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Heritage Hills Retail Plaza 471 Terry Fox Drive, Ottawa

Transportation Impact Assessment

Heritage Hills Retail Plaza 471 Terry Fox Drive

Transportation Impact Assessment

Prepared By:

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

January 2019

Novatech File: 118133 Ref: R-2018-119



January 31, 2019

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

Attention: Ms. Rosanna Baggs Project Manager, Infrastructure Approvals

Dear Ms. Baggs:

Reference: 471 Terry Fox Drive Transportation Impact Assessment Novatech File No. 118133

We are pleased to submit the following Transportation Impact Assessment in support of Zoning and Site Plan Control Applications for 471 Terry Fox Drive, for your review and signoff. 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 Jennifer Luong, or the undersigned.

Yours truly,

NOVATECH

Kudis

Joshua Audia, B.Sc. E.I.T. | Transportation/Traffic

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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 √ appropriate field(s)] is either transportation engineering or transportation planning □.

^{1,2} License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa Infrastructure Services and Community Sustainability Planning and Growth Management 110 Laurier Avenue West, 4th fl. Ottawa, ON K1P 1J1 Tel.: 613-580-2424 Fax: 613-560-6006 Ville d'Ottawa Services d'infrastructure et Viabilité des collectivités Urbanisme et Gestion de la croissance 110, avenue Laurier Ouest Ottawa (Ontario) K1P 1J1 Tél.: 613-580-2424 Télécopieur: 613-560-6006

Ottawa this <u>3</u> day of <u>January</u> (City) ___, 201<u>7</u>. Dated at

Name:

Jennifer Luong, P.Eng. (Please Print)

Professional Title:

Senior Project Manager, Transportation/Traffic_____

enter -

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

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning and Site Plan Control Applications for the property located at 471 Terry Fox Drive. The subject site is currently undeveloped.

The site is part of the Broughton Subdivision, and was considered as commercial development with retail and gas station uses in the original 2004 TIS (revised in 2007 and 2008) and 2010 Addendum (D07-16-04-0020). Addendums 2, 3, and 4 were prepared in 2011, 2015, and 2016 to address development of the Phase 3B lands at the corner of Kanata Avenue and the former Richardson Side Road (revised SP D07-12-15-0150).

The subject site is designated as 'General Urban Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Local Commercial Zone' (LC), and there are no Secondary Plans or Community Design Plans applicable to the site. A minor rezoning application is required to permit the location of building setbacks closer to Terry Fox Drive and Tillsonburg Street.

The proposed development will feature a retail building with a total of 22,437 ft² of leasable space and 23,000 ft² of floor space, and a 3,315 ft² gas station with car wash. A total of 112 parking spaces will be provided, with 96 parking spaces serving the retail building and 16 parking spaces serving the gas station.

The proposed accesses to the site include a full-movement access on Tillsonburg Street, a right-in/ right-out (RIRO) access on Kanata Avenue and a RIRO access on Terry Fox Drive. The fullmovement access on Tillsonburg Street will serve the retail building, the RIRO access on Kanata Avenue will serve the gas station, and the RIRO access on Terry Fox Drive will serve both uses.

The study area for this report includes Terry Fox Drive, Kanata Avenue, Tillsonburg Street, and Huntsville Drive. The study area includes the signalized intersections at Terry Fox Drive/Kanata Avenue and Kanata Avenue/Huntsville Drive, as well as the unsignalized intersection at Terry Fox Drive/Tillsonburg Street.

The selected time periods for the analysis are the weekday AM and PM peak hours and the Saturday peak hour, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The proposed development is expected to be completed in one phase, with full occupancy by the year 2019. Therefore, the analysis considers the buildout year 2019 and the horizon year 2024.

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

Forecasting

- The proposed development is projected to generate approximately 132 person trips during the AM peak hour, 260 person trips during the PM peak hour, and 267 person trips during the Saturday peak hour.
- The proposed development is projected to generate 103 vehicle trips during the AM peak hour, 197 vehicle trips during the PM peak hour, and 206 vehicle trips during the Saturday peak hour.

Development Design and Parking

- Pedestrian facilities will be provided between the building entrances and the parking areas. Additionally, pedestrian facilities will connect the retail buildings to the existing sidewalks along Terry Fox Drive and Tillsonburg Street. Sidewalks will be depressed and continuous across the accesses, in accordance with City standards.
- All building entrances are within 400m walking distances of stops for both OC Transpo routes 165 and 264.
- Retail garbage collection will take place approximately 80m south of the full-movement access on Tillsonburg Street. Gas station garbage collection will take place south of the proposed car wash, approximately 15m north of the RIRO access on Kanata Avenue.
- Loading and delivery spaces for the retail uses are provided adjacent to the east and west of the full-movement access on Tillsonburg Street.
- The accesses to the gas station are sufficient to accommodate a fuel tanker, the largest vehicle to enter and exit the site. Some mountable curb is required for the tanker to negotiate turning into/out of the accesses.
- The fire route for the proposed development accesses the site from the full-movement access on Tillsonburg Street and the RIRO access on Terry Fox Drive.
- Approximately 112 vehicle parking spaces and 16 bicycle parking spaces are proposed for the development, meeting the minimum requirements of the ZBL. Four of the 96 retail parking spaces and one of the 16 gas station parking spaces are accessible spaces, meeting the minimum requirements of the City's *Accessibility Design Standards*.
- A total of ten bicycle parking spaces will be provided for the retail building, and a total of six bicycle parking spaces will be provided for the gas station and convenience store, thereby meeting the requirements of the ZBL.
- The proposed car wash provides queueing space for ten vehicles before/in the car wash bay, and one vehicle after the bay, thereby meeting the minimum requirements of the ZBL.
- Two retail loading spaces are proposed, thereby meeting the minimum requirements of the ZBL.

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
 - Kanata Avenue meets the target pedestrian level of service (PLOS), while Terry Fox Drive and Tillsonburg Street do not;
 - No boundary streets meet the target bicycle level of service (BLOS);
 - No boundary streets have targets for transit level of service (TLOS), however Terry Fox Drive and Kanata Avenue both currently meet the target for Transit Priority Corridors with Isolated Measures;
 - Terry Fox Drive meets the target truck level of service (TkLOS);
 - All boundary streets meet the vehicular level of service (Auto LOS).

- The east side of Terry Fox Drive does not achieve the target PLOS C. The target PLOS can
 only be achieved by reducing the operating speed significantly (i.e. reducing the posted
 speed limit from 70 km/h to 50 km/h). Therefore, no recommendations have been made in
 improving the PLOS on Terry Fox Drive.
- The north side of Tillsonburg Street has no pedestrian facilities. Current City standards suggest that if required, sidewalks can be provided on one side of local roadways. Any potential pedestrian traffic generated by the proposed development are anticipated to use the sidewalk on the south side of Tillsonburg Street, which meets the target PLOS C. Therefore, no recommendations have been made in improving the PLOS on Tillsonburg Street.
- Terry Fox Drive does not achieve the target BLOS E, despite the existing bike lanes. The target BLOS can only be achieved by reducing the operating speed to 60 km/h or implementing a physically separated bikeway (such as a multi-use pathway). Site observations indicate that the majority of cyclists likely use the east sidewalk on Terry Fox Drive rather than the bike lanes, as an existing multi-use pathway ties into this sidewalk north of Richardson Side Road. Consideration could be given to extending the multi-use pathway on the east side of Terry Fox Drive. This is identified for the City's consideration as funding becomes available.
- Tillsonburg Street does not achieve the target BLOS D. If classified as a residential street with an operating speed of 50 km/h, Tillsonburg Street achieves a BLOS B. Book 18 of the *Ontario Traffic Manual* indicates that shared use lanes are acceptable for Tillsonburg Street, given the operating speed and traffic volumes. Therefore, no recommendations have been made in improving the BLOS on Tillsonburg Street.
- Kanata Avenue does not achieve the target BLOS B. The target BLOS can only be achieved through either a reduction in the operating speed to 50 km/h and a raised median, or implementation of a physically separated bikeway. A nearby alternate local route is Richardson Side Road east of Terry Fox Drive, which is closed to vehicular traffic. Therefore, no recommendations have been made in improving the BLOS on Kanata Avenue.

Access Design

- Section 25 (a) of the *Private Approach By-Law* identifies a maximum requirement for the number of approaches based on the amount of frontage, and Section 25 (b) identifies that each roadway shall be evaluated separately. For 46m to 150m of frontage (Tillsonburg Street and Kanata Avenue), up to two two-way approaches are permitted. For every additional 90m in excess of 150m (Terry Fox Drive), another two-way approach is permitted. This requirement is met by the proposed accesses.
- Section 25 (c) of the *Private Approach By-Law* identifies a maximum width requirement of 9m for two-way private approaches, and Section 107 (1)(a) of the *Zoning By-Law* identifies a minimum width requirement of 6.7m for two-way private approaches to a parking lot. These requirements are met by the proposed accesses.
- Section 25 (I) of the *Private Approach By-Law* identifies minimum separation distances of 30m between a two-way approach and the nearest intersecting street line, and between a

two-way approach and any other private approach. These requirements are met by the proposed accesses.

- If all parking spaces are considered rather than dividing the retail and gas station parking, the minimum separation distance requirement increases to 45m between a two-way approach and the nearest intersecting street line. In this case, the Tillsonburg Street access would not meet the requirement and a waiver would be required. However, this access is located as far from Terry Fox Drive as possible, and the retail and gas station uses are anticipated to function somewhat independently. In addition, the long throat length will help to mitigate any concerns with regards to queueing back to Terry Fox Drive.
- Figure 8.8.2 of the *Geometric Design Guide* identifies minimum corner clearance distances of 70m on arterial roadways, 25m on collector roadways divided with a raised median, and 15m on local roadways. These requirements are met by the proposed accesses.
- Section 25 (o) of the *Private Approach By-Law* identifies a minimum distance requirement of 3m between a private approach and the nearest property line. The spacing between the Tillsonburg Street access and the property line is approximately 4.2m and the spacing between the Kanata Avenue access and the property line is approximately 15.5m, thereby meeting this requirement.
- Table 8.9.3 of the Geometric Design Guide identifies a minimum clear throat length requirement of 8m for collector roadways and 15m for arterial roadways, for shopping centres less than 25,000 ft². No clear throat length requirement is explicitly stated for gas stations. Measured from the near edge of the sidewalk, the access on Terry Fox Drive achieves a clear throat length of 15m. Additionally, there is a significant amount of open paved area onsite, which is anticipated to contain any inbound queueing. The access on Kanata Avenue achieves a clear throat length of 15m, thereby meeting the requirements.
- Section 2.5.3 of the Geometric Design Guide identifies minimum stopping sight distance (SSD) requirements based on the roadway grade and design speed. Adjusting the design speed for traffic turning onto Tillsonburg Street from Terry Fox Drive to reflect a lower operating speed, all accesses meet the minimum SSD requirements.
- A right turn lane or taper is not recommended for the Terry Fox Drive access. It is noted that right turn tapers are not provided for accesses to the Kanata Centrum area to the south, where Terry Fox Drive still has the same posted speed limit of 70 km/h. A similar level of friction will be introduced along this section of Terry Fox Drive as traffic lights and development continue to occur.
- The Terry Fox Drive access is critical to the proposed development. Connectivity between
 the retail and gas station areas is important due to the turning restrictions at the accesses,
 and each land use depends on the other use's access for at least one movement.
 Additionally, providing an access on Terry Fox Drive allows fuel trucks to enter the site without
 navigating the entire retail parking lot first.

<u>Transit</u>

• The transit trips generated by the proposed development are not anticipated to have a significant impact on the operations of OC Transpo routes 165 and 264. No mitigation measures have been recommended, as none are required.

Intersection Design

- Based on the results of the intersection MMLOS analysis:
 - Neither intersection meets the target pedestrian level of service (PLOS);
 - Neither intersection meets the target bicycle level of service (BLOS);
 - Neither intersection has a target transit level of service (TLOS), however all approaches achieve a TLOS E or better;
 - Terry Fox Drive/Kanata Avenue meets the target truck level of service (TkLOS);
 - All intersections meet the vehicular level of service (Auto LOS).
- Pedestrian Level of Service:
 - Both crosswalks of Terry Fox Drive/Kanata Avenue do not achieve the target PLOS C, due to crossing distances equivalent to at least eight lanes. There are limited opportunities in improving the PLOS without reducing the number of travel lanes on Terry Fox Drive and Kanata Avenue, and as such, no recommendations have been made in improving the PLOS at this intersection.
 - At Kanata Avenue/Huntsville Drive, the east crosswalk does not achieve the target PLOS C based on PETSI score, due to a crossing distance equivalent to five lanes. Additionally, the east and west crosswalks do not achieve the target PLOS C based on delay score. There are limited opportunities in improving the PLOS at the east approach without reducing the number of travel lanes on Kanata Avenue, with the only possible modification being the removal of the westbound right turn lane. To achieve the target PLOS C based on delay score, the effective walk time for pedestrians would require an increase of approximately three seconds.
- Bicycle Level of Service:
 - At Terry Fox Drive/Kanata Avenue, the south and east approaches do not achieve the target BLOS B based on right turn characteristics, and the north approach does not achieve the target BLOS B based on left turn characteristics. The east approach does not meet the target, as the pocket bike lane is adjacent to a right turn lane greater than 50m. Bike access to Terry Fox Drive is also provided at Richardson Side Road, where the east approach is closed to vehicular traffic.
 - For the south and east approaches, this would require removal of the existing channelized right turn lanes, which is not recommended based on the right turn volumes. Therefore, no recommendations have been made in improving the BLOS for the south and east approaches. A jug handle and crossride for cyclists coming from the north approach can feasibly be implemented along with the installation of a bicycle traffic signal.
 - At Kanata Avenue/Huntsville Drive, the east approach does not achieve the target BLOS B based on right turn characteristics, and the west approach does not achieve the target BLOS B based on left turn characteristics. Consideration could be given to shifting the location of the bike lane to the curb at the east approach or removing the

westbound right turn lane, which would improve the BLOS of the approach to a BLOS A. In addition, a crossride could be considered to improve cyclist visibility through the intersection.

- With respect to left turns, a jug handle and crossride for cyclists coming from the west approach can feasibly be implemented along with the installation of a bicycle traffic signal.
- The following modifications can be accommodated at the intersections of Terry Fox Drive/ Kanata Avenue and Kanata Avenue/Huntsville Drive, and are identified for the City's consideration:
 - A jug handle and crossride for southbound cyclists at Terry Fox Drive/Kanata Avenue;
 - A jug handle and crossride for eastbound cyclists at Kanata Avenue/Huntsville Drive;
 - o Removal of the westbound right turn lane at Kanata Avenue/Huntsville Drive;
 - A southbound green time increase of three seconds at Kanata Avenue/Huntsville Drive, such that the intersection achieves the target PLOS C.
- Compared to existing conditions, marginal increases in the v/c ratios and delays at the study area intersections are anticipated as a result of background growth and site-generated traffic.
- All study area intersections are projected to continue operating acceptably during the AM, PM, and Saturday peak hours (Auto LOS B or better). There are no queueing issues identified in Synchro for the 2024 total traffic conditions, which can be considered the 'worst case' scenario analyzed in this TIA.
- Based on the foregoing, the proposed development is recommended from a transportation perspective.

1.0 INTRODUCTION

This Transportation Impact Assessment has been prepared in support of Zoning and Site Plan Control Applications for the property located at 471 Terry Fox Drive. The subject site is currently undeveloped.

The site is part of the Broughton Subdivision, and was considered as commercial development with retail and gas station uses in the original 2004 TIS (revised in 2007 and 2008) and 2010 Addendum (D07-16-04-0020). Addendums 2, 3, and 4 were prepared in 2011, 2015, and 2016 to address development of the Phase 3B lands at the corner of Kanata Avenue and the former Richardson Side Road (revised SP D07-12-15-0150).

The proposed development is a retail plaza, featuring approximately 23,000 ft² of retail space and a 3,315 ft² gas station with car wash. The development will provide 112 surface parking spaces, with 96 spaces serving the retail uses and 16 spaces serving the gas station.

The subject site is surrounded by the following:

- Residences to the north;
- Kanata Avenue, residences and vacant land to the east;
- Terry Fox Drive and vacant land to the south;
- Tillsonburg Street and residences to the west.

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

2.0 PROPOSED DEVELOPMENT

The subject site is designated as 'General Urban Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Local Commercial Zone' (LC), and there are no Secondary Plans or Community Design Plans applicable to the site. A minor rezoning application is required to permit the location of building setbacks closer to Terry Fox Drive and Tillsonburg Street.

The proposed development will feature a retail building with a total of 22,437 ft² of leasable space and 23,000 ft² of floor space, and a 3,315 ft² gas station with car wash. A total of 112 parking spaces will be provided, with 96 parking spaces serving the retail building and 16 parking spaces serving the gas station.

The proposed accesses to the site include a full-movement access on Tillsonburg Street, a right-in/ right-out (RIRO) access on Kanata Avenue and a RIRO access on Terry Fox Drive. The fullmovement access on Tillsonburg Street will serve the retail building, the RIRO access on Kanata Avenue will serve the gas station, and the RIRO access on Terry Fox Drive will serve both uses.

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

A site plan context figure, which includes details of the boundary streets such as pavement markings, sidewalks, accesses, and right-of-way locations, is included in **Figure 2**.

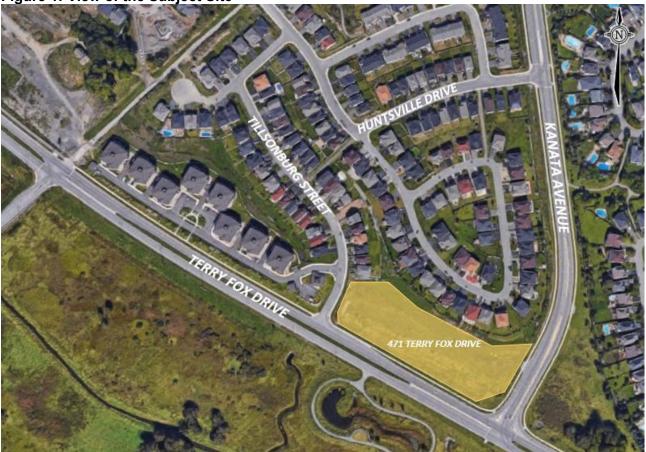


Figure 1: View of the Subject Site

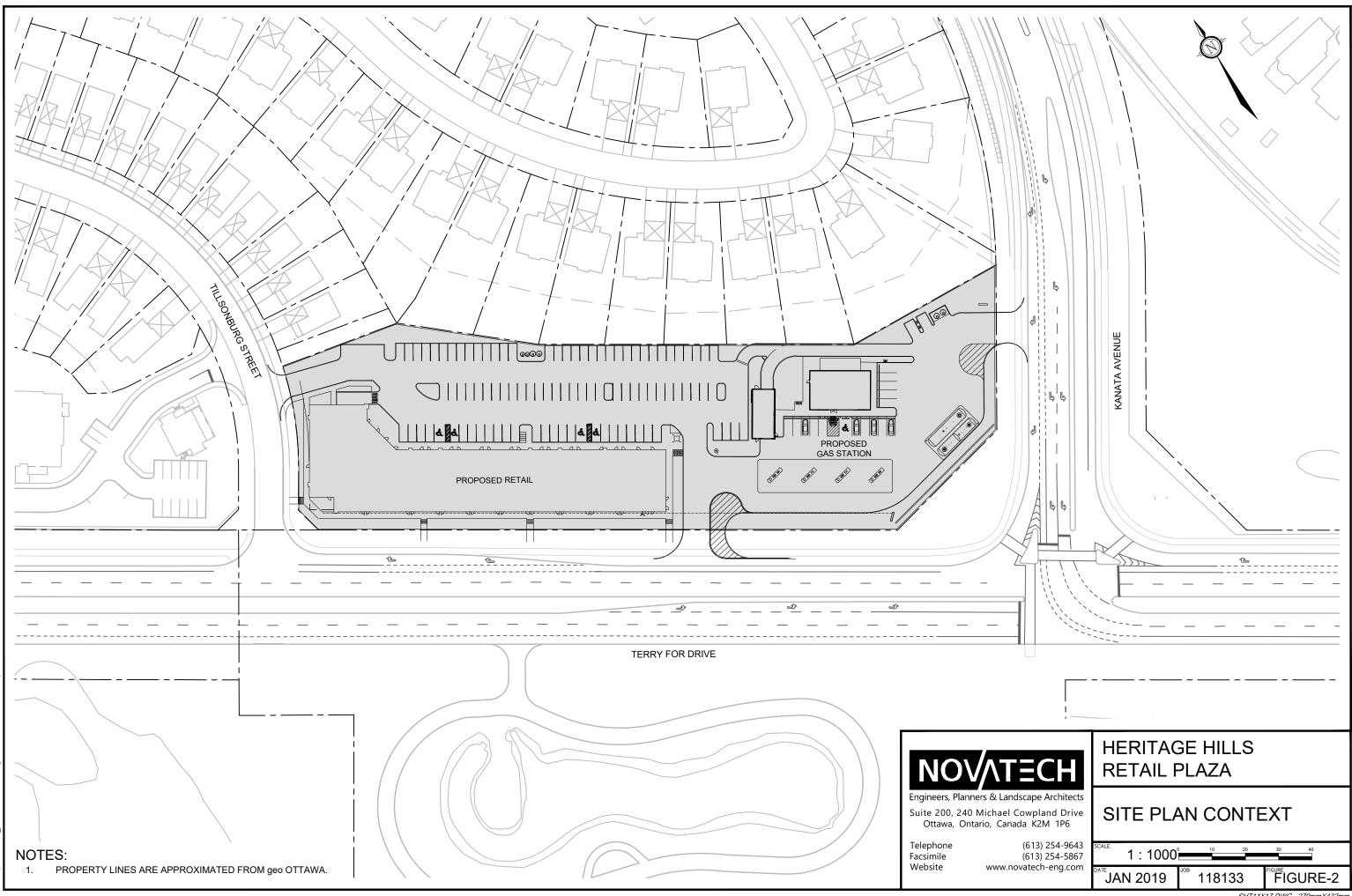
3.0 SCREENING

3.1 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 expected to generate over 60 person trips/peak hour; further assessment is required based on this trigger.
- Location Triggers The development is located along a Spine Cycling Route; further assessment is required based on this trigger.
- Safety Triggers Multiple accesses have limited sight lines due to vertical and horizontal curvatures (Tillsonburg Street and Kanata Avenue), are within 150m of a traffic signal (Terry Fox Drive and Kanata Avenue), and are within auxiliary lanes of other intersections (Kanata Avenue). For these reasons, further assessment is required based on this trigger.

A copy of the TIA Screening Form is included in **Appendix B**.



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4.0 SCOPING

4.1 Existing Conditions

4.1.1 Roadways

All roadways within the study area fall under the jurisdiction of the City of Ottawa.

Terry Fox Drive is an arterial roadway that runs on a north-south alignment within the study area. Overall, Terry Fox Drive runs generally on a north-south alignment between Herzberg Road and Eagleson Road. Within the study area, Terry Fox Drive has a four-lane divided urban cross-section, sidewalks on the east side of the roadway, and a posted speed limit of 70 km/h. Terry Fox Drive is classified as a truck route, allowing full loads. Street parking is not permitted. The right-of-way (ROW) at the subject site is approximately 44.5m, equal to the ROW protection identified in the City of Ottawa's Official Plan. No widening is required.

Kanata Avenue is a major collector roadway that runs generally on an east-west alignment within the study area. Kanata Avenue runs between Terry Fox Drive and Aird Place, where it continues south as Castlefrank Road. Castlefrank Road continues on a generally north-south alignment until terminating at Terry Fox Drive. Within the study area, Kanata Avenue has a two-lane divided urban cross-section, sidewalks on both sides of the roadway, and a posted speed limit of 60 km/h. Kanata Avenue is not classified as a truck route, and street parking is not permitted. The ROW at the subject site is approximately 40m, and no ROW protection is identified in the Official Plan.

Tillsonburg Street is a local roadway that runs on an east-west, then north-south alignment between Terry Fox Drive and Wallaceburg Court. Within the study area, Tillsonburg Street has a two-lane undivided urban cross-section, sidewalks on the south/east side of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Tillsonburg Street is not classified as a truck route. Street parking is permitted. The ROW at the subject site is approximately 18m, and no ROW protection is identified in the Official Plan.

Huntsville Drive is a local roadway that runs generally on an east-west alignment between Kanata Avenue and Ingersoll Crescent, then runs north-south to Terry Fox Drive. Within the study area, Huntsville Drive has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and an unposted regulatory speed limit of 50 km/h. Huntsville Drive is not classified as a truck route. Street parking is permitted.

4.1.2 Intersections

Terry Fox Drive/Tillsonburg Street

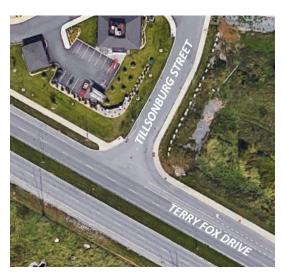
- Unsignalized three-legged intersection
- North Approach: two through lanes
- South Approach: two through lanes and one right turn lane
- East Approach: one right turn lane
- Bike lanes on north and south approaches

Terry Fox Drive/Kanata Avenue

- Signalized three-legged intersection
- North Approach: one left turn lane and two through lanes
- South Approach: two through lanes and one channelized right turn lane
- East Approach: two left turn lanes and one channelized right turn lane
- Bike lanes on all approaches

Kanata Avenue/Huntsville Drive

- Signalized three-legged intersection
- North Approach: one shared left turn/right turn lane
- East Approach: one through lane and one right turn lane
- West Approach: one left turn lane and one through lane
- Bike lanes on east and west approaches







4.1.3 Driveways

In accordance with the City's 2017 TIA guidelines, a review of adjacent driveways along the boundary roads are provided as follows:

Tillsonburg Street, North Side:

- 12 driveways to residences on Tillsonburg Street
- Driveway to Guelph Private, which provides access to 96 condominiums (offset approximately 10m to the east of the proposed access)

Kanata Avenue, South Side:

 Driveway to commercial property at 475 Terry Fox Drive (development has not proceeded)

4.1.4 Pedestrian and Cycling Facilities

Concrete sidewalks are provided on both sides of Kanata Avenue and Huntsville Drive, the east side of Terry Fox Drive, and the south side of Tillsonburg Street.

Terry Fox Drive is classified as part of Ottawa's primary cycling network as a Spine Route, and Kanata Avenue is classified as a Local Route. Tillsonburg Street and Huntsville Drive have no cycling route designation. Multiple pathways connect Kanata Avenue to various portions of the surrounding neighbourhood. Bike lanes have been implemented in both directions on Terry Fox Drive and Kanata Avenue. The 2013 Ottawa Cycling Plan identifies no further improvements to the cycling network within the study area.

4.1.5 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress.

4.1.6 Transit

Bus stops within 400m walking distance of the subject site are listed as follows:

- Stop #1554 for route 165 (located at the northeast corner of Huntsville Drive/Ingersoll Crescent)
- Stop #1557 for route 165 (located at the southeast corner of Huntsville Drive/Ingersoll Crescent)
- Stop #6050 for routes 165 and 264 (located at the northwest corner of Kanata Avenue/Huntsville Drive)
 Stop #6054 – for routes 465 and 264
- Stop #6051 for routes 165 and 264 (located at the northeast corner of Kanata Avenue/Huntsville Drive)
- Stop #7572 for route 264 (located at the southwest corner of Kanata Avenue/Huntsville Drive)

Tillsonburg Street, South Side:

 17 driveways to residences on Tillsonburg Street

- Stop #7569 for route 264 (located at the northeast corner of Terry Fox Drive/Richardson Side Road)
- Stop #7573 for route 264 (located at the northwest corner of Terry Fox Drive/Tillsonburg Street)

Locations of these bus stops are shown in Figure 3.

OC Transpo Route 165 travels between Terry Fox Station and Innovation Station. On weekdays, the route operates every 60 minutes from 9:00am to 2:00pm and 7:00pm to 10:00pm. The route does not operate outside of these hours, or on weekends.

OC Transpo Route 264 travels between either Terry Fox/Tillsonburg or Huntsville/Ingersoll and Mackenzie King Station. During the weekday AM peak period, the route operates from Terry Fox/Tillsonburg toward Mackenzie King Station every 20-30 minutes between 5:30am and 8:30am. During the weekday PM peak period, the route operates from Mackenzie King Station toward Huntsville/Ingersoll every 20-30 minutes between 4:00pm and 7:00pm. The route does not operate outside of these hours, or on weekends.

OC Transpo maps for the routes outlined above are included in Appendix C.



Figure 3: OC Transpo Bus Stop Locations

4.1.7 Existing Traffic Volumes

Weekday and Saturday traffic counts completed by the City of Ottawa, IBI Group, or Novatech were used to determine the existing pedestrian, cyclist and vehicular traffic volumes at the study area intersections.

While an April 2018 traffic count at Terry Fox Drive/Kanata Avenue was conducted by the City, it was completed after the closure of Goulbourn Forced Road in February 2018. Goulbourn Forced Road is a roadway connecting the Kanata Lakes area to the Kanata North Technology Park, and is being realigned to intersect with Terry Fox Drive west of the technology park. The 2018 traffic count reflects that with the closure, substantial traffic volumes are rerouted to the intersection of Terry Fox Drive/Kanata Avenue. The next most recent count was conducted by the City in June 2014.

Comparing the 2014 and 2018 counts, two-way traffic volumes on Kanata Avenue at Terry Fox Drive increased by the following amounts:

- AM Peak Hour: 550 vehicles in 2014, compared to 1,079 vehicles in 2018 (96% increase)
- PM Peak Hour: 673 vehicles in 2014, compared to 961 vehicles in 2018 (43% increase)

Nearly all of the development between the 2014 and 2018 counts took place north of the study area, but accounts for only a small portion of the increase in traffic on Kanata Avenue. The 2014 count at Terry Fox/Kanata Avenue will be used in this TIA for the reasons listed above. As the City has no counts on file at Kanata Avenue/Huntsville Drive, and weekday counts conducted while Goulbourn Forced Road is closed are considered to be unreliable, this TIA will use a 2015 count conducted by IBI Group as part of the Richardson Ridge Transportation Impact Study (September 2015).

Weekday traffic counts were completed on the dates listed below by the following sources:

•	Terry Fox Drive/Tillsonburg Street	May 27, 2015	(City of Ottawa)
٠	Terry Fox Drive/Kanata Avenue	June 27, 2014	(City of Ottawa)
•	Kanata Avenue/Huntsville Drive	September 17, 2015	(IBI Group)

All Saturday traffic counts were coordinated by Novatech, and were completed on September 15, 2018. It is anticipated that the closure of Goulbourn Forced Road does not have as significant of an impact to the traffic operations on Kanata Avenue and Terry Fox Drive during the weekend, due to the general lack of commuter traffic. Saturday peak hour volumes for the southbound left turn and westbound right turn movements have been reduced by 50%, as they represent traffic that may use Goulbourn Forced Road upon reopening.

Based on the count data, Terry Fox Drive has an annual average daily traffic (AADT) of 18,200 vehicles/day, Tillsonburg Street has an AADT of 600 vehicles/day, Kanata Avenue has an AADT of 3,100 vehicles/day, and Huntsville Drive has an AADT of 2,040 vehicles/day.

All traffic count data previously discussed is included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 4**.

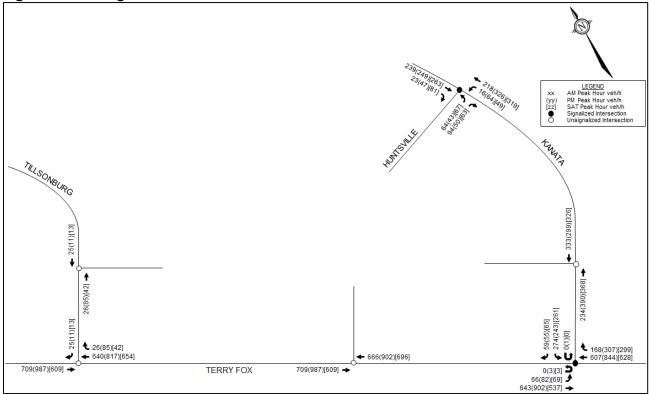


Figure 4: Existing Network Traffic Volumes

4.1.8 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 intersections. Copies of the collision summary reports are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The number of collisions at each intersection from January 1, 2013 to December 31, 2017 is summarized in **Table 1**.

Table 1: Reported Collisions

Intersection	Number of Reported Collisions
Terry Fox Drive/Tillsonburg Street	0
Terry Fox Drive/Kanata Avenue	39
Kanata Avenue/Huntsville Drive	1

Terry Fox Drive/Kanata Avenue

To remain consistent with the previous Broughton Subdivision TIS, traffic on Terry Fox Drive is considered to travel northbound and southbound, while traffic on Kanata Avenue is considered to travel westbound. The collision data provided by the City was not always consistent regarding vehicle directions at this intersection, requiring some estimations regarding the direction of vehicles involved in collisions.

A total of 39 collisions were reported at this intersection over the last five years, of which there were 11 rear-end impacts, 11 turning movement impacts, two sideswipe impacts, eight angle impacts, and seven single-vehicle/other impacts. Eleven of the collisions caused injuries, but none caused fatalities.

Of the 11 rear-end impacts, two occurred at the northbound approach (two through vehicle incidents), three occurred at the southbound approach (one left turn and two through vehicle incidents), and six at the westbound approach (three left turn and three right turn incidents). Three of the 11 impacts occurred in poor driving conditions.

All 11 turning movement impacts involved left turns at the southbound approach. Seven of the 11 impacts occurred in poor driving conditions. Left turns at this approach are permitted but not protected at any time. The posted speed limit of Terry Fox Drive is 70 km/h and traffic volumes are heavy during the peak hours, which may lead to drivers misjudging gaps in incoming traffic or taking more risks when attempting a left turn.

A process for determining whether a left-turn phase is warranted is outlined in the *Ontario Traffic Manual – Book 12*, and has been reviewed as part of the scoping section of this TIA. The process identifies multiple possible justifications for a left-turn phase, including over-capacity left-turn volumes (calculated using the Ontario Capacity Analysis Method shown in the *Ontario Traffic Manual*), and over-representation of turning movement collisions. While the left-turn volumes have not been found to be over capacity, southbound left-turning vehicles may be over-represented in the collision history at this intersection (11 out of 39 collisions, or 28% of all impacts). Therefore, consideration could be given to implementing a protected left-turn phase for this movement.

Of the eight angle impacts, seven involved a northbound vehicle and a westbound vehicle, and one involved an southbound vehicle and a westbound vehicle. Five of the eight impacts occurred in poor driving conditions. The heavy traffic volumes and posted speed limit of 70 km/h on Terry Fox Drive may result in more collisions of this type. There are no sightline obstructions or other geometric features of the intersection that appear to cause angle impacts.

Of the seven single-vehicle/other impacts, four occurred at the northbound approach and three occurred at the westbound approach (including one cyclist). Four of the seven impacts occurred in poor driving conditions.

Kanata Avenue/Huntsville Drive

One collision was reported at this intersection over the last five years, a rear-end impact in poor driving conditions. The collision did not cause any injuries.

4.2 Planned Conditions

The City's 2013 Transportation Master Plan (TMP) does not identify any roadway projects within the study area in its Affordable Road Network or its Rapid Transit and Transit Priority (RTTP) Network. The 2013 Ottawa Cycling Plan does not identify any cycling infrastructure projects within the study area.

Construction of the Richardson Ridge subdivision west of the subject site is ongoing, which consists of a mix of single-detached housing, semi-detached housing, and apartments. Transportation Impact Studies (TIS) were completed by IBI Group in September 2015 (Phases 1-3) and August 2016 (Phase 4). The assumed buildout year of Phases 1-3 is 2018, and the assumed buildout year of

Phase 4 is 2021. Traffic generated by the residences built since 2015 have been added to the existing weekday traffic conditions, as the available traffic counts would not have accounted for these trips.

Construction of Phase 3B of the Broughton subdivision north of the subject site is ongoing, which consists of four condominium buildings. The most recent revisions to the TIS for this subdivision was completed by Novatech in July 2017, and anticipates full buildout of the subdivision by 2019.

Applications in support of phases 1 and 2 of the Kanata Highlands subdivision are currently in the approval process, and will consist of a mix of single-detached housing, semi-detached housing, and condominiums. A TIS for Phase 1 and a TIA Strategy Report for Phase 2 were completed by Parsons in January 2017 and June 2018, respectively. The studies project Phase 1 to be built out in 2021, however Phase 2 is anticipated to be constructed beyond the 2024 horizon year.

Further discussion of the above subdivisions is included in the forecasting section of this TIA.

4.3 Study Area and Time Periods

The study area for this report includes Terry Fox Drive, Kanata Avenue, Tillsonburg Street, and Huntsville Drive. The study area includes the signalized intersections at Terry Fox Drive/Kanata Avenue and Kanata Avenue/Huntsville Drive, as well as the unsignalized intersection at Terry Fox Drive/Tillsonburg Street.

The selected time periods for the analysis are the weekday AM and PM peak hours and the Saturday peak hour, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The proposed development is expected to be completed in one phase, with full occupancy by the year 2019. Therefore, the analysis considers the buildout year 2019 and the horizon year 2024.

4.4 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the TIA guidelines. The applicable exemptions for this site are shown in **Table 2**.

