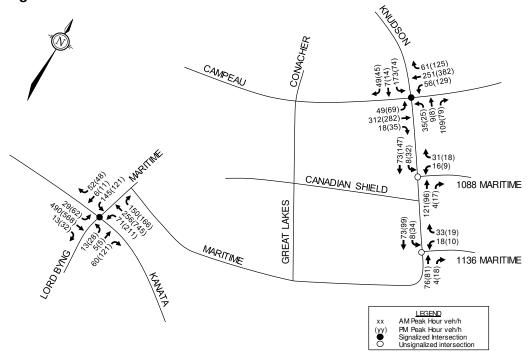
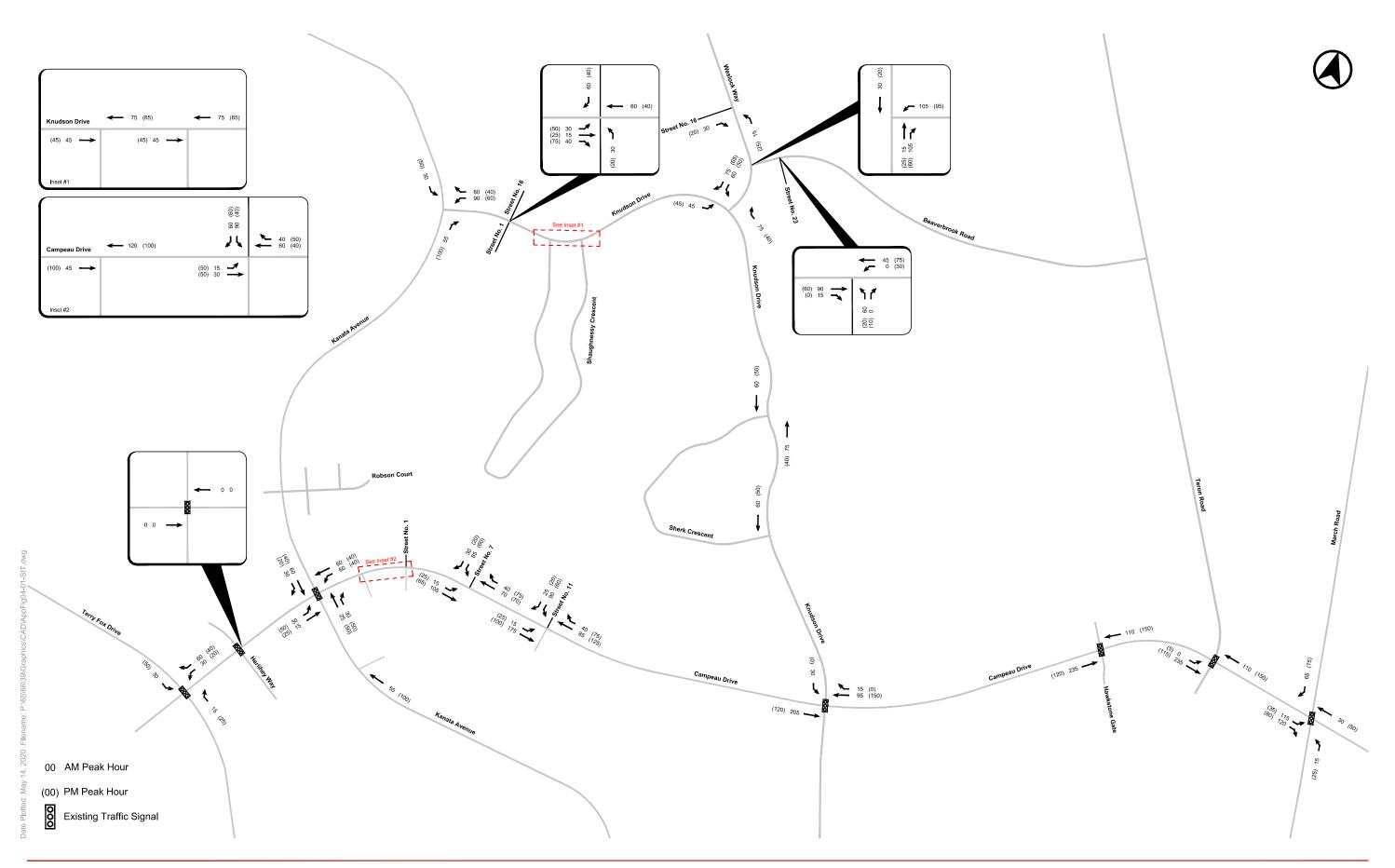


Figure 10: Total Traffic



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PARSONS

Figure 6: Percent Assignment

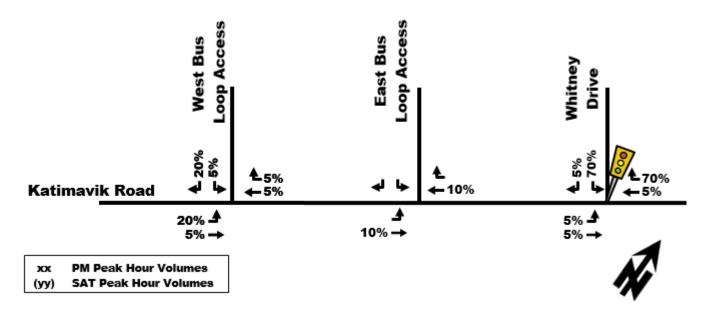
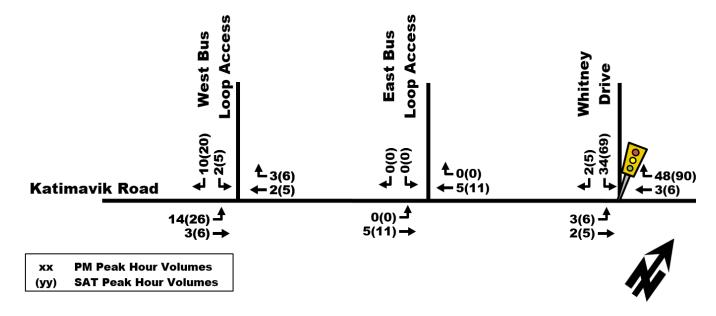


Figure 7: Site Generated Traffic Volumes



3.4. Future Background Projected Intersection Volumes

The future background traffic for the 2017 horizon year was projected by adding 1% background growth for 1 year to the through movements along Katimavik Road. The future background traffic for the 2022 horizon year was projected by adding 1% background growth for 6 years to the through movements along Katimavik Road. The future background traffic volumes for the 2017 and 2022 are illustrated in *Figure* 8 and *Figure* 9, respectively.

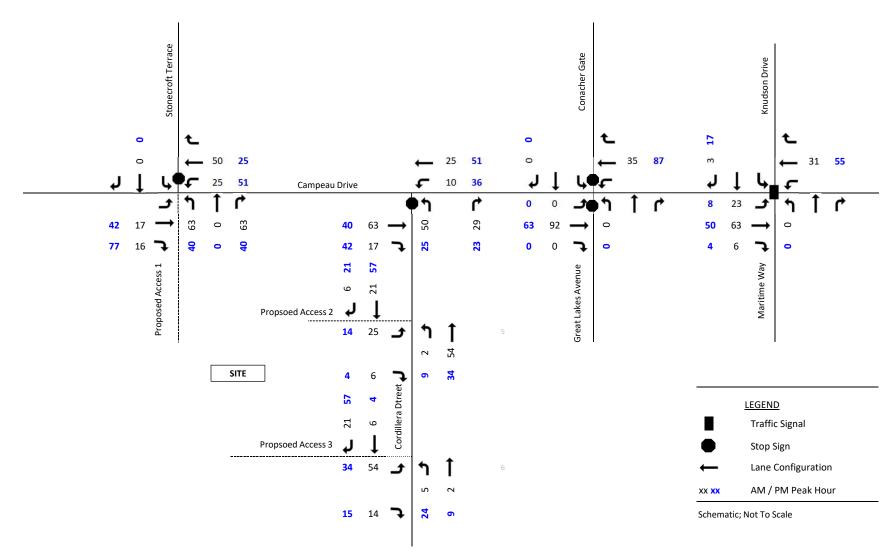


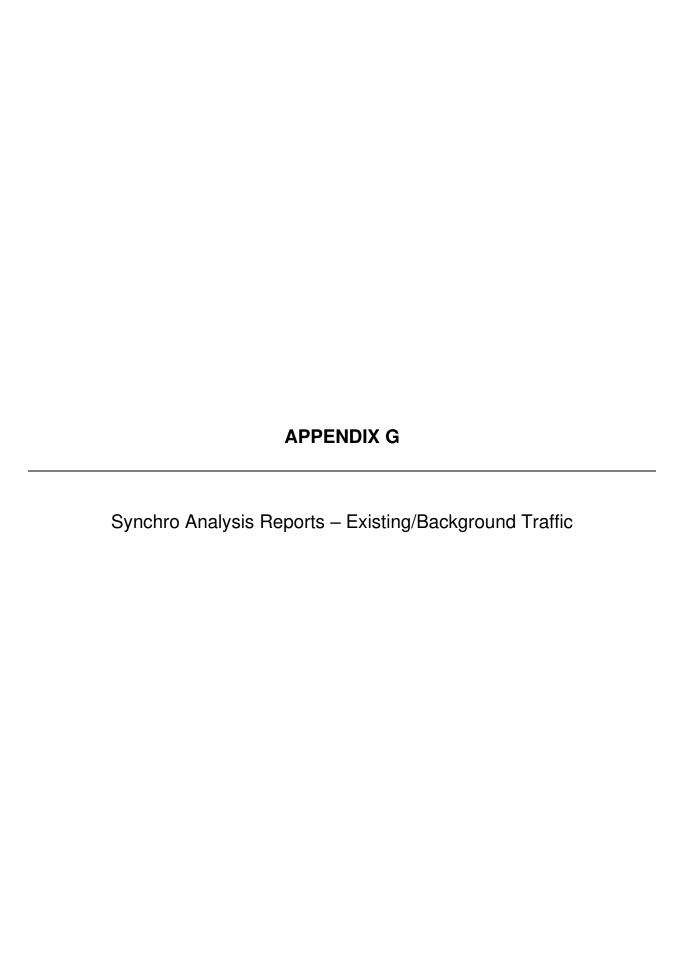
TRAFFIC IMPACT ASSESSMENT

Proposed Housing Development 6301 Campeau Drive, Kanata, ON



Figure 7: Site Traffic Assignment, Weekday AM and PM Peak Hours





	-	•	•	•	4	-
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations			VVBL		NBL	NDK 7
Traffic Volume (vph)	↑ 493	₹ 37	5 7	↑ 226	1 0	35
Future Volume (vph)	493	37	57 57	226	10	35
	1800		1800	1800	1800	1800
Ideal Flow (vphpl)	1800	1800		1800		
Storage Length (m)		55.0	110.0		30.0	0.0
Storage Lanes		1	100.0		1	T
Taper Length (m)	4.00	4.00	100.0	4.00	45.0	4.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.050	1.00			0.0=0
Frt		0.850	0.0==		0.0	0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1767	1394	1695	1670	1441	1459
Flt Permitted			0.438		0.950	
Satd. Flow (perm)	1767	1394	781	1670	1441	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		41				39
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)	20.1		1	55.5	J. <u>L</u>	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	11%	2%	9%	20%	6%
Adj. Flow (vph)	548	41	63	251	11	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	548	41	63	251	11	39
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane	7.5			7.0	7.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
	1.00	1.06	24	1.00	24	1.06
Turning Speed (k/h)				0		
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	6	6	8	8
Switch Phase	2		U	U	U	U
	40.0	10.0	10.0	10.0		F 0
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	30.0	30.0	29.4	29.4	24.9	24.9
Total Split (s)	30.0	30.0	30.0	30.0	25.0	25.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%
Maximum Green (s)	23.6	23.6	23.6	23.6	19.1	19.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	3.1	3.1	2.6	2.6
			Ų.,	J. 1	0	

	-	•	•	•	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10	10	10	10	10	10
Act Effct Green (s)	41.4	41.4	41.4	41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.15	0.15
v/c Ratio	0.41	0.04	0.11	0.20	0.05	0.15
Control Delay	8.0	3.1	6.8	6.0	16.9	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	3.1	6.8	6.0	16.9	7.5
LOS	A	J.1	0.0 A	0.0 A	10.3	7.5 A
Approach Delay	7.7	Α	٨	6.1	9.6	^
Approach LOS	7.7 A			0.1 A	9.6 A	
Queue Length 50th (m)	20.3	0.0	1.8	7.6	1.0	0.0
Queue Length 95th (m)	#76.0	4.1	1.0	29.6	3.3	4.7
		4.1	10.1		104.3	4.7
Internal Link Dist (m)	263.1	EE O	110.0	447.4		
Turn Bay Length (m)	1329	55.0	110.0	1056	30.0	532
Base Capacity (vph)		1059	587	1256	500	
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	*	-	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.04	0.11	0.20	0.02	0.07
Intersection Summary						
Area Type:	Other					
Cycle Length: 55						
Actuated Cycle Length: 55						
Offset: 0 (0%), Referenced to ph	nase 2:EBT and 6	6:WBTL, Sta	art of Green	1		
Natural Cycle: 55						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.41						
Intersection Signal Delay: 7.3				Int	ersection Lo	OS: A
Intersection Capacity Utilization	55.5%			IC	U Level of S	Service B
Analysis Period (min) 15						
# 95th percentile volume exce	eds capacity, que	eue may be	longer.			
Queue shown is maximum at		,				
	•					
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
▼ Ø2 (R)						
30 s						
_						
▼ Ø6 (R)						[™] Ø8
₩ Ø6 (R)						198

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1		*	1 ,		7	î,		*	ĵ.	
Traffic Volume (vph)	19	6	36	100	2	19	85	228	115	12	419	16
Future Volume (vph)	19	6	36	100	2	19	85	228	115	12	419	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			40.0			75.0			55.0		
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	1.00	0.98		0.99	0.98		1.00	0.99		1.00	1.00	
Frt	0.050	0.872		0.050	0.863		0.050	0.950		0.050	0.994	
Flt Protected	0.950	4040	^	0.950	4500	^	0.950	4045	^	0.950	4745	0
Satd. Flow (prot)	1262	1049	0	1616	1509	0	1417	1645	0	1478	1745	0
Flt Permitted	0.742	1010	٥	0.726	4500	٥	0.374	1015	٥	0.536	4745	0
Satd. Flow (perm)	984	1049	0	1228	1509	0	557	1645	0	833	1745	0
Right Turn on Red		40	Yes		21	Yes		53	Yes		3	Yes
Satd. Flow (RTOR) Link Speed (k/h)		50			50			50 50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	1	0.0	3	3	7.1	1	3	7.9	1	1	33.9	3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	17%	2%	44%
Adj. Flow (vph)	21	7	40	111	2 %	270	94	253	128	17 %	466	18
Shared Lane Traffic (%)	21	1	40	111		۷۱	34	233	120	13	400	10
Lane Group Flow (vph)	21	47	0	111	23	0	94	381	0	13	484	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	3.7	rtigiit	LGIL	3.7	rtigrit	Leit	3.7	rtigrit	LGIL	3.7	rtigrit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D	0.0		D	0.0			0.0		D	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	0	8		4	4		1	6		0	2	
Permitted Phases Detector Phase	8 8	8		4	1		6 1	G		2	2	
	0	0		4	4		I	6		2	2	
Switch Phase Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
	28.3	28.3		28.3	28.3			33.3		33.3		
Minimum Split (s)	28.0	28.0		28.0	28.0		11.3 14.0	62.0		48.0	33.3 48.0	
Total Split (s) Total Split (%)	31.1%	31.1%		31.1%	31.1%		15.6%	68.9%		53.3%	53.3%	
Maximum Green (s)	21.7	21.7		21.7	21.7		7.7	55.7		41.7	41.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
All-Yea Time (9)	٥.٥	5.5		5.5	٥.٥		3.0	3.0		3.0	3.0	

	•	→	•	•	←	•	•	†	~	\	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		10	10			10		10	10	
Act Effct Green (s)	14.4	14.4		14.4	14.4		66.3	67.5		56.6	56.6	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.74	0.75		0.63	0.63	
v/c Ratio	0.13	0.23		0.57	0.09		0.20	0.31		0.02	0.44	
Control Delay	31.9	14.6		45.3	13.8		5.8	4.8		11.9	14.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.9	14.6		45.3	13.8		5.8	4.8		11.9	14.4	
LOS	С	В		D	В		Α	Α		В	В	
Approach Delay		20.0			39.9			5.0			14.3	
Approach LOS		В			D			Α			В	
Queue Length 50th (m)	3.2	1.1		18.2	0.3		3.0	10.2		1.0	47.2	
Queue Length 95th (m)	8.7	9.3		31.3	6.1		12.7	37.0		4.4	90.2	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	237	283		296	379		484	1247		523	1097	
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	0.17		0.38	0.06		0.19	0.31		0.02	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 90 Actuated Cycle Length: 90

Offset: 40 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

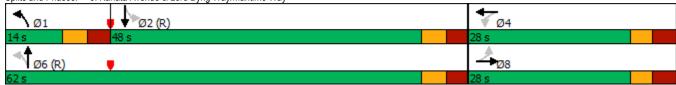
Maximum v/c Ratio: 0.57 Intersection Signal Delay: 13.8

Intersection Capacity Utilization 59.3%

Intersection LOS: B ICU Level of Service B

Analysis Period (min) 15





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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	*	#	A			44
Traffic Volume (vph)	217	183	277	0	0	661
Future Volume (vph)	217	183	277	0	0	661
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1695	1334	1717	0	0	3325
Flt Permitted	0.950					
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		203				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	241	203	308	0	0	734
Shared Lane Traffic (%)						
Lane Group Flow (vph)	241	203	308	0	0	734
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	. tigitt	0.0	· ugilt	LVII	0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane	7.0		7.0			7.0
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	1.00	24	1.00
Number of Detectors	1	1	2	14	27	2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
			0.0			30.5 0.0
Trailing Detector (m)	0.0	0.0				
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	37.0	37.0	53.0			53.0
Total Split (%)	41.1%	41.1%	58.9%			58.9%
Maximum Green (s)	32.0	32.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	ა.ა 1.7	3.3 1.7	2.8			2.8
	0.0	0.0	0.0			0.0
Lost Time Adjust (s)						6.1
Total Lost Time (s)	5.0	5.0	6.1			0.1
Lead/Lag						
Lead-Lag Optimize?	2.0	2.0	2.0			2.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	18.2	18.2	60.7			60.7	
Actuated g/C Ratio	0.20	0.20	0.67			0.67	
v/c Ratio	0.70	0.47	0.27			0.33	
Control Delay	44.1	7.9	2.8			6.4	
Queue Delay	0.0	0.0	0.0			0.0	
Total Delay	44.1	7.9	2.8			6.4	
LOS	D	Α	A			Α	
Approach Delay	27.6		2.8			6.4	
Approach LOS	С		A			Α	
Queue Length 50th (m)	39.1	0.0	5.6			24.3	
Queue Length 95th (m)	57.7	15.4	7.4			37.6	
Internal Link Dist (m)	308.8		102.6			90.0	
Turn Bay Length (m)			. =				
Base Capacity (vph)	602	605	1158			2242	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.40	0.34	0.27			0.33	
			•				
Intersection Summary Area Type:	Other						
Cycle Length: 90	Other						
Actuated Cycle Length: 90							
Offset: 35 (39%), Referenced to	a phase 2:NIPT on	A C. CDT C	tart of Croon				
Natural Cycle: 55	o priase 2.No i ani	u 0.3D1, 3	lari di Green				
Control Type: Actuated-Coordin	antad						
Maximum v/c Ratio: 0.70	ialeu						
Intersection Signal Delay: 12.0				الما	ersection L	10. D	
					J Level of S		
Intersection Capacity Utilization	143.9%			ICC	J Level of S	ervice A	
Analysis Period (min) 15							
Splits and Phases: 4: Kanata	a Avenue & HWY	117 WB Off	f				
. † (a.) (b.)							
Ø2 (R)							
53 s							
							3-
Ø6 (R)						1	∜ Ø8
53 e						37	9

-	•	•	†	<i>></i>	\	 		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4	
Lane Configurations			A	#	ኻ	A	~ .	
Traffic Volume (vph)	0	0	253	196	332	414		
Future Volume (vph)	0	0	253	196	332	414		
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0	.000	50.0	0.0	1000		
Storage Lanes	0	0		1	1			
aper Length (m)	7.6	•		•	7.6			
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor	1.00	1.00	1.00	0.98	1.00	1.00		
rt				0.850	1.00			
It Protected				0.000	0.950			
atd. Flow (prot)	0	0	1685	1502	1679	1750		
It Permitted	U	U	1000	1302	0.538	1750		
	٨	0	1605	1460		1750		
atd. Flow (perm)	0	0 Yes	1685	1468 Yes	949	1750		
ght Turn on Red		res						
atd. Flow (RTOR)	40			218				
nk Speed (k/h)	48		50			50		
nk Distance (m)	278.4		119.2			126.6		
ravel Time (s)	20.9		8.6			9.1		
onfl. Peds. (#/hr)	0.00	0.00	0.00	1	1	0.00		
eak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
eavy Vehicles (%)	0%	0%	8%	3%	3%	4%		
lj. Flow (vph)	0	0	281	218	369	460		
nared Lane Traffic (%)								
ne Group Flow (vph)	0	0	281	218	369	460		
ter Blocked Intersection	No	No	No	No	No	No		
ine Alignment	Left	Right	Left	Right	Left	Left		
dian Width(m)	0.0		3.7			3.7		
nk Offset(m)	0.0		0.0			0.0		
osswalk Width(m)	4.9		4.9			4.9		
vo way Left Turn Lane								
eadway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
rning Speed (k/h)	24	14		14	24			
mber of Detectors			2	1	1	2		
tector Template			Thru	Right	Left	Thru		
ading Detector (m)			30.5	6.1	6.1	30.5		
ailing Detector (m)			0.0	0.0	0.0	0.0		
tector 1 Position(m)			0.0	0.0	0.0	0.0		
tector 1 Size(m)			1.8	6.1	6.1	1.8		
etector 1 Type			CI+Ex	CI+Ex	CI+Ex	CI+Ex		
etector 1 Channel								
etector 1 Extend (s)			0.0	0.0	0.0	0.0		
etector 1 Queue (s)			0.0	0.0	0.0	0.0		
etector 1 Delay (s)			0.0	0.0	0.0	0.0		
etector 2 Position(m)			28.7	0.0	0.0	28.7		
etector 2 Size(m)			1.8			1.8		
etector 2 Type			CI+Ex			CI+Ex		
etector 2 Channel			OI / LA			OI / LA		
etector 2 Extend (s)			0.0			0.0		
rn Type			NA	Perm	pm+pt	NA		
otected Phases			2	i Cilli	рит-ри 1	6	4	
rmitted Phases				2	6	U	4	
Infilled Phases			2	2	1	6		
					ı	0		
vitch Phase			10.0	10.0	E 0	10.0	E 0	
nimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
nimum Split (s)			23.7	23.7	10.7	23.7	27.0	
otal Split (s)			50.0	50.0	12.0	62.0	28.0	
otal Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
laximum Green (s)			44.3	44.3	6.3	56.3	23.0	
ellow Time (s)			3.3 2.4	3.3 2.4	3.3 2.4	3.3	3.0 2.0	
III-Red Time (s)				0.4	0.4	2.4	20	

	•	•	†	~	\	ļ			
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4		
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			5.7	5.7	5.7	5.7			
Lead/Lag			Lag	Lag	Lead				
Lead-Lag Optimize?			Yes	Yes	Yes				
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Walk Time (s)			7.0	7.0			7.0		
Flash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10		
Act Effct Green (s)			66.2	66.2	78.9	83.5			
Actuated g/C Ratio			0.74	0.74	0.88	0.93			
v/c Ratio			0.23	0.19	0.42	0.28			
Control Delay			5.9	1.7	4.0	2.5			
Queue Delay			0.0	0.0	0.1	0.0			
Total Delay			5.9	1.7	4.1	2.5			
LOS			A	Α	A	A			
Approach Delay			4.1			3.2			
Approach LOS			A			A			
Queue Length 50th (m)			4.9	0.0	0.8	0.0			
Queue Length 95th (m)			49.9	10.5	31.2	37.5			
Internal Link Dist (m)	254.4		95.2		• · · · ·	102.6			
Turn Bay Length (m)			***	50.0					
Base Capacity (vph)			1240	1138	888	1623			
Starvation Cap Reductn			0	0	54	59			
Spillback Cap Reductn			0	0	0	0			
Storage Cap Reductn			0	0	0	0			
Reduced v/c Ratio			0.23	0.19	0.44	0.29			
ntersection Summary									
Area Type:	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 42 (47%), Referenced to pl	nase 2:NBT an	d 6:SBTL,	Start of Gre	en					
Natural Cycle: 65									
Control Type: Actuated-Coordinate	ed								
Maximum v/c Ratio: 0.42									
Intersection Signal Delay: 3.5					ersection L				
Intersection Capacity Utilization 43	.9%			IC	U Level of S	Service A			
Analysis Period (min) 15									
Splits and Phases: 5: Kanata Av	renue & HWY	417 EB On							
Ø1 • Ø2	(R)							kk _{Ø4}	
12 s 50 s	VV							s	
Ø6 (R)									

Existing Traffic								ik Road/			iming Plan:	
	•	→	*	•	+	•	•	†	/	\	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		412			Δ		*	ĵ.		*	ĵ.	
Traffic Volume (vph)	45	4	18	19	4	61	41	444	36	52	361	41
Future Volume (vph)	45	6	18	19	6	61	41	444	36	52	361	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.97			0.96		0.99	1.00		0.99	1.00	
Frt		0.965			0.904			0.989			0.985	
Flt Protected		0.969			0.989		0.950			0.950		
Satd. Flow (prot)	0	1218	0	0	1463	0	1145	1728	0	1662	1705	0
Flt Permitted		0.787			0.918		0.489			0.437		
Satd. Flow (perm)	0	973	0	0	1348	0	584	1728	0	761	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			68			8			12	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14		18	18		14	9		6	6		9
Confl. Bikes (#/hr)			1						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 (%)	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Adj. Flow (vph)	50	7	20	21	7	68	46	493	40	58	401	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	0	0	96	0	46	533	0	58	447	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		^ ^			^ ^			^ ^			^ ^	
Detector 2 Extend (s)		0.0		_	0.0		_	0.0		_	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4		_	8		_	2		_	6	
Permitted Phases	4			8	•		2	•		6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase		40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.3			13.3		69.2	69.2		69.2	69.2	
Actuated g/C Ratio		0.15			0.15		0.77	0.77		0.77	0.77	
v/c Ratio		0.48			0.37		0.10	0.40		0.10	0.34	
Control Delay		36.4			16.8		5.2	5.7		6.4	6.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.2	
Total Delay		36.4			16.8		5.2	5.7		6.4	6.4	
LOS		D			В		Α	Α		Α	Α	
Approach Delay		36.4			16.8			5.7			6.4	
Approach LOS		D			В			Α			Α	
Queue Length 50th (m)		9.5			4.4		2.3	33.3		2.8	23.7	
Queue Length 95th (m)		20.2			15.7		m5.9	46.8		7.9	38.1	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		271			406		449	1330		585	1313	
Starvation Cap Reductn		0			0		0	0		0	306	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.28			0.24		0.10	0.40		0.10	0.44	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.48

Intersection Signal Delay: 8.7 Intersection Capacity Utilization 64.1%

Intersection LOS: A ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



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

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	î,		7	î,		7	î,		7	•	7
Traffic Volume (vph)	144	124	72	30	99	27	123	322	45	40	230	66
Future Volume (vph)	144	124	72	30	99	27	123	322	45	40	230	66
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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		0.98	0.98		0.97	0.99		0.97		0.94
Frt		0.945			0.968			0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1586	1645	0	1695	1638	0	1695	1627	0	1503	1655	1322
Flt Permitted	0.451			0.622			0.598			0.470		
Satd. Flow (perm)	717	1645	0	1084	1638	0	1040	1627	0	723	1655	1245
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			17			9				126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	35		16	16		35	20		33	33		20
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 (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	15%	10%	17%
Adj. Flow (vph)	160	138	80	33	110	30	137	358	50	44	256	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	218	0	33	140	0	137	408	0	44	256	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
		40.0		24.2	24.2		22.0	22.0		33.8	33.8	33.8
	5.3	43.3		31.3	31.3		33.8	33.8		33.0	33.0	00.0
Maximum Green (s) Yellow Time (s)	5.3 3.3 3.4	43.3 3.3 3.4		31.3 3.3 3.4	31.3 3.3 3.4		33.8 3.3 2.9	3.3 2.9		3.3	3.3	3.3

	•	→	•	•	←	•	4	†	~	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	25.9	25.9		13.9	13.9		51.2	51.2		51.2	51.2	51.2
Actuated g/C Ratio	0.29	0.29		0.15	0.15		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.62	0.43		0.20	0.52		0.23	0.44		0.11	0.27	0.10
Control Delay	36.2	22.2		33.5	36.6		12.4	13.9		11.8	10.6	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.2	22.2		33.5	36.6		12.4	13.9		11.8	10.6	2.5
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		28.1			36.0			13.5			9.2	
Approach LOS		С			D			В			Α	
Queue Length 50th (m)	22.5	24.5		5.2	20.2		10.4	34.8		1.7	11.5	0.2
Queue Length 95th (m)	32.6	37.0		11.7	32.9		26.6	73.3		9.2	34.2	4.5
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	257	814		376	580		591	929		411	941	762
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.62	0.27		0.09	0.24		0.23	0.44		0.11	0.27	0.10

Intersection Summary

Area Type: Other

Cycle Length: 90 Actuated Cycle Length: 90

Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

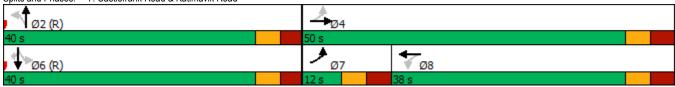
Natural Cycle: 75

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.62 Intersection Signal Delay: 18.8

Intersection LOS: B Intersection Capacity Utilization 75.2% ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Castlefrank Road & Katimavik Road



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ĵ.		*	ĵ.		*	î,		*	ĵ,	
Traffic Volume (vph)	23	331	3	45	272	52	2	10	87	112	7	43
Future Volume (vph)	23	331	3	45	272	52	2	10	87	112	7	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			55.0			40.0			35.0		
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	0.99	1.00		0.99	0.99		0.99	0.96		0.98	0.97	
Frt	0.050	0.999		0.050	0.976		0.050	0.865		0.050	0.871	
Flt Protected	0.950	4707	^	0.950	4507	^	0.950	4.477	^	0.950	4.400	•
Satd. Flow (prot)	1695	1727	0	1695	1587	0	1695	1477	0	1695	1490	0
Flt Permitted	0.543	4707	0	0.536	4507	٥	0.720	4.477	٥	0.687	1400	^
Satd. Flow (perm)	957	1727	0 Yes	946	1587	0 Yes	1274	1477	0 Yes	1196	1490	0 Yes
Right Turn on Red		1	res		17	res		97	res		48	res
Satd. Flow (RTOR)		50			50			50			40	
Link Speed (k/h) Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	12	17.9	11	11	14.7	12	4	10.1	12	12	13.0	4
Confl. Bikes (#/hr)	12		1	- 11		12	4		12	12		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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	14%	2%
Adj. Flow (vph)	26	368	33 /6	50	302	58	2 /0	11	97	124	8	48
Shared Lane Traffic (%)	20	300	J	30	302	50	2	- 11	31	124	Ü	40
Lane Group Flow (vph)	26	371	0	50	360	0	2	108	0	124	56	0
Enter Blocked Intersection	No.	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Lon	3.7	ragin	Loit	3.7	ragne	Loit	3.7	rtigitt	Loit	3.7	rugiit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2		_	6		_	8		4	4	
Permitted Phases	2	0		6	^		8	_		4	4	
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase	40.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	39.3	39.3		39.3	39.3		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	58.4	58.4		58.4	58.4		14.2	14.2		14.2	14.2	
Actuated g/C Ratio	0.73	0.73		0.73	0.73		0.18	0.18		0.18	0.18	
v/c Ratio	0.04	0.29		0.07	0.31		0.01	0.32		0.58	0.18	
Control Delay	5.7	6.4		5.9	6.4		24.0	9.8		40.7	11.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.7	6.4		5.9	6.4		24.0	9.8		40.7	11.1	
LOS	Α	Α		Α	Α		С	Α		D	В	
Approach Delay		6.4			6.3			10.0			31.5	
Approach LOS		Α			Α			В			С	
Queue Length 50th (m)	1.1	19.4		2.2	18.0		0.3	1.4		17.6	1.0	
Queue Length 95th (m)	4.4	41.2		7.2	39.6		1.9	12.7		31.1	9.3	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	699	1261		690	1163		461	597		433	570	
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	0.04	0.29		0.07	0.31		0.00	0.18		0.29	0.10	
Intersection Summary												

Area Type:

Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.58

Intersection Signal Delay: 10.9 Intersection LOS: B Intersection Capacity Utilization 54.8% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u> </u>	EDK	VVDL		NDL	INDIK
Traffic Volume (vph)	ጥ 421	82	214	↑ 489	7 9	177
Future Volume (vph)	421	82	214	489	79	177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	55.0	110.0	1000	30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		45.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98	1.00			0.98
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1640	1517	1695	1784	1695	1517
Flt Permitted			0.399		0.950	
Satd. Flow (perm)	1640	1483	711	1784	1695	1482
Right Turn on Red	10-10	Yes		1101	1000	Yes
Satd. Flow (RTOR)		91				197
Link Speed (k/h)	50	- 71		50	50	101
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
	20.7	1	1	33.8	5.2	1
Confl. Peds. (#/hr)	0.00	0.90	0.90	0.00	0.00	0.90
Peak Hour Factor	0.90			0.90	0.90	
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	468	91	238	543	88	197
Shared Lane Traffic (%)	400	0.4	000	E 10	00	407
Lane Group Flow (vph)	468	91	238	543	88	197
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	0.0	28.7	0.0	0.0
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Type Detector 2 Channel	UI+EX			OITEX		
	0.0			0.0		
Detector 2 Extend (s) Turn Type	NA	Dorm	nm : nt		Perm	Perm
		Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases	^	2	6	_	8	8
Detector Phase	2	2	1	6	8	8
Switch Phase	10.5	40.0	- ^	400	- ^	- ^
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	29.4	29.4	10.8	29.4	24.9	24.9
Total Split (s)	58.0	58.0	12.0	70.0	30.0	30.0
Total Split (%)	58.0%	58.0%	12.0%	70.0%	30.0%	30.0%
Maximum Green (s)	51.6	51.6	6.2	63.6	24.1	24.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	2.5	3.1	2.6	2.6
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	5.8	6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	61.4	61.4	76.9	76.3	11.4	11.4
Actuated g/C Ratio	0.61	0.61	0.77	0.76	0.11	0.11
v/c Ratio	0.47	0.10	0.37	0.40	0.46	0.57
Control Delay	13.7	2.7	5.4	5.7	47.6	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	2.7	5.4	5.7	47.6	12.5
LOS	В	Α	Α	Α	D	В
Approach Delay	11.9			5.6	23.3	
Approach LOS	В			Α	С	
Queue Length 50th (m)	43.8	0.0	9.5	27.7	16.4	0.0
Queue Length 95th (m)	87.8	7.2	23.2	61.1	28.6	17.9
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		55.0	110.0		30.0	
Base Capacity (vph)	1006	945	636	1361	408	506
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.10	0.37	0.40	0.22	0.39
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to ph	ase 2:EBT and	6:WBTL, Sta	rt of Green	1		
Natural Cycle: 70						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.57						
Intersection Signal Delay: 10.9				Int	ersection L(OS: B
Intersection Capacity Utilization	56.0%				J Level of S	
Analysis Period (min) 15						
• , ,						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
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Ø 1 ▼ Ø 2	(R)					
12 s 58 s						
4						
₹ Ø6 (R)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	î.		*	1 ,		*	Î.		*	Î.	
Traffic Volume (vph)	30	1 3	78	87	9	26	136	617	125	37	472	25
Future Volume (vph)	30	3	78	87	9	26	136	617	125	37	472	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0	4.00	4.00	40.0	4.00	4.00	75.0	4.00	4.00	55.0	4.00	4.00
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 Frt	0.98	0.97 0.855		0.99	0.97 0.888		1.00	1.00 0.975		1.00	1.00 0.992	
Flt Protected	0.950	0.000		0.950	0.000		0.950	0.975		0.950	0.992	
Satd. Flow (prot)	1262	1248	0	1695	1535	0	1503	1732	0	1695	1752	0
Flt Permitted	0.732	1240	U	0.699	1000	U	0.323	1702	U	0.354	1752	U
Satd. Flow (perm)	952	1248	0	1238	1535	0	510	1732	0	631	1752	0
Right Turn on Red	002	1210	Yes	1200	1000	Yes	010	1702	Yes	001	1702	Yes
Satd. Flow (RTOR)		87			29			21			4	. , , ,
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	11		4	4		11	3		3	3		3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	33	3	87	97	10	29	151	686	139	41	524	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	90	0	97	39	0	151	825	0	41	552	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0 4.9			0.0 4.9			0.0 4.9			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00
Number of Detectors	1	2	17	1	2	17	1	2	17	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Perm	0.0 NA		Perm	0.0 NA		nm . nt	0.0 NA		Darm	0.0 NA	
Turn Type Protected Phases	Pellii	4		Pelili	NA 8		pm+pt			Perm	NA 6	
Permitted Phases	4	4		8	0		5 2	2		6	0	
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase				U	U U		J			U	U	
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	28.3	28.3		28.3	28.3		11.3	33.3		33.3	33.3	
Total Split (s)	28.0	28.0		28.0	28.0		15.0	62.0		47.0	47.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		16.7%	68.9%		52.2%	52.2%	
Maximum Green (s)	21.7	21.7		21.7	21.7		8.7	55.7		40.7	40.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
\-/												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		10	10			10		10	10	
Act Effct Green (s)	13.7	13.7		13.7	13.7		66.9	68.2		52.8	52.8	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.74	0.76		0.59	0.59	
v/c Ratio	0.23	0.34		0.51	0.15		0.32	0.63		0.11	0.54	
Control Delay	35.2	11.1		39.5	12.1		6.1	9.0		13.1	16.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.0	
Total Delay	35.2	11.1		39.5	12.1		6.1	9.1		13.1	16.3	
LOS	D	В		D	В		Α	Α		В	В	
Approach Delay		17.6			31.7			8.6			16.1	
Approach LOS		В			С			Α			В	
Queue Length 50th (m)	5.2	0.5		16.1	1.9		5.3	56.1		3.1	56.4	
Queue Length 95th (m)	12.1	11.7		27.7	8.9		m13.4	126.1		10.5	110.0	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	229	366		298	392		476	1317		370	1029	
Starvation Cap Reductn	0	0		0	0		0	38		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	0.14	0.25		0.33	0.10		0.32	0.65		0.11	0.54	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 31 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

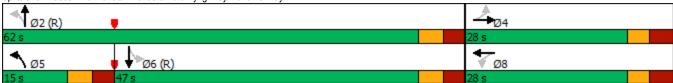
Intersection LOS: B ICU Level of Service D

Intersection Signal Delay: 13.4 Intersection Capacity Utilization 80.2%

Analysis Period (min) 15

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

Splits and Phases: 3: Kanata Avenue & Lord Byng Way/Maritime Way



	•	4	†	/	/	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y DE	7	<u> </u>	HUIT	ODL	*
Traffic Volume (vph)	419	549	T 548	0	0	TT 811
Future Volume (vph)	419	549	548	0	0	811
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00					3.00
Frt		0.850				
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1317	1730	U	U	3331
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red	1093	Yes	1730	Yes	U	3331
		171		res		
Satd. Flow (RTOR)	F0	1/1				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3	0.55	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	466	610	609	0	0	901
Shared Lane Traffic (%)						
Lane Group Flow (vph)	466	610	609	0	0	901
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	J -	0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	1.00	24	1.00
Number of Detectors	1	1	2	14	27	2
Detector Template	Left	Right	Thru			Thru
	6.1	6.1	30.5			30.5
Leading Detector (m)						
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	1 CIIII	1 01111	2			6
Permitted Phases	8	8	2			U
Detector Phase	8	8	2			6
Switch Phase	0	0	2			O
		F 0	40.0			40.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	40.0	40.0	38.9			38.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

	•	4	†	/	-	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	34.1	34.1	44.8			44.8
Actuated g/C Ratio	0.38	0.38	0.50			0.50
v/c Ratio	0.73	0.90	0.70			0.54
Control Delay	30.2	35.1	19.9			15.3
Queue Delay	0.0	0.0	0.4			0.0
Total Delay	30.2	35.1	20.3			15.3
LOS	C	D	20.0 C			В
Approach Delay	33.0		20.3			15.3
Approach LOS	55.0 C		20.5 C			В
Queue Length 50th (m)	64.1	69.6	69.0			36.0
Queue Length 95th (m)	91.3	#116.5	#127.4			60.3
Internal Link Dist (m)	308.8	#110.J	102.6			90.0
Turn Bay Length (m)	300.0		102.0			30.0
Base Capacity (vph)	753	769	870			1670
Starvation Cap Reductn	0	0	45			0
Spillback Cap Reductin	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.62	0.79	0.74			0.54
	0.02	0.70	V.1 1			0.01
Intersection Summary	0.11					
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 32 (36%), Referenced to	o phase 2:NBT ar	nd 6:SBT, S	tart of Greer	1		
Natural Cycle: 65						
Control Type: Actuated-Coordin	nated					
Maximum v/c Ratio: 0.90						
Intersection Signal Delay: 23.8					ersection L	
Intersection Capacity Utilization	97.5%			ICL	J Level of S	Service F
Analysis Period (min) 15						
# 95th percentile volume exce		eue may be	longer.			
Queue shown is maximum a	after two cycles.					
Splits and Phases: 4: Kanata	Avenue & HWY	417 WB Of	f			
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
Lane Configurations			•	1	*	*		
Traffic Volume (vph)	0	0	432	178	312	764		
Future Volume (vph)	0	0	432	178	312	764		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0		50.0	0.0			
Storage Lanes	0	0		1	1			
Taper Length (m)	7.6				7.6			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor				0.98	1.00			
Frt				0.850	0.050			
Flt Protected	•	^	4700	4547	0.950	4704		
Satd. Flow (prot)	0	0	1733	1517	1662	1784		
Flt Permitted	0	^	4700	4.470	0.413	4704		
Satd. Flow (perm)	0	0 Yes	1733	1479 Yes	722	1784		
Right Turn on Red Satd. Flow (RTOR)		res		198				
Link Speed (k/h)	48		50	190		50		
Link Distance (m)	278.4		119.2			126.6		
Travel Time (s)	20.9		8.6			9.1		
Confl. Peds. (#/hr)	20.3		0.0	2	2	3.1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
Heavy Vehicles (%)	0%	0%	5%	2%	4%	2%		
Adj. Flow (vph)	0	0	480	198	347	849		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	480	198	347	849		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	0.0	·	3.7			3.7		
Link Offset(m)	0.0		0.0			0.0		
Crosswalk Width(m)	4.9		4.9			4.9		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	14		14	24			
Number of Detectors			_ 2	1	1	_ 2		
Detector Template			Thru	Right	Left	Thru		
Leading Detector (m)			30.5	6.1	6.1	30.5		
Trailing Detector (m)			0.0	0.0	0.0	0.0		
Detector 1 Position(m)			0.0	0.0	0.0	0.0		
Detector 1 Size(m) Detector 1 Type			1.8 CI+Ex	6.1 CI+Ex	6.1 CI+Ex	1.8 CI+Ex		
Detector 1 Channel			CI+EX	CI+EX	CI+EX	CI+EX		
Detector 1 Extend (s)			0.0	0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0	0.0		
Detector 2 Position(m)			28.7	0.0	0.0	28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			CI+Ex		
Detector 2 Channel						-		
Detector 2 Extend (s)			0.0			0.0		
Turn Type			NA	Perm	pm+pt	NA		
Protected Phases			2		1	6	8	
Permitted Phases				2	6			
Detector Phase			2	2	1	6		
Switch Phase								
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0	
Total Split (s)			50.0	50.0	12.0	62.0	28.0	
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0	
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0	
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0	

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ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8		
ost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			5.7	5.7	5.7	5.7			
_ead/Lag			Lag	Lag	Lead	<u> </u>			
_ead-Lag Optimize?			Yes	Yes	Yes				
/ehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Walk Time (s)			7.0	7.0	140110	O WILL	7.0		
Flash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10.0		
Act Effct Green (s)			65.4	65.4	78.9	83.5	10		
Actuated g/C Ratio			0.73	0.73	0.88	0.93			
•									
//c Ratio			0.38 4.3	0.18 0.7	0.49 5.9	0.51 3.8			
Control Delay									
Queue Delay			0.3	0.0	0.2	0.0			
Total Delay			4.5	0.7	6.1	3.8			
_OS			Α	Α	Α	A			
Approach Delay			3.4			4.5			
Approach LOS			Α			Α			
Queue Length 50th (m)			7.1	0.0	1.9	4.8			
Queue Length 95th (m)			67.4	3.5	35.5	83.4			
nternal Link Dist (m)	254.4		95.2			102.6			
Гurn Bay Length (m)				50.0					
Base Capacity (vph)			1260	1129	713	1654			
Starvation Cap Reductn			281	0	65	6			
Spillback Cap Reductn			48	0	0	19			
Storage Cap Reductn			0	0	0	0			
Reduced v/c Ratio			0.49	0.18	0.54	0.52			
ntersection Summary									
Area Type:	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 27 (30%), Referenced to p	hase 2:NBT and	d 6:SBTL,	Start of Gre	en					
Natural Cycle: 75									
Control Type: Actuated-Coordinat	ted								
Maximum v/c Ratio: 0.51									
ntersection Signal Delay: 4.1				Int	ersection L	OS: A			
ntersection Capacity Utilization 9	7.5%				U Level of S				
Analysis Period (min) 15									
)	0.10407	147 ED 0							
Splits and Phases: 5: Kanata A	venue & HWY 4	II / EB On							
v ø₁ t ø₂	2 (R)								
12 s 50 s									
Nac 20								Åå Ø8	
▼ Ø6 (R) ■								л № Ø8	

Existing Traffic

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.2			10.2		67.9	67.9		67.9	67.9	
Actuated g/C Ratio		0.11			0.11		0.75	0.75		0.75	0.75	
v/c Ratio		0.25			0.55		0.04	0.54		0.15	0.65	
Control Delay		27.1			19.4		4.6	6.1		6.0	8.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.1	
Total Delay		27.1			19.4		4.6	6.1		6.0	8.3	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		27.1			19.4			6.1			8.2	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		3.6			5.6		0.4	26.6		2.5	40.6	
Queue Length 95th (m)		10.4			19.0		m1.4	76.5		m7.6	61.3	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		313			453		356	1321		460	1337	
Starvation Cap Reductn		0			0		0	31		0	41	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.12			0.31		0.04	0.55		0.15	0.67	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 10 (11%), 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: 8.6

Intersection Capacity Utilization 73.6%

Intersection LOS: A ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



Externity frame	۶	→	•	•	+	4	1	†	<i>></i>	/		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	î₃		*	ĵ.		*	ĵ,		*		7
Traffic Volume (vph)	113	129	75	84	171	86	41	347	49	83	544	176
Future Volume (vph)	113	129	75	84	171	86	41	347	49	83	544	176
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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	0.98	0.98		0.98	0.98		0.98	0.99		0.98		0.92
Frt	0.050	0.945		0.050	0.950		0.050	0.982		0.050		0.850
Flt Protected	0.950	4050	^	0.950	4000	^	0.950	4707	^	0.950	4704	4.470
Satd. Flow (prot)	1662	1659	0	1558	1639	0	1695	1737	0	1647	1784	1473
Flt Permitted	0.264	1050	0	0.617 994	1000	٥	0.392	4707	٥	0.281	4704	1250
Satd. Flow (perm)	455	1659	0 Yes	994	1639	0 Yes	684	1737	0 Yes	479	1784	1356 Yes
Right Turn on Red Satd. Flow (RTOR)		39	res		28	res		8	res			196
Link Speed (k/h)		50			50			50			50	190
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			293.7			18.3			13.8	
Confl. Peds. (#/hr)	16	22.5	12	12	21.3	16	31	10.3	27	27	13.0	31
Confl. Bikes (#/hr)	10		12	12		10	31		21	21		31
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%	2%	2%	11%	2%	7%	2%	2%	2%	5%	2%	5%
Adj. Flow (vph)	126	143	83	93	190	96	46	386	54	92	604	196
Shared Lane Traffic (%)	120	140	03	93	190	30	40	300	J 4	92	004	190
Lane Group Flow (vph)	126	226	0	93	286	0	46	440	0	92	604	196
Enter Blocked Intersection	No	No	No	No.	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Loit	3.7	rugiit	Loit	3.7	rtigitt	Lon	3.7	rugin	Loit	3.7	rtigitt
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		_	0.0		_	0.0			0.0	_
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		0	2		1	6	
Permitted Phases	4			8	•		2			6	•	6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase	5.0	40.0		40.0	40.0		40.0	40.0		5 0	40.0	40.0
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.2	29.2		29.2	29.2		11.2	29.7	29.7
Total Split (s)	12.0	43.0		31.0	31.0		35.0	35.0		12.0	47.0	47.0
Total Split (%)	13.3%	47.8%		34.4%	34.4%		38.9%	38.9%		13.3%	52.2%	52.2%
Maximum Green (s)	5.3	36.3		24.8	24.8		28.8	28.8		5.8	40.3	40.3
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3

	•	-	•	•	•	•	4	†	~	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	30.6	30.6		19.1	19.1		35.7	35.7		46.5	46.0	46.0
Actuated g/C Ratio	0.34	0.34		0.21	0.21		0.40	0.40		0.52	0.51	0.51
v/c Ratio	0.56	0.38		0.44	0.77		0.17	0.63		0.27	0.66	0.25
Control Delay	30.2	19.4		36.2	43.9		23.9	29.4		15.2	21.0	4.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	30.2	19.4		36.2	43.9		23.9	29.4		15.2	21.0	4.8
LOS	С	В		D	D		С	С		В	С	Α
Approach Delay		23.3			42.0			28.9			16.9	
Approach LOS		С			D			С			В	
Queue Length 50th (m)	15.2	23.6		14.0	42.1		5.5	63.8		7.4	85.9	5.2
Queue Length 95th (m)	25.4	38.2		26.4	64.5		14.4	#112.4		m12.2	92.7	m13.2
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	225	692		273	471		271	694		337	911	788
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.56	0.33		0.34	0.61		0.17	0.63		0.27	0.66	0.25

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Intersection Signal Delay: 25.2

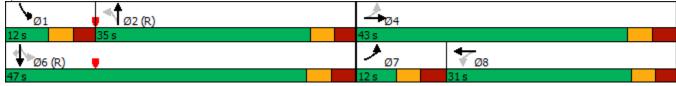
Intersection Capacity Utilization 83.7%

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.





Intersection LOS: C

ICU Level of Service E

Synchro 10 Report Brad Byvelds, Novatech

	۶	→	•	•	+	•	1	†	/	/	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ.		¥	ĵ,		×	î,		¥	1	
Traffic Volume (vph)	50	243	11	64	359	89	4	10	52	33		48
Future Volume (vph)	50	243	11	64	359	89	4	10	52	33	5	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0	4.00	4.00	55.0	4.00	4.00	40.0	4.00	4.00	35.0	4.00	4.00
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	0.99	1.00		0.99	0.99		0.98	0.97		0.99	0.96	
Frt Flt Protected	0.950	0.994		0.950	0.970		0.950	0.874		0.950	0.865	
	1695	1771	0	1695	1714	0	1695	1520	0	1679	1487	0
Satd. Flow (prot)	0.389	1771	U	0.587	1714	U	0.719	1520	U	0.712	1487	0
Flt Permitted	688	1771	0	1042	1714	0	1258	1520	0	1246	1487	0
Satd. Flow (perm) Right Turn on Red	000	1771	Yes	1042	17 14	Yes	1230	1520	Yes	1240	1407	Yes
Satd. Flow (RTOR)		5	165		20	165		58	165		53	168
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	15	17.9	4	4	14.7	15	8	10.1	4	4	13.0	8
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	56	270	12	71	399	99	4	11	58	37	6	53
Shared Lane Traffic (%)	30	210	12	7 1	333	33	7	11	30	31	U	33
Lane Group Flow (vph)	56	282	0	71	498	0	4	69	0	37	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	LOIL	3.7	ragnt	LOIL	3.7	rtigrit	Lon	3.7	rtigrit	LOIL	3.7	rtigrit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
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	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	66.0		51.0	51.0		24.0	24.0		24.0	24.0	
Total Split (%)	16.7%	73.3%		56.7%	56.7%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	9.3	60.3		45.3	45.3		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.1	71.2		61.4	61.4		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.09	0.20		0.10	0.42		0.03	0.28		0.24	0.25	
Control Delay	3.9	3.9		8.8	10.4		37.5	23.5		38.1	14.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.9	3.9		8.8	10.4		37.5	23.5		38.1	14.3	
LOS	Α	Α		Α	В		D	С		D	В	
Approach Delay		3.9			10.2			24.3			23.5	
Approach LOS		Α			В			С			С	
Queue Length 50th (m)	1.9	10.9		4.4	39.0		0.8	4.2		6.0	0.9	
Queue Length 95th (m)	6.2	25.3		12.6	78.2		m1.8	m14.8		13.7	10.7	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	640	1403		711	1176		251	350		249	339	
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	0.20		0.10	0.42		0.02	0.20		0.15	0.17	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

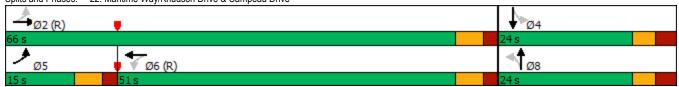
Maximum v/c Ratio: 0.42 Intersection Signal Delay: 10.4

Intersection LOS: B Intersection Capacity Utilization 54.5% ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



	•	•	†	~	/	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u> </u>	.10/(UDL	*
Traffic Volume (vph)	419	549	T 548	0	0	TT 811
Future Volume (vph)	419	549	548	0	0	811
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.33
Frt		0.850				
Flt Protected	0.950	0.000				
		1517	1750	0	0	2257
Satd. Flow (prot)	1695	1517	1750	U	U	3357
Flt Permitted	0.950	1517	4750	^	^	2257
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		36				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	466	610	609	0	0	901
Shared Lane Traffic (%)	100	010	000	U	U	001
Lane Group Flow (vph)	466	610	609	0	0	901
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	• •		2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	0.0	0.0	28.7			28.7
D / / 0.01 /)			4.0			4.0
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				-
Detector Phase	8	8	2			6
Switch Phase	- 0	-				- 0
	- F O	E 0	10.0			10.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	85.0	85.0	35.0			35.0
Total Split (%)	70.8%	70.8%	29.2%			29.2%
Maximum Green (s)	80.0	80.0	28.9			28.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
	5.0	5.0	6.1			6.1
Total Lost Time (s)	5.0		() [

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
_ead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	62.6	62.6	46.3			46.3	
Actuated g/C Ratio	0.52	0.52	0.39			0.39	
v/c Ratio	0.53	0.75	0.90			0.70	
Control Delay	20.1	26.4	54.9			37.0	
Queue Delay	0.0	0.0	47.6			0.0	
Total Delay	20.1	26.4	102.5			37.0	
LOS	20.1 C	20.4 C	102.5 F			37.0 D	
Approach Delay	23.7	U	102.5			37.0	
Approach LOS	23.7 C		102.5 F			37.0 D	
	68.8	100.0				93.5	
Queue Length 50th (m)		102.0	134.9				
Queue Length 95th (m)	65.7	100.6	#263.3			#167.5	
Internal Link Dist (m)	308.8		102.6			90.0	
Turn Bay Length (m)	4400	4000				1000	
Base Capacity (vph)	1130	1023	675			1296	
Starvation Cap Reductn	0	0	126			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.41	0.60	1.11			0.70	
Intersection Summary							
	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to phas	se 2:NBT and 6	S:SBT, Sta	t of Green				
Natural Cycle: 65							
Control Type: Actuated-Coordinate	ed						
Maximum v/c Ratio: 0.90							
ntersection Signal Delay: 46.9				Inte	ersection L	OS: D	
ntersection Capacity Utilization 97	.5%			ICI	J Level of S	Service F	
Analysis Period (min) 15							
95th percentile volume exceeds	s capacity, que	eue may be	longer.				
Queue shown is maximum after		,					
			_				
Splits and Phases: 4: Kanata Av	renue & HWY	11 / WB Of	Ť				
₩ Ø6 (R)		₹.					

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	44	ADA	UDL	*
Traffic Volume (vph)	419	549	TT 548	0	0	TT 811
Future Volume (vph)	419	549	548	0	0	811
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	0.33	1.00	1.00	0.33
Frt		0.850				
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	3325	0	0	3357
Flt Permitted	0.950	1017	3323	U	U	333 <i>1</i>
		1517	2225	0	0	2257
Satd. Flow (perm)	1695	1517 Vac	3325	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		36				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	466	610	609	0	0	901
Shared Lane Traffic (%)		310	300	U	-	301
Lane Group Flow (vph)	466	610	609	0	0	901
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2		'	2
Detector Template	Left		Thru			Thru
		Right				
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
	0.0	0.0				
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases		*****	2			6
Permitted Phases	8	8	_			
Detector Phase	8	8	2			6
Switch Phase	U	U				U
		<i>-</i>	10.0			40.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	85.0	85.0	35.0			35.0
Total Split (%)	70.8%	70.8%	29.2%			29.2%
Maximum Green (s)	80.0	80.0	28.9			28.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
	0.0	0.0	0.0			0.0
Lost Time Adjust (s)						
Lost Time Adjust (s) Total Lost Time (s)	5.0	5.0	6.1			6.1

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
_ead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	62.6	62.6	46.3			46.3	
Actuated g/C Ratio	0.52	0.52	0.39			0.39	
v/c Ratio	0.53	0.75	0.47			0.70	
Control Delay	20.1	26.4	32.3			37.0	
Queue Delay	0.0	0.0	0.4			0.0	
Total Delay	20.1	26.4	32.7			37.0	
LOS	C	20.4 C	02.7 C			D D	
Approach Delay	23.7	- 0	32.7			37.0	
Approach LOS	23.7 C		02.7 C			D D	
Queue Length 50th (m)	68.8	102.0	56.6			93.5	
Queue Length 95th (m)	65.7	102.0	91.3			#167.5	
Internal Link Dist (m)	308.8	100.0	102.6			90.0	
Turn Bay Length (m)	300.0		102.0			90.0	
Base Capacity (vph)	1130	1023	1283			1296	
Starvation Cap Reductn	0	0	267			0	
	0					0	
Spillback Cap Reductn		0	0			0	
Storage Cap Reductn	0	0					
Reduced v/c Ratio	0.41	0.60	0.60			0.70	
ntersection Summary							
	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to phase	se 2:NBT and 6	S:SBT, Star	t of Green				
Natural Cycle: 60							
Control Type: Actuated-Coordinate	ed						
Maximum v/c Ratio: 0.75							
ntersection Signal Delay: 30.4					ersection L		
ntersection Capacity Utilization 97	7.5%			ICL	J Level of S	Service F	
Analysis Period (min) 15							
# 95th percentile volume exceed	ls capacity, que	eue may be	longer.				
Queue shown is maximum afte	r two cycles.						
Splits and Phases: 4: Kanata Av	venue & HWY	117 WB Off					
, Îø2 (R) 35 s							
₩ Ø6 (R)		₽ ø					

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>LBI</u>	LDK	YVDL Š	<u>₩</u>	NDL 1	TION.
Traffic Volume (vph)	705	37	5 7	7 348	1 0	35
Future Volume (vph)	705	37	57	348	10	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	55.0	110.0	1000	30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		45.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			1.00			
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1767	1394	1695	1670	1441	1459
Flt Permitted			0.337		0.950	
Satd. Flow (perm)	1767	1394	601	1670	1441	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		37				35
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)	20.7		1	30.0		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	11%	2%	9%	20%	6%
Adj. Flow (vph)	705	37	57	348	10	35
Shared Lane Traffic (%)	700	01	01	0-10	10	00
Lane Group Flow (vph)	705	37	57	348	10	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	ragnt	LGIL	3.7	3.7	ragni
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane	4.3			7.0	7.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	1.00	1.06	24	1.00	24	1.06
Number of Detectors	2	14	1	2	1	14
Detector Template	Thru	Right	Left	Thru	Left	Right
	30.5	6.1	6.1	30.5	6.1	6.1
Leading Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Trailing Detector (m) Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
· ,						
Detector 1 Size(m)	1.8	6.1	6.1 CI+Ex	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+EX	CI+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel	0.0	^ ^		^ ^	^ ^	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	30.0	30.0	29.4	29.4	24.9	24.9
Total Split (s)	30.0	30.0	30.0	30.0	25.0	25.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%
Maximum Green (s)	23.6	23.6	23.6	23.6	19.1	19.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	3.1	3.1	2.6	2.6
(0)	5. 1	•	•	•		

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	5.9	5.9
Lead/Lag	3.7	.	.	.	0.0	0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10	10	10	10	10	10
Act Effct Green (s)	41.4	41.4	41.4	41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.15	0.15
v/c Ratio	0.53	0.03	0.13	0.28	0.05	0.14
Control Delay	11.0	3.2	7.3	6.4	16.8	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	3.2	7.3	6.4	16.8	7.6
LOS	11.0 B	3.2 A	7.5 A	0.4 A	В	7.0 A
Approach Delay	10.6	٨	٨	6.6	9.6	Α
Approach LOS	10.6 B			0.0 A	9.6 A	
Queue Length 50th (m)	30.0	0.0	1.6	11.3	0.9	0.0
Queue Length 50th (m) Queue Length 95th (m)	#123.1	3.9	9.8	42.2	3.1	4.5
Internal Link Dist (m)	#123.1 263.1	ა.ყ	9.0	447.4	104.3	4.5
	203.1	EC 0	110.0	447.4		
Turn Bay Length (m)	1200	55.0	110.0	1056	30.0	E20
Base Capacity (vph)	1329	1058	452	1256	500	529
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.03	0.13	0.28	0.02	0.07
Intersection Summary						
Area Type:	Other					
Cycle Length: 55						
Actuated Cycle Length: 55						
Offset: 0 (0%), Referenced to ph	nase 2:EBT and 6	6:WBTL, Sta	art of Green	1		
Natural Cycle: 60						
Control Type: Actuated-Coordinated	ated					
Maximum v/c Ratio: 0.53						
Intersection Signal Delay: 9.2				Int	ersection L0	DS: A
Intersection Capacity Utilization	64.4%			IC	U Level of S	ervice C
Analysis Period (min) 15						
# 95th percentile volume exce	eds capacity, que	eue mav be	longer.			
Queue shown is maximum at						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
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▼ Ø2 (R)						
30 c						
30 S						
-						40.
▼ Ø6 (R)						Ø8

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	1		*	1		*	ĵ,		*	ĵ.	
Traffic Volume (vph)	19	6	36	164	2	49	85	323	147	22	611	16
Future Volume (vph)	19	6	36	164	2	49	85	323	147	22	611	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			40.0			75.0			55.0		
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	1.00	0.98		0.99	0.98		1.00	0.99		1.00	1.00	
Frt		0.871			0.856			0.953			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1262	1045	0	1616	1495	0	1417	1651	0	1478	1758	0
Flt Permitted	0.724			0.730			0.254			0.494		
Satd. Flow (perm)	960	1045	0	1234	1495	0	379	1651	0	768	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			49			48			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	1		3	3		1	3		1	1		3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	17%	2%	44%
Adj. Flow (vph)	19	6	36	164	2	49	85	323	147	22	611	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	42	0	164	51	0	85	470	0	22	627	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	_ 2		1	_ 2		1	_ 2		1	_ 2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex	
Detector 1 Channel		0.0		2.2	0.0		0.0				2.2	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D	0.0		D	0.0			0.0		D	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	•	8			4		1	6		•	2	
Permitted Phases	8			4			6			2	_	
Detector Phase	8	8		4	4		1	6		2	2	
Switch Phase	10.0	40.0		400	40.0		- 0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	28.3	28.3		28.3	28.3		11.3	33.3		33.3	33.3	
Total Split (s)	28.0	28.0		28.0	28.0		14.0	62.0		48.0	48.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		15.6%	68.9%		53.3%	53.3%	
Maximum Green (s)	21.7	21.7		21.7	21.7		7.7	55.7		41.7	41.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		10	10			10		10	10	
Act Effct Green (s)	16.6	16.6		16.6	16.6		60.8	60.8		49.8	49.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.68	0.68		0.55	0.55	
v/c Ratio	0.11	0.19		0.72	0.16		0.25	0.42		0.05	0.64	
Control Delay	29.5	13.6		51.8	10.3		7.9	6.9		13.1	20.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.5	13.6		51.8	10.3		7.9	6.9		13.1	20.4	
LOS	С	В		D	В		Α	Α		В	С	
Approach Delay		18.5			41.9			7.0			20.2	
Approach LOS		В			D			Α			С	
Queue Length 50th (m)	2.7	0.9		26.7	0.3		3.1	15.1		1.8	76.5	
Queue Length 95th (m)	8.1	8.7		44.9	8.8		13.2	53.0		6.2	130.6	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	231	279		297	397		346	1131		424	973	
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	0.08	0.15		0.55	0.13		0.25	0.42		0.05	0.64	
Intersection Summary												

Area Type:

Cycle Length: 90

Actuated Cycle Length: 90

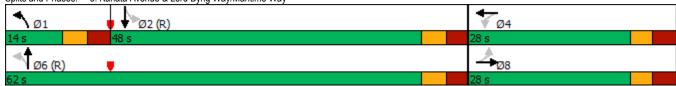
Offset: 40 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 18.3
Intersection Capacity Utilization 72.0% Intersection LOS: B ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Kanata Avenue & Lord Byng Way/Maritime Way



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ኝ	7	A			*
Traffic Volume (vph)	252	239	367	0	0	940
Future Volume (vph)	252	239	367	0	0	940
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1695	1334	1717	0	0	3325
Flt Permitted	0.950					
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		239				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	252	239	367	0 /0	0 /8	940
Shared Lane Traffic (%)	202	200	301	0	0	340
Lane Group Flow (vph)	252	239	367	0	0	940
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	Cl+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	i Giiii	1 01111	2			6
Permitted Phases	8	8				- 0
Detector Phase	8	8	2			6
Switch Phase	U	U				U
Minimum Initial (s)	5.0	5.0	10.0			10.0
	23.0	23.0	28.1			24.1
Minimum Split (s)						53.0
Total Split (s)	37.0	37.0	53.0			
Total Split (%)	41.1%	41.1%	58.9%			58.9%
Maximum Green (s)	32.0	32.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	18.9	18.9	60.0			60.0
Actuated g/C Ratio	0.21	0.21	0.67			0.67
v/c Ratio	0.71	0.51	0.32			0.42
Control Delay	43.4	7.8	3.0			8.3
Queue Delay	0.0	0.0	0.2			0.0
Total Delay	43.4	7.8	3.2			8.3
LOS	D	A	Α.			A
Approach Delay	26.0		3.2			8.3
Approach LOS	C C		A			Α.
Queue Length 50th (m)	40.8	0.0	6.6			31.1
Queue Length 95th (m)	58.6	16.2	8.4			59.6
Internal Link Dist (m)	308.8	10.2	102.6			90.0
Turn Bay Length (m)	000.0		102.0			50.0
Base Capacity (vph)	602	628	1144			2215
Starvation Cap Reductn	0	0	226			0
Spillback Cap Reductn	0	0	0			8
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.42	0.38	0.40			0.43
	0.42	0.50	0.40			0.40
Intersection Summary	0.0					
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 35 (39%), Referenced to	phase 2:NBT and	0 6:SB1, S	tart of Green			
Natural Cycle: 55						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.71						
Intersection Signal Delay: 12.1					ersection L	
Intersection Capacity Utilization	54.8%			ICL	J Level of S	Service A
Analysis Period (min) 15						
Splits and Phases: 4: Kanata	Avenue & HWY 4	I17 WR Of	;			
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Ø2 (R)						
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4	
Lane Configurations			A	#	*	A	**	
Traffic Volume (vph)	0	0	339	227	452	586		
Future Volume (vph)	0	0	339	227	452	586		
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0	1000	50.0	0.0	1000		
Storage Lanes	0.0	0.0		1	1			
Taper Length (m)	7.6	U			7.6			
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor	1.00	1.00	1.00	0.98	1.00	1.00		
-rt				0.850	1.00			
It Protected				0.000	0.950			
	٥	۸	1605	1502	1679	1750		
Satd. Flow (prot)	0	0	1685	1502		1/50		
It Permitted	^	^	4005	4400	0.500	4750		
atd. Flow (perm)	0	0	1685	1468	883	1750		
ight Turn on Red		Yes		Yes				
atd. Flow (RTOR)	40			227				
ink Speed (k/h)	48		50			50		
ink Distance (m)	278.4		119.2			126.6		
ravel Time (s)	20.9		8.6			9.1		
Confl. Peds. (#/hr)		,		1	1	,		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
leavy Vehicles (%)	0%	0%	8%	3%	3%	4%		
dj. Flow (vph)	0	0	339	227	452	586		
Shared Lane Traffic (%)								
ane Group Flow (vph)	0	0	339	227	452	586		
Inter Blocked Intersection	No	No	No	No	No	No		
ane Alignment	Left	Right	Left	Right	Left	Left		
fledian Width(m)	0.0		3.7			3.7		
ink Offset(m)	0.0		0.0			0.0		
crosswalk Width(m)	4.9		4.9			4.9		
wo way Left Turn Lane								
leadway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
urning Speed (k/h)	24	14		14	24			
lumber of Detectors			2	1	1	2		
Detector Template			Thru	Right	Left	Thru		
eading Detector (m)			30.5	6.1	6.1	30.5		
railing Detector (m)			0.0	0.0	0.0	0.0		
etector 1 Position(m)			0.0	0.0	0.0	0.0		
etector 1 Size(m)			1.8	6.1	6.1	1.8		
etector 1 Type			CI+Ex	CI+Ex	CI+Ex	CI+Ex		
Detector 1 Channel			OI LA	JI. LA	JI. LA	J1. LA		
Detector 1 Extend (s)			0.0	0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0	0.0		
Detector 2 Position(m)			28.7	0.0	0.0	28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			CI+Ex		
			UI+EX			UI+EX		
Detector 2 Channel			0.0			0.0		
Detector 2 Extend (s)			0.0	Dem	n.m	0.0		
urn Type			NA	Perm	pm+pt	NA	4	
Protected Phases			2	^	1	6	4	
ermitted Phases			_	2	6			
Petector Phase			2	2	1	6		
Switch Phase								
finimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
finimum Split (s)			23.7	23.7	10.7	23.7	27.0	
otal Split (s)			50.0	50.0	12.0	62.0	28.0	
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0	
			3.3	3.3	3.3	3.3	3.0	
Yellow Time (s) All-Red Time (s)			2.4	2.4	2.4	2.4	2.0	

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4		
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			5.7	5.7	5.7	5.7			
Lead/Lag			Lag	Lag	Lead	<u> </u>			
Lead-Lag Optimize?			Yes	Yes	Yes				
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Walk Time (s)			7.0	7.0	110110	O Max	7.0		
Flash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10.0		
Act Effct Green (s)			64.8	64.8	78.9	83.5	10		
Actuated g/C Ratio			0.72	0.72	0.88	0.93			
//c Ratio			0.72	0.72	0.66	0.93			
Control Delay			6.1	1.6	5.3	2.3			
			0.1	0.0	0.0	0.0			
Queue Delay									
Total Delay			6.4	1.6	5.3	2.3			
LOS			A	Α	Α	A			
Approach Delay			4.5			3.6			
Approach LOS			A			Α			
Queue Length 50th (m)			5.0	0.0	3.5	0.0			
Queue Length 95th (m)			59.9	11.1	31.4	39.6			
nternal Link Dist (m)	254.4		95.2			102.6			
Гurn Bay Length (m)				50.0					
Base Capacity (vph)			1213	1120	848	1623			
Starvation Cap Reductn			402	0	6	9			
Spillback Cap Reductn			0	0	0	0			
Storage Cap Reductn			0	0	0	0			
Reduced v/c Ratio			0.42	0.20	0.54	0.36			
ntersection Summary									
	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 42 (47%), Referenced to ph	nase 2:NBT and	6:SBTL,	Start of Gre	en					
Natural Cycle: 75									
Control Type: Actuated-Coordinate	ed								
Maximum v/c Ratio: 0.53									
ntersection Signal Delay: 3.9				Int	ersection L	OS: A			
ntersection Capacity Utilization 54	.8%			IC	U Level of S	Service A			
Analysis Period (min) 15									
Splits and Phases: 5: Kanata Av	renue & HWY 4	17 FR ∩n							
Conto and i nasos. J. Nanata Av	OHUU GIIVVI 4	LI LD OII							
v ø₁ v vø₂	(R)							∱ \$ _{Ø4}	
12 s 50 s								28 s	
k.									

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		*	î,		7	ĵ.	
Traffic Volume (vph)	45	6	18	19	6	61	41	561	36	52	525	41
Future Volume (vph)	45	6	18	19	6	61	41	561	36	52	525	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6	4.00	4.00	7.6	4.00	4.00	30.0	4.00	4.00	30.0	4.00	4.00
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		0.97			0.96		0.99	1.00		1.00	1.00	
Frt Fit Destants de		0.965			0.904		0.050	0.991		0.050	0.989	
Flt Protected	٥	0.968	٥	0	0.989	٥	0.950	4720	٥	0.950 1662	4740	0
Satd. Flow (prot) Flt Permitted	0	1218 0.809	0	0	1464 0.909	0	1145 0.419	1732	0	0.402	1713	0
	0		٥	0		۸		1720	٥		1710	0
Satd. Flow (perm)	U	1001	0 Yes	U	1336	0	501	1732	0	701	1713	0 Yes
Right Turn on Red Satd. Flow (RTOR)		18	res		61	Yes		6	Yes		8	res
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14	11.3	18	18	12.0	14	9	13.0	6	6	0.0	9
Confl. Bikes (#/hr)	14		10	10		14	3		1	U		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 (%)	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Adj. Flow (vph)	45	6	18	19	6	61	41	561	36	52	525	41
Shared Lane Traffic (%)	70	U	10	10	U	01	71	301	00	52	020	71
Lane Group Flow (vph)	0	69	0	0	86	0	41	597	0	52	566	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Loit	0.0	rugiit	Loit	0.0	rugiit	Lon	3.7	rugiit	Lon	3.7	rugiit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s) Turn Type	Perm	0.0 NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	reiiii	1NA 4		reiiii	NA 8		reiiii	2		reiiii	1NA 6	
Permitted Phases	4	4		8	0		2			6	U	
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase	4	4		0	U					U	U	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Maximum Green (s)	7.10											

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	• NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.0			13.0		69.5	69.5		69.5	69.5	
Actuated g/C Ratio		0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio		0.43			0.35		0.11	0.45		0.10	0.43	
Control Delay		34.5			17.0		5.0	5.7		5.9	6.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.2	
Total Delay		34.5			17.0		5.0	5.7		5.9	7.1	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		34.5			17.0			5.6			7.0	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		8.4			4.0		1.9	34.7		3.1	44.6	
Queue Length 95th (m)		18.3			14.6		m5.0	51.0		6.4	41.1	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		277			398		387	1339		541	1324	
Starvation Cap Reductn		0			0		0	0		0	200	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.22		0.11	0.45		0.10	0.50	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

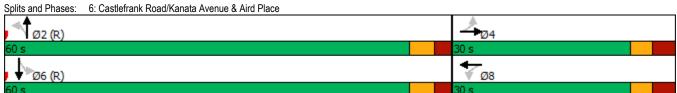
Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.45 Intersection Signal Delay: 8.3

Intersection Capacity Utilization 69.6%

Analysis Period (min) 15

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



Intersection LOS: A

ICU Level of Service C

	٦	→	•	•	←	•	1	†	<i>></i>	\	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	Î.		75	Î.		*	Î.		*	•	7
Traffic Volume (vph)	158	130	72	34	114	34	123	388	51	79	300	100
Future Volume (vph)	158	130	72	34	114	34	123	388	51	79	300	100
ldeal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0	4.00	4.00	55.0	4.00	4.00	55.0	4.00	4.00	30.0	4.00	4.00
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		0.98	0.98		0.98	0.99		0.97		0.94
Frt	0.050	0.947		0.050	0.966		0.050	0.983		0.050		0.850
Fit Protected	0.950	1010	^	0.950 1695	1000	٥	0.950	4000	0	0.950	1000	4200
Satd. Flow (prot) Flt Permitted	1586 0.447	1649	0	0.631	1629	0	1695 0.559	1629	0	1503 0.444	1655	1322
Satd. Flow (perm)	711	1649	0	1099	1629	0	975	1629	0	684	1655	1245
Right Turn on Red	711	1049	Yes	1099	1029	Yes	913	1029	Yes	004	1000	Yes
Satd. Flow (RTOR)		43	163		18	163		8	163			126
Link Speed (k/h)		50			50			50			50	120
Link Opeca (MI)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	35	LL.0	16	16	21.0	35	20	10.0	33	33	10.0	20
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 (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	15%	10%	17%
Adj. Flow (vph)	158	130	72	34	114	34	123	388	51	79	300	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	158	202	0	34	148	0	123	439	0	79	300	100
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	0	14	24	0	14	24	0	14	24	0	14
Number of Detectors	1	2 Thru		1	2 Thru		1	2 Thru		1	2 Than	1 Diaht
Detector Template	Left 6.1	Thru 30.5		Left 6.1	Thru 30.5		Left 6.1	Thru 30.5		Left 6.1	Thru 30.5	Right 6.1
Leading Detector (m) Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	OI · EX	OI · LX		OI · EX	OI · LX		OI · LA	OI · LX		OI · EX	OI LX	OI · EX
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase		40.0		400	40.0		40.0	40.0		40.0	40.0	10.0
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
Maximum Green (s)	5.3	43.3		31.3	31.3		33.8	33.8		33.8	33.8	33.8
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)	3.4	3.4		3.4	3.4		2.9	2.9		2.9	2.9	2.9

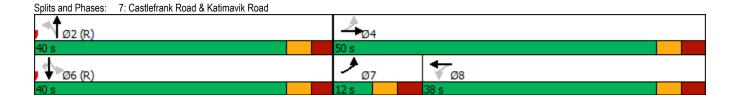
	•	→	•	•	•	•	4	†	~	\	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	26.2	26.2		14.2	14.2		50.9	50.9		50.9	50.9	50.9
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.61	0.40		0.20	0.55		0.22	0.47		0.20	0.32	0.13
Control Delay	35.5	21.3		33.3	37.2		12.5	14.7		13.9	12.5	4.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.5	21.3		33.3	37.2		12.5	14.7		13.9	12.5	4.5
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		27.5			36.4			14.2			11.1	
Approach LOS		С			D			В			В	
Queue Length 50th (m)	22.0	22.1		5.3	21.3		9.4	39.1		3.3	12.9	0.0
Queue Length 95th (m)	32.2	34.2		12.0	34.7		24.3	80.9		15.9	44.6	9.8
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	258	815		382	578		551	925		387	936	759
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.61	0.25		0.09	0.26		0.22	0.47		0.20	0.32	0.13
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												

Cycle Length: 90 Actuated Cycle Length: 90

Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 18.8
Intersection Capacity Utilization 80.3% Analysis Period (min) 15



Intersection LOS: B ICU Level of Service D

	٠	→	•	•	←	•	1	†	<i>></i>	/		✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ,		¥	ĵ,		¥	î,		¥	ĵ.	
Traffic Volume (vph)	50	652	13	62	442	75	17	17	145	160	10	53
Future Volume (vph)	50	652	13	62	442	75	17	17	145	160	10	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0	4.00	4.00	55.0	4.00	4.00	40.0	4.00	4.00	35.0	4.00	4.00
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	0.99	1.00		1.00	0.99		0.99	0.96		0.98	0.98	
Frt Flt Protected	0.950	0.997		0.950	0.978		0.950	0.866		0.950	0.874	
	1695	1718	0	1695	1592	0	1695	1479	0	1695	1493	0
Satd. Flow (prot) Flt Permitted	0.420	1/10	U	0.324	1092	U	0.716	1479	U	0.645	1493	U
Satd. Flow (perm)	743	1718	0	575	1592	0	1267	1479	0	1125	1493	0
Right Turn on Red	143	1710	Yes	3/3	1092	Yes	1207	1479	Yes	1123	1493	Yes
Satd. Flow (RTOR)		2	163		15	163		145	163		53	163
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	12	17.5	11	11	17.1	12	4	10.1	12	12	10.0	4
Confl. Bikes (#/hr)	12		1			12	7		12	12		-
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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	14%	2%
Adj. Flow (vph)	50	652	13	62	442	75	17	17	145	160	10	53
Shared Lane Traffic (%)	00	002	10	VL		70	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	110	100		00
Lane Group Flow (vph)	50	665	0	62	517	0	17	162	0	160	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	9
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D	0.0		D	0.0		D	0.0		D	0.0	
Turn Type Protected Phases	Perm	NA 2		Perm	NA 6		Perm	NA 8		Perm	NA 4	
Permitted Phases	2	2		6	Ö		0	Ŏ		1	4	
Detector Phase	2 2	2		6	6		8	0		4	1	
Switch Phase	2	Z		0	6		δ	8		4	4	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Initial (s) Minimum Split (s)	27.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	39.3	39.3		39.3	39.3		29.0	29.0		29.0	29.0	
Yellow Time (s)	39.3	39.3		39.3	39.3		3.0	3.0		3.0	3.0	
TOHOW THIIC (5)	5.7	5.1		5.1	J.1		3.0	5.0		5.0	5.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	51.5	51.5		51.5	51.5		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.21	0.21		0.21	0.21	
v/c Ratio	0.10	0.60		0.17	0.50		0.06	0.38		0.68	0.18	
Control Delay	7.8	12.5		8.9	10.6		22.7	8.3		42.8	9.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	12.5		8.9	10.6		22.7	8.3		42.8	9.7	
LOS	Α	В		Α	В		С	Α		D	Α	
Approach Delay		12.2			10.4			9.7			33.4	
Approach LOS		В			В			Α			С	
Queue Length 50th (m)	2.5	50.9		3.3	34.7		2.1	2.1		22.6	1.2	
Queue Length 95th (m)	8.6	107.0		11.0	74.9		6.2	14.6		37.4	9.3	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	478	1107		370	1030		459	628		407	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	0.10	0.60		0.17	0.50		0.04	0.26		0.39	0.11	
Intersection Summary	Other											

Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.68

Intersection Signal Delay: 14.1 Intersection Capacity Utilization 86.6%

Intersection LOS: B ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



	-	•	•	←	4	/
Lana Group	EDT	EDD	MDI	\\/DT	NDI	NDD
Lane Group	EBT	EBR	WBL	WBT	NBL -	NBR
Lane Configurations	607	7	214	602	\	177
Traffic Volume (vph)	607 607	82 82	214 214	693 693	79 79	177 177
Future Volume (vph)	1800	1800	1800	1800	1800	1800
Ideal Flow (vphpl)	1800	55.0	110.0	1800	30.0	0.0
Storage Length (m)		55.0 1	110.0		30.0	0.0
Storage Lanes			100.0		45.0	
Taper Length (m) Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98	1.00	1.00	1.00	0.98
Frt Frt		0.98				0.98
Fit Protected		0.000	0.950		0.950	0.000
	1640	1517		1701		1517
Satd. Flow (prot)	1640	1517	1695	1784	1695	1517
Flt Permitted	4040	4.400	0.315	4704	0.950	4.400
Satd. Flow (perm)	1640	1483	562	1784	1695	1482
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		82				177
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)		1	1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	607	82	214	693	79	177
Shared Lane Traffic (%)						
Lane Group Flow (vph)	607	82	214	693	79	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	,g	_5/(3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane	7.0			7.0	7.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	1.00	1.00	24	1.00	24	1.00
	2	14	1	2	1	14
Number of Detectors			Left		Left	
Detector Template	Thru	Right		Thru		Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type		D	pm+pt	NA	Perm	Perm
Tulli Tybe		Perm	F Pt		, V .III	, 0,1111
	NA	Perm	1	h		
Protected Phases			1	6	8	8
Protected Phases Permitted Phases	NA 2	2	6		8	8 8
Protected Phases Permitted Phases Detector Phase	NA		-	6	8 8	8
Protected Phases Permitted Phases Detector Phase Switch Phase	NA 2 2	2 2	6	6	8	8
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s)	NA 2 2	2 2 10.0	5.0	6	5.0	5.0
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s)	NA 2 2 10.0 29.4	2 2 10.0 29.4	5.0 10.8	6 10.0 29.4	5.0 24.9	5.0 24.9
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s)	NA 2 2 10.0 29.4 58.0	2 2 10.0 29.4 58.0	5.0 10.8 12.0	6 10.0 29.4 70.0	5.0 24.9 30.0	5.0 24.9 30.0
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%)	NA 2 2 10.0 29.4 58.0 58.0%	2 2 10.0 29.4 58.0 58.0%	5.0 10.8 12.0 12.0%	6 10.0 29.4 70.0 70.0%	5.0 24.9 30.0 30.0%	5.0 24.9 30.0 30.0%
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s)	NA 2 2 10.0 29.4 58.0 58.0% 51.6	2 2 10.0 29.4 58.0 58.0% 51.6	5.0 10.8 12.0 12.0% 6.2	10.0 29.4 70.0 70.0% 63.6	5.0 24.9 30.0 30.0% 24.1	5.0 24.9 30.0 30.0% 24.1
Protected Phases Permitted Phases Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%)	NA 2 2 10.0 29.4 58.0 58.0%	2 2 10.0 29.4 58.0 58.0%	5.0 10.8 12.0 12.0%	6 10.0 29.4 70.0 70.0%	5.0 24.9 30.0 30.0%	5.0 24.9 30.0 30.0%

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	5.8	6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	62.1	62.1	77.3	76.7	11.0	11.0
Actuated g/C Ratio	0.62	0.62	0.77	0.77	0.11	0.11
v/c Ratio	0.60	0.09	0.40	0.51	0.42	0.55
Control Delay	16.1	2.8	5.9	6.7	46.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	2.8	5.9	6.7	46.9	12.7
LOS	В	Α	Α	Α	D	В
Approach Delay	14.5			6.5	23.3	
Approach LOS	В			Α	С	
Queue Length 50th (m)	62.5	0.0	8.2	39.1	14.7	0.0
Queue Length 95th (m)	128.5	6.8	20.7	88.5	26.1	17.0
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		55.0	110.0		30.0	
Base Capacity (vph)	1018	951	533	1367	408	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.09	0.40	0.51	0.19	0.36
Intersection Summary						
Area Type:	Other					
Cycle Length: 100	Other					
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to ph	aco 2:EDT and (6-M/DTI Cto	art of Groon	,		
Natural Cycle: 75	iase z.Ebi and i	o.wbil, Sia	iii oi Green	l		
Control Type: Actuated-Coordinated	otod					
Maximum v/c Ratio: 0.60	aleu					
Intersection Signal Delay: 11.8				lad	ersection L()C. D
Intersection Capacity Utilization	CC 20/				J Level of S	
	00.3%			IU	J Level of S	ervice C
Analysis Period (min) 15						
Culity and Dhanner 1. Ford Co.	Daine 0 Kanat					
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
 	(0)					
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12 s 58 s						
4-						
▼ Ø6 (R) ■						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1 , 3		*	1		*	î,		*	ĵ,	
Traffic Volume (vph)	30	3	78	134	9	48	136	824	200	72	638	25
Future Volume (vph)	30	3	78	134	9	48	136	824	200	72	638	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			40.0			75.0			55.0		
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	0.98	0.97		0.99	0.96			1.00		1.00	1.00	
Frt		0.856			0.874			0.971			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1262	1250	0	1695	1504	0	1503	1724	0	1695	1760	0
Flt Permitted	0.720			0.704			0.226			0.194		
Satd. Flow (perm)	937	1250	0	1247	1504	0	358	1724	0	346	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		78			48			25			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	11		4	4		11	3		3	3		3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	134	9	48	136	824	200	72	638	25
Shared Lane Traffic (%)	00			101		10	100	021	200		000	
Lane Group Flow (vph)	30	81	0	134	57	0	136	1024	0	72	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	LGIL	3.7	rtigiit	Leit	3.7	rtigrit	Leit	3.7	rtigrit	Leit	3.7	rtigrit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		4.3			4.3			4.3			4.3	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.1	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
(,	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Size(m)	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Type	UI+EX	CI+EX		CI+EX	UI+EX		CI+EX	CI+EX		CI+EX	CI+EX	
Detector 1 Channel	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	28.3	28.3		28.3	28.3		11.3	33.3		33.3	33.3	
Total Split (s)	28.0	28.0		28.0	28.0		15.0	62.0		47.0	47.0	
	31.1%	31.1%		31.1%	31.1%		16.7%	68.9%		52.2%	52.2%	
Total Split (%)	31.170											
Total Split (%) Maximum Green (s)				21.7	21.7		8.7	55.7		40.7	40.7	
Total Split (%) Maximum Green (s) Yellow Time (s)	21.7	21.7 3.0		21.7 3.0	21.7 3.0		8.7 3.3	55.7 3.3		40.7 3.3	40.7 3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	10	10		10	10			10		10	10	
Act Effct Green (s)	15.3	15.3		15.3	15.3		62.1	62.1		47.9	47.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.69	0.69		0.53	0.53	
v/c Ratio	0.19	0.29		0.64	0.19		0.39	0.86		0.39	0.71	
Control Delay	32.7	10.5		41.6	8.5		6.8	14.6		23.3	22.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay	32.7	10.5		41.6	8.5		6.8	15.1		23.3	22.8	
LOS	С	В		D	Α		Α	В		С	С	
Approach Delay		16.5			31.7			14.1			22.8	
Approach LOS		В			С			В			С	
Queue Length 50th (m)	4.5	0.4		21.9	2.9		6.1	108.0		6.9	80.4	
Queue Length 95th (m)	11.2	11.3		37.3	10.5		m8.9	m#135.0		22.6	#159.6	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	225	360		300	399		359	1197		184	938	
Starvation Cap Reductn	0	0		0	0		0	26		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	0.13	0.23		0.45	0.14		0.38	0.87		0.39	0.71	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 31 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 18.7

Intersection LOS: B ICU Level of Service F

Intersection Capacity Utilization 98.4%

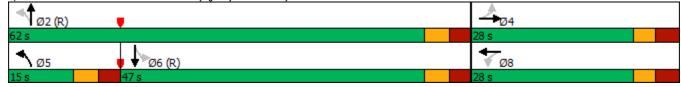
Analysis Period (min) 15

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: 3: Kanata Avenue & Lord Byng Way/Maritime Way



Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	VVDL	₹ VVDIN		NON	ODL	♣ ♠
Traffic Volume (vph)	486	699	↑ 737	0	0	7.7 1064
	486	699		0	0	1064
Future Volume (vph)			737			
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor		0.050				
Frt	0.050	0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950					
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		114				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	486	699	737	0 %	0%	1064
	400	033	131	U	U	1004
Shared Lane Traffic (%)	400	COO	707	0	0	1004
Lane Group Flow (vph)	486	699	737	0	0	1064
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
	0.0	0.0	0.0			0.0
Detector 1 Position(m)						
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel			OITEX			OITLX
			0.0			0.0
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
		40.0	38.9			38.9
Maximum Green (s)	40.0					
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	39.2	39.2	39.7			39.7
Actuated g/C Ratio	0.44	0.44	0.44			0.44
v/c Ratio	0.66	0.97	0.95			0.72
Control Delay	25.1	48.1	39.6			20.3
Queue Delay	0.3	0.6	26.1			0.0
Total Delay	25.4	48.7	65.8			20.3
LOS	23.4 C	70.7 D	65.6 E			20.5 C
Approach Delay	39.2		65.8			20.3
Approach LOS	D		03.0 E			20.5 C
Queue Length 50th (m)	63.3	98.1	97.2			44.1
Queue Length 95th (m)	96.5	#173.8	#190.0			73.8
Internal Link Dist (m)	308.8	#173.0	102.6			90.0
Turn Bay Length (m)	300.0		102.0			30.0
Base Capacity (vph)	753	737	772			1481
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	43	4	75			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.68	0.95	1.06			0.72
	0.00	0.95	1.00			0.72
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 32 (36%), Referenced to	phase 2:NBT ar	nd 6:SBT, S	tart of Green)		
Natural Cycle: 90						
Control Type: Actuated-Coordinate	ated					
Maximum v/c Ratio: 0.97						
Intersection Signal Delay: 39.0					ersection L	
Intersection Capacity Utilization	124.2%			ICU	J Level of S	Service H
Analysis Period (min) 15						
# 95th percentile volume exce		eue may be	e longer.			
Queue shown is maximum at	fter two cycles.					
			_			
Splits and Phases: 4: Kanata	Avenue & HWY	417 WB Of	f			
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▼ Ø6 (R)					₩ (28

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Lane Configurations				#	*	A	,50
Traffic Volume (vph)	0	0	602	206	408	963	
Future Volume (vph)	0	0	602	206	408	963	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
Гареr Length (m)	7.6				7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor				0.98			
Frt				0.850			
Flt Protected	^	^	4700	4547	0.950	4704	
Satd. Flow (prot)	0	0	1733	1517	1662	1784	
Flt Permitted	٥	0	4700	1170	0.279	4704	
Satd. Flow (perm)	0	0 Yes	1733	1479 Yes	488	1784	
Right Turn on Red Satd. Flow (RTOR)		168		204			
Link Speed (k/h)	48		50	204		50	
Link Distance (m)	278.4		119.2			126.6	
Travel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.3		0.0	2	2	J. I	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	0%	5%	2%	4%	2%	
Adj. Flow (vph)	0	0	602	206	408	963	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	602	206	408	963	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0		3.7			3.7	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Furning Speed (k/h)	24	14	_	14	24		
Number of Detectors			2	1	1	2	
Detector Template			Thru	Right	Left	Thru	
Leading Detector (m)			30.5	6.1	6.1	30.5	
Trailing Detector (m)			0.0	0.0	0.0	0.0	
Detector 1 Position(m)			0.0	0.0	0.0	0.0	
Detector 1 Size(m)			1.8 CI+Ex	6.1 CI+Ex	6.1 CI+Ex	1.8 CI+Ex	
Detector 1 Type Detector 1 Channel			CI+EX	CI+EX	CI+EX	UI+EX	
Detector 1 Extend (s)			0.0	0.0	0.0	0.0	
Detector 1 Extend (s) Detector 1 Queue (s)			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	0.0	
Detector 2 Position(m)			28.7	0.0	0.0	28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel			OI · EX			O1 · E∧	
Detector 2 Extend (s)			0.0			0.0	
Turn Type			NA	Perm	pm+pt	NA	
Protected Phases			2	*****	1	6	8
Permitted Phases				2	6		
Detector Phase			2	2	1	6	
Switch Phase							
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0
Total Split (s)			50.0	50.0	12.0	62.0	28.0
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
Lost Time Adjust (s)			0.0	0.0	0.0	0.0		
Total Lost Time (s)			5.7	5.7	5.7	5.7		
Lead/Lag			Lag	Lag	Lead			
Lead-Lag Optimize?			Yes	Yes	Yes			
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Walk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			53.9	53.9	78.9	83.5		
Actuated g/C Ratio			0.60	0.60	0.88	0.93		
v/c Ratio			0.58	0.21	0.60	0.58		
Control Delay			9.2	1.0	15.3	5.6		
Queue Delay			0.9	0.0	0.0	0.1		
Total Delay			10.0	1.0	15.3	5.7		
LOS			В	Α	В	Α		
Approach Delay			7.7			8.5		
Approach LOS			Α			Α		
Queue Length 50th (m)			40.7	1.1	20.5	9.3		
Queue Length 95th (m)			81.3	2.9	#69.3	#110.3		
Internal Link Dist (m)	254.4		95.2			102.6		
Turn Bay Length (m)				50.0				
Base Capacity (vph)			1037	967	679	1654		
Starvation Cap Reductn			194	0	0	6		
Spillback Cap Reductn			107	0	0	87		
Storage Cap Reductn			0	0	0	0		
Reduced v/c Ratio			0.71	0.21	0.60	0.61		
Intersection Summary								
Area Type: Ot	her							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 27 (30%), Referenced to phas	se 2:NBT an	d 6:SBTL,	Start of Gre	en				
Natural Cycle: 90								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.60								
Intersection Signal Delay: 8.2				Int	ersection L	OS: A		
Intersection Capacity Utilization 124.2	2%			IC	U Level of S	Service H		
Analysis Period (min) 15								
# 95th percentile volume exceeds of	capacity, que	eue may be	longer.					
Queue shown is maximum after to	vo cycles.							
Splits and Phases: 5: Kanata Aven	ue & HWY	117 EB On						
\		2 011						
🕶 Ø1 🏮 Tø2 (F	8)							
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▼ [™] Ø6 (R) ■								# \$ø8

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₽.		*	î,		*	ĵ.	
Traffic Volume (vph)	17	4 3	13	30	1	97	12	805	35	62	959	24
Future Volume (vph)	17	3	13	30	1	97	12	805	35	62	959	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.98			0.97			1.00			1.00	
Frt		0.947			0.898			0.994			0.996	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1542	0	1695	1755	0	1695	1775	0
Flt Permitted		0.735			0.909		0.213			0.280		
Satd. Flow (perm)	0	1219	0	0	1415	0	380	1755	0	500	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			97			4			3	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	7		6	6		7	9		5	5		9
Confl. Bikes (#/hr)									3			
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	17	3	13	30	1	97	12	805	35	62	959	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	128	0	12	840	0	62	983	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
		3.0		3.0								

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.1			10.1		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.11			0.11		0.76	0.76		0.76	0.76	
v/c Ratio		0.22			0.52		0.04	0.63		0.16	0.73	
Control Delay		26.2			19.2		4.8	8.1		6.8	12.2	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.0	
Total Delay		26.2			19.2		4.8	8.2		6.8	12.2	
LOS		С			В		Α	Α		Α	В	
Approach Delay		26.2			19.2			8.1			11.9	
Approach LOS		С			В			Α			В	
Queue Length 50th (m)		3.3			5.1		0.3	34.5		3.7	83.1	
Queue Length 95th (m)		9.9			17.8		m1.2	96.0		m5.7	#222.1	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		331			445		287	1327		377	1342	
Starvation Cap Reductn		0			0		0	19		0	7	
Spillback Cap Reductn		0			2		0	39		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.29		0.04	0.65		0.16	0.74	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.73 Intersection Signal Delay: 11.0

Intersection Capacity Utilization 75.8%

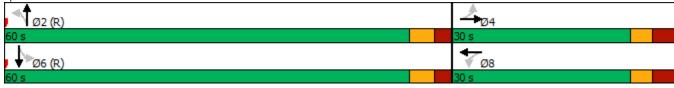
Intersection LOS: B ICU Level of Service D

Analysis Period (min) 15

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

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	Î.		7	ĵ.		*	î,		*	•	7
Traffic Volume (vph)	144	140	75	92	200	105	41	434	60	115	654	198
Future Volume (vph)	144	140	75	92	200	105	41	434	60	115	654	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0	4.00	4.00	55.0	4.00	4.00	55.0	4.00	4.00	30.0	4.00	4.00
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	0.99	0.98		0.98	0.98		0.98	0.99				0.92
Frt	0.050	0.948		0.050	0.948		0.050	0.982		0.050		0.850
Flt Protected	0.950	1000	0	0.950 1558	1004	٥	0.950	4707	0	0.950 1647	4704	4.470
Satd. Flow (prot) Flt Permitted	1662 0.250	1666	0	0.624	1634	0	1695 0.330	1737	0	0.222	1784	1473
Satd. Flow (perm)	431	1666	0	1005	1634	0	577	1737	0	385	1784	1356
Right Turn on Red	431	1000	Yes	1005	1034	Yes	311	1737	Yes	303	1704	Yes
Satd. Flow (RTOR)		36	163		29	163		8	163			195
Link Speed (k/h)		50			50			50			50	190
Link Opeca (MI)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	16	LL.0	12	12	21.0	16	31	10.0	27	27	10.0	31
Confl. Bikes (#/hr)			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%	2%	2%	11%	2%	7%	2%	2%	2%	5%	2%	5%
Adj. Flow (vph)	144	140	75	92	200	105	41	434	60	115	654	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	144	215	0	92	305	0	41	494	0	115	654	198
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24	0	14
Number of Detectors	1	2		1	2		1	2		1	2 Th	1 Diamet
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m) Trailing Detector (m)	6.1 0.0	30.5 0.0		6.1 0.0	30.5 0.0		6.1 0.0	30.5 0.0		6.1 0.0	30.5 0.0	6.1 0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel	OITEX	OITEX		OITEX	OITEX		OITEX	OITEX		OITEX	OITEX	OITEX
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.2	29.2		29.2	29.2		11.2	29.7	29.7
Total Split (s)	12.0	43.0		31.0	31.0		35.0	35.0		12.0	47.0	47.0
Total Split (%)	13.3%	47.8%		34.4%	34.4%		38.9%	38.9%		13.3%	52.2%	52.2%
Maximum Green (s)	5.3	36.3		24.8	24.8		28.8	28.8		5.8	40.3	40.3
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	31.5	31.5		20.0	20.0		34.9	34.9		45.6	45.1	45.1
Actuated g/C Ratio	0.35	0.35		0.22	0.22		0.39	0.39		0.51	0.50	0.50
v/c Ratio	0.65	0.35		0.41	0.79		0.18	0.73		0.40	0.73	0.26
Control Delay	34.5	18.6		34.3	44.4		24.9	33.7		15.3	21.8	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.5	18.6		34.3	44.4		24.9	33.7		15.3	21.8	4.1
LOS	С	В		С	D		С	С		В	С	Α
Approach Delay		25.0			42.0			33.0			17.4	
Approach LOS		С			D			С			В	
Queue Length 50th (m)	17.3	22.0		13.5	45.0		5.0	77.3		7.2	84.1	3.1
Queue Length 95th (m)	28.5	36.5		26.1	69.3		13.6	#135.0		m13.5	#152.5	m10.8
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	223	693		276	471		223	679		291	893	776
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.31		0.33	0.65		0.18	0.73		0.40	0.73	0.26

Intersection Summary

Other

Area Type: Cycle Length: 90

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.79 Intersection Signal Delay: 26.7

Intersection Capacity Utilization 93.3%

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.

7: Castlefrank Road & Katimavik Road Splits and Phases:



Intersection LOS: C

ICU Level of Service F

Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ.		¥	ĵ.		×	î,		¥	1	
Traffic Volume (vph)	66	452	32	119	621	103	13	14	85	38		73
Future Volume (vph)	66	452	32	119	621	103	13	14	85	38	11	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0 1.00	1.00	1.00	55.0 1.00	1.00	1.00	40.0 1.00	1.00	1.00	35.0 1.00	1.00	1.00
Lane Util. Factor Ped Bike Factor	1.00	1.00	1.00	1.00	0.99	1.00	0.98	0.97	1.00	0.99	0.96	1.00
Frt		0.990		1.00	0.99		0.90	0.871		0.99	0.90	
Flt Protected	0.950	0.330		0.950	0.313		0.950	0.07 1		0.950	0.070	
Satd. Flow (prot)	1695	1763	0	1695	1734	0	1695	1514	0	1679	1497	0
Flt Permitted	0.257	1700	U	0.487	1104	0	0.702	1014	V	0.693	1401	· ·
Satd. Flow (perm)	459	1763	0	865	1734	0	1229	1514	0	1213	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			13			85			73	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	15		4	4		15	8		4	4		8
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	66	452	32	119	621	103	13	14	85	38	11	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	484	0	119	724	0	13	99	0	38	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	1.00	4.00	4.00	4.00	4.00	1.00	1.00	4.00	1.00	4.00	4.00	4.00
Headway Factor Turning Speed (k/h)	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
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	5.0	40.0		400	40.0		40.0	40.0		40.0	40.0	
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	66.0		51.0	51.0		24.0	24.0		24.0	24.0	
Total Split (%)	16.7%	73.3%		56.7%	56.7%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	9.3	60.3		45.3	45.3		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.7	3.7 2.0		3.7 2.0	3.7 2.0		3.0	3.0 3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR '	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.1	71.2		61.3	61.3		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.15	0.35		0.20	0.61		0.08	0.37		0.25	0.33	
Control Delay	4.3	4.8		9.8	14.4		36.3	20.8		38.6	14.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.3	4.8		9.8	14.4		36.3	20.8		38.6	14.4	
LOS	Α	Α		Α	В		D	С		D	В	
Approach Delay		4.7			13.8			22.6			21.9	
Approach LOS		Α			В			С			С	
Queue Length 50th (m)	2.3	21.6		8.1	71.1		2.4	6.2		6.1	1.8	
Queue Length 95th (m)	7.1	47.6		21.1	142.5		m3.9	m14.9		14.1	13.2	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	485	1397		589	1185		245	370		242	357	
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	0.14	0.35		0.20	0.61		0.05	0.27		0.16	0.24	
Intersection Summany												

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 11.9

Intersection LOS: B Intersection Capacity Utilization 70.1% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



	•	4	†	/	/	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ኝ	#	A			*
Traffic Volume (vph)	486	699	737	0	0	1064
Future Volume (vph)	486	699	737	0	0	1064
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor						0.50
Frt		0.850				
Flt Protected	0.950	3.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1311	1700			5501
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red	1000	Yes	1700	Yes	U	0001
Satd. Flow (RTOR)		89		163		
Link Speed (k/h)	50	03	50			50
Link Speed (k/n) Link Distance (m)	332.8		126.6			114.0
			9.1			
Travel Time (s)	24.0		9.1	2		8.2
Confl. Bikes (#/hr)	4.00	4.00	4.00	3	4.00	4.00
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	486	699	737	0	0	1064
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	699	737	0	0	1064
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
	0.0	0.0	0.0			0.0
Detector 1 Position(m)						1.8
Detector 1 Size(m)	6.1	6.1	1.8			
Detector 1 Type	Cl+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel	2.2	2.0	0.0			2.2
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8	_			
Detector Phase	8	8	2			6
Switch Phase		-	_			
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	67.0	67.0	53.0			53.0
						53.0 44.2%
Total Split (%)	55.8%	55.8%	44.2%			
Maximum Green (s)	62.0	62.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

	•	•	†	/	/	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	57.1	57.1	51.8			51.8	
Actuated g/C Ratio	0.48	0.48	0.43			0.43	
v/c Ratio	0.60	0.91	0.98			0.73	
Control Delay	26.1	42.0	62.5			33.2	
Queue Delay	0.0	0.0	40.4			0.0	
Total Delay	26.1	42.0	102.8			33.2	
LOS	C	D	F			C	
Approach Delay	35.5		102.8			33.2	
Approach LOS	D		F			C	
Queue Length 50th (m)	77.4	126.4	~187.1			112.9	
Queue Length 95th (m)	106.5	#199.8	#265.6			143.3	
Internal Link Dist (m)	308.8	11 100.0	102.6			90.0	
Turn Bay Length (m)	000.0		102.0			00.0	
Base Capacity (vph)	875	826	755			1450	
Starvation Cap Reductn	0	0	169			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.56	0.85	1.26			0.73	
ntersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to ph	nase 2:NBT and	6:SBT, Star	t of Green				
Natural Cycle: 90							
Control Type: Actuated-Coordina	ated						
Maximum v/c Ratio: 0.98							
ntersection Signal Delay: 51.3					ersection L		
ntersection Capacity Utilization	124.2%			ICU	J Level of S	Service H	
Analysis Period (min) 15							
 Volume exceeds capacity, qu 		cally infinite.					
Queue shown is maximum af							
# 95th percentile volume excee	eds capacity, qu	eue may be	longer.				
Queue shown is maximum af	fter two cycles.						
Splits and Phases: 4: Kanata	Avenue & HWY	417 WR Of	f				
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Lane Configurations	ች	77	44			44		
Traffic Volume (vph)	252	239	367	0	0	940		
Future Volume (vph)	252	239	367	0	0	940		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95		
Frt		0.850						
Flt Protected	0.950							
Satd. Flow (prot)	1695	2347	3262	0	0	3325		
Flt Permitted	0.950							
Satd. Flow (perm)	1695	2347	3262	0	0	3325		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)		239						
Link Speed (k/h)	50		50			50		
Link Distance (m)	332.8		126.6			114.0		
Travel Time (s)	24.0	4.00	9.1	4.00	4.00	8.2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%		
Adj. Flow (vph)	252	239	367	0	0	940		
Shared Lane Traffic (%)	0.50	239	367	٥	٥	940		
Lane Group Flow (vph)	252 Na			0	0			
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	3.7		0.0			0.0		
Link Offset(m) Crosswalk Width(m)	0.0 4.9		0.0 4.9			0.0 4.9		
Two way Left Turn Lane	4.9		4.9			4.9		
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	1.00	1.00	1.00	24	1.00		
Number of Detectors	1	1	2	17	24	2		
Detector Template	Left	Right	Thru			Thru		
Leading Detector (m)	6.1	6.1	30.5			30.5		
Trailing Detector (m)	0.0	0.0	0.0			0.0		
Detector 1 Position(m)	0.0	0.0	0.0			0.0		
Detector 1 Size(m)	6.1	6.1	1.8			1.8		
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		
Detector 2 Position(m)			28.7			28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			Cl+Ex		
Detector 2 Channel								
Detector 2 Extend (s)			0.0			0.0		
Turn Type	Prot	Prot	NA			NA	•	
Protected Phases	7	4	2			6	3	
Permitted Phases	7		0					
Detector Phase	7	4	2			6		
Switch Phase Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0	
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0	
Total Split (s)	36.0	18.0	54.0			54.0	18.0	
Total Split (%)	40.0%	20.0%	60.0%			60.0%	20%	
Maximum Green (s)	31.0	13.0	47.9			47.9	16.0	
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0	
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	V.V	
Total Lost Time (s)	5.0	5.0	6.1			6.1		
Lead/Lag		Lag				<u> </u>	Lead	
Lead-Lag Optimize?		Yes					Yes	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Recall Mode	None	None	C-Max			C-Max	None	
Walk Time (s)			7.0				7.0	
Flash Dont Walk (s)			15.0				9.0	
Pedestrian Calls (#/hr)			10				10	
Act Effct Green (s)	19.4	15.8	59.5			59.5		
Actuated g/C Ratio	0.22	0.18	0.66			0.66		
v/c Ratio	0.69	0.39	0.17			0.43		
Control Delay	41.8	6.9	12.0			13.1		
Queue Delay	0.0	0.0	0.0			0.0		
Total Delay	41.8	6.9	12.0			13.1		
LOS	D	Α	В			В		
Approach Delay	24.8		12.0			13.1		
Approach LOS	С		В			В		
Queue Length 50th (m)	40.8	0.0	9.4			62.1		
Queue Length 95th (m)	56.3	11.2	48.9			85.4		
Internal Link Dist (m)	308.8		102.6			90.0		
Turn Bay Length (m)								
Base Capacity (vph)	583	624	2158			2199		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	0	0	0			137		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.43	0.38	0.17			0.46		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 0 (0%), Referenced to pha	ase 2:NBT and 6	S:SBT, Star	t of Green					
Natural Cycle: 60								
Control Type: Actuated-Coordinate	ted							
Maximum v/c Ratio: 0.69								
Intersection Signal Delay: 16.1					ersection L			
Intersection Capacity Utilization 5	54.8%			ICL	Level of S	Service A		
Analysis Period (min) 15								
Splits and Phases: 4: Kanata A	Avenue & HWY	417 WB Off	:					
↑ ↑ Ø2 (R)							∤k ø₃	Q 4
54 s							3 s	18 s
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	7	77	44			44	
Traffic Volume (vph)	486	699	737	0	0	1064	
Future Volume (vph)	486	699	737	0	0	1064	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Ped Bike Factor							
Frt		0.850					
Flt Protected	0.950						
Satd. Flow (prot)	1695	2669	3325	0	0	3357	
Flt Permitted	0.950						
Satd. Flow (perm)	1695	2669	3325	0	0	3357	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		699					
Link Speed (k/h)	50		50			50	
Link Distance (m)	332.8		126.6			114.0	
Travel Time (s)	24.0		9.1			8.2	
Confl. Bikes (#/hr)				3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%	
Adj. Flow (vph)	486	699	737	0	0	1064	
Shared Lane Traffic (%)	100	000		•	•	4004	
Lane Group Flow (vph)	486	699	737	0	0	1064	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m) Two way Left Turn Lane	4.9		4.9			4.9	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	1.00	1.00	1.00	24	1.00	
Number of Detectors	1	1	2	17	24	2	
Detector Template	Left	Right	Thru			Thru	
Leading Detector (m)	6.1	6.1	30.5			30.5	
Trailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	Cl+Ex	CI+Ex			CI+Ex	
Detector 1 Channel	U	U. 2.	0			U	
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot	Prot	NA			NA	
Protected Phases	7	4	2			6	3
Permitted Phases							
Detector Phase	7	4	2			6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0
Total Split (s)	61.9	43.9	28.1			28.1	18.0
Total Split (%)	68.8%	48.8%	31.2%			31.2%	20%
Maximum Green (s)	56.9	38.9	22.0			22.0	16.0
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0	6.1			6.1	Lond
Lead/Lag		Lag					Lead

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Lead-Lag Optimize?		Yes					Yes	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	C-Max			C-Max	None	
Walk Time (s)			7.0				7.0	
Flash Dont Walk (s)			15.0				9.0	
Pedestrian Calls (#/hr)			10				10	
Act Effct Green (s)	34.5	30.9	44.4			44.4		
Actuated g/C Ratio	0.38	0.34	0.49			0.49		
v/c Ratio	0.75	0.51	0.45			0.64		
Control Delay	30.8	3.2	26.1			19.8		
Queue Delay	0.0	0.1	0.0			0.1		
Total Delay	30.8	3.3	26.1			20.0		
LOS	C	A	C			В		
Approach Delay	14.6	,,	26.1			20.0		
Approach LOS	В		C			В		
Queue Length 50th (m)	71.0	0.0	63.7			80.4		
Queue Length 95th (m)	85.0	13.0	88.8			#118.4		
Internal Link Dist (m)	308.8	10.0	102.6			90.0		
Turn Bay Length (m)	300.0		102.0			30.0		
Base Capacity (vph)	1071	1553	1641			1657		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	9	112	0			90		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.46	0.49	0.45			0.68		
	0.40	0.49	0.43			0.00		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 0 (0%), Referenced to ph	nase 2:NBT and 6	S:SBT, Star	t of Green					
Natural Cycle: 60								
Control Type: Actuated-Coordinated	ated							
Maximum v/c Ratio: 0.75								
Intersection Signal Delay: 19.3					ersection L			
Intersection Capacity Utilization	106.9%			ICl	J Level of S	Service G		
Analysis Period (min) 15								
# 95th percentile volume exce		eue may be	longer.					
Queue shown is maximum at	fter two cycles.							
Splits and Phases: 4: Kanata	Avenue & HWY	117 WR ∩f	f					
△	Avenue a river				1			
Tø2 (R)		∱ j	ø3					
28.1s		18 s			43.9			
			_					
		- •€	Ø7					

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u> </u>	.10/1	UDL	*
Traffic Volume (vph)	486	489	677	0	0	1064
Future Volume (vph)	486	489	677	0	0	1064
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00					3.00
Frt		0.850				
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1017	1730	U	U	0001
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red	1033	Yes	1730	Yes	U	5551
Satd. Flow (RTOR)		30		res		
	50	30	50			50
Link Speed (k/h)						
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)	4.05	4.00	4.00	3	4.00	4.00
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	486	489	677	0	0	1064
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	489	677	0	0	1064
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.1	0.1	0.0			0.0
	0.0	0.0	0.0			0.0
Detector 1 Position(m)						1.8
Detector 1 Size(m)	6.1	6.1	1.8			
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel	^ ^	0.0	0.0			^ ^
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases		2	2			6
Permitted Phases	8	8	_			-
Detector Phase	8	8	2			6
Switch Phase	U	U				-
	5.0	5 0	10.0			10.0
Minimum Initial (s)		5.0	28.1			24.1
Minimum Split (s)	23.0	23.0				
Total Split (s)	61.0	61.0	29.0			29.0
Total Split (%)	67.8%	67.8%	32.2%			32.2%
Maximum Green (s)	56.0	56.0	22.9			22.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
	5.0	5.0	6.1			6.1
Total Lost Time (s)	5.0	5.0	0.1			0.1

Act Effct Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 51 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90		✓	•	†	~	\	ļ
Lead-Lag Optimize? Vehicle Extension (s) 3.0	Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Vehicle Extension (s) 3.0 3.0 3.0 3.0 Recall Mode None None C-Max C-Max Walk Time (s) 7.0 7.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 15.0 Pedestrian Calls (#hr) 10 10 10 Act Effet Green (s) 37.6 37.6 41.3 41.3 Act Effet Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Los C D C C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Len							
Walk Time (s) 7.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 15.0 Pedestrian Calls (#/hr) 10 10 10 Act Effct Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 308.8 102.6 90.0 Base Capacity (vph) 1054 955 803 <td< td=""><td></td><td>3.0</td><td>3.0</td><td>3.0</td><td></td><td></td><td>3.0</td></td<>		3.0	3.0	3.0			3.0
Walk Time (s) 7.0 7.0 7.0 Flash Dont Walk (s) 11.0 11.0 15.0 Pedestrian Calls (#/hr) 10 10 10 Act Effct Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 308.8 102.6 90.0 Base Capacity (vph) 1054 955 803 <td< td=""><td>Recall Mode</td><td>None</td><td>None</td><td>C-Max</td><td></td><td></td><td>C-Max</td></td<>	Recall Mode	None	None	C-Max			C-Max
Pedestrian Calls (#/hr) 10 10 10 Act Effct Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 308.8 102.6 90.0 Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0<	Walk Time (s)	7.0	7.0				
Act Effct Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C D Approach Delay 26.4 39.5 28.0 Approach LOS C D Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	Flash Dont Walk (s)	11.0	11.0	15.0			
Act Effct Green (s) 37.6 37.6 41.3 41.3 Actuated g/C Ratio 0.42 0.42 0.46 0.46 v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C D Approach Delay 26.4 39.5 28.0 Approach LOS C D Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	Pedestrian Calls (#/hr)	10	10	10			
Actuated g/C Ratio 0.42 0.42 0.46 0.46 0.46 //c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C D C C D C C D C C D C C D C C D C C D C C D C C D C C C D C C D C C C D C C C D C C C C D C C C C D C C C C C D C	Act Effct Green (s)	37.6	37.6	41.3			41.3
v/c Ratio 0.69 0.75 0.84 0.69 Control Delay 25.5 27.3 37.2 28.0 Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 8ase Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 <t< td=""><td>Actuated g/C Ratio</td><td>0.42</td><td>0.42</td><td>0.46</td><td></td><td></td><td>0.46</td></t<>	Actuated g/C Ratio	0.42	0.42	0.46			0.46
Queue Delay 0.0 0.0 2.3 0.0 Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 8ase Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 51 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 0 0 Intersection Summary Area Type: Other Cycle Length: 90 Other 0	v/c Ratio	0.69	0.75	0.84			0.69
Total Delay 25.5 27.3 39.5 28.0 LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 8ase Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	Control Delay	25.5	27.3	37.2			28.0
LOS C C D C Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 8ase Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	Queue Delay	0.0	0.0	2.3			0.0
Approach Delay 26.4 39.5 28.0 Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	Total Delay	25.5	27.3	39.5			28.0
Approach LOS C D C Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	LOS	С	С	D			С
Queue Length 50th (m) 66.8 65.8 121.3 68.6 Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 88.6 90.0 102.6 90.0 Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90	Approach Delay	26.4		39.5			28.0
Queue Length 95th (m) 72.4 74.4 #206.9 #140.1 Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) 955 803 1541 Starvation Cap Reductn 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 0 0 0	Approach LOS	С		D			С
Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 0 0 0	Queue Length 50th (m)	66.8	65.8	121.3			68.6
Internal Link Dist (m) 308.8 102.6 90.0 Turn Bay Length (m) Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 0 0 0	Queue Length 95th (m)	72.4	74.4	#206.9			#140.1
Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 0 0 0	Internal Link Dist (m)	308.8		102.6			90.0
Base Capacity (vph) 1054 955 803 1541 Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 0 0 0	Turn Bay Length (m)						
Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 <		1054	955	803			1541
Spillback Cap Reductn 0 0 51 0 Storage Cap Reductn 0 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 <	Starvation Cap Reductn	0	0	0			0
Storage Cap Reducth 0 0 0 Reduced v/c Ratio 0.46 0.51 0.90 0.69 Intersection Summary Area Type: Other Cycle Length: 90 0.51 0.90 0.69	Spillback Cap Reductn	0	0	51			0
Intersection Summary Area Type: Other Cycle Length: 90	Storage Cap Reductn	0	0	0			0
Area Type: Other Cycle Length: 90	Reduced v/c Ratio	0.46	0.51	0.90			0.69
Cycle Length: 90	Intersection Summary						
	Area Type:	Other					
	Cycle Length: 90						
Actuated Cycle Length. 30	Actuated Cycle Length: 90						

Offset: 32 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84 Intersection Signal Delay: 30.3

Intersection Capacity Utilization 110.5%

Intersection LOS: C ICU Level of Service H

Queue shown is maximum after two cycles.