Module	Element	Exemption Criteria	Exemption Status	
Design Review	Component			
4.1 Development	<i>4.1.2</i> Circulation and Access	Not Exempt		
Design	<i>4.1.3</i> New Street Networks	 Only required for plans of subdivision 	Exempt	
4.2	<i>4.2.1</i> Parking Supply	Only required for site plans	Not Exempt	
Parking	<i>4.2.2</i> 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 	Exempt	
4.6 Neighbourhood Traffic Management	<i>4.6.1</i> Adjacent Neighbourhoods	 Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds 	Exempt	
4.8 Network Concept	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 	Exempt	

Table 2: TIA Exemptions

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 4.7: Transit
- Module 4.9: Intersection Design

5.0 FORECASTING

5.1 Development-Generated Travel Demand

5.1.1 Trip Generation

The proposed development will include two retail buildings with a total of 22,437 ft² of leasable retail space, and a 3,315 ft² gas station with eight fuel pumps, a convenience store, and a car wash. Trips generated by the proposed land uses have been estimated using the *ITE Trip Generation Manual*, 10th Edition. Retail trips have been estimated based on the Shopping Centre data (land use 820) and gas station trips have been estimated based on the Gasoline/Service Station data (land use 944). Land use code 945 (Gasoline/Service Station with Convenience Market) was not used, as it applies only to stations with ten or more vehicle fueling positions.

The *ITE Trip Generation Handbook* outlines a recommended procedure for selecting between the average rate and the regression equation for the Shopping Centre land use. Based on the recommended procedure, there is a sufficient number of data points that the regression equations should be used. However, the average rates outlined in the *ITE Trip Generation Manual* have been used for the Shopping Centre land use rather than the regression equations, as the data for developments around 25,000 ft² is closer to the average rates. The regression equations are more suitable for larger shopping centre developments, such as malls.

The estimated number of trips generated by the proposed development is shown in **Table 3**.

Land Use	ITE Code					F	PM Pea (PPH)		SAT Peak (PPH)		
	oouc	i unpo	IN	OUT	TOT	IN	OUT	тот	IN	OUT	тот
Shopping Centre	820	22,437 ft ²	17	11	28	56	60	116	71	66	137
Gasoline/ Service Station	944	8 pumps	52	52	104	72	72	144	65	65	130
	70	62	132	128	132	260	136	131	267		

Table 3: Person Trip Generation

1. PPH: Persons Per Hour – Calculated using an ITE Trip to Person Trip Factor of 1.28, consistent with the 2018 TIA Guidelines

From the previous table, the proposed development is projected to generate 132 person trips during the AM peak hour, 260 person trips during the PM peak hour, and 267 person trips during the Saturday peak hour.

The modal shares for the proposed development are anticipated to be consistent with the modal shares outlined in the 2011 TRANS O-D Survey Report, specific to the Kanata/Stittsville region. The modal share values applied to the retail trips are based on all observed trips within the Kanata/Stittsville district. The modal share assigned to transit has been added to the auto driver share on Saturdays, as there is no transit service within the study area on weekends. Due to the nature of gas stations, a higher auto driver share, lower transit share, and lower non-auto share have been assumed for all trips generated by the proposed gas station.

A full breakdown of the projected site-generated person trips by modal share is shown in Table 4.

	Мо	dal	AM Peak				PM Peal	K	SAT Peak			
Travel Mode Share												
	A/P	SAT	IN	OUT	тот	IN	OUT	тот	IN	OUT	тот	
Retail Pe	erson	Trips	17	11	28	56	60	116	71	66	137	
Auto Driver	70%	75%	12	7	19	39	42	81	53	49	102	
Auto Passenger	15%	15%	3	2	5	8	9	17	11	10	21	
Transit	5%	0%	1	1	2	3	3	6	0	0	0	
Non-Auto	10%	10%	1	1	2	6	6	11	7	7	14	
Gas Station Pe	erson	Trips	52	52	104	72	72	144	65	65	130	
Auto Driver	80)%	42	42	84	58	58	116	52	52	104	
Auto Passenger	15	5%	8	8	16	11	11	22	10	10	20	
Transit	0	%	0	0	0	0	0	0	0	0	0	
Non-Auto	5	%	2	2	4	3	3	6	3	3	6	
Auto Dri	Auto Driver (Total)		54	49	103	97	100	197	105	101	206	
Auto Passenger (Total)		11	10	21	19	20	39	21	20	41		
Trar	Transit (Total)		1	1	2	3	3	6	0	0	0	
Non-A	uto (T	otal)	3	3	6	9	9	18	10	10	20	

Table 4: Person Trips by Modal Share

From the previous table, the proposed development is projected to generate 103 vehicle trips during the AM peak hour, 197 vehicle trips during the PM peak hour, and 206 vehicle trips during the Saturday peak hour.

Some trips are anticipated to be internally captured within the subject site (for example, drivers who enter the gas station for fuel may then go to the retail section of the site for food or other purchases). The *ITE Trip Generation Handbook* does not identify internal capture rates specific to gas stations. Therefore, internal capture rates between two retail land uses has been assumed. The methodology used to determine the amount of internally captured trips follows the methodology outlined in Chapter 7 of the *ITE Trip Generation Handbook*. Internal capture worksheets are included in **Appendix F**.

The number of internally captured trips generated by the proposed development is presented in **Table 5**.

Trip Type	AM Peak			F	PM Pea	k	SAT Peak			
пр туре	IN	OUT	тот	IN	OUT	тот	IN	OUT	тот	
Retail Trips	12	7	19	39	42	81	53	49	102	
Internal	2	1	3	8	8	16	10	10	20	
External	10	6	16	31	34	65	43	39	82	
Gas Station Trips	42	42	84	58	58	116	52	52	104	
Internal	1	2	3	8	8	16	10	10	20	
External	41	40	81	50	50	100	42	42	84	

Table 5: Internally Captured Trips

The proposed land uses are also expected to generate two types of external peak hour trips: primary and pass-by trips. Primary trips are made for the specific purpose of visiting the site, while pass-by trips are made as intermediate stops on the way to another destination.

For the proposed land uses, peak hour pass-by trips have been estimated based on the average rates identified in the *ITE Trip Generation Handbook* for the Shopping Centre land use (34% during the PM peak hour and 26% during the Saturday peak hour), and the Gasoline/Service Station land use (58% during the AM peak hour and 42% during the PM peak hour). It has been assumed that there are no pass-by retail trips during the AM peak hour, and pass-by gas station trips during the Saturday peak hour rate of 42%.

The primary and pass-by trip generation for the proposed development is presented in Table 6.

Trip Type	AM Peak			F	PM Pea	k	SAT Peak		
	IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
External Retail Trips	10	6	16	31	34	65	43	39	82
Pass-by	0	0	0	11	11	22	11	11	22
Primary	10	6	16	20	23	43	32	28	60
External Gas Station Trips	41	40	81	50	50	100	42	42	84
Pass-by	23	23	46	21	21	42	18	18	36
Primary	18	17	35	29	29	58	24	24	48
Primary Total	28	23	51	49	52	101	56	52	108

Table 6: Primary and Pass-by Trips

From the previous tables, the proposed development is projected to generate 51 primary vehicle trips during the AM peak hour, 101 primary vehicle trips during the PM peak hour, and 108 primary vehicle trips during the Saturday peak hour.

5.1.2 Trip Distribution

The assumed distribution of trips generated by the subject site has been derived from existing traffic patterns within the study area. Primary trips generated by the retail and gas station land uses are not anticipated to follow the traffic patterns associated with the typical commute. To best approximate this, the distribution of site-generated primary trips is based on the Saturday peak hour traffic counts within the study area, and can be described as follows:

- 30% to/from the north via Terry Fox Drive
- 30% to/from the south via Terry Fox Drive
- 30% to/from the east via Kanata Avenue and Tillsonburg Street
- 10% to/from the east via Tillsonburg Street (within the Broughton Subdivision)

All trips destined to the east via Kanata Avenue are assumed to depart the study area by heading east on Tillsonburg Street, north on Wallaceburg Court and Huntsville Drive, and east on Kanata Avenue.

The distribution of pass-by trips is assumed to follow the existing commuter traffic pattern. Further discussion is included in the following section.

5.1.3 Trip Assignment

The proposed accesses on Terry Fox Drive and Kanata Avenue are RIRO accesses only. While the access on Tillsonburg Street allows for full movement, access to Tillsonburg Street from Terry Fox Drive is RIRO only. Due to these turning restrictions, the trip assignment does not assume that all

trips will enter and exit the site using the same access. All trips arriving from the north via Terry Fox Drive requires a southbound U-turn at Terry Fox Drive/Kanata Avenue. Trips generated by the proposed development are assigned to the accesses as follows.

Full-Movement Access – Tillsonburg Street

- 20% of retail trips arriving from the north and south via Terry Fox Drive, and east via Kanata Avenue;
- 50% of retail trips departing to the north via Terry Fox Drive;
- 100% of retail trips arriving and departing to the east via Tillsonburg Street;
- 100% of gas station trips arriving and departing to the east via Tillsonburg Street.

RIRO Access – Terry Fox Drive

- 80% of retail trips arriving from the north and south via Terry Fox Drive, and east via Kanata Avenue;
- 50% of retail trips departing to the north via Terry Fox Drive;
- 100% of gas station trips arriving from the north and south via Terry Fox Drive;
- 100% of gas station trips departing to the north via Terry Fox Drive.

RIRO Access – Kanata Avenue

- 100% of retail trips departing to the south via Terry Fox Drive;
- 100% of gas station trips arriving from the east via Kanata Avenue;
- 100% of gas station trips departing to the south via Terry Fox Drive.

Pass-by trips generated by the proposed retail development have been distributed to the access on Terry Fox Drive. Pass-by trips generated by the proposed gas station have been distributed proportionately, with 75% assigned to the access on Terry Fox Drive and 25% assigned to the access on Kanata Avenue. No retail or gas station pass-by trips have been assigned to traffic entering the study area from the north, as the Kanata Centrum and multiple gas stations are approximately two kilometres downstream and can be accessed more easily than the subject site.

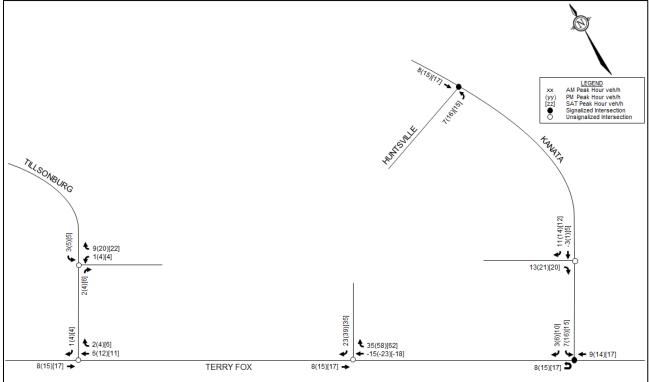
Trips generated by the proposed development are shown in **Figure 5**.

5.2 Background Traffic

5.2.1 General Background Growth Rate

A rate of background growth has been established through a review of the City of Ottawa's Strategic Long Range Model and transportation impact studies in support of other proposed developments within the vicinity of the subject site. As development within the area continues, traffic volumes on Terry Fox Drive will continue to increase. Consistent with the transportation studies discussed in the following section, a 2% annual background growth rate has been assumed for Terry Fox Drive and a 1% annual growth rate has been assumed for Kanata Avenue. Growth on Tillsonburg Street and Huntsville Drive is assumed to be fully accounted for by considering the other proposed developments discussed below, and therefore no growth rate has been applied.





5.2.2 Other Area Developments

Multiple residential developments are either being constructed or are in the approval process. The following developments will be added to the background traffic to maintain a conservative analysis.

Richardson Ridge Subdivision, Phases 1-4

Two Transportation Impact Studies were prepared by IBI Group in support of the Richardson Ridge subdivision in September 2015 (Phases 1-3) and August 2016 (Phase 4). Phases 1-3 consist of 434 single-detached homes, 131 semi-detached/townhomes, and 112 apartments, with 174 single-detached homes being occupied at the time of the September 2015 report. For simplicity, 50% of the projected traffic generated by these phases is assumed to be accounted for in the 2014 weekday counts, while the 2018 Saturday counts represent full buildout.

Phase 4 consists of 41 single-detached homes and 156 semi-detached/townhomes. It is estimated that buildout of Phase 4 will occur in 2021. Therefore, all projected traffic generated by this phase has been added to the 2024 background conditions.

Broughton Subdivision, Phase 3B

A TIS was prepared by Novatech in support of Phase 3B of the Broughton Subdivision, with the latest revisions being submitted in July 2017. Phase 3B consists of 186 condominiums, and it is assumed that 107 of these units are accounted for in the 2018 Saturday counts. The revised addendum submitted in July 2017 estimated that buildout of Phase 3B will occur in 2019. Therefore, traffic generated by this phase has been added to both the 2019 and 2024 background conditions.

Kanata Highlands, Phases 1 and 2

A TIS for Phase 1 and a TIA for Phase 2 were prepared by Parsons in support of the Kanata Highlands subdivision in January 2017 and June 2018, respectively. Phase 1 consists of 159 single-detached homes and 276 semi-detached/townhomes. The TIS prepared in January 2017 estimated that buildout of Phase 1 will occur in 2021. Therefore, traffic generated by this phase has been added to the 2024 background conditions.

Phase 2 consists of 370 single-detached homes, 190 semi-detached/townhomes, and 120 condominiums. The TIA Strategy Report was prepared in June 2018. For the purposes of this study, it is assumed that the timing of this development is beyond the 2024 horizon year. Therefore, traffic generated by this phase has not been included in the 2024 background conditions.

The weekday AM and PM peak hour trips generated by the subdivisions outlined above are taken directly from the corresponding transportation study, and applied to the existing and background traffic conditions as appropriate. These traffic studies did not consider the Saturday peak hour in the analysis. Trips generated on Saturdays by these developments have been estimated using the *ITE Trip Generation Manual, 10th Edition*.

The land use codes used are Single-Family Detached Housing (land use 210), Multifamily Housing Low-Rise (land use 220), and Multifamily Housing Mid-Rise (land use 221). As with the trip generation projections presented in Section 5.1.1, all ITE trips have been converted to person trips using a factor of 1.28, consistent with the 2017 TIA Guidelines. Person trips generated by the developments outlined above during the Saturday peak hour are shown in **Table 7**.

Relevant excerpts from the studies described above are included in Appendix G.

Land Use	ITE Code	Units	SAT Peak (PPH)					
Eand 036		Units	IN	OUT	тот			
Richardson Ridge Subdivision, Phase 4 (197 units in total)								
Single-Family Detached Housing	210	41	26	23	49			
Multifamily Housing (Low-Rise)	220	156	156 75		139			
		Total	101	87	188			
Broughton Subdivision, Phase 3B (186 units in total, 79 units to be constructed)								
Multifamily Housing (Mid-Rise)	221	79	22	23	45			
		Total	22	23	45			
Kanata Highlands Subdivision, Phase 1 (435 units in total)								
Single-Family Detached Housing	210	159	105	90	195			
Multifamily Housing (Low-Rise)	220	276	133	114	247			
		Total	238	204	442			

Table 7: Saturday Trip Generation - Other Area Developments

The number of vehicle trips that the developments will generate during the Saturday peak hour has been estimated by categorizing the person trips by modal share. The modal shares are anticipated to be consistent with the modal shares outlined in the *2011 TRANS O-D Survey Report*, specific to the Kanata/Stittsville region. The modal share values applied are based on all observed trips within the Kanata/Stittsville district. As there is no transit service in the area on weekends, a transit share of 0% has been applied to all developments. A full breakdown of the projected Saturday peak person trips is shown in **Table 8**.

Table 0. Saturday Trips by Modal Share - Other Area Developments								
Travel Mode	Modal Share	SAT Peak						
		IN	OUT	тот				
Richardson Ridge Subdivision, Phase 4		101	87	188				
Auto Driver	75%	76	65	141				
Auto Passenger	15%	15	13	28				
Transit	0%	0	0	0				
Non-Auto	10%	10	9	19				
Broughton Subdivision, Phase	22	23	45					
Auto Driver	75%	17	17	34				
Auto Passenger	15%	3	4	7				
Transit	0%	0	0	0				
Non-Auto	10%	2	2	4				
Kanata Highlands Subdivision, Phase 1		238	204	442				
Auto Driver	75%	179	153	332				
Auto Passenger	15%	35	31	66				
Transit	0%	0	0	0				
Non-Auto	10%	24	20	44				

Table 8: Saturday Trips by Modal Share - Other Area Developments

Considering the weekday AM peak and PM peak trip generation projections of the previous transportation studies and the foregoing table for Saturday peak trips, a full breakdown of the vehicle trips projected for each development is shown in **Table 9**.

Development	AM Peak (VPH)		PM Peak (VPH)			SAT Peak (VPH)			
	IN	OUT	тот	IN	OUT	тот	IN	OUT	тот
Richardson Ridge (Phases 1-3)	43	154	197	158	89	247	-	-	-
Richardson Ridge (Phase 4)	18	75	93	70	37	107	76	65	141
Broughton Subdivision (Phase 3B)	15	75	90	70	35	105	17	17	34
Kanata Highlands (Phase 1)	39	146	185	150	82	232	179	153	332

Trips were distributed in a manner consistent with the assumptions outlined in each transportation study. Trips generated by other area developments for the 2019 buildout year and 2024 horizon year are shown in **Figure 6** and **Figure 7**, respectively. Background traffic volumes for 2019 and 2024 are shown in **Figure 8** and **Figure 9**, respectively. Total traffic volumes for 2019 and 2024 are shown in **Figure 10** and **Figure 11**, respectively.

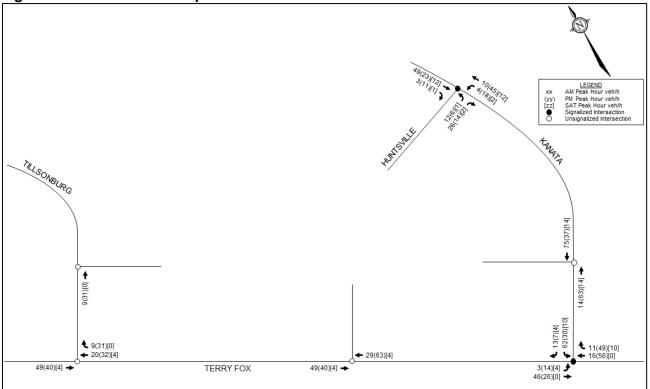
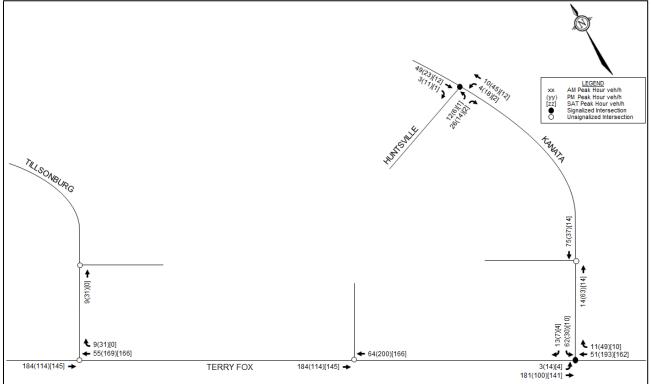


Figure 6: Other Area Developments - 2019 Traffic

Figure 7: Other Area Developments - 2024 Traffic





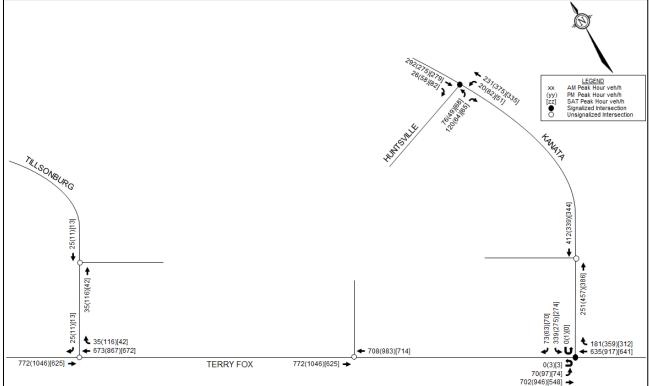


Figure 9: 2024 Background Traffic

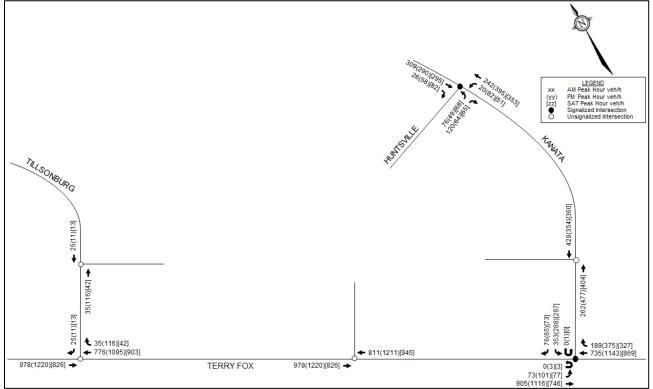


Figure 10: 2019 Total Traffic

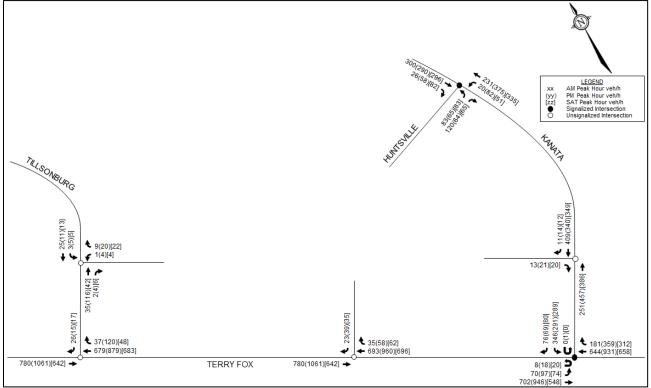
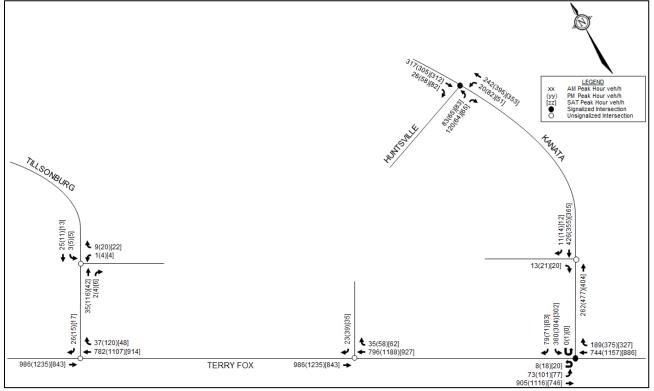


Figure 11: 2024 Total Traffic



6.0 ANALYSIS

6.1 Development Design

6.1.1 Design for Sustainable Modes

Pedestrian facilities will be provided between the building entrances and the parking areas. Additionally, pedestrian facilities will connect the retail buildings to the existing sidewalks along Terry Fox Drive and Tillsonburg Street. Sidewalks will be depressed and continuous across the accesses, in accordance with City standards.

The nearest bus stops to the subject site are reviewed in Section 4.1.6 and shown in **Figure 2**. All entrances are within 400m walking distance of stops for both OC Transpo routes 165 and 264. Entrances to both proposed retail buildings are approximately within 200m of stop #7573 at Terry Fox Drive/Tillsonburg Street, and 350m of stops #1554 and #1557 at Huntsville Drive/Ingersoll Crescent. The entrance to the proposed gas station is approximately within 400m of stops #6050, #6051, and #7572 at Kanata Avenue/Huntsville Drive.

A total of ten bicycle parking spaces will be provided for the retail building, and a total of six bicycle parking spaces will be provided for the gas station and convenience store. Further review of the minimum bicycle parking requirements is included 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 H**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

6.1.2 Circulation and Access

Retail garbage collection will take place approximately 80m south of the full-movement access on Tillsonburg Street. Gas station garbage collection will take place south of the car wash area, approximately 15m north of the access on Kanata Avenue. Loading and delivery spaces for the retail uses are provided to the east and west of the full-movement access on Tillsonburg Street.

The accesses to the gas station are sufficient to accommodate a fuel tanker, the largest vehicle to enter and exit the site. Mountable curb is required at the access on Terry Fox Drive and the access on Kanata Avenue, for fuel tankers to negotiate turning into/out of the accesses. A turning template for a fuel delivery truck, represented by a WB-23 double trailer design vehicle entering the site via the Terry Fox Drive access and exiting via the Kanata Avenue access, is included in **Appendix A**.

The fire route for the proposed development accesses the site from the full-movement access on Tillsonburg Street and the RIRO access on Terry Fox Drive, as shown on the site plan.

6.2 Parking

The subject site is located in Area C of Schedules 1 and 1A of the City of Ottawa's ZBL. Minimum vehicular and bicycle parking rates for the proposed development are identified in the ZBL, and summarized in **Table 10**.

Land Use	Rate	GFA	Required	Provided
Vehicle Parking				
Retail Store	3.4 spaces per 100 m ² GFA	2,137 m ²	73	96
Convenience Store ⁽¹⁾	3.4 spaces per 100 m ² GFA	211 m ²	7	16
		Total	80	112
Bicycle Parking				
Retail Store	1 space per 250 m ² GFA	2,137 m ²	9	10
Convenience Store	1 space per 250 m ² GFA	211 m ²	1	6
		Total	10	16

1. Parking rates for the gas station apply only to the convenience store, as standalone gas bars have no parking requirement

Based on the foregoing table, both the vehicular and bicycle parking provided for the proposed development will meet the minimum requirements of the ZBL.

The City of Ottawa's *Accessibility Design Standards* outline minimum requirements for the number of accessible parking spaces that must be provided, based on the total number of parking spaces. For a total number of parking spaces between 76 and 100, four accessible spaces are required. For a total number of parking spaces between 13 and 25, one accessible space is required. Four of the 96 retail parking spaces and one of the 16 gas station parking spaces are accessible spaces, thereby meeting the minimum requirements.

Table 112 of the ZBL identifies the minimum off-street motor vehicle queueing space required for automatic car washes to be ten vehicles before/in each wash bay and one vehicle after each wash bay. These minimum requirements are provided for the on-site car wash bay.

The minimum number of loading spaces for the proposed development are identified in the ZBL, based on the land use and gross floor area. The gross floor area of the proposed retail buildings and gas station is approximately 2,137 m² and 211 m², respectively.

Table 113A of the ZBL identifies a minimum of one loading space for 'retail stores' or 'shopping centres' between 2,000 and 4,999 m² GFA, and identifies no requirement for any land uses with less than 1,000 m² GFA (gas stations). As the proposed development provides two loading spaces for retail, the minimum requirements are met.

6.3 Boundary Streets

This section provides a review of the boundary streets using complete streets principles. The *Multi-Modal Levels of Service* (MMLOS) Guidelines produced by IBI Group in October 2015 were used to evaluate the levels of service of Terry Fox Drive, Tillsonburg Street, and Kanata Avenue, for each mode of transportation. Schedule B of the City of Ottawa's Official Plan identifies all boundary streets as being within the General Urban Area. The boundary between the General Urban and General Rural Areas follows Terry Fox Drive within the study area. The boundary streets review evaluates Terry Fox Drive, Tillsonburg Street, and Kanata Avenue based on existing conditions.

6.3.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of the boundary streets. Exhibit 22 of the MMLOS guidelines suggest a target PLOS C for all roadways within the General Urban Area (Tillsonburg Street, Kanata Avenue, and the east side of Terry Fox Drive), and no target for roadways within the General Rural Area (west side of Terry Fox Drive). As such, the west side of Terry Fox Drive has not been evaluated for PLOS.

The results of the segment PLOS analysis are summarized in Table 11.

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed ⁽¹⁾	Segment PLOS
Terry Fox Dr	ive (east side				
2.0m	> 2.0m	> 3000 vpd	No	80 km/h	D
Tillsonburg	Street (north :	side)			
No sid	ewalk	N/A	N/A	60 km/h	F
Tillsonburg	Street (south	side)			
2.0m	0m	<u><</u> 3000 vpd	N/A	60 km/h	С
Kanata Aven	ue (north sid	e)			
2.0m	0.5 to 2.0m	<u><</u> 3000 vpd	N/A	70 km/h	В
Kanata Aven	ue (south sid	le)			
2.0m	0.5 to 2.0m	<u><</u> 3000 vpd	N/A	70 km/h	В

Table 11: PLOS Segment Analysis

1. Operating speed on Terry Fox Drive, Tillsonburg Street, and Kanata Avenue taken as the posted speed limit plus 10 km/h.

6.3.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of the boundary streets. For the General Urban Area, Exhibit 22 of the MMLOS guidelines suggest a target BLOS B for Local Routes (Kanata Avenue), a target BLOS C for Spine Routes (Terry Fox Drive), and a target BLOS D for roadways with no bike classification (Tillsonburg Street).

The results of the segment BLOS analysis are summarized in Table 12.

Road Class	Bike Route	Type of Bikeway	Bike Lane Width	Bike Lane Blockage	Travel Lanes	Center- line Type	Operating Speed	Segment BLOS					
Terry Fox	Terry Fox Drive (Tillsonburg Street to Kanata Avenue)												
Arterial	Spine	Bike	2.0m	Rare	4	Raised	80 km/h	Е					
Alterial	Route	Lane	2.011	Nale	4	Median	00 KIII/II	Ľ					
Tillsonbu	Tillsonburg Street (Terry Fox Drive to Wallaceburg Court)												
Local	No	Mixed			2	None	60 km/h	F					
LUCAI	Class	Traffic	-	-	Z	(Residential)		Г					
Kanata Av	Kanata Avenue (Terry Fox Drive to Huntsville Drive)												
Major	Local	Bike	2.0m	Rare	2	Line	70 km/h	Е					
Collector	Route	Lane	2.011	ivale	Z	Markings		Ľ					

Table 12: BLOS Segment Analysis

6.3.3 Transit Level of Service (TLOS)

Exhibit 15 of the MMLOS guidelines has been used to evaluate the segment TLOS of the boundary streets. Exhibit 22 of the MMLOS guidelines does not identify any targets for roadways without a Rapid Transit or Transit Priority designation. As transit operates on Terry Fox Drive and Kanata Avenue, these roadways have been evaluated regardless. Tillsonburg Street has not been evaluated for TLOS.

The results of the segment MMLOS analysis are summarized in Table 13.

Table 13: TLOS Segment Analysis

Facility Type		Level/Exposure to Congestion Delay, Friction and Incidents									
Гасшиу Туре	Congestion	Friction Incident Potential		TLOS							
Terry Fox Drive (Tillsonburg Street to Kanata Avenue)											
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D							
Kanata Avenue (Terry Fox Drive to Huntsville Drive)											
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D							

6.3.4 Truck Level of Service (TkLOS)

Exhibit 20 of the MMLOS guidelines has been used to evaluate the segment TkLOS of the boundary streets. For the General Urban Area, Exhibit 22 of the MMLOS guidelines suggests a target TkLOS D for arterial truck routes (Terry Fox Drive), and no target for collector and local roadways that are not designated as truck routes (Kanata Avenue and Tillsonburg Street). Kanata Avenue has been evaluated for TkLOS despite having no target, as transit operates on this roadway. Tillsonburg Street has not been evaluated for TkLOS.

The results of the segment TkLOS analysis are summarized in Table 14.

Table 14: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	Segment TkLOS									
Terry Fox Drive (Tillsonburg Street to Kanata Avenue)											
<u><</u> 3.5m	2	A									
Kanata Avenue (Terry Fox Drive to Huntsville Drive)											
<u><</u> 3.5m	1	С									

471 Terry Fox Drive

6.3.5 Vehicular Level of Service (Auto LOS)

Exhibit 22 of the MMLOS guidelines suggests a target Auto LOS D for all roadways within the General Urban Area. The typical lane capacity along the study area roadways are based on the City's guidelines for the TRANS Long-Range Transportation Model. The lane capacity along the boundary streets have been estimated based on road classification and general characteristics (i.e. suburban with limited access, urban with on-street parking, etc.).

The results of the Auto LOS analysis are summarized in Table 15.

	Directional	Trat	ific Volu	mes	v/c Ratio and LOS								
Direction		AM	PM	SAT	AM F	AM Peak		Peak	SAT Peak				
	Capacity	Peak	Peak	Peak	v/c	LOS	v/c	LOS	v/c	LOS			
Terry Fox Dri	Ferry Fox Drive (Tillsonburg Street to Kanata Avenue)												
Northbound	2,000 vph	666	902	696	0.33	А	0.45	А	0.35	Α			
Southbound	2,000 vph	709	984	609	0.35	А	0.49	А	0.30	Α			
Tillsonburg S	Street (Terry F	ox Drive	e to Wall	aceburg	Court)								
Eastbound	400 vph	26	85	42	0.07	А	0.21	А	0.11	Α			
Westbound	400 vph	25	11	13	0.06	А	0.03	А	0.03	Α			
Kanata Aven	ue (Terry Fox	Drive to	Huntsvi	ille Drive	e)								
Eastbound	600 vph	234	389	368	0.39	А	0.65	В	0.61	В			
Westbound	600 vph	333	298	326	0.56	А	0.50	А	0.54	Α			

Table 15: Auto LOS Segment Analysis

6.3.6 Segment MMLOS Summary

Results of the segment multi-modal level of service (MMLOS) analysis can be summarized as follows:

- Kanata Avenue meets the target pedestrian level of service (PLOS), while Terry Fox Drive and Tillsonburg Street do not;
- No boundary streets meet the target bicycle level of service (BLOS);
- No boundary streets have targets for transit level of service (TLOS), however Terry Fox Drive and Kanata Avenue both currently meet the target for Transit Priority Corridors with Isolated Measures;
- Terry Fox Drive meets the target truck level of service (TkLOS);
- All boundary streets meet the target vehicular level of service (Auto LOS).

A summary of the segment MMLOS analysis for the boundary streets is also provided in Table 16.

Table 16: Segment MMLOS Summary

	Segment	Terry Fox Drive	Tillsonburg Street	Kanata Avenue
	Sidewalk Width	2.0m	0m	2.0m
c	Boulevard Width	> 2.0m	0m	0.5m to 2.0m
ria	Average Daily Curb Lane Traffic Volume	> 3000 vpd	<u><</u> 3000 vpd	<u><</u> 3000 vpd
est	On-Street Parking	No	-	-
Pedestrian	Operating Speed	80 km/h	60 km/h	70 km/h
<u> </u>	Level of Service	D	F	В
	Target	С	С	С
	Road Classification	Arterial	Local	Major Collector
	Bike Route Classification	Spine Route	No Classification	Local Route
	Type of Bikeway	Bike Lane	Mixed Traffic	Bike Lane
t.	Bike Lane Width	2.0m	-	2.0m
Cyclist	Bike Lane Blocking	Rare	-	Rare
yc	Travel Lanes	4	2	2
0	Centerline Type	Raised Median	No Markings	Centerline Markings
	Operating Speed	80 km/h	60 km/h	70 km/h
	Level of Service	E	F	E
	Target	С	D	В
t.	Facility Type	Mixed Traffic	-	Mixed Traffic
Transit	Friction/Congestion/Incident Potential	Limited	-	Limited
ra	Level of Service	D	-	D
-	Target	-	-	-
	Lane Width	<u><</u> 3.5m	-	<u><</u> 3.5m
Truck	Travel Lanes (per direction)	2	-	1
Tru	Level of Service	А	-	С
•	Target	D	-	-
Auto	Level of Service	А	А	В
Au	Target	D	D	D

The east side of Terry Fox Drive achieves a PLOS E. The target PLOS C can only be achieved by reducing the operating speed significantly, from 80 km/h to 60 km/h (i.e. reducing the posted speed limit from 70 km/h to 50 km/h). Therefore, no recommendations have been made in improving the PLOS on Terry Fox Drive.

The north side of Tillsonburg Street achieves a PLOS F, as there are no pedestrian facilities. Current City standards suggest that if required, sidewalks can be provided on one side of local roadways. Any potential pedestrian traffic generated by the proposed development are anticipated to use the sidewalk on the south side of Tillsonburg Street, as that sidewalk is adjacent to the subject site. The existing sidewalk sufficiently connects to the network of pedestrian facilities within the subdivision north of the subject site, and meets the target PLOS C. Therefore, no recommendations have been made in improving the PLOS on Tillsonburg Street.

Terry Fox Drive achieves a BLOS E. The target BLOS C can only be achieved through either a reduction in the operating speed to 60 km/h or implementation of a physically separated bikeway (such as a multi-use pathway). Site observations during the Saturday traffic counts conducted by Novatech on September 15, 2018 included noting that the majority of cyclists during the count rode on the east sidewalk on Terry Fox Drive, rather than the bike lanes. This is likely because an existing multi-use pathway on the east side of Terry Fox Drive north of Richardson Side Road ties into the sidewalk south of Richardson Side Road. Consideration could be given to extending the multi-use pathway on the east side of Terry Fox Drive. This is identified for the City's consideration as funding becomes available.

Tillsonburg Street achieves a BLOS F. If classified as a residential street with an operating speed of 50 km/h (i.e. a posted speed limit of 40 km/h), Tillsonburg Street achieves a BLOS B. The desirable cycling facility selection tool included in *Ontario Traffic Manual (OTM) – Book 18* indicates that based on the operating speed and traffic volumes on Tillsonburg Street, shared use lanes are acceptable. As such, no recommendations have been made in improving the BLOS on Tillsonburg Street.

Kanata Avenue achieves a BLOS E. The target BLOS B can be achieved through either a reduction in the operating speed to 50 km/h and a raised median, or implementation of a physically separated bikeway. A nearby alternate local route is Richardson Side Road east of Terry Fox Drive, which is closed to vehicular traffic. Therefore, no recommendations have been made in improving the BLOS on Kanata Avenue.

6.4 Access Design

The development will be served by three accesses: a 6.7m-wide retail access on Tillsonburg Street, an 8.0m-wide shared retail/gas station access on Terry Fox Drive with a 5m mountable truck apron, and a 9.0m-wide gas station access on Kanata Avenue with a 1.5m mountable truck apron.