Splits and Phases: 4: Kanata Avenue & HWY 417 WB Off



Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

	-	•	•	•	4	/
Lane Group	EDT	EDD	\//DI	\\/DT	NDI	NDD
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	★ ★	₹	<i>E7</i>	₹	ነ	75
Traffic Volume (vph)	754 754	37	57 57	371	10	35
Future Volume (vph)	754	37	57	371	10	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		40.0	110.0		30.0	0.0
Storage Lanes		1	0		1	1
Taper Length (m)	0.05	4.00	100.0	0.05	45.0	4.00
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor		0.050		1.00		0.050
Frt		0.850		0.000	0.055	0.850
Flt Protected				0.993	0.950	
Satd. Flow (prot)	3357	1394	0	3177	1441	1459
Flt Permitted				0.804	0.950	
Satd. Flow (perm)	3357	1394	0	2573	1441	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		37				35
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	11%	2%	9%	20%	6%
Adj. Flow (vph)	754	37	57	371	10	35
Shared Lane Traffic (%)	7 04	JI	JI	57 1	10	33
	754	37	0	428	10	35
Lane Group Flow (vph)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel	OITLX	OI LA	OI LA	OI LX	OI! LX	OI LX
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases	_	2	6		8	8
	2	2	6	6	8	8
	2		U	U U	<u> </u>	J
Detector Phase					F 0	5.0
Detector Phase Switch Phase	10.0	10.0	10.0	10.0		
Detector Phase Switch Phase Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s)	30.0	30.0	29.4	29.4	24.9	24.9
Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s)	30.0 30.0	30.0 30.0	29.4 30.0	29.4 30.0	24.9 25.0	24.9 25.0
Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%)	30.0 30.0 54.5%	30.0 30.0 54.5%	29.4 30.0 54.5%	29.4 30.0 54.5%	24.9 25.0 45.5%	24.9 25.0 45.5%
Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s)	30.0 30.0 54.5% 23.6	30.0 30.0 54.5% 23.6	29.4 30.0 54.5% 23.6	29.4 30.0 54.5% 23.6	24.9 25.0 45.5% 19.1	24.9 25.0 45.5% 19.1
Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s)	30.0 30.0 54.5%	30.0 30.0 54.5%	29.4 30.0 54.5%	29.4 30.0 54.5%	24.9 25.0 45.5%	24.9 25.0 45.5%

	-	•	•	←	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10	10	10	10	10	10
Act Effct Green (s)	41.4	41.4		41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75		0.75	0.15	0.15
v/c Ratio	0.30	0.03		0.22	0.05	0.14
Control Delay	5.6	3.2		5.5	16.8	7.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	5.6	3.2		5.5	16.8	7.6
LOS	A	A		A	В	Α
Approach Delay	5.5	.,		5.5	9.6	
Approach LOS	A			A	A	
Queue Length 50th (m)	13.1	0.0		6.9	0.9	0.0
Queue Length 95th (m)	40.4	3.9		23.6	3.1	4.5
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		40.0			30.0	
Base Capacity (vph)	2525	1058		1936	500	529
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.30	0.03		0.22	0.02	0.07
Intersection Summary	0"					
Area Type:	Other					
Cycle Length: 55						
Actuated Cycle Length: 55	O EDT /	CAMPTI OF				
Offset: 0 (0%), Referenced to ph	nase 2:EBT and t	o:WBTL, Sta	art of Greer	1		
Natural Cycle: 55	ata d					
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.30						20. 4
Intersection Signal Delay: 5.6	E 4 00/				ersection LO	
Intersection Capacity Utilization	54.3%			IC	U Level of S	Service A
Analysis Period (min) 15						
0 19 I Dhanna - 4 Fad O	D.: 0.1/1	A				
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
					I	
▼ Ø2 (R)						
30 s						
4−						46.3
▼ Ø6 (R)						Ø8
30 e						25 s

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	•	7	16.56	1		7	44	7		ፈቤ	
Traffic Volume (vph)	19	6	36	174		51	85	346	159	23	653	16
Future Volume (vph)	19	6	36	174	2	51	85	346	159	23	653	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0	4.00	4.00	40.0	4.00	4.00	75.0	0.05	4.00	55.0	0.05	0.05
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	1.00		0.98	0.99	0.99		1.00		0.98		1.00	
Frt Flt Protected	0.050		0.850	0.050	0.856		0.050		0.850		0.997	
	0.950 1262	4704	000	0.950 3135	4500	٥	0.950	2205	1170	٥	0.998 3323	٥
Satd. Flow (prot)	0.950	1784	992	0.950	1508	0	1417 0.288	3325	1473	0	0.934	0
Flt Permitted	1261	1784	976	3116	1508	0	429	3325	1441	0	3110	٥
Satd. Flow (perm) Right Turn on Red	1201	1704	Yes	3110	1500	Yes	429	33Z3	Yes	U	3110	0 Yes
•			193		51	165			159		3	168
Satd. Flow (RTOR)		50	193		50			50	159		50	
Link Speed (k/h) Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	1	0.0	3	3	1.1	1	3	1.9	1	1	33.9	3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	17%	2%	44%
Adj. Flow (vph)	19	6	36	174	2 /0	51	85	346	159	23	653	16
Shared Lane Traffic (%)	10		30	1/7		01	00	0+0	100	20	000	10
Lane Group Flow (vph)	19	6	36	174	53	0	85	346	159	0	692	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Loit	7.4	rtigitt	Loit	7.4	ragne	Loit	3.7	ragne	Loit	3.7	rtigrit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0		_	0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	3	8		7	4		1	6	•		2	
Permitted Phases			8	_			6		6	2		
Detector Phase	3	8	8	7	4		1	6	6	2	2	
Switch Phase	5.0	40.0	40.0		40.0			400	400	40.0	40.0	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	13.2	30.2		12.0	48.5	48.5	36.5	36.5	
Total Split (%)	12.6%	31.4%	31.4%	14.7%	33.6%		13.3%	53.9%	53.9%	40.6%	40.6%	
Maximum Green (s)	5.0	22.0	22.0	6.9	23.9		5.7	42.2	42.2	30.2	30.2	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.0	3.0	3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		10	10		10			10	10	10	10	
Act Effct Green (s)	5.0	12.4	12.4	8.1	15.8		57.1	57.1	57.1		46.4	
Actuated g/C Ratio	0.06	0.14	0.14	0.09	0.18		0.63	0.63	0.63		0.52	
v/c Ratio	0.27	0.02	0.12	0.61	0.17		0.25	0.16	0.16		0.43	
Control Delay	50.7	30.5	0.8	50.7	10.4		9.9	8.4	3.1		17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	50.7	30.5	0.8	50.7	10.4		9.9	8.4	3.1		17.9	
LOS	D	С	Α	D	В		Α	Α	Α		В	
Approach Delay		19.3			41.3			7.2			17.9	
Approach LOS		В			D			Α			В	
Queue Length 50th (m)	3.2	1.0	0.0	15.4	0.3		8.6	19.8	4.7		43.1	
Queue Length 95th (m)	10.1	3.7	0.0	#29.9	8.6		12.5	21.4	5.6		71.8	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	384	283	437		346	2109	972		1603	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.27	0.01	0.09	0.61	0.12		0.25	0.16	0.16		0.43	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 17.3

Intersection Capacity Utilization 72.9%

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Kanata Avenue & Lord Byng Way/Maritime Way



Intersection LOS: B

ICU Level of Service C

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y NDL	7	<u> </u>	11011	UDL	*
Traffic Volume (vph)	273	258	T 395	0	0	77 987
Future Volume (vph)	273	258	395	0	0	987
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.90
Frt		0.850				
Flt Protected	0.950	0.000				
	1695	1334	1717	0	0	3325
Satd. Flow (prot)		1334	17.17	U	U	აა∠5
Flt Permitted	0.950	4004	4747	^	^	2205
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		258				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Peds. (#/hr)					1006	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	273	258	395	0	0	987
Shared Lane Traffic (%)	210	200	000		0	301
	272	258	395	0	0	987
Lane Group Flow (vph)	273					
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
	6.1	6.1	30.5			30.5
Leading Detector (m)						
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	0.0	0.0	28.7			28.7
			4.0			
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase		•	_			•
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	37.0	37.0	53.0			53.0
Total Split (%)	41.1%	41.1%	58.9%			58.9%
Maximum Green (s)	32.0	32.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Total Lost Tille (S)						

	•	•	†	/	/	+
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	20.0	20.0	58.9			58.9
Actuated g/C Ratio	0.22	0.22	0.65			0.65
v/c Ratio	0.73	0.52	0.35			0.45
Control Delay	43.1	7.4	3.2			11.6
Queue Delay	0.0	0.0	0.2			0.0
Total Delay	43.1	7.4	3.4			11.6
LOS	D	Α	Α			В
Approach Delay	25.8		3.4			11.6
Approach LOS	С		Α			В
Queue Length 50th (m)	44.1	0.0	7.2			64.0
Queue Length 95th (m)	62.6	16.4	9.2			90.4
Internal Link Dist (m)	308.8		102.6			90.0
Turn Bay Length (m)						
Base Capacity (vph)	602	640	1123			2175
Starvation Cap Reductn	0	0	182			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.45	0.40	0.42			0.45
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 35 (39%), Referenced to	phase 2:NBT and	d 6:SBT, St	art of Green			
Natural Cycle: 55						
Control Type: Actuated-Coordin	nated					
Maximum v/c Ratio: 0.73						
Intersection Signal Delay: 13.9				Inte	ersection Lo	OS: B
Intersection Capacity Utilization	n 58.1%			-	J Level of S	
Analysis Period (min) 15						
· · ·						
Splits and Phases: 4: Kanata	A Avenue & HWY	117 WB Off				
1 Ø2 (R)						
53 s						
33 8						
1 25 (2)						- 1.2
▼ Ø6 (R)						

	•	4	†	<i>></i>	/	+		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4	
Lane Configurations			A	#	*	A		
Traffic Volume (vph)	0	0	365	247	485	628		
Future Volume (vph)	0	0	365	247	485	628		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0		50.0	0.0			
Storage Lanes	0	0		1	1			
Taper Length (m)	7.6				7.6			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor				0.98	1.00			
Frt				0.850				
Flt Protected					0.950			
Satd. Flow (prot)	0	0	1685	1502	1679	1750		
Flt Permitted	^	^	4005	4400	0.476	4750		
Satd. Flow (perm)	0	0 Yes	1685	1468 Yes	840	1750		
Right Turn on Red Satd. Flow (RTOR)		res		247				
Link Speed (k/h)	48		50	241		50		
Link Speed (k/ll) Link Distance (m)	278.4		119.2			126.6		
Travel Time (s)	20.9		8.6			9.1		
Confl. Peds. (#/hr)	20.5		0.0	1	1	J. 1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	0%	0%	8%	3%	3%	4%		
Adj. Flow (vph)	0	0	365	247	485	628		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	365	247	485	628		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	0.0	· ·	3.7	•		3.7		
Link Offset(m)	0.0		0.0			0.0		
Crosswalk Width(m)	4.9		4.9			4.9		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	14	_	14	24			
Number of Detectors			_ 2	1	1	2		
Detector Template			Thru	Right	Left	Thru		
Leading Detector (m)			30.5	6.1	6.1	30.5		
Trailing Detector (m)			0.0	0.0	0.0	0.0		
Detector 1 Position(m)			0.0	0.0	0.0	0.0		
Detector 1 Size(m) Detector 1 Type			1.8 CI+Ex	6.1 CI+Ex	6.1 CI+Ex	1.8 Cl+Ex		
Detector 1 Type Detector 1 Channel			CI+EX	CI+EX	CI+EX	CI+EX		
Detector 1 Extend (s)			0.0	0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0	0.0		
Detector 2 Position(m)			28.7	0.0	0.0	28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			Cl+Ex		
Detector 2 Channel								
Detector 2 Extend (s)			0.0			0.0		
Turn Type			NA	Perm	pm+pt	NA		
Protected Phases			2		1	6	4	
Permitted Phases				2	6			
Detector Phase			2	2	1	6		
Switch Phase								
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0	
Total Split (s)			50.0	50.0	12.0	62.0	28.0	
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0	
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0	
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0	

	•	•	†	~	-	↓			
ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4		
ost Time Adjust (s)			0.0	0.0	0.0	0.0			
otal Lost Time (s)			5.7	5.7	5.7	5.7			
.ead/Lag			Lag	Lag	Lead				
ead-Lag Optimize?			Yes	Yes	Yes				
ehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Valk Time (s)			7.0	7.0			7.0		
lash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10		
act Effct Green (s)			62.6	62.6	78.9	83.5			
ctuated g/C Ratio			0.70	0.70	0.88	0.93			
/c Ratio			0.31	0.23	0.58	0.39			
Control Delay			6.7	1.7	9.6	1.6			
Queue Delay			0.3	0.0	0.0	0.0			
otal Delay			7.0	1.7	9.7	1.6			
OS .			Α	A	A	A			
Approach Delay			4.9	,,	, ,	5.1			
Approach LOS			Α.			A			
Queue Length 50th (m)			16.6	1.8	16.8	0.0			
Queue Length 95th (m)			62.9	11.2	#39.2	33.0			
nternal Link Dist (m)	254.4		95.2	11.2	1100.2	102.6			
urn Bay Length (m)	204.4		JJ.2	50.0		102.0			
Base Capacity (vph)			1171	1095	835	1623			
Starvation Cap Reductn			363	0	13	1023			
Spillback Cap Reductn			0	0	0	0			
Storage Cap Reductn			0	0	0	0			
Reduced v/c Ratio			0.45	0.23	0.59	0.39			
ntersection Summary			0.10	0.20	0.00	0.00			
rea Type:	Other								
Cycle Length: 90	Culoi								
ctuated Cycle Length: 90									
Offset: 42 (47%), Referenced to p	hase 2·NRT an	d 6·SRTI	Start of Gre	en					
latural Cycle: 80	nasc z.ivbi an	u 0.0D1L, (July of Old	on .					
Control Type: Actuated-Coordinate	ed								
Maximum v/c Ratio: 0.58	cu								
ntersection Signal Delay: 5.0				Int	ersection L	OS: A			
ntersection Capacity Utilization 58	R 1%				U Level of S				
nalysis Period (min) 15	J. 1 /0			10	O LOVEI UI	DOI VIOG D			
95th percentile volume exceed	de canacity que	ula may ha	longer						
Queue shown is maximum after		de may be	ionger.						
	•								
Splits and Phases: 5: Kanata A	venue & HWY 4	117 EB On							
V _{Ø1}	(R)							# k ø4	
12 s 50 s	. 7						2	8 s	
Ø6 (R)									

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₽.		*	î,		*	ĵ.	
Traffic Volume (vph)	45	4	18	19	6	61	41	605	36	52	561	41
Future Volume (vph)	45	6	18	19	6	61	41	605	36	52	561	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.97			0.96		0.99	1.00		1.00	1.00	
Frt		0.965			0.904			0.992			0.990	
Flt Protected		0.968			0.989		0.950			0.950		
Satd. Flow (prot)	0	1218	0	0	1464	0	1145	1734	0	1662	1715	0
Flt Permitted		0.809			0.909		0.399			0.378		
Satd. Flow (perm)	0	1001	0	0	1336	0	478	1734	0	659	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			61			6			7	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14		18	18		14	9		6	6		9
Confl. Bikes (#/hr)			1						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 (%)	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Adj. Flow (vph)	45	6	18	19	6	61	41	605	36	52	561	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	86	0	41	641	0	52	602	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	• NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.0			13.0		69.5	69.5		69.5	69.5	
Actuated g/C Ratio		0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio		0.43			0.35		0.11	0.48		0.10	0.45	
Control Delay		34.5			17.0		4.9	5.6		5.1	5.0	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.2	
Total Delay		34.5			17.0		4.9	5.7		5.1	5.2	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		34.5			17.0			5.6			5.2	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		8.4			4.0		1.7	36.0		1.3	16.0	
Queue Length 95th (m)		18.3			14.6		m4.6	52.2		5.3	35.7	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		277			398		369	1340		508	1326	
Starvation Cap Reductn		0			0		0	64		0	177	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.22		0.11	0.50		0.10	0.52	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

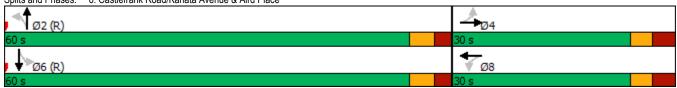
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.48 Intersection Signal Delay: 7.4

Intersection Capacity Utilization 69.6%

Intersection LOS: A ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



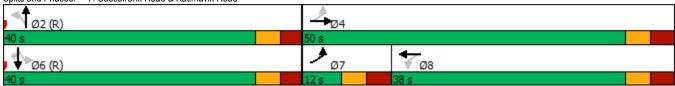
m Volume for 95th percentile queue is metered by upstream signal.

	•	→	•	•	+	4	1	†	<i>></i>	\	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	î,		*	ĵ.		*	ħ		*	•	7
Traffic Volume (vph)	158	130	72	34	114	34	123	420	51	79	323	100
Future Volume (vph)	158	130	72	34	114	34	123	420	51	79	323	100
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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		0.98	0.98		0.98	0.99		0.98		0.94
Frt		0.947			0.966			0.984				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1586	1649	0	1695	1629	0	1695	1631	0	1503	1655	1322
Flt Permitted	0.447	1010		0.631	1000		0.539	1001	•	0.419	4055	1015
Satd. Flow (perm)	711	1649	0	1099	1629	0	941	1631	0	647	1655	1245
Right Turn on Red		40	Yes		40	Yes		•	Yes			Yes
Satd. Flow (RTOR)		43			18			8				126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)	0.5	22.5	40	40	21.3	0.5	00	18.3	00	00	13.8	22
Confl. Peds. (#/hr)	35	4.00	16	16	4.00	35	20	4.00	33	33	4.00	20
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 (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	15%	10%	17%
Adj. Flow (vph)	158	130	72	34	114	34	123	420	51	79	323	100
Shared Lane Traffic (%)	450	000	•	0.4	440	_	400	474	^	70	000	400
Lane Group Flow (vph)	158	202	0	34	148	0	123	471	0	79	323	100
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0 4.9			0.0 4.9			0.0 4.9			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.00
Headway Factor	1.06 24	1.00	1.06	24	1.00	1.06	1.06	1.00	1.06	1.06 24	1.00	1.06 14
Turning Speed (k/h) Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.1	0.0		0.1	0.0		0.0	0.0		0.1	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	OILEX	OI · LX		OITEX	OITEX		OI · LX	OI LX		OI. LX	OI. LX	OI LX
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	0.0
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel		OI - EX			OI · Ex			OI - EX			OI LX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
Maximum Green (s)	5.3	43.3		31.3	31.3		33.8	33.8		33.8	33.8	33.8
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)	3.4	3.4		3.4	3.4		2.9	2.9		2.9	2.9	2.9
- 1-1	±											

2033 Background Tra	IIIC									I	illillig Flati.	AIVI FEAK
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	26.2	26.2		14.2	14.2		50.9	50.9		50.9	50.9	50.9
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.61	0.40		0.20	0.55		0.23	0.51		0.22	0.35	0.13
Control Delay	35.5	21.3		33.3	37.2		12.7	15.3		19.5	18.1	7.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.5	21.3		33.3	37.2		12.7	15.3		19.5	18.1	7.0
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		27.5			36.4			14.8			16.1	
Approach LOS		С			D			В			В	
Queue Length 50th (m)	22.0	22.1		5.3	21.3		9.4	43.2		7.7	31.4	2.5
Queue Length 95th (m)	32.2	34.2		12.0	34.7		24.5	88.9		17.5	52.5	11.2
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	258	815		382	578		532	926		366	936	759
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.61	0.25		0.09	0.26		0.23	0.51		0.22	0.35	0.13
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 25 (28%), Referenced to p	phase 2:NBTL a	and 6:SBTL,	Start of Gre	een								
Natural Cycle: 75												
Control Type: Actuated-Coordina	ited											
Maximum v/c Ratio: 0.61												
Intersection Signal Delay: 20.4					ersection LOS:							
Intersection Capacity Utilization 8	32.1%			IC	U Level of Serv	rice E						
Analysis Pariod (min) 15												

Splits and Phases: 7: Castlefrank Road & Katimavik Road

Analysis Period (min) 15



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ,		¥	ĵ,		¥	î,		¥	ĵ.	
Traffic Volume (vph)	52	685	14	67	469	81	18	18	154	171	11	57
Future Volume (vph)	52	685	14	67	469	81	18	18	154	171	11	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0 1.00	1.00	1.00	55.0 1.00	1.00	1.00	40.0 1.00	1.00	1.00	35.0	1.00	1.00
Lane Util. Factor Ped Bike Factor	0.99	1.00	1.00	1.00	0.99	1.00	0.99	0.96	1.00	1.00 0.98	0.98	1.00
Frt	0.99	0.997		1.00	0.99		0.99	0.866		0.90	0.96	
Flt Protected	0.950	0.551		0.950	0.570		0.950	0.000		0.950	0.014	
Satd. Flow (prot)	1695	1718	0	1695	1592	0	1695	1479	0	1695	1493	0
Flt Permitted	0.394	1710	V	0.298	1002	V	0.713	1410	V	0.626	1400	J
Satd. Flow (perm)	698	1718	0	530	1592	0	1261	1479	0	1092	1493	0
Right Turn on Red			Yes		.002	Yes			Yes	1002		Yes
Satd. Flow (RTOR)		2			15			154			57	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	12		11	11		12	4		12	12		4
Confl. Bikes (#/hr)			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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	14%	2%
Adj. Flow (vph)	52	685	14	67	469	81	18	18	154	171	11	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	699	0	67	550	0	18	172	0	171	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Headway Factor Turning Speed (k/h)	24	1.00	1.06	24	1.00	1.06	24	1.00	1.06	24	1.00	1.06
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2		_	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase	40.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	39.3	39.3		39.3	39.3		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	50.8	50.8		50.8	50.8		17.5	17.5		17.5	17.5	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.22	0.22		0.22	0.22	
v/c Ratio	0.12	0.64		0.20	0.54		0.07	0.39		0.72	0.18	
Control Delay	8.5	14.0		10.0	11.8		22.0	8.0		44.7	9.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.5	14.0		10.0	11.8		22.0	8.0		44.7	9.3	
LOS	Α	В		Α	В		С	Α		D	Α	
Approach Delay		13.6			11.6			9.3			34.6	
Approach LOS		В			В			Α			С	
Queue Length 50th (m)	2.8	57.5		3.8	39.8		2.2	2.2		24.2	1.3	
Queue Length 95th (m)	9.4	120.8		12.6	85.4		6.4	14.8		39.6	9.4	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	443	1091		336	1016		457	634		395	577	
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	0.12	0.64		0.20	0.54		0.04	0.27		0.43	0.12	
Intersection Summary												
Δrea Tyne:	Other											

Area Type: Cycle Length: 80 Other

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.72

Intersection Signal Delay: 15.2 Intersection Capacity Utilization 89.6%

Intersection LOS: B ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



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Lane Group	EDT	EDD	\\/DI	\\/DT	NDI	NBR
Lane Group	EBT	EBR	WBL	WBT	NBL	
Lane Configurations	^	7	04.4	₹	\	177
Traffic Volume (vph)	649	82	214	742	79	177
Future Volume (vph)	649	82	214	742	79	177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		40.0	110.0		30.0	0.0
Storage Lanes		1	0		1	1
Taper Length (m)		,	100.0		45.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor		0.98		1.00		0.99
Frt		0.850				0.850
Flt Protected				0.989	0.950	
Satd. Flow (prot)	3115	1517	0	3353	1695	1517
Flt Permitted				0.670	0.950	
Satd. Flow (perm)	3115	1483	0	2271	1695	1496
Right Turn on Red	0110	Yes			.000	Yes
Satd. Flow (RTOR)		82				177
	50	02		ΕO	ΕO	177
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)		1	1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	649	82	214	742	79	177
Shared Lane Traffic (%)	J.5					
Lane Group Flow (vph)	649	82	0	956	79	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment						
Madion Width(m)	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	3.0	0.0	28.7	3.0	3.0
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase	<u>-</u>	_	•			
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0
	29.4			29.4		
Minimum Split (s)		29.4	10.8		24.9	24.9
Total Split (s)	58.0	58.0	12.0	70.0	30.0	30.0
Total Split (%)	58.0%	58.0%	12.0%	70.0%	30.0%	30.0%
Maximum Green (s)	51.6	51.6	6.2	63.6	24.1	24.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	2.5	3.1	2.6	2.6
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	76.7	76.7		76.7	11.0	11.0
Actuated g/C Ratio	0.77	0.77		0.77	0.11	0.11
v/c Ratio	0.27	0.07		0.55	0.42	0.55
Control Delay	4.2	1.2		6.9	46.9	12.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	4.2	1.2		6.9	46.9	12.6
LOS	Α	A		A	D	В
Approach Delay	3.9	,,		6.9	23.2	_
Approach LOS	A			A	C	
Queue Length 50th (m)	14.8	0.0		30.0	14.7	0.0
Queue Length 95th (m)	30.7	4.1		63.8	26.1	17.0
Internal Link Dist (m)	263.1			447.4	104.3	17.0
Turn Bay Length (m)	200.1	40.0		777.7	30.0	
Base Capacity (vph)	2388	1156		1741	408	494
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.27	0.07		0.55	0.19	0.36
	0.21	0.07		0.00	0.13	0.50
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to pha	se 2:EBT and (6:WBTL, Sta	rt of Greer	1		
Natural Cycle: 70						
Control Type: Actuated-Coordinat	ed					
Maximum v/c Ratio: 0.55						
Intersection Signal Delay: 7.9				Int	ersection LO	DS: A
Intersection Capacity Utilization 6	7.9%			ICI	J Level of S	ervice C
Analysis Period (min) 15						
, , ,						
Splits and Phases: 1: Earl Grey	Drive & Kanat	a Avenue				
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√Ø1 • ▼Ø2 (R)					
12 s 58 s	N)					
12.5						
▼ Ø6 (R) ▼						
₩ Ø6 (R)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	*	7	14.54	1		7	44	7		4î.P	
Traffic Volume (vph)	30	3	78	143	9	51	136	885	213	76	685	25
Future Volume (vph)	30	3	78	143	9	51	136	885	213	76	685	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	0.99		0.98	0.99	0.98		1.00		0.98		1.00	
Frt			0.850		0.872				0.850		0.995	
Flt Protected	0.950			0.950			0.950				0.995	
Satd. Flow (prot)	1262	1784	1268	3288	1523	0	1503	3390	1517	0	3335	0
Flt Permitted	0.950			0.950			0.234				0.756	
Satd. Flow (perm)	1246	1784	1247	3262	1523	0	370	3390	1479	0	2534	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193		51				128		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	11		4	4		11	3		3	3		3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	143	9	51	136	885	213	76	685	25
Shared Lane Traffic (%)					•				,			
Lane Group Flow (vph)	30	3	78	143	60	0	136	885	213	0	786	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Lon	7.4	rugiit	Loit	7.4	rtigrit	Loit	3.7	rtigitt	Loit	3.7	rtigitt
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		1.0			1.0			1.0			1.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	14	24	1.00	14	24	1.00	14	24	1.00	14
Number of Detectors	1	2	1	1	2	17	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel	OITLX	OITLX	OITEX	OITEX	OITEX		OITEX	OI+LX	OITEX	OITEX	OITLX	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
D / / / O / /												
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s) Detector 2 Position(m)	0.0	0.0 28.7	0.0	0.0	28.7		0.0	28.7	0.0	0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	5 (0.0	_	ъ.	0.0			0.0	_	-	0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		
Detector Phase	7	4	4	3	8		5	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	12.0	29.0		11.9	49.7	49.7	37.8	37.8	
Total Split (%)	12.6%	31.4%	31.4%	13.3%	32.2%		13.2%	55.2%	55.2%	42.0%	42.0%	
Maximum Green (s)	5.0	22.0	22.0	5.7	22.7		5.6	43.4	43.4	31.5	31.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
I GIIOW TIITIG (3)	0.0											

	•	-	•	•	←	•	4	†	~	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		10	10		10			10	10	10	10	
Act Effct Green (s)	5.0	12.4	12.4	6.6	15.2		55.4	55.4	55.4		41.3	
Actuated g/C Ratio	0.06	0.14	0.14	0.07	0.17		0.62	0.62	0.62		0.46	
v/c Ratio	0.43	0.01	0.23	0.60	0.20		0.42	0.42	0.22		0.68	
Control Delay	60.3	30.0	1.6	62.4	12.8		10.0	10.1	4.2		25.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	60.3	30.0	1.6	62.4	12.8		10.0	10.1	4.2		25.0	
LOS	Е	С	Α	Е	В		В	В	Α		С	
Approach Delay		18.2			47.7			9.1			25.0	
Approach LOS		В			D			Α			С	
Queue Length 50th (m)	5.1	0.5	0.0	13.5	0.9		8.8	39.6	4.7		55.3	
Queue Length 95th (m)	#15.6	2.5	0.0	#26.4	7.3		m13.0	m57.3	m7.8		#100.5	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	450	239	422		326	2086	959		1163	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.43	0.01	0.17	0.60	0.14		0.42	0.42	0.22		0.68	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68 Intersection Signal Delay: 18.2

Intersection LOS: B ICU Level of Service D

Intersection Capacity Utilization 78.0%

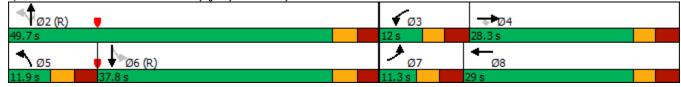
Analysis Period (min) 15

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: 3: Kanata Avenue & Lord Byng Way/Maritime Way



Synchro 10 Report Brad Byvelds, Novatech

	€	•	†	*	/	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y DE	7	<u> </u>	11011	ODL	*
Traffic Volume (vph)	528	754	7	0	0	TT
Future Volume (vph)	528	754	791	0	0	1145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.30
Frt		0.850				
Flt Protected	0.950	0.030				
	1695	1517	1750	0	0	3357
Satd. Flow (prot)		1017	1/50	U	U	335 <i>1</i>
Flt Permitted	0.950	1517	4750	^	^	2257
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		96				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	528	754	791	0	0	1145
Shared Lane Traffic (%)	- 020	701		•	•	. 1 10
Lane Group Flow (vph)	528	754	791	0	0	1145
Enter Blocked Intersection	526 No		No		No	
		No		No		No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
	6.1	6.1	1.8			1.8
Detector 1 Size(m)						
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Type Detector 2 Channel			OITEX			OITEX
			0.0			0.0
Detector 2 Extend (s)	_		0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	40.0	40.0	38.9			38.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

	•	•	†	/	>	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	40.0	40.0	38.9			38.9
Actuated g/C Ratio	0.44	0.44	0.43			0.43
v/c Ratio	0.70	1.04	1.05			0.79
Control Delay	26.3	67.1	61.6			23.8
Queue Delay	0.3	0.0	0.0			0.0
Total Delay	26.6	67.1	61.6			23.8
LOS	20.0 C	67.1 E	01.0 E			23.0 C
Approach Delay	50.4	E	61.6			23.8
Approach LOS	50.4 D		01.0 E			23.8 C
		124.0				93.1
Queue Length 50th (m)	71.3	~131.9	~146.2			
Queue Length 95th (m)	108.2	#199.5	#212.3			130.6
Internal Link Dist (m)	308.8		102.6			90.0
Turn Bay Length (m)	750	707	750			4.50
Base Capacity (vph)	753	727	756			1450
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	27	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.73	1.04	1.05			0.79
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 32 (36%), Referenced to p	hase 2:NBT ar	nd 6:SBT, S	tart of Green	1		
Natural Cycle: 100						
Control Type: Actuated-Coordinat	ed					
Maximum v/c Ratio: 1.05						
Intersection Signal Delay: 43.7				Inte	ersection L	OS: D
Intersection Capacity Utilization 13	32.5%				J Level of S	
Analysis Period (min) 15						
 Volume exceeds capacity, que 	eue is theoretic	ally infinite				
Queue shown is maximum after		,				
# 95th percentile volume exceed	ds canacity au	elle may he	longer			
Queue shown is maximum after	er two cycles	ouc may be	iongor.			
Quodo Silowii is iliaxiillulli allo	i tiro cyclos.					
Splits and Phases: 4: Kanata A	venue & HWY	417 WB Of	f			
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Ø2 (R)						
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▼ Ø6 (R)					1 1	Ø 8

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Lane Configurations			A	7	ኻ	A	
Traffic Volume (vph)	0	0	645	224	439	1040	
Future Volume (vph)	0	0	645	224	439	1040	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
Taper Length (m)	7.6				7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor				0.98			
Frt				0.850	0.050		
Flt Protected	•	^	4700	4547	0.950	4704	
Satd. Flow (prot)	0	0	1733	1517	1662	1784	
Flt Permitted	0	0	4700	1170	0.224	4704	
Satd. Flow (perm)	0	0 Yes	1733	1479 Yes	392	1784	
Right Turn on Red Satd. Flow (RTOR)		168		207			
Link Speed (k/h)	48		50	201		50	
Link Distance (m)	278.4		119.2			126.6	
Travel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.3		0.0	2	2	J. I	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	0%	5%	2%	4%	2%	
Adj. Flow (vph)	0	0	645	224	439	1040	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	645	224	439	1040	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0		3.7			3.7	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14	_	14	24		
Number of Detectors			2	1	1	2	
Detector Template			Thru	Right	Left	Thru	
Leading Detector (m)			30.5	6.1	6.1	30.5	
Trailing Detector (m)			0.0	0.0	0.0	0.0	
Detector 1 Position(m)			0.0	0.0	0.0	0.0	
Detector 1 Size(m)			1.8 CI+Ex	6.1 CI+Ex	6.1 CI+Ex	1.8 CI+Ex	
Detector 1 Type Detector 1 Channel			UI+EX	UI+EX	UI+EX	UI+EX	
Detector 1 Extend (s)			0.0	0.0	0.0	0.0	
Detector 1 Extend (s) Detector 1 Queue (s)			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	0.0	
Detector 2 Position(m)			28.7	0.0	0.0	28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel			J1 - LA			- 1. LΛ	
Detector 2 Extend (s)			0.0			0.0	
Turn Type			NA	Perm	pm+pt	NA	
Protected Phases			2	. 31111	1	6	8
Permitted Phases				2	6		
Detector Phase			2	2	1	6	
Switch Phase							
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0
Total Split (s)			50.0	50.0	12.0	62.0	28.0
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0

Lane Group Lost Time Adjust (s) Total Lost Time (s) Lead/Lag	WBL	WBR	NDT			•		
Total Lost Time (s)			NBT	NBR	SBL	SBT	Ø8	
			0.0	0.0	0.0	0.0		
l pad/l an			5.7	5.7	5.7	5.7		
Lcau/Lay			Lag	Lag	Lead			
Lead-Lag Optimize?			Yes	Yes	Yes			
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Walk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			50.4	50.4	78.9	83.5		
Actuated g/C Ratio			0.56	0.56	0.88	0.93		
v/c Ratio			0.66	0.24	0.66	0.63		
Control Delay			11.5	1.4	19.6	6.6		
Queue Delay			9.1	0.0	0.0	0.3		
Total Delay			20.5	1.4	19.6	6.9		
LOS			20.5 C	Α	19.0 B	0.9 A		
Approach Delay			15.6		ь	10.6		
Approach LOS			15.0 B			10.0 B		
			53.8	3.6	32.1	18.6		
Queue Length 50th (m)			92.6	m3.1	32.1 m#89.1	#238.0		
Queue Length 95th (m)	254.4		95.2	1113.1	111#09.1	102.6		
Internal Link Dist (m)	254.4		95.2	E0.0		102.0		
Turn Bay Length (m)			070	50.0	005	4054		
Base Capacity (vph)			970	919	665	1654		
Starvation Cap Reductn			170	0	0	6		
Spillback Cap Reductn			290	0	0	152		
Storage Cap Reductn			0	0	0	0		
Reduced v/c Ratio			0.95	0.24	0.66	0.69		
Intersection Summary								
	ner							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 27 (30%), Referenced to phas	e 2:NBT and	d 6:SBTL, S	Start of Gre	en				
Natural Cycle: 90								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.66								
Intersection Signal Delay: 12.5				In	itersection L	OS: B		
Intersection Capacity Utilization 132.5	5%			IC	CU Level of S	Service H		
Analysis Period (min) 15								
# 95th percentile volume exceeds of	apacity, que	ue may be	longer.					
Queue shown is maximum after tv	o cycles.							
m Volume for 95th percentile queue	is metered	by upstrea	m signal.					
Splits and Phases: 5: Kanata Aven	ue & HWY 4	17 EB On						
√ ø₁ † ø₂ (R								
12 s 50 s								
Ø6 (R)								Akos

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₩.		*	î,		*	ĵ.	
Traffic Volume (vph)	17	4 3	13	30	1	97	12	866	35	62	1035	24
Future Volume (vph)	17	3	13	30	1	97	12	866	35	62	1035	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.98			0.97			1.00			1.00	
Frt		0.947			0.898			0.994			0.997	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1542	0	1695	1755	0	1695	1777	0
Flt Permitted		0.735			0.909		0.177			0.251		
Satd. Flow (perm)	0	1219	0	0	1415	0	316	1755	0	448	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			97			4			2	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	7		6	6		7	9		5	5		9
Confl. Bikes (#/hr)									3			
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	17	3	13	30	1	97	12	866	35	62	1035	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	128	0	12	901	0	62	1059	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	_	14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s) Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
	0.0	28.7		0.0	28.7		0.0			0.0		
Detector 2 Position(m)		1.8			1.8			28.7 1.8			28.7 1.8	
Detector 2 Size(m)		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Type Detector 2 Channel		OI+EX			UI+EX			CI+EX			CI+EX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	Fellii	4		Fellil	8		Fellii	2		Fellili	6	
Permitted Phases	4	4		8	0		2	2		6	U	
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase	4	4		0	0		Z	2		U	U	
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
	28.2	28.2		28.2	28.2		24.7	5.0 24.7		5.0 24.7	24.7	
Minimum Split (s) Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
		33.3%		33.3%	33.3%			66.7%		66.7%	66.7%	
Total Split (%) Maximum Green (s)	33.3% 23.8	23.8		33.3% 23.8	23.8		66.7% 54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
renow rime (s)	3.0	3.0		3.0	3.0		ა.ა	ა.ა		ა.ა	ა.ა	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	• NBT	• NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.1			10.1		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.11			0.11		0.76	0.76		0.76	0.76	
v/c Ratio		0.22			0.52		0.05	0.68		0.18	0.79	
Control Delay		26.2			19.2		4.8	9.4		7.1	15.0	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.0	
Total Delay		26.2			19.2		4.8	9.6		7.1	15.0	
LOS		С			В		Α	Α		Α	В	
Approach Delay		26.2			19.2			9.5			14.6	
Approach LOS		С			В			Α			В	
Queue Length 50th (m)		3.3			5.1		0.3	37.5		3.8	106.9	
Queue Length 95th (m)		9.9			17.8		m1.1	m107.6		m5.3	#251.7	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		331			445		238	1327		338	1343	
Starvation Cap Reductn		0			0		0	9		0	5	
Spillback Cap Reductn		0			2		0	48		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.29		0.05	0.70		0.18	0.79	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.79 Intersection Signal Delay: 12.9

Intersection Capacity Utilization 80.0%

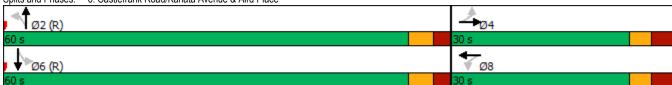
Analysis Period (min) 15

Intersection LOS: B ICU Level of Service D

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

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ĵ.		7	ĵ,		*	î,		7	•	7
Traffic Volume (vph)	144	140	75	92	200	105	41	468	60	115	708	198
Future Volume (vph)	144	140	75	92	200	105	41	468	60	115	708	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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	0.99	0.98		0.98	0.98		0.98	0.99				0.92
Frt		0.948			0.948			0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	1666	0	1558	1634	0	1695	1740	0	1647	1784	1473
Flt Permitted	0.250			0.624			0.283			0.174		
Satd. Flow (perm)	431	1666	0	1005	1634	0	497	1740	0	302	1784	1356
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			29			8				180
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	16		12	12		16	31		27	27		31
Confl. Bikes (#/hr)			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%	2%	2%	11%	2%	7%	2%	2%	2%	5%	2%	5%
Adj. Flow (vph)	144	140	75	92	200	105	41	468	60	115	708	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	144	215	0	92	305	0	41	528	0	115	708	198
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.2	29.2		29.2	29.2		11.2	29.7	29.7
Total Split (s)	12.0	43.0		31.0	31.0		35.0	35.0		12.0	47.0	47.0
Total Split (%)	13.3%	47.8%		34.4%	34.4%		38.9%	38.9%		13.3%	52.2%	52.2%
Maximum Green (s)	5.3	36.3		24.8	24.8		28.8	28.8		5.8	40.3	40.3
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
- 1-1												2.0

	•	→	*	•	•	•	4	†	~	\	Ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	31.5	31.5		20.0	20.0		32.4	32.4		45.6	45.1	45.1
Actuated g/C Ratio	0.35	0.35		0.22	0.22		0.36	0.36		0.51	0.50	0.50
v/c Ratio	0.65	0.35		0.41	0.79		0.23	0.84		0.45	0.79	0.26
Control Delay	34.5	18.6		34.3	44.4		26.7	41.5		15.9	22.2	4.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.5	18.6		34.3	44.4		26.7	41.5		15.9	22.2	4.2
LOS	С	В		С	D		С	D		В	С	Α
Approach Delay		25.0			42.0			40.5			18.0	
Approach LOS		С			D			D			В	
Queue Length 50th (m)	17.3	22.0		13.5	45.0		5.1	85.3		6.7	86.7	2.9
Queue Length 95th (m)	28.5	36.5		26.1	69.3		14.1	#148.6		m12.6	#174.4	m10.1
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	223	693		276	471		178	630		257	893	768
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.31		0.33	0.65		0.23	0.84		0.45	0.79	0.26

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84

Intersection Signal Delay: 28.6 Intersection Capacity Utilization 96.3%

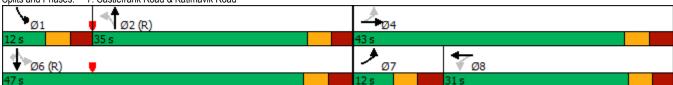
Intersection LOS: C ICU Level of Service F

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.

7: Castlefrank Road & Katimavik Road Splits and Phases:



Synchro 10 Report Brad Byvelds, Novatech

		٠	→	•	•	+	•	1	†	<i>></i>	/	+	4
Traffic Volume (rph) 7i 476 33 126 657 112 13 15 91 42 11 77 1476 33 126 657 112 13 15 91 42 11 77 1476 33 126 657 112 13 15 91 42 11 77 1686 Flow (rphp) 1800 1800 1800 1800 1800 1800 1800 180	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (spin) 71 476 33 126 657 112 13 15 91 42 11 77 Idea Plancy (spin) 71 476 33 126 657 112 13 15 91 42 11 77 Idea Plancy (spin) 71 476 33 126 657 112 13 15 91 42 11 77 Idea Plancy (spin) 800 1800 1800 1800 1800 1800 1800 1800		*	î,		7	ĵ.			î,			ĵ.	
Seal Flow (priphr) 1800												11	
Storage Langth (m)	· · · /												
Storage Lanes			1800			1800			1800			1800	
Taper Lamps (Inc)													
Laine UNIF Sector 1.00	•	· · · · · · · · · · · · · · · · · · ·		Ü	•		0			0	•		Ü
Ped Bike Factor			4.00	1.00		4.00	1.00		4.00	1.00		4.00	1.00
Fit		1.00		1.00			1.00			1.00			1.00
Filt Protected 0.950 0.9					1.00			0.98			0.99		
Said Flow (prote) 1695 1763 0 1695 1732 0 1695 1514 0 1679 1495 0		0.050	0.990		0.050	0.970		0.050	0.07 1		0.050	0.009	
File Permitted 0.233			1763	٥		1732	0		151/	٥		1/05	0
Said. Flow (perm)			1700	U		1702	U		1314	U		1433	U
Right Tum on Red			1763	٥		1732	0		1514	٥		1/195	0
Sairt Flow (RTOR)		710	1700	~	0+0	1702		1220	1017		1200	1700	
Link Speed (i/ch)			8	100		14	100		91	100		77	100
Link Distance (m)	,												
Travel T													
Confl. Peds. (#hr)	()												
Peak Hour Factor		15	17.0	4	4		15	8	10.1	4	4	10.0	8
Heavy Vehicles (%) 2% 2% 2% 2% 2% 2% 2%			1.00			1.00			1.00			1.00	
Adj. Flow (yph) 71 476 33 126 657 112 13 15 91 42 11 77 Shared Lane Traffic (%) Shared Lane Traffic (%) Shared Lane Traffic (%) No No </td <td></td>													
Shared Lane Traffic (%) Lane Group Flow (vph) 71 509 0 126 769 0 13 106 0 42 88 0 0 126 106													
Lane Group Flow (uph)													
Lanck Alignment		71	509	0	126	769	0	13	106	0	42	88	0
Median Width(m)	Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Median Width(m)	Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Crosswak Width(m) 4.9 4.	Median Width(m)		3.7			3.7	<u> </u>		3.7	·		3.7	•
Two way Left Turn Lane Headway Factor 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06	Link Offset(m)		0.0			0.0			0.0			0.0	
Headway Factor 1.06	Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Turning Speed (k/h) 1 24 14 24 24 24 14 24 14 24 14 24 24 24 14 24 14 24 24 14 24 14 24 14 24 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24													
Number of Detectors			1.06			1.06			1.06			1.06	
Detector Template				14			14			14			14
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 Trailing Detector (m) 0.0													
Trailing Detector (m)	•												
Detector 1 Position(m) 0.0													
Detector 1 Size(m)													
Detector 1 Type	\ ,												
Detector 1 Channel													
Detector 1 Extend (s) 0.0		CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX	
Detector 1 Queue (s) 0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s) 0.0													
Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7													
Detector 2 Size(m)		0.0			0.0			0.0			0.0		
Detector 2 Type CI+Ex													
Detector 2 Channel													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA Protected Phases 5 2 6 8 4 Permitted Phases 2 6 6 8 8 4 Detector Phase 5 2 6 6 8 8 4 4 Switch Phase Switch Phase 8 4 4 4 4 4 5 5 2 6 6 8 8 4 4 4 4 4 5 4 4 4 5 5 10			OITEX			OITEX			OITEX			OITEX	
Turn Type pm+pt NA Perm NA Perm NA Perm NA Protected Phases 5 2 6 8 4 Permitted Phases 2 6 8 8 4 Detector Phase 5 2 6 6 8 8 4 Switch Phase 8 4 4 4 4 4 4 4 Minimum Initial (s) 5.0 10.0			0.0			0.0			0.0			0.0	
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 Winimum Initial (s) 5.0 10.0 24.0 24.0 24.0		nm+nt			Perm			Perm			Perm		
Permitted Phases 2 6 8 4 Detector Phase 5 2 6 6 8 8 4 4 Switch Phase Minimum Initial (s) 5.0 10.0 24.0 24.0 24.0 24.0					1 01111			1 01111			1 01111		
Detector Phase 5 2 6 6 8 8 4 4 Switch Phase Minimum Initial (s) 5.0 10.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 26.7% 26.7% 26.7% 26.7% 26.7%					6			8			4	•	
Switch Phase Minimum Initial (s) 5.0 10.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26.7% 26			2			6			8			4	
Minimum Initial (s) 5.0 10.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 24.0 26.7%													
Minimum Split (s) 10.7 27.7 27.7 27.7 24.0 26.7% </td <td></td> <td>5.0</td> <td>10.0</td> <td></td> <td>10.0</td> <td>10.0</td> <td></td> <td>10.0</td> <td>10.0</td> <td></td> <td>10.0</td> <td>10.0</td> <td></td>		5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Total Split (s) 15.0 66.0 51.0 51.0 24.0 26.7% <													
Total Split (%) 16.7% 73.3% 56.7% 56.7% 26.7% 26.7% 26.7% 26.7% Maximum Green (s) 9.3 60.3 45.3 45.3 18.0 18.0 18.0 18.0 Yellow Time (s) 3.7 3.7 3.7 3.0 3.0 3.0 3.0													
Maximum Green (s) 9.3 60.3 45.3 45.3 18.0 18.0 18.0 18.0 Yellow Time (s) 3.7 3.7 3.7 3.0 3.0 3.0 3.0													
Yellow Time (s) 3.7 3.7 3.7 3.0 3.0 3.0 3.0													
		3.7							3.0		3.0	3.0	
	All-Red Time (s)				2.0	2.0		3.0	3.0			3.0	

	•	→	•	•	←	•	4	†	~	\	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.1	71.2		61.2	61.2		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.17	0.36		0.22	0.65		0.08	0.39		0.27	0.34	
Control Delay	4.5	4.9		10.1	15.7		35.1	14.5		39.3	14.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.5	4.9		10.1	15.7		35.1	14.5		39.3	14.2	
LOS	Α	Α		В	В		D	В		D	В	
Approach Delay		4.9			14.9			16.8			22.3	
Approach LOS		Α			В			В			С	
Queue Length 50th (m)	2.5	23.2		8.7	79.5		2.0	2.3		6.8	1.7	
Queue Length 95th (m)	7.5	51.1		22.7	#177.3		m4.4	m9.5		15.1	13.6	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	455	1396		575	1182		245	375		241	360	
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	0.36		0.22	0.65		0.05	0.28		0.17	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65 Intersection Signal Delay: 12.2 Intersection Capacity Utilization 72.9%

Intersection LOS: B

ICU Level of Service C

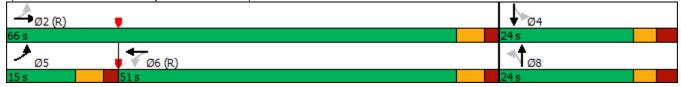
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



Synchro 10 Report Brad Byvelds, Novatech

	•	•	†	_	\	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	#	A			*
Traffic Volume (vph)	528	754	791	0	0	1145
Future Volume (vph)	528	754	791	0	0	1145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.00
Frt		0.850				
Flt Protected	0.950	2.500				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1017	1730	U	U	0001
Satd. Flow (perm)	1695	1517	1750	0	0	3357
	1090	Yes	1730	Yes	U	JJJ1
Right Turn on Red				Yes		
Satd. Flow (RTOR)	50	106				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	528	754	791	0	0	1145
Shared Lane Traffic (%)	020	101	701	U	U	1140
Lane Group Flow (vph)	528	754	791	0	0	1145
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	1.00	14	24	
Number of Detectors	1	1	2			2
	Left		Thru			Thru
Detector Template		Right				
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
	0.0	0.0				
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases		•••••	2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase	U	U				U
	E 0	E 0	10.0			10.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	60.0	60.0	60.0			60.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	55.0	55.0	53.9			53.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
LOSE TIME AGIOSE(S)						
Total Lost Time (s)	5.0	5.0	6.1			6.1

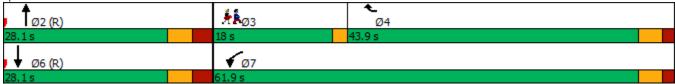
	€	*	†	~	-	Ţ	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	55.0	55.0	53.9			53.9	
Actuated g/C Ratio	0.46	0.46	0.45			0.45	
v/c Ratio	0.68	1.00	1.01			0.76	
Control Delay	31.1	62.1	67.2			31.7	
Queue Delay	0.0	0.0	34.4			0.0	
Total Delay	31.1	62.1	101.6			31.7	
LOS	С	Е	F			С	
Approach Delay	49.3		101.6			31.7	
Approach LOS	D		F			С	
Queue Length 50th (m)	95.6	~158.6	~185.4			116.1	
Queue Length 95th (m)	135.4	#243.8	#268.0			142.6	
Internal Link Dist (m)	308.8		102.6			90.0	
Turn Bay Length (m)							
Base Capacity (vph)	776	752	786			1507	
Starvation Cap Reductn	0	0	202			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.68	1.00	1.35			0.76	
Intersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to pha	ase 2:NBT and	6:SBT, Stai	t of Green				
Natural Cycle: 100							
Control Type: Actuated-Coordinat	ted						
Maximum v/c Ratio: 1.01							
Intersection Signal Delay: 55.9					ersection L		
Intersection Capacity Utilization 1	32.5%			ICL	J Level of S	Service H	
Analysis Period (min) 15							
 Volume exceeds capacity, qu 		ally infinite.					
Queue shown is maximum after							
# 95th percentile volume excee		eue may be	longer.				
Queue shown is maximum after	er two cycles.						
Splits and Phases: 4: Kanata A	venue & HWY	417 WB Of	f				
†							
l Ø2 (R)					-		
					3.		
▼ Ø6 (R)					W (78	

	•	•	†	/	/	ţ	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	*	77	44			44	
Traffic Volume (vph)	273	258	395	0	0	1006	
Future Volume (vph)	273	258	395	0	0	1006	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Frt		0.850					
Flt Protected	0.950						
Satd. Flow (prot)	1695	2347	3262	0	0	3325	
Flt Permitted	0.950			•	•	***	
Satd. Flow (perm)	1695	2347	3262	0	0	3325	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		258					
Link Speed (k/h)	50	200	50			50	
Link Distance (m)	332.8		126.6			114.0	
Travel Time (s)	24.0		9.1			8.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%	
Adj. Flow (vph)	273	258	395	0	0	1006	
Shared Lane Traffic (%)			- 300			. 300	
Lane Group Flow (vph)	273	258	395	0	0	1006	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7	rugin	0.0	rugin	Loit	0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14	1.00	14	24	1.00	
Number of Detectors	1	1	2	• •		2	
Detector Template	Left	Right	Thru			Thru	
Leading Detector (m)	6.1	6.1	30.5			30.5	
Trailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot	Prot	NA			NA	
Protected Phases	7	4	2			6	3
Permitted Phases							
Detector Phase	7	4	2			6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0
Total Split (s)	36.0	18.0	54.0			54.0	18.0
Total Split (%)	40.0%	20.0%	60.0%			60.0%	20%
Maximum Green (s)	31.0	13.0	47.9			47.9	16.0
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0	6.1			6.1	
Lead/Lag		Lag					Lead
Lead-Lag Optimize?		Yes					Yes
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3		
Recall Mode	None	None	C-Max			C-Max	None		
Walk Time (s)			7.0				7.0		
Flash Dont Walk (s)			15.0				9.0		
Pedestrian Calls (#/hr)			10				10		
Act Effct Green (s)	20.3	16.7	58.6			58.6			
Actuated g/C Ratio	0.23	0.19	0.65			0.65			
v/c Ratio	0.72	0.40	0.19			0.46			
Control Delay	42.2	6.6	12.4			7.2			
Queue Delay	0.0	0.0	0.0			0.0			
Total Delay	42.2	6.6	12.4			7.2			
LOS	D	Α	В			Α			
Approach Delay	24.9		12.4			7.2			
Approach LOS	С		В			Α			
Queue Length 50th (m)	44.1	0.0	11.4			23.7			
Queue Length 95th (m)	61.2	11.5	52.3			31.0			
Internal Link Dist (m)	308.8		102.6			90.0			
Turn Bay Length (m)									
Base Capacity (vph)	583	655	2125			2166			
Starvation Cap Reductn	0	0	0			0			
Spillback Cap Reductn	0	0	0			75			
Storage Cap Reductn	0	0	0			0			
Reduced v/c Ratio	0.47	0.39	0.19			0.48			
Intersection Summary									
71:-	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 0 (0%), Referenced to phase	se 2:NBT and 6	S:SBT, Star	t of Green						
Natural Cycle: 60									
Control Type: Actuated-Coordinate	ed								
Maximum v/c Ratio: 0.72									
Intersection Signal Delay: 13.2				Inte	ersection L	OS: B			
Intersection Capacity Utilization 58	3.1%			ICL	J Level of S	Service B			
Analysis Period (min) 15									
Splits and Phases: 4: Kanata Av	venue & HWY	117 WB Off	:						
† (72 (72)							Ååø₃	4. Ø4	
Ø2 (R)							8 s	18 s	
Ī								10.0	
▼ Ø6 (R)							√ Ø7		