Section 25 (a) of the City of Ottawa's *Private Approach By-Law* identifies a maximum requirement for the number of approaches based on the amount of frontage. Section 25 (b) identifies that the provisions of Section 25 (a) shall be applied separately for each roadway that the site fronts onto. For 46m to 150m of frontage (Tillsonburg Street and Kanata Avenue), up to two two-way approaches are permitted. For an additional 90m of frontage in excess of 150m (Terry Fox Drive), another two-way approach is permitted. Based on the foregoing, the proposed accesses meet this requirement.

Section 25 (c) of the *Private Approach By-Law* identifies a maximum width requirement of 9m for two-way private approaches, as measured at the street line. Section 107 (1)(a) of the *Zoning By-*

Law identifies a minimum width requirement of 6.7m for two-way approaches to a parking lot. Based on the foregoing, the proposed accesses meet this requirement.

In the case of a shopping centre with 50 to 99 parking spaces, Section 25 (I) of the *Private Approach By-Law* identifies, as measured at the street line, minimum separation distances of 30m between a two-way approach and the nearest intersecting street line, and between a two-way approach and any other private approach. The access on Tillsonburg Street is approximately 40m from Terry Fox Drive, the access on Kanata Avenue is approximately 50m from Terry Fox Drive, and the access on Terry Fox Drive is approximately 60m from Kanata Avenue. Based on the foregoing, all accesses meet the requirements outlined in Section 25 (I).

The retail and gas station parking spaces have been considered separately, as retail customers are unlikely to park at the gas station and vice versa, based on the site layout. If considered as a whole, the minimum separation distance requirement increases to 45m between a two-way approach and the nearest intersecting street line. In this case, the proposed access to Tillsonburg Street would not meet the requirement and a waiver would be required. However, this access is located as far from Terry Fox Drive as possible, and the retail and gas station uses are anticipated to function somewhat independently. In addition, the long throat length will help to mitigate any concerns with regards to queueing back to Terry Fox Drive.

The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* identifies a minimum corner clearance of 70m on arterial roadways, 25m on collector roadways divided with a raised median, and 15m on local roadways, measuring between the private approach and the nearest intersecting street line (from Figure 8.8.2). Based on the separation distances outlined previously, all accesses meet this requirement.

Section 25 (o) of the *Private Approach By-Law* identifies a minimum distance requirement of 3m between a private approach and the nearest property line, as measured at the street line. The spacing between the access on Tillsonburg Street and the property line to the north is approximately 4.2m, thereby meeting this requirement. The spacing between the access on Kanata Avenue and the property line to the north is approximately 15.5m, thereby meeting this requirement.

For approaches to shopping centres less than 25,000 m², TAC identifies a minimum clear throat length requirement of 8m for collector roadways and 15m for arterial roadways (from Table 8.9.3). No clear throat length requirement is explicitly stated for gas stations. Measured from the end of the curb radius, the access on Terry Fox Drive achieves a clear throat length of 15m. Additionally, there is a significant amount of open paved area on-site, which is anticipated to contain any inbound queueing. The access on Kanata Avenue achieves a clear throat length of 15m, thereby meeting the requirements.

Using the equations and tables shown in Section 2.5.3 of the *Geometric Design Guide*, TAC identifies minimum stopping sight distance (SSD) requirements based on the roadway grade and design speed (taken as the speed limit plus 10 km/h). Taking the design speed directly, the SSD requirements are approximately 130m on Terry Fox Drive, 115m on Kanata Avenue, 95m on Tillsonburg Street (traffic heading toward Terry Fox Drive), and 80m on Tillsonburg Street (traffic coming from Terry Fox Drive). There is sufficient SSD at each access, except for traffic on Tillsonburg Street coming from Terry Fox Drive. However, vehicles travelling eastbound on Tillsonburg Street will be travelling significantly slower than 60 km/h, as motorists will be required to navigate the right turn from Terry Fox Drive. Based on a speed of 40 km/h for eastbound traffic on Tillsonburg Street, there is sufficient SSD at all accesses.

A right turn lane or taper is not recommended for the Terry Fox Drive access. At this access, a right turn lane is not required based on the projected right turn volumes. Right turn tapers are typically used along major arterials with high design speeds, where the hazard to through traffic caused by slow turning or stopped vehicles in the through lanes is significant. It is noted that right turn tapers are not provided for accesses to the Kanata Centrum shopping area to the south, where Terry Fox Drive still has the same posted speed limit of 70 km/h. A similar level of friction will be introduced along this section of Terry Fox Drive as traffic lights and development continue to occur.

The Terry Fox Drive access is critical to the proposed development for the following reasons. Connectivity between the retail and gas station areas is important due to the turning restrictions at the accesses, and each land use depends on the other use's access for at least one movement (for example, westbound left turns to the gas station can only enter the site via the Tillsonburg Street access and southbound left turns from the retail building can only exit the site via the Kanata Avenue access). Additionally, providing an access on Terry Fox Drive allows fuel trucks to enter the site without navigating the entire retail parking lot first.

6.5 Transit

Section 5.1 of the report projected site-generated totals of one transit trip during the AM peak hour and five during the PM peak hour. No transit service is provided anywhere within the study area on Saturdays. As the number of transit trips generated by the proposed development are so low, no capacity problems are anticipated on any of the adjacent bus routes or at any of the nearby bus stops. No mitigation measures have been recommended, as none are required.

6.6 Intersection Design

6.6.1 Intersection MMLOS Analysis

This section provides a review of the study area intersections using complete streets principles. The MMLOS guidelines produced by IBI Group in October 2015 were used to evaluate the multi-modal levels of service for each signalized intersection. As first discussed in Section 6.3, all study area roadways have been evaluated using the targets associated with the General Urban Area designation. The full intersection MMLOS analysis is included in **Appendix I**. A summary of the results is shown in **Table 17**.

Intersection	PLOS		BLOS		TLOS		TkLOS		Auto LOS	
Intersection	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Terry Fox Drive/ Kanata Avenue	F	С	F	В	ш	-	С	D	В	D
Kanata Avenue/ Huntsville Drive	D	С	ш	В	С	-	F	-	А	D
Terry Fox Drive/ Tillsonburg Street ⁽¹⁾	-	-	-	-	-	-	-	-	А	D

Table 17: Intersection MMLOS Summary

1. Unsignalized intersection, evaluated for Auto LOS only

Based on the results of the intersection MMLOS analysis:

- Neither intersection meets the target pedestrian level of service (PLOS);
- Neither intersection meets the target bicycle level of service (BLOS);

- Neither intersection has a target transit level of service (TLOS), however all approaches achieve a TLOS E or better;
- Terry Fox Drive/Kanata Avenue meets the target truck level of service (TkLOS);
- All intersections meet the target vehicular level of service (Auto LOS).

The following sections outline a further discussion for each intersection.

6.6.1.1 Terry Fox Drive/Kanata Avenue

Terry Fox Drive/Kanata Avenue does not meet the target PLOS C or BLOS B.

Both crosswalks do not achieve the target PLOS C, due to crossing distances equivalent to at least eight lanes. There are limited opportunities in improving the PLOS without reducing the number of travel lanes on Terry Fox Drive and Kanata Avenue, and as such, no recommendations have been made in improving the PLOS at this intersection.

The south and east approaches do not achieve the target BLOS B based on right turn characteristics, and the north approach does not achieve the target BLOS B based on left turn characteristics. The east approach does not meet the target, as the pocket bike lane is adjacent to a right turn lane greater than 50m. Bike access to Terry Fox Drive is also provided at Richardson Side Road, where the east approach is closed to vehicular traffic. Exhibit 12 of the MMLOS guidelines suggests no impact if the bike lane is to the right of any turn lane. For the south and east approaches, this would require removal of the existing channelized right turn lanes, which is not recommended based on the right turn volumes at these approaches. Therefore, no recommendations have been made in improving the BLOS for the south and east approaches. A jug handle and crossride for cyclists coming from the north approach can feasibly be implemented along with the installation of a bicycle traffic signal. Further analysis of this intersection with a jug handle and cyclist-exclusive phase implemented is presented in Section 6.6.2.

6.6.1.2 Kanata Avenue/Huntsville Drive

Kanata Avenue/Huntsville Drive does not meet the target PLOS C or BLOS B.

The east crosswalk does not achieve the target PLOS C based on PETSI score, due to a crossing distance equivalent to five lanes. Additionally, the east and west crosswalks do not achieve the target PLOS C based on delay score. There are limited opportunities in improving the PLOS at the east approach without reducing the number of travel lanes on Kanata Avenue, with the only possible modification being the removal of the westbound right turn lane. To achieve the target PLOS C based on delay score, the effective walk time for pedestrians would require an increase of approximately three seconds. This would come at the expense of eastbound and westbound traffic on Kanata Avenue, which already includes the critical movements for this intersection. The potential impacts of increasing the green time for vehicles coming from Huntsville Drive is presented in Section 6.6.2.

The east approach does not achieve the target BLOS B based on right turn characteristics, and the west approach does not achieve the target BLOS B based on left turn characteristics. Consideration could be given to shifting the location of the bike lane to the curb at the east approach or removing the westbound right turn lane, which would improve the BLOS of the approach to a BLOS A. In addition, a crossride could be considered to improve cyclist visibility through the intersection.

With respect to left turns, a jug handle and crossride for cyclists coming from the west approach can feasibly be implemented along with the installation of a bicycle traffic signal. The potential impacts of removing the westbound right turn lane, and implementing a jug handle and cyclist-exclusive phase at this intersection is presented in Section 6.6.2.

6.6.2 Intersection Operations with Identified Modifications

As described in the MMLOS review of Terry Fox Drive/Kanata Avenue and Kanata Avenue/Huntsville Drive, this section will analyze the traffic impacts of the following modifications, based on existing conditions:

- A jug handle and crossride for southbound cyclists at Terry Fox Drive/Kanata Avenue;
- A jug handle and crossride for eastbound cyclists at Kanata Avenue/Huntsville Drive;
- Removal of the westbound right turn lane at Kanata Avenue/Huntsville Drive;
- A southbound green time adjustment at Kanata Avenue/Huntsville Drive, such that the intersection achieves the target PLOS C.

These measures have been evaluated for consideration by the City as funding becomes available. Detailed Synchro reports with the above modifications implemented is included in **Appendix K**.

Terry Fox Drive/Kanata Avenue

To minimize the delays and queueing experienced by all traffic at this intersection, the cycle length of 100 seconds in the weekday AM and PM peak hours, and 90 seconds in the Saturday peak hour will be maintained. In the following analysis, a ten-second actuated bicycle crossing phase will be implemented, and will borrow time from the northbound/southbound phase, as this phase is not identified as the critical movement during any peak hour. To maximize the effect of the bicycle crossing phase and maintain a conservative analysis, maximum recall is assumed.

A comparison of the intersection's performance with and without the bicycle crossing phase is shown in **Table 18**.

	able to: Terry tox brive/Kanata Avenue - bicycle orossing													
		AM I	Peak		PM Peak				SAT Peak					
Mvmt	Existing		Jug Handle		Exis	Existing		Jug Handle		sting	Jug Handle			
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS		
NBT	0.29	А	0.35	А	0.39	Α	0.46	А	0.31	А	0.38	А		
NBR	0.18	А	0.20	А	0.30	Α	0.33	А	0.31	А	0.35	А		
SBL	0.15	А	0.19	А	0.26	Α	0.34	А	0.18	А	0.23	А		
SBT	0.31	А	0.37	А	0.41	Α	0.49	А	0.26	А	0.33	А		
WBL	0.62	В	0.62	В	0.58	Α	0.58	А	0.50	А	0.50	А		
WBT	0.24	А	0.24	А	0.23	Α	0.23	А	0.22	А	0.22	А		
Int Delay	10.5 s	В	14.0 s	В	8.8 s	Α	12.9 s	В	9.4 s	А	13.1 s	В		

Table 18: Terry Fox Drive/Kanata Avenue – Bicycle Crossing

Based on the previous table, the intersection operations at Terry Fox Drive/Kanata Avenue are marginally affected with the addition of a ten-second bicycle crossing phase, and all movements maintain the same level of service. Overall intersection delays increase by approximately three to four seconds. Implementation of a jug handle on the west side of Terry Fox Drive at Kanata Avenue

appears feasible based on the existing ROW, however modifications to the existing traffic signal will be required.

Kanata Avenue/Huntsville Drive

To minimize the delays and queueing experienced by all traffic at this intersection, the cycle length of 80 seconds in the weekday AM and PM peak hours, and 70 seconds in the Saturday peak hour will be maintained. In the following analysis, a ten-second actuated bicycle crossing phase will be implemented, and will borrow time from the eastbound/westbound phase, as this phase is not identified as the critical movement during any peak hour. To maximize the effect of the bicycle crossing phase and maintain a conservative analysis, maximum recall is assumed.

A comparison of the intersection's performance with and without the bicycle crossing phase, with and without the westbound right turn lane, and with and without an increased southbound green time is shown in **Table 19** through **Table 21**, respectively. To represent a 'worst case' for vehicular level of service, a final comparison with all modifications implemented is shown in **Table 22**.

		AM I	Peak		PM Peak				SAT Peak				
Mvmt	Existing		Jug Handle		Exis	Existing		Jug Handle		ting	Jug Handle		
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	
EBL	0.03	Α	0.03	А	0.09	Α	0.12	Α	0.07	А	0.10	А	
EBT	0.20	Α	0.26	А	0.27	Α	0.35	Α	0.28	А	0.40	Α	
WBT	0.22	Α	0.29	А	0.20	Α	0.27	Α	0.23	А	0.33	А	
WBR	0.03	Α	0.03	А	0.05	Α	0.06	Α	0.08	А	0.12	А	
SBL/R	0.55	Α	0.53	А	0.46	Α	0.43	Α	0.42	А	0.39	А	
Int Delay	8.4 s	Α	12.1 s	В	5.8 s	А	9.9 s	А	6.4 s	А	11.3 s	В	

Table 19: Kanata Avenue/Huntsville Drive – Bicycle Crossing

Based on the previous table, the intersection operations at Kanata Avenue/Huntsville Drive are marginally affected with the addition of a ten-second bicycle crossing phase, and all movements maintain the same level of service. Overall intersection delays increase by approximately three to five seconds.

Implementation of a jug handle on the south side of Kanata Avenue at Huntsville Drive appears feasible based on the existing ROW, however modifications to the existing traffic signal will be required.

	Tunut				21110							
		AM I	Peak			PM I	Peak		SAT Peak			
Mvmt	Existing		Removal		Existing		Removal		Existing		Removal	
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.03	Α	0.03	Α	0.09	А	0.09	А	0.07	А	0.08	А
EBT	0.20	Α	0.20	Α	0.27	А	0.27	А	0.28	А	0.28	А
WBT	0.22	Α	0.25	Α	0.20	А	0.25	А	0.23	А	0.31	А
WBR	0.03	Α	-	-	0.05	А	-	-	0.08	А	-	-
SBL/R	0.55	Α	0.55	Α	0.46	А	0.46	А	0.42	А	0.42	А
Int Delay	8.4 s	Α	8.5 s	А	5.8 s	Α	5.9 s	Α	6.4 s	Α	6.8 s	Α

Table 20: Kanata Avenue/Huntsville Drive – Removal of WBR Lane

Based on the previous table, the intersection operations at Kanata Avenue/Huntsville Drive are marginally affected with the removal of the westbound right turn lane, and all movements maintain the same level of service. Overall intersection delays are approximately equal.

	AM Peak					PM I	Peak		SAT Peak			
Mvmt	Exis	sting	Adj. T	iming	Exis	sting	Adj. T	iming	Exis	sting	Adj. T	iming
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS
EBL	0.03	Α	0.03	Α	0.09	Α	0.09	Α	0.07	А	0.07	А
EBT	0.20	Α	0.20	Α	0.27	Α	0.27	Α	0.28	А	0.28	А
WBT	0.22	Α	0.23	Α	0.20	Α	0.21	Α	0.23	А	0.23	А
WBR	0.03	Α	0.03	Α	0.05	Α	0.05	Α	0.08	А	0.09	А
SBL/R	0.55	Α	0.53	Α	0.46	А	0.45	Α	0.42	А	0.40	А
Int Delay	8.4 s	A	8.0 s	Α	5.8 s	Α	5.7 s	Α	6.4 s	А	6.5 s	Α

Table 21: Kanata Avenue/Huntsville Drive – Increased SB Green Time

Based on the previous table, the intersection operations at Kanata Avenue/Huntsville Drive are marginally affected by adjusting the green times to add three seconds for the southbound phase, and all movements maintain the same level of service. Overall intersection delays are approximately equal.

		AM I	Peak			PM I	M Peak SAT				Г Peak		
Mvmt	Exis	sting	Mod	ified	Exis	sting	Mod	ified	Exis	sting	Modified		
	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	v/c	LOS	
EBL	0.03	А	0.03	А	0.09	Α	0.13	А	0.07	Α	0.13	А	
EBT	0.20	А	0.27	А	0.27	Α	0.37	А	0.28	Α	0.42	А	
WBT	0.22	А	0.33	А	0.20	Α	0.34	А	0.23	Α	0.47	А	
WBR	0.03	А	-	-	0.05	Α	-	-	0.08	Α	-	-	
SBL/R	0.55	А	0.52	А	0.46	Α	0.42	А	0.42	Α	0.38	А	
Int Delay	8.4 s	А	12.2 s	В	5.8 s	Α	10.5 s	В	6.4 s	Α	12.8 s	В	

Table 22: Kanata Avenue/Huntsville Drive – All Identified Modifications

Based on the previous table, the intersection operations at Kanata Avenue/Huntsville Drive are marginally affected with the implementation of all three modifications analyzed above. All v/c ratios continue to equate to an Auto LOS A, and the performance of the westbound through/right turn movement is the only movement to downgrade noticeably. Overall intersection delays increase by approximately four to six seconds.

6.6.3 2019 Background Traffic – Intersection Operations

Intersection capacity analysis has been completed for the 2019 background traffic conditions. The intersection parameters used in the analysis are consistent with the 2017 TIA Guidelines (Saturation Flow Rate: 1800 vphpl, Peak Hour Factor: 1.0). The results of the Synchro 10 analysis for the AM, PM, and Saturday peak hours are summarized in **Table 23**. Signal timing plans are included in **Appendix J**. Detailed reports are included in **Appendix K**.

	A	AM Peak			PM Peak			SAT Peak		
Intersection	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	
Terry Fox Drive/ Kanata Avenue	0.64	В	WBL	0.59	А	WBL	0.49	А	WBL	
Kanata Avenue/ Huntsville Drive	0.59	А	SBL/R	0.40	А	SBL/R	0.41	А	SBL/R	
Terry Fox Drive/ Tillsonburg Street ⁽¹⁾	10 sec	А	WBR	10 sec	А	WBR	10 sec	А	WBR	

1. Unsignalized intersection

Based on the previous table, movements at all intersections within the study area are projected to operate acceptably, surpassing the target Auto LOS D during the AM, PM, and Saturday peak hours. There are no queueing issues identified in Synchro for the 2019 background traffic conditions.

6.6.4 2024 Background Traffic – Intersection Operations

Intersection capacity analysis has been completed for the 2024 background traffic conditions. The intersection parameters used in the analysis are consistent with the 2017 TIA Guidelines (Saturation Flow Rate: 1800 vphpl, Peak Hour Factor: 1.0). The results of the Synchro 10 analysis for the AM, PM, and Saturday peak hours are summarized in **Table 24**. Signal timing plans are included in **Appendix J**. Detailed reports are included in **Appendix K**.

	A	AM Peak			PM Peak			SAT Peak		
Intersection	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	
Terry Fox Drive/ Kanata Avenue	0.65	В	WBL	0.60	А	WBL	0.51	А	WBL	
Kanata Avenue/ Huntsville Drive	0.59	А	SBL/R	0.40	А	SBL/R	0.41	А	SBL/R	
Terry Fox Drive/ Tillsonburg Street ⁽¹⁾	10 sec	А	WBR	10 sec	А	WBR	10 sec	А	WBR	

Table 24: 2024 Background – Intersection Operations

Based on the previous table, marginal increases in the v/c ratios at the study area intersections are anticipated as a result of background growth and other developments in the vicinity of the subject site. All study area intersections are projected to continue operating acceptably during the AM, PM, and Saturday peak hours. There are no queueing issues identified in Synchro for the 2024 background conditions.

6.6.5 2019 Total Traffic – Intersection Operations

Intersection capacity analysis has been completed for the 2019 total traffic conditions. The intersection parameters used in the analysis are consistent with the 2017 TIA Guidelines (Saturation Flow Rate: 1800 vphpl, Peak Hour Factor: 1.0). The results of the Synchro 10 analysis for the AM, PM, and Saturday peak hours are summarized in **Table 25**. Signal timing plans are included in **Appendix J**. Detailed reports are included in **Appendix K**.

	AM Peak			PM Peak			SAT Peak		
Intersection	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Terry Fox Drive/ Kanata Avenue	0.65	В	WBL	0.60	А	WBL	0.51	А	WBL
Kanata Avenue/ Huntsville Drive	0.60	А	SBL/R	0.44	А	SBL/R	0.44	А	SBL/R
Terry Fox Drive/ Tillsonburg Street ⁽¹⁾	11 sec	В	WBR	11 sec	В	WBR	11 sec	В	WBR
Tillsonburg Street/ Site Access ⁽¹⁾	9 sec	А	NBL/R	9 sec	А	NBL/R	9 sec	А	NBL/R
Terry Fox Drive/ Site Access ⁽¹⁾	10 sec	А	WBR	10 sec	А	WBR	10 sec	А	WBR
Kanata Avenue/ Site Access ⁽¹⁾	9 sec	А	SBR	9 sec	А	SBR	9 sec	А	SBR

Table 25: 2019 Total – Intersection Operations

Based on the previous table, marginal increases in the v/c ratios at the study area intersections are anticipated as a result of background growth and site-generated traffic. All study area intersections are projected to continue operating acceptably during the AM, PM, and Saturday peak hours. There are no queueing issues identified in Synchro for the 2019 total traffic conditions.

6.6.6 2024 Total Traffic – Intersection Operations

Intersection capacity analysis has been completed for the 2024 total traffic conditions. The intersection parameters used in the analysis are consistent with the 2017 TIA Guidelines (Saturation Flow Rate: 1800 vphpl, Peak Hour Factor: 1.0). The results of the Synchro 10 analysis for the AM, PM, and Saturday peak hours are summarized in **Table 26**. Signal timing plans are included in **Appendix J**. Detailed reports are included in **Appendix K**.

	Α	M Pea	ık	PM Peak			SAT Peak		
Intersection	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Terry Fox Drive/ Kanata Avenue	0.66	В	WBL	0.62	В	WBL	0.53	А	WBL
Kanata Avenue/ Huntsville Drive	0.60	А	SBL/R	0.44	А	SBL/R	0.44	А	SBL/R
Terry Fox Drive/ Tillsonburg Street ⁽¹⁾	11 sec	В	WBR	10 sec	А	WBR	10 sec	А	WBR
Tillsonburg Street/ Site Access ⁽¹⁾	9 sec	А	NBL/R	9 sec	А	NBL/R	9 sec	А	NBL/R
Terry Fox Drive/ Site Access ⁽¹⁾	10 sec	А	WBR	11 sec	В	WBR	10 sec	А	WBR
Kanata Avenue/ Site Access ⁽¹⁾	9 sec	А	SBR	9 sec	А	SBR	9 sec	А	SBR

Based on the previous table, marginal increases in the v/c ratios at the study area intersections are anticipated as a result of background growth and site-generated traffic. All study area intersections are projected to continue operating acceptably during the AM, PM, and Saturday peak hours. There are no queueing issues identified in Synchro for the 2024 total traffic conditions.

7.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

- The proposed development is projected to generate approximately 132 person trips during the AM peak hour, 260 person trips during the PM peak hour, and 267 person trips during the Saturday peak hour.
- The proposed development is projected to generate 103 vehicle trips during the AM peak hour, 197 vehicle trips during the PM peak hour, and 206 vehicle trips during the Saturday peak hour.

Development Design and Parking

- Pedestrian facilities will be provided between the building entrances and the parking areas. Additionally, pedestrian facilities will connect the retail buildings to the existing sidewalks along Terry Fox Drive and Tillsonburg Street. Sidewalks will be depressed and continuous across the accesses, in accordance with City standards.
- All building entrances are within 400m walking distances of stops for both OC Transpo routes 165 and 264.
- Retail garbage collection will take place approximately 80m south of the full-movement access on Tillsonburg Street. Gas station garbage collection will take place south of the proposed car wash, approximately 15m north of the RIRO access on Kanata Avenue.
- Loading and delivery spaces for the retail uses are provided adjacent to the east and west of the full-movement access on Tillsonburg Street.
- The accesses to the gas station are sufficient to accommodate a fuel tanker, the largest vehicle to enter and exit the site. Some mountable curb is required for the tanker to negotiate turning into/out of the accesses.
- The fire route for the proposed development accesses the site from the full-movement access on Tillsonburg Street and the RIRO access on Terry Fox Drive.
- Approximately 112 vehicle parking spaces and 16 bicycle parking spaces are proposed for the development, meeting the minimum requirements of the ZBL. Four of the 96 retail parking spaces and one of the 16 gas station parking spaces are accessible spaces, meeting the minimum requirements of the City's *Accessibility Design Standards*.
- A total of ten bicycle parking spaces will be provided for the retail building, and a total of six bicycle parking spaces will be provided for the gas station and convenience store, thereby meeting the requirements of the ZBL.
- The proposed car wash provides queueing space for ten vehicles before/in the car wash bay, and one vehicle after the bay, thereby meeting the minimum requirements of the ZBL.

• Two retail loading spaces are proposed, thereby meeting the minimum requirements of the ZBL.

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
 - Kanata Avenue meets the target pedestrian level of service (PLOS), while Terry Fox Drive and Tillsonburg Street do not;
 - No boundary streets meet the target bicycle level of service (BLOS);
 - No boundary streets have targets for transit level of service (TLOS), however Terry Fox Drive and Kanata Avenue both currently meet the target for Transit Priority Corridors with Isolated Measures;
 - Terry Fox Drive meets the target truck level of service (TkLOS);
 - All boundary streets meet the vehicular level of service (Auto LOS).
- The east side of Terry Fox Drive does not achieve the target PLOS C. The target PLOS can only be achieved by reducing the operating speed significantly (i.e. reducing the posted speed limit from 70 km/h to 50 km/h). Therefore, no recommendations have been made in improving the PLOS on Terry Fox Drive.
- The north side of Tillsonburg Street has no pedestrian facilities. Current City standards suggest that if required, sidewalks can be provided on one side of local roadways. Any potential pedestrian traffic generated by the proposed development are anticipated to use the sidewalk on the south side of Tillsonburg Street, which meets the target PLOS C. Therefore, no recommendations have been made in improving the PLOS on Tillsonburg Street.
- Terry Fox Drive does not achieve the target BLOS E, despite the existing bike lanes. The target BLOS can only be achieved by reducing the operating speed to 60 km/h or implementing a physically separated bikeway (such as a multi-use pathway). Site observations indicate that the majority of cyclists likely use the east sidewalk on Terry Fox Drive rather than the bike lanes, as an existing multi-use pathway ties into this sidewalk north of Richardson Side Road. Consideration could be given to extending the multi-use pathway on the east side of Terry Fox Drive. This is identified for the City's consideration as funding becomes available.
- Tillsonburg Street does not achieve the target BLOS D. If classified as a residential street
 with an operating speed of 50 km/h, Tillsonburg Street achieves a BLOS B. Book 18 of the
 Ontario Traffic Manual indicates that shared use lanes are acceptable for Tillsonburg Street,
 given the operating speed and traffic volumes. Therefore, no recommendations have been
 made in improving the BLOS on Tillsonburg Street.
- Kanata Avenue does not achieve the target BLOS B. The target BLOS can only be achieved through either a reduction in the operating speed to 50 km/h and a raised median, or implementation of a physically separated bikeway. A nearby alternate local route is Richardson Side Road east of Terry Fox Drive, which is closed to vehicular traffic. Therefore, no recommendations have been made in improving the BLOS on Kanata Avenue.

Access Design

- Section 25 (a) of the *Private Approach By-Law* identifies a maximum requirement for the number of approaches based on the amount of frontage, and Section 25 (b) identifies that each roadway shall be evaluated separately. For 46m to 150m of frontage (Tillsonburg Street and Kanata Avenue), up to two two-way approaches are permitted. For every additional 90m in excess of 150m (Terry Fox Drive), another two-way approach is permitted. This requirement is met by the proposed accesses.
- Section 25 (c) of the *Private Approach By-Law* identifies a maximum width requirement of 9m for two-way private approaches, and Section 107 (1)(a) of the *Zoning By-Law* identifies a minimum width requirement of 6.7m for two-way private approaches to a parking lot. These requirements are met by the proposed accesses.
- Section 25 (I) of the *Private Approach By-Law* identifies minimum separation distances of 30m between a two-way approach and the nearest intersecting street line, and between a two-way approach and any other private approach. These requirements are met by the proposed accesses.
- If all parking spaces are considered rather than dividing the retail and gas station parking, the minimum separation distance requirement increases to 45m between a two-way approach and the nearest intersecting street line. In this case, the Tillsonburg Street access would not meet the requirement and a waiver would be required. However, this access is located as far from Terry Fox Drive as possible, and the retail and gas station uses are anticipated to function somewhat independently. In addition, the long throat length will help to mitigate any concerns with regards to queueing back to Terry Fox Drive.
- Figure 8.8.2 of the *Geometric Design Guide* identifies minimum corner clearance distances of 70m on arterial roadways, 25m on collector roadways divided with a raised median, and 15m on local roadways. These requirements are met by the proposed accesses.
- Section 25 (o) of the *Private Approach By-Law* identifies a minimum distance requirement of 3m between a private approach and the nearest property line. The spacing between the Tillsonburg Street access and the property line is approximately 4.2m and the spacing between the Kanata Avenue access and the property line is approximately 15.5m, thereby meeting this requirement.
- Table 8.9.3 of the Geometric Design Guide identifies a minimum clear throat length requirement of 8m for collector roadways and 15m for arterial roadways, for shopping centres less than 25,000 ft². No clear throat length requirement is explicitly stated for gas stations. Measured from the near edge of the sidewalk, the access on Terry Fox Drive achieves a clear throat length of 15m. Additionally, there is a significant amount of open paved area onsite, which is anticipated to contain any inbound queueing. The access on Kanata Avenue achieves a clear throat length of 15m, thereby meeting the requirements.
- Section 2.5.3 of the Geometric Design Guide identifies minimum stopping sight distance (SSD) requirements based on the roadway grade and design speed. Adjusting the design speed for traffic turning onto Tillsonburg Street from Terry Fox Drive to reflect a lower operating speed, all accesses meet the minimum SSD requirements.

- A right turn lane or taper is not recommended for the Terry Fox Drive access. It is noted that right turn tapers are not provided for accesses to the Kanata Centrum area to the south, where Terry Fox Drive still has the same posted speed limit of 70 km/h. A similar level of friction will be introduced along this section of Terry Fox Drive as traffic lights and development continue to occur.
- The Terry Fox Drive access is critical to the proposed development. Connectivity between the retail and gas station areas is important due to the turning restrictions at the accesses, and each land use depends on the other use's access for at least one movement. Additionally, providing an access on Terry Fox Drive allows fuel trucks to enter the site without navigating the entire retail parking lot first.

<u>Transit</u>

• The transit trips generated by the proposed development are not anticipated to have a significant impact on the operations of OC Transpo routes 165 and 264. No mitigation measures have been recommended, as none are required.

Intersection Design

- Based on the results of the intersection MMLOS analysis:
 - Neither intersection meets the target pedestrian level of service (PLOS);
 - Neither intersection meets the target bicycle level of service (BLOS);
 - Neither intersection has a target transit level of service (TLOS), however all approaches achieve a TLOS E or better;
 - Terry Fox Drive/Kanata Avenue meets the target truck level of service (TkLOS);
 - All intersections meet the vehicular level of service (Auto LOS).
- Pedestrian Level of Service:
 - Both crosswalks of Terry Fox Drive/Kanata Avenue do not achieve the target PLOS C, due to crossing distances equivalent to at least eight lanes. There are limited opportunities in improving the PLOS without reducing the number of travel lanes on Terry Fox Drive and Kanata Avenue, and as such, no recommendations have been made in improving the PLOS at this intersection.
 - At Kanata Avenue/Huntsville Drive, the east crosswalk does not achieve the target PLOS C based on PETSI score, due to a crossing distance equivalent to five lanes. Additionally, the east and west crosswalks do not achieve the target PLOS C based on delay score. There are limited opportunities in improving the PLOS at the east approach without reducing the number of travel lanes on Kanata Avenue, with the only possible modification being the removal of the westbound right turn lane. To achieve the target PLOS C based on delay score, the effective walk time for pedestrians would require an increase of approximately three seconds.
- Bicycle Level of Service:
 - At Terry Fox Drive/Kanata Avenue, the south and east approaches do not achieve the target BLOS B based on right turn characteristics, and the north approach does not achieve the target BLOS B based on left turn characteristics. The east approach does not meet the target, as the pocket bike lane is adjacent to a right turn lane greater than 50m. Bike access to Terry Fox Drive is also provided at Richardson Side Road, where the east approach is closed to vehicular traffic.

- For the south and east approaches, this would require removal of the existing channelized right turn lanes, which is not recommended based on the right turn volumes. Therefore, no recommendations have been made in improving the BLOS for the south and east approaches. A jug handle and crossride for cyclists coming from the north approach can feasibly be implemented along with the installation of a bicycle traffic signal.
- At Kanata Avenue/Huntsville Drive, the east approach does not achieve the target BLOS B based on right turn characteristics, and the west approach does not achieve the target BLOS B based on left turn characteristics. Consideration could be given to shifting the location of the bike lane to the curb at the east approach or removing the westbound right turn lane, which would improve the BLOS of the approach to a BLOS A. In addition, a crossride could be considered to improve cyclist visibility through the intersection.
- With respect to left turns, a jug handle and crossride for cyclists coming from the west approach can feasibly be implemented along with the installation of a bicycle traffic signal.
- The following modifications can be accommodated at the intersections of Terry Fox Drive/ Kanata Avenue and Kanata Avenue/Huntsville Drive, and are identified for the City's consideration:
 - A jug handle and crossride for southbound cyclists at Terry Fox Drive/Kanata Avenue;
 - A jug handle and crossride for eastbound cyclists at Kanata Avenue/Huntsville Drive;
 - Removal of the westbound right turn lane at Kanata Avenue/Huntsville Drive;
 - A southbound green time increase of three seconds at Kanata Avenue/Huntsville Drive, such that the intersection achieves the target PLOS C.
- Compared to existing conditions, marginal increases in the v/c ratios and delays at the study area intersections are anticipated as a result of background growth and site-generated traffic.
- All study area intersections are projected to continue operating acceptably during the AM, PM, and Saturday peak hours (Auto LOS B or better). There are no queueing issues identified in Synchro for the 2024 total traffic conditions, which can be considered the 'worst case' scenario analyzed in this TIA.
- Based on the foregoing, the proposed development is recommended from a transportation perspective.