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	*	77	44			44	
Traffic Volume (vph)	528	754	791	0	0	1145	
Future Volume (vph)	528	754	791	0	0	1145	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Ped Bike Factor							
Frt		0.850					
Flt Protected	0.950						
Satd. Flow (prot)	1695	2669	3325	0	0	3357	
Flt Permitted	0.950						
Satd. Flow (perm)	1695	2669	3325	0	0	3357	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		754					
Link Speed (k/h)	50		50			50	
Link Distance (m)	332.8		126.6			114.0	
Travel Time (s)	24.0		9.1	_		8.2	
Confl. Bikes (#/hr)	4.00	4.00	4.00	3	4.00	4.00	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%	
Adj. Flow (vph)	528	754	791	0	0	1145	
Shared Lane Traffic (%)	500	754	704	•	•	4445	
Lane Group Flow (vph)	528	754	791	0	0	1145	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left 3.7	Right	Left 0.0	Right	Left	Left 0.0	
Median Width(m) Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane	4.3		4.3			4.3	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14	1.00	14	24	1.00	
Number of Detectors	1	1	2	• • •		2	
Detector Template	Left	Right	Thru			Thru	
Leading Detector (m)	6.1	6.1	30.5			30.5	
Trailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex			CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)		. .	0.0			0.0	
Turn Type	Prot	Prot	NA			NA	2
Protected Phases	7	4	2			6	3
Permitted Phases	7		2			G	
Detector Phase Switch Phase	7	4	2			6	
	5.0	5 N	10.0			10.0	1.0
Minimum Initial (s) Minimum Split (s)	10.0	5.0 10.0	28.1			24.1	18.0
Total Split (s)	61.9	43.9	28.1			28.1	18.0
Total Split (%)	68.8%	48.8%	31.2%			31.2%	20%
Maximum Green (s)	56.9	38.9	22.0			22.0	16.0
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	J.0
Total Lost Time (s)	5.0	5.0	6.1			6.1	
Lead/Lag		Lag	V.1			V .1	Lead
		3					

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3		
_ead-Lag Optimize?		Yes					Yes		
/ehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		
Recall Mode	None	None	C-Max			C-Max	None		
Valk Time (s)			7.0				7.0		
Flash Dont Walk (s)			15.0				9.0		
Pedestrian Calls (#/hr)			10				10		
Act Effct Green (s)	37.5	33.9	41.4			41.4			
Actuated g/C Ratio	0.42	0.38	0.46			0.46			
//c Ratio	0.75	0.51	0.52			0.74			
Control Delay	28.2	2.8	30.1			29.4			
Queue Delay	0.0	0.0	0.0			0.4			
Total Delay	28.3	2.8	30.1			29.8			
LOS	С	Α	С			С			
Approach Delay	13.3		30.1			29.8			
Approach LOS	В		С			С			
Queue Length 50th (m)	75.3	0.0	74.7			68.9			
Queue Length 95th (m)	84.1	12.2	95.7			#149.3			
Internal Link Dist (m)	308.8		102.6			90.0			
Turn Bay Length (m)									
Base Capacity (vph)	1071	1597	1528			1543			
Starvation Cap Reductn	0	0	0			0			
Spillback Cap Reductn	9	0	0			90			
Storage Cap Reductn	0	0	0			0			
Reduced v/c Ratio	0.50	0.47	0.52			0.79			
ntersection Summary									
Area Type:	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 0 (0%), Referenced to pha	ase 2:NBT and 6	:SBT, Star	t of Green						
Natural Cycle: 60									
Control Type: Actuated-Coordina	ited								
/laximum v/c Ratio: 0.75									
ntersection Signal Delay: 23.3					ersection L				
ntersection Capacity Utilization 1	114.1%			ICU	J Level of S	Service H			
nalysis Period (min) 15									
95th percentile volume excee	eds capacity, que	ue may be	longer.						
Queue shown is maximum aft	er two cycles.								
plits and Phases: 4: Kanata A	Avenue & HWY 4	117 WR ∩fi	f						
<u> </u>	WOHLD OX HIVVI -				1				
Ø2 (R)			ø3			Ø4			



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u> </u>	11511	UDL	*
Traffic Volume (vph)	528	494	4 681	0	0	TT
Future Volume (vph)	528	494	681	0	0	1145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.30
Frt		0.850				
	0.950	0.000				
Flt Protected		1547	1750	^	^	2257
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	4547	4750	_	_	2257
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		40				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	528	494	681	0	0	1145
Shared Lane Traffic (%)	020	-101	301	0	U	1170
	528	494	681	0	0	1145
Lane Group Flow (vph)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	Cl+Ex	CI+Ex	Cl+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	0.0	0.0	28.7			28.7
			4.0			4.0
Detector 2 Size(m)			1.8 CL Ev			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase		0	_			-
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	59.0	59.0	31.0			31.0
Total Split (%)	65.6%	65.6%	34.4%			34.4%
Maximum Green (s)	54.0	54.0	24.9			24.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
	Γ.0	5.0	6.1			6.1
Total Lost Time (s)	5.0	5.0	0.1			

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lead-Lag Optimize?	WDL	WDIN	NDT	NDIX	ODL	301	
	2.0	2.0	2.0			2.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	37.7	37.7	41.2			41.2	
Actuated g/C Ratio	0.42	0.42	0.46			0.46	
v/c Ratio	0.74	0.75	0.85			0.74	
Control Delay	28.0	26.8	35.3			18.5	
Queue Delay	0.2	0.0	0.0			0.0	
Total Delay	28.2	26.8	35.3			18.6	
LOS	С	С	D			В	
Approach Delay	27.5		35.3			18.6	
Approach LOS	С		D			В	
Queue Length 50th (m)	74.5	64.6	119.8			84.4	
Queue Length 95th (m)	83.8	76.6	#204.4			#150.8	
Internal Link Dist (m)	308.8	1 010	102.6			90.0	
Turn Bay Length (m)	000.0		.02.0			00.0	
Base Capacity (vph)	1017	926	801			1538	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	83	0	0			12	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.57	0.53	0.85			0.75	
	0.57	0.55	0.00			0.75	
Intersection Summary	211						
Area Type:	Other						
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 32 (36%), Referenced to	phase 2:NBT an	d 6:SBT, S	tart of Green				
Natural Cycle: 65							
Control Type: Actuated-Coordina	ited						
Maximum v/c Ratio: 0.85							
Intersection Signal Delay: 25.8					ersection L		
Intersection Capacity Utilization 1	115.5%			ICI	J Level of S	Service H	
Analysis Period (min) 15							
# 95th percentile volume excee	eds capacity, que	eue may be	longer.				
Queue shown is maximum aft	ter two cycles.						
Splits and Phases: 4: Kanata /	Avenue & HWY	117 M/D Of	£				
Spiils and Friases. 4. Nariala 7	Avenue & HVIII	+17 WB OI	!				
Tø2 (R)							
31 s			_				
1 25 (2)			2				
▼ Ø6 (R)			▼ Ø8				

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group			WBL			
Lane Configurations Traffic Volume (vph)	↑↑ 803	₹ 37	E7	41 ↑ 393	ኝ 10	7
Future Volume (vph)	803	37	57 57	393	10	35 35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	40.0	110.0	1000	30.0	0.0
Storage Lanes		40.0	0		30.0	0.0
Taper Length (m)		I	100.0		45.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.93	1.00	0.33	1.00	1.00	1.00
Frt		0.850		1.00		0.850
Flt Protected		0.000		0.994	0.950	0.000
Satd. Flow (prot)	3357	1394	0	3179	1441	1459
Flt Permitted	3337	1394	U	0.801	0.950	1409
	2257	1204	0			1450
Satd. Flow (perm)	3357	1394	0	2562	1441	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	50	37		50		35
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	11%	2%	9%	20%	6%
Adj. Flow (vph)	803	37	57	393	10	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	803	37	0	450	10	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex
Detector 1 Channel	CITLX	OITLX	OITLX	OITLX	OITLX	OITLX
Detector 1 Channel Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	30.0	30.0	29.4	29.4	24.9	24.9
Total Split (s)	30.0	30.0	30.0	30.0	25.0	25.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%
Maximum Green (s)	23.6	23.6	23.6	23.6	19.1	19.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	3.1	3.1	2.6	2.6
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10	10	10	10	10	10
Act Effct Green (s)	41.4	41.4		41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75		0.75	0.15	0.15
v/c Ratio	0.32	0.03		0.23	0.05	0.14
Control Delay	5.7	3.2		5.6	16.8	7.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	5.7	3.2		5.6	16.8	7.6
LOS	Α	Α		Α	В	A
Approach Delay	5.6			5.6	9.6	
Approach LOS	A			A	A	
Queue Length 50th (m)	14.2	0.0		7.3	0.9	0.0
Queue Length 95th (m)	43.7	3.9		25.0	3.1	4.5
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		40.0			30.0	
Base Capacity (vph)	2525	1058		1927	500	529
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.32	0.03		0.23	0.02	0.07
Intersection Summary						
Area Type:	Other					
Cycle Length: 55	Culoi					
Actuated Cycle Length: 55						
Offset: 0 (0%), Referenced to ph	ase 2:FBT and	S:WBTI St	art of Green)		
Natural Cycle: 55	SSS E.EDT WIN		01 01001			
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.32						
Intersection Signal Delay: 5.7				Inte	ersection L0	OS: A
Intersection Capacity Utilization	56 4%				J Level of S	
Analysis Period (min) 15	JO 70			100	J LOVOI OI C	O1 4100 D
, maryoto i onou (iliiii) io						
Splits and Phases: 1: Earl Gre	y Drive & Kanat	a Avenue				
▼ Ø2 (R)					l	
30 s						
-						
▼ Ø6 (R)					l	Ø8
30 c						25 s

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	•	7	16.56	1		7	44	7		4Tb	
Traffic Volume (vph)	19	6	36	184		53	85	369	170	24	695	16
Future Volume (vph)	19	6	36	184	2	53	85	369	170	24	695	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	1.00		0.98	0.99	0.99		1.00		0.98		1.00	
Frt			0.850		0.855				0.850		0.997	
Flt Protected	0.950			0.950			0.950			_	0.998	
Satd. Flow (prot)	1262	1784	992	3135	1506	0	1417	3325	1473	0	3326	0
Flt Permitted	0.950			0.950			0.268			_	0.933	_
Satd. Flow (perm)	1261	1784	976	3116	1506	0	399	3325	1441	0	3109	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193		53				170		3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	1		3	3		1	3		1	1		3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	17%	2%	44%
Adj. Flow (vph)	19	6	36	184	2	53	85	369	170	24	695	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	6	36	184	55	0	85	369	170	0	735	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	_ 2	1	1	_ 2		1	_ 2	1	1	_ 2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	
Detector 1 Channel					0.0		0.0	0.0	2.2		0.0	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	Б.,	0.0	-	ъ .	0.0			0.0	_	-	0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	3	8		7	4		1	6		_	2	
Permitted Phases			8	_			6		6	2		
Detector Phase	3	8	8	7	4		1	6	6	2	2	
Switch Phase		40.0	40.0	- ^	40.0		- ^	400	400	40.0	40.0	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	13.2	30.2		12.0	48.5	48.5	36.5	36.5	
Total Split (%)	12.6%	31.4%	31.4%	14.7%	33.6%		13.3%	53.9%	53.9%	40.6%	40.6%	
Maximum Green (s)	5.0	22.0	22.0	6.9	23.9		5.7	42.2	42.2	30.2	30.2	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.0	3.0	3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		10	10		10			10	10	10	10	
Act Effct Green (s)	5.0	12.4	12.4	8.1	15.8		57.1	57.1	57.1		46.4	
Actuated g/C Ratio	0.06	0.14	0.14	0.09	0.18		0.63	0.63	0.63		0.52	
v/c Ratio	0.27	0.02	0.12	0.65	0.18		0.26	0.17	0.17		0.46	
Control Delay	50.7	30.5	0.8	52.4	10.4		9.6	7.7	2.7		18.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	50.7	30.5	0.8	52.4	10.4		9.6	7.7	2.7		18.3	
LOS	D	С	Α	D	В		Α	Α	Α		В	
Approach Delay		19.3			42.7			6.6			18.3	
Approach LOS		В			D			Α			В	
Queue Length 50th (m)	3.2	1.0	0.0	16.3	0.3		8.4	20.8	7.1		46.6	
Queue Length 95th (m)	10.1	3.7	0.0	#32.3	8.8		12.4	22.6	5.4		77.2	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	384	283	438		330	2109	975		1603	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.27	0.01	0.09	0.65	0.13		0.26	0.17	0.17		0.46	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65 Intersection Signal Delay: 17.4

Intersection LOS: B ICU Level of Service D

Intersection Capacity Utilization 73.2%

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Kanata Avenue & Lord Byng Way/Maritime Way



Synchro 10 Report Brad Byvelds, Novatech

	•	•	†	<u> </u>	\	↓
	T M/DI	WDD	NDT	NDD	ODI	ODT
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	205	276	400	^	^	^
Traffic Volume (vph)	295	276	423	0	0	1072
Future Volume (vph)	295	276	423	1900	1900	1072
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt Fit Double start	0.050	0.850				
Flt Protected	0.950	4004	4747	^	^	2025
Satd. Flow (prot)	1695	1334	1717	0	0	3325
Flt Permitted	0.950	1001	4=7=			000-
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		276				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	295	276	423	0	0	1072
Shared Lane Traffic (%)						
Lane Group Flow (vph)	295	276	423	0	0	1072
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane	1.0		1.0			1.0
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	1.00	24	1.00
Number of Detectors	1	1	2	17	44	2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
						0.0
Trailing Detector (m)	0.0	0.0	0.0			
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	1 Gill	1 (1111	2			6
Permitted Phases	8	8				U
Detector Phase	8	8	2			6
Switch Phase	8	0	Z			O
	E 0	ΕΛ	10.0			10.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	37.0	37.0	53.0			53.0
Total Split (%)	41.1%	41.1%	58.9%			58.9%
Maximum Green (s)	32.0	32.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	21.2	21.2	57.7			57.7	
Actuated g/C Ratio	0.24	0.24	0.64			0.64	
v/c Ratio	0.74	0.53	0.38			0.50	
Control Delay	42.7	7.1	3.5			13.1	
Queue Delay	0.0	0.0	0.1			0.0	
Total Delay	42.7	7.1	3.7			13.1	
LOS	D	Α	Α			В	
Approach Delay	25.5		3.7			13.1	
Approach LOS	С		Α			В	
Queue Length 50th (m)	47.5	0.0	7.8			72.6	
Queue Length 95th (m)	66.4	16.5	10.4			97.7	
Internal Link Dist (m)	308.8		102.6			90.0	
Turn Bay Length (m)							
Base Capacity (vph)	602	652	1100			2132	
Starvation Cap Reductn	0	0	138			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.49	0.42	0.44			0.50	
Intersection Summary							
Area Type:	Other						
Cycle Length: 90							
Actuated Cycle Length: 90		100DT 0					
Offset: 35 (39%), Referenced to p	ohase 2:NBT and	d 6:SB1, Si	tart of Green				
Natural Cycle: 55							
Control Type: Actuated-Coordina	ted						
Maximum v/c Ratio: 0.74						00 D	
Intersection Signal Delay: 14.6	- O0/				ersection L		
Intersection Capacity Utilization 8	5.0%			ICU	J Level of S	Service E	
Analysis Period (min) 15							
Splits and Phases: 4: Kanata A	venue & HWY 4	17 WB Off	:				
†							
Ø2 (R)							
JJ 5						_	
L I ac (5)						- 1 2	~
▼ Ø6 (R)						37.5	Ø8

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations				#	*	A	
Traffic Volume (vph)	0	0	390	267	519	669	
Future Volume (vph)	0	0	390	267	519	669	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
Taper Length (m)	7.6				7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor				0.98	1.00		
Frt				0.850			
Flt Protected					0.950		
Satd. Flow (prot)	0	0	1685	1502	1679	1750	
Flt Permitted	•	^	4005	4400	0.442	4750	
Satd. Flow (perm)	0	0	1685	1468	780	1750	
Right Turn on Red		Yes		Yes 267			
Satd. Flow (RTOR) Link Speed (k/h)	48		50	201		50	
Link Speed (k/n) Link Distance (m)	48 278.4		119.2			126.6	
Travel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.9		0.0	1	1	ð. I	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	0%	8%	3%	3%	4%	
Adj. Flow (vph)	0	0	390	267	519	669	
Shared Lane Traffic (%)					3.0	300	
Lane Group Flow (vph)	0	0	390	267	519	669	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0	, in the second	3.7	Ĭ		3.7	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors			_ 2	1	1	_ 2	
Detector Template			Thru	Right	Left	Thru	
Leading Detector (m)			30.5	6.1	6.1	30.5	
Trailing Detector (m)			0.0	0.0	0.0	0.0	
Detector 1 Position(m)			0.0	0.0	0.0	0.0	
Detector 1 Size(m)			1.8	6.1	6.1	1.8	
Detector 1 Type Detector 1 Channel			CI+Ex	CI+Ex	CI+Ex	Cl+Ex	
			0.0	0.0	0.0	0.0	
Detector 1 Extend (s)			0.0	0.0	0.0	0.0	
Detector 1 Queue (s) Detector 1 Delay (s)			0.0	0.0	0.0	0.0	
Detector 2 Position(m)			28.7	0.0	0.0	28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			Cl+Ex			CI+Ex	
Detector 2 Channel			OI! LX			OI · LA	
Detector 2 Extend (s)			0.0			0.0	
Turn Type			NA	Perm	pm+pt	NA	
Protected Phases			2	1 31111	1	6	4
Permitted Phases				2	6		
Detector Phase			2	2	1	6	
Switch Phase							
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0
Total Split (s)			50.0	50.0	12.0	62.0	28.0
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4		
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			5.7	5.7	5.7	5.7			
Lead/Lag			Lag	Lag	Lead				
_ead-Lag Optimize?			Yes	Yes	Yes				
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Walk Time (s)			7.0	7.0			7.0		
Flash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10		
Act Effct Green (s)			57.9	57.9	78.9	83.5			
Actuated g/C Ratio			0.64	0.64	0.88	0.93			
v/c Ratio			0.36	0.26	0.62	0.41			
Control Delay			8.1	2.0	12.5	1.6			
Queue Delay			0.5	0.0	0.1	0.0			
Total Delay			8.6	2.0	12.6	1.6			
LOS			A	A	В	A			
Approach Delay			5.9			6.4			
Approach LOS			A			A			
Queue Length 50th (m)			25.6	4.7	22.7	0.0			
Queue Length 95th (m)			65.6	14.2	#58.0	34.5			
nternal Link Dist (m)	254.4		95.2			102.6			
Turn Bay Length (m)				50.0					
Base Capacity (vph)			1084	1039	836	1623			
Starvation Cap Reductn			335	0	18	4			
Spillback Cap Reductn			0	0	0	0			
Storage Cap Reductn			0	0	0	0			
Reduced v/c Ratio			0.52	0.26	0.63	0.41			
Intersection Summary									
Area Type:	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 42 (47%), Referenced to p	ohase 2:NBT an	d 6:SBTL.	Start of Gre	en					
Natural Cycle: 80									
Control Type: Actuated-Coordina	ted								
Maximum v/c Ratio: 0.62									
ntersection Signal Delay: 6.2				Int	ersection L	OS: A			
ntersection Capacity Utilization 8	35.0%			IC	U Level of S	Service E			
Analysis Period (min) 15									
# 95th percentile volume excee	ds capacity, que	eue may be	longer.						
Queue shown is maximum after									
Calita and Dhagas E. Vasata A	Vonus 9 LIMA	117 ED O-							
Splits and Phases: 5: Kanata A	Avenue & HWY 4	+1/ EB ON							
o ₁ To	2 (R)						I	# k ø4	
12 s 50 s	2 (K)							8 s	
12 S								.0 3	
₩ Ø6 (R)									
* 200 (IC) *									

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			43-		*	î,		*	ĵ.	
Traffic Volume (vph)	45	4	18	19	6	61	41	650	36	52	597	41
Future Volume (vph)	45	6	18	19	6	61	41	650	36	52	597	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.97			0.96		0.99	1.00		1.00	1.00	
Frt		0.965			0.904			0.992			0.990	
Flt Protected		0.968			0.989		0.950			0.950		
Satd. Flow (prot)	0	1218	0	0	1464	0	1145	1734	0	1662	1715	0
Flt Permitted		0.809			0.909		0.379			0.354		
Satd. Flow (perm)	0	1001	0	0	1336	0	454	1734	0	618	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			61			6			7	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14		18	18		14	9		6	6		9
Confl. Bikes (#/hr)			1						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 (%)	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Adj. Flow (vph)	45	6	18	19	6	61	41	650	36	52	597	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	86	0	41	686	0	52	638	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	CI+Ex		CI+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												_
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	_
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.0			13.0		69.5	69.5		69.5	69.5	
Actuated g/C Ratio		0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio		0.43			0.35		0.12	0.51		0.11	0.48	
Control Delay		34.5			17.0		4.7	5.6		5.8	5.7	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.2	
Total Delay		34.5			17.0		4.7	5.7		5.8	5.9	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		34.5			17.0			5.6			5.8	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		8.4			4.0		1.7	37.3		1.4	17.1	
Queue Length 95th (m)		18.3			14.6		m4.2	53.3		6.7	47.5	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		277			398		350	1340		477	1326	
Starvation Cap Reductn		0			0		0	56		0	152	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.22		0.12	0.53		0.11	0.54	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 7.6

Intersection Capacity Utilization 69.6%

Intersection LOS: A ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



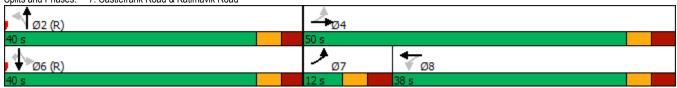
Synchro 10 Report Brad Byvelds, Novatech

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

	٠	→	•	•	+	•	1	†	<i>></i>	\	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ĵ,		*	ĵ.		*	Î.		*	•	7
Traffic Volume (vph)	158	130	72	34	114	34	123	452	51	79	346	100
Future Volume (vph)	158	130	72	34	114	34	123	452	51	79	346	100
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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		0.98	0.98		0.98	0.99		0.98		0.94
Frt		0.947			0.966			0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1586	1649	0	1695	1629	0	1695	1634	0	1503	1655	1322
Flt Permitted	0.447			0.631			0.519			0.395		
Satd. Flow (perm)	711	1649	0	1099	1629	0	907	1634	0	612	1655	1245
Right Turn on Red		40	Yes		40	Yes		_	Yes			Yes
Satd. Flow (RTOR)		43			18			7				126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)	0.5	22.5	40	40	21.3	0.5	00	18.3	00	00	13.8	00
Confl. Peds. (#/hr)	35	4.00	16	16	4.00	35	20	4.00	33	33	4.00	20
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 (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	15%	10%	17%
Adj. Flow (vph)	158	130	72	34	114	34	123	452	51	79	346	100
Shared Lane Traffic (%)	450	000	^	24	440		400	F00		70	240	400
Lane Group Flow (vph)	158	202	0	34	148	0	123	503	0	79 No.	346	100
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7 0.0			3.7 0.0			3.7 0.0			3.7 0.0	
Link Offset(m) Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		4.9			4.9			4.9			4.9	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00
Number of Detectors	1	2	17	1	2	17	1	2	17	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel		• · ·		· ·	·		• •	• · · · · ·			•	· ·
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
Maximum Green (s)	5.3	43.3		31.3	31.3		33.8	33.8		33.8	33.8	33.8
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)	3.4	3.4		3.4	3.4		2.9	2.9		2.9	2.9	2.9
. /												

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	26.2	26.2		14.2	14.2		50.9	50.9		50.9	50.9	50.9
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.61	0.40		0.20	0.55		0.24	0.54		0.23	0.37	0.13
Control Delay	35.5	21.3		33.3	37.2		12.9	16.0		19.4	18.1	6.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.5	21.3		33.3	37.2		12.9	16.0		19.4	18.1	6.5
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		27.5			36.4			15.4			16.1	
Approach LOS		С			D			В			В	
Queue Length 50th (m)	22.0	22.1		5.3	21.3		9.5	47.5		8.3	36.3	3.0
Queue Length 95th (m)	32.2	34.2		12.0	34.7		24.8	97.3		16.1	50.8	9.2
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	258	815		382	578		513	928		346	936	759
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.61	0.25		0.09	0.26		0.24	0.54		0.23	0.37	0.13
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 25 (28%), Referenced to p	hase 2:NBTL a	nd 6:SBTL,	Start of Gre	en								
Natural Cycle: 75												
Control Type: Actuated-Coordinat	ted											
Maximum v/c Ratio: 0.61												
Intersection Signal Delay: 20.5					ersection LO							
Intersection Capacity Utilization 8	3.8%			IC	U Level of Se	ervice E						
Analysis Period (min) 15												

Splits and Phases: 7: Castlefrank Road & Katimavik Road



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ĵ.		75	î,		*	î,		7	î.	
Traffic Volume (vph)	54	718	14	71	496	86	18	19	162	182	1 2	61
Future Volume (vph)	54	718	14	71	496	86	18	19	162	182	12	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			55.0			40.0			35.0		
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	0.99	1.00			0.99		0.99	0.96		0.98	0.98	
Frt		0.997			0.978			0.866			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1718	0	1695	1592	0	1695	1479	0	1695	1494	0
Flt Permitted	0.368			0.271			0.709			0.612		
Satd. Flow (perm)	652	1718	0	484	1592	0	1254	1479	0	1068	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			15			150			61	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	12		11	11		12	4		12	12		4
Confl. Bikes (#/hr)			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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	14%	2%
Adj. Flow (vph)	54	718	14	71	496	86	18	19	162	182	12	61
Shared Lane Traffic (%)												_
Lane Group Flow (vph)	54	732	0	71	582	0	18	181	0	182	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	4.00	4.00	1.06	4.00	4.00	4.00	4.00	1.06	1.06	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.00	1.06	1.06 24	1.06	1.06
Turning Speed (k/h) Number of Detectors	24 1	2	14	24 1	2	14	24	2	14	1	2	14
	Left	Thru		Left	Thru		1 Left	Thru		Left	Thru	
Detector Template Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		Cl+Ex	Cl+Ex		CI+Ex	Cl+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel	CITLX	CITLX		CITLX	CITLX		CITLX	CITLX		CITLX	CITEX	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OI · LX			OI · EX			OI · EX			OI · LX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2	_		6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase					-		-	-				
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	39.3	39.3		39.3	39.3		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	

	•	→	*	1	←	4	4	†	~	/	 	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	49.9	49.9		49.9	49.9		18.4	18.4		18.4	18.4	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.23	0.23		0.23	0.23	
v/c Ratio	0.13	0.68		0.24	0.58		0.06	0.40		0.74	0.19	
Control Delay	9.4	16.3		11.6	13.3		20.9	8.5		45.5	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.4	16.3		11.6	13.3		20.9	8.5		45.5	8.7	
LOS	Α	В		В	В		С	Α		D	Α	
Approach Delay		15.8			13.1			9.7			35.0	
Approach LOS		В			В			Α			С	
Queue Length 50th (m)	3.0	64.7		4.2	45.2		2.2	3.7		25.8	1.4	
Queue Length 95th (m)	10.4	#155.6		14.7	98.9		6.2	16.1		41.1	9.4	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	406	1071		301	998		454	631		387	580	
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	0.13	0.68		0.24	0.58		0.04	0.29		0.47	0.13	

Intersection Summary

Area Type: Cycle Length: 80 Other

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

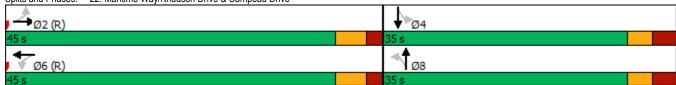
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.74 Intersection Signal Delay: 16.8

Intersection Capacity Utilization 92.5%

Analysis Period (min) 15

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

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



Intersection LOS: B

ICU Level of Service F

	→	•	•	•	4	/
Long Croup	EDT	, EDD	- WDI	MDT	NIDI	- NDD
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑ 692	₹ 82	214	₹	\	177
Traffic Volume (vph) Future Volume (vph)	692 692	82 82	214	791 791	79 79	177 177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	40.0	110.0	1000	30.0	0.0
Storage Lanes		40.0	0		30.0	1
Taper Length (m)		I	100.0		45.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.93	0.98	0.90	1.00	1.00	0.99
Frt Frt		0.98		1.00		0.850
Fit Protected		0.000		0.989	0.950	0.000
	3115	1517	0	3353	1695	1517
Satd. Flow (prot) Flt Permitted	3115	1517	U	0.664	0.950	1017
	2445	1400				1400
Satd. Flow (perm)	3115	1483	0	2251	1695	1496
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	F2	82				177
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)		1	1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	692	82	214	791	79	177
Shared Lane Traffic (%)						
Lane Group Flow (vph)	692	82	0	1005	79	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24	,,,,,	24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.1	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Type	OI+EX	OI+EX	OI+EX	OI+EX	CITEX	OI+EX
Detector 1 Channel	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	29.4	29.4	10.8	29.4	24.9	24.9
Total Split (s)	58.0	58.0	12.0	70.0	30.0	30.0
Total Split (%)	58.0%	58.0%	12.0%	70.0%	30.0%	30.0%
Maximum Green (s)	51.6	51.6	6.2	63.6	24.1	24.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	2.5	3.1	2.6	2.6
, tou i iiio (3)	0.1	0.1	2.0	0.1	2.0	2.0

	-	•	•	←	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	76.7	76.7		76.7	11.0	11.0
Actuated g/C Ratio	0.77	0.77		0.77	0.11	0.11
v/c Ratio	0.29	0.07		0.58	0.42	0.55
Control Delay	4.3	1.2		7.3	46.9	12.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	4.3	1.2		7.3	46.9	12.6
LOS	A	Α		A	D	В
Approach Delay	4.0			7.3	23.2	
Approach LOS	A			A	C	
Queue Length 50th (m)	16.1	0.0		32.8	14.7	0.0
Queue Length 95th (m)	33.2	4.1		70.4	26.1	17.0
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		40.0			30.0	
Base Capacity (vph)	2388	1156		1726	408	494
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.29	0.07		0.58	0.19	0.36
	0.20	0.01		0.00	0.10	0.00
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to ph	nase 2:EBT and (6:WBTL, Sta	rt of Green	1		
Natural Cycle: 70						
Control Type: Actuated-Coordinate	ated					
Maximum v/c Ratio: 0.58						
Intersection Signal Delay: 8.1				Int	ersection L(DS: A
Intersection Capacity Utilization	70.4%			ICI	J Level of S	ervice C
Analysis Period (min) 15						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
▼ Ø1 🕴 🐨 Ø2	(R)					
12 s 58 s						
4						
▼ Ø6 (R) ■						
7 DO (IC)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	*	7	14.54	1 ,		*	44	7		4Tb	
Traffic Volume (vph)	30	3	78	151	9	53	136	947	225	79	732	25
Future Volume (vph)	30	3	78	151	9	53	136	947	225	79	732	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	0.99		0.98	0.99	0.98		1.00		0.98		1.00	
Frt	0.050		0.850	0.050	0.872		0.050		0.850		0.996	
Flt Protected	0.950	4704	4000	0.950	4500	•	0.950	0000	4547	^	0.995	•
Satd. Flow (prot)	1262	1784	1268	3288	1522	0	1503	3390	1517	0	3340	0
Flt Permitted	0.950	4704	1017	0.950	4500	٥	0.212	2200	1170	0	0.742	0
Satd. Flow (perm)	1246	1784	1247 Yes	3262	1522	0 Yes	335	3390	1479 Yes	0	2490	0 Yes
Right Turn on Red			193		53	res			127		4	res
Satd. Flow (RTOR)		50	193		50 50			50	121		50	
Link Speed (k/h) Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			99.0 7.1			7.9			33.9	
Confl. Peds. (#/hr)	11	0.0	4	4	7.1	11	3	1.9	3	3	33.9	3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	151	9	53	136	947	225	79	732	25
Shared Lane Traffic (%)	30	J	70	101	<u> </u>	33	100	JT1	225	13	102	20
Lane Group Flow (vph)	30	3	78	151	62	0	136	947	225	0	836	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Loit	7.4	rugiit	Loit	7.4	rtigrit	Lon	3.7	rtigitt	Loit	3.7	ragne
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	Drot	0.0	Dorm	Drot	0.0		nm.nt	0.0	Darm	Dom	0.0	
Turn Type Protected Phases	Prot 7	NA 4	Perm	Prot 3	NA 8		pm+pt	NA	Perm	Perm	NA 6	
Permitted Phases	- 1	4	1	3	0		5	2	2	6	U	
Detector Phase	7	4	4	3	8		2 5	2	2	6 6	6	
Switch Phase	1	4	4	J	U		J			U	U	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	12.0	29.0		11.9	49.7	49.7	37.8	37.8	
Total Split (%)	12.6%	31.4%	31.4%	13.3%	32.2%		13.2%	55.2%	55.2%	42.0%	42.0%	
Maximum Green (s)	5.0	22.0	22.0	5.7	22.7		5.6	43.4	43.4	31.5	31.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.0	3.0	3.0	3.0	
(0)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		10	10		10			10	10	10	10	
Act Effct Green (s)	5.0	12.4	12.4	6.6	15.2		55.4	55.4	55.4		41.1	
Actuated g/C Ratio	0.06	0.14	0.14	0.07	0.17		0.62	0.62	0.62		0.46	
v/c Ratio	0.43	0.01	0.23	0.63	0.21		0.44	0.45	0.23		0.73	
Control Delay	60.3	30.0	1.6	63.8	13.6		11.7	11.8	5.7		27.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	60.3	30.0	1.6	63.8	13.6		11.7	11.8	5.7		27.2	
LOS	Е	С	Α	E	В		В	В	Α		С	
Approach Delay		18.2			49.2			10.8			27.2	
Approach LOS		В			D			В			С	
Queue Length 50th (m)	5.1	0.5	0.0	14.3	0.8		9.0	42.0	6.2		61.5	
Queue Length 95th (m)	#15.6	2.5	0.0	#28.6	7.8		m11.4	m51.5	m5.6		#112.4	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	450	239	423		310	2086	959		1138	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.43	0.01	0.17	0.63	0.15		0.44	0.45	0.23		0.73	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 20.0

Intersection LOS: B ICU Level of Service D

Intersection Capacity Utilization 81.4%

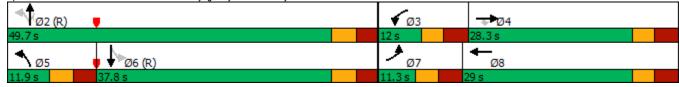
Analysis Period (min) 15

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: 3: Kanata Avenue & Lord Byng Way/Maritime Way



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	VVDL	WDK 7		NDI	ODL	<u>361</u>
Traffic Volume (vph)	570	809	♣ 846	0	0	7.7 1226
Future Volume (vph)	570 570	809	846	0	0	1226
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.90
		0.000				
Frt	0.050	0.850				
Flt Protected	0.950	4547	4750	^	_	2057
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	4547	4750	^	_	2057
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		81				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	570	809	846	0	0	1226
Shared Lane Traffic (%)				•		
Lane Group Flow (vph)	570	809	846	0	0	1226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	ragni	0.0	Ngiit	LEIL	0.0
Link Offset(m)	0.0		0.0			0.0
	4.9		4.9			4.9
Crosswalk Width(m) Two way Left Turn Lane	4.9		4.9			4.9
	4.00	4.00	1.00	1.00	1.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06 24	1.06
Turning Speed (k/h)	24	14	0	14	24	0
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	0.0	0.0	28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
			UI+EX			UI+EX
Detector 2 Channel			0.0			
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			16.1
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
. J.a. Opiit (/0)	40.0	40.0	38.9			38.9
		3.3	3.3			3.3
Maximum Green (s)	2.2		ა.ა			
Maximum Green (s) Yellow Time (s)	3.3					2.0
Maximum Green (s) Yellow Time (s) All-Red Time (s)	1.7	1.7	2.8			2.8
Maximum Green (s) Yellow Time (s)						2.8 0.0 6.1

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	40.0	40.0	38.9			38.9
Actuated g/C Ratio	0.44	0.44	0.43			0.43
v/c Ratio	0.76	1.13	1.12			0.85
Control Delay	28.9	97.7	105.0			22.3
Queue Delay	0.0	0.0	1.1			2.4
Total Delay	28.9	97.7	106.1			24.7
LOS	С	F	F			С
Approach Delay	69.2		106.1			24.7
Approach LOS	E		F			С
Queue Length 50th (m)	79.8	~155.5	~162.3			44.1
Queue Length 95th (m)	121.0	#224.6	#237.7			69.6
Internal Link Dist (m)	308.8		102.6			90.0
Turn Bay Length (m)						
Base Capacity (vph)	753	719	756			1450
Starvation Cap Reductn	0	0	119			0
Spillback Cap Reductn	0	0	0			124
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.76	1.13	1.33			0.92
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 0 (0%), Referenced to ph	nase 2:NBT and	6:SBT, Star	t of Green			
Natural Cycle: 110						
Control Type: Actuated-Coordin	ated					
Maximum v/c Ratio: 1.13						
Intersection Signal Delay: 62.5				Inte	ersection L	OS: E
Intersection Capacity Utilization	140.9%			ICU	J Level of	Service H
Analysis Period (min) 15						
 Volume exceeds capacity, q 	ueue is theoretic	ally infinite.				
Queue shown is maximum at	fter two cycles.					
# 95th percentile volume exce	eds capacity, qu	eue may be	longer.			
Queue shown is maximum at	fter two cycles.		,			
0.111			•			
Splits and Phases: 4: Kanata	Avenue & HWY	417 WB Ot	†		_	
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45 s						
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
Lane Configurations			A	#	*	A	10.0
Traffic Volume (vph)	0	0	689	242	470	1116	
Future Volume (vph)	0	0	689	242	470	1116	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
Taper Length (m)	7.6				7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor				0.98			
Frt				0.850			
Flt Protected	•	•	4700	4-4-	0.950	4704	
Satd. Flow (prot)	0	0	1733	1517	1662	1784	
Flt Permitted	^	^	4700	4.470	0.158	4704	
Satd. Flow (perm)	0	0	1733	1479 Yes	276	1784	
Right Turn on Red		Yes		210			
Satd. Flow (RTOR) Link Speed (k/h)	48		50	210		50	
Link Distance (m)	278.4		119.2			126.6	
Fravel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.0		0.0	2	2	J. I	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	0%	5%	2%	4%	2%	
Adj. Flow (vph)	0	0	689	242	470	1116	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	689	242	470	1116	
Enter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0		3.7			3.7	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14	_	14	24		
Number of Detectors			2	1	1	2	
Detector Template			Thru	Right	Left	Thru	
Leading Detector (m)			30.5	6.1	6.1	30.5	
Trailing Detector (m)			0.0	0.0	0.0	0.0	
Detector 1 Position(m)			0.0	0.0	0.0	0.0	
Detector 1 Size(m)			1.8 CI+Ex	6.1 CI+Ex	6.1 CI+Ex	1.8 CI+Ex	
Detector 1 Type Detector 1 Channel			UI+EX	UI+EX	UI+EX	UI+EX	
Detector 1 Extend (s)			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	0.0	
Detector 2 Position(m)			28.7	0.0	0.0	28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			Cl+Ex	
Detector 2 Channel			 ,			_ .,	
Detector 2 Extend (s)			0.0			0.0	
Turn Type			NA	Perm	pm+pt	NA	
Protected Phases			2		1	6	8
Permitted Phases				2	6		
Detector Phase			2	2	1	6	
Switch Phase							
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0
Гotal Split (s)			50.0	50.0	12.0	62.0	28.0
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
Lost Time Adjust (s)			0.0	0.0	0.0	0.0		
Total Lost Time (s)			5.7	5.7	5.7	5.7		
Lead/Lag			Lag	Lag	Lead			
Lead-Lag Optimize?			Yes	Yes	Yes			
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Walk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			46.6	46.6	78.9	83.5		
Actuated g/C Ratio			0.52	0.52	0.88	0.93		
v/c Ratio			0.77	0.28	0.72	0.67		
Control Delay			15.9	2.0	25.9	8.3		
Queue Delay			17.9	0.0	0.0	0.3		
Total Delay			33.8	2.0	25.9	8.5		
LOS			33.0 C	2.0 A	23.9 C	0.5 A		
			25.5	A	U	13.6		
Approach LOS			25.5 C			13.0 B		
Approach LOS			64.5	C F	20.7	14.5		
Queue Length 50th (m)				6.5	38.7			
Queue Length 95th (m)	054.4		#121.0	m3.2	m#149.6	#277.4		
Internal Link Dist (m)	254.4		95.2	50.0		102.6		
Turn Bay Length (m)			000	50.0	050	4054		
Base Capacity (vph)			898	867	650	1654		
Starvation Cap Reductn			136	0	0	91		
Spillback Cap Reductn			212	0	0	45		
Storage Cap Reductn			0	0	0	0		
Reduced v/c Ratio			1.00	0.28	0.72	0.71		
Intersection Summary								
	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 27 (30%), Referenced to ph	nase 2:NBT and	d 6:SBTL, S	Start of Gre	en				
Natural Cycle: 100								
Control Type: Actuated-Coordinate	ed							
Maximum v/c Ratio: 0.77								
Intersection Signal Delay: 18.0				lı lı	ntersection L	OS: B		
Intersection Capacity Utilization 14	0.9%			ŀ	CU Level of	Service H		
Analysis Period (min) 15								
# 95th percentile volume exceed:	s capacity, que	ue may be	longer.					
Queue shown is maximum after								
m Volume for 95th percentile que	eue is metered	by upstrea	m signal.					
Splits and Phases: 5: Kanata Av	renue & HWY 4	17 EB On						
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		43-			₩.		*	î,		*	ĵ.	
Traffic Volume (vph)	17	4 3	13	30	1	97	12	927	35	62	1111	24
Future Volume (vph)	17	3	13	30	1	97	12	927	35	62	1111	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.98			0.97			1.00			1.00	
Frt		0.947			0.898			0.995			0.997	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1542	0	1695	1757	0	1695	1777	0
Flt Permitted		0.735			0.909		0.141			0.222		
Satd. Flow (perm)	0	1219	0	0	1415	0	252	1757	0	396	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			97			4			2	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	7		6	6		7	9		5	5		9
Confl. Bikes (#/hr)									3			
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	17	3	13	30	1	97	12	927	35	62	1111	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	128	0	12	962	0	62	1135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												_
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	_
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.1			10.1		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.11			0.11		0.76	0.76		0.76	0.76	
v/c Ratio		0.22			0.52		0.06	0.72		0.21	0.85	
Control Delay		26.2			19.2		5.2	11.3		6.1	13.3	
Queue Delay		0.0			0.0		0.0	0.3		0.0	0.0	
Total Delay		26.2			19.2		5.2	11.6		6.1	13.4	
LOS		С			В		Α	В		Α	В	
Approach Delay		26.2			19.2			11.5			13.0	
Approach LOS		С			В			В			В	
Queue Length 50th (m)		3.3			5.1		0.4	51.3		2.0	58.5	
Queue Length 95th (m)		9.9			17.8		m1.2	m#119.0		m5.0	#280.7	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		331			445		190	1329		299	1343	
Starvation Cap Reductn		0			0		0	1		0	2	
Spillback Cap Reductn		0			3		0	60		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.29		0.06	0.76		0.21	0.85	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.85

Intersection Signal Delay: 12.9

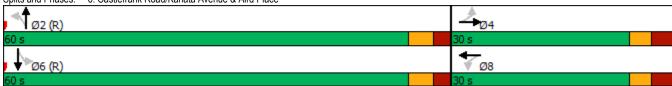
Intersection Capacity Utilization 84.2%

Analysis Period (min) 15

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

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



Intersection LOS: B

ICU Level of Service E

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ĵ.		7	¹}.		*	î,		75	*	#
Traffic Volume (vph)	144	140	75	92	200	105	41	503	60	115	763	198
Future Volume (vph)	144	140	75	92	200	105	41	503	60	115	763	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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	0.99	0.98		0.98	0.98		0.99	0.99				0.92
Frt	0.050	0.948		0.050	0.948		0.050	0.984		0.050		0.850
Fit Protected	0.950	1000	0	0.950	1004	٥	0.950	4740	0	0.950 1647	4704	4.470
Satd. Flow (prot)	1662 0.250	1666	0	1558 0.624	1634	0	1695 0.224	1742	0	0.141	1784	1473
Fit Permitted		1666	0		1624	٥		17/10	0		1701	1256
Satd. Flow (perm)	431	1666	0 Yes	1005	1634	0	395	1742	0	244	1784	1356 Yes
Right Turn on Red Satd. Flow (RTOR)		36	res		29	Yes		7	Yes			167
Link Speed (k/h)		50			50			50			50	107
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	16	22.3	12	12	21.0	16	31	10.5	27	27	13.0	31
Confl. Bikes (#/hr)	10		1	12		10	JI		21	21		JI
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%	2%	2%	11%	2%	7%	2%	2%	2%	5%	2%	5%
Adj. Flow (vph)	144	140	75	92	200	105	41	503	60	115	763	198
Shared Lane Traffic (%)	144	140	70	72	200	100	71	000	00	110	700	100
Lane Group Flow (vph)	144	215	0	92	305	0	41	563	0	115	763	198
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7 1.8			28.7 1.8			28.7 1.8			28.7 1.8	
Detector 2 Size(m) Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		UI+EX			UI+EX			CI+EX			CI+EX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	ριτι - ρι	4		i Cilli	8		1 (1111	2		ριτι - ρι	6	i Giiii
Permitted Phases	4	7		8	U		2			6	0	6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase				•			_	_				
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.2	29.2		29.2	29.2		11.2	29.7	29.7
Total Split (s)	12.0	43.0		31.0	31.0		35.0	35.0		12.0	47.0	47.0
Total Split (%)	13.3%	47.8%		34.4%	34.4%		38.9%	38.9%		13.3%	52.2%	52.2%
Maximum Green (s)	5.3	36.3		24.8	24.8		28.8	28.8		5.8	40.3	40.3
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3				3.3

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	31.5	31.5		20.0	20.0		32.3	32.3		45.6	45.1	45.1
Actuated g/C Ratio	0.35	0.35		0.22	0.22		0.36	0.36		0.51	0.50	0.50
v/c Ratio	0.65	0.35		0.41	0.79		0.29	0.89		0.49	0.85	0.26
Control Delay	34.5	18.6		34.3	44.4		29.9	47.6		20.4	25.4	4.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.5	18.6		34.3	44.4		29.9	47.6		20.4	25.4	4.9
LOS	С	В		С	D		С	D		С	С	Α
Approach Delay		25.0			42.0			46.4			21.1	
Approach LOS		С			D			D			С	
Queue Length 50th (m)	17.3	22.0		13.5	45.0		5.2	94.1		6.9	90.8	3.3
Queue Length 95th (m)	28.5	36.5		26.1	69.3		15.0	#163.2		m11.7	m#180.9	m9.5
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	223	693		276	471		141	630		233	893	762
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.31		0.33	0.65		0.29	0.89		0.49	0.85	0.26

Intersection Summary

Other

Area Type: Cycle Length: 90

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.89

Intersection Signal Delay: 31.4

Intersection Capacity Utilization 99.4%

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.

7: Castlefrank Road & Katimavik Road Splits and Phases:



Intersection LOS: C

ICU Level of Service F

	۶	→	•	•	←	4	1	†	~	>		4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	î,		7	ĵ,		7	ĵ,		7	ĵ,	
Traffic Volume (vph)	76	500	34	132	693	121	13	16	96	45	12	82
Future Volume (vph)	76	500	34	132	693	121	13	16	96	45	12	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			55.0			40.0			35.0		
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		1.00		1.00	0.99		0.98	0.97		0.99	0.96	
Frt		0.990			0.978			0.871			0.869	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1763	0	1695	1732	0	1695	1514	0	1679	1495	0
Flt Permitted	0.207	1100	•	0.465	1102	•	0.696	1011	•	0.685	1100	
Satd. Flow (perm)	369	1763	0	826	1732	0	1219	1514	0	1199	1495	0
Right Turn on Red	303	1700	Yes	020	1102	Yes	1213	1314	Yes	1100	1433	Yes
Satd. Flow (RTOR)		8	103		14	103		96	103		82	103
		50			50			50			40	
Link Speed (k/h)												
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)	45	17.9			14.7	45	^	16.1			13.0	_
Confl. Peds. (#/hr)	15		4	4		15	8		4	4		8
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	76	500	34	132	693	121	13	16	96	45	12	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	534	0	132	814	0	13	112	0	45	94	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7	J -		3.7	J .		3.7	J -		3.7	J
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	24	1.00	14	24	1.00	14	24	1.00	1.00
Number of Detectors	1	2	17	1	2	17	1	2	17	1	2	17
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Leading Detector (m)												
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1 01111	6		1 01111	8		1 01111	4	
Permitted Phases	2			6	U		8	U		4		
	5	2		6	6		8	8		4	4	
Detector Phase	<u> </u>			Ü	U		0	O		4	4	
Switch Phase	F 0	40.0		40.0	40.0		40.0	10.0		40.0	40.0	
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	66.0		51.0	51.0		24.0	24.0		24.0	24.0	
Total Split (%)	16.7%	73.3%		56.7%	56.7%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	9.3	60.3		45.3	45.3		18.0	18.0		18.0	18.0	
maximum Oroon (o)				_						0.0		
Yellow Time (s)	3.7 2.0	3.7 2.0		3.7 2.0	3.7 2.0		3.0	3.0 3.0		3.0	3.0 3.0	

	•	→	•	•	←	•	4	†	~	\	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.0	71.2		61.1	61.1		11.5	11.5		11.5	11.5	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.20	0.38		0.24	0.69		0.08	0.41		0.30	0.36	
Control Delay	4.8	5.1		10.4	17.1		35.9	15.1		39.9	14.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.8	5.1		10.4	17.1		35.9	15.1		39.9	14.3	
LOS	Α	Α		В	В		D	В		D	В	
Approach Delay		5.1			16.2			17.3			22.6	
Approach LOS		Α			В			В			С	
Queue Length 50th (m)	2.6	24.8		9.3	88.6		2.0	3.2		7.3	1.9	
Queue Length 95th (m)	7.9	54.5		24.2	#195.8		m4.2	m9.1		16.1	14.2	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	424	1396		560	1179		243	379		239	364	
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	0.18	0.38		0.24	0.69		0.05	0.30		0.19	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 13.0

Intersection LOS: B ICU Level of Service D

Intersection Capacity Utilization 75.9%

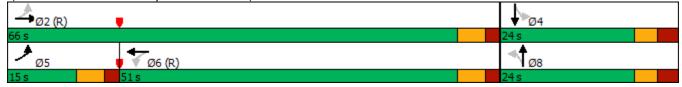
Analysis Period (min) 15

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: 22: Maritime Way/Knudson Drive & Campeau Drive



	•	4	†	<i>></i>	/	ţ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	*	7	A			44
Traffic Volume (vph)	570	809	846	0	0	1226
Future Volume (vph)	570	809	846	0	0	1226
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	5.50
Frt		0.850				
FIt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
		101/	1/50	U	U	335 <i>1</i>
Flt Permitted	0.950	1547	1750	^	^	2257
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		89				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	570	809	846	0 %	0 %	1226
	310	009	040	U	U	1220
Shared Lane Traffic (%)	F70	000	0.40	^	0	1000
Lane Group Flow (vph)	570	809	846	0	0	1226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	14	24	1.00
Number of Detectors	1	1	2	1-7	<u></u>	2
	Left		Thru			Thru
Detector Template		Right				
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
, , ,	0.0	0.0				
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases		*****	2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase		0				- 0
	- F O	<i>E</i> 0	10.0			10.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			16.1
Total Split (s)	60.0	60.0	60.0			60.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	55.0	55.0	53.9			53.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
	0.0	0.0	0.0			0.0
Lost Time Adiust (s)						
Lost Time Adjust (s) Total Lost Time (s)	5.0	5.0	6.1			6.1

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	55.0	55.0	53.9			53.9
Actuated g/C Ratio	0.46	0.46	0.45			0.45
v/c Ratio	0.73	1.09	1.08			0.81
Control Delay	33.5	88.7	87.4			34.1
Queue Delay	0.0	0.0	11.2			0.0
Total Delay	33.5	88.7	98.5			34.1
LOS	C	F	F			С
Approach Delay	65.9		98.5			34.1
Approach LOS	E		F			C
Queue Length 50th (m)	107.0	~202.6	~222.0			129.0
Queue Length 95th (m)	151.3	#277.3	#295.9			157.8
Internal Link Dist (m)	308.8	112.1.0	102.6			90.0
Turn Bay Length (m)	000.0		102.0			50.0
Base Capacity (vph)	776	743	786			1507
Starvation Cap Reductn	0	0	189			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.73	1.09	1.42			0.81
Intersection Summary						
Area Type:	Other					
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 0 (0%), Referenced to ph	nase 2:NBT and	6:SBT, Star	t of Green			
Natural Cycle: 110						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 1.09						
Intersection Signal Delay: 62.6					ersection L	
Intersection Capacity Utilization	140.9%			ICI	J Level of S	Service H
Analysis Period (min) 15						
 Volume exceeds capacity, quality 	ueue is theoretic	ally infinite.				
Queue shown is maximum af	fter two cycles.					
# 95th percentile volume excee		eue may be	longer.			
Queue shown is maximum af	fter two cycles.	_				
Cultin and Dhance A. IZ-	A 0 1 NAO (447 \A/D O	r			
Splits and Phases: 4: Kanata	Avenue & HWY	417 WB Of	†			
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60 s						
I					4	
▼ Ø6 (R)					1 1	Ø8
co -					CO -	

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	ች	77	44			44	
Traffic Volume (vph)	295	276	423	0	0	1072	
Future Volume (vph)	295	276	423	0	0	1072	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Frt		0.850					
Flt Protected	0.950						
Satd. Flow (prot)	1695	2347	3262	0	0	3325	
Flt Permitted	0.950			•	•	***	
Satd. Flow (perm)	1695	2347	3262	0	0	3325	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		276					
Link Speed (k/h)	50		50			50	
Link Distance (m)	332.8		126.6			114.0	
Travel Time (s)	24.0		9.1			8.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%	
Adj. Flow (vph)	295	276	423	0	0	1072	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	295	276	423	0	0	1072	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7	rugiit	0.0	rugin	Loit	0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14	1.00	14	24	1.00	
Number of Detectors	1	1	2	• •		2	
Detector Template	Left	Right	Thru			Thru	
Leading Detector (m)	6.1	6.1	30.5			30.5	
Trailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	Cl+Ex	CI+Ex	CI+Ex			CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel			· ·			• •	
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot	Prot	NA			NA	
Protected Phases	7	4	2			6	3
Permitted Phases							
Detector Phase	7	4	2			6	
Switch Phase						-	
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0
Total Split (s)	36.0	18.0	54.0			54.0	18.0
Total Split (%)	40.0%	20.0%	60.0%			60.0%	20%
Maximum Green (s)	31.0	13.0	47.9			47.9	16.0
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0	6.1			6.1	
Lead/Lag		Lag	•				Lead
Lead-Lag Optimize?		Yes					Yes
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0
	0.0	0.0					

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3		
Recall Mode	None	None	C-Max			C-Max	None		
Walk Time (s)			7.0				7.0		
Flash Dont Walk (s)			15.0				9.0		
Pedestrian Calls (#/hr)			10				10		
Act Effct Green (s)	21.2	17.6	57.7			57.7			
Actuated g/C Ratio	0.24	0.20	0.64			0.64			
v/c Ratio	0.74	0.41	0.20			0.50			
Control Delay	42.7	6.4	12.9			7.7			
Queue Delay	0.0	0.0	0.0			0.0			
Total Delay	42.7	6.4	12.9			7.7			
LOS	D	Α	В			Α			
Approach Delay	25.2		12.9			7.7			
Approach LOS	С		В			Α			
Queue Length 50th (m)	47.5	0.0	13.7			25.6			
Queue Length 95th (m)	66.2	11.8	55.3			32.9			
Internal Link Dist (m)	308.8		102.6			90.0			
Turn Bay Length (m)									
Base Capacity (vph)	583	688	2092			2133			
Starvation Cap Reductn	0	0	0			0			
Spillback Cap Reductn	0	0	0			79			
Storage Cap Reductn	0	0	0			0			
Reduced v/c Ratio	0.51	0.40	0.20			0.52			
Intersection Summary									
Area Type:	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 0 (0%), Referenced to pha	ase 2:NBT and 6	S:SBT, Star	t of Green						
Natural Cycle: 60									
Control Type: Actuated-Coordinat	ted								
Maximum v/c Ratio: 0.74									
Intersection Signal Delay: 13.6					ersection L				
Intersection Capacity Utilization 8	4.2%			ICL	Level of S	Service E			
Analysis Period (min) 15									
Splits and Phases: 4: Kanata A	venue & HWY	417 WB Off	<u> </u>						
↑ ø2 (R)							Ååø₃	4. Ø4	
54s							8 s	18 s	
1							√ Ø7		
							▼ Ø7		

	•	•	†	/	\	↓	
ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
ane Configurations	*	77	44			44	
raffic Volume (vph)	570	809	846	0	0	1226	
uture Volume (vph)	570	809	846	0	0	1226	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
ane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Ped Bike Factor	1.00	0.00	0.00	1.00	1.00	0.00	
rt		0.850					
It Protected	0.950	0.000					
Satd. Flow (prot)	1695	2669	3325	0	0	3357	
Fit Permitted	0.950	2009	3323	U	U	3331	
		0000	2205	0	0	2257	
Satd. Flow (perm)	1695	2669	3325	0	0	3357	
Right Turn on Red		Yes		Yes			
atd. Flow (RTOR)		809					
ink Speed (k/h)	50		50			50	
nk Distance (m)	332.8		126.6			114.0	
ravel Time (s)	24.0		9.1			8.2	
onfl. Bikes (#/hr)				3			
eak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
leavy Vehicles (%)	2%	2%	4%	0%	0%	3%	
dj. Flow (vph)	570	809	846	0	0	1226	
hared Lane Traffic (%)							
ane Group Flow (vph)	570	809	846	0	0	1226	
Inter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
ledian Width(m)	3.7	rugin	0.0	rtigitt	Loit	0.0	
ink Offset(m)	0.0		0.0			0.0	
rosswalk Width(m)	4.9		4.9			4.9	
wo way Left Turn Lane	4.9		4.9			4.9	
	1.06	1.06	1.06	1.06	1.06	1.06	
leadway Factor	24	1.06	1.00	1.06	24	1.00	
urning Speed (k/h)			0	14	24	^	
umber of Detectors	1	1	2			2	
etector Template	Left	Right	Thru			Thru	
eading Detector (m)	6.1	6.1	30.5			30.5	
railing Detector (m)	0.0	0.0	0.0			0.0	
etector 1 Position(m)	0.0	0.0	0.0			0.0	
etector 1 Size(m)	6.1	6.1	1.8			1.8	
etector 1 Type	CI+Ex	CI+Ex	Cl+Ex			Cl+Ex	
etector 1 Channel							
etector 1 Extend (s)	0.0	0.0	0.0			0.0	
etector 1 Queue (s)	0.0	0.0	0.0			0.0	
etector 1 Delay (s)	0.0	0.0	0.0			0.0	
etector 2 Position(m)			28.7			28.7	
etector 2 Size(m)			1.8			1.8	
etector 2 Type			CI+Ex			CI+Ex	
etector 2 Channel							
etector 2 Extend (s)			0.0			0.0	
urn Type	Prot	Prot	NA			NA	
rotected Phases	7	4	2			6	3
ermitted Phases		7	_				•
etector Phase	7	4	2			6	
witch Phase	1	4				U	
	F.0	F 0	10.0			10.0	1.0
linimum Initial (s)	5.0	5.0	10.0			10.0	1.0
linimum Split (s)	10.0	10.0	28.1			16.1	18.0
fotal Split (s)	61.9	43.9	28.1			28.1	18.0
otal Split (%)	68.8%	48.8%	31.2%			31.2%	20%
Maximum Green (s)	56.9	38.9	22.0			22.0	16.0
'ellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
ost Time Adjust (s)	0.0	0.0	0.0			0.0	
otal Lost Time (s)	5.0	5.0	6.1			6.1	
		Lag					Lead