NOVATECH

Prepared by:

Hudia

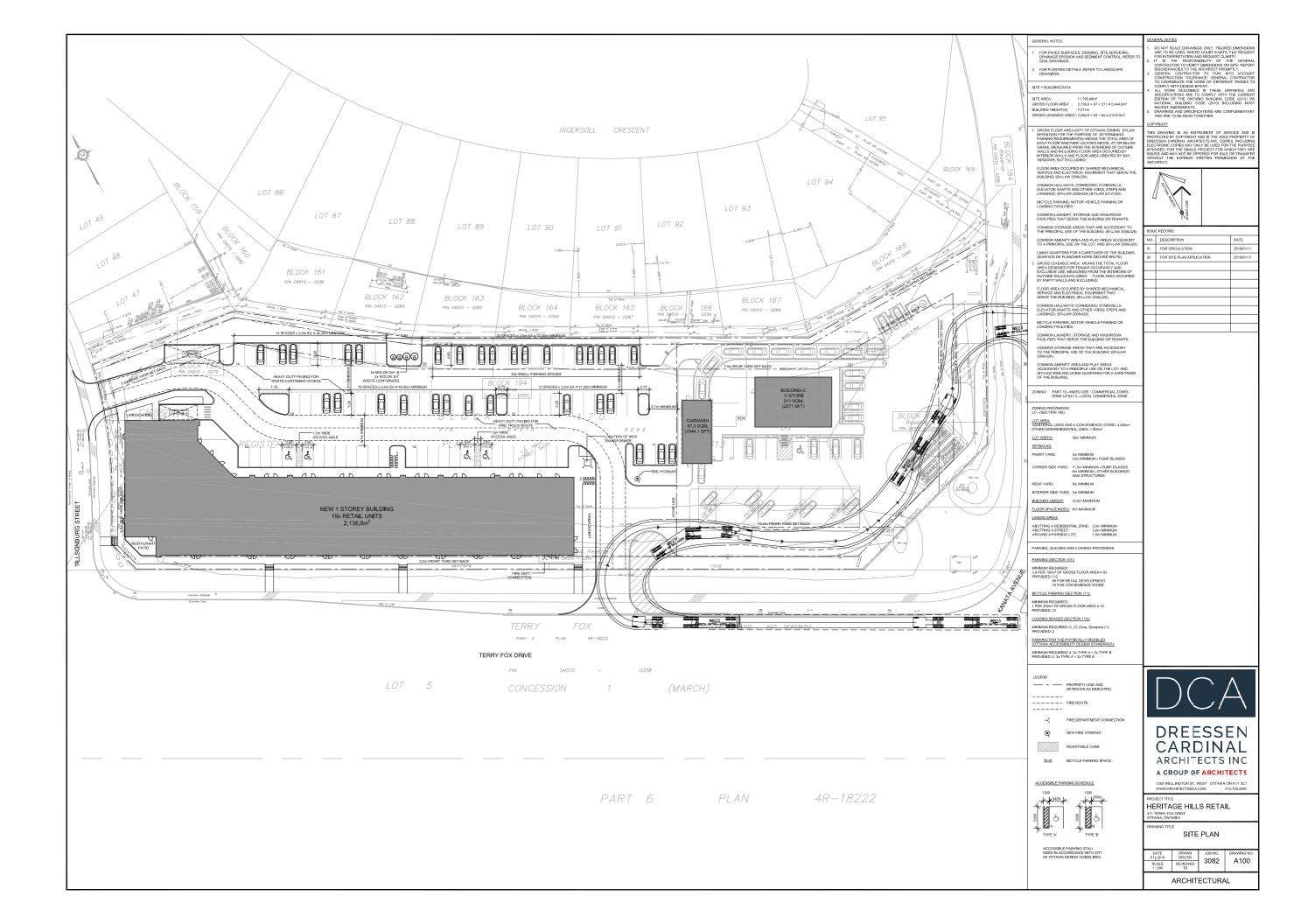
Joshua Audia, B.Sc. E.I.T., Transportation/Traffic Reviewed by:



Jennifer Luong, P.Eng. Senior Project Manager, Transportation/Traffic

APPENDIX A

Conceptual Site Plan



APPENDIX B

TIA Screening Form



Transportation Impact Assessment Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	471 Terry Fox Drive
Description of Location	The approximately 1.19-hectare property is located east of Terry Fox Drive between Kanata Avenue and Tillsonburg Street
Land Use Classification	Retail + Gas Station with Car Wash
Development Size (units)	-
Development Size (m ²)	Retail: 23,000 ft ² (2,137 m ²)
	Gas Station: 3,315 ft ² (308 m ²)
Number of Accesses and	- One access to Tillsonburg Street
Locations	- One access to Kanata Avenue
	- One access to Terry Fox Drive
Phase of Development	1
Buildout Year	2019

If available, <u>please attach a sketch of the development or site plan</u> 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 m ²
Destination retail	1,000 m ²
Gas station or convenience market	75 m ²

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

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



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

*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?		\checkmark
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	\checkmark	
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	~	
Is the proposed driveway within auxiliary lanes of an intersection?	\checkmark	
Does the proposed driveway make use of an existing median break that serves an existing site?		\checkmark
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		\checkmark
Does the development include a drive-thru facility?		\checkmark

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?	\checkmark									
Does the development satisfy the Location Trigger?	\checkmark									
Does the development satisfy the Safety Trigger?	\checkmark									

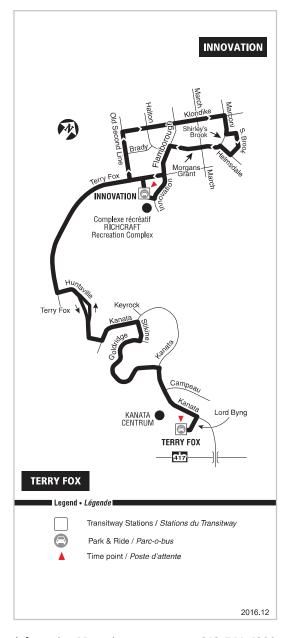
If none of the triggers are satisfied, <u>the TIA Study is complete</u>. If one or more of the triggers is satisfied, <u>the TIA Study must continue into the next stage</u> (Screening and Scoping).

APPENDIX C

OC Transpo Route Maps



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



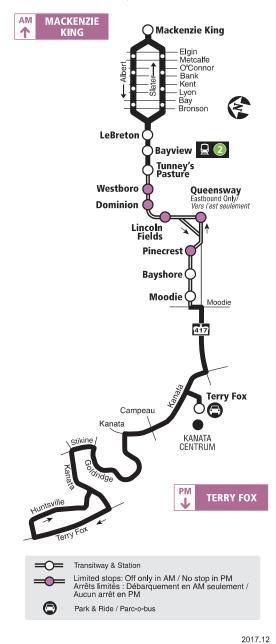
Information / Renseignement	613-741-4390
Customer Relations Service à la clientèle	613-842-3600
Lost and Found / Objets perdus	613-563-4011
Schedule / Horaire	613-560-1000
Text / Texto	
plus your four digit bus stop number / plus votre numér	o d'arrêt à quatre chiffres

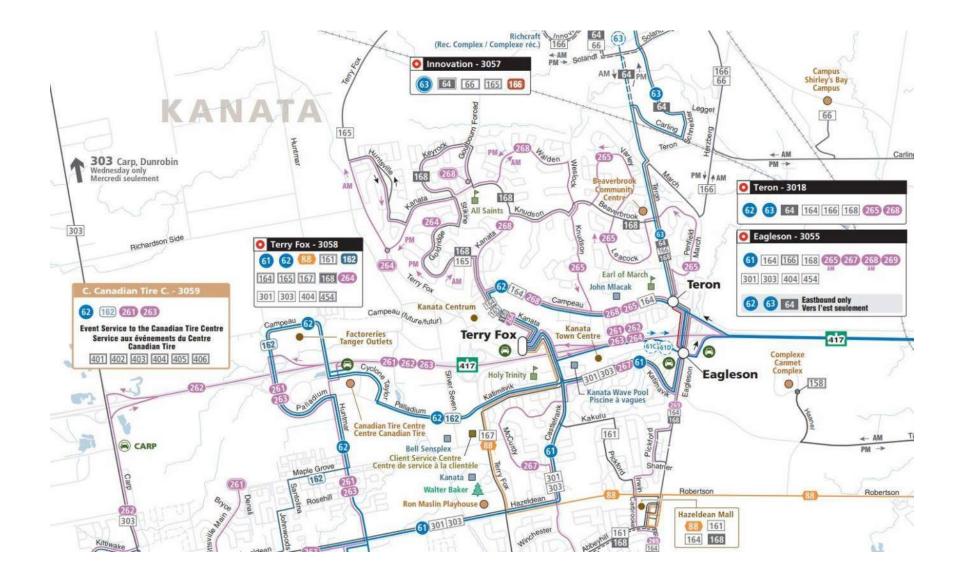
Effective / En vigueur Dec. 25 déc. 2016



Monday to Friday / Lundi au vendredi

Peak periods only Périodes de pointe seulement





APPENDIX D

Traffic Count Data



Turning Movement Count - Full Study Summary Report

KANATA AVE @ TERRY FOX DR

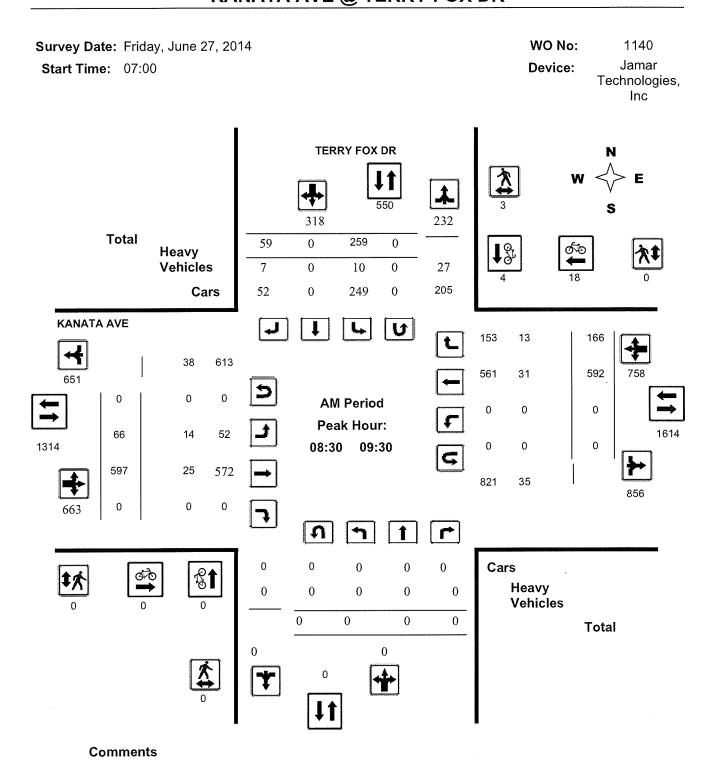
Survey Date: Friday, June 27, 2014									Tot	al Ob		AADT Factor							
								Northboun		0	South		ound:	3			.80		
								Eastbound:		14		Westbound:		2					
									Full \$	Stud	y								
			TERI	RY FO	X DR														
	N	orthboi	und		Sout	hbour	nd			Eastbound				We	estbou	nd	-		
Period	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT		STR TOT	Grano Total
07:00 08:00	0	0	0	0	181	0	34	215	215	46	498	0	544	0	344	129	473	1017	1232
08:00 09:00	0	0	0	0	250	0	56	306	306	63	572	0	635	0	575	156	731	1366	1672
09:00 10:00	0	0	0	0	24 3	0	67	310	310	52	6 20	0	672	0	509	142	651	1323	1633
11: 3 0 12:30	0	0	0	0	215	0	41	256	256	36	792	0	828	0	6 08	208	816	1644	1900
12: 3 0 1 3:3 0	0	0	0	0	169	0	41	210	210	49	584	0	633	0	7 3 2	20 6	938	1571	1781
15:00 16:00	0	0	0	0	184	0	6 9	253	253	55	63 0	0	685	0	750	207	957	1642	1895
16:00 17:00	0	0	0	0	238	0	57	295	295	6 8	8 58	0	926	0	791	277	1068	1994	2289
17:00 18:00	0	0	0	0	200	0	61	261	261	84	789	0	873	0	724	340	1064	1937	2198
Total	0	0	0	0	1 6 80	0	42 6	2106	2106	45 3	5343	0	5796	0	50 33	1 66 5	6698	12494	14600
Equ 12Hr	0	0	0	0	2 33 5	0	592	2927	2927	629	7426	0	8055	0	6995	2314	9309	17364	20291
lote: These v	alues a	are calcu	ulated I	by multi	plying the	e totals	by the	approp	riate exp	pansior	factor.			-	1.39				
Avg 12Hr	0	0	0	0	18 6 7	0	473	2341	2341	50 3	5940	0	6443	0	5595	1851	7447	13891	16232
lote: These v	olume	s are cal	culated	d by mu	Itiplying t	he Equ	uivalent	12 hr. t	otals by	the A/	DT fact	or.		•	80				
Avg 24Hr	0	0	0	0	2445	0	6 19	3066	3066	65 8	7781	0	8440	0	7329	2424	9755	18197	21263

Comments:

Note: U-Turns are included in Totals.

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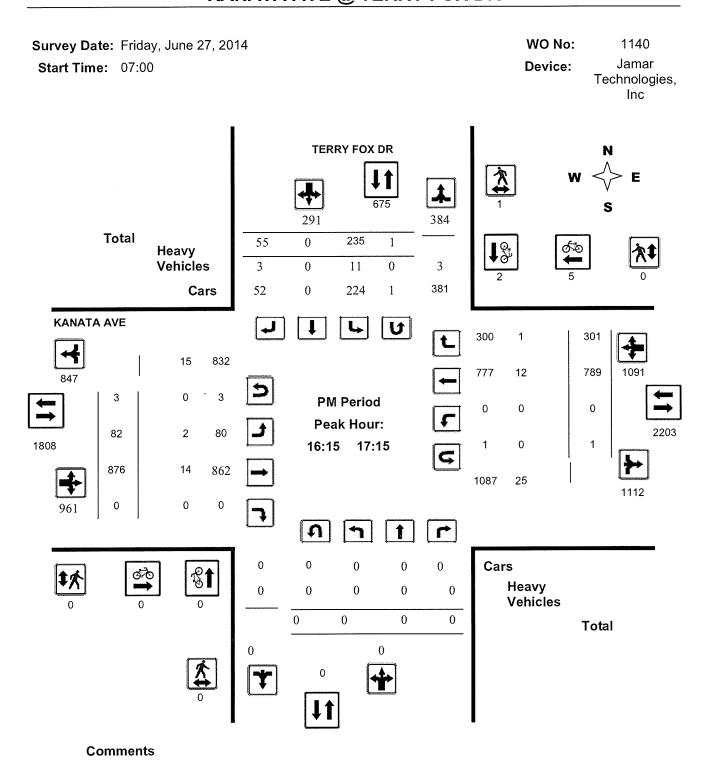
Turning Movement Count - Full Study Peak Hour Diagram KANATA AVE @ TERRY FOX DR



ttawa

Public Works - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram KANATA AVE @ TERRY FOX DR





37662

Turning Movement Count - Full Study Summary Report

KANATA AVE @ TERRY FOX DR

Survey Date: Wednesday, April 11, 2018									Total O		AADT Factor								
							1	Northbo	und: 1		South	bound:	7				.90		
								Eastbou	ind: 0		West	bound:	1						
								F	ull Stu	dy									
			TE	rry f	OX DI	R						K	ANAT	A AVE					
	1	Northb	ound		9	Southbo	ound				Eastbo	ound		1	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	0	365	123	488	218	410	0	628	1116	0	0	0	0	242	0	209	451	451	1567
08:00 09:00	0	641	166	807	220	463	0	683	1490	0	0	0	0	306	0	336	642	642	2132
09:00 10:00	0	462	92	554	93	444	0	537	1091	0	0	0	0	190	0	230	420	420	1511
11:30 12:30	0	469	141	610	106	557	0	663	1273	0	0	0	0	129	0	68	197	197	1470
12:30 13:30	0	592	162	754	94	485	0	579	1333	0	0	0	0	138	0	108	246	246	1579
15:00 16:00	0	575	234	809	136	477	0	613	1422	0	0	0	0	186	0	155	341	341	1763
16:00 17:00	0	608	294	902	212	723	0	935	1837	0	0	0	0	192	0	197	389	389	2226
17:00 18:00	0	655	335	990	264	687	0	951	1941	0	0	0	0	216	0	146	362	362	2303
Sub Total	0	4367	1547	5914	1343	4246	0	5589	11503	0	0	0	0	1599	0	1449	3048	3048	14551
U Turns				1				7	8				0				1	1	9
Total	0	4367	1547	5915	1343	4246	0	5596	11511	0	0	0	0	1599	0	1449	3049	3049	14560
EQ 12Hr	0	6070	2150	8222	1867	5902	0	7778	16000	0	0	0	0	2223	0	2014	4238	4238	20238
Note: These v	alues a	re calcu	lated by	y multipl	ying the	e totals by	y the ap	opropriat	te expansi	on facto	or.			1.39					
AVG 12Hr	0	5463	1935	7400	1680	5312	0	7001	14401	0	0	0	0	2000	0	1813	3814	3814	18215
Note: These v	olumes	are cal	culated	by mult	plying t	he Equiv	alent 12	2 hr. tota	als by the A	AADT f	actor.			.90					
AVG 24Hr	0	7157	2535	9694	2201	6958	0	9171	18865	0	0	0	0	2620	0	2375	4997	4997	23862
Note: These v	olumes	are cal	culated	by multi	iplying tl	he Avera	ge Dail	y 12 hr.	totals by 1	2 to 24	expans	ion fac	tor.	1.31					

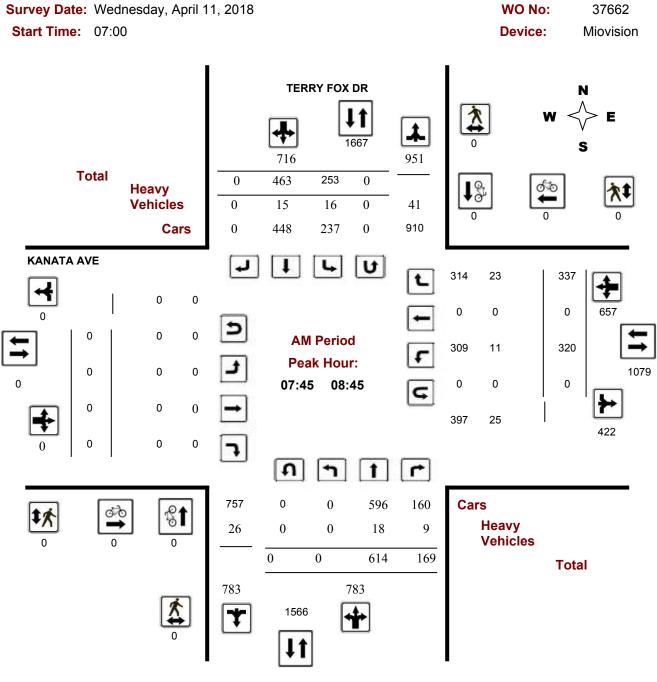
Comments:

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



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram KANATA AVE @ TERRY FOX DR

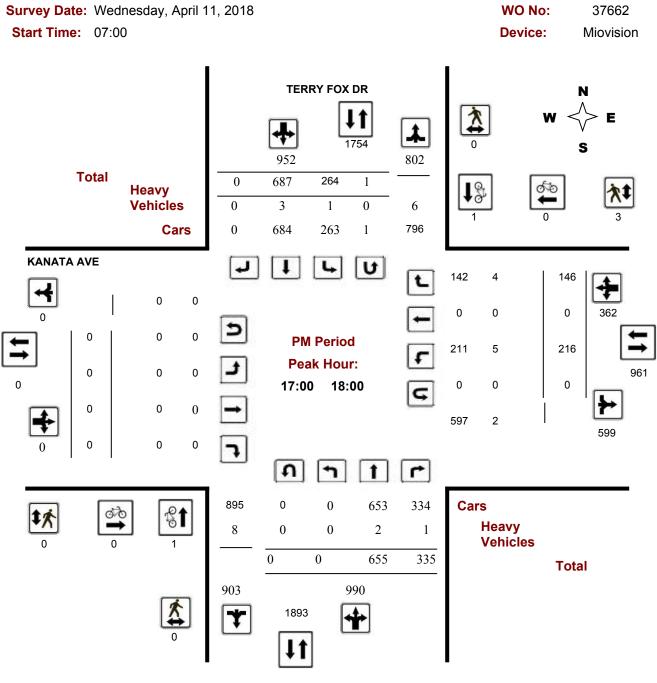


Comments



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram KANATA AVE @ TERRY FOX DR



Comments



35084

Turning Movement Count - Full Study Summary Report

TERRY FOX DR @ TILLSONBURG ST

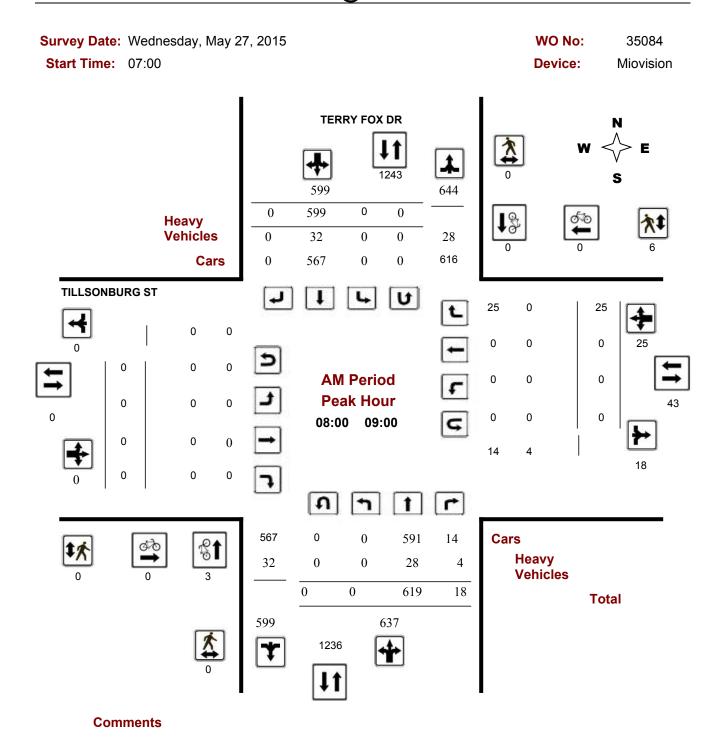
Survey Da	te:	Wedne	esday,	May 2	7, 20	15			Total O	bserv	ved U-	Turns	5				AAD	T Fact	or
								Northbo	und: 0		South	nbound	0				.90		
								Eastbou	ind: 0		West	bound:	0						
								F	ull Stu	ıdy									
			ΤE	RRY F	DX DI	R						TILL	SONB	URG S	ST				
	1	Northbo	ound		5	Southb	ound			E	Eastbo	ound		١	Nestb	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	Grano Tota
07:00 08:00	0	386	12	398	0	522	0	522	920	0	0	0	0	0	0	21	21	21	941
08:00 09:00	0	619	18	637	0	599	0	599	1236	0	0	0	0	0	0	25	25	25	1261
09:00 10:00	0	420	15	435	1	504	0	505	940	0	0	0	0	0	0	23	23	23	963
11:30 12:30	0	504	25	529	0	726	0	726	1255	0	0	0	0	0	0	10	10	10	1265
12:30 13:30	0	636	15	651	0	540	0	540	1191	0	0	0	0	0	0	10	10	10	1201
15:00 16:00	0	656	30	686	0	591	0	591	1277	0	0	0	0	0	0	22	22	22	1299
16:00 17:00	0	731	51	782	0	846	0	846	1628	0	0	0	0	0	0	15	15	15	1643
17:00 18:00	0	749	55	804	0	936	0	936	1740	0	0	0	0	0	0	15	15	15	1755
Sub Total	0	4701	221	4922	1	5264	0	5265	10187	0	0	0	0	0	0	141	141	141	10328
U Turns				0				0	0				0				0	0	0
Total	0	4701	221	4922	1	5264	0	5265	10187	0	0	0	0	0	0	141	141	141	10328
EQ 12Hr	0	6534	307	6842	1	7317	0	7318	14160	0	0	0	0	0	0	196	196	196	14356
Note: These va	alues a	re calcu	lated by	y multiply	ring the	totals b	y the a	opropriat	e expansi	on facto	or.		1	.39					
AVG 12Hr	0	5881	276	6157	1	6585	0	6587	12744	0	0	0	0	0	0	176	176	176	12920
Note: These vo	olumes	are calo	culated	by multip	olying t	he Equiv	alent 1	2 hr. tota	als by the <i>l</i>	AADT fa	actor.			90					
AVG 24Hr	0	7704	362	8066	2	8627	0	8628	16694	0	0	0	0	0	0	231	231	231	16925
Note: These vo	olumes	are calo	culated	by multip	olying t	he Avera	ige Dai	y 12 hr.	totals by 1	12 to 24	expans	sion fac	tor. 1	.31					

Comments:

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

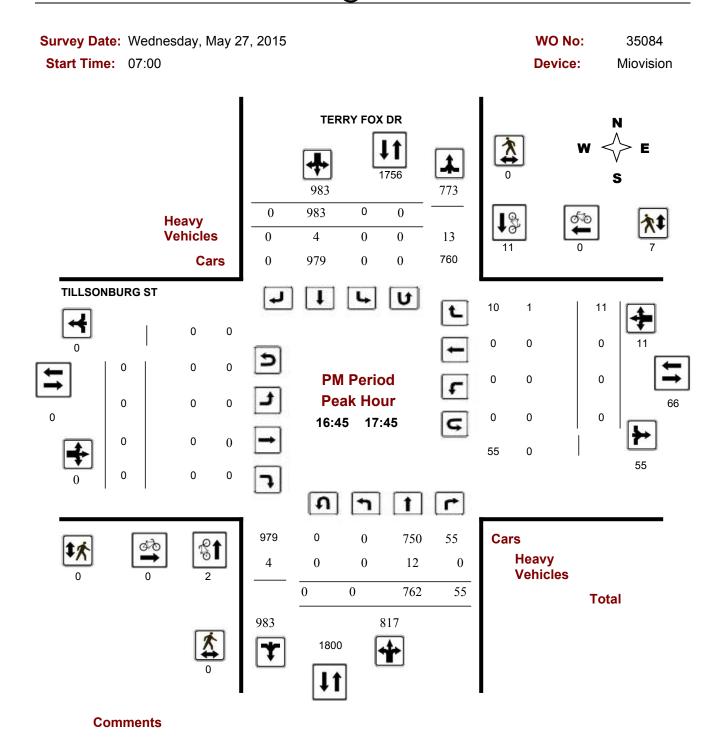


Turning Movement Count - Peak Hour Diagram TERRY FOX DR @ TILLSONBURG ST





Turning Movement Count - Peak Hour Diagram TERRY FOX DR @ TILLSONBURG ST



nata Avenue	& Huntsville D	rive	Survey Date: Thursday, Sept	ember 17, 2015	5	Weather: Sunny
	Kanata	Avenue	Huntsvi	lle Drive		
Time	NBL	SBR	EBL	EBR	total	15-Minute Tota
7:00	5	0	7	13	25	
7:15	7	2	9	20	38	
7:30	4	5	19	14	42	
7:45	2	4	14	25	45	150
8:00	1	10	15	20	46	171
8:15	4	1	7	9	21	154
8:30	6	3	9	13	31	143
8:45	4	3	1	6	14	112
AM Peak (7:15-8:15)	14	21	57	79		
15:30	3	7	6	13	29	
15:45	10	11	5	15	41	
16:00	11	8	2	10	31	
16:15	9	11	12	16	48	149
16:30	14	6	10	11	41	161
16:45	18	11	10	9	48	168
17:00	17	12	7	6	42	179
17:15	12	7	4	11	34	165
PM Peak (16:15-17:15)	58	4 0	39	42		

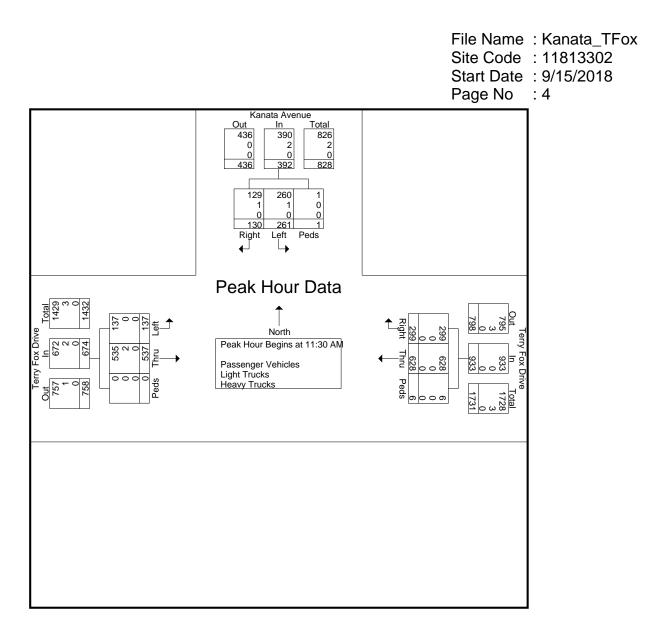


Weather: Clear Serial #: T12-1612&1614 Counted by: Brad Smith & Moodie Allam Location: Terry Fox Dr/Kanata Ave File Name : Kanata_TFox Site Code : 11813302 Start Date : 9/15/2018 Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

	Kanata Avenue Southbound			.		ox Drive		Terry Fox Drive Eastbound					
							bound						
Start Time	Right	Left		App. Total	Right	Thru	Peds	App. Total	Thru	Left		App. Total	Int. Total
11:00 AM	26	51	1	78	58	125	2	185	153	30	0	183	446
11:15 AM	16	52	0	68	58	128	2	188	148	36	0	184	440
11:30 AM	20	65	0	85	90	162	2	254	149	37	0	186	525
11:45 AM	28	56	0	84	70	143	0	213	123	53	0	176	473
Total	90	224	1	315	276	558	6	840	573	156	0	729	1884
12:00 PM	50	69	1	120	69	159	2	230	136	21	0	157	507
12:15 PM	32	71	0	103	70	164	2	236	129	26	0	155	494
12:30 PM	20	65	3	88	65	134	1	200	116	25	0	141	429
12:45 PM	20	64	0	84	50	116	1	167	129	30	0	159	410
Total	122	269	4	395	254	573	6	833	510	102	0	612	1840
01:00 PM	20	44	3	67	38	142	1	181	130	30	0	160	408
01:15 PM	13	62	0	75	48	143	4	195	138	26	0	164	434
01:30 PM	23	64	1	88	54	150	2	206	139	23	0	162	456
01:45 PM	24	66	0	90	50	138	1	189	140	15	0	155	434
Total	80	236	4	320	190	573	8	771	547	94	0	641	1732
02:00 PM	25	56	2	83	53	133	1	187	142	35	0	177	447
02:15 PM	32	49	0	81	53	115	1	169	131	41	0	172	422
02:30 PM	44	70	0	114	68	133	2	203	141	15	0	156	473
02:45 PM	31	59	2	92	54	144	1	199	128	20	0	148	439
Total	132	234	4	370	228	525	5	758	542	111	0	653	1781
03:00 PM	26	49	0	75	58	151	1	210	131	15	0	146	431
03:15 PM	18	40	0	58	63	153	3	219	125	31	0	156	433
03:30 PM	13	44	0	57	80	143	2	225	120	29	0	149	431
03:45 PM	16	48	0	64	49	138	0	187	116	22	0	138	389
Total	73	181	0	254	250	585	6	841	492	97	0	589	1684
Grand Total	497	1144	13	1654	1198	2814	31	4043	2664	560	0	3224	8921
Apprch %	30	69.2	0.8		29.6	69.6	0.8		82.6	17.4	0		
Total %	5.6	12.8	0.1	18.5	13.4	31.5	0.3	45.3	29.9	6.3	0	36.1	
Passenger Vehicles	496	1142	8	1646	1196	2810	19	4025	2654	557	0	3211	8882
% Passenger Vehicles	99.8	99.8	61.5	99.5	99.8	99.9	61.3	99.6	99.6	99.5	0	99.6	99.6
Light Trucks	1	2	5	8	2	3	12	17	9	2	0	11	36
% Light Trucks	0.2	0.2	38.5	0.5	0.2	0.1	38.7	0.4	0.3	0.4	0	0.3	0.4
Heavy Trucks	0	0	0	0	0	1	0	1	1	1	0	2	3
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0.2	0	0.1	0



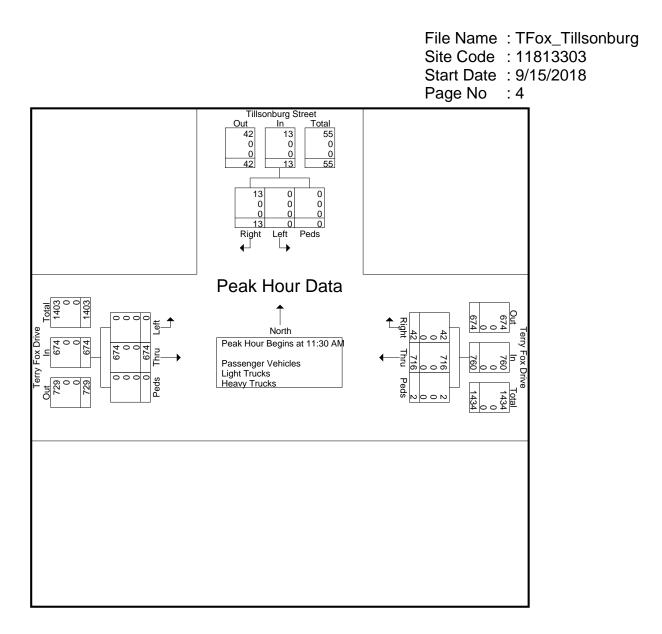




Weather: Clear Serial #: N/A Counted by: Josh Audia Location: Terry Fox Dr/Tillsonburg St File Name : TFox_Tillsonburg Site Code : 11813303 Start Date : 9/15/2018 Page No : 1

			Grou	ps Printed- F	Passenger	Vehicles	s - Liaht	Trucks - Hea	avv Trucks	5			
	-	Tillsonbu	rg Stree			Terry Fo	ox Drive			Terry Fo			
Ctart Times	Dialat	South Left	Dodd	App. Total	Right	West		Ann Total	Thru	Eastb Left		Ann Tatal	lat Tatal
Start Time 11:00 AM	Right	1			J	Thru 145	Peds	App. Total 154	183			App. Total 183	Int. Total 345
11:15 AM	8 7	0 0	0 0	8 7	6 10	145	3 2	154 146	183	0	0 0	183	345 337
11:30 AM	4	0	0	4	10	169	2	140	186	0	0	186	372
11:45 AM	4 2	0	0	4	10	169	0	171	176	0	0	176	349
Total	21	0	0	21	39	609	5	653	729	0	0	729	1403
	21	0	0	21	55	003	5	000	125	0	0	125	1405
12:00 PM	3	0	0	3	10	199	0	209	157	0	0	157	369
12:15 PM	4	0	0	4	9	187	2	198	155	0	0	155	357
12:30 PM	3	0	0	3	6	148	1	155	141	0	0	141	299
12:45 PM	1	0	0	1	6	130	0	136	159	0	0	159	296
Total	11	0	0	11	31	664	3	698	612	0	0	612	1321
01:00 PM	4	0	0	4	8	154	0	162	160	0	0	160	326
01:15 PM	9	0	0	9	13	143	0	156	164	0	0	164	329
01:30 PM	3	0	0	3	8	165	2	175	162	0	0	162	340
01:45 PM	4	0	0	4	12	150	0	162	155	0	0	155	321
Total	20	0	0	20	41	612	2	655	641	0	0	641	1316
02:00 PM	4	0	0	4	10	148	0	158	177	0	0	177	339
02:15 PM	2	0	0	2	10	137	0	147	172	0	0	172	321
02:30 PM	1	0	0	1	7	170	0	177	156	0	0	156	334
02:45 PM	2	0	0	2	11	164	0	175	148	0	0	148	325
Total	9	0	0	9	38	619	0	657	653	0	0	653	1319
03:00 PM	1	0	0	1	8	169	0	177	146	0	0	146	324
03:15 PM	1	0	0	1	2	169	1	172	156	0	0	156	329
03:30 PM	3	0	0	3	7	149	0	156	149	0	0	149	308
03:45 PM	1	0	0	1	11	143	0	154	138	0	0	138	293
Total	6	0	0	6	28	630	1	659	589	0	0	589	1254
Grand Total	67	0	0	67	177	3134	11	3322	3224	0	0	3224	6613
Apprch %	100	0	0		5.3	94.3	0.3		100	0	0		
Total %	1	0	0	1	2.7	47.4	0.2	50.2	48.8	0	0	48.8	
Passenger Vehicles	66	0	0	66	177	3134	11	3322	3224	0	0	3224	6612
% Passenger Vehicles	98.5	0	0	98.5	100	100	100	100	100	0	0	100	100
Light Trucks	1	0	0	1	0	0	0	0	0	0	0	0	1
% Light Trucks	1.5	0	0	1.5	0	0	0	0	0	0	0	0	0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0



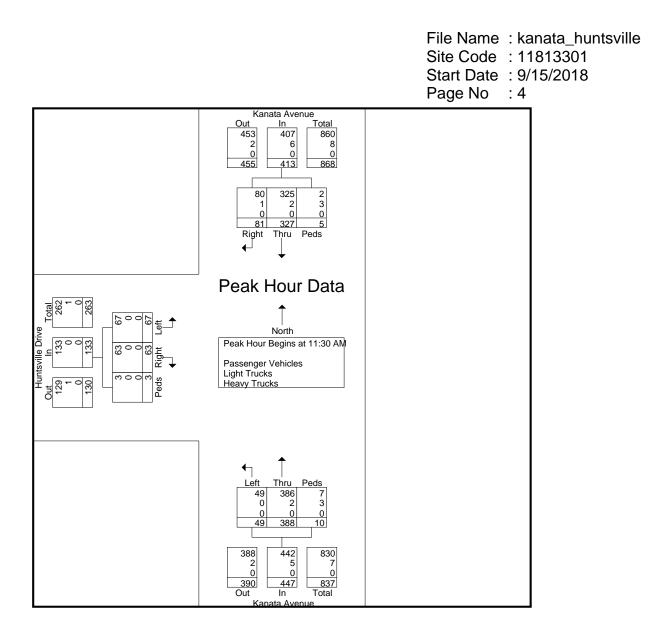




Weather: Clear Serial #: T12-1613 Counted by: Cameron Chown Location: Kanata Ave/Huntsville Dr File Name : kanata_huntsville Site Code : 11813301 Start Date : 9/15/2018 Page No : 1