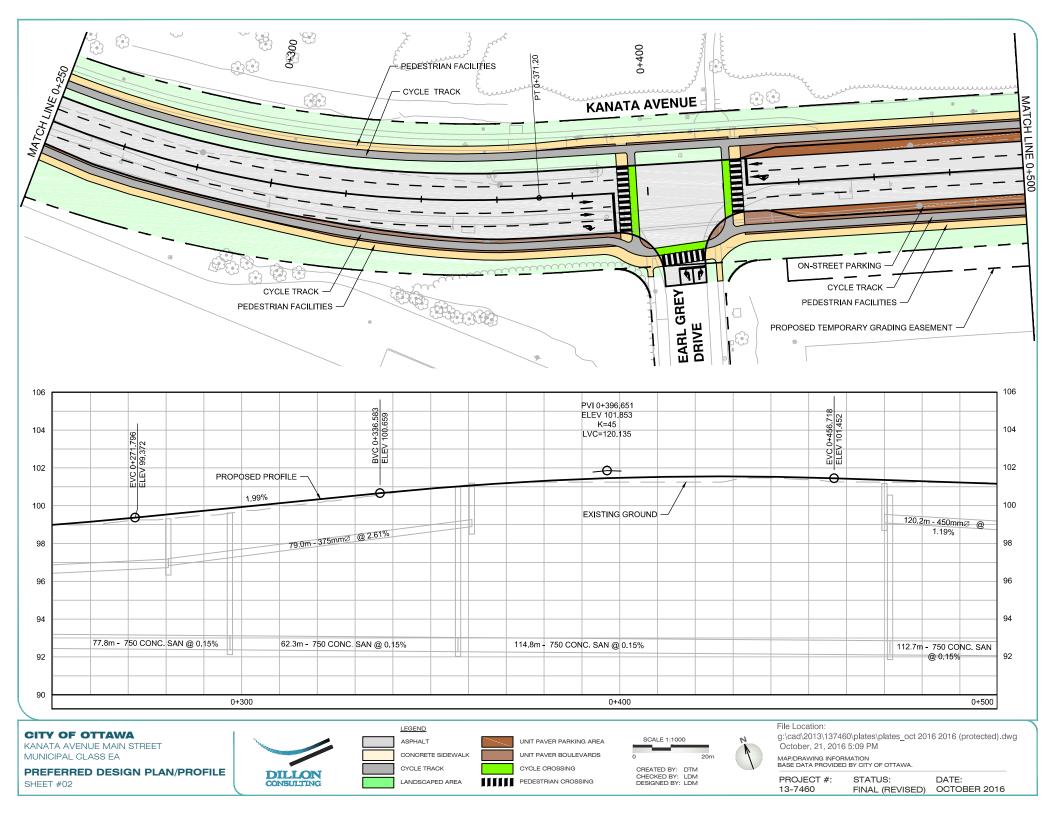
	•	•	†	/	>	↓			
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3		
Lead-Lag Optimize?		Yes					Yes		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		
Recall Mode	None	None	C-Max			C-Max	None		
Walk Time (s)			7.0				7.0		
Flash Dont Walk (s)			15.0				9.0		
Pedestrian Calls (#/hr)			10				10		
Act Effct Green (s)	40.3	36.7	38.6			38.6			
Actuated g/C Ratio	0.45	0.41	0.43			0.43			
v/c Ratio	0.75	0.52	0.59			0.85			
Control Delay	26.3	2.6	32.4			35.9			
Queue Delay	0.0	0.0	0.0			1.5			
Total Delay	26.3	2.6	32.4			37.4			
LOS	C	Α	C			D			
Approach Delay	12.4		32.4			37.4			
Approach LOS	В		C			D			
Queue Length 50th (m)	79.1	0.0	80.7			79.3			
Queue Length 95th (m)	85.1	11.7	#110.7			#177.4			
Internal Link Dist (m)	308.8		102.6			90.0			
Turn Bay Length (m)			102.0			00.0			
Base Capacity (vph)	1071	1647	1424			1438			
Starvation Cap Reductn	0	0	0			0			
Spillback Cap Reductn	9	0	0			88			
Storage Cap Reductn	0	0	0			0			
Reduced v/c Ratio	0.54	0.49	0.59			0.91			
Intersection Summary									
Area Type:	Other								
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 0 (0%), Referenced to pha	ase 2:NBT and 6	SSBT, Sta	t of Green						
Natural Cycle: 60									
Control Type: Actuated-Coordinat	ted								
Maximum v/c Ratio: 0.85									
Intersection Signal Delay: 26.2					ersection L				
Intersection Capacity Utilization 1	21.4%			ICU	J Level of S	Service H			
Analysis Period (min) 15									
# 95th percentile volume excee		eue may be	longer.						
Queue shown is maximum after	er two cycles.								
Splits and Phases: 4: Kanata A	Avenue & HWY	117 WB Of	f						
↑		#	k _{ø3}		1	© 4		 	·
28.1s		18 s			43.9				
1			Ø7						
▼ Ø6 (R)		_ ▼	Ø7						

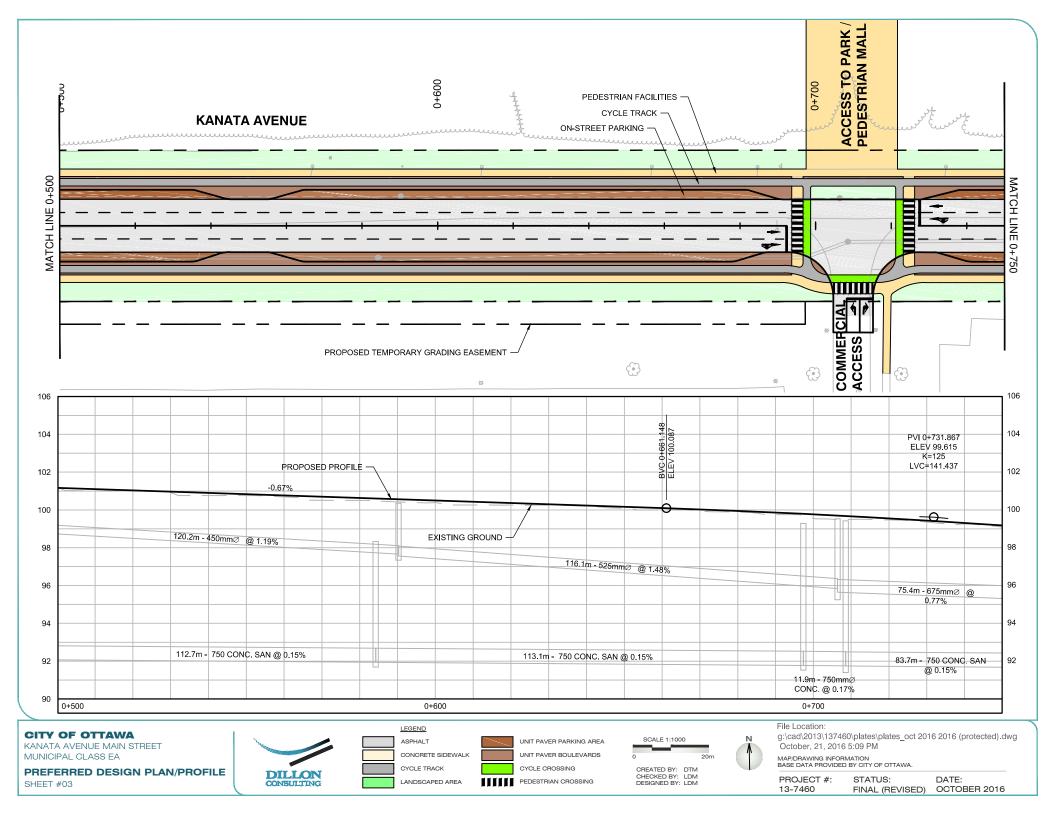
	•	•	†	<i>></i>	\	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	YVDL K	₩DK	<u>ND1</u>	ושוו	ODL	<u>₩</u>
Traffic Volume (vph)	530	489	7 666	0	0	TT 1226
Future Volume (vph)	530	489	666	0	0	1226
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950	2.500				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1017	1700			5501
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red	.000	Yes	1,50	Yes	J	0001
Satd. Flow (RTOR)		32		100		
Link Speed (k/h)	50	02	50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
	24.0		ن . ا	2		0.2
Confl. Bikes (#/hr) 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
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	530	489	666	0	0	1226
Shared Lane Traffic (%)	500	400	000	^	^	4000
Lane Group Flow (vph)	530	489	666	0	0	1226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane		,	,			,
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel			OI LA			O. LX
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	Feiiil	1 61111	2			6
Permitted Phases	8	8				U
Detector Phase	8	8	2			6
Switch Phase	0	0				U
	E 0	<i>E</i> 0	10.0			10.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			16.1
Total Split (s)	61.0	61.0	29.0			29.0
Total Split (%)	67.8%	67.8%	32.2%			32.2%
Maximum Green (s)	56.0	56.0	22.9			22.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

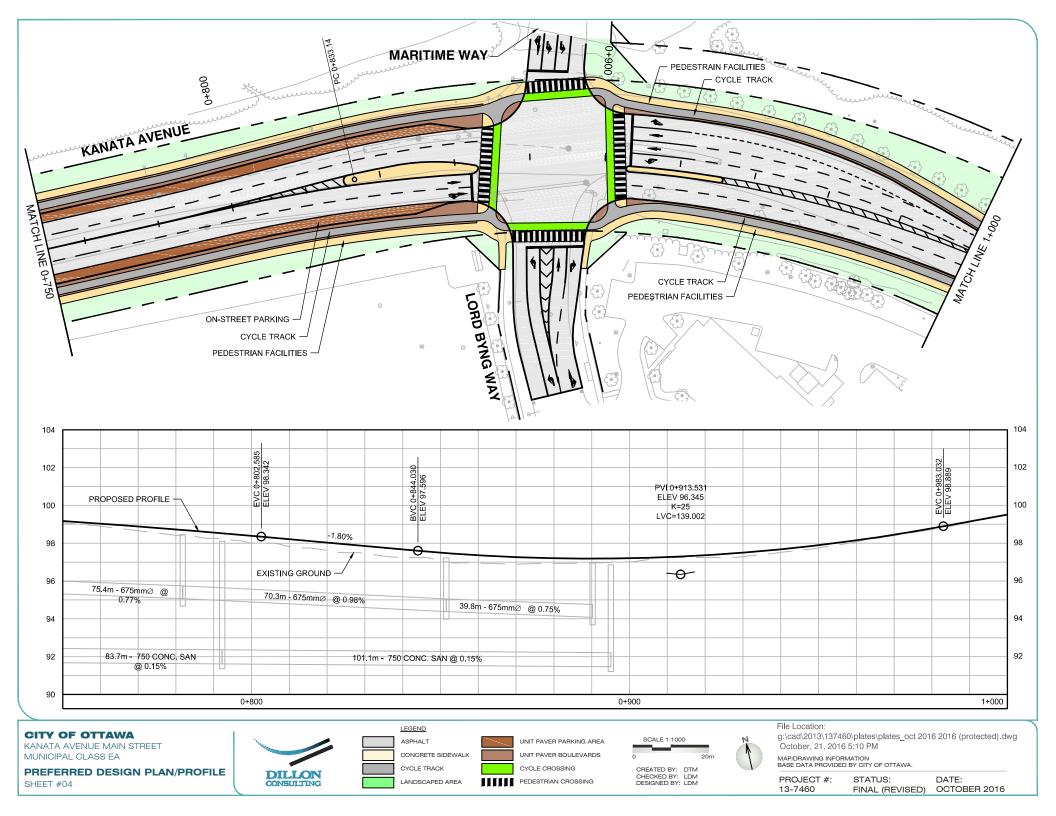
	•	•	†	/	-	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT		
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0		
Recall Mode	None	None	C-Max			C-Max		
Walk Time (s)	7.0	7.0	7.0					
Flash Dont Walk (s)	11.0	11.0	15.0					
Pedestrian Calls (#/hr)	10	10	10					
Act Effct Green (s)	38.2	38.2	40.7			40.7		
Actuated g/C Ratio	0.42	0.42	0.45			0.45		
v/c Ratio	0.74	0.74	0.84			0.81		
Control Delay	27.1	26.2	44.3			32.0		
Queue Delay	0.0	0.0	0.0			0.8		
Total Delay	27.2	26.2	44.3			32.8		
LOS	С	С	D			С		
Approach Delay	26.7		44.3			32.8		
Approach LOS	С		D			С		
Queue Length 50th (m)	73.9	64.1	126.7			76.1		
Queue Length 95th (m)	82.0	74.3	#216.4			#169.2		
Internal Link Dist (m)	308.8		102.6			90.0		
Turn Bay Length (m)								
Base Capacity (vph)	1054	956	790			1516		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	6	0	0			95		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.51	0.51	0.84			0.86		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 0 (0%), Referenced to p	ohase 2:NBT and 6	S:SBT, Sta	rt of Green					
Natural Cycle: 60								
Control Type: Actuated-Coordi	nated							
Maximum v/c Ratio: 0.84								
Intersection Signal Delay: 33.3					ersection L			
	ntersection Capacity Utilization 120.0% ICU Level of Service H							
Analysis Period (min) 15								
# 95th percentile volume exc		eue may be	e longer.					
Queue shown is maximum	after two cycles.							
Splits and Phases: 4: Kanata	a Avenue & HWY	417 WB O	f					
1 ø2 (R)								
29 s								
.		- 1	3-					



		APPENDIX H		
Releva	nt Excerpts from th	ne Kanata Avenue	e Environmental <i>i</i>	Assessme









CITY OF OTTAWA

KANATA AVENUE MAIN STREET MUNICIPAL CLASS EA

PREFERRED DESIGN PLAN/PROFILE SHEET #05



ASPHALT CONCRETE SIDEWALK CYCLE TRACK LANDSCAPED AREA



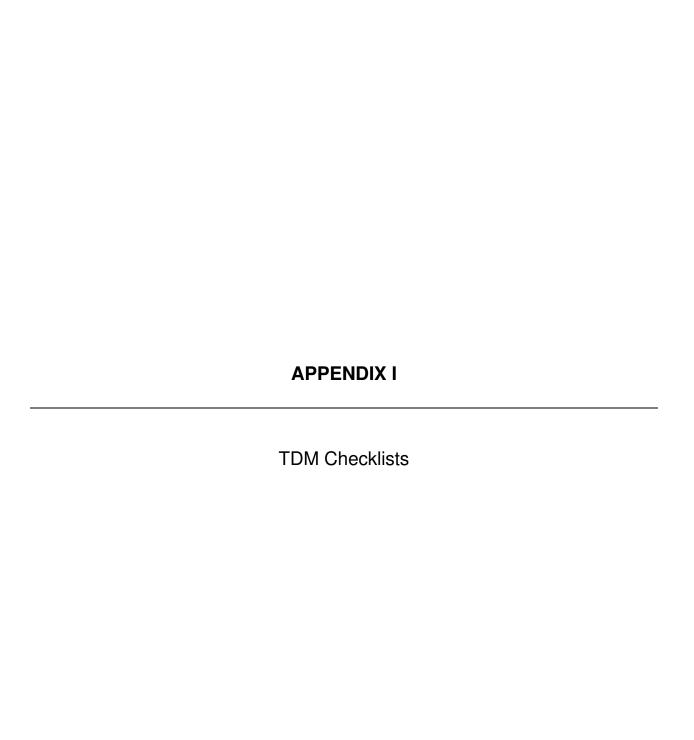
CREATED BY: DTM CHECKED BY: LDM DESIGNED BY: LDM

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MAP/DRAWING INFORMATION BASE DATA PROVIDED BY CITY OF OTTAWA.

PROJECT #: STATUS: 13-7460

DATE: FINAL (REVISED) OCTOBER 2016



TDM Measures Checklist:

Residential Developments (multi-family, condominium or subdivision)

The measure is generally feasible and effective, and in most cases would benefit the development and its users 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 & des	tinations
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium)	
	2.2	Bicycle skills training	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	

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

7	TDM	measures: Residential developments	Check if proposed & add descriptions
6).	TDM MARKETING & COMMUNICATIONS	
6.	5.1	Multimodal travel information	
BASIC ★ 6.		Provide a multimodal travel option information package to new residents	
6	.2	Personalized trip planning	
BETTER ★ 6.	.2.1	Offer personalized trip planning to new residents	

TDM-Supportive Development Design and Infrastructure Checklist:

Residential Developments (multi-family or condominium)

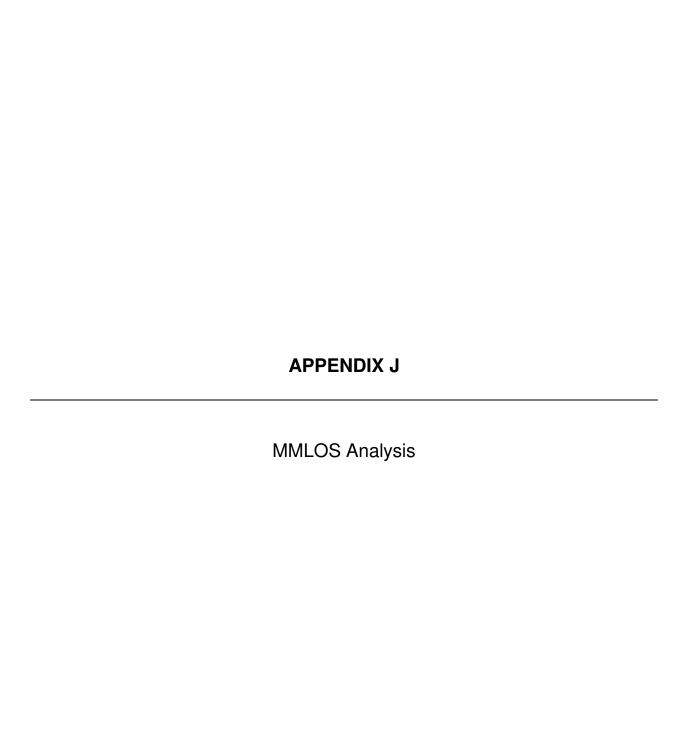
Legend				
REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed			
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users			
BETTER	The measure could maximize support for users of sustainable modes, and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

	TDM-s	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-s	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 onroad 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-s	supportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references
	2.	WALKING & CYCLING: END-OF-TRIP FACILITY	TIES
	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 multifamily 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-s	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)	



Pedestrian Level of Service (PLOS)

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed	Segment PLOS					
Kanata Avenue (North Side)										
2.0m	2.0m	> 3,000 vpd	No	50 km/h	В					
Maritime Way (Maritime Way (South Side)									
1.8m	2.0m	> 3,000 vpd	Yes	50 km/h	В					

Bicycle Level of Service (BLOS)

Road Class	Bike Route	Type of Bikeway Travel Lane (Per Direction		Operating Speed	Segment BLOS
Kanata Avenue					
Arterial	Local Route	2m Bike Lanes	2m Bike Lanes 1 50 km/h		Α
Maritime Way					
Local	Local Route	Mixed Traffic	1	50 km/h	В

Transit Level of Service (TLOS)

Facility Type	Level/Exposure	Segment TLOS			
Facility Type	Congestion	Friction	Incident Potential	Segment 1203	
Kanata Avenue					
Mixed Traffic	Yes	Low	Medium	D	
Maritime Way					
Mixed Traffic	Yes	Medium	Medium	Е	

Truck Level of Service (TkLOS)

Curb Lane Width	Number of Travel Lanes (Per Direction)	Segment TkLOS						
Kanata Avenue								
≤3.5m	1	С						
Maritime Way	Maritime Way							
>3.7m	1	В						

Pedestrian Level of Service (PLOS)

Criteria	South Approac	East Approacl	h	West Approach							
Kanata Avenue/Earl Grey	Kanata Avenue/Earl Grey Drive										
PETSI SCORE											
CROSSING DISTANCE CONDITIONS											
Median > 2.4m in Width	No		No	70	No	70					
Lanes Crossed (3.5m Lane Width)	6	55	5	72	5	72					
SIGNAL PHASING AND TIMING											
Left Turn Conflict	Perm + Prot	-8	No Left Turn/Prohibited	0	Permissive	-8					
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	No Right Turn/Prohibited	0					
Right Turn on Red	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3					
Leading Pedestrian Interval	No	-2	No	-2	No	-2					
CORNER RADIUS		•			<u> </u>						
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	No Right Turn	0					
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn	0					
Perpendicular Radius	N/A	0	N/A	0	N/A	0					
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0					
CROSSING TREATMENT											
Treatment	Standard	-4	Standard	-7	Standard	-7					
PETSI SCORE		23		48		52					
LOS		F		D		D					
	DELA	Y S	CORE								
Cycle Length		55		100		100					
Pedestrian Walk Time		7.6		12.1		12.1					
DELAY SCORE		20.4		38.6		38.6					
LOS		С		D		D					
OVERALL		F		D		D					

Criteria North Approach			South Approach		East Approach		West Approach					
Kanata Avenue/Maritime Way/Lord Byng Way												
PETSI SCORE												
CROSSING DISTANCE CONDITION	DNS											
Median > 2.4m in Width	No	39	No	39	No	EE	No	EE				
Lanes Crossed (3.5m Lane Width)	7	39	7	39	6	55	6	55				
SIGNAL PHASING AND TIMING												
Left Turn Conflict	Permissive	-8	Perm + Prot	-8	Permissive	-8	Permissive	-8				
Right Turn Conflict	Permissive or Yield	-5										
Right Turn on Red	RTOR Allowed	-3										
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2				
CORNER RADIUS												
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8				
Parallel Right Turn Channel	No Right Turn Channel	-4										
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0				
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0				
CROSSING TREATMENT												
Treatment	Standard	-7	Standard	-4	Standard	-7	Standard	-7				
	PETSI SCORE	4		7		18		18				
	LOS	F		F		F		F				
			DELAY SCORE									
Cycle Length		90		90		90		90				
Pedestrian Walk Time				6.7		35.7		20.7				
	DELAY SCORE	38.5		38.5		16.4		26.7				
	LOS	D		D		В		С				
	OVERALL	F		F		F		F				

Criteria	h	South Approac	East Approach								
Kanata Avenue/Highway 417 Westbound Off-Ramp											
PETSI SCORE											
CROSSING DISTANCE CONDITION	ONS										
Median > 2.4m in Width	No	00	N/A	NI/A	No	70					
Lanes Crossed (3.5m Lane Width)	4	88	N/A	N/A	5	72					
SIGNAL PHASING AND TIMING											
Left Turn Conflict	No Left Turn/Prohibited	0	N/A	N/A	No Left Turn/Prohibited	0					
Right Turn Conflict	Permissive or Yield	-5	N/A	N/A	No Right Turn/Prohibited	0					
Right Turn on Red	N/A	0	N/A	N/A	RTOR Allowed	-3					
Leading Pedestrian Interval	No	-2	N/A	N/A	No	-2					
CORNER RADIUS											
Parallel Radius	> 5m to 10m	-5	N/A	N/A	No Right Turn	0					
Parallel Right Turn Channel	No Right Turn Channel	-4	N/A	N/A	No Right Turn	0					
Perpendicular Radius	N/A	0	N/A	N/A	N/A	0					
Perpendicular Right Turn Channel	N/A	0	N/A N		N/A	0					
CROSSING TREATMENT											
Treatment	Standard	-7	N/A	N/A	Standard	-7					
	PETSI SCORE	65		N/A		60					
	LOS	С		N/A		С					
	DELA	Y SC	CORE								
Cycle Length		90		N/A		90					
Pedestrian Walk Time	21		N/A		23.9						
	DELAY SCORE	26.5		N/A		24.3					
	LOS	C		N/A		С					
	OVERALL	С		N/A		С					

Criteria North Approach			South Approac	East Approacl	East Approach						
Kanata Avenue/Highway	Kanata Avenue/Highway 417 Eastbound On-Ramp										
PETSI SCORE											
CROSSING DISTANCE CONDITIONS											
Median > 2.4m in Width	N/A	NI/A	No		No	70					
Lanes Crossed (3.5m Lane Width)	N/A	N/A	6	55	5	72					
SIGNAL PHASING AND TIMING											
Left Turn Conflict	N/A	N/A	No Left Turn/Prohibited	0	Perm + Prot	-8					
Right Turn Conflict	N/A	N/A	No Right Turn/Prohibited	0	Permissive or Yield	-5					
Right Turn on Red	N/A	N/A	RTOR Allowed	-3	N/A	0					
Leading Pedestrian Interval	N/A	N/A	No	-2	No	-2					
CORNER RADIUS											
Parallel Radius	N/A	N/A	No Right Turn	0	> 10m to 15m	-6					
Parallel Right Turn Channel	N/A	N/A	No Right Turn	0	No Right Turn Channel	-4					
Perpendicular Radius	N/A	N/A	N/A	0	N/A	0					
Perpendicular Right Turn Channel	N/A	N/A	N/A	0	N/A	0					
CROSSING TREATMENT											
Treatment	N/A	N/A	Standard	-4	Standard	-7					
	PETSI SCORE	N/A		46		40					
	LOS	N/A		D		Ε					
	DELA	Y S	CORE								
Cycle Length		N/A		90		90					
Pedestrian Walk Time	•			8		33.3					
	DELAY SCORE	N/A		37.4		17.9					
	LOS	N/A		D		В					
	OVERALL	N/A		D		E					

Criteria North Approach		h	South Approach		East Approach		West Approach					
Kanata Avenue/Castlefrar	Kanata Avenue/Castlefrank Road/Aird Place											
PETSI SCORE												
CROSSING DISTANCE CONDITION	DNS											
Median > 2.4m in Width	No	55	No	72	No	70	No	70				
Lanes Crossed (3.5m Lane Width)	6	၁၁	5	12	5	72	5	72				
SIGNAL PHASING AND TIMING												
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Permissive	-8				
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5				
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3				
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2				
CORNER RADIUS												
Parallel Radius	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8				
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4				
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0				
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0				
CROSSING TREATMENT												
Treatment	Standard	-7	Standard	-4	Textured	-4	Textured	-4				
	PETSI SCORE	20		38		38		38				
	LOS	F		Е		Е		Е				
			DELAY SCORE									
Cycle Length		90		90		90		90				
Pedestrian Walk Time				8.8		42.3		42.3				
	DELAY SCORE	36.6		36.6		12.6		12.6				
	LOS	D		D		В		В				
	OVERALL	F		Ε		Ε		Ε				

Criteria	North Approac	h	South Approac	h	East Approac	h	West Approac	h
Castlefrank Road/Katimav	ik Road							
			PETSI SCORE					
CROSSING DISTANCE CONDITION	DNS							
Median > 2.4m in Width	No	55	No	55	No	EE	No	EE
Lanes Crossed (3.5m Lane Width)	6	55	6	၁၁	6	55	6	55
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	Permissive	-8	Perm + Prot	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5						
Right Turn on Red	RTOR Allowed	-3						
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	No Right Turn Channel	-4						
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	Textured	-4	Textured	-4	Textured	-4	Textured	-4
	PETSI SCORE	23		21		21		21
	LOS	F		F		F		F
			DELAY SCORE					
Cycle Length		90		90		90		90
Pedestrian Walk Time		8.3		20.3		12.8		17.8
	DELAY SCORE	37.1		27		33.1		29
	LOS	D		С		D		С
	OVERALL	F		F		F		F

Criteria	North Approac	h	South Approac	h	East Approac	h	West Approac	h
Campeau Drive/Maritime	Way/Knudson Dri	ve						
-			PETSI SCORE					
CROSSING DISTANCE CONDITION	DNS							
Median > 2.4m in Width	No	55	No	70	No	70	No	70
Lanes Crossed (3.5m Lane Width)	6	၁၁	5	72	5	72	5	72
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Perm + Prot	-8	Permissive	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5						
Right Turn on Red	RTOR Allowed	-3						
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 5m to 10m	-5	> 5m to 10m	-5	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4						
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-4	Standard	-7	Standard	-7
	PETSI SCORE	21		41		37		37
	LOS	F		Е		Е		E
			DELAY SCORE					
Cycle Length		80		80		90		90
Pedestrian Walk Time		24.3		24.3		8		8
	DELAY SCORE	19.4		19.4		37.4		37.4
	LOS	В		В		D		D
	OVERALL	F		Ε		Ε		Ε

Bicycle Level of Service (BLOS)

Bicycle Level (of Service (BLOS	<u> </u>		
Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Kanata Avenue	/Earl Grey Drive			
South	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Wilkou Traillo	Left Turn Accommodation	One Lane Crossed; 50km/h	D
East	Bike Lane	Right Turn Lane Characteristics	Not Applicable	Α
Approach	Dino Euro	Left Turn Accommodation	One Lane Crossed; 50km/h	С
West	Pocket Bike	Right Turn Lane Characteristics	Right turn lane to the right of bike lane; >50m long	D
Approach	Lane	Left Turn Accommodation	Not Applicable	Α
Kanata Avenue	/Maritime Way/Lo	rd Byng Way		
North	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Wilked Hallic	Left Turn Accommodation	One Lane Crossed; 50km/h	D
South	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Wilked Hallic	Left Turn Accommodation	One Lane Crossed; 50km/h	D
East	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	DINC Lanc	Left Turn Accommodation	One Lane Crossed; 50km/h	С
West	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Wilked Hallie	Left Turn Accommodation	One Lane Crossed; 50km/h	D
Kanata Avenue	/Highway 417 We	stbound Off-Ramp ¹		
North	Bike Lane	Right Turn Lane Characteristics	Not Applicable	-
Approach	DING LATIC	Left Turn Accommodation	Not Applicable	-
South	Bike Lane	Right Turn Lane Characteristics	Not Applicable	-
Approach	DING LATIC	Left Turn Accommodation	Not Applicable	-
East	Mixed Traffic	Right Turn Lane Characteristics	Not Applicable	-
Approach	WIINGU HAIIIC	Left Turn Accommodation	Not Applicable	-

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Kanata Avenue		stbound On-Ramp ¹		
North	Bike Lane	Right Turn Lane Characteristics	Not Applicable	-
Approach	DIKE Lane	Left Turn Accommodation	Not Applicable	-
South	Pocket Bike	Right Turn Lane Characteristics	Not Applicable	-
Approach	Lane	Left Turn Accommodation	Not Applicable	-
East	Mixed Traffic	Right Turn Lane Characteristics	Not Applicable	-
Approach	Wilked Hallic	Left Turn Accommodation	Not Applicable	-
Kanata Avenue	/Castlefrank Road	d/Aird Place		
North	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	Α
Approach	DINC Lanc	Left Turn Accommodation	One Lane Crossed; 50km/h	С
South	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	Α
Approach	DIKE LAITE	Left Turn Accommodation	One Lane Crossed; 50km/h	С
East	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	Α
Approach	Wilked Trailie	Left Turn Accommodation	No Lanes Crossed; 40km/h	В
West	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	Α
Approach	Wilked Trailie	Left Turn Accommodation	No Lanes Crossed; 40km/h	В
Castlefrank Roa	ad/Katimavik Roa	d		
North	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	Α
Approach	Wilked Framic	Left Turn Accommodation	One Lane Crossed; 50km/h	D
South	Pocket Bike	Right Turn Lane Characteristics	Right turn lane to the right of bike lane; <50m long	В
Approach	Lane	Left Turn Accommodation	One Lane Crossed; 50km/h	С
East	Mixed Treffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Mixed Traffic	Left Turn Accommodation	One Lane Crossed; 50km/h	D
West	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	IVIIXEU ITAIIIC	Left Turn Accommodation	One Lane Crossed; 50km/h	D

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Campeau Drive	Maritime Way/Kı	nudson Drive		
North	Congreted	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Separated	Left Turn Accommodation	No Impact to LTS ¹	А
South	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Mixed Hallic	Left Turn Accommodation	One Lane Crossed; 40km/h	В
East	Congreted	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Separated	Left Turn Accommodation	No Impact to LTS ¹	А
West	Congreted	Right Turn Lane Characteristics	No Impact to LTS	А
Approach	Separated	Left Turn Accommodation	No Impact to LTS ¹	А

Cyclists are required to dismount and cross using the crosswalks

Transit Level of Service (TLOS)

Approach	Delay	(sec.)	TLOS
Approach	AM Peak	PM Peak	ILOS
Kanata Avenue/Earl Grey Drive			
East Approach	6 seconds	6 seconds	В
West Approach	8 seconds	12 seconds	С
South Approach	N/A	N/A	N/A
Kanata Avenue/Maritime Way/Lor	d Byng Way		
East Approach	N/A	N/A	N/A
West Approach	20 seconds	18 seconds	С
North Approach	14 seconds	16 seconds	С
South Approach	5 seconds	9 seconds	В
Kanata Avenue/Highway 417 Wes	tbound Off-Ramp		
East Approach	N/A	N/A	N/A
North Approach	6 seconds	15 seconds	С
South Approach	3 seconds	20 seconds	С
Kanata Avenue/Highway 417 East	bound On-Ramp		
North Approach	3 seconds	5 seconds	В
South Approach	4 seconds	3 seconds	В

Annrosch	Delay	(sec.)	TLOS
Approach	AM Peak	PM Peak	ILOS
Kanata Avenue/Castlefrank Road	/Aird Place	1	
East Approach	N/A	N/A	N/A
West Approach	N/A	N/A	N/A
North Approach	6 seconds	8 seconds	В
South Approach	6 seconds	6 seconds	В
Castlefrank Road/Katimavik Road			
East Approach	36 seconds	42 seconds	F
West Approach	28 seconds	23 seconds	D
North Approach	9 seconds	17 seconds	С
South Approach	14 seconds	29 seconds	D
Campeau Drive/Maritime Way/Knu	udson Drive		
East Approach	6 seconds	10 seconds	В
West Approach	6 seconds	4 seconds	В
North Approach	32 seconds	24 seconds	E
South Approach	N/A	N/A	N/A

Truck Level of Service (TkLOS)

Approach	Effective Corner Radius	Number of Receiving Lanes on Departure from Intersection	LOS
Kanata Avenue/E	arl Grey Drive		
South	10m to 15m	One	E
East	N/A	N/A	1
West	10m to 15m	One	E
Kanata Avenue/M	aritime Way/Lord Byng V	Vay	
North	> 15m	One	С
South	> 15m	One	С
East	10m to 15m	One	E
West	10m to 15m	One	Ш
Kanata Avenue/H	ighway 417 Westbound (Off-Ramp	
East	> 15m	One	С

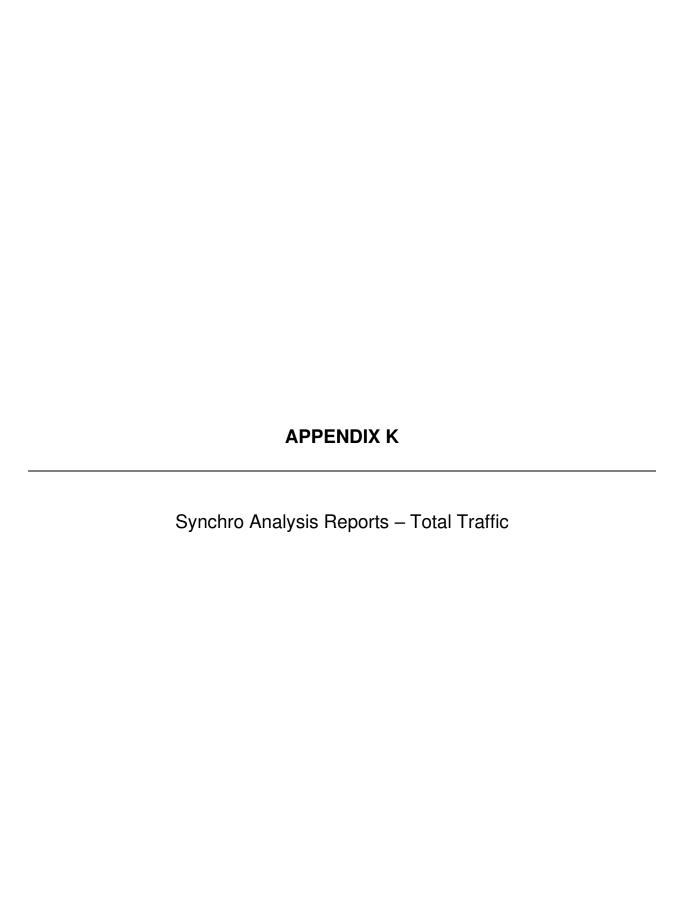
Approach	Effective Corner Radius	Number of Receiving Lanes on Departure from Intersection	LOS
Kanata Avenue/H	ighway 417 Eastbound O	n-Ramp	
North	N/A	N/A	-
South	> 15m	One	С
Kanata Avenue/C	astlefrank Road/Aird Place	ce	
North	> 15m	One	С
South	> 15m	One	С
East	> 15m	One	С
West	10m to 15m	One	E
Castlefrank Road	/Katimavik Road		
North	> 15m	One	С
South	> 15m	One	С
East	> 15m	One	С
West	10m to 15m	One	E
Campeau Drive/M	laritime Way/Knudson Dr	ive	
North	10m to 15m	One	E
South	10m to 15m	One	E
East	< 10m	One	F
West	< 10m	One	F

Vehicle Level of Service (Auto LOS)

Intersection		AM Peak			PM Peak	
intersection	Max V/C	LOS	Mvmt	Max V/C	LOS	Mvmt
Kanata Avenue/ Earl Grey Drive	0.41	Α	EBT	0.57	Α	NBR
Kanata Avenue/ Maritime Way/ Lord Byng Way	0.57	Α	WBL	0.63	В	NBT/R
Kanata Avenue/ Highway 417 Westbound Off-Ramp	0.70	В	WBL	0.90	D	WBR
Kanata Avenue/ Highway 417 Eastbound On-Ramp	0.42	Α	SBL	0.51	Α	SBT
Kanata Avenue/ Castlefrank Road/ Aird Place	0.48	А	EB	0.65	В	SBT/R
Castlefrank Road/ Katimavik Road	0.62	В	EBL	0.77	С	WBT/R
Campeau Drive/ Maritime Way/ Knudson Drive	0.58	Α	SBL	0.42	Α	WBT/R

The intersection parameters used in the analysis are consistent with the TIA guidelines (saturation flow rate: 1800 vphpl, PHF: 0.9)

Detailed Synchro reports are included in Appendix G



	→	•	•	•	4	<i>></i>
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>LBI</u>	LDK	YVDL Š	<u>₩</u>	NDL 1	TION.
Traffic Volume (vph)	713	37	5 7	7 372	1 0	35
Future Volume (vph)	713	37	57	372	10	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	55.0	110.0	1000	30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		45.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			1.00			
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1767	1394	1695	1670	1441	1459
Flt Permitted			0.332		0.950	
Satd. Flow (perm)	1767	1394	592	1670	1441	1459
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		37				35
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)			1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	11%	2%	9%	20%	6%
Adj. Flow (vph)	713	37	57	372	10	35
Shared Lane Traffic (%)	, 10	<u> </u>	<u> </u>	V. Z	10	
Lane Group Flow (vph)	713	37	57	372	10	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	ragiit	LOIL	3.7	3.7	ragin
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane	7.0			7.0	7.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	1.00	1.00	24	1.00	24	1.00
Number of Detectors	2	14	1	2	1	14
Detector Template	Thru	Right	Left	Thru	Left	Right
	30.5	6.1	6.1	30.5	6.1	6.1
Leading Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Trailing Detector (m) Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
()						
Detector 1 Size(m)	1.8	6.1	6.1 CI+Ex	1.8	6.1	6.1
Detector 1 Type	Cl+Ex	CI+Ex	CI+EX	CI+Ex	CI+Ex	Cl+Ex
Detector 1 Channel	0.0				^ ^	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	30.0	30.0	29.4	29.4	24.9	24.9
Total Split (s)	30.0	30.0	30.0	30.0	25.0	25.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%
Maximum Green (s)	23.6	23.6	23.6	23.6	19.1	19.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	3.1	3.1	2.6	2.6
(0)	5. 1	•	•	•••		

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	6.4	6.4	5.9	5.9
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10	10	10	10	10	10
Act Effct Green (s)	41.4	41.4	41.4	41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75	0.75	0.75	0.15	0.15
v/c Ratio	0.54	0.03	0.13	0.30	0.05	0.14
Control Delay	11.1	3.2	7.4	6.6	16.8	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	3.2	7.4	6.6	16.8	7.6
LOS	В	A	A	A	В	A
Approach Delay	10.7	, ,	, ,	6.7	9.6	- '
Approach LOS	В			Α	Α	
Queue Length 50th (m)	30.6	0.0	1.6	12.2	0.9	0.0
Queue Length 95th (m)	#125.1	3.9	9.9	45.8	3.1	4.5
Internal Link Dist (m)	263.1	0.0	0.0	447.4	104.3	1.0
Turn Bay Length (m)	200.1	55.0	110.0	771.7	30.0	
Base Capacity (vph)	1329	1058	445	1256	500	529
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.03	0.13	0.30	0.02	0.07
	0.54	0.03	0.13	0.50	0.02	0.07
Intersection Summary	Other					
Area Type:	Other					
Cycle Length: 55						
Actuated Cycle Length: 55	0.555	O MAIDTL OI				
Offset: 0 (0%), Referenced to ph	ase 2:EBT and 0	o:WBTL, Sta	art of Green			
Natural Cycle: 60						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.54						
Intersection Signal Delay: 9.3					ersection LO	
Intersection Capacity Utilization	64.4%			ICI	J Level of S	ervice C
Analysis Period (min) 15						
# 95th percentile volume excee		eue may be	longer.			
Queue shown is maximum af	ter two cycles.					
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
) 	u ,			T	
▼ Ø2 (R)						
30 s						
-4						
√ Ø6 (R)						Ø 8

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	14		75	Ť.		*	ĵ₃		*	Î.	
Traffic Volume (vph)	19	1	36	216	1	73	85	323	164	30	611	16
Future Volume (vph)	19	6	36	216	2	73	85	323	164	30	611	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			40.0			75.0			55.0		
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	1.00	0.81		0.81	0.98		1.00	0.99		1.00	1.00	
Frt		0.871			0.854			0.949			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1262	867	0	1616	1491	0	1417	1643	0	1478	1758	0
Flt Permitted	0.708	001	•	0.730	1101	•	0.219	10 10	•	0.486	1100	J
Satd. Flow (perm)	939	867	0	1002	1491	0	326	1643	0	755	1758	0
Right Turn on Red	303	001	Yes	1002	1701	Yes	020	1040	Yes	700	1700	Yes
Satd. Flow (RTOR)		36	103		73	103		53	103		2	103
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	1	0.0	100	100	7.1	1	3	7.9	1	1	33.9	2
		1.00		100	4.00			4.00			4.00	3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	17%	2%	44%
Adj. Flow (vph)	19	6	36	216	2	73	85	323	164	30	611	16
Shared Lane Traffic (%)						_			_			
Lane Group Flow (vph)	19	42	0	216	75	0	85	487	0	30	627	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OITEX			OITEX			OITEX			OITEX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	reiiii	8		Fellil	4			6		Fellii	2	
	0	0		1	4		1	0		2	2	
Permitted Phases	8	_		4			6	^		2		
Detector Phase	8	8		4	4		1	6		2	2	
Switch Phase	40.0	40.0		400	40.0		- ^	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	28.3	28.3		28.3	28.3		11.3	33.3		33.3	33.3	
Total Split (s)	28.0	28.0		28.0	28.0		14.0	62.0		48.0	48.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		15.6%	68.9%		53.3%	53.3%	
	21.7	21.7		21.7	21.7		7.7	55.7		41.7	41.7	
Maximum Green (s)												
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	100	100		100	100			10		10	10	
Act Effct Green (s)	21.0	21.0		21.0	21.0		56.4	56.4		45.4	45.4	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.63	0.63		0.50	0.50	
v/c Ratio	0.09	0.18		0.93	0.19		0.29	0.46		0.08	0.71	
Control Delay	27.8	13.3		78.7	8.6		9.7	7.9		14.3	24.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.8	13.3		78.7	8.6		9.7	7.9		14.3	24.2	
LOS	С	В		Ε	Α		Α	Α		В	С	
Approach Delay		17.8			60.6			8.2			23.7	
Approach LOS		В			Ε			Α			С	
Queue Length 50th (m)	2.6	0.8		36.2	0.3		3.4	17.0		2.8	86.6	
Queue Length 95th (m)	8.1	8.8		#76.8	10.5		14.5	55.7		7.8	130.6	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	226	236		241	414		298	1050		380	888	
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	0.08	0.18		0.90	0.18		0.29	0.46		0.08	0.71	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 40 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 24.7

Intersection LOS: C

Intersection Capacity Utilization 75.0%

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: 3: Kanata Avenue & Lord Byng Way/Maritime Way



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WBL	WBR		INDIX	OBL	↑ ↑
Traffic Volume (vph)	252	247	T 376	0	0	77 992
Future Volume (vph)	252	247	376	0	0	992
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.850	1.00	1.00	1.00	0.00
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1334	1717	0	0	3325
Flt Permitted	0.950	1001	11.77	U	J	3020
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red	1000	Yes	.,,,,,	Yes		0020
Satd. Flow (RTOR)		247		. 00		
Link Speed (k/h)	50	_11	50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	252	247	376	0	0	992
Shared Lane Traffic (%)	202	<u></u>	310			302
Lane Group Flow (vph)	252	247	376	0	0	992
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	rigiil	0.0	Nigill	Leit	0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane	4.9		4.5			4.5
	1.06	1.06	1.06	1.06	1.06	1.06
Headway Factor	1.06	1.06	1.00	1.06	1.06	1.00
Turning Speed (k/h)			2	14	24	2
Number of Detectors	1	1 Diaht	2 Thru			2 Thru
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	37.0	37.0	53.0			53.0
Total Split (%)	41.1%	41.1%	58.9%			58.9%
Maximum Green (s)	32.0	32.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag	0.3	0.0	0.1			V. 1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
=	0.0	5.0	0.0			0.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	18.9	18.9	60.0			60.0
Actuated g/C Ratio	0.21	0.21	0.67			0.67
v/c Ratio	0.71	0.52	0.33			0.45
Control Delay	43.4	7.8	3.0			8.3
Queue Delay	0.0	0.0	0.2			0.0
Total Delay	43.4	7.8	3.1			8.3
LOS	D	A	Α			Α
Approach Delay	25.8		3.1			8.3
Approach LOS	C		A			A
Queue Length 50th (m)	40.8	0.0	6.7			28.1
Queue Length 95th (m)	58.6	16.5	8.5			m64.9
Internal Link Dist (m)	308.8	. 0.0	102.6			90.0
Turn Bay Length (m)	000.0		102.0			00.0
Base Capacity (vph)	602	633	1144			2215
Starvation Cap Reductn	0	0	212			0
Spillback Cap Reductn	0	0	0			9
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.42	0.39	0.40			0.45
	0.12	0.00	0.10			0.10
Intersection Summary	0.11					
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90	to observ ONDT on	I C ODT O				
Offset: 35 (39%), Referenced	to phase 2:NB1 an	a 6:5B1, 5	tart of Greer			
Natural Cycle: 55						
Control Type: Actuated-Coord	inated					
Maximum v/c Ratio: 0.71	`					00 0
Intersection Signal Delay: 11.9	9				ersection L	
Intersection Capacity Utilizatio	on 56.7%			ICU	J Level of S	Service B
Analysis Period (min) 15			. ,			
m Volume for 95th percentile	·	• •	•			
Splits and Phases: 4: Kanat	ta Avenue & HWY	117 WB Off	<u> </u>			
T ø2 (R)						
53 s						
55.5						
 						

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Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4	
Lane Configurations	1152		A	#	ሻ	A	~ .	
Traffic Volume (vph)	0	0	348	227	476	615		
Future Volume (vph)	0	0	348	227	476	615		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0		50.0	0.0			
Storage Lanes	0	0		1	1			
Taper Length (m)	7.6				7.6			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor				0.98	1.00			
Frt				0.850				
Flt Protected					0.950			
Satd. Flow (prot)	0	0	1685	1502	1679	1750		
Flt Permitted					0.491			
Satd. Flow (perm)	0	0	1685	1468	867	1750		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	40			227				
Link Speed (k/h)	48		50			50		
Link Distance (m) Travel Time (s)	278.4 20.9		119.2 8.6			126.6 9.1		
Confl. Peds. (#/hr)	20.9		0.0	1	1	9.1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	0%	0%	8%	3%	3%	4%		
Adj. Flow (vph)	0 70	0 /0	348	227	476	615		
Shared Lane Traffic (%)		· ·	010	LL!	470	010		
Lane Group Flow (vph)	0	0	348	227	476	615		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	0.0	<u> </u>	3.7	J -		3.7		
Link Offset(m)	0.0		0.0			0.0		
Crosswalk Width(m)	4.9		4.9			4.9		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	14		14	24			
Number of Detectors			2	1	1	2		
Detector Template			Thru	Right	Left	Thru		
Leading Detector (m)			30.5	6.1	6.1	30.5		
Trailing Detector (m)			0.0	0.0	0.0	0.0		
Detector 1 Position(m)			0.0	0.0	0.0	0.0		
Detector 1 Size(m)			1.8	6.1	6.1	1.8		
Detector 1 Type			CI+Ex	CI+Ex	CI+Ex	CI+Ex		
Detector 1 Channel			0.0	0.0	0.0	0.0		
Detector 1 Extend (s)			0.0	0.0	0.0	0.0		
Detector 1 Queue (s) Detector 1 Delay (s)			0.0	0.0	0.0	0.0		
Detector 2 Position(m)			28.7	0.0	0.0	28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			CI+Ex		
Detector 2 Channel			OITEX			OIT LX		
Detector 2 Extend (s)			0.0			0.0		
Turn Type			NA	Perm	pm+pt	NA		
Protected Phases			2		1	6	4	
Permitted Phases				2	6			
Detector Phase			2	2	1	6		
Switch Phase								
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0	
Total Split (s)			50.0	50.0	12.0	62.0	28.0	
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0	
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0	
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0	

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4	
Lost Time Adjust (s)			0.0	0.0	0.0	0.0		
Total Lost Time (s)			5.7	5.7	5.7	5.7		
_ead/Lag			Lag	Lag	Lead			
_ead-Lag Optimize?			Yes	Yes	Yes			
/ehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Valk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			63.6	63.6	78.9	83.5		
Actuated g/C Ratio			0.71	0.71	0.88	0.93		
/c Ratio			0.29	0.21	0.56	0.38		
Control Delay			6.6	1.7	6.4	2.3		
Queue Delay			0.3	0.0	0.0	0.0		
Total Delay			6.9	1.7	6.4	2.3		
OS			A	Α	Α	Α		
Approach Delay			4.8			4.1		
Approach LOS			4.0 A			4.1 A		
Queue Length 50th (m)			11.9	0.5	5.6	0.0		
Queue Length 95th (m)			62.2	11.3	#34.7	39.5		
nternal Link Dist (m)	254.4		95.2	11.0	πυ4.1	102.6		
Furn Bay Length (m)	204.4		33.2	50.0		102.0		
Base Capacity (vph)			1191	1104	846	1623		
Starvation Cap Reductn			383	0	6	2		
Spillback Cap Reductn			0	0	0	0		
Storage Cap Reductin			0	0	0	0		
<u> </u>								
Reduced v/c Ratio			0.43	0.21	0.57	0.38		
ntersection Summary								
	her							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 42 (47%), Referenced to phas	e 2:NBT and	d 6:SBTL,	Start of Gre	en				
Natural Cycle: 75								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.56								
ntersection Signal Delay: 4.4					ersection L			
ntersection Capacity Utilization 56.7%	6			ICI	U Level of S	Service B		
Analysis Period (min) 15								
# 95th percentile volume exceeds c		ue may be	longer.					
Queue shown is maximum after tw	o cycles.							
Splits and Phases: 5: Kanata Aven	ue & HWY 4	117 EB On						
<u> </u>								# k ø4
Ø1 Ø2 (R	l)							
12 s 50 s								28 s
₽ Ø6 (R)								

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₽.		*	Î.		*	ĵ.	
Traffic Volume (vph)	45	4 6	18	19	6	61	41	570	36	52	554	41
Future Volume (vph)	45	6	18	19	6	61	41	570	36	52	554	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.97			0.96		0.99	1.00		1.00	1.00	
Frt		0.965			0.904			0.991			0.990	
Flt Protected		0.968			0.989		0.950			0.950		
Satd. Flow (prot)	0	1218	0	0	1464	0	1145	1732	0	1662	1715	0
Flt Permitted		0.809			0.909		0.403			0.397		
Satd. Flow (perm)	0	1001	0	0	1336	0	483	1732	0	692	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			61			6			7	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14		18	18		14	9		6	6		9
Confl. Bikes (#/hr)			1						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 (%)	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Adj. Flow (vph)	45	6	18	19	6	61	41	570	36	52	554	41
Shared Lane Traffic (%)		•			_	-						
Lane Group Flow (vph)	0	69	0	0	86	0	41	606	0	52	595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	2011	0.0		20.1	0.0		20.0	3.7		20.0	3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	Cl+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0. <u>L</u> x			0. <u>L</u>			0. <u>L</u>			O. 2.	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1 01111	4		1 01111	8		1 01111	2		1 01111	6	
Permitted Phases	4	•		8	•		2	_		6	•	
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase	-	7			- 0		_	_			-	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
TOHOW THIE (3)	5.0	3.0		3.0	3.0		3.3	٥.٥		3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.0			13.0		69.5	69.5		69.5	69.5	
Actuated g/C Ratio		0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio		0.43			0.35		0.11	0.45		0.10	0.45	
Control Delay		34.5			17.0		5.0	5.7		5.5	6.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.2	
Total Delay		34.5			17.0		5.0	5.7		5.5	6.9	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		34.5			17.0			5.7			6.8	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		8.4			4.0		1.8	36.0		2.6	48.6	
Queue Length 95th (m)		18.3			14.6		m5.0	52.4		6.1	41.1	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		277			398		373	1339		534	1326	
Starvation Cap Reductn		0			0		0	0		0	183	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.22		0.11	0.45		0.10	0.52	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.45

Intersection Signal Delay: 8.2 Intersection Capacity Utilization 69.6%

Intersection LOS: A ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



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

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	₽.		75	î,		7	î,		75	•	7
Traffic Volume (vph)	161	130	72	34	114	37	123	391	51	89	310	110
Future Volume (vph)	161	130	72	34	114	37	123	391	51	89	310	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0 1.00	1.00	1.00	55.0 1.00	1.00	1.00	55.0 1.00	1.00	1.00	30.0 1.00	1.00	1.00
Lane Util. Factor Ped Bike Factor	0.95	0.98	1.00	0.98	0.98	1.00	0.98	0.99	1.00	0.97	1.00	0.94
Frt	0.95	0.96		0.90	0.963		0.90	0.983		0.97		0.850
Flt Protected	0.950	0.341		0.950	0.303		0.950	0.303		0.950		0.050
Satd. Flow (prot)	1586	1649	0	1695	1619	0	1695	1629	0	1503	1655	1322
Flt Permitted	0.441	10-13	v	0.631	1010	0	0.550	1020	•	0.442	1000	1022
Satd. Flow (perm)	701	1649	0	1099	1619	0	959	1629	0	681	1655	1245
Right Turn on Red		1010	Yes			Yes		.020	Yes	•	1000	Yes
Satd. Flow (RTOR)		43			20			8				126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	35		16	16		35	20		33	33		20
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 (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	15%	10%	17%
Adj. Flow (vph)	161	130	72	34	114	37	123	391	51	89	310	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	202	0	34	151	0	123	442	0	89	310	110
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	1.00	1.00	4.00	4.00	4.00	4.00	4.00	1.00	4.00	1.00	4.00	4.00
Headway Factor Turning Speed (k/h)	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6	_	6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase	5.0	40.0		400	40.0		400	40.0		40.0	40.0	40.0
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
Maximum Green (s)	5.3	43.3		31.3	31.3		33.8	33.8		33.8	33.8	33.8
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)	3.4	3.4		3.4	3.4		2.9	2.9		2.9	2.9	2.9

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	26.2	26.2		14.2	14.2		50.9	50.9		50.9	50.9	50.9
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.63	0.40		0.20	0.56		0.23	0.48		0.23	0.33	0.15
Control Delay	36.3	21.2		33.2	37.0		12.7	14.8		14.7	13.0	5.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.3	21.2		33.2	37.0		12.7	14.8		14.7	13.0	5.2
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		27.9			36.3			14.3			11.6	
Approach LOS		С			D			В			В	
Queue Length 50th (m)	22.5	22.1		5.3	21.5		9.4	39.6		3.7	13.4	0.0
Queue Length 95th (m)	32.8	34.2		12.0	34.9		24.4	81.7		17.7	47.2	11.8
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	256	815		382	576		541	924		384	935	758
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.63	0.25		0.09	0.26		0.23	0.48		0.23	0.33	0.15
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												

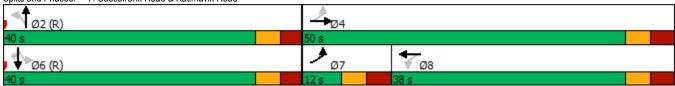
Actuated Cycle Length: 90

Actuated Cycle Length: 90
Offset: 25 (28%), 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: 19.0
Intersection Capacity Utilization 80.7%
Analysis Pagiod (min) 15

Intersection LOS: B ICU Level of Service D

Analysis Period (min) 15





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ,		¥	ĵ.		¥	î,		¥	ĵ.	
Traffic Volume (vph)	50	652	13	68	442	75	17	17	164	160	10	53
Future Volume (vph)	50	652	13	68	442	75	17	17	164	160	10	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0	4.00	4.00	55.0	4.00	4.00	40.0	4.00	4.00	35.0	4.00	4.00
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	0.99	1.00		1.00	0.99		0.99	0.96		0.98	0.98	
Frt Francisco	0.050	0.997		0.050	0.978		0.050	0.864		0.050	0.874	
Flt Protected	0.950	1710	0	0.950	4500	٥	0.950	4.475	٥	0.950	1400	0
Satd. Flow (prot) Flt Permitted	1695 0.419	1718	0	1695 0.323	1592	0	1695 0.716	1475	0	1695 0.603	1493	0
		1710	0		1500	0		1175	0		1402	0
Satd. Flow (perm)	742	1718	Yes	574	1592	Yes	1267	1475	Yes	1052	1493	0 Yes
Right Turn on Red		2	res		15	res		164	res		53	res
Satd. Flow (RTOR)		2 50						164 50			53 40	
Link Speed (k/h) Link Distance (m)		248.0			50 203.8			223.0			40 144.1	
Travel Time (s)		248.0 17.9			203.8 14.7			16.1			13.0	
Confl. Peds. (#/hr)	12	17.9	11	11	14.7	12	4	10.1	12	12	13.0	4
\ ,	IZ		1	- 11		12	4		12	12		4
Confl. Bikes (#/hr) 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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	1.00	2%
Adj. Flow (vph)	50	652	13	68	442	75	17	17	164	160	14 %	53
Shared Lane Traffic (%)	50	032	13	00	442	75	17	17	104	100	10	55
Lane Group Flow (vph)	50	665	0	68	517	0	17	181	0	160	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	LOIL	3.7	rtigitt	LOIL	3.7	rtigrit	Lon	3.7	rtigiit	LOIL	3.7	rtigitt
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		1.0			1.0			1.0			1.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	• • •	1	2	• •	1	2	• • •	1	2	• •
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	39.3	39.3		39.3	39.3		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	51.4	51.4		51.4	51.4		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.21	0.21		0.21	0.21	
v/c Ratio	0.11	0.60		0.18	0.50		0.06	0.41		0.72	0.18	
Control Delay	7.9	12.7		9.2	10.7		22.5	8.1		46.5	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.9	12.7		9.2	10.7		22.5	8.1		46.5	9.6	
LOS	Α	В		Α	В		С	Α		D	Α	
Approach Delay		12.3			10.5			9.3			36.1	
Approach LOS		В			В			Α			D	
Queue Length 50th (m)	2.6	51.5		3.7	35.1		2.1	2.1		22.8	1.2	
Queue Length 95th (m)	8.7	108.1		12.1	75.7		6.1	15.2		38.1	9.2	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	476	1103		368	1027		459	639		381	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	0.11	0.60		0.18	0.50		0.04	0.28		0.42	0.11	
Intersection Summary												

Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.72

Intersection Signal Delay: 14.4 Intersection Capacity Utilization 87.5%

Intersection LOS: B ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



	→	•	•	←	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				र्	W	
Traffic Volume (veh/h)	1 5	24	6	174	76	19
Future Volume (Veh/h)	161	24	6	174	76	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	161	24	6	174	76	19
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	None			THOTIC		
Upstream signal (m)	217					
pX, platoon unblocked	211					
vC, conflicting volume			185		359	173
vC1, stage 1 conf vol			100		339	173
vC2, stage 2 conf vol						
vCu, unblocked vol			185		359	173
tC, single (s)			4.1		6.4	6.2
			4.1		0.4	0.2
tC, 2 stage (s) tF (s)			2.2		3.5	3.3
p0 queue free %			100		3.5 88	3.3 98
			1390		637	98 871
cM capacity (veh/h)			1390		03/	0/1
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	185	180	95			
Volume Left	0	6	76			
Volume Right	24	0	19			
cSH	1700	1390	673			
Volume to Capacity	0.11	0.00	0.14			
Queue Length 95th (m)	0.0	0.1	3.7			
Control Delay (s)	0.0	0.3	11.2			
Lane LOS		Α	В			
Approach Delay (s)	0.0	0.3	11.2			
Approach LOS			В			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			27.1%	IC	U Level of S	ervice
Analysis Period (min)			15			
manyone i oned (min)						

	→	•	•	-	4	<i>></i>
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>LBI</u>	LDK	VVDL	<u>₩</u>	NDL 1	TION.
Traffic Volume (vph)	7 631	82	214	708	7 9	177
Future Volume (vph)	631	82	214	708	79	177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	55.0	110.0	1000	30.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			100.0		45.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98				0.98
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1640	1517	1695	1784	1695	1517
Flt Permitted			0.301		0.950	
Satd. Flow (perm)	1640	1483	537	1784	1695	1482
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		80				177
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)	20.7	1	1	30.0		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	631	82	214	708	79	177
Shared Lane Traffic (%)	001	02	4 17	700	,,,	111
Lane Group Flow (vph)	631	82	214	708	79	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	ragni	LGIL	3.7	3.7	ragiit
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane	7.0			7.0	7.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	1.00	1.06	24	1.00	24	1.06
Number of Detectors	2	14	1	2	1	14
Detector Template	Thru	Right	Left	Thru	Left	Right
	30.5	6.1	6.1	30.5	6.1	6.1
Leading Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Trailing Detector (m) Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
\ /						
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel	0.0					
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	29.4	29.4	10.8	29.4	24.9	24.9
Total Split (s)	58.0	58.0	12.0	70.0	30.0	30.0
Total Split (%)	58.0%	58.0%	12.0%	70.0%	30.0%	30.0%
Maximum Green (s)	51.6	51.6	6.2	63.6	24.1	24.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	2.5	3.1	2.6	2.6
(0)	5.1	•		•		

	-	•	•	←	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4	5.8	6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
_ead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	62.1	62.1	77.3	76.7	11.0	11.0
Actuated g/C Ratio	0.62	0.62	0.77	0.77	0.11	0.11
v/c Ratio	0.62	0.09	0.41	0.52	0.42	0.55
Control Delay	16.7	3.0	6.1	6.9	46.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	3.0	6.1	6.9	46.9	12.7
LOS	В	Α	Α	Α	D	В
Approach Delay	15.1			6.7	23.3	
Approach LOS	В			A	C	
Queue Length 50th (m)	66.6	0.2	8.2	40.4	14.7	0.0
Queue Length 95th (m)	136.9	7.0	20.7	91.6	26.1	17.0
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		55.0	110.0		30.0	
Base Capacity (vph)	1018	951	516	1367	408	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.09	0.41	0.52	0.19	0.36
Internation Operation						
Intersection Summary	0"					
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100	0.555					
Offset: 0 (0%), Referenced to ph	nase 2:EBT and 0	6:WBTL, Sta	art of Green	1		
Natural Cycle: 80						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.62						
Intersection Signal Delay: 12.1	/				ersection Lo	
Intersection Capacity Utilization	67.6%			ICI	J Level of S	ervice C
Analysis Period (min) 15						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
√Ø1 ♦ Ø2	(R)					
12 s 58 s						
4-						
🦸 Ø6 (R) 🌹						

2020 Total Hallic	٠	→	•	•	←	•	4	†	<i>></i>	\	+	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*			*			*	ĵ.		*	ĵ,	
Traffic Volume (vph)	30	1 3	78	166	1	63	136	824	253	96	638	25
Future Volume (vph)	30	3	78	166	9	63	136	824	253	96	638	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			40.0			75.0			55.0		
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	0.98	0.74		0.77	0.96			0.99			1.00	
Frt Flt Protected	0.050	0.856		0.050	0.869		0.050	0.965		0.050	0.994	
	0.950	٥٢٥	0	0.950 1695	1101	٥	0.950	4740	0	0.950	4700	0
Satd. Flow (prot) Flt Permitted	1262 0.710	950	0	0.704	1494	0	1503 0.187	1712	0	1695 0.103	1760	0
Satd. Flow (perm)	924	950	0	969	1494	0	296	1712	0	184	1760	0
Right Turn on Red	924	900	Yes	909	1494	Yes	290	1712	Yes	104	1700	Yes
Satd. Flow (RTOR)		78	163		63	169		32	163		3	163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	11	0.0	125	125	7.1	11	3	1.5	3	3	55.5	3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	166	9	63	136	824	253	96	638	25
Shared Lane Traffic (%)								<u></u>				
Lane Group Flow (vph)	30	81	0	166	72	0	136	1077	0	96	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel		0.0		0.0			0.0			0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0 28.7		0.0	0.0 28.7		0.0	0.0 28.7		0.0	0.0 28.7	
Detector 2 Position(m)					1.8			1.8			1.8	
Detector 2 Size(m)		1.8 CI+Ex						CI+Ex			Cl+Ex	
Detector 2 Type Detector 2 Channel		CI+EX			Cl+Ex			CI+EX			CI+EX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	Feiiii	4		Feiiii	8		рит-рі 5	2		Fellil	6	
Permitted Phases	4	7		8	U		2			6	U	
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase		7		0			,			0	0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	28.3	28.3		28.3	28.3		11.3	33.3		33.3	33.3	
Total Split (s)	28.0	28.0		28.0	28.0		15.0	62.0		47.0	47.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		16.7%	68.9%		52.2%	52.2%	
Maximum Green (s)	21.7	21.7		21.7	21.7		8.7	55.7		40.7	40.7	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	
	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	100	100		100	100			10		10	10	
Act Effct Green (s)	19.7	19.7		19.7	19.7		57.7	57.7		43.4	43.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.64	0.64		0.48	0.48	
v/c Ratio	0.15	0.30		0.78	0.19		0.46	0.97		1.09	0.78	
Control Delay	29.1	10.6		53.9	7.3		7.5	20.1		152.8	28.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay	29.1	10.6		53.9	7.3		7.5	20.7		152.8	28.6	
LOS	С	В		D	Α		Α	С		F	С	
Approach Delay		15.6			39.8			19.2			44.3	
Approach LOS		В			D			В			D	
Queue Length 50th (m)	4.1	0.4		26.4	3.0		8.5	~135.8		~19.8	96.8	
Queue Length 95th (m)	11.2	11.5		#56.4	10.9		m8.4	m#135.0		#49.6	#159.6	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	222	288		233	408		306	1108		88	849	
Starvation Cap Reductn	0	0		0	0		0	4		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	0.14	0.28		0.71	0.18		0.44	0.98		1.09	0.78	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 31 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09 Intersection Signal Delay: 29.4

Intersection LOS: C

ICU Level of Service G

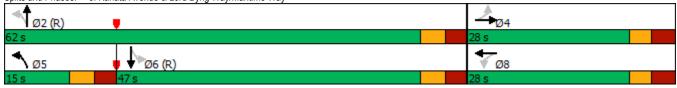
Intersection Capacity Utilization 104.4% Analysis Period (min) 15

- 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: 3: Kanata Avenue & Lord Byng Way/Maritime Way



	•	4	†	/	/	Ţ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u>NB1</u>	11011	ODL	*
Traffic Volume (vph)	486	723	7 66	0	0	1069
-uture Volume (vph)	486	723	766	0	0	1069
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.50	1.50	1.00	1.00	0.00
Frt		0.850				
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1017	1750	U	U	0001
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red	1033	Yes	1730	Yes	U	5551
Satd. Flow (RTOR)		104		res		
	- FO	104	ΕO			E0.
Link Speed (k/h)	50 222.0		50			50 114.0
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1	_		8.2
Confl. Bikes (#/hr)		,		3	4.55	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	486	723	766	0	0	1069
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	723	766	0	0	1069
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.1	0.1	0.0			0.0
	0.0	0.0	0.0			0.0
Detector 1 Position(m)						
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases		*****	2			6
Permitted Phases	8	8	_			-
Detector Phase	8	8	2			6
Switch Phase	U	U				-
	5.0	5 0	10.0			10.0
Minimum Initial (s)		5.0	28.1			24.1
Minimum Split (s)	23.0	23.0				
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	40.0	40.0	38.9			38.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag	5.0	0.0	0.1			• • • • • • • • • • • • • • • • • • • •

Brad Byvelds, Novatech

4. Nanata Avenue & ni	VV 1 4 17 VVD OII
	Timing Plan: PM Peak

Synchro 10 Report

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	40.0	40.0	38.9			38.9
Actuated g/C Ratio	0.44	0.44	0.43			0.43
v/c Ratio	0.65	0.99	1.01			0.74
Control Delay	24.4	53.5	52.5			22.0
Queue Delay	0.4	1.5	31.5			0.0
Total Delay	24.8	55.0	84.0			22.0
LOS	24.0 C	55.0 E	04.0 F			C C
Approach Delay	42.9		84.0			22.0
Approach LOS	42.9 D		04.0 F			22.0 C
Queue Length 50th (m)	63.3	107.4	~107.1			53.2
Queue Length 95th (m)	96.5	#185.6	#202.3			75.4
J ()	308.8	#100.0	102.6			90.0
Internal Link Dist (m)	308.8		102.0			90.0
Turn Bay Length (m)	753	732	756			1450
Base Capacity (vph)	753	732	756			1450
Starvation Cap Reductn						~
Spillback Cap Reductn	48	5	102			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.69	0.99	1.17			0.74
Intersection Summary	0.11					
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 32 (36%), Referenced to p	phase 2:NBT ar	nd 6:SBT, S	tart of Green	1		
Natural Cycle: 90						
Control Type: Actuated-Coordina	ted					
Maximum v/c Ratio: 1.01						
Intersection Signal Delay: 45.9					ersection L	
Intersection Capacity Utilization 1	27.5%			ICL	Level of S	Service H
Analysis Period (min) 15						
 Volume exceeds capacity, qu 		ally infinite.				
Queue shown is maximum after						
# 95th percentile volume excee		eue may be	longer.			
Queue shown is maximum after	er two cycles.					
Splits and Phases: 4: Kanata A	Avenue & HWY	417 WB Of	<u>f</u>			
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Ø2 (R)					_	
45 s						
L L					1 3	
▼ Ø6 (R)					₩ 9	Ø 8

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ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
ane Configurations			•	#	7	*	
raffic Volume (vph)	0	0	631	206	423	981	
uture Volume (vph)	0	0	631	206	423	981	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
Taper Length (m)	7.6				7.6		
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor				0.98			
rt				0.850			
It Protected					0.950		
Satd. Flow (prot)	0	0	1733	1517	1662	1784	
It Permitted					0.244		
Satd. Flow (perm)	0	0	1733	1479	427	1784	
tight Turn on Red		Yes	1130	Yes	121	1101	
atd. Flow (RTOR)		, 00		195			
ink Speed (k/h)	48		50	100		50	
ink Distance (m)	278.4		119.2			126.6	
ravel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.5		0.0	2	2	3.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
leavy Vehicles (%)	0%	0%	5%	2%	4%	2%	
	0%	0%	631	2%	4%	2% 981	
dj. Flow (vph)	U	U	031	200	423	901	
shared Lane Traffic (%)	0	^	C24	206	423	981	
ane Group Flow (vph)	0	0	631				
Inter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0		3.7			3.7	
ink Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
wo way Left Turn Lane							
leadway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
urning Speed (k/h)	24	14		14	24		
lumber of Detectors			2	1	1	2	
Detector Template			Thru	Right	Left	Thru	
eading Detector (m)			30.5	6.1	6.1	30.5	
railing Detector (m)			0.0	0.0	0.0	0.0	
etector 1 Position(m)			0.0	0.0	0.0	0.0	
etector 1 Size(m)			1.8	6.1	6.1	1.8	
etector 1 Type			CI+Ex	CI+Ex	CI+Ex	Cl+Ex	
Detector 1 Channel							
etector 1 Extend (s)			0.0	0.0	0.0	0.0	
Petector 1 Queue (s)			0.0	0.0	0.0	0.0	
Petector 1 Delay (s)			0.0	0.0	0.0	0.0	
Detector 2 Position(m)			28.7			28.7	
etector 2 Size(m)			1.8			1.8	
etector 2 Type			CI+Ex			Cl+Ex	
Detector 2 Channel			_			-	
Detector 2 Extend (s)			0.0			0.0	
urn Type			NA	Perm	pm+pt	NA	
rotected Phases			2	. 51111	1	6	8
ermitted Phases				2	6	U	
etector Phase			2	2	1	6	
witch Phase					ı	U	
finimum Initial (s)			10.0	10.0	5.0	10.0	5.0
			23.7				27.0
finimum Split (s)				23.7	10.7	23.7	
			50.0	50.0	12.0	62.0	28.0
			55.6%	55.6%	13.3%	68.9%	31%
otal Split (s)						E	
			44.3	44.3 3.3	6.3 3.3	56.3 3.3	23.0 3.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
Lost Time Adjust (s)			0.0	0.0	0.0	0.0		
Total Lost Time (s)			5.7	5.7	5.7	5.7		
Lead/Lag			Lag	Lag	Lead			
Lead-Lag Optimize?			Yes	Yes	Yes			
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Walk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			51.8	51.8	78.9	83.5		
Actuated g/C Ratio			0.58	0.58	0.88	0.93		
v/c Ratio			0.63	0.22	0.63	0.59		
Control Delay			10.5	1.2	17.6	5.7		
Queue Delay			2.5	0.0	0.0	0.1		
Total Delay			13.0	1.2	17.6	5.8		
LOS			13.0 B	1.2 A	17.0 B	J.0 A		
			10.1	A	D	9.4		
Approach Delay			10.1 B			9.4 A		
Approach LOS				0.4	00.0			
Queue Length 50th (m)			51.5	2.4	26.3	7.8		
Queue Length 95th (m)	054.4		87.8	m2.9	#82.2	#117.9		
Internal Link Dist (m)	254.4		95.2			102.6		
Turn Bay Length (m)			007	50.0	007	1051		
Base Capacity (vph)			997	934	667	1654		
Starvation Cap Reductn			176	0	0	6		
Spillback Cap Reductn			241	0	0	105		
Storage Cap Reductn			0	0	0	0		
Reduced v/c Ratio			0.83	0.22	0.63	0.63		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 27 (30%), Referenced to pl	hase 2:NBT an	d 6:SBTL,	Start of Gre	en				
Natural Cycle: 90								
Control Type: Actuated-Coordinate	ed							
Maximum v/c Ratio: 0.63								
Intersection Signal Delay: 9.6					ersection L			
Intersection Capacity Utilization 12	27.5%			IC	U Level of S	Service H		
Analysis Period (min) 15								
# 95th percentile volume exceed		eue may be	longer.					
Queue shown is maximum afte								
m Volume for 95th percentile que	eue is metered	by upstrea	m signal.					
Splits and Phases: 5: Kanata Av	venue & HWY 4	117 EB On						
\ ø ₁								
12 s 50 s								
Ø6 (R)								# \$ Ø8
₩ ₩ (K)								

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			₽		*	î,		*	ĵ.	
Traffic Volume (vph)	17	4 3	13	30	1	97	12	834	35	62	977	24
Future Volume (vph)	17	3	13	30	1	97	12	834	35	62	977	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.98			0.97			1.00			1.00	
Frt		0.947			0.898			0.994			0.996	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1542	0	1695	1755	0	1695	1775	0
Flt Permitted		0.735			0.909		0.204			0.266		
Satd. Flow (perm)	0	1219	0	0	1415	0	364	1755	0	475	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			97			4			2	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	7		6	6		7	9		5	5		9
Confl. Bikes (#/hr)									3			
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	17	3	13	30	1	97	12	834	35	62	977	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	128	0	12	869	0	62	1001	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												_
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	_
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	• NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.1			10.1		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.11			0.11		0.76	0.76		0.76	0.76	
v/c Ratio		0.22			0.52		0.04	0.65		0.17	0.75	
Control Delay		26.2			19.2		4.8	8.5		6.8	13.0	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.0	
Total Delay		26.2			19.2		4.8	8.6		6.8	13.0	
LOS		С			В		Α	Α		Α	В	
Approach Delay		26.2			19.2			8.5			12.7	
Approach LOS		С			В			Α			В	
Queue Length 50th (m)		3.3			5.1		0.3	37.8		3.3	89.8	
Queue Length 95th (m)		9.9			17.8		m1.1	102.6		m5.7	#229.2	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		331			445		274	1327		359	1342	
Starvation Cap Reductn		0			0		0	18		0	6	
Spillback Cap Reductn		0			2		0	44		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.29		0.04	0.68		0.17	0.75	

Intersection Summary

Other

Area Type: Cycle Length: 90

Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.75 Intersection Signal Delay: 11.6

Intersection Capacity Utilization 76.7%

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.



Intersection LOS: B

ICU Level of Service D

Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ.		*	ĵ.		*	ĵ.		*	•	#
Traffic Volume (vph)	154	140	75	92	200	115	41	444	60	121	660	204
Future Volume (vph)	154	140	75	92	200	115	41	444	60	121	660	204
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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	0.99	0.98		0.98	0.98		0.98	0.99				0.92
Frt		0.948			0.945			0.982				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	1666	0	1558	1626	0	1695	1737	0	1647	1784	1473
Flt Permitted	0.241			0.624			0.332			0.195		
Satd. Flow (perm)	416	1666	0	1005	1626	0	581	1737	0	338	1784	1356
Right Turn on Red			Yes			Yes		_	Yes			Yes
Satd. Flow (RTOR)		36			32			8			_	199
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	16		12	12		16	31		27	27		31
Confl. Bikes (#/hr)			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%	2%	2%	11%	2%	7%	2%	2%	2%	5%	2%	5%
Adj. Flow (vph)	154	140	75	92	200	115	41	444	60	121	660	204
Shared Lane Traffic (%)	454	045	^	00	045	•	44	504	•	404	000	00.4
Lane Group Flow (vph)	154	215	. 0	92	315	. 0	41	504	0	121	660	204
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	1.00	4.00	1.06	4.00	1.00	4.00	1.00	1.06	1.06	4.00	1.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06 14	1.06 24	1.00	1.06	1.06 24	1.06	1.06
Turning Speed (k/h) Number of Detectors	24 1	2	14	24 1	2	14		2	14	1	2	14 1
	Left	Thru			Thru		1 Left	Z Thru		Left	Thru	-
Detector Template Leading Detector (m)	6.1	30.5		Left 6.1	30.5		6.1	30.5		6.1	30.5	Right 6.1
Trailing Detector (m)	0.0	0.0		0.1	0.0		0.0	0.0		0.1	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	Cl+Ex
Detector 1 Channel	OITLX	OITLX		CITLX	CITLX		OITLX	OITEX		OITLX	OITLX	OITEX
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	0.0
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OI LX			OITEX			OI · LX			OI LX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4		1 01111	8		1 01111	2		1	6	1 01111
Permitted Phases	4	Т		8	0		2			6	- 0	6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase	•	-						_				
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.2	29.2		29.2	29.2		11.2	29.7	29.7
Total Split (s)	12.0	43.0		31.0	31.0		35.0	35.0		12.0	47.0	47.0
Total Split (%)	13.3%	47.8%		34.4%	34.4%		38.9%	38.9%		13.3%	52.2%	52.2%
Maximum Green (s)	5.3	36.3		24.8	24.8		28.8	28.8		5.8	40.3	40.3
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	31.8	31.8		20.3	20.3		32.1	32.1		45.3	44.8	44.8
Actuated g/C Ratio	0.35	0.35		0.23	0.23		0.36	0.36		0.50	0.50	0.50
v/c Ratio	0.70	0.35		0.41	0.80		0.20	0.81		0.45	0.74	0.26
Control Delay	38.6	18.4		33.9	44.9		25.4	39.2		16.0	21.5	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.6	18.4		33.9	44.9		25.4	39.2		16.0	21.5	4.1
LOS	D	В		С	D		С	D		В	С	Α
Approach Delay		26.9			42.4			38.2			17.2	
Approach LOS		С			D			D			В	
Queue Length 50th (m)	18.5	21.8		13.5	46.1		5.1	80.8		7.5	86.2	3.1
Queue Length 95th (m)	#33.1	36.5		26.1	71.6		13.6	#139.1		m13.9	#155.1	m10.9
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	220	693		276	471		207	625		270	887	774
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.70	0.31		0.33	0.67		0.20	0.81		0.45	0.74	0.26

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.81

Intersection Signal Delay: 28.2 Intersection Capacity Utilization 94.6%

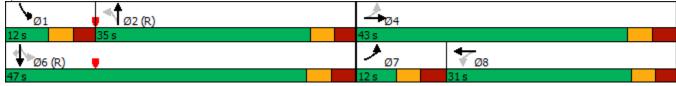
Intersection LOS: C ICU Level of Service F

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.





Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	ĵ.		7	ĵ,		7	ĵ,		7	ĵ.	
Traffic Volume (vph)	66	452	32	138	621	103	13	14	97	38	11	73
Future Volume (vph)	66	452	32	138	621	103	13	14	97	38	11	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			55.0			40.0			35.0		
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		1.00		1.00	0.99		0.98	0.97		0.99	0.96	
Frt		0.990			0.979			0.869			0.870	
Flt Protected	0.950			0.950		_	0.950			0.950		_
Satd. Flow (prot)	1695	1763	0	1695	1734	0	1695	1509	0	1679	1497	0
Flt Permitted	0.257			0.487		_	0.702			0.685		_
Satd. Flow (perm)	459	1763	0	865	1734	0	1229	1509	0	1199	1497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			13			97			73	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	15		4	4		15	8		4	4		8
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	66	452	32	138	621	103	13	14	97	38	11	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	484	0	138	724	0	13	111	0	38	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	^	14	24	•	14	24	•	14	24	^	14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0 1.8		0.0 6.1	0.0		0.0	0.0	
Detector 1 Size(m)	6.1 CI+Ex	1.8		6.1 CI+Ex	CI+Ex			1.8		6.1 CI+Ex	1.8 Cl+Ex	
Detector 1 Type Detector 1 Channel	CI+EX	CI+Ex		CI+EX	CI+EX		CI+Ex	CI+Ex		CI+EX	CI+EX	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s) Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel		CI+EX			CI+EX			CI+EX			CI+EX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		I CIIII	6		I CIIII	8		i Giiii	4	
Permitted Phases	2			6	U		8	U		4	7	
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase	3			U	U		U	U		7	7	
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	66.0		51.0	51.0		24.0	24.0		24.0	24.0	
Total Split (%)	16.7%	73.3%		56.7%	56.7%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	9.3	60.3		45.3	45.3		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.7	3.7		45.3 3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
All-Red Tillie (S)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.1	71.2		61.3	61.3		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.15	0.35		0.23	0.61		0.08	0.40		0.25	0.33	
Control Delay	4.3	4.8		10.1	14.4		33.4	17.4		38.7	14.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.3	4.8		10.1	14.4		33.4	17.4		38.7	14.4	
LOS	Α	Α		В	В		С	В		D	В	
Approach Delay		4.7			13.7			19.1			21.9	
Approach LOS		Α			В			В			С	
Queue Length 50th (m)	2.3	21.6		9.6	71.1		2.5	8.5		6.1	1.8	
Queue Length 95th (m)	7.1	47.6		24.6	142.5		m2.8	m9.7		14.1	13.2	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	485	1397		589	1185		245	379		239	357	
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	0.14	0.35		0.23	0.61		0.05	0.29		0.16	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

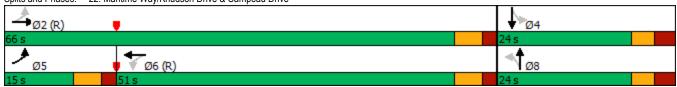
Intersection Signal Delay: 11.7
Intersection Capacity Utilization 70.1%

I Delay: 11.7 Intersection LOS: B city Utilization 70.1% ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



	→	•	•	←	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	î,			र्	W	
Traffic Volume (veh/h)	226	77	19	159	47	12
Future Volume (Veh/h)	226	77	19	159	47	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	226	77	19	159	47	12
Pedestrians		• • •				·-
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	1,0110			110110		
Upstream signal (m)	217					
pX, platoon unblocked	217					
vC, conflicting volume			303		462	264
vC1, stage 1 conf vol			300		702	204
vC2, stage 2 conf vol						
vCu, unblocked vol			303		462	264
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			4.1		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	98
cM capacity (veh/h)			1258		550	96 774
Civi Capacity (Veri/II)					550	114
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	303	178	59			
Volume Left	0	19	47			
Volume Right	77	0	12			
cSH	1700	1258	584			
Volume to Capacity	0.18	0.02	0.10			
Queue Length 95th (m)	0.0	0.3	2.5			
Control Delay (s)	0.0	1.0	11.9			
Lane LOS		Α	В			
Approach Delay (s)	0.0	1.0	11.9			
Approach LOS			В			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			35.8%	IC	U Level of S	ervice
Analysis Period (min)			15			
analysis i siloa (iiiii)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	1 ,		¥	1		¥	ĵ,		¥	î,	
Traffic Volume (vph)	30		78	166		63	136	824	253	96	638	25
Future Volume (vph)	30	3	78	166	9	63	136	824	253	96	638	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	40.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0	4.00	4.00	40.0	4.00	4.00	75.0	4.00	4.00	55.0	4.00	4.00
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	0.97	0.66		0.70	0.96			0.99			1.00	
Frt Flt Protected	0.950	0.856		0.950	0.869		0.950	0.965		0.950	0.994	
	1262	847	0	1695	1484	0	1503	1711	0	1695	1760	٥
Satd. Flow (prot) Flt Permitted	0.710	847	U	0.704	1484	U	0.258	1711	U	0.130	1760	0
	918	847	0	873	1484	0	408	1711	0	232	1760	0
Satd. Flow (perm) Right Turn on Red	910	047	Yes	0/3	1404	Yes	400	17 11	Yes	232	1700	Yes
		78	168		63	165		29	165		3	168
Satd. Flow (RTOR)		76 50			50			50			50	
Link Speed (k/h) Link Distance (m)		119.6			99.0			110.4			471.4	
\		8.6			7.1			7.9			33.9	
Travel Time (s) Confl. Peds. (#/hr)	11	0.0	125	125	7.1	11	3	7.9	3	3	33.9	3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	166	9	63	136	824	253	96	638	20%
Shared Lane Traffic (%)	30	J	70	100	9	03	130	024	233	90	030	23
Lane Group Flow (vph)	30	81	0	166	72	0	136	1077	0	96	663	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	3.7	Rigit	Leit	3.7	Night	LEIL	3.7	Night	Leit	3.7	Right
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		7.0			7.0			7.0			4.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24	1100	14	24	1.00	14	24	1100	14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	28.3	28.3		28.3	28.3		11.3	33.3		33.3	33.3	
Total Split (s)	32.0	32.0		32.0	32.0		11.6	88.0		76.4	76.4	
Total Split (%)	26.7%	26.7%		26.7%	26.7%		9.7%	73.3%		63.7%	63.7%	
Maximum Green (s)	25.7	25.7		25.7	25.7		5.3	81.7		70.1	70.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.3	3.3		3.3	3.3		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
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	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)	15.0	15.0		15.0	15.0			20.0		20.0	20.0	
Pedestrian Calls (#/hr)	100	100		100	100			10		10	10	
Act Effct Green (s)	25.0	25.0		25.0	25.0		82.4	82.4		70.6	70.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.69	0.69		0.59	0.59	
v/c Ratio	0.16	0.34		0.92	0.20		0.41	0.91		0.71	0.64	
Control Delay	40.9	13.5		95.6	13.1		6.5	17.3		49.3	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	8.8		0.0	0.0	
Total Delay	40.9	13.5		95.6	13.1		6.5	26.1		49.3	20.0	
LOS	D	В		F	В		Α	С		D	В	
Approach Delay		20.9			70.7			23.9			23.7	
Approach LOS		С			Е			С			С	
Queue Length 50th (m)	5.8	0.6		38.2	1.7		9.0	121.2		15.2	98.2	
Queue Length 95th (m)	14.4	14.1		#78.7	13.7		m8.8	m153.8		#48.1	137.4	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	20.0			40.0			35.0			35.0		
Base Capacity (vph)	196	242		186	367		331	1184		136	1036	
Starvation Cap Reductn	0	0		0	0		0	97		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	0.33		0.89	0.20		0.41	0.99		0.71	0.64	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 28.5

Intersection LOS: C

Intersection Capacity Utilization 104.4%

ICU Level of Service G

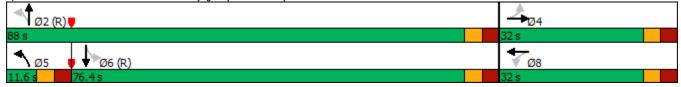
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Kanata Avenue & Lord Byng Way/Maritime Way



Synchro 10 Report Brad Byvelds, Novatech

	•	4	†	/	/	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ች	7	A		JUL	*
Traffic Volume (vph)	486	723	766	0	0	1096
Future Volume (vph)	486	723	766	0	0	1096
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	3.50
Frt		0.850				
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1317	1730	U	U	5551
Satd. Flow (perm)	1695	1517	1750	0	0	3357
	1093	Yes	1/50	Yes	U	JJ51
Right Turn on Red				res		
Satd. Flow (RTOR)	- 50	109	F0			
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	486	723	766	0	0	1096
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	723	766	0	0	1096
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0	3		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane	1.5		1.0			1.0
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	1.00	14	24	1.00
Number of Detectors	1	1	2	1-7	LT	2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	ı ciiil	1 51111	2			6
Permitted Phases	8	8				U
Detector Phase	8	8	2			6
Cuitah Dhaca	0	0	2			0
Switch Phase	5 0	.	40.0			40.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	61.0	61.0	59.0			59.0
Total Split (%)	50.8%	50.8%	49.2%			49.2%
Maximum Green (s)	56.0	56.0	52.9			52.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
LOST TITLE AUJUST (2)						
Total Lost Time (s)	5.0	5.0	6.1			6.1

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	54.6	54.6	54.3			54.3	
Actuated g/C Ratio	0.46	0.46	0.45			0.45	
v/c Ratio	0.63	0.97	0.97			0.72	
Control Delay	29.1	52.8	58.1			24.1	
Queue Delay	0.0	0.4	42.1			0.0	
Total Delay	29.1	53.2	100.2			24.1	
LOS	С	D	F			С	
Approach Delay	43.5		100.2			24.1	
Approach LOS	D		F			С	
Queue Length 50th (m)	83.5	141.0	175.9			72.3	
Queue Length 95th (m)	118.9	#224.3	#258.9			m105.9	
Internal Link Dist (m)	308.8		102.6			90.0	
Turn Bay Length (m)							
Base Capacity (vph)	791	766	792			1519	
Starvation Cap Reductn	0	0	201			0	
Spillback Cap Reductn	0	3	61			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.61	0.95	1.30			0.72	
Intersection Summary							
	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to phase	2:NBT and	6:SBT, Star	t of Green				
Natural Cycle: 90							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.97							
Intersection Signal Delay: 50.7					ersection L		
Intersection Capacity Utilization 128	.3%			ICL	Level of S	Service H	
Analysis Period (min) 15							
# 95th percentile volume exceeds	capacity, qu	eue may be	longer.				
Queue shown is maximum after t	two cycles.						
m Volume for 95th percentile queu	ue is metered	l by upstrea	m signal.				
0.19 1.00	0.10407	447.14/0.00					
Splits and Phases: 4: Kanata Ave	nue & HVVY	417 WB OT	<u> </u>		1		
T ø2 (R)					l		
50 c					•		
J7 S							
L GC (D)					1 2 2		
▼ Ø6 (R)					∜ Ø	5	

	•	•	†	/	/	ļ		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Lane Configurations	ች	77	44			44		
Traffic Volume (vph)	252	247	376	0	0	992		
Future Volume (vph)	252	247	376	0	0	992		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95		
Frt		0.850						
Flt Protected	0.950							
Satd. Flow (prot)	1695	2347	3262	0	0	3325		
Flt Permitted	0.950							
Satd. Flow (perm)	1695	2347	3262	0	0	3325		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)		247						
Link Speed (k/h)	50		50			50		
Link Distance (m)	332.8		126.6			114.0		
Travel Time (s)	24.0	4.00	9.1	4.00	4.00	8.2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%		
Adj. Flow (vph)	252	247	376	0	0	992		
Shared Lane Traffic (%)	050	0.47	070	^	^	000		
Lane Group Flow (vph)	252 No.	247	376	0	0	992 No		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	3.7		0.0			0.0		
Link Offset(m) Crosswalk Width(m)	0.0 4.9		0.0 4.9			0.0 4.9		
Two way Left Turn Lane	4.9		4.9			4.9		
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	1.00	1.00	1.00	24	1.00		
Number of Detectors	1	1	2	17	27	2		
Detector Template	Left	Right	Thru			Thru		
Leading Detector (m)	6.1	6.1	30.5			30.5		
Trailing Detector (m)	0.0	0.0	0.0			0.0		
Detector 1 Position(m)	0.0	0.0	0.0			0.0		
Detector 1 Size(m)	6.1	6.1	1.8			1.8		
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		
Detector 2 Position(m)			28.7			28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			CI+Ex		
Detector 2 Channel								
Detector 2 Extend (s)			0.0			0.0		
Turn Type	Prot	Prot	NA			NA		
Protected Phases	7	4	2			6	3	
Permitted Phases	7		0					
Detector Phase	7	4	2			6		
Switch Phase Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0	
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0	
Total Split (s)	36.0	18.0	54.0			54.0	18.0	
Total Split (%)	40.0%	20.0%	60.0%			60.0%	20%	
Maximum Green (s)	31.0	13.0	47.9			47.9	16.0	
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0	
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	V.V	
Total Lost Time (s)	5.0	5.0	6.1			6.1		
Lead/Lag		Lag				<u> </u>	Lead	
Lead-Lag Optimize?		Yes					Yes	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Recall Mode	None	None	C-Max			C-Max	None	
Walk Time (s)			7.0				7.0	
Flash Dont Walk (s)			15.0				9.0	
Pedestrian Calls (#/hr)			10				10	
Act Effct Green (s)	19.4	15.8	59.5			59.5		
Actuated g/C Ratio	0.22	0.18	0.66			0.66		
v/c Ratio	0.69	0.40	0.17			0.45		
Control Delay	41.7	6.9	12.0			11.4		
Queue Delay	0.0	0.0	0.0			0.0		
Total Delay	41.7	6.9	12.0			11.4		
LOS	D	Α	В			В		
Approach Delay	24.5		12.0			11.4		
Approach LOS	С		В			В		
Queue Length 50th (m)	40.8	0.0	9.7			62.1		
Queue Length 95th (m)	56.3	11.4	50.2			m82.6		
Internal Link Dist (m)	308.8		102.6			90.0		
Turn Bay Length (m)								
Base Capacity (vph)	583	631	2157			2198		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	0	0	0			138		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.43	0.39	0.17			0.48		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 0 (0%), Referenced to pl	hase 2:NBT and 6	:SBT, Star	t of Green					
Natural Cycle: 60								
Control Type: Actuated-Coordin	nated							
Maximum v/c Ratio: 0.69								
Intersection Signal Delay: 15.0					ersection Lo			
Intersection Capacity Utilization	56.7%			ICL	J Level of S	Service B		
Analysis Period (min) 15								
m Volume for 95th percentile	queue is metered	by upstrea	m signal.					

Splits and Phases: 4: Kanata Avenue & HWY 417 WB Off



	•	4	†	/	/	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	*	77	44			44	
Traffic Volume (vph)	486	723	766	0	0	1096	
Future Volume (vph)	486	723	766	0	0	1096	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Ped Bike Factor	1.00	0.00	0.55	1.00	1.00	0.55	
-rt		0.850					
Flt Protected	0.950	0.000					
Satd. Flow (prot)	1695	2669	3325	0	0	3357	
Flt Permitted	0.950	2009	3323	U	U	333 <i>1</i>	
	1695	2669	3325	0	0	3357	
Satd. Flow (perm)	1095		3323		U	333 <i>1</i>	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	50	723					
ink Speed (k/h)	50		50			50	
ink Distance (m)	332.8		126.6			114.0	
Travel Time (s)	24.0		9.1			8.2	
Confl. Bikes (#/hr)				3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%	
Adj. Flow (vph)	486	723	766	0	0	1096	
Shared Lane Traffic (%)							
ane Group Flow (vph)	486	723	766	0	0	1096	
Enter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
ink Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors	1	1	2			2	
Detector Template	Left	Right	Thru			Thru	
eading Detector (m)	6.1	6.1	30.5			30.5	
Frailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel	OI · EX	OITEX	OI · LX			OI LX	
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)	0.0	0.0	28.7			28.7	
			4.0			4.0	
Detector 2 Size(m) Detector 2 Type			1.8 Cl+Ex			1.8 CI+Ex	
Detector 2 Channel			OI+EX			OITEX	
			0.0			0.0	
Detector 2 Extend (s)	Deat	Deat					
Furn Type	Prot 7	Prot 4	NA			NA 6	3
Protected Phases		4	2			р	ა
Permitted Phases	7	4	0			^	
Detector Phase	7	4	2			6	
Switch Phase	- •		40.0			10.0	4.0
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0
Total Split (s)	61.9	43.9	28.1			28.1	18.0
Fotal Split (%)	68.8%	48.8%	31.2%			31.2%	20%
Maximum Green (s)	56.9	38.9	22.0			22.0	16.0
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
	5.0	5.0	6.1			6.1	
Total Lost Time (s)	5.0	0.0	0.1			0.1	

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Lead-Lag Optimize?		Yes					Yes	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	C-Max			C-Max	None	
Walk Time (s)			7.0				7.0	
Flash Dont Walk (s)			15.0				9.0	
Pedestrian Calls (#/hr)			10				10	
Act Effct Green (s)	34.4	30.8	44.5			44.5		
Actuated g/C Ratio	0.38	0.34	0.49			0.49		
v/c Ratio	0.75	0.52	0.47			0.66		
Control Delay	30.8	3.3	26.9			18.2		
Queue Delay	0.0	0.2	0.0			0.2		
Total Delay	30.8	3.4	26.9			18.4		
LOS	С	Α	С			В		
Approach Delay	14.4		26.9			18.4		
Approach LOS	В		С			В		
Queue Length 50th (m)	71.0	0.0	72.0			81.3		
Queue Length 95th (m)	85.5	13.1	92.2			#127.8		
Internal Link Dist (m)	308.8		102.6			90.0		
Turn Bay Length (m)								
Base Capacity (vph)	1071	1567	1643			1659		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	9	205	0			93		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.46	0.53	0.47			0.70		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 0 (0%), Referenced to p	hase 2:NBT and 6	S:SBT, Star	t of Green					
Natural Cycle: 60								
Control Type: Actuated-Coordin	nated							
Maximum v/c Ratio: 0.75								

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 19.0 Intersection Capacity Utilization 109.5%

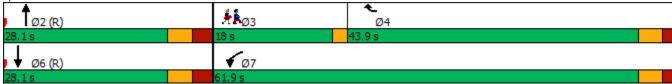
Intersection LOS: B ICU Level of Service H

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.





	→	*	•	—	1	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u> </u>	EDK	WDL	<u>₩</u>	NBL	NBR 7
Traffic Volume (vph)	ተተ 762	37	57	395	10	35
Future Volume (vph)	762 762	37	57 57	395	10	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	40.0	110.0	1000	30.0	0.0
Storage Lanes		1	0		1	1
Taper Length (m)		•	100.0		45.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.00		0.00	1.00		
Frt		0.850		7.00		0.850
Flt Protected				0.994	0.950	2.000
Satd. Flow (prot)	3357	1394	0	3179	1441	1459
Flt Permitted	5001	1001		0.808	0.950	1,00
Satd. Flow (perm)	3357	1394	0	2584	1441	1459
Right Turn on Red	3331	Yes	0	2004	1771	Yes
Satd. Flow (RTOR)		37				35
Link Speed (k/h)	50	31		50	50	33
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	207.1			33.9	9.2	
	20.7		1	33.9	9.2	
Confl. Peds. (#/hr) Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
	3%					
Heavy Vehicles (%)		11%	2%	9%	20%	6%
Adj. Flow (vph)	762	37	57	395	10	35
Shared Lane Traffic (%)	700	07	^	450	40	25
Lane Group Flow (vph)	762	37	0	452	10	35 No.
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7	0.0	3.0	28.7	3.0	3.0
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel	OI LX			OI'LX		
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2	i Gilli	Cilli	6	i Gilli	I CIIII
Permitted Phases	2	2	6	U	8	8
Detector Phase	2	2	6	6	8	8
Switch Phase	2	۷	U	U	0	0
	10.0	10.0	10.0	10.0	ΕΛ	E 0
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	30.0 30.0	30.0	29.4	29.4	24.9	24.9
,	30.0	30.0	30.0	30.0	25.0	25.0 45.5%
Total Split (s)			E 4 E 0 /			//h h //-
Total Split (s) Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	
Total Split (s) Total Split (%) Maximum Green (s)	54.5% 23.6	54.5% 23.6	23.6	23.6	19.1	19.1
Total Split (s) Total Split (%)	54.5%	54.5%				

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag	J. 1	0.1		V. 1	0.0	0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10.0	10.0	10.0	10.0	10	10
Act Effct Green (s)	41.4	41.4	10	41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75		0.75	0.15	0.15
v/c Ratio	0.73	0.73		0.73	0.15	0.13
Control Delay	5.6	3.2		5.5	16.8	7.6
•	0.0	0.0		0.0	0.0	0.0
Queue Delay	5.6	3.2		5.5	16.8	7.6
Total Delay						
LOS	A	A		A	В	Α
Approach Delay	5.5			5.5	9.6	
Approach LOS	A 42.2	0.0		A 7.4	A	0.0
Queue Length 50th (m)	13.3	0.0		7.4	0.9	0.0
Queue Length 95th (m)	40.9	3.9		25.0	3.1	4.5
Internal Link Dist (m)	263.1	40.0		447.4	104.3	
Turn Bay Length (m)	0505	40.0		4044	30.0	F00
Base Capacity (vph)	2525	1058		1944	500	529
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.30	0.03		0.23	0.02	0.07
Intersection Summary						
Area Type:	Other					
Cycle Length: 55						
Actuated Cycle Length: 55						
Offset: 0 (0%), Referenced to ph	nase 2:EBT and	6:WBTL, St	art of Greer	1		
Natural Cycle: 55						
Control Type: Actuated-Coordinate	ated					
Maximum v/c Ratio: 0.30						
Intersection Signal Delay: 5.7				Int	ersection LO	DS: A
Intersection Capacity Utilization	55.3%			ICI	J Level of S	ervice B
Analysis Period (min) 15						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
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Ø2 (R)						
30 s						
4_						4
▼ Ø6 (R)					l	Ø8
20 -						25 -

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	•	7	16.54	1 ,		7	44	7		4Tb	
Traffic Volume (vph)	19	6	36	226	2	75	85	346	176	31	653	16
Future Volume (vph)	19	6	36	226	2	75	85	346	176	31	653	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	1.00		0.87	0.80	0.99		1.00		0.98		1.00	
Frt			0.850		0.854				0.850		0.997	
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1262	1784	992	3135	1504	0	1417	3325	1473	0	3319	0
Flt Permitted	0.950			0.950			0.239				0.922	
Satd. Flow (perm)	1261	1784	860	2499	1504	0	356	3325	1441	0	3066	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193		75				176		3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	1		100	100		1	3		1	1	-0.0	3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	17%	2%	44%
Adj. Flow (vph)	19	6	36	226	2	75	85	346	176	31	653	16
Shared Lane Traffic (%)	.0				_	10		0.10	170	0.	000	10
Lane Group Flow (vph)	19	6	36	226	77	0	85	346	176	0	700	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	7.4	ragnt	Leit	7.4	rtigrit	Leit	3.7	ragnt	Leit	3.7	rtigitt
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		4.3			4.3			4.3			4.3	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00	24	1.00	1.00
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Leading Detector (m)	0.1	0.0	0.1	0.0	0.0		0.0	0.0	0.0	0.1	0.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Size(m)	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Type	CI+EX	CI+EX	CI+EX	CI+EX	CI+EX		CI+EX	CI+EX	CI+EX	CI+EX	CI+EX	
Detector 1 Channel	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			Cl+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	_	0.0	_	_	0.0			0.0	_	_	0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	3	8		7	4		1	6			2	
Permitted Phases			8				6		6	2		
Detector Phase	3	8	8	7	4		1	6	6	2	2	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	13.2	30.2		12.0	48.5	48.5	36.5	36.5	
Total Split (%)	12.6%	31.4%	31.4%	14.7%	33.6%		13.3%	53.9%	53.9%	40.6%	40.6%	
	5.0	22.0	22.0	6.9	23.9		5.7	42.2	42.2	30.2	30.2	
Maximum Green (s)												
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		100	100		100			10	10	10	10	
Act Effct Green (s)	5.0	19.6	19.6	7.5	25.6		47.2	47.2	47.2		37.6	
Actuated g/C Ratio	0.06	0.22	0.22	0.08	0.28		0.52	0.52	0.52		0.42	
v/c Ratio	0.27	0.02	0.11	0.86	0.16		0.33	0.20	0.21		0.55	
Control Delay	50.7	26.0	0.6	72.7	7.6		17.2	14.4	5.3		24.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	50.7	26.0	0.6	72.7	7.6		17.2	14.4	5.3		24.9	
LOS	D	С	Α	Е	Α		В	В	Α		С	
Approach Delay		18.7			56.2			12.2			24.9	
Approach LOS		В			Е			В			С	
Queue Length 50th (m)	3.2	0.8	0.0	20.4	0.2		11.3	25.1	8.2		54.0	
Queue Length 95th (m)	10.1	3.7	0.0	#41.9	10.2		12.3	21.1	5.9		73.3	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	356	262	526		254	1745	840		1283	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.27	0.01	0.10	0.86	0.15		0.33	0.20	0.21		0.55	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 25.7

Intersection LOS: C

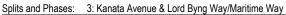
Intersection Capacity Utilization 78.7%

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.





Synchro 10 Report Brad Byvelds, Novatech

2000 Fotal Frame	•	•	†	~	\	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	VVDL			NDIN	ODL	<u> </u>
Traffic Volume (vph)	273	266	↑ 404	0	0	ተተ 1058
Future Volume (vph)	273	266	404	0	0	1058
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
	1.00	1.00	1.00	1.00	1.00	0.90
Ped Bike Factor		0.050				
Frt	0.050	0.850				
Flt Protected	0.950	4004	4717	_	^	0005
Satd. Flow (prot)	1695	1334	1717	0	0	3325
Flt Permitted	0.950	1001	4-1-			000-
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		266				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Peds. (#/hr)					1006	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	273	266	404	0	0	1058
Shared Lane Traffic (%)	210	200	10 1	-		1000
Lane Group Flow (vph)	273	266	404	0	0	1058
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	Nigrit	0.0	ragnt	Leit	0.0
Link Offset(m)	0.0		0.0			0.0
	4.9		4.9			4.9
Crosswalk Width(m) Two way Left Turn Lane	4.9		4.9			4.9
	1.00	1.00	1.00	4.00	1.00	1.00
Headway Factor	1.06 24	1.06	1.06	1.06 14	1.06 24	1.06
Turning Speed (k/h)		14	0	14	24	^
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	Cl+Ex	CI+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	3.3	0.0	28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			Cl+Ex
Detector 2 Channel			OITLX			OITLX
			0.0			0.0
Detector 2 Extend (s)	D	D	0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	37.0	37.0	53.0			53.0
	41.1%	41.1%	58.9%			58.9%
lotal Split (%)		32.0	46.9			46.9
Total Split (%) Maximum Green (s)	32.0					3.3
Maximum Green (s)	32.0 3.3		3.3			
Maximum Green (s) Yellow Time (s)	3.3	3.3	3.3 2.8			
Maximum Green (s) Yellow Time (s) All-Red Time (s)	3.3 1.7	3.3 1.7	2.8			2.8
Maximum Green (s) Yellow Time (s)	3.3	3.3				

	•	4	†	<i>></i>	\	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			Jillux
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	20.0	20.0	58.9			58.9
Actuated g/C Ratio	0.22	0.22	0.65			0.65
v/c Ratio	0.73	0.53	0.36			0.49
Control Delay	43.1	7.5	3.2			7.6
Queue Delay	0.0	0.0	0.1			0.0
	43.1	7.5	3.3			7.6
Total Delay LOS	43.1 D	7.5 A	3.3 A			7.0 A
		А				
Approach LOS	25.5		3.3			7.6
Approach LOS	C	0.0	A 7.2			A
Queue Length 50th (m)	44.1	0.0	7.3			65.2
Queue Length 95th (m)	62.6	16.6	9.3			m90.6
Internal Link Dist (m)	308.8		102.6			90.0
Turn Bay Length (m)						
Base Capacity (vph)	602	645	1123			2175
Starvation Cap Reductn	0	0	166			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.45	0.41	0.42			0.49
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 35 (39%), Referenced to	o phase 2:NBT and	d 6:SBT, S	tart of Green	l		
Natural Cycle: 55						
Control Type: Actuated-Coording	nated					
Maximum v/c Ratio: 0.73						
Intersection Signal Delay: 11.6					ersection L	
Intersection Capacity Utilization	า 60.0%			ICl	J Level of S	Service B
Analysis Period (min) 15						
m Volume for 95th percentile	queue is metered	by upstrea	m signal.			
·		, ,	ŭ			
Splits and Phases: 4: Kanata	a Avenue & HWY 4	117 WB Of	f			
†						
Ø2 (R)						
53 s						
I						
▼ Ø6 (R)						1.4
. 20 (1)						27

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
ane Configurations			•	#	*	•	
raffic Volume (vph)	0	0	374	247	509	657	
uture Volume (vph)	0	0	374	247	509	657	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
torage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
aper Length (m)	7.6				7.6		
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
ed Bike Factor				0.98	1.00		
rt				0.850			
It Protected					0.950		
atd. Flow (prot)	0	0	1685	1502	1679	1750	
It Permitted					0.462		
atd. Flow (perm)	0	0	1685	1468	816	1750	
ight Turn on Red	-	Yes		Yes			
atd. Flow (RTOR)				247			
nk Speed (k/h)	48		50			50	
nk Distance (m)	278.4		119.2			126.6	
ravel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.0		3.0	1	1	V. 1	
eak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
leavy Vehicles (%)	0%	0%	8%	3%	3%	4%	
dj. Flow (vph)	0	0	374	247	509	657	
Shared Lane Traffic (%)	0	U	517	271	303	001	
ane Group Flow (vph)	0	0	374	247	509	657	
Inter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0	Nigrit	3.7	Nigrit	Leit	3.7	
ink Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
wo way Left Turn Lane	4.3		4.3			4.3	
leadway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
furning Speed (k/h)	24	1.00	1.00	1.00	24	1.00	
lumber of Detectors	24	17	2	1	1	2	
etector Template			Thru	Right	Left	Thru	
eading Detector (m)			30.5	6.1	6.1	30.5	
railing Detector (m)			0.0	0.1	0.1	0.0	
Detector 1 Position(m)			0.0	0.0	0.0	0.0	
			1.8	6.1	6.1	1.8	
letector 1 Size(m) letector 1 Type			CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel			CI+EX	CI+EX	CI+EX	CI+EX	
Detector 1 Extend (s)			0.0	0.0	0.0	0.0	
Petector 1 Queue (s)			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)			28.7	0.0	0.0	28.7	
Detector 2 Position(m)							
Detector 2 Size(m)			1.8			1.8	
etector 2 Type			CI+Ex			Cl+Ex	
etector 2 Channel			2.2			2.2	
Detector 2 Extend (s)			0.0	_		0.0	
urn Type			NA	Perm	pm+pt	NA	
rotected Phases			2		1	6	4
ermitted Phases				2	6		
etector Phase			2	2	1	6	
witch Phase							
linimum Initial (s)			10.0	10.0	5.0	10.0	5.0
linimum Split (s)			23.7	23.7	10.7	23.7	27.0
otal Split (s)			50.0	50.0	12.0	62.0	28.0
otal Split (%)			55.6%	55.6%	13.3%	68.9%	31%
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0
'ellow Time (s)			3.3	3.3	3.3	3.3	3.0
II-Red Time (s)			2.4	2.4	2.4	2.4	2.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4		
Lost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			5.7	5.7	5.7	5.7			
Lead/Lag			Lag	Lag	Lead				
Lead-Lag Optimize?			Yes	Yes	Yes				
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Walk Time (s)			7.0	7.0			7.0		
Flash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10		
Act Effct Green (s)			60.1	60.1	78.9	83.5			
Actuated g/C Ratio			0.67	0.67	0.88	0.93			
//c Ratio			0.33	0.23	0.61	0.40			
Control Delay			7.5	1.9	11.0	1.6			
Queue Delay			0.4	0.0	0.1	0.0			
Total Delay			7.9	1.9	11.0	1.6			
-OS			7.5 A	Α	В	Α			
Approach Delay			5.5	,,		5.7			
Approach LOS			Α			Α			
Queue Length 50th (m)			25.2	3.5	18.0	0.0			
Queue Length 95th (m)			65.4	14.5	#50.8	32.5			
nternal Link Dist (m)	254.4		95.2	11.0	1100.0	102.6			
Furn Bay Length (m)	204.4		JU.2	50.0		102.0			
Base Capacity (vph)			1125	1063	840	1623			
Starvation Cap Reductn			345	0	12	2			
Spillback Cap Reductn			0	0	0	0			
Storage Cap Reductn			0	0	0	0			
Reduced v/c Ratio			0.48	0.23	0.61	0.41			
ntersection Summary			0.10	0.20	0.01	0.11			
)ther								
Cycle Length: 90	All I C I								
Actuated Cycle Length: 90									
Offset: 42 (47%), Referenced to pha	se 2-NPT on	4 6-CDTI	Start of Gro	an					
Natural Cycle: 80	oc∠.INDI dil	u U.JDIL,	olail UI GIE	CII					
valural Cycle. 60 Control Type: Actuated-Coordinated									
Johnor Type. Actuated-Coordinated Maximum v/c Ratio: 0.61									
ntersection Signal Delay: 5.6				Int	ersection L	ΩS· Δ			
ntersection Signal Delay, 5.6 ntersection Capacity Utilization 60.0	10/_				U Level of S				
Analysis Period (min) 15	J /0			10	o Level of 3	SELVICE D			
# 95th percentile volume exceeds	canacity au	ue may ha	longer						
Queue shown is maximum after t		ue may be	ionger.						
Queue shown is maximum after t	.wo cycles.								
Splits and Phases: 5: Kanata Ave	nue & HWY 4	117 EB On							
V _{Ø1} ↑ ↑ Ø2 (B)							# k ø4	
12 s 50 s	· V							28 s	
1 25 (0)									
♥ Ø6 (R) •								I	

	•	→	•	•	+	4	1	†	<i>></i>	/	+	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		414			43		*	î,		75	Î.	
Traffic Volume (vph)	45	4 6	18	19	6	61	41	614	36	52	590	41
Future Volume (vph)	45	6	18	19	6	61	41	614	36	52	590	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.97			0.96		0.99	1.00		1.00	1.00	
Frt		0.965			0.904			0.992			0.990	
Flt Protected		0.968			0.989		0.950			0.950		
Satd. Flow (prot)	0	1218	0	0	1464	0	1145	1734	0	1662	1715	0
Flt Permitted		0.809			0.909		0.383			0.373		
Satd. Flow (perm)	0	1001	0	0	1336	0	459	1734	0	650	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			61			6			7	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14		18	18		14	9		6	6		9
Confl. Bikes (#/hr)			1						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 (%)	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Adj. Flow (vph)	45	6	18	19	6	61	41	614	36	52	590	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	86	0	41	650	0	52	631	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8		_	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