				Printed- Pa	assenger	Vehicles	s - Light	Trucks - H	eavy Truc				
			Avenue			Kanata				Huntsvi	lle Drive	•	
			bound			North					ound		
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
11:00 AM	7	59	0	66	75	10	3	88	12	6	0	18	172
11:15 AM	3	59	1	63	83	13	3	99	13	10	1	24	186
11:30 AM	3	63	1	67	106	11	2	119	21	10	1	32	218
11:45 AM	12	70	3	85	130	8	3	141	12	36	0	48	274
Total	25	251	5	281	394	42	11	447	58	62	2	122	850
				1				1				1	
12:00 PM	45	93	1	139	82	10	2	94	11	11	2	24	257
12:15 PM	21	101	0	122	70	20	3	93	19	10	0	29	244
12:30 PM	6	53	0	59	91	17	2	110	23	4	1	28	197
12:45 PM	6	61	0	67	65	14	0	79	25	11	1	37	183
Total	78	308	1	387	308	61	7	376	78	36	4	118	881
04-00 DM	0	47	0	50	74		0	00	45	0	0	00	450
01:00 PM	6	47	0	53	71	11	0	82	15	8	0	23	158
01:15 PM	7	59	2	68	76	6	0	82	17	9	3	29	179
01:30 PM	2 5	67 70	1	70	61 72	9	0 1	70	17	0 7	0	17 33	157
01:45 PM	20		0	75	280	<u>10</u> 36	-	83	<u>24</u> 73	24	2		191
Total	20	243	3	266	280	30	1	317	73	24	5	102	685
02:00 PM	7	71	2	80	92	7	0	99	12	6	2	20	199
02:00 PM	3	61	0	64	102	8	0	110	12	6	0	20	198
02:10 PM	5	77	2	84	70	9	1	80	24	3	0	27	190
02:45 PM	7	84	1	92	65	15	0	80	12	5	1	18	190
Total	22	293	5	320	329	39	1	369	66	20	3	89	778
i otar j		200	Ŭ	020	020	00	•	000	00	20	Ũ		110
03:00 PM	7	58	1	66	76	17	0	93	17	5	0	22	181
03:15 PM	5	52	1	58	77	19	0	96	9	9	0	18	172
03:30 PM	5	55	0	60	94	11	0	105	14	10	1	25	190
03:45 PM	8	49	0	57	76	10	1	87	18	11	0	29	173
Total	25	214	2	241	323	57	1	381	58	35	1	94	716
Grand Total	170	1309	16	1495	1634	235	21	1890	333	177	15	525	3910
Apprch %	11.4	87.6	1.1		86.5	12.4	1.1		63.4	33.7	2.9		
Total %	4.3	33.5	0.4	38.2	41.8	6	0.5	48.3	8.5	4.5	0.4	13.4	
Passenger Vehicles	169	1305	3	1477	1620	234	13	1867	332	176	7	515	3859
% Passenger Vehicles	99.4	99.7	18.8	98.8	99.1	99.6	61.9	98.8	99.7	99.4	46.7	98.1	98.7
Light Trucks	1	4	13	18	14	1	8	23	1	0	8	9	50
% Light Trucks	0.6	0.3	81.2	1.2	0.9	0.4	38.1	1.2	0.3	0	53.3	1.7	1.3
Heavy Trucks	0	0	0	0	0	0	0	0	0	1	0	1	1
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0.6	0	0.2	0





APPENDIX E

Collision Records



City Operations - Transportation Services Collision Details Report - Public Version

From: January 1, 2013 To: December 31, 2017

	SVILLE DR @	KANATA AVE							
Traffic Control:							Total C	ollisions: 1	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2013-Dec-14, Sat,23:50	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stoppin	ng Automobile, station wagon	Other motor vehicle	
					East	Unknown	Pick-up truck	Other motor vehicle	
Location: KANAT	A AVE @ TEI	RRY FOX DR							
Traffic Control: Tra	ffic signal						Total C	ollisions: 39	
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped
2014-Jan-10, Fri,08:09	Clear	Turning movement	P.D. only	Loose snow	South	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-May-29, Thu,16:53	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2014-May-23, Fri,22:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Aug-21, Thu,21:48	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	
					West	Turning right	Pick-up truck	Other motor vehicle	

2014-Sep-05, Fri,16:26	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2014-Oct-28, Tue,20:14	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-May-13, Wed,08:59	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2015-May-02, Sat,16:05	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2015-Mar-10, Tue,19:06	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jan-13, Tue,07:17	Clear	Angle	Non-fatal injury	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2015-Aug-21, Fri,21:39	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle

2015-Jun-09, Tue,11:13	Rain	Angle	Non-fatal injury	Wet	North	Going ahead	Pick-up truck	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2016-Sep-16, Fri,08:36	Clear	Rear end	P.D. only	Dry	North	•	Automobile, station wagon	Other motor vehicle
					North	Slowing or stopping	-	Other motor vehicle
2015-Oct-28, Wed,13:54	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2015-Nov-25, Wed,18:12	Clear	Angle	Non-fatal injury	Dry	West		Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Nov-27, Fri,15:38	Rain	Turning movement	P.D. only	Wet	South	Turning left	School bus	Other motor vehicle
					North	•	Automobile, station wagon	Other motor vehicle
2015-Dec-10, Thu,13:34	Clear	Rear end	P.D. only	Dry	North		Automobile, station wagon	Other motor vehicle
					North	•	Automobile, station wagon	Other motor vehicle
					North	Slowing or stopping	-	Other motor vehicle
2016-Jan-17, Sun,11:21	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Unknown	Other motor vehicle
					South		Automobile, station wagon	Other motor vehicle

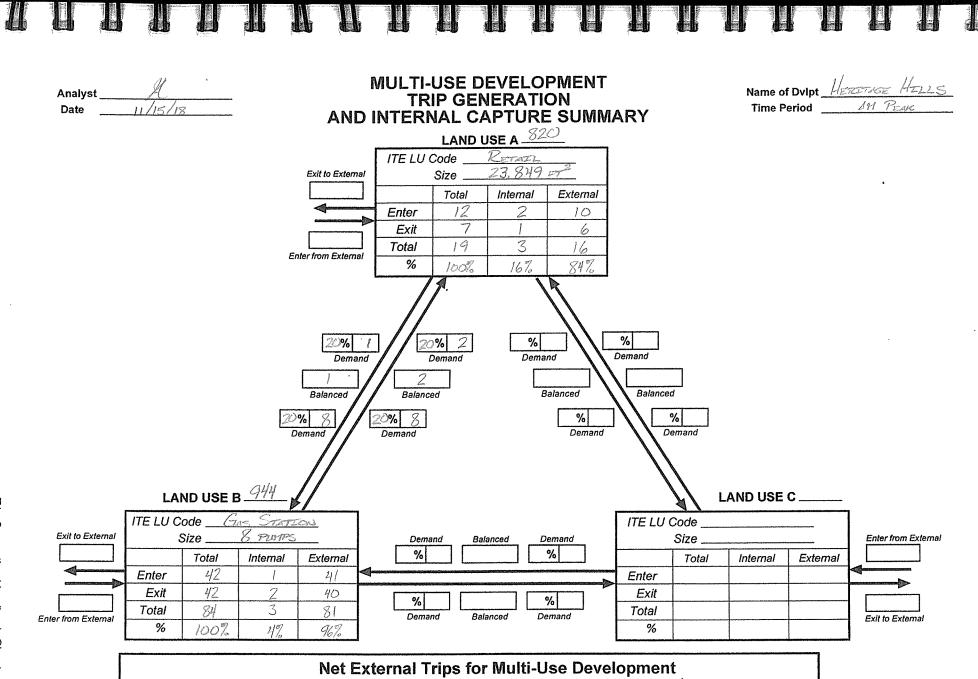
West Stopped Pick-up truck Other motor vehicle 2016-Feb-22, Mon.13.49 Clear Turning movement Non-fatal injury Dry South Turning left School bus Other motor vehicle 2016-Oct-15, Sat, 14.00 Clear Angle Non-fatal injury Dry West Turning right station wagon Automobile, vehicle Cyclist cutomobile, station wagon Cyclist other motor vehicle 2017-Aug-18, Fri, 15.23 Clear SMV other Non-fatal injury Dry North Slowing or stopping Pick-up truck Ran off road 2017-Aug-18, Fri, 15.23 Clear SMV other Non-fatal injury Dry North Slowing or stopping Pick-up truck Ran off road 2017-Aug-12, Sat, 15.06 Rain Turning movement P.D. only Wet South North Turning left Going ahead Automobile, Automobile, station wagon Other motor vehicle 2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Geing ahead Automobile, Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun, 16:35 Clear Turning movement Non-fatal injury Dry South North Turning left Going ahead Automobile, Automobile, Station wagon Other motor vehicle	2016-Jun-29, Wed,15:52	Rain	Rear end	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
North Going ahead Automobile, station wagon Other motor vehicle 2016-Oct-15, Sat,14:00 Clear Angle Non-fatal injury Dry West Turning right station wagon Automobile, station wagon Cyclist 2016-Oct-15, Sat,14:00 Clear Angle Non-fatal injury Dry West Turning right station wagon Automobile, station wagon Cyclist 2017-Aug-18, Fri,15:23 Clear SMV other Non-fatal injury Dry North Slowing or stopping Pick-up truck Ran off road 2017-Aug-12, Sat, 15:06 Rain Turning movement P.D. only Wet South Turning left station wagon Other motor vehicle 2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Other motor vehicle 2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle <						West	Stopped	Pick-up truck	
2016-Oct-15, Sat,14:00ClearAngleNon-fatal injuryDryWestTurning right station wagon NorthAutomobile, station wagon Other motor vehicleCyclist Station wagon Other motor vehicle2017-Aug-18, Fri,15:23ClearSMV otherNon-fatal injuryDryNorthSlowing or stopping Pick-up truckRan off road2017-Aug-12, Sat,15:06RainTurning movementP.D. onlyWetSouthTurning left station wagon NorthAutomobile, station wagonOther motor vehicle2017-Oct-08, Sun,09:13ClearSMV otherP.D. onlyWetNorthGoing aheadAutomobile, station wagonOther motor vehicle2016-Sep-11, Sun,16:35ClearTurning movementNon-fatal injuryDrySouthTurning left station wagon NorthAutomobile, station wagonOther motor vehicle2016-Sep-11, Sun,16:35ClearTurning movementNon-fatal injuryDrySouthTurning left station wagon NorthAutomobile, station wagonOther motor vehicle	2016-Feb-22, Mon,13:49	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	School bus	
North Going ahead Bicycle Other motor vehicle 2017-Aug-18, Fri, 15:23 Clear SMV other Non-fatal injury Dry North Slowing or stopping Pick-up truck Ran off road 2017-Aug-12, Sat, 15:06 Rain Turning movement P.D. only Wet South Turning left Automobile, station wagon Other motor vehicle 2017-Cot-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle						North	Going ahead		
2017-Aug-18, Fri,15:23 Clear SMV other Non-fatal injury Dry North Slowing or stopping Pick-up truck Ran off road 2017-Aug-12, Sat,15:06 Rain Turning movement P.D. only Wet South Turning left Automobile, station wagon Other motor vehicle 2017-Aug-12, Sat,15:06 Rain Turning movement P.D. only Wet South Turning left Automobile, station wagon Other motor vehicle 2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Pole (utility, power) 2016-Sep-11, Sun, 16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun, 16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun, 16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, other motor vehicle Other motor vehicle 2016-Sep-11, Sun, 16:35 Clear Turning	2016-Oct-15, Sat,14:00	Clear	Angle	Non-fatal injury	Dry	West	Turning right		Cyclist
2017-Aug-12, Sat, 15:06 Rain Turning movement P.D. only Wet South Turning left Automobile, station wagon Other motor vehicle 2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Other motor vehicle 2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Pole (utility, power) 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle						North	Going ahead	Bicycle	
2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle	2017-Aug-18, Fri,15:23	Clear	SMV other	Non-fatal injury	Dry	North	Slowing or stopping	g Pick-up truck	Ran off road
2017-Oct-08, Sun,09:13 Clear SMV other P.D. only Wet North Going ahead Automobile, station wagon Pole (utility, power) 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle 2016-Sep-11, Sun,16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, station wagon Other motor vehicle	2017-Aug-12, Sat,15:06	Rain	Turning movement	P.D. only	Wet	South	Turning left		
2016-Sep-11, Sun, 16:35 Clear Turning movement Non-fatal injury Dry South Turning left Automobile, Station wagon vehicle North Going ahead Automobile, Other motor vehicle						North	Going ahead		
station wagon vehicle North Going ahead Automobile, Other motor station wagon vehicle	2017-Oct-08, Sun,09:13	Clear	SMV other	P.D. only	Wet	North	Going ahead		
station wagon vehicle	2016-Sep-11, Sun,16:35	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left		
						North	Going ahead		
2016-Nov-30, Wed,18:06 Rain Turning movement P.D. only Wet North Going ahead Pick-up truck Other motor vehicle	2016-Nov-30, Wed,18:06	Rain	Turning movement	P.D. only	Wet	North	Going ahead	Pick-up truck	
South Turning left Pick-up truck Other motor vehicle						South	Turning left	Pick-up truck	

2016-Dec-12, Mon,14:16	Snow	SMV other	P.D. only	Loose snow	West	Turning right	Automobile, station wagon	Curb
2017-Mar-06, Mon,19:13	Freezing Rain	Turning movement	Non-fatal injury	Ice	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-27, Thu,16:44	Snow	SMV other	P.D. only	Wet	North	Slowing or stopping	g Automobile, station wagon	Skidding/sliding
2017-May-12, Fri,21:30	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Curb
2017-May-02, Tue,14:55	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2017-Jul-24, Mon,16:17	Rain	Angle	Non-fatal injury	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Nov-21, Tue,18:20	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Dec-23, Sat,18:31	Snow	Turning movement	Non-fatal injury	Packed snow	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-23, Sat,09:29	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle

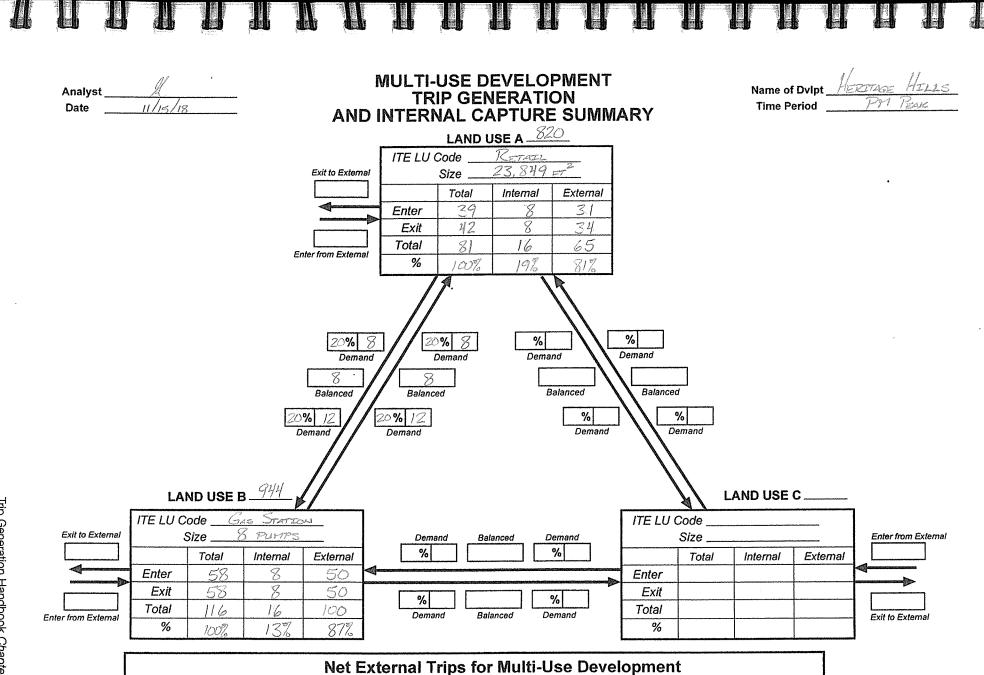
					West	Turning left	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2017-Oct-09, Mon,12:45	Rain	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2013-Feb-06, Wed,18:07	Clear	Angle	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2013-Feb-09, Sat,00:00	Snow	SMV other	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Skidding/sliding
2013-Sep-09, Mon,12:27	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Passenger van	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

APPENDIX F

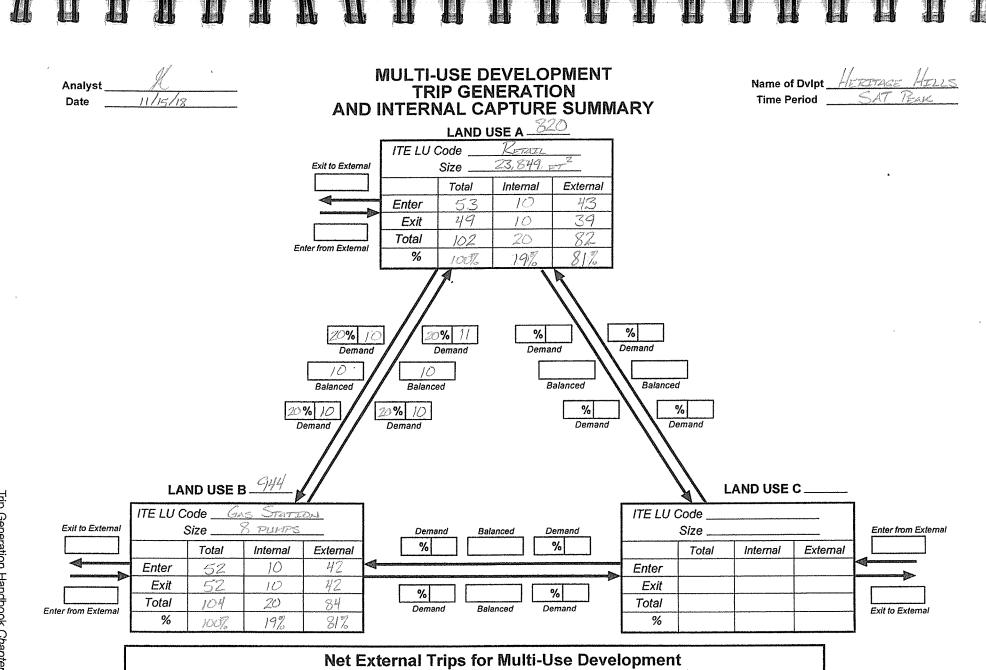
Internal Capture Summary Sheets



		Net Externa	I Trips for Multi-	Jse Development		
		LAND USE A	LAND USE B	LAND USE C	TOTAL	Source: Kaku Associates, Inc.
	Enter					Source: Kaku Associates, inc.
	Exit					
2	Total					INTERNAL CAPTURE
	Single-Lise Trin Gen Est					



	LAND USE A	LAND USE B	LAND USE C	TOTAL	Source: Kaku Associates, Inc.
Enter					Source, Naku Associates, inc.
Exit					
Total					INTERNAL CAPTURE
Single-Use Trin Gen Est					



	LAND USE A	LAND USE B	LAND USE C	TOTAL	Source: Kaku Associates, Inc.
Enter					Source, Naku Associates, inc.
Exit					
Total					INTERNAL CAPTURE
Single-Use Trin Gen Est					

APPENDIX G

Other Area Developments

Richardson Ridge Subdivision (Phases 1-3)

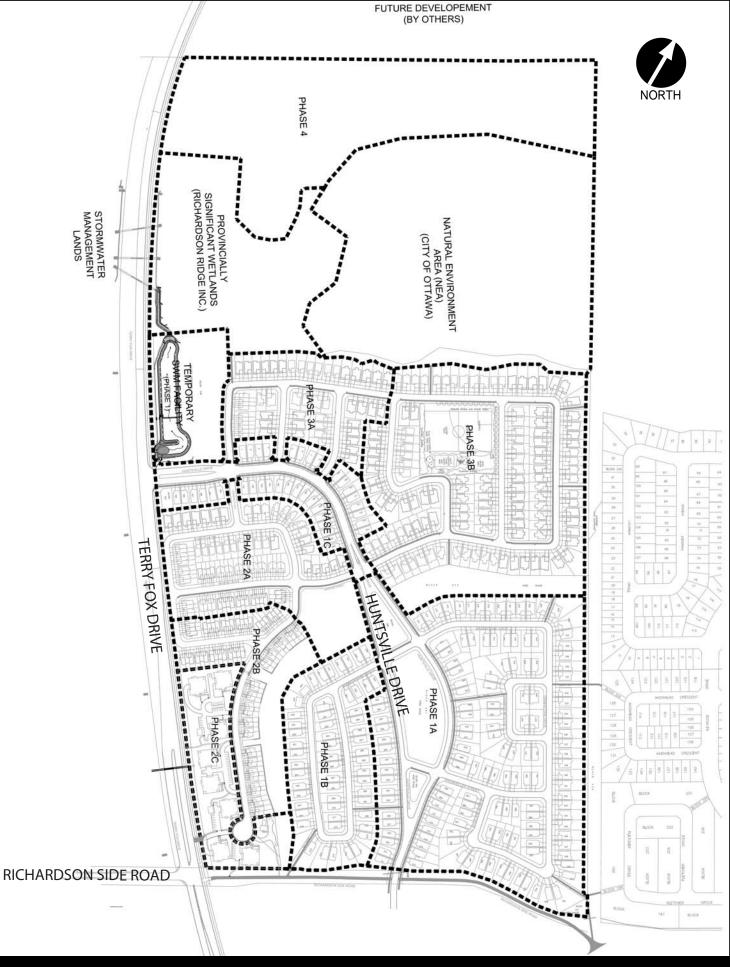
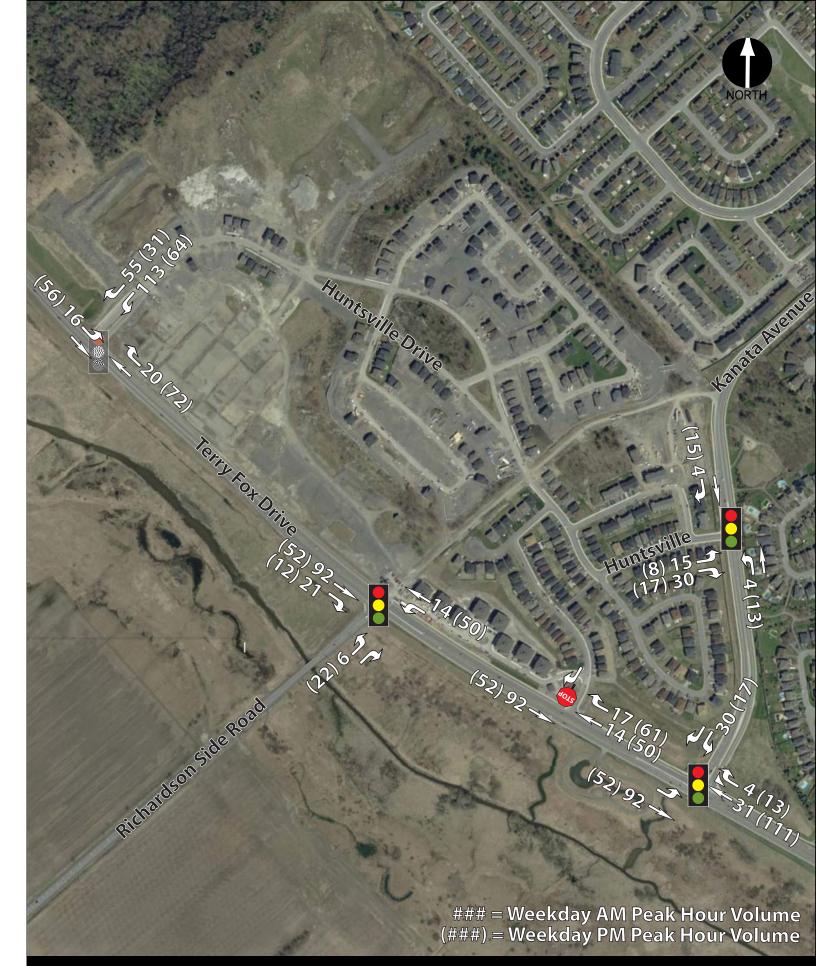




EXHIBIT 2: Richardson Ridge Phasing Plan

PROJECT No. 25911 DATE: Septer SCALE: September 2015 0m

100m <u>200m</u>

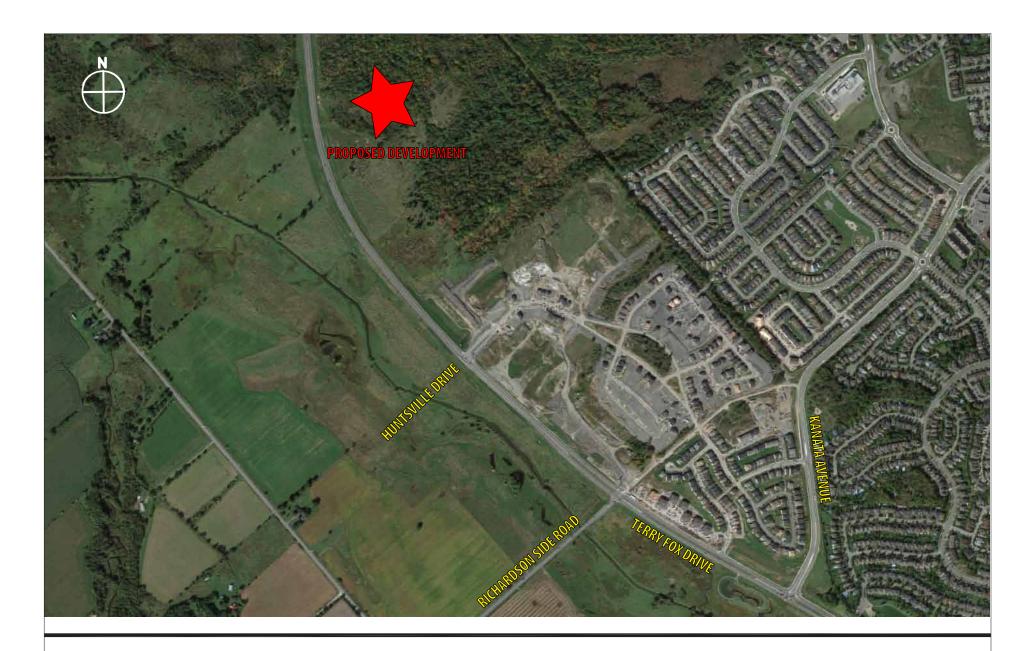


Richardson Ridge Transportation Impact Study Update

EXHIBIT 8: Site-Generated Traffic

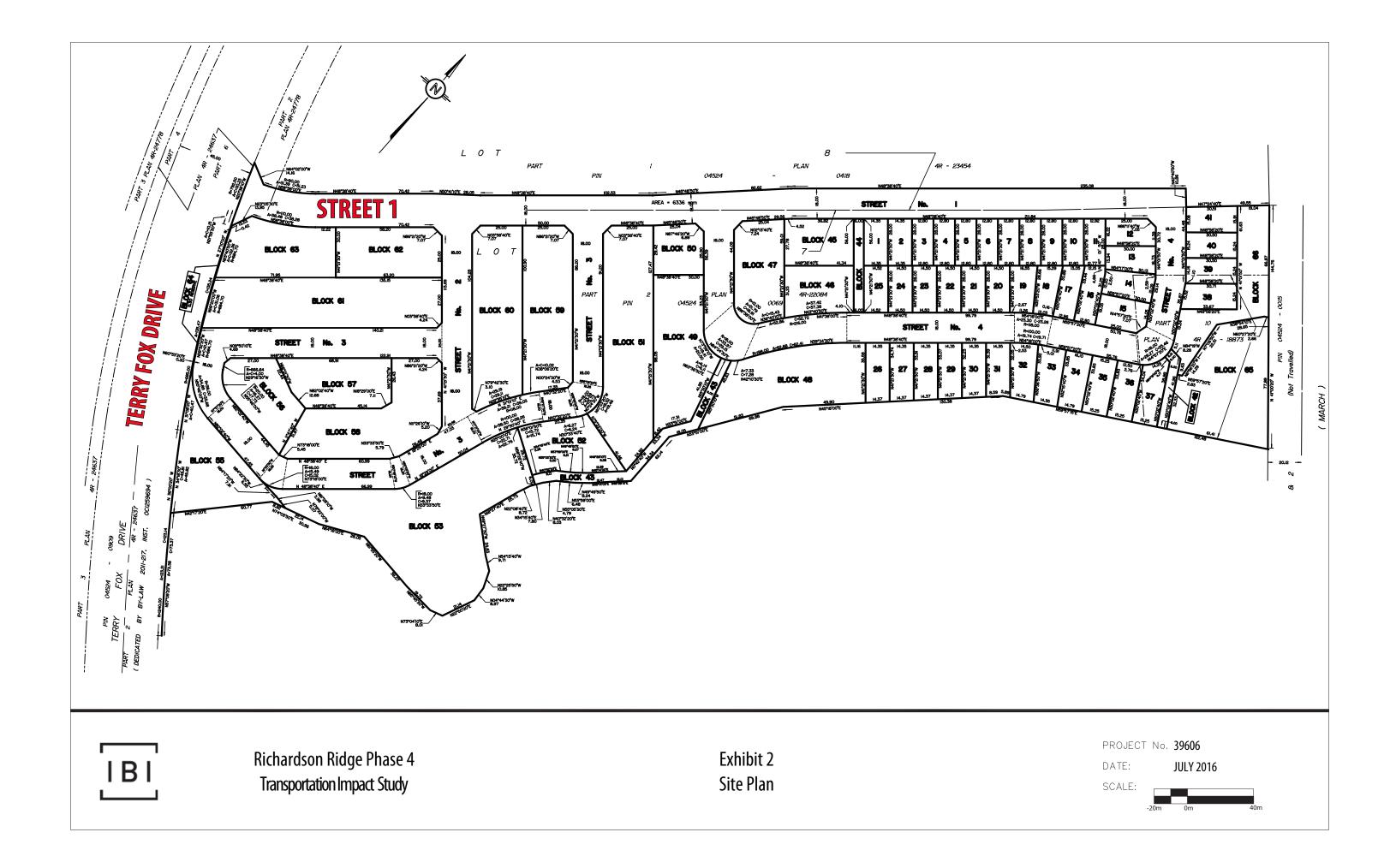
PROJECT No. 25911 DATE: September 2015 SCALE: 0m 100m 200m

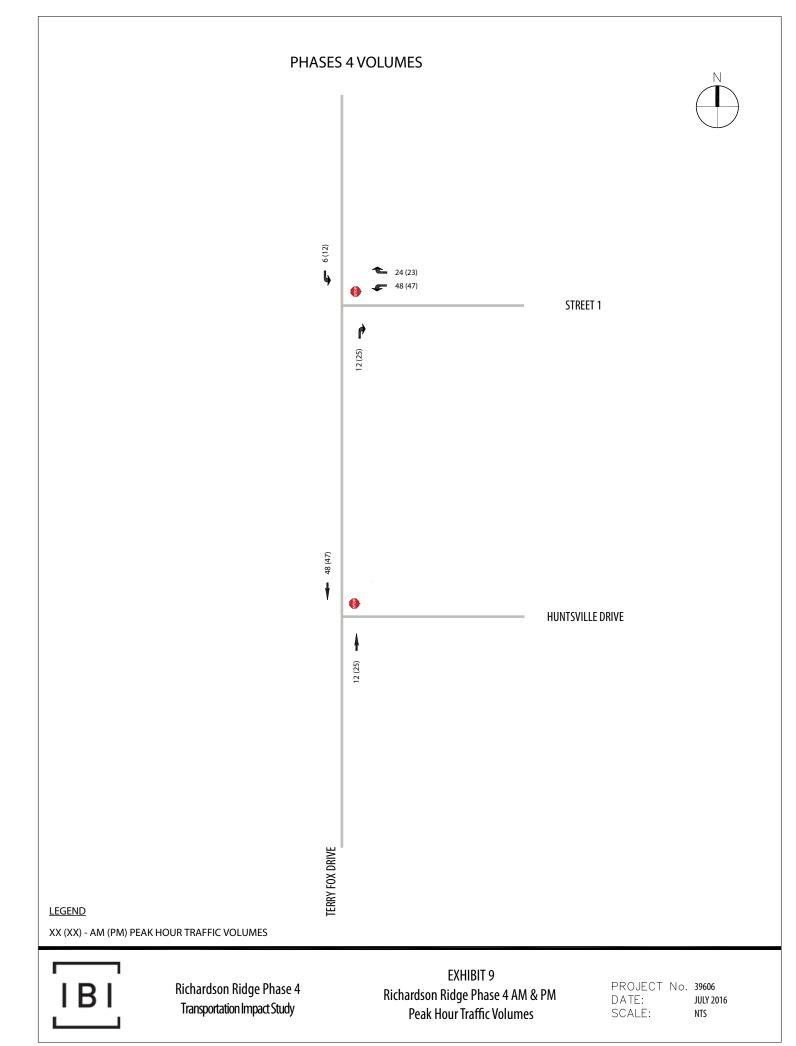
Richardson Ridge Subdivision (Phase 4)



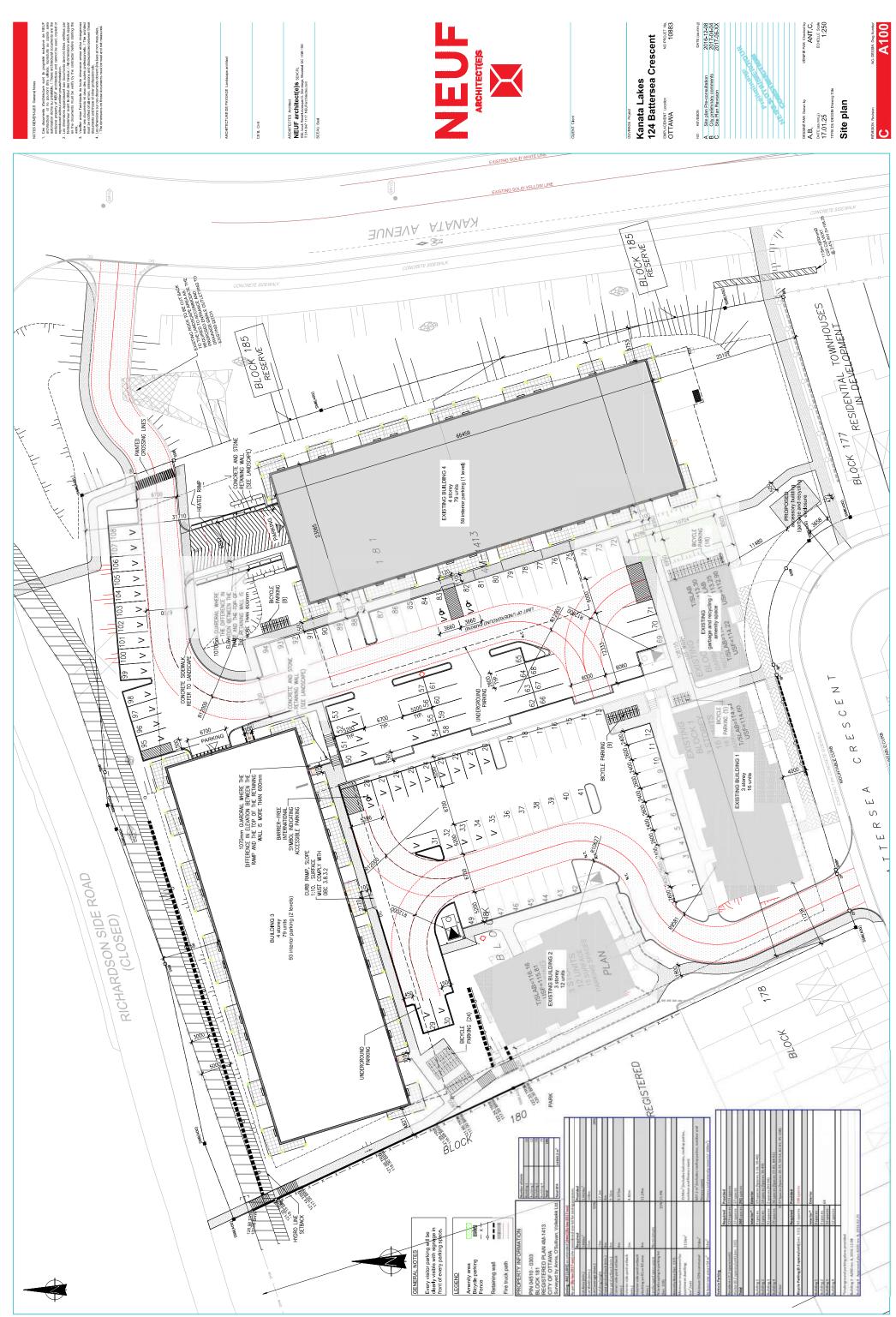


Richardson Ridge Phase 4 Transportation Impact Study Exhibit 1 Site Location PROJECT No. 39606 DATE: JULY 2016 SCALE: -100m 0m 200m





Broughton Subdivision (Phase 3B)



P:/Projets/P_10800/10883.06/CAD/10883.06_A100_Site Plan.dwg



The estimated vehicle trip rates with access to Kanata Avenue have been summarized in the following table. A marginal number of trips will be added to the Battersea Crescent access as 10 surface parking spaces are to be provided in the Battersea Crescent parking lot. These spaces represent 9% of the total parking associated with the new building and will likely result in less than 5 new vehicle trips per hour in the a.m. and p.m. peaks. The trips to/from Battersea Crescent are not significantly influenced by the additional building, and therefore have not been included in this summary. Trips to/from Battersea Crescent will continue to be significantly less than the 2013 approved site plan.

Land Use	ITE Code	Units	AM Peak	PM Peak				
Phase 3B Development Based on Approved Site Plan (Addendum 3)								
Condominiums (Kanata Ave.)	230	75	41 vph 7 in / 34 out	47 vph 31 in / 16 out				
Phase 3B Development Based on an Additional Building								
Condominiums (Kanata Ave.)	230	150	71 vph 12 in / 59 out	84 vph 56 in / 28 out				
Net difference in trips generated (from Addendum 3)			5 in / 25 out	25 in / 12 out				

Table 1 | Broughton Subdivision Phase 3B Trip Generation (Revised)

Note: The relationship identified by ITE between condominium units and vehicle trips is not linear resulting in fewer vehicle trips for the additional 75 units than was estimated for the initial 75 units.

The proposed revision to the Phase 3B site plan is expected to result in 30 to 40 additional vehicle trips at the Kanata Avenue access in the weekday a.m. and p.m. peaks. This amounts to an additional vehicle every 1.5 to two minutes.

3.3.2 Trip Assignment

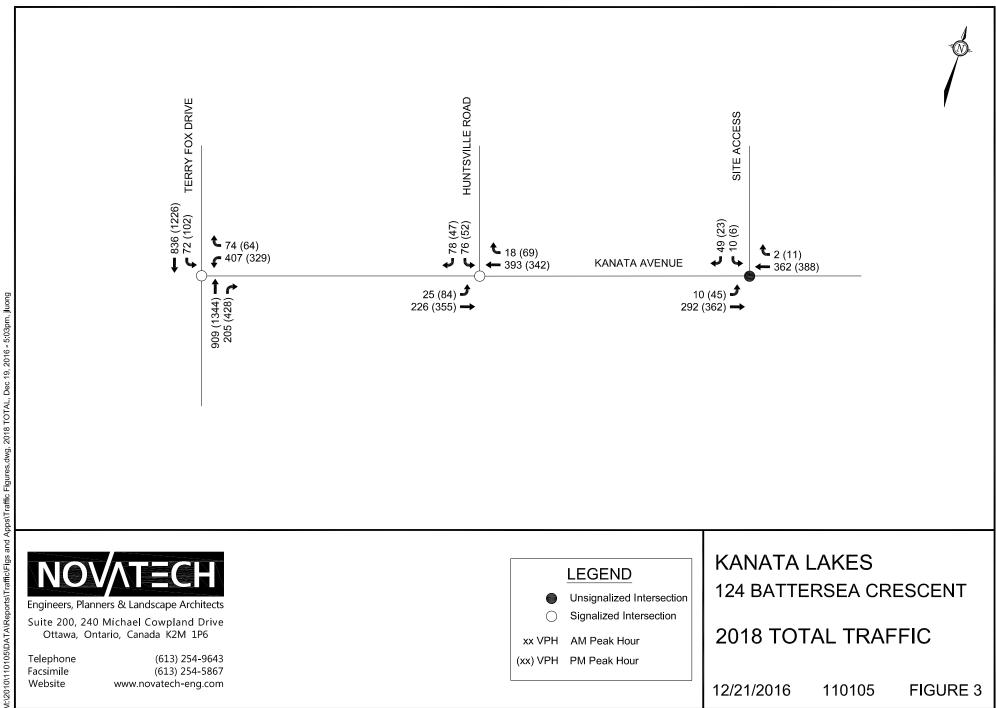
The trip assignment of the Phase 3B site traffic has been carried forward from the original TIS. A review of the 2011 OD data for the Kanata-Sttitsville district was undertaken which confirmed the trip assignment applied in the original TIS remains reasonable. The trip assignment parameters for the Phase 3B trips are outlined as follows:

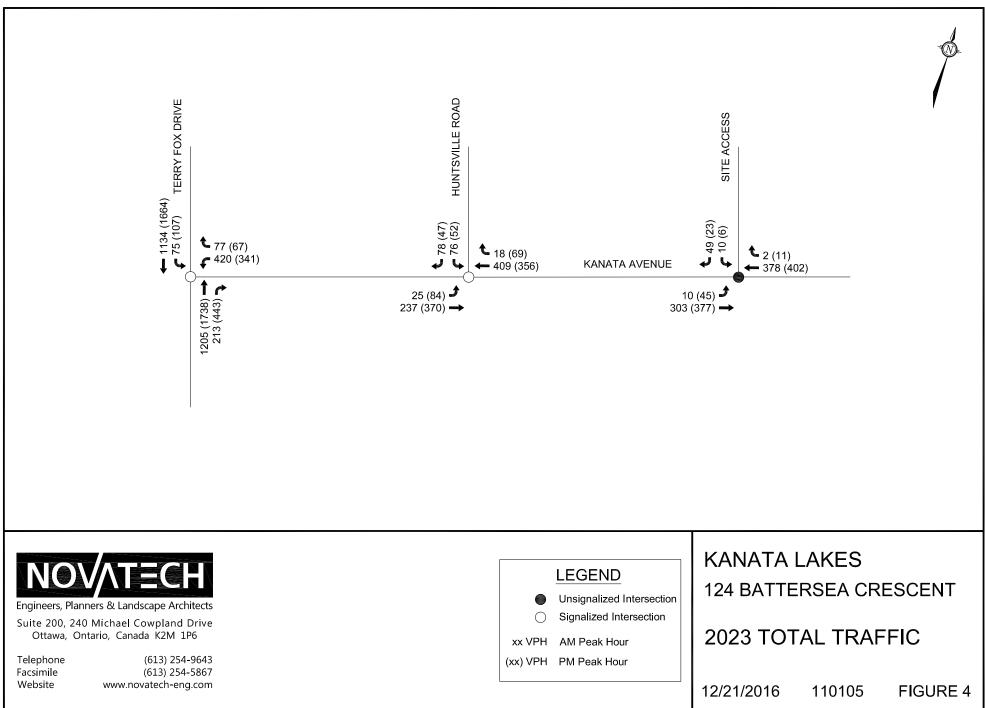
- AM Peak Hour
 - o 35% to/from the north (evenly split between Terry Fox Drive and Kanata Avenue)
 - o 65% to/from the south via Terry Fox Drive
- PM Peak Hour
 - 40% to/from the north (evenly split between Terry Fox Drive and Kanata Avenue)
 - 60% to/from the south via Terry Fox Drive.

3.4 Intersection Capacity Analysis

Revised 2018 and 2023 total traffic volumes for the full build-out scenario are shown in **Figure 3** and **Figure 4**.

M:\2010\110105\DATA\REPORTS\TRAFFIC\20170704TISADDENDUM4-REVISED.DOCX





Vi 2010/110105/DATA/Reports/Traffic/Figs and Apps/Traffic Figures.dwg, 2023 TOTAL, Dec 19, 2016 - 5:03pm, Juong

Kanata Highlands (Phase 1)

PARSONS



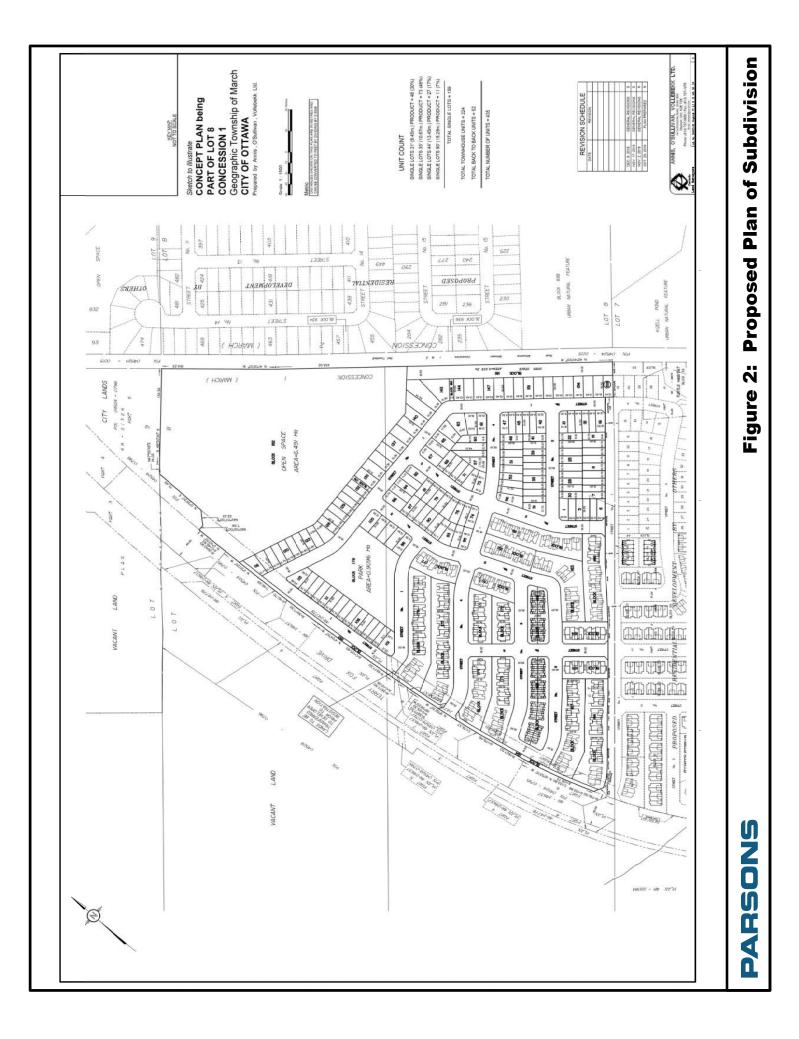
Traffic Impact Study

1. INTRODUCTION

Richcraft is proposing a 435 unit residential subdivision on the lands in Kanata located adjacent to Terry Fox Drive between Richardson Side Road and Second Line Road approximately midway. The site's context is shown in Figure 1 and the Site Plan is shown on Figure 2. As shown on the Site Plan, two roadway connections are proposed to Terry Fox Drive and one is shown connecting to the residential subdivision to the south.



Figure 1: Local Context



PARSONS

As shown in Table 4, the resulting number of potential "new" two-way vehicle trips generated by the proposed subdivision and approximately 185 veh/h and 230 veh/h during the morning and afternoon peak hours, respectively. It is these volumes that will be assigned to the proposed site intersections and the study area's signalized intersections to determine impacts and requirements.

4.5. TRAFFIC DISTRIBUTION AND ASSIGNMENT

Traffic distribution is impacted by a number of factors when considering a residential site plan. Included are locations of employment and retail, subdivision driveway connections to adjacent arterial roads and connectivity to the area's main commuter/highway routes. Given the location of the proposed subdivision, located between too major arterials (Terry Fox Drive and March Road) that both provide access to HWY 417, the distribution to/from the site is estimated to be 60% to the south via Terry Fox Drive and 40% to the east towards March Road. Applying this distribution to the Table 4 projected peak hour traffic generation and assigning it to the subdivision's two proposed roadway connections to Terry Fox Drive results in the traffic assignment depicted in Figure 6. It is noteworthy that the percentage distribution at the Terry Fox/March intersection is approximately the same as existing conditions.

With regard to subdivision access to Terry Fox Drive, given the southern driveway connection will be shared with the Richardson Ridge subdivision to the south, it is likely this access will warrant signalization. As such, a greater percentage of left-turning vehicles into and out of the site were assigned to the southern intersection under the assumption it will be signalized.

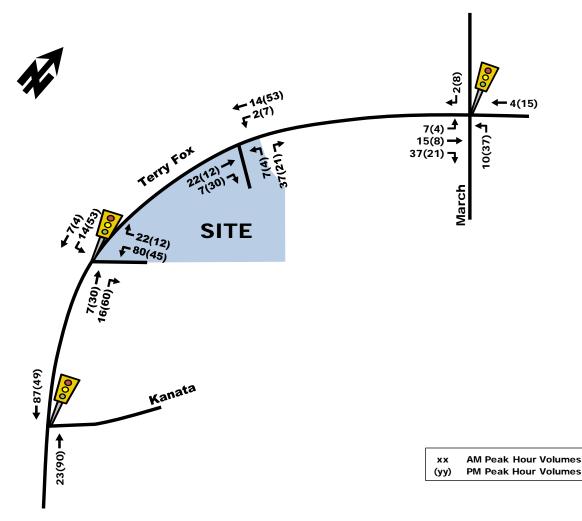


Figure 6: Site-Generated Peak Hour Traffic Assignment

Other Area Developments

Kanata Highlands (Phase 2)

PARSONS



TIA Forecasting Report

1. SCREENING FORM

The screening form was completed to assess the need for a Transportation Impact Assessment (TIA) and is provided in Appendix A. The Trip Generation, Location and Safety triggers were met based on the unit count of 680 single family homes, townhomes, condos, cycling spine network, and road speed/geometry.

2. DESCRIPTION OF PROPOSED DEVELOPMENT

2.1. PROPOSED DEVELOPMENT

The proposed Official Plan Amendment (OPA) for the development at 820 Huntmar Drive is a greenfield development, forming part of the Kanata Lakes-Marchwood Lakeside-Morgan's Grant and Carp community along Terry Fox Drive. The current zoning for the developable portion is Rural Countryside (RU), permitting agricultural use, animal care establishment, animal hospital, artist studio, bed and breakfast, cemetery, detached dwelling, equestrian establishment, environmental preserve and educational area, forestry operation, group home, home-based business, home-based day care, kennel, converted retirement home, or secondary dwelling unit. The proposed OPA will redesignate these lands to Residential once they are brought into the General Urban Area. The site's local context is illustrated in Figure 1.

The development will include approximately 680 residential units, including 370 single family homes, 190 townhomes and 120 condominium units. The development will access Terry Fox Drive directly through two proposed accesses. The estimated date of occupancy is 2022 with one phase of development. The site plan is illustrated in Figure 2.

The Zoning By-Law will be the City regulatory documents primarily used for analysis of the OPA.





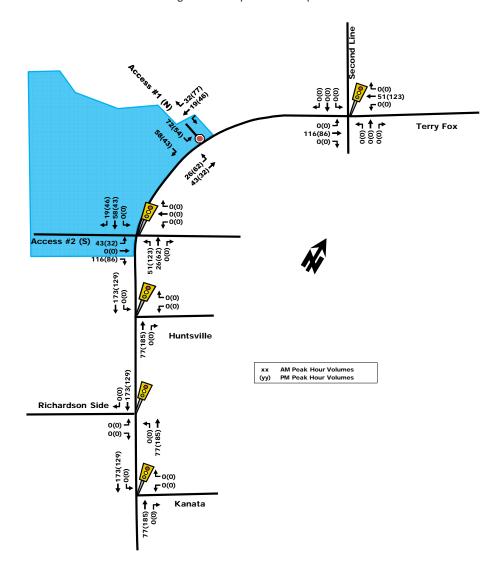
KANATA HIGHLANDS / HAUTES TERRES DE KANATA PHASE 2 PREFERRED PLAN / PLAN PRIVILÉGIÉ

LEGEND / LÉGENDE

LEGEND / LEGENDE							
:::::	RICHCRAFT PROPERTY BOUNDARY / LIMITES DE LA PROPRIÉTÉ DE RICHCRAFT						
	DEVELOPABLE AREA / SECTEUR D'AMÉNAGEMENT						
8333	STORMWATER MANAGEMENT FACILITY / INSTALLATION DE GESTION DES EAUX PLUVIALES						
	FORMER FLOODPLAIN / ANCIENNE PLAINE INONDABLE						
	FORMER FLOODPLAIN 15M BUFFER / ZONE TAMPON DE 15M DE L'ANCIENNE PLAINE INONDABLE						
	UPDATED FLOODPLAIN / CARTOGRAPHIE À JOUR DES PLAINES INONDABLES						
::::3	UPDATED FLOODPLAIN 15M BUFFER / ZONE TAMPON DE 15M DES PLAINES INONDABLES REVUE						
	MEANDER BELT / LIT DES MÉANDRES						
[]	MEANDER BELT 15m BUFFER / ZONE TAMPON DE 15 M DU LIT DES MÉANDRES						
	REGULATORY LIMIT / LIMITE RÉGLEMENTAIRE						
	STREET / RUE						
	PARK / PARC						
BREAK	OPEN SPACE / ESPACE LIBRE						
	PATHWAY / SENTIER						
	SERVICING CORRIDOR / COULOIR DE VIABILISATION						
	HIGH-DENSITY RESIDENTIAL / ZONE RÉSIDENTIELLE DE HAUTE DENSITÉ						
	Low-Medium density residential / Zone résidentielle de densité moyenne à faible						
	CARP RIVER / RIVIÈRE CARP						
	TURTLE CORRIDOR / COULOIR DE MIGRATION DES TORTUES						
Ţ	0m 40 80 120 160 200						
	29, 2018						
	COTENIN						
FOTENN							
Pla	nning+Design						

PARSONS

Figure 9: Site Trip Generated Trip Volumes



10.BACKGROUND NETWORK TRAVEL DEMANDS

10.1. TRANSPORTATION NETWORK PLANS

The transportation network changes have been discussed within Section 4.1 and none are anticipated to impact the transportation analysis for this development.

10.2. BACKGROUND GROWTH

Within the vicinity of the subject development is expected to continue to develop and use of Terry Fox Drive as an arterial route will also continue. As such, a 2% annual background traffic growth rate for the mainline volumes along Terry Fox Drive.

As the subject development will share the access road to Terry Fox Drive with the Richardson Ridge Phase 4 subdivision, traffic volume projections from the Richardson Ridge Subdivision are included in the background traffic growth analysis. The resultant traffic volumes for the years 2024, representing full built-out and occupancy and 2029 representing 5-years

APPENDIX H

Transportation Demand Management Checklist

TDM-Supportive Development Design and Infrastructure Checklist:

Non-Residential Developments (office, institutional, retail or industrial)

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

	TDM-s	supportive design & infrastructure measures: Non-residential developments	Check if completed & add descriptions, explanations or plan/drawing references
	1.	WALKING & CYCLING: ROUTES	
	1.1	Building location & access points	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	
	1.2	Facilities for walking & cycling	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see Official Plan policy 4.3.3)	☐ - N/A, no rapid transit routes in area
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 <i>Plan policy 4.3.12</i>)	

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

	TDM-s	supportive design & infrastructure measures: Non-residential developments	Check if completed & add descriptions, explanations or plan/drawing references		
	2.	WALKING & CYCLING: END-OF-TRIP FACILI	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 commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists			
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season			
	2.2	Secure bicycle parking			
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see Zoning By-law Section 111)	- N/A; less than 50 bicycle parking spaces required		
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)			
	2.3	Shower & change facilities			
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters			
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters			
	2.4	Bicycle repair station			
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)			

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

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

APPENDIX I

Intersection MMLOS Analysis

Pedestrian Level of Service (PLOS)

Exhibit 5 of the Addendum to the MMLOS guidelines has been used to evaluate the PLOS at all signalized intersections within the study area. Exhibit 22 of the MMLOS guidelines suggests a target PLOS C for all roadways within the General Urban Area.

The results of the intersection PLOS analysis are summarized in Table 1 and Table 2.

Bicycle Level of Service (BLOS)

Exhibit 12 of the MMLOS guidelines has been used to evaluate the BLOS at all signalized intersections within the study area. For the General Urban Area, Exhibit 22 of the MMLOS guidelines suggests a target BLOS B for Local Routes (Kanata Avenue), a target BLOS C for Spine Routes (Terry Fox Drive), and a target BLOS D for roadways with no bike classification (Huntsville Drive).

The results of the intersection BLOS are summarized in Table 3.

Transit Level of Service (TLOS)

Exhibit 16 of the MMLOS guidelines has been used to evaluate the existing TLOS at all signalized intersections within the study area. Exhibit 22 of the MMLOS guidelines does not identify any targets for roadways without a Rapid Transit or Transit Priority designation. Terry Fox Drive, Kanata Avenue, and Huntsville Drive have been evaluated regardless, as transit operates on these roadways.

The results of the intersection TLOS are summarized in Table 4.

Truck Level of Service (TkLOS)

Exhibit 21 of the MMLOS guidelines has been used to evaluate the TkLOS at all intersections within the study area. Exhibit 22 of the MMLOS guidelines suggests a target TkLOS D for arterial truck routes within the General Urban Area (Terry Fox Drive). Kanata Avenue and Huntsville Drive have also been evaluated for TkLOS despite having no target, as transit operates on these roadways.

The results of the intersection TkLOS analysis are summarized in **Table 5**.

Vehicular Level of Service (Auto LOS)

Exhibit 22 of the MMLOS guidelines suggests a target Auto LOS D for all roadways within the General Urban Area. Synchro analysis was performed to evaluate the performance of all intersections during the AM, PM, and Saturday peak hours. Signal timing plans are included in **Appendix J**. Detailed Synchro reports are included in **Appendix K**.

The results of the intersection Auto LOS analysis are summarized in Table 6.

Intersection MMLOS Summary

A summary of the results of the intersection MMLOS analysis is provided in Table 7.

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	00	N/A	0	No	0	N/A	0
anes Crossed (3.5m Lane Width)	8	23	N/A	0	9	6	N/A	0
SIGNAL PHASING AND TIMING	•					· · ·		÷
Left Turn Conflict	No Left Turn/Prohibited	0	N/A	0	Permissive	-8	N/A	0
Right Turn Conflict	Permissive or Yield	-5	N/A	0	Permissive or Yield	-5	N/A	0
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	N/A	0	No	-2	N/A	0
CORNER RADIUS	•							•
Parallel Radius	> 15m to 25m	-8	N/A	0	> 15m to 25m	-8	N/A	0
Parallel Right Turn Channel	Smart Channel	2	N/A	0	Smart Channel	2	N/A	0
Perpendicular Radius	N/A	0	N/A	0	> 15m to 25m	-8	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	Smart Channel	2	N/A	0
CROSSING TREATMENT	•							
Treatment	Standard	-7	N/A	0	Standard	-7	N/A	0
	PETSI SCORE	3		-		-28		-
	LOS	F		-		F		-
			DELAY SCORE					
Cycle Length		100		0		90		100
Pedestrian Walk Time		7.8		0		40		7.8
	DELAY SCORE	42.5		-		13.9		-
	LOS	Е		-		в		-
	OVERALL	F		- 1		F		-

Table 1: PLOS Intersection Analysis – Terry Fox Drive/Kanata Avenue

Table 2: PLOS Intersection Analysis – Kanata Avenue/Huntsville Drive

CRITERIA	North Approach		South Approach		East Approach		West Approach	
			PETSI SCORE					
CROSSING DISTANCE CONDITIONS	6							
Median > 2.4m in Width	No	105	N/A	0	No	72	No	88
Lanes Crossed (3.5m Lane Width)	3	105	N/A	0	5	12	4	00
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	N/A	0	Permissive	-8	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	N/A	0	No Right Turn/Prohibited	0	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	N/A	0	No	-2	No	-2
CORNER RADIUS			-		•			
Parallel Radius	> 5m to 10m	-5	N/A	0	N/A	0	> 5m to 10m	-5
Parallel Right Turn Channel	No Right Turn Channel	-4	N/A	0	N/A	0	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	N/A	0	Standard	-7	Standard	-7
	PETSI SCORE	71		-		55		62
	LOS	С		-		D		С
			DELAY SCORE					
Cycle Length		70		0		80		80
Pedestrian Walk Time		28.3		0		7.9		7.9
	DELAY SCORE	12.4		-		32.5		32.5
	LOS	В		-		D		D
	OVERALL	С				D		D

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS					
Terry Fox Drive/	Terry Fox Drive/Kanata Avenue								
North Approach	Curbside	Right Turn Lane Characteristics	No right turn	-					
North Approach	Bike Lane	Left Turn Accommodation	2 lanes crossed; <u>></u> 50 km/h	F					
South Approach	Pocket	Right Turn Lane Characteristics	Right turn lane > 50m and introduced to the right	D					
South Approach	Bike Lane	Left Turn Accommodation	No left turn	-					
East Approach	Pocket	Right Turn Lane Characteristics	Right turn lane > 50m and introduced to the right	D					
East Approach	Bike Lane	Left Turn Accommodation	0 lanes crossed; <u>></u> 60 km/h	С					
Kanata Avenue/H	luntsville Drive								
North Approach	Mixed Troffie	Right Turn Lane Characteristics	Shared left turn/right turn lane	A					
North Approach	Mixed Traffic	Left Turn Accommodation	0 lanes crossed; ≥ 60 km/h	D					
East Approach	Pocket	Right Turn Lane Characteristics	Right turn lane > 50m and introduced to the right	D					
East Approach	Bike Lane	Left Turn Accommodation	No left turn	-					
West Approach	Curbside	Right Turn Lane Characteristics	No right turn	-					
West Approach	Bike Lane	Left Turn Accommodation	1 lane crossed; <u>></u> 60 km/h	E					

Table 4: TLOS Intersection Analysis

Approach	Delay ⁽¹⁾	TLOS						
Terry Fox Drive/Kanata Avenue								
North Approach	5 sec	В						
South Approach	5 sec	В						
East Approach	35 sec	E						
Kanata Avenue/Huntsville Driv	ve							
North Approach	20 sec	C						
East Approach	5 sec	В						
West Approach	5 sec	В						

1. Delay based on existing traffic outputs from Synchro analysis

Table 5: TkLOS Intersection Analysis

Approach	Effective Corner Radius	Number of Receiving Lanes on Departure from Intersection	TkLOS
Terry Fox Drive/Kanat	a Avenue		
South Approach	> 15m	1	С
East Approach	> 15m	2	А
Kanata Avenue/Hunts	ville Drive		
North Approach	< 10m	1	F
East Approach	< 10m	1	F

Table 6: Auto LOS Intersection Analysis – Existing

	A	M Pea	ık	Р	M Pea	ak	SAT Peak		
Intersection	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Terry Fox Drive/ Kanata Avenue	0.62	В	WBL	0.58	А	WBL	0.50	А	WBL
Kanata Avenue/ Huntsville Drive	0.55	А	SBL/R	0.46	А	SBL/R	0.42	А	SBL/R
Terry Fox Drive/ Tillsonburg Street ⁽¹⁾	10 sec	А	WBR	10 sec	А	WBR	10 sec	А	WBR

1. Unsignalized intersection

Table 7: Intersection MMLOS Summary

Table 7: Intersection MMLOS Summary Intersection Terry Fox Drive/Kanata Avenue Kanata Avenue/Huntsville Drive							
	Intersection	North	South	a Avenue East	North	East	West
	Island Refuge	No	-	No	No	No	No
	Lanes Crossed (3.5m Width)	8	-	9	3	5	4
	Conflicting Left Turns	No Left Turn	-	Permissive	Permissive	Permissive	No Left Turn
	Conflicting Right Turns	Permissive	-	Permissive	Permissive	No Right Turn	Permissive
	Right Turn on Red	-	-	-	Allowed	-	Allowed
	Ped Leading Interval	No	-	No	No	No	No
د	Parallel Radius	15m to 25m	-	15m to 25m	5m to 10m	-	5m to 10m
Pedestrian	Parallel Channel	Smart Channel	-	Smart Channel	No Channel	-	No Channel
les	Perpendicular Radius	-	-	15m to 25m	-	-	-
Ped	Perpendicular Channel	-	-	Smart Channel	-	-	-
	Crosswalk Type	Standard	-	Standard	Standard	Standard	Standard
	PETSI Score	3	-	-28	71	55	62
	Delay Score	42.5	-	13.9	12.4	32.5	32.5
	Level of Service	F	-	F	С	D	D
			F			D	
	Target		С			С	
	Type of Bikeway	Curb Lane	Pocket Lane	Pocket Lane	Mixed Traffic	Pocket Lane	Curb Lane
	Turning Speed	-	Slow	Slow	Slow	Slow	-
	Right Turn Storage	-	> 50m	> 50m	0m	> 50m	-
	Dual Right Turn Lanes	-	No	No	No	No	-
	Shared Through-Right Lane	-	No	No	Yes	No	-
Cyclist	Two-Stage Bike Box	No	-	No	No	-	No
C	Lanes Crossed for Left Turns	2	-	0	0	-	1
Ú.	Dual Left Turn Lanes	No	-	Yes	No	-	No
	Approach Speed	80 km/h	80 km/h	70 km/h	60 km/h	70 km/h	70 km/h
		F	D	D	D	D	E
	Level of Service		F			E	
	Target		В			В	
	Average Signal Delay	5 sec	5 sec	35 sec	20 sec	5 sec	5 sec
sit		В	В	E	C	В	В
Transit	Level of Service		E	<u> </u>	<u> </u>	C	
É É	Torret		E			C	
	Target		-	45	10	10	
	Turning Radius	-	> 15m	> 15m	< 10m	< 10m	-
상	Receiving Lanes	-	1	2	1 F	1	-
Tru	Level of Service	-	C	A	F	Г	-
	T		С			F	
	Target		D			-	
Auto	Level of Service		В			А	
٩٢	Target		D			D	

APPENDIX J

Signal Timing Plans

Traffic Signal Timing

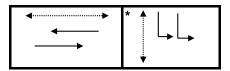
	City of Otta	awa, Transportation S	Services Departme	nt
		Traffic Signal Operat	tions Unit	
Intersection:	Main:	Terry Fox	Side:	Kanata
Controller:	ATC-3		TSD:	6586
Author:	Yassine	e Bennani	Date:	07-Sep-2018

Existing Timing Plans[†]

	Plan		Ped Minimum Time				
	AM Peak	Off Peak	PM Peak	Night	Walk	DW	A+R
	1	2	3	4			
Cycle	100	90	100	70			
Offset	Х	Х	Х	Х			
EB Thru	68	58	68	38	-	-	4.2+1.8
WB Thru	68	58	68	38	7	12	4.2+1.8
SB Left	32	32	32	32	7	18	3.7+2.5

Phasing Sequence[‡]

Plan: All



Schedule

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

у
Plan
4
2
4

_

Sunday					
Time	Plan				
0:10	4				
8:00	2				
22:30	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 \$56.50 (\$50 + HST)

Traffic Signal Timing

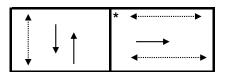
	City of Ott	awa, Transporta	ation Services	Departme	nt
		Traffic Signal	Operations Unit	t	
Intersection:	Main:	Kanata	Side:	Huntsvill	e
Controller:	MS-320	00		TSD:	6812
Author:	Yassine	e Bennani		Date:	07-Sep-2018

Existing Timing Plans[†]

	Plan			Ped Minimum Time			
	AM Peak	Off Peak	PM Peak	Night	Walk	DW	A+R
	1	2	3	4			
Cycle	80	70	80	70			
Offset	Х	Х	Х	х			
NB Thru	53	43	53	43	15	9	3.7+2.0
SB Thru	53	43	53	43	15	9	3.7+2.0
EB Thru	27	27	27	27	7	14	3.3+1.8

Phasing Sequence[‡]

Plan: All



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	2			
22:30	4			

Sunday	
Time	Plan
0:10	4
8:00	2
22:30	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 \$56.50 (\$50 + HST)

APPENDIX K

Synchro Analysis

	٨	-	+	×	1	~
		FOT				000
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	<u> </u>		<u></u>	1	ካካ	
Traffic Volume (vph)	66	643	607	168	274	59
Future Volume (vph)	66	643	607	168	274	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0			100.0	70.0	110.0
Storage Lanes	1			1	1	1
Taper Length (m)	45.0				80.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor	1.00			0.96		0.98
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1647	3293	3293	1473	3195	1473
Flt Permitted	0.393				0.950	
Satd. Flow (perm)	679	3293	3293	1417	3195	1451
Right Turn on Red	013	0290	0230	Yes	0190	Yes
Satd. Flow (RTOR)				187		66
		70	70	107	EO	00
Link Speed (k/h)		70			50	
Link Distance (m)		234.5	343.0		421.6	
Travel Time (s)		12.1	17.6		30.4	
Confl. Peds. (#/hr)	3			3		
Confl. Bikes (#/hr)				18		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	73	714	674	187	304	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	714	674	187	304	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	Lon	6.0	5.0	rugite	9.0	rugni
Link Offset(m)		0.0	0.0		0.0	
		2.0	2.0		2.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	18.6	93.0	93.0	18.6	18.6	18.6
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)	18.6	5.5	5.5	18.6	18.6	18.6
Detector 1 Type	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
Detector 1 Extend (s)					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)		87.5	87.5			
Detector 2 Size(m)		5.5	5.5			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2	-	v	6		4
Detector Phase	2	2	6	6	4	4
	Z	2	U	U	4	4
Switch Phase						

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	25.0 68.0	25.0 68.0	25.0 68.0	25.0 68.0	31.2	31.2
Total Split (%)	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	3.7	3.7
	4.2	4.2	4.2	4.2	2.5	2.5
All-Red Time (s)			0.0			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag						
Lead-Lag Optimize?		~ ~		~ ~	~ ~	• •
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	3	3	0	0
Act Effct Green (s)	62.0	62.0	62.0	62.0	13.6	13.6
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.15	0.15
v/c Ratio	0.15	0.31	0.29	0.18	0.62	0.24
Control Delay	5.7	5.5	5.4	1.2	40.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	5.5	5.4	1.2	40.4	10.8
LOS		3.5 A	3.4 A	A	40.4 D	10.0 B
	A	5.5	4.5	А	35.1	D
Approach Delay						
Approach LOS	24	A	A		D	• •
Queue Length 50th (m)	3.1	18.4	17.1	0.0	22.9	0.0
Queue Length 95th (m)	8.5	29.7	27.7	5.4	34.5	9.6
Internal Link Dist (m)		210.5	319.0		397.6	
Turn Bay Length (m)	95.0			100.0	70.0	110.0
Base Capacity (vph)	479	2326	2326	1055	939	473
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	0.15	0.31	0.29	0.18	0.32	0.14
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 87.8						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.62	orainateu					
	5			ما	tersection	
Intersection Signal Delay: 10						
Intersection Capacity Utilizati	011 49.5%			IC	U Level 0	f Service A
Analysis Period (min) 15						
Splits and Phases: 1: Terry	y Fox & Kanat	а				
	- ox a ranat	<i>x</i>				
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affic Volume (vph) 64 94 16 218 239 23 ture Volume (vph) 64 94 16 218 239 23 all Flow (vph) 1800 1800 1800 1800 1800 1800 orage Length (m) 0.0 0.0 40.0 65.0 orage Lanes 1 0 1 1 1 per Length (m) 10.0 1.00 1.00 1.00 1.00 d Flow (prot) 1563 0 164/7 1733 1733 1443 Permitted 0.980 0.595	Lane Group		EBR		-	-	
ture Volume (vph) 64 94 16 218 239 23 ala Flow (vphp) 1800 100 1.00	Lane Configurations						
bail Flow (vphpl) 1800 1000 100 100 100 100 100 100 100 100 100 100 100 101 110 110 110 110 110 100 100 100 100 100 100 100	Traffic Volume (vph)		94				
ala Flow (vphp) 1800	Future Volume (vph)		94				
brage Lanes 1 0 1 1 1 per Length (m) 10.0 30.0	Ideal Flow (vphpl)				1800	1800	
brage Lanes 1 0 1 1 per Length (m) 10.0 30.0	Storage Length (m)	0.0	0.0	40.0			65.0
per Length (m) 10.0 30.0 ne Util, Factor 1.00 1.0	Storage Lanes	1	0	1			1
ne 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 1.00 1.00 1.00 0.930 0.930 0.930 0.950 0.850 0.1031 1733 1473 148 145	Taper Length (m)	10.0		30.0			
d Bike Factor 0.920 0.880 Protected 0.980 0.950 Ht Flow (port) 1563 0 1647 1733 1733 1473 Permitted 0.980 0.595	Lane Util. Factor		1.00		1.00	1.00	1.00
b 0.920 0.850 Protected 0.980 0.950 td. Flow (prot) 1563 0 1647 1733 1473 Permitted 0.980 0.555							
Protected 0.980 0.950 tdt. Flow (prot) 1563 0 1647 1733 1733 1473 Permitted 0.980 0.595	Frt	0 920					
tid. Flow (prot) 1563 0 1647 1733 1733 1473 Permitted 0.980 0.595 tid. Flow (perm) 1563 0 1031 1733 1733 1440 ph Turn on Red Yes Yes tid. Flow (RTOR) 91 26 the Speed (k/h) 50 50 50 the Distance (m) 223.0 421.6 166.2 avel Time (s) 16.1 30.4 12.0 unfl. Bikes (#/hr) 4 104 18 242 266 26 tared Lane Traffic (%) nere Group Flow (vph) 71 104 18 242 266 26 ther Blocked Intersection No No No No No No No ne Alignment Left Right Left Left Left Right adian Width(m) 3.7 3.7 3.7 the Of Detectors 1 0.6 1.06 1.06 1.06 1.06 1.06 ning Speed (k/h) 24 14 24 under Speed (k/h) 24 14 24 thetector Template Left Left Thru Thru Right ading Detector (m) 18.6 18.6 93.0 93.0 0.0 the totor the Speed (k/h) 24 14 24 thetector Template Left Left Thru Thru Right ading Detector (m) 18.6 18.6 5.5 5.5 18.6 there Clerch Speed (k/h) 24 14 24 thetector Template Left Left Cleft CleFtx Cl+Ex Cl+Ex tector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 thetector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 thetector 1 Size(m) 18.6 18.6 18.6 5.5 5.5 18.6 thetector 1 Size(m) 5.5 5.5 thetector 1 Size(m) 5.5 5.5 thetector 2 Size(m) 5.5 5.5 thetector 2 Size(m) 5.5 5.5 thetector 2 Size(m) 5.5 5.5 thetector 2 Size(m) 7.5 7.5 thetector 2 Size(m) 7.5 7.5 thete				0 950			0.000
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td. Flow (perm) 1563 0 1031 1733 1733 1440 ght Turn on Red Yes Yes Yes Yes Yes kk Speed (k/h) 50 50 50 50 50 so so <td< td=""><td>ů,</td><td></td><td>0</td><td></td><td>1755</td><td>1/55</td><td>1473</td></td<>	ů,		0		1755	1/55	1473
ght Turn on Red Yes Yes idt, Flow (RTOR) 91 26 ik Speed (k/h) 50 50 50 ik Distance (m) 223.0 421.6 166.2 aval Time (s) 16.1 30.4 12.0 onfl. Bikes (#/hr) 4 30.4 12.0 421.6 166.2 aval Time (s) 16.1 30.4 12.0 4 4 4 ak Hour Factor 0.90 <t< td=""><td></td><td></td><td>0</td><td></td><td>1700</td><td>1700</td><td>1110</td></t<>			0		1700	1700	1110
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hk Distance (m) 223.0 421.6 166.2 avel Time (s) 16.1 30.4 12.0 avel Time (s) 16.1 30.4 12.0 avel Time (s) 0.90 0.90 0.90 0.90 0.90 avel Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 ji Flow (vph) 71 104 18 242 266 26 ared Lane Traffic (%) ared Lane Traffic (%) no						_	26
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Bak Hour Factor 0.90	Travel Time (s)	16.1			30.4	12.0	
Bak Hour Factor 0.90	Confl. Bikes (#/hr)						4
Ij. Flow (vph) 71 104 18 242 266 26 aared Lane Traffic (%) ne Group Flow (vph) 175 0 18 242 266 26 ter Blocked Intersection No	Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Lared Lare Traffic (%) 175 0 18 242 266 26 ter Blocked Intersection No	Adj. Flow (vph)						
ne Group Flow (vph) 175 0 18 242 266 26 ter Blocked Intersection No No<							
Iter Blocked Intersection No		175	0	18	242	266	26
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adian Width(m) 3.7 3.7 3.7 3.7 nk Offset(m) 0.0 0.0 0.0 0.0 osswalk Width(m) 2.0 2.0 2.0 2.0 vo way Left Turn Lane							
hk Offset(m) 0.0 0.0 0.0 oosswalk Width(m) 2.0 2.0 2.0 vo way Left Turn Lane			Right	Leit			Right
Sosswalk Width(m) 2.0 2.0 2.0 vo way Left Turn Lane							
wo way Left Tum Lane padway Factor 1.06 1.06 1.06 1.06 1.06 rming Speed (k/h) 24 14 24 14 umber of Detectors 1 1 2 2 1 stector Template Left Left Thru Thru Right ading Detector (m) 18.6 18.6 93.0 93.0 18.6 ailing Detector (m) 0.0 0.0 0.0 0.0 0.0 otector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 otector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 otector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 otector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 otector 1 Channel							
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Imber of Detectors 1 1 2 2 1 etector Template Left Thru Thru Right ading Detector (m) 18.6 18.6 93.0 93.0 18.6 ailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 etector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 etector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 etector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 etector 1 Channel CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex etector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 etector 2 Position(m) 87.5 87.5 5 5.5 5.5 etector 2 Position(m) 87.5 5.5 5.5 5.5 5.5 etector 2 Size(m) 5.5 5.5 5.5 5.5 5.5 etector 2 Extend (s) <td< td=""><td>Headway Factor</td><td></td><td></td><td></td><td>1.06</td><td>1.06</td><td></td></td<>	Headway Factor				1.06	1.06	
Left Left Thru Thru Right ading Detector (m) 18.6 18.6 93.0 93.0 18.6 ailing Detector (m) 0.0 0.0 0.0 0.0 0.0 betector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 betector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 betector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 betector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 betector 1 Channel	Turning Speed (k/h)	24	14	24			14
ading Detector (m) 18.6 18.6 93.0 93.0 18.6 ading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 attector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 attector 1 Channel CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex attector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 attector 2 Position(m) 87.5 87.5 5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 </td <td>Number of Detectors</td> <td>1</td> <td></td> <td>1</td> <td>2</td> <td>2</td> <td>1</td>	Number of Detectors	1		1	2	2	1
ading Detector (m) 18.6 18.6 93.0 93.0 18.6 ading Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 attector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 attector 1 Channel CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex attector 1 Extend (s) 0.0 0.0 0.0 0.0 0.0 0.0 attector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 attector 2 Position(m) 87.5 87.5 5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 </td <td>Detector Template</td> <td>Left</td> <td></td> <td>Left</td> <td>Thru</td> <td>Thru</td> <td>Right</td>	Detector Template	Left		Left	Thru	Thru	Right
ailing Detector (m) 0.0 0.0 0.0 0.0 0.0 batector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 batector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 batector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex batector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 batector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 batector 1 Channel 0.0 0.0 0.0 0.0 0.0 0.0 batector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 0.0 batector 2 Position(m) 87.5 87.5 87.5 5.5 5.5 5.5 batector 2 Size(m) 5.5 5.5 5.5 5.5 5.5 5.5 batector 2 Channel 0.0 0.0 0.0 0.0 0.0 0.0 rm Type Prot Perm NA NA Perm 6 batector 2 Phases 2 6 <td>Leading Detector (m)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Leading Detector (m)						
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etector 2 Type CI+Ex CI+Ex etector 2 Channel etector 2 Extend (s) 0.0 0.0 rn Type Prot Perm NA NA Perm otected Phases 4 2 6 ermitted Phases 2 6 etector Phase 4 2 2 6 6 etector Phase 4 2 2 6 6	Detector 2 Position(m)						
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extector 2 Extend (s)0.00.0rn TypeProtPermNANAotected Phases426ermitted Phases26otector Phase422otector Phase422vitch Phase6	Detector 2 Channel						
rn Type Prot Perm NA NA Perm otected Phases 4 2 6 ermitted Phases 2 6 etector Phase 4 2 2 6 6 vitch Phase	Detector 2 Extend (s)				0.0	0.0	
otected Phases426ormitted Phases26otector Phase4226vitch Phase	Turn Type	Prot		Perm			Perm
ermitted Phases 2 6 etector Phase 4 2 2 6 6 vitch Phase				. 0.111			. 0111
vitector Phase 4 2 2 6 6 vitch Phase		т		2	2	0	6
vitch Phase		Λ			0	6	
		4		Z	Z	0	0
nimum initiai (s) 10.0 10.0 10.0 10.0 10.0 10.0				40.0	40.0		40.0
	Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Synchro 10 Report