	•	→	•	•	+	•	•	†	/	*	1	√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	• NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.0			13.0		69.5	69.5		69.5	69.5	
Actuated g/C Ratio		0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio		0.43			0.35		0.12	0.49		0.10	0.48	
Control Delay		34.5			17.0		4.9	5.7		5.8	5.9	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.2	
Total Delay		34.5			17.0		4.9	5.7		5.8	6.0	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		34.5			17.0			5.7			6.0	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		8.4			4.0		1.7	37.4		1.7	21.1	
Queue Length 95th (m)		18.3			14.6		m4.5	53.5		6.0	42.7	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		277			398		354	1340		502	1326	
Starvation Cap Reductn		0			0		0	62		0	158	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.22		0.12	0.51		0.10	0.54	

Intersection Summary

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

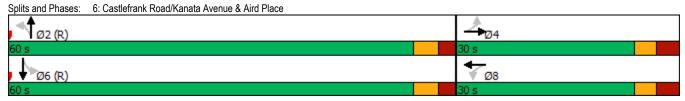
Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.49 Intersection Signal Delay: 7.8

Intersection Capacity Utilization 69.6%

Analysis Period (min) 15

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



Intersection LOS: A

ICU Level of Service C

	۶	→	•	•	—	4	•	†	<i>></i>	\	↓	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	î,		*	Î.		*	ĵ.		*	•	7
Traffic Volume (vph)	161	130	72	34	114	37	123	423	51	89	333	110
Future Volume (vph)	161	130	72	34	114	37	123	423	51	89	333	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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		0.98	0.98		0.98	0.99		0.98		0.94
Frt		0.947			0.963			0.984				0.850
Flt Protected	0.950	1010	•	0.950	1010		0.950	4000	•	0.950	4055	4000
Satd. Flow (prot)	1586	1649	0	1695	1619	0	1695	1632	0	1503	1655	1322
Flt Permitted	0.441	4040	^	0.631	1010	^	0.530	4000	^	0.417	4055	4045
Satd. Flow (perm)	701	1649	0	1099	1619	0	926	1632	0	645	1655	1245
Right Turn on Red		40	Yes		20	Yes		0	Yes			Yes
Satd. Flow (RTOR)		43 50			20 50			8 50			Ε0	126
Link Speed (k/h)		313.1			295.7			254.6			50 192.1	
Link Distance (m)		22.5			295.7			18.3			13.8	
Travel Time (s)	35	22.5	16	16	21.3	35	20	10.3	33	33	13.8	20
Confl. Peds. (#/hr) 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	20 1.00
Heavy Vehicles (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	1.00	1.00	17%
, ,	161	130	2% 72	34	3% 114	37	123	423	51	89	333	117%
Adj. Flow (vph) Shared Lane Traffic (%)	101	130	12	34	114	31	123	423	31	09	333	110
Lane Group Flow (vph)	161	202	0	34	151	0	123	474	0	89	333	110
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Leit	3.7	Night	Leit	3.7	Nigrit	LEIL	3.7	Right	Leit	3.7	Right
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		4.0			7.0			7.0			4.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24	1100	14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex		Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		_	0.0			0.0		_	0.0	_
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		^	8		•	2		^	6	•
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase	F 0	10.0		40.0	10.0		10.0	40.0		40.0	40.0	10.0
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
Maximum Green (s)	5.3 3.3	43.3 3.3		31.3	31.3 3.3		33.8 3.3	33.8 3.3		33.8	33.8 3.3	33.8
Yellow Time (s) All-Red Time (s)	3.3	3.3		3.3 3.4	3.4		2.9	2.9		3.3 2.9	2.9	3.3 2.9
All-Red Tillle (5)	3.4	3.4		3.4	3.4		2.9	2.9		2.9	2.9	2.9

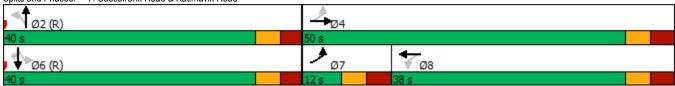
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	26.2	26.2		14.2	14.2		50.9	50.9		50.9	50.9	50.9
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.63	0.40		0.20	0.56		0.24	0.51		0.24	0.36	0.15
Control Delay	36.3	21.2		33.2	37.0		12.8	15.4		19.1	17.5	7.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.3	21.2		33.2	37.0		12.8	15.4		19.1	17.5	7.1
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		27.9			36.3			14.9			15.6	
Approach LOS		С			D			В			В	
Queue Length 50th (m)	22.5	22.1		5.3	21.5		9.5	43.8		8.4	31.3	2.8
Queue Length 95th (m)	32.8	34.2		12.0	34.9		24.6	89.9		18.3	51.2	11.6
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	256	815		382	576		523	925		364	935	758
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.63	0.25		0.09	0.26		0.24	0.51		0.24	0.36	0.15
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												

Actuated Cycle Length: 90

Actuated Cycle Length: 90
Offset: 25 (28%), 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: 20.3
Intersection Capacity Utilization 82.5%
Analysis Pagiod (min) 15 Intersection LOS: C ICU Level of Service E

Analysis Period (min) 15





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ĵ.		¥	ĵ.		¥	î,		¥	ĵ.	
Traffic Volume (vph)	52	685	14	73	469	81	18	18	173	171	11	57
Future Volume (vph)	52	685	14	73	469	81	18	18	173	171	11	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0	4.00	4.00	55.0	4.00	4.00	40.0	4.00	4.00	35.0	4.00	4.00
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	0.99	1.00		1.00	0.99		0.99	0.96		0.98	0.98	
Frt Flt Protected	0.950	0.997		0.950	0.978		0.950	0.864		0.950	0.874	
	1695	1718	0	1695	1592	0	1695	1475	0	1695	1493	0
Satd. Flow (prot) Flt Permitted	0.393	1718	U	0.297	1592	U	0.713	1475	U	0.587	1493	0
Satd. Flow (perm)	696	1718	0	528	1592	0	1261	1475	0	1025	1493	0
Right Turn on Red	090	17 10	Yes	320	1592	Yes	1201	1473	Yes	1023	1493	Yes
Satd. Flow (RTOR)		2	165		15	165		165	165		57	165
		50			50			50			40	
Link Speed (k/h) Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	12	17.3	11	11	14.7	12	4	10.1	12	12	13.0	4
Confl. Bikes (#/hr)	12		1	- 11		12	4		12	12		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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	14%	2%
Adj. Flow (vph)	52	685	14	73	469	81	18	18	173	171	11	57
Shared Lane Traffic (%)	32	000	17	10	703	01	10	10	170	17.1	- 11	51
Lane Group Flow (vph)	52	699	0	73	550	0	18	191	0	171	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	20.1	3.7		20.0	3.7		20.0	3.7		20.1	3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D	0.0		D	0.0		D	0.0		D	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases Permitted Phases		2		_	6		0	8		4	4	
	2	0		6	C		8	0		4	4	
Detector Phase Switch Phase	2	2		6	6		8	8		4	4	
	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Initial (s)		10.0		10.0	10.0		10.0				10.0	
Minimum Split (s)	27.7	27.7		27.7 45.0	27.7		24.0	24.0		24.0	24.0	
Total Split (%)	45.0 56.3%	45.0 56.3%		45.0 56.3%	45.0 56.3%		35.0	35.0		35.0 43.8%	35.0	
Total Split (%) Maximum Green (s)	56.3% 39.3	39.3		39.3			43.8% 29.0	43.8% 29.0		43.8%	43.8% 29.0	
Yellow Time (s)	39.3	39.3		39.3	39.3 3.7		3.0	3.0		3.0	3.0	
TEHOW THITE (5)	3.1	3.1		3.1	3.1		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	50.6	50.6		50.6	50.6		17.7	17.7		17.7	17.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.22	0.22		0.22	0.22	
v/c Ratio	0.12	0.64		0.22	0.54		0.06	0.42		0.75	0.18	
Control Delay	8.6	14.2		10.4	11.9		21.8	8.5		48.6	9.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.6	14.2		10.4	11.9		21.8	8.5		48.6	9.2	
LOS	Α	В		В	В		С	Α		D	Α	
Approach Delay		13.8			11.8			9.6			37.4	
Approach LOS		В			В			Α			D	
Queue Length 50th (m)	2.8	58.1		4.2	40.1		2.2	3.2		24.4	1.3	
Queue Length 95th (m)	9.5	122.0		13.8	86.2		6.4	16.5		40.2	9.4	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	440	1087		333	1012		457	639		371	577	
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	0.12	0.64		0.22	0.54		0.04	0.30		0.46	0.12	
Intersection Summary												

Area Type: Cycle Length: 80 Other

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

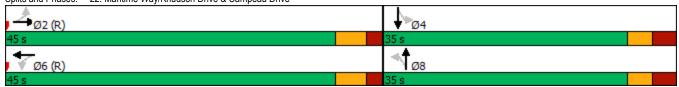
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.7 Intersection Capacity Utilization 90.5%

Analysis Period (min) 15

Intersection LOS: B ICU Level of Service E

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	î,			र्	W	
Traffic Volume (veh/h)	174	24	6	186	76	19
Future Volume (Veh/h)	174	24	6	186	76	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	174	24	6	186	76	19
Pedestrians					. •	
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	1,0110			110110		
Upstream signal (m)	217					
pX, platoon unblocked	217					
vC, conflicting volume			198		384	186
vC1, stage 1 conf vol			130		304	100
vC2, stage 2 conf vol						
vCu, unblocked vol			198		384	186
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			7.1		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			100		88	98
cM capacity (veh/h)			1375		616	856
					010	000
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	198	192	95			
Volume Left	0	6	76			
Volume Right	24	0	19			
cSH	1700	1375	653			
Volume to Capacity	0.12	0.00	0.15			
Queue Length 95th (m)	0.0	0.1	3.9			
Control Delay (s)	0.0	0.3	11.5			
Lane LOS		Α	В			
Approach Delay (s)	0.0	0.3	11.5			
Approach LOS			В			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			27.8%	IC	U Level of S	ervice
Analysis Period (min)			15		0 2010. 0. 0	0.1.00
range of onou (min)			10			

	→	•	•	•	4	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	*		TYDL	414	NDL 1	TION.
Traffic Volume (vph)	77 673	82	214	심 T 757	79	177
Future Volume (vph)	673	82	214	757	79	177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	40.0	110.0	1000	30.0	0.0
Storage Lanes		1	0		1	1
Taper Length (m)			100.0		45.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.00	0.98	3.00	1.00		0.99
Frt		0.850				0.850
Flt Protected				0.989	0.950	
Satd. Flow (prot)	3115	1517	0	3353	1695	1517
Flt Permitted				0.665	0.950	
Satd. Flow (perm)	3115	1483	0	2254	1695	1496
Right Turn on Red	3110	Yes			.000	Yes
Satd. Flow (RTOR)		82				177
Link Speed (k/h)	50			50	50	
Link Opeca (km)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)	20.1	1	1	55.5	J. <u>Z</u>	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	673	82	2%	757	2% 79	177
Shared Lane Traffic (%)	013	02	Z 14	131	13	177
Lane Group Flow (vph)	673	82	0	971	79	177
Enter Blocked Intersection	No	No	No	No	No	No
	Left		Left	Left	Left	Right
Lane Alignment Median Width(m)	Leπ 0.0	Right	Leit	Leπ 0.0	3.7	Right
	0.0			0.0	0.0	
Link Offset(m) Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane	4.9			4.9	4.9	
	1.00	1.00	1.00	1.06	1.06	1.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	^	14	24		24	14
Number of Detectors	2	1 Diaht	1	2 Than	1	1 Diaht
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	29.4	29.4	10.8	29.4	24.9	24.9
Total Split (s)	58.0	58.0	12.0	70.0	30.0	30.0
Total Split (%)	58.0%	58.0%	12.0%	70.0%	30.0%	30.0%
Maximum Green (s)	51.6	51.6	6.2	63.6	24.1	24.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
		3.3	2.5	3.1	2.6	2.6
All-Red Time (s)	3.1					

	-	•	•	•	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	76.7	76.7		76.7	11.0	11.0
Actuated g/C Ratio	0.77	0.77		0.77	0.11	0.11
v/c Ratio	0.28	0.07		0.56	0.42	0.55
Control Delay	4.3	1.2		7.0	46.9	12.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	4.3	1.2		7.0	46.9	12.6
LOS	Α	Α		Α	D	В
Approach Delay	3.9			7.0	23.2	
Approach LOS	Α			Α	С	
Queue Length 50th (m)	15.5	0.0		31.0	14.7	0.0
Queue Length 95th (m)	32.1	4.1		66.2	26.1	17.0
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		40.0			30.0	
Base Capacity (vph)	2388	1156		1728	408	494
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.28	0.07		0.56	0.19	0.36
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to ph	ase 2:EBT and	6:WBTL. Sta	rt of Greer	1		
Natural Cycle: 70		,,		<u> </u>		
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.56						
Intersection Signal Delay: 7.9				Inte	ersection L0	OS: A
Intersection Capacity Utilization	68.9%			ICI	J Level of S	ervice C
Analysis Period (min) 15	00.070				2010.0.0	0.1.00
randyold romou (many ro						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
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4						
▼ Ø6 (R) •						
♥ 20 (K) ♥						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	*	7	16.54	1		*	44	7		4Tb	
Traffic Volume (vph)	30	3	78	175	9	66	136	885	266	100	685	25
Future Volume (vph)	30	3	78	175	9	66	136	885	266	100	685	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	0.99		0.84	0.75	0.98		1.00		0.98		1.00	
Frt			0.850		0.868				0.850		0.995	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1262	1784	1268	3288	1514	0	1503	3390	1517	0	3332	0
Flt Permitted	0.950			0.950			0.194				0.698	
Satd. Flow (perm)	1247	1784	1062	2451	1514	0	307	3390	1479	0	2340	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193		66				160		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		119.6			99.0			110.4			471.4	
Travel Time (s)		8.6			7.1			7.9			33.9	
Confl. Peds. (#/hr)	11		125	125		11	3		3	3		3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	175	9	66	136	885	266	100	685	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	3	78	175	75	0	136	885	266	0	810	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	20.1	7.4			7.4			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel	OI · LX	OI · EX	OI · EX	OI · EX	OI · LX		OI · LA	OI · LX	OI · LX	OI- LX	OI LX	
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	0.0	28.7	0.0	0.0	28.7		0.0	28.7	0.0	0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		CITLX			CITEX			CITLX			CITEX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4	I CIIII	3	8		рш+рt 5	2	I CIIII	I GIIII	6	
Permitted Phases	, , , , , , , , , , , , , , , , , , ,	4	4	J	O O		2		2	6	U	
	7	4	4	3	8		5	2	2	6	6	
Detector Phase Switch Phase	- 1	4	4	J	0		υ	2	۷	U	Ü	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
									10.0	10.0		
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	12.0	29.0		11.9	49.7	49.7	37.8	37.8	
Total Split (%)	12.6%	31.4%	31.4%	13.3%	32.2%		13.2%	55.2%	55.2%	42.0%	42.0%	
Maximum Green (s)	5.0	22.0	22.0	5.7	22.7		5.6	43.4	43.4	31.5	31.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.0	3.0	3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		100	100		100			10	10	10	10	
Act Effct Green (s)	5.0	19.6	19.6	6.6	22.4		48.2	48.2	48.2		36.1	
Actuated g/C Ratio	0.06	0.22	0.22	0.07	0.25		0.54	0.54	0.54		0.40	
v/c Ratio	0.43	0.01	0.20	0.73	0.18		0.57	0.49	0.31		0.86	
Control Delay	60.3	26.0	1.2	68.3	9.4		15.3	14.8	5.9		38.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	60.3	26.0	1.2	68.3	9.4		15.3	14.8	5.9		38.3	
LOS	E	С	Α	Е	Α		В	В	Α		D	
Approach Delay		17.8			50.6			13.0			38.3	
Approach LOS		В			D			В			D	
Queue Length 50th (m)	5.1	0.4	0.0	16.4	0.6		13.6	59.7	11.1		71.8	
Queue Length 95th (m)	#15.6	2.5	0.0	#34.4	8.6		m12.5	m54.8	m9.1		#112.2	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	405	239	467		240	1815	866		941	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.43	0.01	0.19	0.73	0.16		0.57	0.49	0.31		0.86	

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86 Intersection Signal Delay: 25.4

Intersection Capacity Utilization 83.7%

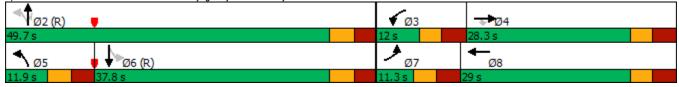
Analysis Period (min) 15

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: 3: Kanata Avenue & Lord Byng Way/Maritime Way



Intersection LOS: C

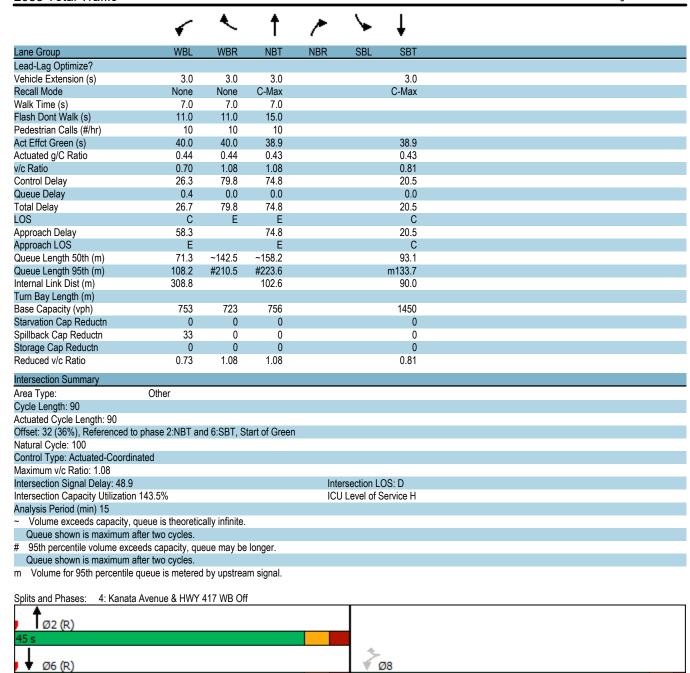
ICU Level of Service E

Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	YVDL			NUN	ODL	<u>₩</u>
Traffic Volume (vph)	528	778	↑ 820	0	0	ተተ 1177
Future Volume (vph)	528	778	820	0	0	1177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
	1.00	1.00	1.00	1.00	1.00	0.90
Ped Bike Factor		0.050				
Frt	0.050	0.850				
Flt Protected	0.950	4-1-	4	_		00
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950					
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		88				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	528	778	820	0 %	0 %	1177
	020	110	020	U	U	11//
Shared Lane Traffic (%)	F00	770	000	^	^	4477
Lane Group Flow (vph)	528	778 No.	820 No.	0	0	1177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.1	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel			OI / LX			OITEX
Detector 2 Extend (s)			0.0			0.0
	Dame	De				
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	40.0	40.0	38.9			38.9
			3.3			3.3
Yellow Time (s)	3.3	3.3				
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

Ø6 (R)

4: Kanata Avenue &	HWY 417 WB OII
	Timing Plan: PM Peak



	•	•	†	/	/	↓	
_ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8
ane Configurations			•	#	*	•	
Traffic Volume (vph)	0	0	645	674	454	1058	
uture Volume (vph)	0	0	645	674	454	1058	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0	0.0		50.0	0.0		
Storage Lanes	0	0		1	1		
Taper Length (m)	7.6				7.6		
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor				0.98			
Frt Frt				0.850			
It Protected					0.950		
Satd. Flow (prot)	0	0	1733	1517	1662	1784	
Flt Permitted	•	<u> </u>			0.214		
Satd. Flow (perm)	0	0	1733	1479	374	1784	
Right Turn on Red		Yes	.,,	Yes	0 , 1		
Satd. Flow (RTOR)		100		624			
ink Speed (k/h)	48		50	024		50	
ink Distance (m)	278.4		119.2			126.6	
ravel Time (s)	20.9		8.6			9.1	
Confl. Peds. (#/hr)	20.5		0.0	2	2	J. I	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
leavy Vehicles (%)	0%	0%	5%	2%	4%	2%	
	0%	0%	645	674	454	1058	
Adj. Flow (vph)	U	U	040	0/4	404	1000	
Shared Lane Traffic (%)	^	^	CAE	674	454	1058	
ane Group Flow (vph)	0	0	645				
Enter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	0.0		3.7			3.7	
ink Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
wo way Left Turn Lane							
leadway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
urning Speed (k/h)	24	14		14	24		
lumber of Detectors			2	1	1	2	
Detector Template			Thru	Right	Left	Thru	
eading Detector (m)			30.5	6.1	6.1	30.5	
railing Detector (m)			0.0	0.0	0.0	0.0	
Detector 1 Position(m)			0.0	0.0	0.0	0.0	
Detector 1 Size(m)			1.8	6.1	6.1	1.8	
Detector 1 Type			CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			Cl+Ex	
Detector 2 Channel			- /.				
Detector 2 Extend (s)			0.0			0.0	
urn Type			NA	Perm	pm+pt	NA	
Protected Phases			2	. 01111	1	6	8
ermitted Phases				2	6		
Petector Phase			2	2	1	6	
witch Phase					ı	U	
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0
			23.7				27.0
Minimum Split (s)				23.7	10.7	23.7	
Total Split (s)			50.0	50.0	12.0	62.0	28.0
OTOL S DUT / V/. 1			55.6%	55.6% 44.3	13.3%	68.9%	31%
Total Split (%)			44.0	44.3	6.3	56.3	23.0
Maximum Green (s) /ellow Time (s)			44.3 3.3	3.3	3.3	3.3	3.0

	•	•	†	<i>></i>	>	ļ		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
Lost Time Adjust (s)			0.0	0.0	0.0	0.0		
Total Lost Time (s)			5.7	5.7	5.7	5.7		
Lead/Lag			Lag	Lag	Lead			
Lead-Lag Optimize?			Yes	Yes	Yes			
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Walk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			49.3	49.3	78.9	83.5		
Actuated g/C Ratio			0.55	0.55	0.88	0.93		
v/c Ratio			0.68	0.62	0.68	0.64		
Control Delay			14.1	3.6	20.6	6.8		
Queue Delay			16.8	0.7	0.0	0.3		
Total Delay			30.9	4.3	20.6	7.2		
LOS			30.9 C	4.5 A	20.0 C	7.2 A		
Approach Delay			17.3	Α	U	11.2		
Approach LOS			17.3 B			11.2 B		
Queue Length 50th (m)			59.5	11.9	35.7	18.7		
Queue Length 95th (m)			105.1	7.5	m#94.2	#245.0		
	254.4		95.2	7.5	111#94.2	102.6		
Internal Link Dist (m)	204.4		95.2	F0.0		102.0		
Turn Bay Length (m)			040	50.0	C70	1051		
Base Capacity (vph)			949	1092	670	1654		
Starvation Cap Reductn			201	162	0	6		
Spillback Cap Reductn			300	0	0	174		
Storage Cap Reductn			0	0	0	0		
Reduced v/c Ratio			0.99	0.72	0.68	0.71		
Intersection Summary								
	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 27 (30%), Referenced to ph Natural Cycle: 90	nase 2:NBT and	d 6:SBTL,	Start of Gre	en				
Control Type: Actuated-Coordinate	ad							
Maximum v/c Ratio: 0.68	Ju							
Intersection Signal Delay: 14.0				In	tersection L	∩S· B		
Intersection Capacity Utilization 14	3 5%				CU Level of S			
Analysis Period (min) 15	13.370			IC	DO LEVELOI (Del vice i i		
# 95th percentile volume exceed	s capacity aug	uo may ha	longor					
Queue shown is maximum after		ue may be	ionger.					
m Volume for 95th percentile que		by upstrea	m signal.					
			o.g					
Splits and Phases: 5: Kanata Av	enue & HWY 4	117 EB On						1
>ø₁ 1 ø₂	(R)							
12 s 50 s								
₩ Ø6 (R)								#k ⊘8
₩ ₩6 (R)								71 E-100

	•	→	•	•	←	•	1	†	<i>></i>	-	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			43-		*	î,		*	ĵ.	
Traffic Volume (vph)	17	4 3	13	30	1	97	12	895	35	62	1053	24
Future Volume (vph)	17	3	13	30	1	97	12	895	35	62	1053	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.98			0.97			1.00			1.00	
Frt		0.947			0.898			0.994			0.997	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1542	0	1695	1755	0	1695	1777	0
Flt Permitted		0.735			0.909		0.169			0.237		
Satd. Flow (perm)	0	1219	0	0	1415	0	302	1755	0	423	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			97			4			2	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	7		6	6		7	9		5	5		9
Confl. Bikes (#/hr)									3			
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	17	3	13	30	1	97	12	895	35	62	1053	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	128	0	12	930	0	62	1077	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0	J		0.0	3 -		3.7	J .		3.7	J
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OI · LX			OI- EX			OI · EX			OI · LX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1 01111	4		1 01111	8		1 01111	2		1 01111	6	
Permitted Phases	4	7		8	0		2			6	0	
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase	4	4		0	U					U	U	
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
TOTAL ONLL (9)										66.7%		
	32 20/											
Total Split (%) Maximum Green (s)	33.3% 23.8	33.3% 23.8		33.3% 23.8	33.3% 23.8		66.7% 54.3	66.7% 54.3		54.3	66.7% 54.3	

	•	→	*	•	←	•	•	†	~	/	+	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.1			10.1		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.11			0.11		0.76	0.76		0.76	0.76	
v/c Ratio		0.22			0.52		0.05	0.70		0.19	0.80	
Control Delay		26.2			19.2		4.9	10.1		7.3	15.7	
Queue Delay		0.0			0.0		0.0	0.2		0.0	0.0	
Total Delay		26.2			19.2		4.9	10.3		7.3	15.7	
LOS		С			В		Α	В		Α	В	
Approach Delay		26.2			19.2			10.3			15.2	
Approach LOS		С			В			В			В	
Queue Length 50th (m)		3.3			5.1		0.4	47.2		3.8	115.0	
Queue Length 95th (m)		9.9			17.8		m1.1	m#111.3		m5.3	#258.3	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		331			445		228	1327		319	1343	
Starvation Cap Reductn		0			0		0	7		0	4	
Spillback Cap Reductn		0			3		0	62		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.29		0.05	0.74		0.19	0.80	

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.80

Intersection Signal Delay: 13.5 Intersection Capacity Utilization 81.0%

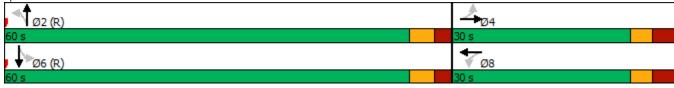
Intersection LOS: B ICU Level of Service D

Analysis Period (min) 15

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

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



Synchro 10 Report Brad Byvelds, Novatech

	•	→	*	•	—	1	1	†	~	\	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ĵ,		*	ĵ.		*	ĵ.		*	•	7
Traffic Volume (vph)	154	140	75	92	200	115	41	478	60	121	714	204
Future Volume (vph)	154	140	75	92	200	115	41	478	60	121	714	204
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0			55.0			55.0			30.0		
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	0.99	0.98		0.98	0.98		0.98	0.99				0.92
Frt	0.050	0.948		0.050	0.945		0.050	0.983		0.050		0.850
Fit Protected	0.950	1000	^	0.950 1558	1000	٥	0.950	1710	٥	0.950 1647	4704	4.470
Satd. Flow (prot) Flt Permitted	1662 0.241	1666	0	0.624	1626	0	1695 0.274	1740	0	0.160	1784	1473
Satd. Flow (perm)	416	1666	0	1005	1626	0	481	1740	0	277	1784	1356
Right Turn on Red	410	1000	Yes	1005	1020	Yes	401	1740	Yes	211	1704	Yes
Satd. Flow (RTOR)		36	163		32	163		7	163			184
Link Speed (k/h)		50			50			50			50	104
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	16	LL.0	12	12	21.0	16	31	10.0	27	27	10.0	31
Confl. Bikes (#/hr)			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%	2%	2%	11%	2%	7%	2%	2%	2%	5%	2%	5%
Adj. Flow (vph)	154	140	75	92	200	115	41	478	60	121	714	204
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	215	0	92	315	0	41	538	0	121	714	204
Enter Blocked Intersection	No	No	No									
Lane Alignment	Left	Left	Right									
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	2	14	24	2	14	24	2	14	24	2	14 1
Number of Detectors	1 Left	2 Thru		1 Left	2 Thru		1 Left	Thru		1 Left	2 Th:::	
Detector Template Leading Detector (m)	6.1	Thru 30.5		6.1	Thru 30.5		6.1	30.5		6.1	Thru 30.5	Right 6.1
Trailing Detector (m)	0.1	0.0		0.0	0.0		0.0	0.0		0.1	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex		Cl+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	<u> </u>	U		U. 2.	0. <u></u>		J/.	υ. <u>-</u> χ		O/.	J/.	J. 2
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase		40.0		40.0	40.0		40.0	40.0		5 ^	40.0	40.0
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.2	29.2		29.2	29.2		11.2	29.7	29.7
Total Split (s)	12.0	43.0		31.0	31.0		35.0	35.0		12.0	47.0	47.0
Total Split (%) Maximum Green (s)	13.3% 5.3	47.8% 36.3		34.4% 24.8	34.4% 24.8		38.9% 28.8	38.9% 28.8		13.3% 5.8	52.2% 40.3	52.2% 40.3
Yellow Time (s)	3.3	30.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
I GHOW THING (2)	ა.ა	ა.ა		3.3	ა.ა		ა.ა	ა.ა		ა.ა	ა.ა	ა.ა

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	31.8	31.8		20.3	20.3		31.9	31.9		45.3	44.8	44.8
Actuated g/C Ratio	0.35	0.35		0.23	0.23		0.35	0.35		0.50	0.50	0.50
v/c Ratio	0.70	0.35		0.41	0.80		0.24	0.87		0.49	0.80	0.27
Control Delay	38.6	18.4		33.9	44.9		27.3	44.7		18.2	22.8	4.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.6	18.4		33.9	44.9		27.3	44.7		18.2	22.8	4.2
LOS	D	В		С	D		С	D		В	С	Α
Approach Delay		26.9			42.4			43.4			18.6	
Approach LOS		С			D			D			В	
Queue Length 50th (m)	18.5	21.8		13.5	46.1		5.2	89.4		7.0	88.6	2.9
Queue Length 95th (m)	#33.1	36.5		26.1	71.6		14.2	#153.0		m13.0	m#175.6	m10.2
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	220	693		276	471		170	621		248	887	766
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.70	0.31		0.33	0.67		0.24	0.87		0.49	0.80	0.27

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.87

Intersection Signal Delay: 29.9

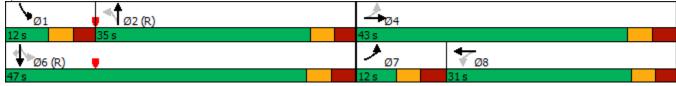
Intersection Capacity Utilization 97.6%

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.





Intersection LOS: C

ICU Level of Service F

Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ĵ.		*	Î.		*	î,		*	ĵ.	
Traffic Volume (vph)	71	476	33	145	657	112	13	15	103	42	11	77
Future Volume (vph)	71	476	33	145	657	112	13	15	103	42	11	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0	4.00	4.00	55.0	4.00	4.00	40.0	4.00	4.00	35.0	4.00	4.00
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		1.00		1.00	0.99		0.98	0.97		0.99	0.96	
Frt Flt Protected	0.950	0.990		0.950	0.978		0.950	0.869		0.950	0.869	
Satd. Flow (prot)	1695	1763	0	1695	1732	0	1695	1509	0	1679	1495	0
Flt Permitted	0.233	1703	U	0.476	1732	U	0.700	1509	U	0.681	1495	U
Satd. Flow (perm)	416	1763	0	846	1732	0	1226	1509	0	1193	1495	0
Right Turn on Red	710	1700	Yes	040	1702	Yes	1220	1000	Yes	1100	1433	Yes
Satd. Flow (RTOR)		8	100		14	100		103	100		77	100
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	15		4	4		15	8		4	4		8
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	71	476	33	145	657	112	13	15	103	42	11	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	509	0	145	769	0	13	118	0	42	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	1.06	1.06	1.00	1.06	1.00	1.06	1.00	1.06	1.06	1.06	1.00	1.00
Headway Factor Turning Speed (k/h)	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14	1.06 24	1.06	1.06 14
Number of Detectors	1	2	14	1	2	14	1	2	14	1	2	14
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0		-	0.0		_	0.0		5	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		^	6		0	8		4	4	
Permitted Phases Detector Phase	2	2		6	6		8	8		4	1	
Switch Phase	5	2		0	О		Ö	ŏ		4	4	
	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Initial (s) Minimum Split (s)	10.7	27.7		10.0 27.7	27.7		24.0	24.0		24.0	10.0 24.0	
Total Split (s)	15.0	66.0		51.0	51.0		24.0	24.0		24.0	24.0	
Total Split (%)	16.7%	73.3%		56.7%	56.7%		26.7%	24.0		26.7%	26.7%	
Maximum Green (s)	9.3	60.3		45.3	45.3		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
	2.0	2.0		0	2.0		0.0	0.0		5.0	0.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.1	71.2		61.2	61.2		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.17	0.36		0.25	0.65		0.08	0.42		0.28	0.34	
Control Delay	4.5	4.9		10.4	15.7		35.3	15.1		39.5	14.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.5	4.9		10.4	15.7		35.3	15.1		39.5	14.2	
LOS	Α	Α		В	В		D	В		D	В	
Approach Delay		4.9			14.9			17.1			22.4	
Approach LOS		Α			В			В			С	
Queue Length 50th (m)	2.5	23.2		10.3	79.5		1.8	3.7		6.8	1.7	
Queue Length 95th (m)	7.5	51.1		26.2	#177.3		m4.2	m9.4		15.1	13.6	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	455	1396		575	1182		245	384		238	360	
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	0.36		0.25	0.65		0.05	0.31		0.18	0.24	

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65 Intersection Signal Delay: 12.3

Intersection LOS: B ICU Level of Service C

Intersection Capacity Utilization 72.9%

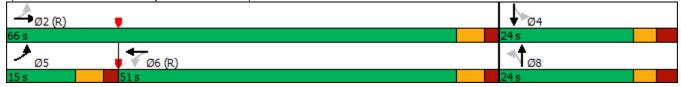
Analysis Period (min) 15

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: 22: Maritime Way/Knudson Drive & Campeau Drive



Synchro 10 Report Brad Byvelds, Novatech

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				र्	W	
Traffic Volume (veh/h)	1 243	77	19	171	47	12
Future Volume (Veh/h)	243	77	19	171	47	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	243	77	19	171	47	12
Pedestrians		• • •				· -
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	140110			110110		
Upstream signal (m)	217					
pX, platoon unblocked	<u> </u>					
vC, conflicting volume			320		490	282
vC1, stage 1 conf vol			520		700	202
vC2, stage 2 conf vol						
vCu, unblocked vol			320		490	282
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			7.1		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	98
cM capacity (veh/h)			1240		529	757
					323	101
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	320	190	59			
Volume Left	0	19	47			
Volume Right	77	0	12			
cSH	1700	1240	563			
Volume to Capacity	0.19	0.02	0.10			
Queue Length 95th (m)	0.0	0.4	2.7			
Control Delay (s)	0.0	0.9	12.1			
Lane LOS		Α	В			
Approach Delay (s)	0.0	0.9	12.1			
Approach LOS			В			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			36.4%	IC	U Level of S	ervice
Analysis Period (min)			15			
iaiyəiə Fellou (IIIIII)			10			

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u> </u>	.10/(UDL	*
Traffic Volume (vph)	528	778	820	0	0	TT
Future Volume (vph)	528	778	820	0	0	1177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.30
Frt		0.850				
Flt Protected	0.950	0.030				
	1695	1517	1750	0	0	3357
Satd. Flow (prot)		1017	1/50	U	U	335 <i>1</i>
Flt Permitted	0.950	4547	4750	^	^	2257
Satd. Flow (perm)	1695	1517	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		97				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	528	778	820	0	0	1177
Shared Lane Traffic (%)	020	110	020	0	0	1111
	528	778	820	0	0	1177
Lane Group Flow (vph)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	Cl+Ex	CI+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	0.0	0.0	28.7			28.7
			4.0			4.0
Detector 2 Size(m)			1.8 CL Ev			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase		•	_			0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	60.0	60.0	60.0			60.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	55.0	55.0	53.9			53.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Total Lost Time 137						

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ane Group	WBL	WBR	NBT	NBR	SBL	SBT	
_ead-Lag Optimize?							
/ehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	55.0	55.0	53.9			53.9	
Actuated g/C Ratio	0.46	0.46	0.45			0.45	
//c Ratio	0.68	1.04	1.04			0.78	
Control Delay	31.1	73.0	77.0			32.6	
Queue Delay	0.0	0.0	23.3			0.0	
Total Delay	31.1	73.0	100.3			32.6	
OS	C	E	F			C	
Approach Delay	56.1		100.3			32.6	
Approach LOS	E		F			C	
Queue Length 50th (m)	95.6	~184.9	~209.2			121.0	
Queue Length 95th (m)	135.4	#258.7	#282.7			148.4	
nternal Link Dist (m)	308.8	11200.1	102.6			90.0	
Furn Bay Length (m)	000.0		102.0			50.0	
Base Capacity (vph)	776	747	786			1507	
Starvation Cap Reductn	0	0	195			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.68	1.04	1.39			0.78	
ntersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to pha	ise 2:NBT and	6:SBT, Star	t of Green				
Natural Cycle: 100							
Control Type: Actuated-Coordinat	ted						
Maximum v/c Ratio: 1.04							
ntersection Signal Delay: 58.7					ersection L		
ntersection Capacity Utilization 13	36.6%			ICU	J Level of S	Service H	
Analysis Period (min) 15							
 Volume exceeds capacity, que 		cally infinite.					
Queue shown is maximum after							
# 95th percentile volume exceed	ds capacity, qu	eue may be	longer.				
Queue shown is maximum after	er two cycles.						
Solits and Phases: 4: Kanata A	venue & HWY	417 M/D 04	f.				
opiils and Priases. 4. Nanata A	venue & HVVY	41/ WB UI	I		1		
Tø2 (R)					┙		
60 s							
▼ Ø6 (R)					12	2 /8	
▼ ₩0 (K)					T .	00	

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	*	77	44			44	
Traffic Volume (vph)	273	266	404	0	0	1058	
Future Volume (vph)	273	266	404	0	0	1058	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Frt		0.850					
Flt Protected	0.950						
Satd. Flow (prot)	1695	2347	3262	0	0	3325	
Flt Permitted	0.950						
Satd. Flow (perm)	1695	2347	3262	0	0	3325	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		266					
Link Speed (k/h)	50		50			50	
Link Distance (m)	332.8		126.6			114.0	
Travel Time (s)	24.0		9.1			8.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%	
Adj. Flow (vph)	273	266	404	0	0	1058	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	273	266	404	0	0	1058	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors	1	1	2			2	
Detector Template	Left	Right	Thru			Thru	
Leading Detector (m)	6.1	6.1	30.5			30.5	
Trailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Prot	Prot	NA			NA	
Protected Phases	7	4	2			6	3
Permitted Phases							
Detector Phase	7	4	2			6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0
Total Split (s)	36.0	18.0	54.0			54.0	18.0
Total Split (%)	40.0%	20.0%	60.0%			60.0%	20%
Maximum Green (s)	31.0	13.0	47.9			47.9	16.0
Yellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0	6.1			6.1	
Lead/Lag		Lag					Lead
Lead-Lag Optimize?		Yes	0.0			2.2	Yes
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0

	•	•	†		-	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Recall Mode	None	None	C-Max			C-Max	None
Walk Time (s)			7.0				7.0
Flash Dont Walk (s)			15.0				9.0
Pedestrian Calls (#/hr)			10				10
Act Effct Green (s)	20.3	16.7	58.6			58.6	
Actuated g/C Ratio	0.23	0.19	0.65			0.65	
v/c Ratio	0.71	0.41	0.19			0.49	
Control Delay	42.1	6.6	12.5			8.5	
Queue Delay	0.0	0.0	0.0			0.0	
Total Delay	42.1	6.6	12.5			8.5	
LOS	D	Α	В			Α	
Approach Delay	24.6		12.5			8.5	
Approach LOS	С		В			Α	
Queue Length 50th (m)	44.1	0.0	11.8			29.2	
Queue Length 95th (m)	61.1	11.6	53.4			m37.3	
Internal Link Dist (m)	308.8		102.6			90.0	
Turn Bay Length (m)							
Base Capacity (vph)	583	662	2124			2165	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	0	0	0			84	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.47	0.40	0.19			0.51	
Intersection Summary							
Area Type:	Other						
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 0 (0%), Referenced to pha	ase 2:NBT and 6	S:SBT, Star	t of Green				
Natural Cycle: 60							
Control Type: Actuated-Coordina	ited						
Maximum v/c Ratio: 0.71							
Intersection Signal Delay: 13.6				Inte	ersection L	OS: B	
Intersection Capacity Utilization 6	60.0%			ICL	J Level of S	Service B	
Analysis Period (min) 15							
m Volume for 95th percentile q	ueue is metered	by upstrea	m signal.				

Splits and Phases: 4: Kanata Avenue & HWY 417 WB Off



	•	4	†	/	/	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	*	##	44			44	
Traffic Volume (vph)	528	778	820	0	0	1177	
Future Volume (vph)	528	778	820	0	0	1177	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
ane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Ped Bike Factor	1.00	0.00	0.00	1.00	1.00	0.00	
-rt		0.850					
Flt Protected	0.950	0.000					
Satd. Flow (prot)	1695	2669	3325	0	0	3357	
Flt Permitted	0.950	2003	3020	U	U	3331	
Satd. Flow (perm)	1695	2669	3325	0	0	3357	
	1033	Yes	3323	Yes	U	3331	
Right Turn on Red				res			
Satd. Flow (RTOR)		778	Ε0				
ink Speed (k/h)	50		50			50 114.0	
ink Distance (m)	332.8		126.6				
ravel Time (s)	24.0		9.1	_		8.2	
Confl. Bikes (#/hr)	4.00	4.00	4.00	3	4.00	4.00	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%	
Adj. Flow (vph)	528	778	820	0	0	1177	
Shared Lane Traffic (%)							
ane Group Flow (vph)	528	778	820	0	0	1177	
Enter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
.ink Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
wo way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
urning Speed (k/h)	24	14		14	24		
lumber of Detectors	1	1	2			2	
Detector Template	Left	Right	Thru			Thru	
eading Detector (m)	6.1	6.1	30.5			30.5	
railing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)	0.0		28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			Cl+Ex	
Detector 2 Channel			OI LX			OITEX	
Detector 2 Extend (s)			0.0			0.0	
Furn Type	Prot	Prot	NA			NA	
Protected Phases	7	4	2			6	3
Permitted Phases	ı	4				U	J
Detector Phase	7	4	2			6	
	I	4	2			U	
Switch Phase	Γ.0		10.0			10.0	1.0
Ainimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0
Total Split (s)	61.9	43.9	28.1			28.1	18.0
otal Split (%)	68.8%	48.8%	31.2%			31.2%	20%
Maximum Green (s)	56.9	38.9	22.0			22.0	16.0
(ellow Time (s)	3.3	3.3	3.3			3.3	2.0
All-Red Time (s)	1.7	1.7	2.8			2.8	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	5.0	5.0	6.1			6.1	
Lead/Lag		Lag					Lead

	€	•	†	~	-	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	I
Lead-Lag Optimize?		Yes					Yes	ĺ
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	
Recall Mode	None	None	C-Max			C-Max	None	
Walk Time (s)			7.0				7.0	
Flash Dont Walk (s)			15.0				9.0	
Pedestrian Calls (#/hr)			10				10	
Act Effct Green (s)	37.5	33.9	41.4			41.4		
Actuated g/C Ratio	0.42	0.38	0.46			0.46		
v/c Ratio	0.75	0.52	0.54			0.76		
Control Delay	28.3	2.9	29.4			35.7		
Queue Delay	0.0	0.0	0.0			0.5		
Total Delay	28.3	2.9	29.4			36.2		
LOS	С	Α	С			D		
Approach Delay	13.1		29.4			36.2		
Approach LOS	В		С			D		
Queue Length 50th (m)	75.3	0.0	77.7			97.2		
Queue Length 95th (m)	84.3	12.3	98.9			m#154.4		
Internal Link Dist (m)	308.8		102.6			90.0		
Turn Bay Length (m)								
Base Capacity (vph)	1071	1611	1529			1544		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	9	0	0			92		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.50	0.48	0.54			0.81		
Intersection Summary								

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 25.4

Intersection Capacity Utilization 116.7%

Intersection LOS: C ICU Level of Service H

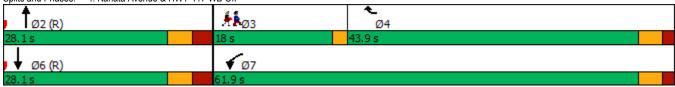
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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





	→	•	•	•	1	-
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u> </u>	EDK	WIDL	₩	NDL	NDK
Traffic Volume (vph)	*** 807	37	57	405	1 0	35
Future Volume (vph)	807	37	57 57	405	10	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	40.0	110.0	1000	30.0	0.0
Storage Lanes		1	0		1	1
Taper Length (m)			100.0		45.0	1
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.00	1.00	0.00	1.00	1.00	1.00
Frt		0.850		1.00		0.850
Flt Protected		0.000		0.994	0.950	3.000
Satd. Flow (prot)	3357	1394	0	3179	1441	1459
Flt Permitted	3331	1004	U	0.803	0.950	1403
Satd. Flow (perm)	3357	1394	0	2568	1441	1459
Right Turn on Red	3331	Yes	U	2000	1441	Yes
		res 37				7 es 35
Satd. Flow (RTOR)	F0	31			<i>Γ</i> Λ	33
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)			1			,
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	11%	2%	9%	20%	6%
Adj. Flow (vph)	807	37	57	405	10	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	807	37	0	462	10	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	CI+Ex	Cl+Ex	CI+Ex	CI+Ex	Cl+Ex	CI+Ex
Detector 1 Channel	OITEX	OITEX	OITEX	OITEX	OITEX	OITLA
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	28.7	0.0	0.0	28.7	0.0	0.0
Detector 2 Position(m)						
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0		_	0.0	_	
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0
Minimum Split (s)	30.0	30.0	29.4	29.4	24.9	24.9
Total Split (s)	30.0	30.0	30.0	30.0	25.0	25.0
Total Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%
Maximum Green (s)	23.6	23.6	23.6	23.6	19.1	19.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	3.1	3.1	2.6	2.6
(0)	5.1	•	•	•		

	-	•	•	←	•	~
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag	0.1	V. 1		V. 1	5.0	0.0
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)	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
Pedestrian Calls (#/hr)	10.0	10.0	10.0	10.0	10	10
Act Effct Green (s)	41.4	41.4	10	41.4	8.4	8.4
Actuated g/C Ratio	0.75	0.75		0.75	0.15	0.15
v/c Ratio	0.73	0.73		0.75	0.15	0.13
Control Delay	5.7	3.2		5.6	16.8	7.6
•	0.0	0.0		0.0	0.0	0.0
Queue Delay		3.2			16.8	7.6
Total Delay	5.7			5.6		
LOS	Α	Α		Α	В	Α
Approach Delay	5.6			5.6	9.6	
Approach LOS	Α	^ ^		A	A	
Queue Length 50th (m)	14.3	0.0		7.5	0.9	0.0
Queue Length 95th (m)	44.0	3.9		25.6	3.1	4.5
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		40.0		10	30.0	
Base Capacity (vph)	2525	1058		1932	500	529
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.32	0.03		0.24	0.02	0.07
Intersection Summary						
Area Type:	Other					
Cycle Length: 55						
Actuated Cycle Length: 55						
Offset: 0 (0%), Referenced to ph	ase 2:EBT and	6:WBTL, Sta	art of Greer	1		
Natural Cycle: 55						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.32						
Intersection Signal Delay: 5.7				Int	ersection LO	OS: A
Intersection Capacity Utilization 5	56.9%			ICI	J Level of S	ervice B
Analysis Period (min) 15						
,						
Splits and Phases: 1: Earl Gre	y Drive & Kanat	a Avenue				
▼ Ø2 (R)					l	
30 s						
4						
▼ Ø6 (R)					l	Ø8
₩ 26 (R)						1 20

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	*	7	16.54	1		*	44	7		4î.P	
Traffic Volume (vph)	19	6	36	210	2	65	85	369	178	28	695	16
Future Volume (vph)	19	6	36	210	2	65	85	369	178	28	695	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	1.00		0.87	0.80	0.99		1.00		0.98		1.00	
Frt	0.050		0.850	0.050	0.854		0.050		0.850		0.997	
Flt Protected	0.950	4704	000	0.950	4504	•	0.950	0005	4.470	•	0.998	•
Satd. Flow (prot)	1262	1784	992	3135	1504	0	1417	3325	1473	0	3323	0
Flt Permitted	0.950	1704	000	0.950	4504	0	0.220	2205	4444	٥	0.926	0
Satd. Flow (perm)	1261	1784	860	2499	1504	0	328	3325	1441 Yes	0	3083	0
Right Turn on Red			Yes 193		65	Yes			178		3	Yes
Satd. Flow (RTOR)		ΕO	193		50			EΩ	1/0		50	
Link Speed (k/h) Link Distance (m)		50 119.6			99.0			50 110.4			471.4	
` ,		8.6			99.0 7.1			7.9			33.9	
Travel Time (s) Confl. Peds. (#/hr)	1	0.0	100	100	1.1	1	3	1.9	1	1	აა.ყ	3
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 (%)	37%	2%	56%	7%	2%	2%	22%	4%	5%	1.00	2%	44%
Adj. Flow (vph)	19	6	36	210	2 %	65	85	369	178	28	695	16
Shared Lane Traffic (%)	13	U	30	210		00	0.5	303	170	20	033	10
Lane Group Flow (vph)	19	6	36	210	67	0	85	369	178	0	739	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Loit	7.4	rtigrit	LOIL	7.4	rtigrit	LOIL	3.7	rtigiit	LOIL	3.7	rtigrit
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		2.2			0.0			0.0			0.0	
Detector 2 Extend (s)	Dest	0.0	D	Doct	0.0			0.0	D	D	0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	3	8	0	7	4		1	6	^	0	2	
Permitted Phases Detector Phase	3	8	8	7	4		6	G	6	2	2	
	ა	0	8	7	4		1	6	· · · · ·	2	2	
Switch Phase Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
		28.3	28.3		28.3			33.3	33.3	33.3		
Minimum Split (s)	11.3 11.3	28.3	28.3	11.3 13.2	30.2		11.3 12.0	48.5	48.5	36.5	33.3 36.5	
Total Split (s) Total Split (%)	12.6%	31.4%	31.4%	14.7%	33.6%		13.3%	53.9%	53.9%	40.6%	40.6%	
Maximum Green (s)	5.0	22.0	22.0	6.9	23.9		13.3%	42.2	42.2	30.2	30.2	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	30.2	30.2	
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.0	3.0	3.0	3.0	
All-Med Tillie (3)	٥.٥	٥.٥	5.5	3.3	3.3		3.0	3.0	3.0	3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		100	100		100			10	10	10	10	
Act Effct Green (s)	5.0	19.6	19.6	7.5	25.6		47.2	47.2	47.2		37.6	
Actuated g/C Ratio	0.06	0.22	0.22	0.08	0.28		0.52	0.52	0.52		0.42	
v/c Ratio	0.27	0.02	0.11	0.80	0.14		0.35	0.21	0.21		0.57	
Control Delay	50.7	26.0	0.6	65.0	8.0		17.1	13.9	5.0		25.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	50.7	26.0	0.6	65.0	8.0		17.1	13.9	5.0		25.4	
LOS	D	С	Α	Е	Α		В	В	Α		С	
Approach Delay		18.7			51.3			11.8			25.4	
Approach LOS		В			D			В			С	
Queue Length 50th (m)	3.2	0.8	0.0	18.8	0.2		11.3	26.8	8.3		57.7	
Queue Length 95th (m)	10.1	3.7	0.0	#38.3	9.6		12.3	22.5	5.5		78.1	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	356	262	519		240	1745	841		1291	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.27	0.01	0.10	0.80	0.13		0.35	0.21	0.21		0.57	

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 24.4

Intersection LOS: C
ICU Level of Service D

Intersection Capacity Utilization 78.7%

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Kanata Avenue & Lord Byng Way/Maritime Way



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u> </u>	I,DIC	ODL	*
Traffic Volume (vph)	295	280	428	0	0	1098
Future Volume (vph)	295	280	428	0	0	1098
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	1695	1334	1717	0	0	3325
Flt Permitted	0.950					
Satd. Flow (perm)	1695	1334	1717	0	0	3325
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		280				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%
Adj. Flow (vph)	295	280	428	0	0	1098
Shared Lane Traffic (%)						
Lane Group Flow (vph)	295	280	428	0	0	1098
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex			CI+Ex
Detector 1 Channel	J. 2.		·			
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)	0.0	0.0	28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel			OITLX			OITLX
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	Penn	reiiii	NA 2			NA 6
	0	0	2			0
Permitted Phases	8	8	2			G
Detector Phase Switch Phase	8	ð	2			6
	5.0	5 0	10.0			10.0
Minimum Initial (s)		5.0				
Minimum Split (s)	23.0	23.0	28.1			24.1
Total Split (s)	37.0	37.0	53.0			53.0
Total Split (%)	41.1%	41.1%	58.9%			58.9%
Maximum Green (s)	32.0	32.0	46.9			46.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	21.2	21.2	57.7			57.7
Actuated g/C Ratio	0.24	0.24	0.64			0.64
v/c Ratio	0.74	0.53	0.39			0.52
Control Delay	42.7	7.1	3.5			9.0
Queue Delay	0.0	0.0	0.1			0.0
Total Delay	42.7	7.1	3.7			9.0
LOS	D	Α	A			A
Approach Delay	25.4		3.7			9.0
Approach LOS	C		A			A
Queue Length 50th (m)	47.5	0.0	7.8			72.5
Queue Length 95th (m)	66.4	16.6	10.5			124.3
Internal Link Dist (m)	308.8		102.6			90.0
Turn Bay Length (m)	222.0					55.5
Base Capacity (vph)	602	654	1100			2132
Starvation Cap Reductn	0	0	129			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.49	0.43	0.44			0.52
Intersection Summary						
Area Type:	Other					
Cycle Length: 90	Outo					
Actuated Cycle Length: 90						
Offset: 35 (39%), Referenced to	nhase 2:NRT and	d 6 SBT S	tart of Green			
Natural Cycle: 55	pridoc Z.NDT dis	u 0.0D1, 0	tart or Oroon			
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.74	atou					
Intersection Signal Delay: 12.4				Inte	ersection Lo	OS: B
Intersection Capacity Utilization	86.3%				J Level of S	
Analysis Period (min) 15	00.070			100	LOVOI OI C	JOI VIOC L
rinaryolo i onoa (min) io						
Splits and Phases: 4: Kanata	Avenue & HWY 4	117 WB Off	f			
+						
Ø2 (R)						- 1
53 s						
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▼ Ø6 (R)						
F 20 (K)						0.7

Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4	
Lane Configurations			•	#	*	*		
Traffic Volume (vph)	0	0	395	267	531	683		
Future Volume (vph)	0	0	395	267	531	683		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0		50.0	0.0			
Storage Lanes	0	0		1	1			
Taper Length (m)	7.6				7.6			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor				0.98	1.00			
Frt				0.850	0.050			
Flt Protected	•	^	4005	4500	0.950	4750		
Satd. Flow (prot)	0	0	1685	1502	1679	1750		
Flt Permitted	0	^	4005	4400	0.432	4750		
Satd. Flow (perm)	0	0 Yes	1685	1468 Yes	763	1750		
Right Turn on Red		res		267				
Satd. Flow (RTOR) Link Speed (k/h)	48		50	201		50		
Link Speed (k/n) Link Distance (m)	278.4		119.2			126.6		
Travel Time (s)	20.9		8.6			9.1		
Confl. Peds. (#/hr)	20.5		0.0	1	1	5.1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	0%	0%	8%	3%	3%	4%		
Adj. Flow (vph)	0	0	395	267	531	683		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	395	267	531	683		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	0.0	·	3.7	·		3.7		
Link Offset(m)	0.0		0.0			0.0		
Crosswalk Width(m)	4.9		4.9			4.9		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	14		14	24			
Number of Detectors			_ 2	1	1	_ 2		
Detector Template			Thru	Right	Left	Thru		
Leading Detector (m)			30.5	6.1	6.1	30.5		
Trailing Detector (m)			0.0	0.0	0.0	0.0		
Detector 1 Position(m)			0.0	0.0	0.0	0.0		
Detector 1 Size(m) Detector 1 Type			1.8 CI+Ex	6.1 CI+Ex	6.1 CI+Ex	1.8 Cl+Ex		
Detector 1 Channel			CI+EX	CI+EX	CI+EX	CI+EX		
Detector 1 Extend (s)			0.0	0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0	0.0		
Detector 1 Delay (s)			0.0	0.0	0.0	0.0		
Detector 2 Position(m)			28.7	0.0	0.0	28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			Cl+Ex		
Detector 2 Channel						- .,		
Detector 2 Extend (s)			0.0			0.0		
Turn Type			NA	Perm	pm+pt	NA		
Protected Phases			2		1	6	4	
Permitted Phases				2	6			
Detector Phase			2	2	1	6		
Switch Phase								
Minimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
Minimum Split (s)			23.7	23.7	10.7	23.7	27.0	
Total Split (s)			50.0	50.0	12.0	62.0	28.0	
Total Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0	
Yellow Time (s)			3.3	3.3	3.3	3.3	3.0	
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0	