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7	
Total Split (s)	27.0		53.0	53.0	53.0	53.0	
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3	
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7	
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7	
Lead/Lag	0.1		5.1	5.1	5.1	5.1	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		Max	Max	Max	Max	
Walk Time (s)	7.0		15.0	15.0	15.0	15.0	
	14.0		9.0	9.0	9.0	9.0	
Flash Dont Walk (s) Pedestrian Calls (#/hr)	14.0		9.0	9.0	9.0	9.0	
	11.3		50.2	50.2	50.2	50.2	
Act Effct Green (s)			50.2 0.69			50.2 0.69	
Actuated g/C Ratio	0.16			0.69	0.69		
v/c Ratio	0.55		0.03	0.20	0.22	0.03	
Control Delay	20.2		4.2	4.8	4.9	1.9	
Queue Delay	0.0		0.0	0.0	0.0	0.0	
Total Delay	20.2		4.2	4.8	4.9	1.9	
LOS	С		А	A	A	А	
Approach Delay	20.2			4.7	4.6		
Approach LOS	С			А	А		
Queue Length 50th (m)	9.0		0.5	8.1	9.0	0.0	
Queue Length 95th (m)	24.2		2.5	18.7	20.6	2.0	
Internal Link Dist (m)	199.0			397.6	142.2		
Turn Bay Length (m)			40.0			65.0	
Base Capacity (vph)	538		715	1201	1201	1006	
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	0.33		0.03	0.20	0.22	0.03	
Intersection Summary							
Area Type:	Other						
Cycle Length: 80	54161						
Actuated Cycle Length: 72.4							
Natural Cycle: 60							
Control Type: Actuated-Unco	ordinated						
Maximum v/c Ratio: 0.55							
Intersection Signal Delay: 8.4				In	tersection	108.1	
Intersection Capacity Utilization						LOS. A f Service A	
Analysis Period (min) 15	511 52.570					Service A	
niaiysis r enou (11111) 13							
Splits and Phases: 2: Kana	ta & Huntsville						
A an							Ø4
Ø2							
558							27 s
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3: Terry Fox & Tillsonburg AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	† †	1		1
Traffic Volume (vph)	0	709	640	26	0	25
Future Volume (vph)	0	709	640	26	0	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	234.5		319.8	
Travel Time (s)		19.8	16.9		23.0	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	788	711	29	0	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	788	711	29	0	28
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	5.	0.0	5 -
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 28.7%			IC	U Level of	Service A

Intersection Capacity Utilization 28.7% Analysis Period (min) 15 ICU Level of Service A

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations	ă.	^	^	1	ካካ	1	
Traffic Volume (vph)	66	643	607	168	274	59	
Future Volume (vph)	66	643	607	168	274	59	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	95.0	1000	1000	100.0	70.0	110.0	
	95.0 1			100.0	70.0	110.0	
Storage Lanes	45.0			I	80.0	I	
Taper Length (m)		0.05	0.05	1 00		1 00	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor	1.00			0.96		0.98	
Frt	0.050			0.850	0.050	0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1647	3293	3293	1473	3195	1473	
Flt Permitted	0.374				0.950		
Satd. Flow (perm)	647	3293	3293	1414	3195	1451	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				187		66	
Link Speed (k/h)		70	70		50		
Link Distance (m)		234.5	343.0		421.6		
Travel Time (s)		12.1	17.6		30.4		
Confl. Peds. (#/hr)	3			3			
Confl. Bikes (#/hr)				18		4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	73	714	674	187	304	66	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	73	714	674	187	304	66	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		6.0	5.0		9.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		2.0	2.0		2.0		
Two way Left Turn Lane		2.0	2.0		2.0		
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	14	
Number of Detectors	1	2	2	14	24	14	
				-			
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	18.6	93.0	93.0	18.6	18.6	18.6	
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)	18.6	5.5	5.5	18.6	18.6	18.6	
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)		87.5	87.5				
Detector 2 Size(m)		5.5	5.5				
Detector 2 Type		CI+Ex	CI+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases		2	6		4		3
Permitted Phases	2	_		6		4	
Detector Phase	2	2	6	6	4	4	
Switch Phase	L	L	v	v			
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Synchro 10 Report

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	31.2	31.2	10.0
Total Split (s)	58.0	58.0	58.0	58.0	32.0	32.0	10.0
Total Split (%)	58.0%	58.0%	58.0%	58.0%	32.0%	32.0%	10%
Maximum Green (s)	52.0	52.0	52.0	52.0	25.8	25.8	5.0
Yellow Time (s)	4.2	4.2	4.2	4.2	3.7	3.7	2.0
All-Red Time (s)	1.8	1.8	1.8	1.8	2.5	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2	
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	3.0
Recall Mode	Max	Max	Max	Max	None	None	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	18.0	18.0	
Pedestrian Calls (#/hr)	0	0	3	3	0	0	
Act Effct Green (s)	52.0	52.0	52.0	52.0	13.6	13.6	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.15	0.15	
v/c Ratio	0.19	0.37	0.35	0.20	0.62	0.24	
Control Delay	10.6	10.3	10.1	2.0	40.4	10.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.6	10.3	10.1	2.0	40.4	10.8	
LOS	В	В	В	А	D	В	
Approach Delay		10.3	8.4		35.1		
Approach LOS		В	А		D		
Queue Length 50th (m)	4.8	27.7	25.7	0.0	22.9	0.0	
Queue Length 95th (m)	12.3	42.2	39.4	7.7	34.5	9.6	
Internal Link Dist (m)		210.5	319.0		397.6		
Turn Bay Length (m)	95.0			100.0	70.0	110.0	
Base Capacity (vph)	383	1951	1951	914	939	473	
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	0.19	0.37	0.35	0.20	0.32	0.14	
Intersection Summary							
Area Type:	Other						
Cycle Length: 100							
Actuated Cycle Length: 87.8							
Natural Cycle: 70							
Control Type: Semi Act-Unco	ord						
Maximum v/c Ratio: 0.62							
Intersection Signal Delay: 14.					tersection		
Intersection Capacity Utilization	on 49.5%			IC	U Level of	Service A	۱ <u> </u>
Analysis Period (min) 15							
Splits and Phases: 1: Terry	/ Fox & Kanata	a					
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58 s	10 s	32 s
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Ø6		
58 s		

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		•			÷	*		
ane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3	
ane Configurations	¥.		<u></u>	•	î∌			
raffic Volume (vph)	64	94	16	218	239	23		
uture Volume (vph)	64	94	16	218	239	23		
eal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
prage Length (m)	0.0	0.0	40.0			65.0		
orage Lanes	1	0	10.0			0		
iper Length (m)	10.0	Ū	30.0			Ū		
ne Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
ed Bike Factor	1.00	1.00	1.00	1.00	1.00	1.00		
	0.920				0.988			
t Protected	0.920		0.950		0.900			
		0		1700	1700	0		
td. Flow (prot)	1563	0	1647	1733	1709	0		
Permitted	0.980	•	0.574	(=0.0		•		
td. Flow (perm)	1563	0	995	1733	1709	0		
ght Turn on Red		Yes				Yes		
td. Flow (RTOR)	96				8			
nk Speed (k/h)	50			50	50			
nk Distance (m)	223.0			421.6	166.2			
vel Time (s)	16.1			30.4	12.0			
onfl. Bikes (#/hr)						4		
ak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
. Flow (vph)	71	104	18	242	266	26		
ared Lane Traffic (%)								
ne Group Flow (vph)	175	0	18	242	292	0		
ter Blocked Intersection	No	No	No	No	No	No		
ne Alignment	Left	Right	Left	Left	Left	Right		
dian Width(m)	3.7	rugni	Leit	3.7	3.7	rugin		
	0.0			0.0	0.0			
k Offset(m)								
osswalk Width(m)	2.0			2.0	2.0			
o way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00		
adway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
rning Speed (k/h)	24	14	24			14		
umber of Detectors	1		1	2	2			
etector Template	Left		Left	Thru	Thru			
ading Detector (m)	18.6		18.6	93.0	93.0			
ailing 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)	18.6		18.6	5.5	5.5			
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)	0.0		0.0	87.5	87.5			
etector 2 Size(m)				5.5	5.5			
etector 2 Type				CI+Ex	Cl+Ex			
etector 2 Channel					OFEX			
				0.0	0.0			
etector 2 Extend (s)	P (_	0.0	0.0			
Irn Type	Prot		Perm	NA	NA		•	
otected Phases	4			2	6		3	
ermitted Phases			2					
etector Phase	4		2	2	6			
witch Phase								
nimum Initial (s)	10.0		10.0	10.0	10.0		5.0	

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Synchro 10 Report

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3		
Vinimum Split (s)	26.1		29.7	29.7	29.7		10.0		
Total Split (s)	30.0		40.0	40.0	40.0		10.0		
Total Split (%)	37.5%		50.0%	50.0%	50.0%		13%		
Maximum Green (s)	24.9		34.3	34.3	34.3		5.0		
Yellow Time (s)	3.3		3.7	3.7	3.7		2.0		
All-Red Time (s)	1.8		2.0	2.0	2.0		3.0		
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0		
Total Lost Time (s)	5.1		5.7	5.7	5.7				
_ead/Lag	Lag		•	•	•		Lead		
_ead-Lag Optimize?	Yes						Yes		
/ehicle Extension (s)	3.0		3.0	3.0	3.0		3.0		
Recall Mode	None		Max	Max	Max		Max		
Walk Time (s)	7.0		15.0	15.0	15.0		max		
Flash Dont Walk (s)	14.0		9.0	9.0	9.0				
Pedestrian Calls (#/hr)	0		0.0	0	0.0				
Act Effct Green (s)	11.0		34.3	34.3	34.3				
Actuated g/C Ratio	0.17		0.52	0.52	0.52				
//c Ratio	0.52		0.02	0.02	0.33				
Control Delay	18.1		8.7	10.2	10.5				
Queue Delay	0.0		0.0	0.0	0.0				
Fotal Delay	18.1		8.7	10.2	10.5				
LOS	B		A	B	B				
Approach Delay	18.1		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	10.1	10.5				
Approach LOS	В			B	B				
Queue Length 50th (m)	8.0		0.9	13.6	16.4				
Queue Length 95th (m)	22.6		3.7	27.8	33.3				
nternal Link Dist (m)	199.0		0.1	397.6	142.2				
Furn Bay Length (m)	100.0		40.0	001.0	112.2				
Base Capacity (vph)	649		516	899	891				
Starvation Cap Reductn	040		0	000	0				
Spillback Cap Reductn	0		0	0	0				
Storage Cap Reductn	0		0	0	0				
Reduced v/c Ratio	0.27		0.03	0.27	0.33				
ntersection Summary									
Area Type:	Other								
Cycle Length: 80									
Actuated Cycle Length: 66.1									
Natural Cycle: 70									
Control Type: Semi Act-Unco	ord								
Maximum v/c Ratio: 0.52									
ntersection Signal Delay: 12	2			In	tersection	OS: B			
ntersection Capacity Utilizati					CU Level of				
Analysis Period (min) 15						20.100 /1			
	- 4- 0 1 1 4 11								
Splits and Phases: 2: Kana	ata & Huntsville								
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✓ Ø2	👬 🖉	Ø4
40 s	10 s 30 s	
↓ Ø6		
40 s		

3: Terry Fox & Tillsonburg AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	709	640	26	0	25
Future Volume (vph)	0	709	640	26	0	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	234.5		319.8	
Travel Time (s)		19.8	16.9		23.0	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	788	711	29	0	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	788	711	29	0	28
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	J •	0.0	J •
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 28.7%			IC	U Level of	Service A

Analysis Period (min) 15

1: Terry Fox & Kanata PM Peak Hour

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	EBU	EDI	CDT			CDI	CDD
Lane Group	EDU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	2	3	*	*		ካካ	
Traffic Volume (vph)	3	82 82	902	844	307 307	243	55
Future Volume (vph)	3		902	844		243	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		95.0			100.0	70.0	110.0
Storage Lanes		1			1	1	1
Taper Length (m)	0.05	45.0	0.05	0.05	4.00	80.0	4.00
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor		1.00			0.97		0.99
Frt					0.850		0.850
Flt Protected	•	0.950				0.950	
Satd. Flow (prot)	0	1696	3390	3390	1517	3195	1473
Flt Permitted	-	0.288				0.950	
Satd. Flow (perm)	0	514	3390	3390	1478	3195	1453
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					341		61
Link Speed (k/h)			70	70		50	
Link Distance (m)			234.5	343.0		421.6	
Travel Time (s)			12.1	17.6		30.4	
Confl. Peds. (#/hr)		1			1		
Confl. Bikes (#/hr)					5		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	3	91	1002	938	341	270	61
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	94	1002	938	341	270	61
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(m)			6.0	5.0		9.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			2.0	2.0		2.0	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2	1	1	1
Detector Template	Left	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6
Trailing Detector (m)	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
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6
Detector 1 Type	CI+Ex	Cl+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	0.0
Detector 1 Queue (s)	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
Detector 2 Position(m)	0.0	0.0	87.5	87.5	0.0	0.0	0.0
Detector 2 Size(m)			5.5	5.5			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	0.0 NA	Perm	Prot	Perm
Protected Phases	Feini	r enn	NA 2	NA 6	Felli	4	Felli
	0	0	2	0	6	4	A
Permitted Phases	2	2	0	6	6	Λ	4
Detector Phase	2	2	2	6	6	4	4

J.Audia, Novatech

Synchro 10 Report

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Switch Phase	LDU				WDIX	ODL	ODIX	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2	
Total Split (s)	68.0	68.0	68.0	68.0	68.0	32.0	32.0	
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%	
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	25.8	25.8	
	4.2	4.2	4.2	4.2	4.2	25.8	25.8 3.7	
Yellow Time (s) All-Red Time (s)	4.2	4.2	4.2	4.2	4.2	2.5	2.5	
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2	
Lead/Lag		0.0	0.0	0.0	0.0	0.2	0.2	
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max		Max					
	7.0	Max 7.0		Max	Max 7.0	None	None	
Walk Time (s) Flash Dont Walk (s)	12.0	12.0	7.0 12.0	7.0 12.0	12.0	7.0 18.0	7.0 18.0	
Pedestrian Calls (#/hr)	12.0 0	12.0	12.0	12.0	12.0	18.0 0	18.0	
Act Effct Green (s)	U	62.5	62.5	62.5	62.5	12.7	12.7	
		02.5	02.5	02.5	02.5	0.15	0.15	
Actuated g/C Ratio v/c Ratio		0.71	0.71	0.71	0.71	0.15	0.15	
Control Delay		7.0	5.9	5.7	1.3	40.0	11.3	
Queue Delay		0.0	0.0	0.0	0.0	40.0	0.0	
		7.0	0.0 5.9	5.7	1.3	40.0	11.3	
Total Delay LOS		7.0 A	5.9 A	5.7 A	1.3 A	40.0 D	B	
Approach Delay		A	6.0	4.5	A	34.7	D	
Approach LOS			0.0 A	4.5 A		54.7 C		
Queue Length 50th (m)		4.2	27.2	24.8	0.0	20.1	0.0	
Queue Length 95th (m)		4.2	42.6	39.0	6.7	30.8	9.3	
Internal Link Dist (m)		11.7	210.5	39.0	0.7	397.6	9.5	
Turn Bay Length (m)		95.0	210.5	519.0	100.0	70.0	110.0	
Base Capacity (vph)		367	2423	2423	1153	942	471	
Starvation Cap Reductn		0	0	2423	0	942	4/1	
Spillback Cap Reductn		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0	0	0	0	
Reduced v/c Ratio		0.26	0.41	0.39	0.30	0.29	0.13	
		0.20	0.41	0.59	0.50	0.29	0.15	
Intersection Summary								
Area Type:	Other							
Cycle Length: 100								
Actuated Cycle Length: 87.5								
Natural Cycle: 60								
Control Type: Actuated-Uncoo	rdinated							
Maximum v/c Ratio: 0.58								
Intersection Signal Delay: 8.8				In	tersection	LOS: A		
Intersection Capacity Utilizatio	n 56.5%			IC	CU Level o	f Service B		
Analysis Period (min) 15								
Splits and Phases: 1: Terry	Fox & Kanat	9						
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EBC EBR NBL NBT SBT SBR affic Volume (vph) 43 50 64 326 248 47 affic Volume (vph) 43 50 64 326 248 47 ture Volume (vph) 1800						I	,
ne Configurations N A F affic Volume (vph) 43 50 64 326 248 47 sal Flow (vph) 1800		٦	•		T	ŧ	*
ne Configurations N A F affic Volume (vph) 43 50 64 326 248 47 sal Flow (vph) 1800	Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
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bal Flow (vphp) 1800 100 100 100 100 100 100 100 100 100 101 101 101 101 101 101 101 101 101 101 101 101 101 101 101 101 101							
brage Length (m) 0.0 0.0 45.0 65.0 prage Length (m) 1.00 30.0 1.00 1.							
brage Lanes 1 0 1 1 per Length (m) 10.0 30.0 1.00 <					1000	1000	
per Length (m) 10.0 30.0 ne Util, Factor 1.00 1.0							
he 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 1.00 1.00 1.00 1.00 0.98 Protected 0.977 0.950 0.950 0.923 1733 1733 1473 Permitted 0.977 0.590 0.590 1647 1733 1733 1442 How (perm) 1570 0 1023 1733 1733 1442 How (RTOR) 56 50 50 50 50 statk bistance (m) 223.0 421.6 166.2 avault line (s) 16.1 30.4 12.0 11.00 1.0			0				
d Bike Factor 0.927 0.950 Protected 0.977 0.950 td. Flow (port) 1570 0 1647 1733 1733 1473 Permitted 0.977 0.590 td. Flow (perm) 1570 0 1023 1733 1733 1442 ght Turn on Red Yes Yes th CHow (DRN) 56 50 sk Speed (k/h) 50 50 50 kk Distance (m) 223.0 421.6 166.2 avel Time (s) 16.1 30.4 12.0 multi. Bikes (#/hr) 23 0.90 0.90 0.90 0.90 0.90 j. Flow (vph) 48 56 71 362 276 52 ared Lane Traffic (%) ne Group Flow (vph) 104 0 71 362 276 52 ter Blocked Intersection No No No No No No No ne Alignment Left Right Left Left Left Right edian Width(m) 3.7 3.7 3.7 sk Offset(m) 0.0 0.00 0.00 orsswalk Width(m) 2.0 2.0 2.0 to way Left Turn Lane sadway Factor 1.06 1.06 1.06 1.06 1.06 1.06 sing Speed (k/h) 24 14 24 14 24 14 tector Template Left Left Thru Thru Right ading Detectors 1 1 2 2 1 tector Template Left Left Cl+Ex Cl+Ex Cl+Ex Cl+Ex tector 1 Size(m) 18.6 18.6 93.0 93.0 18.6 aling Detector (m) 18.6 18.6 5.5 5.5 18.6 tector 1 Size(m) 5.5 5.5 tector 1 Size(m) 5.5 5.5 tector 2 Channel tector 1 Size(m) 5.5 5.5 tector 2 Channel tector 2 Phase 4 2 2 6 inth Phase			1.00		1.00	1.00	1 00
0.927 0.950 Protected 0.977 0.950 td. Flow (prot) 1570 0 1647 1733 1733 1473 Permitted 0.977 0.590 1733 1733 1442 ph Turn on Red Yes Yes Yes td. Flow (PCR) 56 50 50 kk Speed (kh) 50 50 50 52 kk Speed (kh) 16.1 30.4 12.0 168 avel Time (s) 16.1 30.4 12.0 1733 avel Time (s) 16.1 30.4 12.0 164 avel Time (s) 16.1 30.4 12.0 164 avel Time (s) 16.1 30.4 12.0 12 ard Lane Traffic (%) 18 56 71 362 276 52 ared Lane Traffic (%) 0 0 71 362 276 52 ared Lane Traffic (%) 0.0 0.0 0.0 0.0 0.0 <td></td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td></td>		1.00	1.00	1.00	1.00	1.00	
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td. Flow (perm) 1570 0 1023 1733 1733 1442 pht Turn on Red Yes Yes Yes Yes kk Speed (k/h) 50 50 50 50 ik Distance (m) 223.0 421.6 166.2 avel Time (s) 16.1 30.4 12.0 20 avel Time (s) 16.1 30.4 12.0 276 52 30 30.4 12.0 276 52 avel Tame (s) 16.1 30.4 12.0 276 52 30.4 30.4 12.0 30.4 12.0 30.4	Flt Permitted	0.977		0.590			
ght Turn on Red Yes Yes td. Flow (RTOR) 56 50 50 ik Speed (k/h) 50 50 50 ik Distance (m) 223.0 421.6 166.2 avel Time (s) 16.1 30.4 12.0 infl. Bikes (#/hr) 2 2 30.4 12.0 ak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 ared Lane Traffic (%) - - 2 2 6 52 ared Lane Traffic (%) - - - 2 76 52 ared Lane Traffic (%) - - - 76 52 ared Lane Traffic (%) 0 71 362 276 52 ter Blocked Intersection No No No No No No No No ared Lane Traffic (%) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <	Satd. Flow (perm)		0		1733	1733	1442
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ne Group Flow (vph) 104 0 71 362 276 52 ter Blocked Intersection No Left	Adj. Flow (vph)	48	56	71	362	276	52
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Left Right Left Left Left Left Right adian Width(m) 3.7 3.7 3.7 3.7 3.7 ak Offset(m) 0.0 0.0 0.0 0.0 0.0 osswalk Width(m) 2.0 2.0 2.0 2.0 2.0 vo way Left Turn Lane	Enter Blocked Intersection	No	No	No	No	No	No
addian Width(m) 3.7 3.7 3.7 3.7 ak Offset(m) 0.0 0.0 0.0 0.0 osswalk Width(m) 2.0 2.0 2.0 2.0 vo way Left Turn Lane	Lane Alignment						
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wo way Left Tum Lane eadway Factor 1.06 1.06 1.06 1.06 1.06 1.06 rning Speed (k/h) 24 14 24 14 intector Template Left Left Thru Thru Right ading Detector (m) 18.6 18.6 93.0 93.0 18.6 aling Detector (m) 0.0 0.0 0.0 0.0 0.0 itector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 itector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 itector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 itector 2 Position(m) 87.5 87.5 5.5 5.5 5.5 itector 2 Size(m) 5.5 5.5 5.5 5.5 5.5 itector 2 Size							
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Image Speed (k/h) 24 14 24 14 24 14 Index of Detectors 1 1 2 2 1 Intector Template Left Left Thru Thru Right ading Detector (m) 18.6 18.6 93.0 93.0 18.6 aling Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 tector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 tector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 tector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 tector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 tector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 tector 1 Queue (s) 0.0 0.0 0.0 0.0 0.0 tector 2 Position(m) 87.5 87.5 5.5 5.5 5.5 tector 2 Size(m) 5.5<		1.00	1.00	1.00	1.00	1.00	1.00
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tetector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 tetector 1 Type CI+Ex CI+Ex<	Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
tector 1 Type CI+Ex	Detector 1 Size(m)						
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	winning (S)	5.0		5.0	5.0	5.0	5.0

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Synchro 10 Report

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Recall Mode None Max Max Max Max Max Walk Time (s) 7.0 15.0 15.0 15.0 15.0 15.0 Flash Dont Walk (s) 14.0 9.0 9.0 9.0 9.0 Pedestrian Calls (#/hr) 0 0 0 0 0 0 Act Effct Green (s) 8.0 55.0 55.0 55.0 55.0 55.0 Actuated g/C Ratio 0.11 0.78 0.78 0.78 0.78 v/c Ratio 0.46 0.09 0.27 0.20 0.05 Control Delay 21.6 3.6 3.9 3.6 1.3 Queue Delay 0.0
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v/c Ratio 0.46 0.09 0.27 0.20 0.05 Control Delay 21.6 3.6 3.9 3.6 1.3 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 21.6 3.6 3.9 3.6 1.3 LOS C A A A Approach Delay 21.6 3.9 3.2 Approach LOS C A A Queue Length 50th (m) 5.3 1.8 10.9 7.9 0.0 Queue Length 95th (m) 16.4 5.8 24.0 17.9 2.4
Control Delay 21.6 3.6 3.9 3.6 1.3 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 21.6 3.6 3.9 3.6 1.3 LOS C A A A A Approach Delay 21.6 3.9 3.2 Approach Delay 21.6 3.9 3.2 Approach LOS C A A A A Queue Length 50th (m) 5.3 1.8 10.9 7.9 0.0 Queue Length 95th (m) 16.4 5.8 24.0 17.9 2.4
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Queue Length 50th (m)5.31.810.97.90.0Queue Length 95th (m)16.45.824.017.92.4
Queue Length 95th (m) 16.4 5.8 24.0 17.9 2.4
Internal Link Dist (m) 199.0 397.6 142.2
Turn Bay Length (m) 45.0 65.0
Base Capacity (vph) 529 798 1352 1352 1137
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 0.20 0.09 0.27 0.20 0.05
Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 70.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 5.8 Intersection LOS: A
Intersection Capacity Utilization 37.4% ICU Level of Service A
Analysis Period (min) 15
Splits and Phases: 2: Kanata & Huntsville
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3: Terry Fox & Tillsonburg PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	987	817	85	0	11
Future Volume (vph)	0	987	817	85	0	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	234.5		319.8	
Travel Time (s)		19.8	16.9		23.0	
Confl. Peds. (#/hr)	1					
Confl. Bikes (#/hr)				5		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1097	908	94	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1097	908	94	0	12
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ŭ	0.0	Ū
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 33.8%			IC	U Level of	Service A

Analysis Period (min) 15

1: Terry Fox & Kanata PM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations	200	3	11	^	7	ኘካ	1	20
Traffic Volume (vph)	3	82	902	844	307	243	55	
Future Volume (vph)	3	82	902	844	307	243	55	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	
Storage Length (m)	1000	95.0	1000	1000	100.0	70.0	110.0	
Storage Lanes		1			100.0	1	1	
Taper Length (m)		45.0				80.0		
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor	0.00	1.00	0.55	0.55	0.97	0.51	0.99	
Frt		1.00			0.850		0.850	
Flt Protected		0.950			0.000	0.950	0.000	
Satd. Flow (prot)	0	1696	3390	3390	1517	3195	1473	
Flt Permitted	0	0.263	0000	0000	1017	0.950	1475	
	0	469	2200	2200	1477	3195	1453	
Satd. Flow (perm) Right Turn on Red	0	409	3390	3390	Yes	3195	Yes	
					341		fes 61	
Satd. Flow (RTOR) Link Speed (k/h)			70	70	341	50	01	
			234.5	343.0		421.6		
Link Distance (m)								
Travel Time (s)		1	12.1	17.6	4	30.4		
Confl. Peds. (#/hr)		I			1		0	
Confl. Bikes (#/hr)	0.00	0.00	0.00	0.00	5	0.00	2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	2%	2%	2%	2%	5%	5%	
Adj. Flow (vph)	3	91	1002	938	341	270	61	
Shared Lane Traffic (%)	0	04	4000	000	044	070	64	
Lane Group Flow (vph)	0	94	1002	938	341	270	61	
Enter Blocked Intersection	No	No	No	No	No	No	No	
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right	
Median Width(m)			6.0	5.0		9.0		
Link Offset(m)			0.0	0.0		0.0		
Crosswalk Width(m)			2.0	2.0		2.0		
Two way Left Turn Lane	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	
Turning Speed (k/h)	14	24	0	0	14	24	14	
Number of Detectors	1	1	2	2	1	1	1	
Detector Template	Left	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Trailing Detector (m)	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	
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6	
Detector 1 Type	CI+Ex	Cl+Ex	Cl+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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)			87.5	87.5				
Detector 2 Size(m)			5.5	5.5				
Detector 2 Type			CI+Ex	CI+Ex				
Detector 2 Channel								
Detector 2 Extend (s)			0.0	0.0				
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases			2	6		4		3
Permitted Phases	2	2			6		4	
Detector Phase	2	2	2	6	6	4	4	

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2	10.0	
Total Split (s)	58.0	58.0	58.0	58.0	58.0	32.0	32.0	10.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	58.0%	32.0%	32.0%	10%	
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	25.8	25.8	5.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7	2.0	
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5	3.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2		
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	3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max	None	None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	max	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0		
Pedestrian Calls (#/hr)	0	0	0	1	1	0	0		
Act Effct Green (s)	v	52.0	52.0	52.0	52.0	12.7	12.7		
Actuated g/C Ratio		0.60	0.60	0.60	0.60	0.15	0.15		
v/c Ratio		0.34	0.49	0.46	0.33	0.58	0.23		
Control Delay		13.6	11.3	10.9	2.0	39.8	11.3		
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay		13.6	11.3	10.9	2.0	39.8	11.3		
LOS		В	B	B	2.0 A	00.0 D	B		
Approach Delay		U	11.5	8.5	Л	34.5	D		
Approach LOS			B	0.5 A		04.0 C			
Queue Length 50th (m)		6.6	41.7	38.1	0.0	20.1	0.0		
Queue Length 95th (m)		17.8	61.6	56.3	9.7	30.8	9.3		
Internal Link Dist (m)		17.0	210.5	319.0	5.1	397.6	0.0		
Turn Bay Length (m)		95.0	210.5	515.0	100.0	70.0	110.0		
Base Capacity (vph)		280	2027	2027	1020	948	474		
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		0.34	0.49	0.46	0.33	0.28	0.13		
		0.04	0.40	0.40	0.00	0.20	0.10		
Intersection Summary	Other								
	Other								
Cycle Length: 100									
Actuated Cycle Length: 87									
Natural Cycle: 75									
Control Type: Semi Act-Uncoor	rd								
Maximum v/c Ratio: 0.58									
Intersection Signal Delay: 12.9					tersection				
Intersection Capacity Utilization	า 56.5%			IC	CU Level of	Service B			
Analysis Period (min) 15									
Splits and Phases: 1: Terry F	Fox & Kanata	a							1
≝ _{Ø2}						j 🎽	Ø3	</td <td></td>	
58 s						10 s		32 s	
						10 3		52.5	
Ø 6					_				
58 s									

								Existing frame
	٦	\mathbf{r}	1	†	↓ I	-		
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3	
ane Configurations	Y		۲	•	f,	02.1	~~	
raffic Volume (vph)	43	50	64	326	248	47		
uture Volume (vph)	43	50	64	326	248	47		
	1800	1800	1800	1800	1800	1800		
eal Flow (vphpl)				1800	1800			
orage Length (m)	0.0	0.0	45.0			65.0		
torage Lanes	1	0	1			0		
aper Length (m)	10.0		30.0					
ane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
ed Bike Factor					1.00			
t	0.927				0.979			
t Protected	0.977		0.950					
atd. Flow (prot)	1570	0	1647	1733	1691	0		
Permitted	0.977		0.557					
td. Flow (perm)	1570	0	965	1733	1691	0		
ght Turn on Red	1010	Yes	000	1100	1001	Yes		
td. Flow (RTOR)	56	163			15	163		
	50			50	50			
k Speed (k/h)								
k Distance (m)	223.0			421.6	166.2			
vel Time (s)	16.1			30.4	12.0	•		
nfl. Bikes (#/hr)						2		
k Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		
Flow (vph)	48	56	71	362	276	52		
red Lane Traffic (%)								
e Group Flow (vph)	104	0	71	362	328	0		
er Blocked Intersection	No	No	No	No	No	No		
e Alignment	Left	Right	Left	Left	Left	Right		
dian Width(m)	3.7			3.7	3.7			
Coffset(m)	0.0			0.0	0.0			
sswalk Width(m)	2.0			2.0	2.0			
	2.0			2.0	2.0			
o way Left Turn Lane	4.00	4.00	4.00	4.00	4.00	4.00		
adway Factor	1.06	1.06	1.06	1.06	1.06	1.06		
ning Speed (k/h)	24	14	24			14		
mber of Detectors	1		1	2	2			
tector Template	Left		Left	Thru	Thru			
ading Detector (m)	18.6		18.6	93.0	93.0			
ailing 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)	18.6		18.6	5.5	5.5			
etector 1 Type	CI+Ex		CI+Ex	CI+Ex	Cl+Ex			
etector 1 Channel			9. • E A	9 . • E A	. . .			
etector 1 Extend (s)	0.0		0.0	0.0	0.0			
tector 1 Queue (s)	0.0		0.0	0.0	0.0			
etector 1 Delay (s)	0.0		0.0	0.0	0.0			
	0.0		0.0					
etector 2 Position(m)				87.5	87.5			
etector 2 Size(m)				5.5	5.5			
etector 2 Type				CI+Ex	Cl+Ex			
etector 2 Channel								
etector 2 Extend (s)				0.0	0.0			
rn Type	Prot		Perm	NA	NA			
otected Phases	4			2	6		3	
rmitted Phases			2					
etector Phase	4		2	2	6			
witch Phase			2	2	v			
nimum Initial (s)	5.0		5.0	5.0	5.0		5.0	
	5.0		0.0	0.0	0.0		0.0	