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4		
ost Time Adjust (s)			0.0	0.0	0.0	0.0			
Total Lost Time (s)			5.7	5.7	5.7	5.7			
_ead/Lag			Lag	Lag	Lead				
.ead-Lag Optimize?			Yes	Yes	Yes				
/ehicle Extension (s)			3.0	3.0	3.0	3.0	3.0		
Recall Mode			C-Max	C-Max	None	C-Max	None		
Valk Time (s)			7.0	7.0			7.0		
lash Dont Walk (s)			11.0	11.0			15.0		
Pedestrian Calls (#/hr)			10	10			10		
Act Effct Green (s)			56.3	56.3	78.9	83.5			
Actuated g/C Ratio			0.63	0.63	0.88	0.93			
/c Ratio			0.37	0.26	0.63	0.42			
Control Delay			8.9	2.1	13.4	1.6			
Queue Delay			0.6	0.0	0.1	0.0			
Total Delay			9.5	2.1	13.5	1.6			
.OS			A.0	Α	В	Α			
Approach Delay			6.5			6.8			
Approach LOS			0.5 A			0.0 A			
Queue Length 50th (m)			26.2	4.8	23.6	0.0			
Queue Length 95th (m)			66.9	14.1	#65.2	34.5			
nternal Link Dist (m)	254.4		95.2	17.1	π0J.Z	102.6			
urn Bay Length (m)	204.4		33.2	50.0		102.0			
Base Capacity (vph)			1054	1018	840	1623			
Starvation Cap Reductn			328	0	18	4			
Spillback Cap Reductn			0	0	0	0			
Storage Cap Reductin			0	0	0	0			
0 1									
Reduced v/c Ratio			0.54	0.26	0.65	0.42			
ntersection Summary									
	Other								
Cycle Length: 90									
ctuated Cycle Length: 90									
Offset: 42 (47%), Referenced to pha	ase 2:NBT and	d 6:SBTL,	Start of Gre	en					
latural Cycle: 90									
Control Type: Actuated-Coordinated	d								
Maximum v/c Ratio: 0.63									
ntersection Signal Delay: 6.7					ersection L				
ntersection Capacity Utilization 86.	3%			IC	U Level of S	Service E			
Analysis Period (min) 15									
95th percentile volume exceeds		ue may be	longer.						
Queue shown is maximum after	two cycles.								
Splits and Phases: 5: Kanata Ave	enue & HWY 4	117 EB On							
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			43-		*	ħ		*	ĵ.	
Traffic Volume (vph)	45	6	18	19	6	61	41	655	36	52	611	41
Future Volume (vph)	45	6	18	19	6	61	41	655	36	52	611	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.97			0.96		0.99	1.00		1.00	1.00	
Frt		0.965			0.904			0.992			0.991	
Flt Protected		0.968			0.989		0.950			0.950		
Satd. Flow (prot)	0	1218	0	0	1464	0	1145	1734	0	1662	1716	0
Flt Permitted	•	0.809	•	-	0.909	•	0.372		-	0.351		-
Satd. Flow (perm)	0	1001	0	0	1336	0	446	1734	0	612	1716	0
Right Turn on Red	· ·	1001	Yes	•	1000	Yes	110	1701	Yes	VIL	11 10	Yes
Satd. Flow (RTOR)		18	100		61	100		6	100		7	100
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8			8.6	
Confl. Peds. (#/hr)	14	11.3	18	18	12.0	14	9	13.0	6	6	0.0	9
Confl. Bikes (#/hr)	14		1	10		14	9		1	U		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
	33%	67%	39%	11%	50%	2%	51%	4%	3%	4%	5%	2%
Heavy Vehicles (%)					50%							
Adj. Flow (vph)	45	6	18	19	D	61	41	655	36	52	611	41
Shared Lane Traffic (%)	0	00	^	^	00	^	4.4	004	^		050	0
Lane Group Flow (vph)	0	69	0	0	86	0	41	691	0	52	652	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24	_	14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		· ·			*· =··			• · ·				
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1 01111	4		1 01111	8		1 01111	2		1 01111	6	
Permitted Phases	4			8	U		2			6	U	
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase	4	4		0	U					U	U	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s) Yellow Time (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	

	•	→	•	•	+	•	•	†	~	*	1	√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		13.0			13.0		69.5	69.5		69.5	69.5	
Actuated g/C Ratio		0.14			0.14		0.77	0.77		0.77	0.77	
v/c Ratio		0.43			0.35		0.12	0.52		0.11	0.49	
Control Delay		34.5			17.0		4.8	5.7		6.1	6.1	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.2	
Total Delay		34.5			17.0		4.8	5.7		6.1	6.2	
LOS		С			В		Α	Α		Α	Α	
Approach Delay		34.5			17.0			5.7			6.2	
Approach LOS		С			В			Α			Α	
Queue Length 50th (m)		8.4			4.0		1.7	38.1		1.5	19.8	
Queue Length 95th (m)		18.3			14.6		m4.2	54.2		6.9	50.1	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		277			398		344	1340		472	1326	
Starvation Cap Reductn		0			0		0	55		0	143	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.22		0.12	0.54		0.11	0.55	

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.52 Intersection Signal Delay: 7.8

Intersection Capacity Utilization 69.6%

Intersection LOS: A ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	₽.		75	î,		*	î,		75	•	7
Traffic Volume (vph)	160	130	72	34	114	36	123	454	51	84	351	105
Future Volume (vph)	160	130	72	34	114	36	123	454	51	84	351	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	55.0		0.0	35.0		0.0	90.0		60.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	55.0	1.00	1.00	55.0	1.00	1.00	55.0	1.00	1.00	30.0	4.00	1.00
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 Frt	0.95	0.98 0.947		0.98	0.98 0.964		0.98	0.99 0.985		0.98		0.94 0.850
Flt Protected	0.950	0.947		0.950	0.904		0.950	0.900		0.950		0.000
Satd. Flow (prot)	1586	1649	0	1695	1622	0	1695	1634	0	1503	1655	1322
Flt Permitted	0.443	1049	U	0.631	1022	U	0.515	1034	U	0.393	1000	1322
Satd. Flow (perm)	705	1649	0	1099	1622	0	900	1634	0	609	1655	1245
Right Turn on Red	705	1043	Yes	1033	1022	Yes	300	1034	Yes	003	1000	Yes
Satd. Flow (RTOR)		43	103		19	103		7	103			126
Link Speed (k/h)		50			50			50			50	120
Link Distance (m)		313.1			295.7			254.6			192.1	
Travel Time (s)		22.5			21.3			18.3			13.8	
Confl. Peds. (#/hr)	35	22.0	16	16	21.0	35	20	10.0	33	33	10.0	20
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 (%)	9%	3%	2%	2%	3%	15%	2%	9%	7%	15%	10%	17%
Adj. Flow (vph)	160	130	72	34	114	36	123	454	51	84	351	105
Shared Lane Traffic (%)	100	100	, _	0.7	117	00	120	101	01	0-1	001	100
Lane Group Flow (vph)	160	202	0	34	150	0	123	505	0	84	351	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Zon	3.7	rugni	Lon	3.7	ragne	LOIL	3.7	rugin	Lon	3.7	rugin
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0		_	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	7	4		•	8		•	2		•	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		6	6	6
Switch Phase	5.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	40.0
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.7	29.7		29.7	29.7		29.2	29.2		29.2	29.2	29.2
Total Split (s)	12.0	50.0		38.0	38.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	13.3%	55.6%		42.2%	42.2%		44.4%	44.4%		44.4%	44.4%	44.4%
Maximum Green (s)	5.3	43.3		31.3	31.3		33.8	33.8		33.8	33.8	33.8
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)	3.4	3.4		3.4	3.4		2.9	2.9		2.9	2.9	2.9

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.7	6.7		6.2	6.2		6.2	6.2	6.2
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)		7.0		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	16.0		16.0	16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	10
Act Effct Green (s)	26.2	26.2		14.2	14.2		50.9	50.9		50.9	50.9	50.9
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.57	0.57		0.57	0.57	0.57
v/c Ratio	0.62	0.40		0.20	0.55		0.24	0.55		0.24	0.38	0.14
Control Delay	36.0	21.3		33.2	37.1		13.0	16.1		19.3	18.0	6.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	36.0	21.3		33.2	37.1		13.0	16.1		19.3	18.0	6.7
LOS	D	С		С	D		В	В		В	В	Α
Approach Delay		27.8			36.4			15.5			16.0	
Approach LOS		С			D			В			В	
Queue Length 50th (m)	22.3	22.1		5.3	21.5		9.5	47.9		8.6	36.1	3.2
Queue Length 95th (m)	32.6	34.2		12.0	34.7		24.9	98.1		16.6	50.5	9.7
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	257	815		382	576		509	926		344	935	758
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.62	0.25		0.09	0.26		0.24	0.55		0.24	0.38	0.14

Area Type: Other

Cycle Length: 90 Actuated Cycle Length: 90

Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

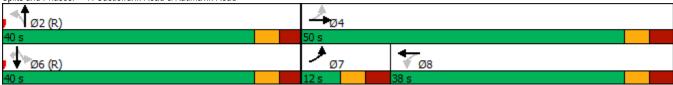
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 20.5
Intersection Capacity Utilization 84.1%

Intersection LOS: C

ICU Level of Service E

Analysis Period (min) 15





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	î,		75	î,		*	î,		*	ĵ.	
Traffic Volume (vph)	54	718	14	74	496	86	18	19	171	182	12	61
Future Volume (vph)	54	718	14	74	496	86	18	19	171	182	12	61
ldeal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			55.0			40.0			35.0		
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	0.99	1.00			0.99		0.99	0.96		0.98	0.98	
Frt		0.997			0.978			0.865			0.875	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1718	0	1695	1592	0	1695	1477	0	1695	1494	0
Flt Permitted	0.367			0.271			0.709			0.595		
Satd. Flow (perm)	650	1718	0	484	1592	0	1254	1477	0	1039	1494	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			15			150			61	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	12		11	11		12	4		12	12		4
Confl. Bikes (#/hr)			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 (%)	2%	5%	33%	2%	11%	12%	2%	2%	2%	2%	14%	2%
Adj. Flow (vph)	54	718	14	74	496	86	18	19	171	182	12	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	732	0	74	582	0	18	190	0	182	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	20.0	3.7		20.0	3.7		20.0	3.7		20.0	3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane		1.0			1.0			1.0			1.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	14	24	1.00	14	24	1.00	14	24	1.00	14
Number of Detectors	1	2	• • • • • • • • • • • • • • • • • • • •	1	2		1	2	• • •	1	2	• •
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Channel	OITEX	OIILX		OIILX	OITEX		OITEX	OITEX		OITEX	OITEX	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			Cl+Ex			CI+Ex	
Detector 2 Type Detector 2 Channel		UI+EX			CI+EX			CI+EX			CI+EX	
		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	D			D			D			D		
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2	2			6		0	8		4	4	
Permitted Phases	2	0		6	^		8	0		4	4	
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase	40.0	40.0		40.0	40.0		40.0	40.0		40.0	40.0	
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	27.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	39.3	39.3		39.3	39.3		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	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	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	49.8	49.8		49.8	49.8		18.5	18.5		18.5	18.5	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.23	0.23		0.23	0.23	
v/c Ratio	0.13	0.68		0.25	0.58		0.06	0.42		0.76	0.19	
Control Delay	9.5	16.4		11.8	13.4		20.9	9.3		47.5	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	16.4		11.8	13.4		20.9	9.3		47.5	8.7	
LOS	Α	В		В	В		С	Α		D	Α	
Approach Delay		15.9			13.2			10.3			36.4	
Approach LOS		В			В			В			D	
Queue Length 50th (m)	3.0	65.0		4.5	45.4		2.2	4.8		25.9	1.4	
Queue Length 95th (m)	10.4	#156.0		15.4	99.2		6.2	17.5		41.4	9.4	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	404	1070		301	996		454	631		376	580	
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	0.13	0.68		0.25	0.58		0.04	0.30		0.48	0.13	

Other

Area Type: Cycle Length: 80

Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

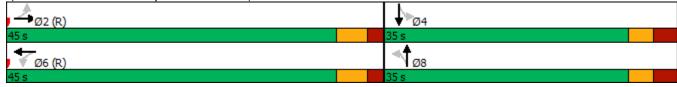
Natural Cycle: 60

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.1 Intersection Capacity Utilization 92.9% Intersection LOS: B ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 22: Maritime Way/Knudson Drive & Campeau Drive



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

	→	•	•	←	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	î,			र्	W	
Traffic Volume (veh/h)	186	12	3	198	38	9
Future Volume (Veh/h)	186	12	3	198	38	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	186	12	3	198	38	9
Pedestrians			<u> </u>			
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	140110			110110		
Upstream signal (m)	217					
pX, platoon unblocked	211					
vC, conflicting volume			198		396	192
vC1, stage 1 conf vol			130		330	102
vC2, stage 2 conf vol						
vCu, unblocked vol			198		396	192
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			4.1		0.4	0.2
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	99
cM capacity (veh/h)			1375		608	850
Civi Capacity (veri/ii)					000	000
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	198	201	47			
Volume Left	0	3	38			
Volume Right	12	0	9			
cSH	1700	1375	643			
Volume to Capacity	0.12	0.00	0.07			
Queue Length 95th (m)	0.0	0.0	1.8			
Control Delay (s)	0.0	0.1	11.0			
Lane LOS		Α	В			
Approach Delay (s)	0.0	0.1	11.0			
Approach LOS			В			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			23.5%	IC	U Level of S	ervice
Analysis Period (min)			15			
range of onou (min)			10			

	→	•	•	•	4	/
Long Croup	EDT	- EDD	WDL	MA	NIDI.	NDD
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑ ↑	₹ 82	214	₹	\	177
Traffic Volume (vph) Future Volume (vph)	704 704	82 82	214	799 799	79 79	177 177
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	40.0	110.0	1000	30.0	0.0
Storage Lanes		40.0	0		30.0	1
Taper Length (m)		I	100.0		45.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.93	0.98	0.90	1.00	1.00	0.99
Frt Frt		0.98		1.00		0.99
Fit Protected		0.000		0.990	0.950	0.000
	2115	1517	۸			1517
Satd. Flow (prot) Flt Permitted	3115	1517	0	3356 0.662	1695 0.950	1517
	2445	1400	0			1406
Satd. Flow (perm)	3115	1483	0	2244	1695	1496
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	F2	82				177
Link Speed (k/h)	50			50	50	
Link Distance (m)	287.1			471.4	128.3	
Travel Time (s)	20.7			33.9	9.2	
Confl. Peds. (#/hr)		1	1			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	11%	2%	2%	2%	2%	2%
Adj. Flow (vph)	704	82	214	799	79	177
Shared Lane Traffic (%)						
Lane Group Flow (vph)	704	82	0	1013	79	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24	,,,,,	24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.1	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Type Detector 1 Channel	OI+EX	OI+EX	OI+EX	OI+EX	CITEX	OI+EX
	0.0	0.0	0.0	.0.0	0.0	0.0
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	CI+Ex			CI+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	29.4	29.4	10.8	29.4	24.9	24.9
Total Split (s)	58.0	58.0	12.0	70.0	30.0	30.0
Total Split (%)	58.0%	58.0%	12.0%	70.0%	30.0%	30.0%
Maximum Green (s)	51.6	51.6	6.2	63.6	24.1	24.1
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	3.1	3.1	2.5	3.1	2.6	2.6
, toa 11110 (a)	0.1	0.1	2.0	0.1	2.0	2.0

	-	•	•	•	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.4	6.4		6.4	5.9	5.9
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	12.0	12.0
Pedestrian Calls (#/hr)	10	10		10	10	10
Act Effct Green (s)	76.7	76.7		76.7	11.0	11.0
Actuated g/C Ratio	0.77	0.77		0.77	0.11	0.11
v/c Ratio	0.29	0.07		0.59	0.42	0.55
Control Delay	4.3	1.2		7.4	46.9	12.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	4.3	1.2		7.4	46.9	12.6
LOS	Α	Α		Α	D	В
Approach Delay	4.0			7.4	23.2	
Approach LOS	A			Α	С	
Queue Length 50th (m)	16.5	0.0		33.4	14.7	0.0
Queue Length 95th (m)	33.9	4.1		71.6	26.1	17.0
Internal Link Dist (m)	263.1			447.4	104.3	
Turn Bay Length (m)		40.0			30.0	
Base Capacity (vph)	2388	1156		1720	408	494
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.29	0.07		0.59	0.19	0.36
	0.20					
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to ph	ase 2:EBT and (6:WBTL, Sta	rt of Greer	1		
Natural Cycle: 70						
Control Type: Actuated-Coordina	ated					
Maximum v/c Ratio: 0.59						
Intersection Signal Delay: 8.1					ersection L(
Intersection Capacity Utilization	71.0%			ICI	J Level of S	ervice C
Analysis Period (min) 15						
Splits and Phases: 1: Earl Gre	ey Drive & Kanat	a Avenue				
▼ Ø1 • Ø2	(R)					
12 s 58 s						
4						
▼ Ø6 (R) ■						
7 DO (IV)						

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	*	7	16.54	1 ,		*	44	7		4Tb	
Traffic Volume (vph)	30	3	78	168	9	61	136	947	251	91	732	25
Future Volume (vph)	30	3	78	168	9	61	136	947	251	91	732	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	40.0		0.0	40.0		0.0	35.0		20.0	35.0		0.0
Storage Lanes	2		1	2		0	1		1	0		0
Taper Length (m)	25.0			40.0			75.0			55.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor	0.99		0.84	0.75	0.98		1.00		0.98		1.00	
Frt	0.050		0.850	0.050	0.869		0.050		0.850		0.996	
Flt Protected	0.950	4704	4000	0.950	4540	•	0.950	0000	4547	•	0.995	•
Satd. Flow (prot)	1262	1784	1268	3288	1516	0	1503	3390	1517	0	3340	0
Flt Permitted	0.950	1704	1000	0.950	1510	0	0.178	2200	1170	٥	0.708	^
Satd. Flow (perm)	1247	1784	1062	2451	1516	0	281	3390	1479	0	2376	0
Right Turn on Red			Yes 193		61	Yes			Yes 141		1	Yes
Satd. Flow (RTOR)		50	193		50			50	141		4 50	
Link Speed (k/h)		119.6			99.0			110.4			471.4	
Link Distance (m) Travel Time (s)		8.6			99.0 7.1			7.9			33.9	
Confl. Peds. (#/hr)	11	0.0	125	125	7.1	11	3	1.9	3	3	33.9	3
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 (%)	37%	2%	22%	2%	2%	2%	15%	2%	2%	2%	2%	20%
Adj. Flow (vph)	30	3	78	168	9	61	136	947	251	91	732	25
Shared Lane Traffic (%)	30	J	70	100	3	01	100	341	201	31	132	25
Lane Group Flow (vph)	30	3	78	168	70	0	136	947	251	0	848	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	Lon	7.4	rugiit	Loit	7.4	rtigit	Loit	3.7	rugiit	Loit	3.7	ragin
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s) Turn Type	Prot	0.0 NA	Perm	Prot	0.0 NA		pm+pt	0.0 NA	Perm	Perm	0.0 NA	
Protected Phases	7	4	reiiii	3	8		рит+рі 5	2	reiiii	reiiii	6	
Permitted Phases	<i>'</i>	4	4	3	0		2	2	2	6	U	
Detector Phase	7	4	4	3	8		5	2	2	6	6	
Switch Phase	1	4	4	J	U		J			U	U	
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.3	28.3	28.3	11.3	28.3		11.3	33.3	33.3	33.3	33.3	
Total Split (s)	11.3	28.3	28.3	12.0	29.0		11.9	49.7	49.7	37.8	37.8	
Total Split (%)	12.6%	31.4%	31.4%	13.3%	32.2%		13.2%	55.2%	55.2%	42.0%	42.0%	
Maximum Green (s)	5.0	22.0	22.0	5.7	22.7		5.6	43.4	43.4	31.5	31.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3		3.0	3.0	3.0	3.0	3.0	
	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		6.3	6.3	6.3		6.3	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Max	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)		15.0	15.0		15.0			20.0	20.0	20.0	20.0	
Pedestrian Calls (#/hr)		100	100		100			10	10	10	10	
Act Effct Green (s)	5.0	19.6	19.6	6.6	22.4		48.2	48.2	48.2		36.1	
Actuated g/C Ratio	0.06	0.22	0.22	0.07	0.25		0.54	0.54	0.54		0.40	
v/c Ratio	0.43	0.01	0.20	0.70	0.17		0.60	0.52	0.29		0.89	
Control Delay	60.3	26.0	1.2	66.9	9.9		17.0	16.5	7.3		40.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	60.3	26.0	1.2	66.9	9.9		17.0	16.5	7.3		40.7	
LOS	Е	С	Α	Е	Α		В	В	Α		D	
Approach Delay		17.8			50.1			14.8			40.7	
Approach LOS		В			D			В			D	
Queue Length 50th (m)	5.1	0.4	0.0	15.8	0.7		12.9	60.3	8.9		~78.7	
Queue Length 95th (m)	#15.6	2.5	0.0	#32.8	8.4		m11.1	m50.3	m6.1		#119.0	
Internal Link Dist (m)		95.6			75.0			86.4			447.4	
Turn Bay Length (m)	40.0			40.0			35.0		20.0			
Base Capacity (vph)	70	436	405	239	464		228	1815	857		956	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.43	0.01	0.19	0.70	0.15		0.60	0.52	0.29		0.89	

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 26.9

Intersection LOS: C
ICU Level of Service E

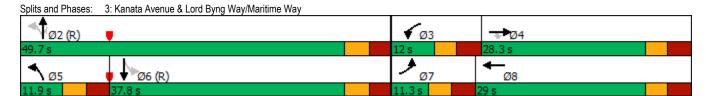
Intersection Capacity Utilization 86.6%

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.



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u>ND1</u>	ושוו	ODL	*
Traffic Volume (vph)	570	821	860	0	0	TT 1243
Future Volume (vph)	570	821	860	0	0	1243
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.50
Frt		0.850				
FIt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Fit Permitted	0.950	1017	1730	U	U	ააე <i>1</i>
		1517	1750	۸	0	2257
Satd. Flow (perm)	1695	1517 Vac	1750	0	0	3357
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	50	77				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	570	821	860	0	0	1243
Shared Lane Traffic (%)						
Lane Group Flow (vph)	570	821	860	0	0	1243
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane	1.5		1.0			1.0
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	1.00	14	24	1.00
Number of Detectors	1	1	2	17	4 7	2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.1	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
	6.1	6.1	1.8			1.8
Detector 1 Size(m)						
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			Cl+Ex
Detector 1 Channel	2.2	0.0	0.0			0.0
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases			2			6
Permitted Phases	8	8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			16.1
Total Split (s)	45.0	45.0	45.0			45.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
	40.0	40.0	38.9			38.9
Maximum Green (s)						
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	6.1			6.1
Lead/Lag						

4. Nanata Avenue & ni	VV 1 4 17 VVD OII
	Timing Plan: PM Peak

	•	•	†	<i>></i>	\	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lead-Lag Optimize?						
/ehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	11.0	11.0	15.0			
Pedestrian Calls (#/hr)	10	10	10			
Act Effct Green (s)	40.0	40.0	38.9			38.9
Actuated g/C Ratio	0.44	0.44	0.43			0.43
v/c Ratio	0.76	1.15	1.14			0.86
Control Delay	28.9	105.4	112.2			25.6
Queue Delay	0.0	0.0	1.3			3.0
Total Delay	28.9	105.4	113.4			28.5
LOS	C	F	F			C
Approach Delay	74.1		113.4			28.5
Approach LOS	E		F			C
Queue Length 50th (m)	79.8	~160.8	~167.4			60.4
Queue Length 95th (m)	121.0	#229.9	#243.2			m70.3
Internal Link Dist (m)	308.8	HLLU.U	102.6			90.0
Turn Bay Length (m)	300.0		102.0			50.0
Base Capacity (vph)	753	717	756			1450
Starvation Cap Reductn	0	0	134			0
Spillback Cap Reductn	0	0	0			124
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.76	1.15	1.38			0.94
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 0 (0%), Referenced to pha	ise 2:NBT and	6:SBT, Star	t of Green			
Natural Cycle: 120						
Control Type: Actuated-Coordinat	ted					
Maximum v/c Ratio: 1.15						
Intersection Signal Delay: 67.6					ersection L	
Intersection Capacity Utilization 1	43.0%			ICL	J Level of S	Service H
Analysis Period (min) 15						
 Volume exceeds capacity, que 		ally infinite.				
Queue shown is maximum after	er two cycles.					
# 95th percentile volume exceed	ds capacity, qu	eue may be	longer.			
Queue shown is maximum after	er two cycles.					
m Volume for 95th percentile qu	ieue is metered	by upstrea	ım signal.			
0.111						
Splits and Phases: 4: Kanata A	venue & HWY	417 WB Of	†		_	
Tø2 (R)					1	
45 s						
1					- 5-	
▼ Ø6 (R)					₩ (78
45 -					AE a	

	•	•	†	/	/	Ţ		
_ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
ane Configurations			•	#	*	*		
raffic Volume (vph)	0	0	703	242	470	1125		
uture Volume (vph)	0	0	703	242	470	1125		
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	0.0	0.0		50.0	0.0			
Storage Lanes	0	0		1	1			
aper Length (m)	7.6				7.6			
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
ed Bike Factor				0.98				
rt				0.850				
It Protected					0.950			
satd. Flow (prot)	0	0	1733	1517	1662	1784		
It Permitted					0.143			
Satd. Flow (perm)	0	0	1733	1479	250	1784		
tight Turn on Red	-	Yes		Yes				
atd. Flow (RTOR)				206				
ink Speed (k/h)	48		50			50		
ink Distance (m)	278.4		119.2			126.6		
ravel Time (s)	20.9		8.6			9.1		
Confl. Peds. (#/hr)	20.0		3.0	2	2	V. 1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	0%	0%	5%	2%	4%	2%		
Adj. Flow (vph)	0 70	0	703	242	470	1125		
Shared Lane Traffic (%)	0	U	700	272	410	1120		
ane Group Flow (vph)	0	0	703	242	470	1125		
Enter Blocked Intersection	No	No	No	No	No	No		
ane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	0.0	Night	3.7	Nigrit	Leit	3.7		
.ink Offset(m)	0.0		0.0			0.0		
Crosswalk Width(m)	4.9		4.9			4.9		
Two way Left Turn Lane	4.3		4.3			4.3		
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
urning Speed (k/h)	24	1.00	1.00	1.00	24	1.00		
lumber of Detectors	24	17	2	1	1	2		
Detector Template			Thru	Right	Left	Thru		
eading Detector (m)			30.5	6.1	6.1	30.5		
railing Detector (m)			0.0	0.1	0.1	0.0		
Detector 1 Position(m)			0.0	0.0	0.0	0.0		
			1.8	6.1	6.1	1.8		
Detector 1 Size(m) Detector 1 Type			CI+Ex	CI+Ex	CI+Ex	CI+Ex		
Detector 1 Channel			CI+EX	CI+EX	CI+EX	CI+EX		
Detector 1 Extend (s)			0.0	0.0	0.0	0.0		
Detector 1 Queue (s)			0.0	0.0	0.0	0.0		
Detector 1 Delay (s)			28.7	0.0	0.0	28.7		
Detector 2 Position(m)								
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			Cl+Ex		
Detector 2 Channel			2.2			2.2		
Detector 2 Extend (s)			0.0	_		0.0		
urn Type			NA	Perm	pm+pt	NA	_	
rotected Phases			2		1	6	8	
Permitted Phases				2	6			
etector Phase			2	2	1	6		
Switch Phase								
/linimum Initial (s)			10.0	10.0	5.0	10.0	5.0	
linimum Split (s)			23.7	23.7	10.7	23.7	27.0	
otal Split (s)			50.0	50.0	12.0	62.0	28.0	
otal Split (%)			55.6%	55.6%	13.3%	68.9%	31%	
Maximum Green (s)			44.3	44.3	6.3	56.3	23.0	
'ellow Time (s)			3.3	3.3	3.3	3.3	3.0	
All-Red Time (s)			2.4	2.4	2.4	2.4	2.0	

	•	•	†	/	-	ļ		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø8	
Lost Time Adjust (s)			0.0	0.0	0.0	0.0		
Total Lost Time (s)			5.7	5.7	5.7	5.7		
Lead/Lag			Lag	Lag	Lead			
Lead-Lag Optimize?			Yes	Yes	Yes			
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	
Recall Mode			C-Max	C-Max	None	C-Max	None	
Walk Time (s)			7.0	7.0			7.0	
Flash Dont Walk (s)			11.0	11.0			15.0	
Pedestrian Calls (#/hr)			10	10			10	
Act Effct Green (s)			46.2	46.2	78.9	83.5		
Actuated g/C Ratio			0.51	0.51	0.88	0.93		
v/c Ratio			0.79	0.28	0.73	0.68		
Control Delay			17.1	2.1	26.8	8.1		
Queue Delay			49.3	0.0	0.0	0.2		
Total Delay			66.4	2.1	26.8	8.3		
LOS			00.4 E	Α.Τ	20.0 C	0.5 A		
Approach Delay			49.9	^	U	13.7		
Approach LOS			49.9 D			13.7 B		
Queue Length 50th (m)			68.8	7.2	40.3	9.7		
Queue Length 95th (m)			#140.8	m3.2		m#276.9		
	254.4		95.2	1113.2	111# 150.4	102.6		
Internal Link Dist (m)	234.4		95.2	F0 0		102.0		
Turn Bay Length (m)			000	50.0	C42	4054		
Base Capacity (vph)			889	859	643	1654		
Starvation Cap Reductn			128	0	0	92		
Spillback Cap Reductn			248	0	0	46		
Storage Cap Reductn			0	0	0	0		
Reduced v/c Ratio			1.10	0.28	0.73	0.72		
Intersection Summary								
	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 27 (30%), Referenced to ph	nase 2:NBT and	d 6:SBTL,	Start of Gre	en				
Natural Cycle: 110								
Control Type: Actuated-Coordinate	ed							
Maximum v/c Ratio: 0.79								
Intersection Signal Delay: 27.2					ntersection l			
Intersection Capacity Utilization 14	3.0%			ŀ	CU Level of	Service H		
Analysis Period (min) 15								
# 95th percentile volume exceed:	s capacity, que	ue may be	longer.					
Queue shown is maximum after								
m Volume for 95th percentile que	eue is metered	by upstrea	m signal.					
Splits and Phases: 5: Kanata Av	renue & HWY 4	17 FR On						
\ \phi_@1		111 25 011						
12 s 50 s	(IV)							
Ø6 (R)								# \$ @8
₩ ₩0 (K) ♥								100

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		43-			₩.		*	î,		*	ĵ.	
Traffic Volume (vph)	17	4	13	30	1	97	12	941	35	62	1120	24
Future Volume (vph)	17	3	13	30	1	97	12	941	35	62	1120	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	30.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.6			7.6			30.0			30.0		
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		0.98			0.97			1.00			1.00	
Frt		0.947			0.898			0.995			0.997	
Flt Protected		0.975			0.988		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1542	0	1695	1757	0	1695	1777	0
Flt Permitted		0.735			0.909		0.137			0.216		
Satd. Flow (perm)	0	1219	0	0	1415	0	244	1757	0	385	1777	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			97			4			2	
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		125.4			132.9			192.1			119.2	
Travel Time (s)		11.3			12.0			13.8	_	_	8.6	_
Confl. Peds. (#/hr)	7		6	6		7	9		5	5		9
Confl. Bikes (#/hr)									3			
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 (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	17	3	13	30	1	97	12	941	35	62	1120	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	128	0	12	976	0	62	1144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24 1	2	14	24	2	14	24	2	14	24	2	14
Number of Detectors	Left	Z Thru		1	Z Thru		1 Left	Thru		1 Left	Z Thru	
Detector Template				Left								
Leading Detector (m) Trailing Detector (m)	6.1 0.0	30.5 0.0		6.1 0.0	30.5 0.0		6.1 0.0	30.5 0.0		6.1 0.0	30.5 0.0	
0 ()	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m) Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	CITEX	CI+EX		CITEX	CI+EX		CI+EX	CI+EX		CI+EX	CI+EX	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			Cl+Ex			CI+Ex	
Detector 2 Channel		OIILX			OITEX			OIILX			OITEX	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1 01111	4		1 01111	8		1 01111	2		1 01111	6	
Permitted Phases	4	T		8	U		2	L		6	0	
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase		T		U	U			_		0	0	
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		24.7	24.7		24.7	24.7	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	23.8	23.8		23.8	23.8		54.3	54.3		54.3	54.3	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
. 5511 111110 (0)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	

	٠	→	•	•	←	•	•	†	~	/	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.2			6.2		5.7	5.7		5.7	5.7	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)		10.1			10.1		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.11			0.11		0.76	0.76		0.76	0.76	
v/c Ratio		0.22			0.52		0.07	0.73		0.21	0.85	
Control Delay		26.2			19.2		5.2	11.7		6.1	13.6	
Queue Delay		0.0			0.0		0.0	0.3		0.0	0.0	
Total Delay		26.2			19.2		5.2	12.0		6.1	13.6	
LOS		С			В		Α	В		Α	В	
Approach Delay		26.2			19.2			11.9			13.2	
Approach LOS		С			В			В			В	
Queue Length 50th (m)		3.3			5.1		0.4	58.1		1.9	58.4	
Queue Length 95th (m)		9.9			17.8		m1.2	m#121.6		m5.0	#283.6	
Internal Link Dist (m)		101.4			108.9			168.1			95.2	
Turn Bay Length (m)							30.0			50.0		
Base Capacity (vph)		331			445		184	1329		290	1343	
Starvation Cap Reductn		0			0		0	1		0	2	
Spillback Cap Reductn		0			3		0	63		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.29		0.07	0.77		0.21	0.85	

Area Type: Cycle Length: 90 Other

Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85 Intersection Signal Delay: 13.2

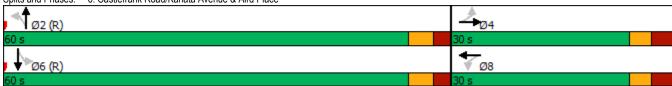
Intersection Capacity Utilization 84.7%

Analysis Period (min) 15

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

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

Splits and Phases: 6: Castlefrank Road/Kanata Avenue & Aird Place



Intersection LOS: B

ICU Level of Service E

Synchro 10 Report Brad Byvelds, Novatech

Lame Configure Lame		٠	→	•	•	←	4	•	†	<i>></i>	/	↓	✓
Triffic Volume (right) 144 140 75 92 200 110 41 508 60 118 766 201	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Fuluse Volume (pdf)		*	î,			î,			î,		*	•	
Storage Langth (m) 35.0	(, ,												
Storage Lanes			1800			1800			1800			1800	
Taper Lamph (n)													
Liane Ulli Factor 1,00 1		· · · · · · · · · · · · · · · · · · ·		0			0	-		0			1
Ped Bike Factor			1.00	4.00		1.00	1.00		4.00	1.00		1.00	1.00
Fit Protected				1.00			1.00			1.00	1.00	1.00	
Filt Protected 0.950 0.9		0.99			0.98			0.99					
Said Flow (prot) 16862		0.050	0.940		0.050	0.947		0.050	0.904		0.050		0.000
File Permitted			1511	n		1631	٨		17/12	٥		170/	1/172
Said. Flow (perm) 424			1311	U		1031	U		1742	U		1704	14/3
Right Tum on Red			1511	٥		1631	Λ		17/12	٥		178/	1356
Said, Flow (RTOR)		424	1011	-	1005	1001		304	1142		223	1704	
Link Speed ((kh)			36	103		30	103		7	103			
Link Distance (m) 313.1 225.5 213 18.3 18.3 13.8 Confi. Pedis. (#hhr) 16 22.5 149 12 16 31 27 27 31 31 3.5 Confi. Pedis. (#hhr) 16 10 1.00 1.00 1.00 1.00 1.00 1.00 1.0	,								-			50	100
Travel 100													
Confl. Bikes (#hr) 16													
Confl. Bikes (#hr)		16	LL.U	149	12	21.0	16	31	10.0	27	27	10.0	31
Peak Hour Factor					•=			•		=:	=:		•
Heary Vehicles (%)		1 00	1 00		1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Adj. Flow (yph) 144 140 75 92 200 110 41 508 60 118 766 201 Shared Lane Traffic (%) Lane Group Plow (yph) 144 215 0 92 310 0 41 568 0 118 766 201 Enter Blocked Intersection No													
Shared Lane Traffic (%) Lane Group Flow (yph) 144 215 0 92 310 0 41 568 0 118 766 201	, ,												
Lane Group Flow (pph)								•					
Enter Blocked Intersection		144	215	0	92	310	0	41	568	0	118	766	201
Lane Alignment	1 \ 1 /			No						No			
Median Width(m)													
Link Offset(m)			3.7						3.7			3.7	J
Two way Left Turn Lane Headway Factor 1.06			0.0			0.0			0.0			0.0	
Headway Factor	Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Turning Speed (k/h) 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 1 2 1 3 6.1 1 3 6.1 1 3 6.1 1 3 6.1 1 8 6.1 1 8<	Two way Left Turn Lane												
Number of Detectors	Headway Factor	1.06	1.06		1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Detector Template	Turning Speed (k/h)	24		14	24		14	24		14	24		14
Leading Detector (m) 6.1 30.5 6.1 30.5 6.1 30.5 6.1 Trailing Detector (m) 0.0			2			2					-		
Trailing Detector (m) 0.0	· ·												
Detector 1 Position(m) 0.0													
Detector 1 Size(m)													
Detector 1 Type													
Detector 1 Channel	()												
Detector 1 Extend (s) 0.0		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Queue (s) 0.0	D	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s) 0.0													
Detector 2 Position(m) 28.7 28.7 28.7 28.7 28.7													
Detector 2 Size(m)		0.0			0.0			0.0			0.0		0.0
Detector 2 Type													
Detector 2 Channel													
Detector 2 Extend (s) 0.0 0.0 0.0 0.0 Turn Type pm+pt NA Perm NA Perm NA pm+pt NA Perm Protected Phases 7 4 8 2 1 6 6 Permitted Phases 7 4 8 8 2 2 1 6 6 Switch Phase 7 4 8 8 2 2 1 6 6 Switch Phase 8 8 2 2 1 6 6 Switch Phase 8 8 2 2 1 6 6 Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12			CI+EX			CI+EX			CI+EX			CI+EX	
Turn Type pm+pt NA Perm NA Perm NA pm+pt NA Perm Protected Phases 7 4 8 2 1 6 6 Permitted Phases 4 8 8 2 2 1 6 6 Switch Phase 7 4 8 8 2 2 1 6 6 Switch Phase 8 8 2 2 1 6 6 Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% M			0.0			0.0			0.0			0.0	
Protected Phases 7 4 8 2 1 6 Permitted Phases 4 8 2 6 6 Detector Phase 7 4 8 8 2 2 1 6 6 Switch Phase Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3	\ <i>\</i>	nm+nt			Perm			Perm			nm+nt		Perm
Permitted Phases 4 8 2 6 6 6 Detector Phase 7 4 8 8 2 2 1 6 6 Switch Phase Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3					1 Cilli			1 Cilli					1 Cilli
Detector Phase 7 4 8 8 2 2 1 6 6 Switch Phase Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3			т.		8	0		2			-	U	6
Switch Phase Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3			4			8			2			6	
Minimum Initial (s) 5.0 10.0 10.0 10.0 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 29.2 11.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3		•	•			<u> </u>		_	_		•	<u> </u>	· ·
Minimum Split (s) 11.7 29.7 29.2 29.2 29.2 29.2 29.2 29.2 29.2 29.7 29.7 Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3		5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Total Split (s) 12.0 43.0 31.0 31.0 35.0 35.0 35.0 12.0 47.0 47.0 Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \												
Total Split (%) 13.3% 47.8% 34.4% 34.4% 38.9% 38.9% 13.3% 52.2% 52.2% Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3													
Maximum Green (s) 5.3 36.3 24.8 24.8 28.8 28.8 5.8 40.3 40.3													

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.4	3.4		2.9	2.9		2.9	2.9		2.9	3.4	3.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7		6.2	6.2		6.2	6.2		6.2	6.7	6.7
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	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
Recall Mode	None	None		None	None		C-Max	C-Max		None	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	16.0			16.0	16.0
Pedestrian Calls (#/hr)		10		10	10		10	10			10	10
Act Effct Green (s)	31.7	31.7		20.2	20.2		32.1	32.1		45.4	44.9	44.9
Actuated g/C Ratio	0.35	0.35		0.22	0.22		0.36	0.36		0.50	0.50	0.50
v/c Ratio	0.65	0.39		0.41	0.80		0.30	0.91		0.52	0.86	0.26
Control Delay	34.8	19.2		34.1	44.7		30.6	49.8		21.9	26.1	5.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.8	19.2		34.1	44.7		30.6	49.8		21.9	26.1	5.0
LOS	С	В		С	D		С	D		С	С	Α
Approach Delay		25.5			42.3			48.5			21.7	
Approach LOS		С			D			D			С	
Queue Length 50th (m)	17.2	22.2		13.5	45.6		5.3	96.2		7.2	91.7	3.6
Queue Length 95th (m)	28.5	37.5		26.1	70.6		15.1	#165.1		m11.9	m#179.4	m9.5
Internal Link Dist (m)		289.1			271.7			230.6			168.1	
Turn Bay Length (m)	35.0			55.0			35.0			90.0		60.0
Base Capacity (vph)	222	630		276	471		136	625		227	889	761
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.34		0.33	0.66		0.30	0.91		0.52	0.86	0.26

Other

Area Type: Cycle Length: 90

Actuated Cycle Length: 90
Offset: 25 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.91

Intersection Signal Delay: 32.3 Intersection Capacity Utilization 99.9%

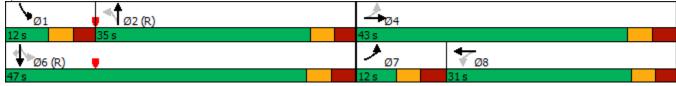
Intersection LOS: C ICU Level of Service F

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.





Synchro 10 Report Brad Byvelds, Novatech

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	î,		7	î,		7	î,		7	ĵ,	
Traffic Volume (vph)	76	500	34	142	693	121	13	16	102	45	12	82
Future Volume (vph)	76	500	34	142	693	121	13	16	102	45	12	82
ldeal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	40.0			55.0			40.0			35.0		
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		1.00		1.00	0.99		0.98	0.97		0.99	0.96	
Frt		0.990			0.978			0.870			0.869	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1763	0	1695	1732	0	1695	1512	0	1679	1495	0
Flt Permitted	0.207			0.465			0.696			0.681		
Satd. Flow (perm)	369	1763	0	826	1732	0	1219	1512	0	1193	1495	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			14			102			82	
Link Speed (k/h)		50			50			50			40	
Link Distance (m)		248.0			203.8			223.0			144.1	
Travel Time (s)		17.9			14.7			16.1			13.0	
Confl. Peds. (#/hr)	15		4	4		15	8		4	4		8
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 (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
Adj. Flow (vph)	76	500	34	142	693	121	13	16	102	45	12	82
Shared Lane Traffic (%)												,_
Lane Group Flow (vph)	76	534	0	142	814	0	13	118	0	45	94	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	20.1	3.7		20.0	3.7		20.0	3.7		20.0	3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	1.00	14	24	1.00	14	24	1.00	14	24	1.00	14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	Cl+Ex		CI+Ex	CI+Ex		Cl+Ex	CI+Ex	
Detector 1 Type Detector 1 Channel	OITEX	OIILX		OIILX	OITEX		OIILX	OITEX		OITEX	OIILX	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
											0.0	
Detector 1 Queue (s) Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	28.7		0.0	28.7		0.0	28.7		0.0	28.7	
		1.8			1.8			1.8			1.8	
Detector 2 Size(m)												
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)		0.0		_	0.0		-	0.0		_	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		•	6		•	8			4	
Permitted Phases	2			6			8			4	4	
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	10.7	27.7		27.7	27.7		24.0	24.0		24.0	24.0	
Total Split (s)	15.0	66.0		51.0	51.0		24.0	24.0		24.0	24.0	
Total Split (%)	16.7%	73.3%		56.7%	56.7%		26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	9.3	60.3		45.3	45.3		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.7 2.0	3.7		3.7	3.7		3.0	3.0		3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0		3.0	3.0		3.0	3.0	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.7	5.7		5.7	5.7		6.0	6.0		6.0	6.0	
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)		15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)		10		10	10		10	10		10	10	
Act Effct Green (s)	70.0	71.2		61.1	61.1		11.5	11.5		11.5	11.5	
Actuated g/C Ratio	0.78	0.79		0.68	0.68		0.13	0.13		0.13	0.13	
v/c Ratio	0.20	0.38		0.25	0.69		0.08	0.42		0.30	0.36	
Control Delay	4.8	5.1		10.6	17.2		36.1	14.9		39.9	14.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.8	5.1		10.6	17.2		36.1	14.9		39.9	14.2	
LOS	Α	Α		В	В		D	В		D	В	
Approach Delay		5.1			16.2			17.0			22.6	
Approach LOS		Α			В			В			С	
Queue Length 50th (m)	2.6	24.8		10.1	88.6		1.8	3.2		7.3	1.9	
Queue Length 95th (m)	7.9	54.5		26.0	#195.8		m4.1	m8.7		16.1	14.2	
Internal Link Dist (m)		224.0			179.8			199.0			120.1	
Turn Bay Length (m)	30.0			30.0			40.0			35.0		
Base Capacity (vph)	424	1395		560	1179		243	384		238	364	
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	0.18	0.38		0.25	0.69		0.05	0.31		0.19	0.26	

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69 Intersection Signal Delay: 13.0

Intersection LOS: B

Intersection Capacity Utilization 75.9% ICU Level of Service D

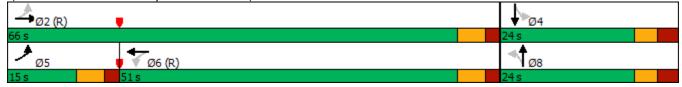
Analysis Period (min) 15

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: 22: Maritime Way/Knudson Drive & Campeau Drive



Synchro 10 Report Brad Byvelds, Novatech

	→	•	•	←	•	~
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	î,			্ব	W	
Traffic Volume (veh/h)	258	38	10	181	24	6
Future Volume (Veh/h)	258	38	10	181	24	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	258	38	10	181	24	6
Pedestrians	200	00	10	101		
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)	NONE			NONE		
Upstream signal (m)	217					
pX, platoon unblocked	217					
vC, conflicting volume			296		478	277
vC1, stage 1 conf vol			290		4/0	211
vC2, stage 2 conf vol vCu, unblocked vol			296		478	277
			296 4.1			
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)			0.0		2.5	2.2
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	99
cM capacity (veh/h)			1265		542	762
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	296	191	30			
Volume Left	0	10	24			
Volume Right	38	0	6			
cSH	1700	1265	575			
Volume to Capacity	0.17	0.01	0.05			
Queue Length 95th (m)	0.0	0.2	1.3			
Control Delay (s)	0.0	0.5	11.6			
Lane LOS		Α	В			
Approach Delay (s)	0.0	0.5	11.6			
Approach LOS			В			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			28.7%	IC	U Level of S	ervice
Analysis Period (min)			15			
and joint office (min)			- 10			

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	7	<u> </u>	.1011	JUL	*
Traffic Volume (vph)	570	821	8 60	0	0	TT
Future Volume (vph)	570	821	860	0	0	1243
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.30
Frt		0.850				
Flt Protected	0.950	0.000				
Satd. Flow (prot)	1695	1517	1750	0	0	3357
Flt Permitted	0.950	1017	1730	U	U	0001
Satd. Flow (perm)	1695	1517	1750	0	0	3357
	1090	Yes	1730	Yes	U	JJ31
Right Turn on Red				res		
Satd. Flow (RTOR)	F0	86				
Link Speed (k/h)	50		50			50
Link Distance (m)	332.8		126.6			114.0
Travel Time (s)	24.0		9.1			8.2
Confl. Bikes (#/hr)		,		3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%
Adj. Flow (vph)	570	821	860	0	0	1243
Shared Lane Traffic (%)						
Lane Group Flow (vph)	570	821	860	0	0	1243
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	Tagin	0.0	rugiit	LOIL	0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
	4.9		4.9			4.9
Two way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	6.1	6.1	30.5			30.5
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	6.1	6.1	1.8			1.8
Detector 1 Type	Cl+Ex	CI+Ex	CI+Ex			Cl+Ex
Detector 1 Channel	OITLA	OLITEX	OITEX			OLIFEX
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Perm	Perm	NA			NA
Protected Phases	. 51111	. 0.111	2			6
Permitted Phases	8	8				U
	8	8	2			6
Detector Phase	ð	Ŏ	2			Ö
Switch Phase		- ^	40.0			40.0
Minimum Initial (s)	5.0	5.0	10.0			10.0
Minimum Split (s)	23.0	23.0	28.1			16.1
Total Split (s)	60.0	60.0	60.0			60.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%
Maximum Green (s)	55.0	55.0	53.9			53.9
Yellow Time (s)	3.3	3.3	3.3			3.3
All-Red Time (s)	1.7	1.7	2.8			2.8
	0.0	0.0	0.0			0.0
Lost Lime Adjust (s)			0.0			0.0
Lost Time Adjust (s) Total Lost Time (s)	5.0	5.0	6.1			6.1

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0			3.0	
Recall Mode	None	None	C-Max			C-Max	
Walk Time (s)	7.0	7.0	7.0				
Flash Dont Walk (s)	11.0	11.0	15.0				
Pedestrian Calls (#/hr)	10	10	10				
Act Effct Green (s)	55.0	55.0	53.9			53.9	
Actuated g/C Ratio	0.46	0.46	0.45			0.45	
//c Ratio	0.73	1.11	1.09			0.82	
Control Delay	33.5	95.6	93.4			34.7	
Queue Delay	0.0	0.0	4.1			0.0	
Total Delay	33.5	95.6	97.5			34.7	
LOS	C	F	F			C	
Approach Delay	70.1	•	97.5			34.7	
Approach LOS	E		F			C	
Queue Length 50th (m)	107.0	~209.4	~228.8			131.8	
Queue Length 95th (m)	151.3	#284.1	#303.3			161.3	
Internal Link Dist (m)	308.8	11204.1	102.6			90.0	
Turn Bay Length (m)	000.0		102.0			00.0	
Base Capacity (vph)	776	741	786			1507	
Starvation Cap Reductn	0	0	186			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.73	1.11	1.43			0.82	
ntersection Summary							
Area Type:	Other						
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 0 (0%), Referenced to pha	ase 2:NBT and	6:SBT, Sta	t of Green				
Natural Cycle: 120							
Control Type: Actuated-Coordina	ited						
Maximum v/c Ratio: 1.11							
ntersection Signal Delay: 64.3					ersection L		
ntersection Capacity Utilization 1	143.0%			ICU	J Level of S	Service H	
Analysis Period (min) 15							
 Volume exceeds capacity, qu 	ieue is theoretic	ally infinite.					
Queue shown is maximum after							
95th percentile volume excee		eue may be	longer.				
Queue shown is maximum after	er two cycles.						
Splits and Phases: 4: Kanata A	Avenue & HWY	417 WB Of	f				
*		115 01	•		1		
Ø2 (R)					┛		
50 s							
▼ Ø6 (R)					2	78	
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Lane Configurations	*	77	44			44		
Traffic Volume (vph)	295	280	428	0	0	1098		
Future Volume (vph)	295	280	428	0	0	1098		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95		
Frt		0.850						
Flt Protected	0.950							
Satd. Flow (prot)	1695	2347	3262	0	0	3325		
Flt Permitted	0.950	00.47	0000	•	•	2005		
Satd. Flow (perm)	1695	2347	3262	0	0	3325		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR) Link Speed (k/h)	50	280	50			50		
Link Distance (m)	332.8		126.6			114.0		
Travel Time (s)	24.0		9.1			8.2		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	2%	16%	6%	0%	0%	4%		
Adj. Flow (vph)	295	280	428	0 /0	0 /0	1098		
Shared Lane Traffic (%)	200	_00	120			. 300		
Lane Group Flow (vph)	295	280	428	0	0	1098		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Right	Left	Left		
Median Width(m)	3.7		0.0			0.0		
Link Offset(m)	0.0		0.0			0.0		
Crosswalk Width(m)	4.9		4.9			4.9		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	24	14		14	24			
Number of Detectors	1	1	2			2		
Detector Template	Left	Right	Thru			Thru		
Leading Detector (m)	6.1	6.1	30.5			30.5		
Trailing Detector (m)	0.0	0.0	0.0			0.0		
Detector 1 Position(m)	0.0	0.0	0.0			0.0		
Detector 1 Size(m) Detector 1 Type	6.1 CI+Ex	6.1 CI+Ex	1.8 Cl+Ex			1.8 Cl+Ex		
Detector 1 Channel	CI+EX	CI+EX	CI+EX			CI+EX		
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		
Detector 2 Position(m)	0.0	0.0	28.7			28.7		
Detector 2 Size(m)			1.8			1.8		
Detector 2 Type			CI+Ex			CI+Ex		
Detector 2 Channel								
Detector 2 Extend (s)			0.0			0.0		
Turn Type	Prot	Prot	NA			NA		
Protected Phases	7	4	2			6	3	
Permitted Phases								
Detector Phase	7	4	2			6		
Switch Phase								
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0	
Minimum Split (s)	10.0	10.0	28.1			24.1	18.0	
Total Split (s)	36.0	18.0	54.0			54.0	18.0	
Total Split (%)	40.0%	20.0%	60.0%			60.0%	20%	
Maximum Green (s)	31.0 3.3	13.0 3.3	47.9			47.9 3.3	16.0 2.0	
Yellow Time (s)	3.3 1.7	3.3 1.7	3.3			3.3 2.8	0.0	
All-Red Time (s) Lost Time Adjust (s)	0.0	0.0	2.8 0.0			0.0	U.U	
Total Lost Time (s)	5.0	5.0	6.1			6.1		
Lead/Lag	J.0	Lag	0.1			0.1	Lead	
Lead-Lag Optimize?		Yes					Yes	
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3	
Recall Mode	None	None	C-Max			C-Max	None	
Walk Time (s)			7.0				7.0	
Flash Dont Walk (s)			15.0				9.0	
Pedestrian Calls (#/hr)			10				10	
Act Effct Green (s)	21.2	17.6	57.7			57.7		
Actuated g/C Ratio	0.24	0.20	0.64			0.64		
v/c Ratio	0.74	0.41	0.20			0.52		
Control Delay	42.7	6.4	13.9			8.2		
Queue Delay	0.0	0.0	0.0			0.0		
Total Delay	42.7	6.4	13.9			8.2		
LOS	D	Α	В			Α		
Approach Delay	25.0		13.9			8.2		
Approach LOS	С		В			Α		
Queue Length 50th (m)	47.5	0.0	13.8			28.4		
Queue Length 95th (m)	66.0	11.9	55.8			36.2		
Internal Link Dist (m)	308.8		102.6			90.0		
Turn Bay Length (m)								
Base Capacity (vph)	583	692	2091			2132		
Starvation Cap Reductn	0	0	0			0		
Spillback Cap Reductn	0	0	0			84		
Storage Cap Reductn	0	0	0			0		
Reduced v/c Ratio	0.51	0.40	0.20			0.54		
Intersection Summary								
Area Type:	Other							
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 0 (0%), Referenced to ph	ase 2:NBT and 6	S:SBT, Star	t of Green					
Natural Cycle: 60								
Control Type: Actuated-Coordina	ated							
Maximum v/c Ratio: 0.74								
Intersection Signal Delay: 14.0				Inte	ersection L	OS: B		
Intersection Capacity Utilization 8	85.2%			ICU	J Level of S	Service E		
Analysis Period (min) 15								
Splits and Phases: 4: Kanata	Avenue & HWY	417 WB Of	f					
† (22.(D)							₩kø3	•
∫ Ø2 (R) 54 s						_	л ь g3 8 s	Ø4 18 s
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▼ Ø6 (R)							√ Ø7	
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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	*	11	44			44	
Traffic Volume (vph)	570	821	860	0	0	1243	
Future Volume (vph)	570	821	860	0	0	1243	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
ane Util. Factor	1.00	0.88	0.95	1.00	1.00	0.95	
Ped Bike Factor							
Frt		0.850					
Flt Protected	0.950	0.000					
Satd. Flow (prot)	1695	2669	3325	0	0	3357	
Flt Permitted	0.950	2000	0020			0007	
Satd. Flow (perm)	1695	2669	3325	0	0	3357	
Right Turn on Red	1033	Yes	3020	Yes	U	0001	
Satd. Flow (RTOR)		778		163			
Link Speed (k/h)	50	110	50			50	
.ink Distance (m)	332.8		126.6			114.0	
ravel Time (s)	24.0		9.1			8.2	
Confl. Bikes (#/hr)	24.0		J. I	3		0.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	4%	0%	0%	3%	
Adj. Flow (vph)	570	821	860	0	0	1243	
Shared Lane Traffic (%)	570	004	000	^	^	40.40	
ane Group Flow (vph)	570	821	860	0	0	1243	
Enter Blocked Intersection	No	No	No	No	No	No	
ane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	3.7		0.0			0.0	
.ink Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.9		4.9			4.9	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24	14		14	24		
Number of Detectors	1	1	2			2	
Detector Template	Left	Right	Thru			Thru	
eading Detector (m)	6.1	6.1	30.5			30.5	
Frailing Detector (m)	0.0	0.0	0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0	
Detector 1 Size(m)	6.1	6.1	1.8			1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex			CI+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0	
Detector 2 Position(m)			28.7			28.7	
Detector 2 Size(m)			1.8			1.8	
Detector 2 Type			CI+Ex			CI+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Furn Type	Prot	Prot	NA			NA	
Protected Phases	7	4	2			6	3
Permitted Phases		•	= -				
Detector Phase	7	4	2			6	
Switch Phase			_			•	
Minimum Initial (s)	5.0	5.0	10.0			10.0	1.0
Minimum Split (s)	10.0	10.0	28.1			16.1	18.0
otal Split (s)	70.0	52.0	30.0			30.0	18.0
Total Split (%)	70.0%	52.0%	30.0%			30.0%	18%
	65.0						
	กาน	47.0	23.9			23.9	16.0 2.0
Maximum Green (s)		2.2	2 2				
Maximum Green (s) Yellow Time (s)	3.3	3.3	3.3			3.3	
Maximum Green (s) Yellow Time (s) All-Red Time (s)	3.3 1.7	1.7	2.8			2.8	0.0
Maximum Green (s)	3.3						

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ane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3		
Lead-Lag Optimize?		Yes					Yes		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		
Recall Mode	None	None	C-Max			C-Max	None		
Walk Time (s)			7.0				7.0		
Flash Dont Walk (s)			15.0				9.0		
Pedestrian Calls (#/hr)			10				10		
Act Effct Green (s)	45.0	41.4	43.9			43.9			
Actuated g/C Ratio	0.45	0.41	0.44			0.44			
v/c Ratio	0.75	0.53	0.59			0.84			
Control Delay	28.3	3.1	25.9			34.2			
Queue Delay	0.0	0.0	0.0			0.0			
Total Delay	28.3	3.1	25.9			34.2			
LOS	С	Α	С			С			
Approach Delay	13.4		25.9			34.2			
Approach LOS	В		С			С			
Queue Length 50th (m)	88.9	2.5	64.5			109.8			
Queue Length 95th (m)	92.8	14.8	#115.6			#199.6			
Internal Link Dist (m)	308.8		102.6			90.0			
Turn Bay Length (m)									
Base Capacity (vph)	1101	1681	1458			1472			
Starvation Cap Reductn	0	0	0			0			
Spillback Cap Reductn	0	0	0			0			
Storage Cap Reductn	0	0	0			Ő			
Reduced v/c Ratio	0.52	0.49	0.59			0.84			
Intersection Summary									
Area Type:	Other								
Cycle Length: 100									
Actuated Cycle Length: 100									
Offset: 0 (0%), Referenced to ph	nase 2:NBT and 6	:SBT, Star	rt of Green						
Natural Cycle: 65									
Control Type: Actuated-Coordina	ated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 23.9				Inte	ersection Lo	OS: C			
Intersection Capacity Utilization	122.7%				J Level of S				
Analysis Period (min) 15									
# 95th percentile volume excee		eue may be	e longer.						
Queue shown is maximum aff									
	Avenue & HWY 4	117 WR Of	ff						
A	Avenue or niver -	#17 WB OI			•				
Ø2 (R)		_	Ø3		Ø4				
30 s		18 s			52 s				