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3		
Minimum Split (s)	26.1		29.7	29.7	29.7	OBIC	10.0		
Total Split (s)	30.0		40.0	40.0	40.0		10.0		
Total Split (%)	37.5%		50.0%	50.0%	50.0%		13%		
Maximum Green (s)	24.9		34.3	34.3	34.3		5.0		
Yellow Time (s)	3.3		3.7	3.7	3.7		2.0		
All-Red Time (s)	1.8		2.0	2.0	2.0		3.0		
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0		
Total Lost Time (s)	5.1		5.7	5.7	5.7				
Lead/Lag	Lag		5.1	5.1	5.1		Lead		
Lead-Lag Optimize?	Yes						Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0		
Recall Mode	None		Max	Max	Max		Max		
Walk Time (s)	7.0		15.0	15.0	15.0		IVIAA		
Flash Dont Walk (s)	14.0		9.0	9.0	9.0				
Pedestrian Calls (#/hr)	14.0 0		9.0	9.0	9.0				
Act Effct Green (s)	7.6		34.6	34.6	34.6				
()	0.13		0.57	0.57	0.57				
Actuated g/C Ratio v/c Ratio	0.13		0.57	0.37	0.37				
	19.4		8.4	9.7	9.0				
Control Delay	0.0		0.4	9.7	0.0				
Queue Delay Total Delay	0.0 19.4		8.4	0.0 9.7	9.0				
LOS	19.4 B		0.4 A	9.7 A	9.0 A				
Approach Delay	ы 19.4		A	9.5	9.0				
Approach LOS	B 4.7		3.3	A 19.7	A 16.5				
Queue Length 50th (m)	4.7		5.5 9.4	38.9	33.7				
Queue Length 95th (m)	199.0		9.4	30.9 397.6	142.2				
Internal Link Dist (m)	199.0		45.0	397.0	14Z.Z				
Turn Bay Length (m)	<u> </u>		45.0	000	074				
Base Capacity (vph)	683		550	988	971				
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	0.15		0.13	0.37	0.34				
ntersection Summary	Other								
Area Type:	Other								
Cycle Length: 80									
Actuated Cycle Length: 60.7									
Natural Cycle: 70 Control Typo: Somi Act Upon	ard								
Control Type: Semi Act-Unco									
Maximum v/c Ratio: 0.42	F				Anna Maria	00. 5			
ntersection Signal Delay: 10.					Itersection				
Intersection Capacity Utilizati Analysis Period (min) 15	011 40.5%			IL	CU Level of	Service A			
Splits and Phases: 2: Kana	ata & Huntsville								
⊲†					41		•		

▲ Ø2	₽₽ _{Ø3}	▶ _{Ø4}
40 s	10 s	30 s
↓ Ø6		
40 s		

3: Terry Fox & Tillsonburg PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	<u></u>	1		*
Traffic Volume (vph)	0	987	817	85	0	11
Future Volume (vph)	0	987	817	85	0	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	234.5		319.8	
Travel Time (s)		19.8	16.9		23.0	
Confl. Peds. (#/hr)	1					
Confl. Bikes (#/hr)				5		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	1097	908	94	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1097	908	94	0	12
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	J -	0.0	J .
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 33.8%			IC	U Level of	Service A
Analysis Dariad (min) 45	011 00.070			10	0 2000/01	001110071

Analysis Period (min) 15

1: Terry Fox & Kanata SAT Peak Hour

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_ane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
ane Configurations		3	<u></u>	^	7	<u> </u>	<u> </u>	
	2	69	5 37				65	
Traffic Volume (vph)	3			628	299	261		
Future Volume (vph)	3	69	537	628	299	261	65	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	
Storage Length (m)		95.0			100.0	70.0	110.0	
Storage Lanes		1			1	1	1	
Taper Length (m)		45.0				80.0		
_ane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor		1.00			0.97		0.99	
Frt					0.850		0.850	
-It Protected		0.950				0.950		
Satd. Flow (prot)	0	1695	3390	3390	1517	3288	1517	
Fit Permitted	Ŭ	0.381	0000	0000	1011	0.950	1011	
Satd. Flow (perm)	0	677	3390	3390	1465	3288	1497	
Right Turn on Red	U	011	2220	2220	Yes	5200		
							Yes	
Satd. Flow (RTOR)					332		72	
ink Speed (k/h)			70	70		50		
₋ink Distance (m)			234.5	343.0		421.6		
Travel Time (s)			12.1	17.6		30.4		
Confl. Peds. (#/hr)		6			6		1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	3	77	597	698	332	290	72	
Shared Lane Traffic (%)	-							
ane Group Flow (vph)	0	80	597	698	332	290	72	
Enter Blocked Intersection	No	No	No	No	No	No	No	
ane Alignment	R NA	Left	Left	Left	Right	Left	Right	
	IN INA	Leit	6.0	5.0	Right	9.0	Кіўні	
Median Width(m)								
ink Offset(m)			0.0	0.0		0.0		
Crosswalk Width(m)			2.0	2.0		2.0		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Furning Speed (k/h)	14	24			14	24	14	
Number of Detectors	1	1	2	2	1	1	1	
Detector Template	Left	Left	Thru	Thru	Right	Left	Right	
_eading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Trailing Detector (m)	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	
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	
Detector 1 Channel								
	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)			87.5	87.5				
Detector 2 Size(m)			5.5	5.5				
Detector 2 Type			CI+Ex	CI+Ex				
Detector 2 Channel								
Detector 2 Extend (s)			0.0	0.0				
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases			2	6	. 0.111	4		
Permitted Phases	2	2	2	- 0	6	- T	4	
Detector Phase	2	2	2	6	6	4	4	
	2	2	2	0	0	4	4	
Switch Phase Minimum Initial (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	
(unimum initial (c)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	

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1: Terry Fox & Kanata SAT Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	58.0	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
	4.2	4.2	4.2	4.2	4.2	2.5	2.5
All-Red Time (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s) Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
()		0.0	0.0	0.0	0.0	0.2	0.2
Lead/Lag Lead-Lag Optimize?							
	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s) Recall Mode	Max		Max				
		Max		Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0 1	18.0
Pedestrian Calls (#/hr)	0	0	0	6	6	1	1 13.8
Act Effct Green (s)		52.5	52.5	52.5	52.5	13.8	
Actuated g/C Ratio		0.67	0.67	0.67	0.67	0.18	0.18
v/c Ratio		0.18	0.26	0.31	0.31	0.50	0.22
Control Delay		7.5	6.3	6.6	1.7	31.8	8.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		7.5	6.3	6.6	1.7	31.8	8.6
LOS		А	A	A	А	С	А
Approach Delay			6.5	5.0		27.2	
Approach LOS			A	A		C	0.0
Queue Length 50th (m)		3.2	13.4	16.3	0.0	18.5	0.0
Queue Length 95th (m)		12.3	31.6	37.7	9.3	28.1	8.7
Internal Link Dist (m)			210.5	319.0		397.6	
Turn Bay Length (m)		95.0			100.0	70.0	110.0
Base Capacity (vph)		452	2264	2264	1088	1083	541
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0
Reduced v/c Ratio		0.18	0.26	0.31	0.31	0.27	0.13
Intersection Summary							
	Other						
Cycle Length: 90							
Actuated Cycle Length: 78.6							
Natural Cycle: 60							
Control Type: Actuated-Uncoord	linated						
Maximum v/c Ratio: 0.50							
Intersection Signal Delay: 9.4				In	tersection	LOS: A	
Intersection Capacity Utilization	50.6%					Service A	
Analysis Period (min) 15							
Splits and Phases: 1: Terry Fo	ox & Kanat	a					1.1.1.1.1
<u></u> ≤\$¢ _{Ø2}						5	1
58 s							32 s
+						100	N. C.

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Υ		٦	•	•	1
Traffic Volume (vph)	67	63	49	319	263	81
Future Volume (vph)	67	63	49	319	263	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0			65.0
Storage Lanes	1	0	1			1
Taper Length (m)	10.0		30.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			0.97
Frt	0.934		1.00			0.850
Flt Protected	0.975		0.950			0.000
Satd. Flow (prot)	1625	0	1695	1784	1784	1517
Flt Permitted	0.975	0	0.581	1704	1704	1017
	1621	0	1032	1784	1784	1475
Satd. Flow (perm)	1021		1032	1784	1784	
Right Turn on Red	70	Yes				Yes
Satd. Flow (RTOR)	70					90
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			421.6	166.2	
Travel Time (s)	16.1			30.4	12.0	
Confl. Peds. (#/hr)	3		5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	74	70	54	354	292	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	144	0	54	354	292	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	i tigrit	Lon	3.7	3.7	rugin
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase	т		2	2	U	0
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
wininfulli finitiar (S)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7	
Total Split (s)	27.0		43.0	43.0	43.0	43.0	
Total Split (%)	38.6%		61.4%	61.4%	61.4%	61.4%	
Aaximum Green (s)	21.9		37.3	37.3	37.3	37.3	
'ellow Time (s)	3.3		3.7	3.7	3.7	3.7	
II-Red Time (s)	1.8		2.0	2.0	2.0	2.0	
ost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7	
Lead/Lag	5.1		5.1	5.7	5.1	5.1	
ead-Lag Optimize?							
ehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
.,	None				Max	Max	
Recall Mode			Max	Max			
Valk Time (s)	7.0		15.0	15.0	15.0	15.0	
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0		0	0	0	0	
Act Effct Green (s)	10.4		42.2	42.2	42.2	42.2	
ctuated g/C Ratio	0.18		0.71	0.71	0.71	0.71	
/c Ratio	0.42		0.07	0.28	0.23	0.08	
Control Delay	16.3		4.6	5.2	5.0	1.4	
lueue Delay	0.0		0.0	0.0	0.0	0.0	
otal Delay	16.3		4.6	5.2	5.0	1.4	
OS	В		А	А	А	А	
pproach Delay	16.3			5.2	4.1		
pproach LOS	В			А	А		
Queue Length 50th (m)	6.4		1.7	12.7	10.1	0.0	
ueue Length 95th (m)	18.4		5.0	25.3	20.4	3.6	
nternal Link Dist (m)	199.0			397.6	142.2		
urn Bay Length (m)			45.0			65.0	
Base Capacity (vph)	645		736	1272	1272	1077	
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	0.22		0.07	0.28	0.23	0.08	
ntersection Summary	•						
Area Type:	Other						
Cycle Length: 70							
Actuated Cycle Length: 59.2							
Vatural Cycle: 60							
Control Type: Actuated-Unco	ordinated						
laximum v/c Ratio: 0.42							
ntersection Signal Delay: 6.4	1			l.	Itersection	108.1	
tersection Signal Delay: 6.4						LOS: A f Service A	
nalysis Period (min) 15	1011 30.4 70				O Level 0	I SEIVICE A	
11aiysis renou (11111) 13							
Splits and Phases: 2: Kan	ata & Huntsville						
4						0	1
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105							2/s
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43 s					1		

3: Terry Fox & Tillsonburg SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		^	^	1		1	
Traffic Volume (vph)	0	609	654	42	0	13	
Future Volume (vph)	0	609	654	42	0	13	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0			55.0	0.0	0.0	
Storage Lanes	0			1	0	1	
Taper Length (m)	10.0				10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor							
Frt				0.850		0.865	
Flt Protected							
Satd. Flow (prot)	0	3390	3390	1517	0	1543	
Flt Permitted							
Satd. Flow (perm)	0	3390	3390	1517	0	1543	
Link Speed (k/h)		50	50		50		
Link Distance (m)		274.9	234.5		319.8		
Travel Time (s)		19.8	16.9		23.0		
Confl. Peds. (#/hr)	2			2			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	0	677	727	47	0	14	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	677	727	47	0	14	
Enter Blocked Intersection	No	Yes	Yes	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		5.0	5.0	Ŭ	0.0	Ŭ	
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		2.0	2.0		2.0		
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	24	14	
Sign Control		Free	Free		Stop		
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Intersection Capacity Utilizati	on 29.1%			IC	U Level of	f Service A	
Analysis Deviad (min) 15							

Intersection Capacity Utilization 29.1% Analysis Period (min) 15

1: Terry Fox & Kanata SAT Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	
Lane Configurations		3	^	† †	1	ኻኻ	1	20	
Traffic Volume (vph)	3	69	537	628	299	261	65		
Future Volume (vph)	3	69	537	628	299	261	65		
	1800	1800	1800	1800	1800	1800	1800		
Ideal Flow (vphpl)	1000		1000	1000					
Storage Length (m)		95.0			100.0	70.0	110.0		
Storage Lanes		1			1	1	1		
Taper Length (m)		45.0				80.0			
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00		
Ped Bike Factor		1.00			0.97		0.99		
Frt					0.850		0.850		
Flt Protected		0.950				0.950			
Satd. Flow (prot)	0	1695	3390	3390	1517	3288	1517		
Flt Permitted		0.357				0.950			
Satd. Flow (perm)	0	634	3390	3390	1465	3288	1497		
Right Turn on Red	-				Yes		Yes		
Satd. Flow (RTOR)					332		72		
Link Speed (k/h)			70	70	002	50	12		
Link Distance (m)			234.5	343.0		421.6			
Travel Time (s)		0	12.1	17.6	0	30.4	4		
Confl. Peds. (#/hr)	0.00	6	0.00	0.00	6	0.00	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90		
Adj. Flow (vph)	3	77	597	698	332	290	72		
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	80	597	698	332	290	72		
Enter Blocked Intersection	No	No	No	No	No	No	No		
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right		
Median Width(m)			6.0	5.0		9.0			
Link Offset(m)			0.0	0.0		0.0			
Crosswalk Width(m)			2.0	2.0		2.0			
Two way Left Turn Lane									
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06		
Turning Speed (k/h)	14	24			14	24	14		
Number of Detectors	1	1	2	2	1	1	1		
Detector Template	Left	Left	Thru	Thru	Right	Left	Right		
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6		
Trailing Detector (m)	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		
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+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		
Detector 1 Queue (s)	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		
Detector 2 Position(m)			87.5	87.5					
Detector 2 Size(m)			5.5	5.5					
Detector 2 Type			CI+Ex	CI+Ex					
Detector 2 Channel									
			0.0	0.0					
Detector 2 Extend (s)	D	Der			Der	De- 4	Deer		
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm)	
Protected Phases	-		2	6	_	4	_	3	
Permitted Phases	2	2			6		4		
Detector Phase	2	2	2	6	6	4	4		
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	

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1: Terry Fox & Kanata SAT Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	Ø3		
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2	10.0		
Total Split (s)	48.0	48.0	48.0	48.0	48.0	32.0	32.0	10.0		
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	35.6%	35.6%	11%		
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0	25.8	25.8	5.0		
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7	2.0		
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5	3.0		
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2			
Lead/Lag		0.0	0.0	0.0	0.0	Lag	Lag	Lead		
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	Max	Max	Max	Max	Max	None	None	Max		
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0			
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0			
Pedestrian Calls (#/hr)	0	0	0	6	6	10.0	1			
Act Effct Green (s)	Ŭ	42.2	42.2	42.2	42.2	13.8	13.8			
Actuated g/C Ratio		0.54	0.54	0.54	0.54	0.18	0.18			
v/c Ratio		0.23	0.33	0.38	0.35	0.50	0.22			
Control Delay		13.6	11.5	12.0	2.7	31.7	8.6			
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		13.6	11.5	12.0	2.7	31.7	8.6			
LOS		B	B	12.0 B	Α	C	A			
Approach Delay		U	11.8	9.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	27.1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Approach LOS			B	0.0 A		C				
Queue Length 50th (m)		5.0	20.7	25.3	0.0	18.5	0.0			
Queue Length 95th (m)		16.6	41.8	49.8	12.2	28.1	8.7			
Internal Link Dist (m)		10.0	210.5	319.0	12.2	397.6	0.1			
Turn Bay Length (m)		95.0	210.0	010.0	100.0	70.0	110.0			
Base Capacity (vph)		341	1825	1825	942	1087	543			
Starvation Cap Reductn		0	0	0	0	0	0			
Spillback Cap Reductn		0	0	0	0	0	0			
Storage Cap Reductn		Ũ	0	0	0	0	0			
Reduced v/c Ratio		0.23	0.33	0.38	0.35	0.27	0.13			
Intersection Summary		0.20	0.00	0100	0.00	•.=.				
	Other									
Cycle Length: 90										
Actuated Cycle Length: 78.3										
Natural Cycle: 70										
Control Type: Semi Act-Uncoor	d									
Maximum v/c Ratio: 0.50	u									
Intersection Signal Delay: 13.1				In	tersection	I OS' B				
Intersection Capacity Utilization	50.6%					f Service A				
Analysis Period (min) 15	100.070									
Splits and Phases: 1: Terry F	ox & Kanat	2								
*		a				11				
						0 s	32 s	Ø4		
4 ⁴							52.5			

Lane Group EBL EBR NBL NBL SBT SBR 03 Lane Configurations Y							,		
Lane Configurations V A L Traffic Volume (vph) 67 63 49 319 283 81 Traffic Volume (vph) 1800 1800 1800 1800 1800 1800 Storage Length (m) 0.0 0.0 45.0 65.0 50 Storage Length (m) 1.00 1.00 1.00 1.00 1.00 Lane Ulin Factor 1.00 1.00 1.00 1.00 1.00 1.00 Lane Ulin Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Fl Potected 0.975 0.950 5 5 5 5 Std Flow (porth) 1625 0 1695 1724 1716 0 7784 1716 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1		≯	\rightarrow	▲	Ť	Ŧ	-		
Lane Configurations Y A L Traffic Volume (vph) 67 63 49 319 263 81 Future Volume (vph) 67 63 49 319 263 81 Storage Length (m) 0.0 0.0 45.0 65.0 55 Storage Length (m) 0.0 1.00 1.00 1.00 1.00 Lane Cluft Factor 1.00 1.00 1.00 1.00 1.00 1.00 Lane Cluft Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 FIP otected 0.975 0.950 5 5 5 5 Std. Flow (port) 1621 0 873 1784 1716 0 7 Std. Flow (port) 1621 0 873 1784 12.0 5 Std. Flow (port) 5 5 5 5 5 Flow (port) 74 0 54 354 282 0	Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3	
Traffic Volume (vph) 67 63 49 319 263 81 Volume Volum (vph) 1800 1800 1800 1800 1800 1800 Storage Length (m) 0.0 45.0 65.0 Storage Length (m) 10.0 0.0 45.0 65.0 Storage Length (m) 10.0 100 1.00 1.00 Paper Length (m) 10.0 30.0 Paper Length (m) 10.0 100 1.00 1.00 Pager Length (m) 10.0 100 1.00 Pager Length (m) 10.0 1.00 1.00 Pager Length (m) 10.0 1.00 Pager Length (m) 22.0 2.0 Pager Length (m) 22.0 1.0 Pager Length (m) 2.0 2.0 Pager Length (m) 2.0 2.0 Pager Length (m) 2.0 Pager Leng									
Funce Volume (vph) 67 63 49 319 263 81 disal Flow (vphp) 1800 1800 1800 1800 1800 1800 Storage Length (m) 0.0 0.0 45.0 65.0 Storage Length (m) 1.0 1.00 1.00 1.00 Lane Uhit Factor 1.00 1.00 1.00 1.00 Ped Bike Factor 1.00 1.00 1.00 1.00 FIP Oreclad 0.975 0.950 - - Said Flow (perot) 1625 0 1695 1784 1716 0 Said Flow (perot) 1621 0 873 1784 1716 0 - Said Flow (perot) 1621 0 873 1784 1716 0 -			63				81		
Ideal Flow (vphp) 1800 1800 1800 1800 1800 Storage Length (m) 0.0 45.0 66.0 555555 Storage Length (m) 1.0 1.00 1.00 1.00 1.00 Taper Length (m) 1.00 1.00 1.00 1.00 1.00 1.00 Ped Bike Factor 1.00 1.00 1.00 1.00 1.00 1.00 Ped Bike Factor 1.00 1.00 1.00 1.00 1.00 1.00 Ped Bike Factor 1.00 1.00 1.00 1.00 1.00 1.00 Stad. Flow (prot) 1625 0 1695 1784 1716 0 Stad. Flow (prot) 1621 0 873 1784 1716 0 Link Obstance (m) 223.0 4216 1662 1662 1662 1662 Confl. Peds. (#hr) 3 5 5 5 5 164 164 164 164 164 164 164									
Storage Length (m) 0.0 45.0 65.0 Taper Length (m) 10.0 30.0 0 Taper Length (m) 10.0 10.0 10.0 10.0 Ped Bike Factor 10.0 10.0 0.99 0 Fit Protected 0.975 0.950 0 0 Satd. Flow (porb) 1625 0 1695 1724 1716 0 Satd. Flow (porb) 1625 0 873 1784 1716 0 1716 0 Satd. Flow (porb) 1621 0 873 1784 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 0 1716 1716 1716 0 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 1716 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Shorağe anase 1 0 1 0 Taper Length (m) 10.0 1.00 1.00 1.00 1.00 Page Length (m) 10.0 1.00 1.00 1.00 1.00 Pad Bike Factor 1.00 1.00 1.00 0.99 Fift 0.934 0.966					1000	1000			
Taper Length (m) 100 1.00									
Lane LUI, Factor 1,00 1,00 1,00 1,00 1,00 1,00 1,00 Pad Bike Factor 1,00 1,00 1,00 0,99 Pad Bike Factor 1,00 1,70 0,99 Pad Bike Factor 1,00 1,75 0,950 Satel Flow (prot) 1,625 0,950 Satel Flow (prot) 1,625 0,941 Satel Flow (prot) 1,627 0,950 Satel Flow (prot) 1,627 0,941 Satel Flow (prot) 1,621 0,975 0,970 1,970 Satel Flow (Prot) 1,784 Tarle Time (Satel Flow (Prot) 1,74 70 5,976 Satel Flow (Prot) 1,74 70 Satel 2,92 90 Satel Lane Traffic (%)			U	-			U		
Ped Bike Factor 1.00 1.00 0.99 Frt 0.934 0.968 Frt Protected 0.975 0.950 Frt Protected 0.975 0.950 Satel Flow (prot) 1625 0 1695 1784 1716 0 Free Protected 0.975 0.491 Satel Flow (prem) 1621 0 873 1764 1716 0 Free Protected 0.975 0.491 Link Speed (kh) 50 50 Link Speed (kh) 50 50 Link Speed (kh) 50 50 Free Khour Factor 0.90 0.90 0.90 0.90 0.90 Link Speed (kh) 3 5 Free Khour Factor 0.90 0.90 0.90 0.90 0.90 0.90 Adj. Flow (vph) 74 70 54 354 382 0 Enter Biocked Intersection No No No No No No Stared Lane Traffic (%) Lane Group Flow (vph) 144 0 54 354 382 0 Enter Biocked Intersection No No No No No No Crosswalk Width(m) 3.7 3.7 3.7 Link Offset(m) 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Free Khour Factor 1.06 1.06 1.06 1.06 1.06 Link Gree Cross 1 1 2 2 Detector Template Left Left Thru Thru Leading Detector (m) 0.0 0.00 Crosswalk Width(m) 0.0 0.0 Crosswalk Width(m) 186 186 830 933.0 Fraining Detector (m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 2 Positon(m) 0.0 0.0 Detector 2 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 2 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 2 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 1 Positon(m) 0.0 0.0 Detector 2 Positon(m) 0.0 0.0 Detector 2 Positon(4.00		4.00	4.00	4.00		
Fri 0.393 0.968 Fit Protected 0.375 0.950 Satd. Flow (prot) 1625 0 1695 Fit Permitted 0.975 0.491 Satd. Flow (prot) 1621 0 873 1764 1716 0 Right Turn on Red Yes Yes Yes Yes Satd. Flow (prot) 1621 0 873 1764 1716 0 Link Obstance (m) 223.0 421.6 1662 Travel Time (s) 16.1 30.4 12.0 Confi. Peds. (#fthr) 3 5 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Alg. Flow (vph) 74 70 54 354 20 Shared Lane Traffic (%)			1.00		1.00		1.00		
Fit Protected 0.975 0.950 Sald Live (prot) 1625 0 1695 1764 1716 0 Sald Live (prot) 1621 0 873 1784 1716 0 Sald Live (prom) 1621 0 873 1784 1716 0 Sald Live (RTOR) 70 24 Yes Yes Yes Link Speed (kh) 50 50 50 50 50 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 9.90 Shared Lane Traffic (%)				1.00					
Said. Flow (prot) 1625 0 1695 1764 1716 0 Flt Permitted 0.975 0.491 0 873 1774 1716 0 Stid. Flow (perm) 1621 0 873 1784 1716 0 Stid. Flow (ROR) 70 24 24 1716 0 1784 1716 0 Stid. Flow (ROR) 70 50 50 50 50 50 50 Stid. Flow (ROR) 70 54 354 20 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 50 50 Shared Lare Traffic (%)						0.968			
Fit Permitted 0.975 0.491 Satd. Flow (perm) 1621 0 873 1784 1716 0 Satd. Flow (RTOR) 70 24 Yes Yes Satd. Flow (RTOR) 50 50 50 50 Link Speed (k/h) 50 50 50 50 Confl. Peds. (#hr) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Shared Lane Taffic (%) 74 70 54 354 292 90 Shared Lane Taffic (%) 144 0 54 354 382 0 Enter Blocked Intersection No	Flt Protected								
Sald. Flow (perm) 1621 0 873 1784 1716 0 Right Turn on Red Yes Yes Yes Link Speed (kh) 50 50 50 Link Distance (m) 223.0 421.6 166.2 Trevel Time (s) 16.1 30.4 12.0 Soft, Flow (ph) 74 70 54 354 292 90 Shared Lane Traffic (%)	Satd. Flow (prot)	1625	0	1695	1784	1716	0		
Sald, Elow (perm) 1621 0 873 1784 1716 0 Vight Turn on Red Yes Yes Yes Jink Deped (kh) 50 50 50 Jink Distance (m) 223.0 421.6 166.2 Travel Time (s) 16.1 30.4 12.0 Donfl, Peds, (#/hr) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 Shared Lane Traffic (%)	-It Permitted	0.975		0.491					
No Yes Yes Sald. Flow (RTOR) 70 24 Ink Speed (k/h) 50 50 Link Distance (m) 223.0 421.6 166.2 Travel Time (s) 16.1 30.4 12.0 Sonfi. Peds. (#hr) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 Alg. Flow (yph) 74 54 354 292 90 Shared Lane Traffic (%)			0		1784	1716	0		
Said Flow (RTOR) 70 24 Link Speed (kh) 50 50 50 Link Distance (m) 223.0 421.6 166.2 Travel Time (s) 16.1 30.4 12.0 Speak Hour Factor 0.90 0.90 0.90 0.90 Peak Hour Factor 0.90 0.90 0.90 0.90 Shared Lane Traffic (%)									
Link Speed (kh) 50 50 50 Link Distance (m) 223.0 421.6 166.2 Confl. Peds. (#/hr) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 Adj, Flow (vph) 74 70 54 354 292 90 Shared Lane Traffic (%)		70				24			
Link Distance (m) 223.0 421.6 166.2 Travel Time (s) 16.1 30.4 12.0 Confl. Peds. (#hn) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Adj. Flow (vph) 74 70 54 354 292 90 Shared Lane Traffic (%)					50				
Travel Time (s) 16.1 30.4 12.0 Confl. Peds. (#hr) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 Adj. Flow (vph) 74 70 54 354 292 90 Shared Lane Traffic (%) Lane Group Flow (vph) 144 0 54 354 382 0 Lane Group Flow (vph) 144 0 54 354 382 0 Enter Blocked Intersection No No No No No No Lane Alignment Left Right Left Right Right Mathemathemathemathemathemathemathemathem									
Confl. Peds. (#hr) 3 5 5 Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 Shared Lane Traffic (%) 14 0 54 354 292 90 Shared Lane Traffic (%) 144 0 54 354 382 0 Enter Blocked Intersection No No No No No No Lane Aignment Left Right Left Left Right Right Median Width(m) 3.7 3.7 3.7 Image State Stat									
Peak Hour Factor 0.90 0.90 0.90 0.90 0.90 0.90 Adj. Flow (vph) 74 70 54 354 329 90 Shared Lane Traffic (%)				-	30.4	12.0	-		
Adj. Flow (vph) 74 70 54 354 292 90 Shared Lane Traffic (%) Lane Group Flow (vph) 144 0 54 354 382 0 Enter Blocked Intersection No No No No No No No Median Width(m) 3.7 3.7 3.7			0.00		0.00	0.00			
Shared Lane Traffic (%) ane Group Flow (vph) 144 0 54 354 382 0 Enter Blocked Intersection No No No No No No ane Alignment Left Right Left Left Right Median Width(m) 3.7 3.7 3.7 3.7 .ink Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Wow way Left Turn Lane									
Lane Group Flow (vph) 144 0 54 354 382 0 Enter Blocked Intersection No No No No No No ane Alignment Left Right Left Right Right Vedian Width(m) 3.7 3.7 3.7 J.7 .ink Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Yow way Left Tum Lane		74	70	54	354	292	90		
Enter Blocked Intersection No No No No No No ane Alignment Left Right Left Left Right Median Width(m) 3.7 3.7 3.7 ink Offset(m) 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 View ay Left Turn Lane 14 24 View ay Factor 1.06 1.06 1.06 1.06 1.06 Number of Detectors 1 1 2 2 Detector Template Left Left Thru Thru Leading Detector (m) 0.0 0.0 0.0 0.0 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Size(m) 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0									
Lane Alignment 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 Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane	Lane Group Flow (vph)								
Median Width(m) 3.7 3.7 3.7 3.7 .ink Offset(m) 0.0 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 2.0 Wow ay Left Turn Lane	Enter Blocked Intersection	No	No	No	No	No	No		
Median Width(m) 3.7 3.7 3.7 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Wow ay Left Turn Lane	Lane Alignment	Left	Right	Left	Left	Left	Right		
Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane			Ŭ		3.7		Ū		
Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane									
Two way Left Turn Lane Headway Factor 1.06 1.06 1.06 1.06 Turning Speed (k/h) 24 14 24 14 Number of Detectors 1 1 2 2 Detector Template Left Left Thru Thru Leading Detector (m) 18.6 18.6 93.0 93.0 Trailing Detector (m) 0.0 0.0 0.0 0.0 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Channel United to the state of the s									
Headway Factor 1.06 1.06 1.06 1.06 1.06 Turning Speed (k/h) 24 14 24 14 Number of Detectors 1 1 2 2 Detector Template Left Left Thru Thru Leading Detector (m) 18.6 18.6 93.0 93.0 Trailing Detector (m) 0.0 0.0 0.0 Detector 1 Position(m) 0.0 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Position(m) 0.0 0.0 0.0 0.0 Detector 1 Position(m) Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Channel		2.0			2.0	2.0			
Turning Speed (k/h) 24 14 24 14 Number of Detectors 1 1 2 2 Detector Template Left Thru Thru Leading Detector (m) 18.6 18.6 93.0 93.0 Trailing Detector (m) 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 Detector 1 Position(m) Detector 1 Position(m) 0.0 0.0 Detector 1 Channel Understand Detector 1 Queue (s) 0.0 0.0 Detector 2 Position(m) ST5 ST5 Detector 2 Size(m) ST5 ST5 Detector 2 Size(m) ST5 ST5 Detector 2 Channel Understand Detector 2 Position (Poston Poston Poston Poston		1.06	1.06	1.06	1.06	1.06	1.06		
Number of Detectors 1 1 2 2 Detector Template Left Left Thru Thru Leading Detector (m) 18.6 18.6 93.0 93.0 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) 18.6 18.6 5.5 5.5 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Extend (s) 0.0 0.0 0.0 0.0 Detector 1 Extend (s) 0.0 0.0 0.0 0.0 Detector 1 Extend (s) 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0					1.00	1.00			
Detector Template Left Thru Thru Leading Detector (m) 18.6 18.6 93.0 93.0 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) 18.6 18.6 5.5 5.5 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Extend (s) 0.0 0.0 0.0 0.0 Detector 1 Leave (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 Detector 2 Size(m) 5.5 5.5 5.5 5.5 5.5 5.5 Detector 2 Size(m) 5.5 5.5 5.5 5.5 5.5 5.5 Detector 2 Channel 0.0 0.0 0.0			14		0	0	14		
Leading Detector (m) 18.6 18.6 93.0 93.0 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) 18.6 18.6 5.5 5.5 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Channel V V V V Detector 1 Extend (s) 0.0 0.0 0.0 0.0 Detector 1 Lextend (s) 0.0 0.0 0.0 0.0 Detector 1 Level (s) 0.0 0.0 0.0 0.0 Detector 2 Rosition(m) 87.5 87.5 5.5 5.5 Detector 2 Size(m) 5.5 5.5 5.5 5.5 Detector 2 Channel V V V V Detector 2 Extend (s) 0.0 0.0 0.0 V Urur Type Prot Perm NA NA Poretocted Phases 4 2									
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) 18.6 18.6 5.5 5.5 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel									
Detector 1 Position(m) 0.0 0.0 0.0 0.0 Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex Detector 1 Channel 0.0 0.0 0.0 0.0 Detector 1 Channel 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) 87.5 87.5 5.5 5.5 Detector 2 Size(m) 5.5									
Detector 1 Size(m) 18.6 18.6 5.5 5.5 Detector 1 Type CI+Ex CI+Ex CI+Ex Detector 1 Channel									
Detector 1 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 1 Channel	Detector 1 Position(m)	0.0		0.0	0.0	0.0			
Detector 1 Type Cl+Ex Cl+Ex Cl+Ex Cl+Ex Detector 1 Channel	Detector 1 Size(m)	18.6		18.6	5.5	5.5			
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) 87.5 87.5 87.5 Detector 2 Size(m) 5.5 5.5 5.5 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Prot Perm NA Protected Phases 4 2 6 3 Detector Phase 4 2 2 6									
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) 87.5 87.5 0.0 0.0 Detector 2 Size(m) 5.5 5.5 0.0 0.0 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex 0.0 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 Prot Perm NA NA Protected Phases 4 2 6 3 Detector Phase 4 2 6 3									
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 1 Delay (s) 0.0 0.0 0.0 0.0 Detector 2 Position(m) 87.5 87.5 87.5 Detector 2 Size(m) 5.5 5.5 5.5 Detector 2 Type Cl+Ex Cl+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Prot Perm NA Protected Phases 4 2 6 3 Permitted Phases 2 6 3 Detector Phase 4 2 2 6		0.0		0.0	0.0	0.0			
Detector 1 Delay (s) 0.0 0.0 0.0 0.0 Detector 2 Position(m) 87.5 87.5 87.5 Detector 2 Size(m) 5.5 5.5 5.5 Detector 2 Type Cl+Ex Cl+Ex Cl+Ex Detector 2 Channel 0.0 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 0.0 Turn Type Prot Perm NA NA Protected Phases 4 2 6 3 Detector Phase 4 2 2 6 Switch Phase 4 2 2 6									
Detector 2 Position(m)87.587.5Detector 2 Size(m)5.55.5Detector 2 TypeCI+ExDetector 2 Channel0.0Detector 2 Extend (s)0.0FrotPermNAProtected Phases426Detector Phase2Detector Phase426Switch Phase3									
Detector 2 Size(m)5.55.5Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeProtPermNAProtected Phases4263Permitted Phases226Detector Phase4226Switch Phase4226		0.0		0.0					
Detector 2 TypeCI+ExCI+ExDetector 2 Channel0.00.0Detector 2 Extend (s)0.00.0Turn TypeProtPermNAProtected Phases4263Permitted Phases226Detector Phase4226Switch Phase4226									
Detector 2 ChannelDetector 2 Extend (s)0.0Furn TypeProtPermProtected Phases42Permitted Phases2Detector Phase42Detector Phase42Switch Phase5									
Detector 2 Extend (s)0.00.0Furn TypeProtPermNANAProtected Phases4263Permitted Phases226Detector Phase4226Switch Phase4226					CI+Ex	CI+Ex			
Furn Type Prot Perm NA NA Protected Phases 4 2 6 3 Permitted Phases 2 2 6 Detector Phase 4 2 2 6 Switch Phase 5 5 5									
Protected Phases 4 2 6 3 Permitted Phases 2 Detector Phase 4 2 2 6 Switch Phase									
Protected Phases 4 2 6 3 Permitted Phases 2 2 6 Detector Phase 4 2 2 6 Switch Phase 5 5 5 5				Perm	NA				
Detector Phase 4 2 2 6 Switch Phase		4			2	6		3	
Detector Phase 4 2 2 6 Switch Phase	Permitted Phases			2					
Switch Phase		4			2	6			
				_		-			
	Minimum Initial (s)	10.0		10.0	10.0	10.0		5.0	
		10.0		10.0	10.0	10.0		0.0	

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø3	
Minimum Split (s)	26.1		29.7	29.7	29.7		10.0	
Total Split (s)	30.0		30.0	30.0	30.0		10.0	
Total Split (%)	42.9%		42.9%	42.9%	42.9%		14%	
Maximum Green (s)	24.9		24.3	24.3	24.3		5.0	
Yellow Time (s)	3.3		3.7	3.7	3.7		2.0	
All-Red Time (s)	1.8		2.0	2.0	2.0		3.0	
_ost Time Adjust (s)	0.0		0.0	0.0	0.0			
Total Lost Time (s)	5.1		5.7	5.7	5.7			
_ead/Lag	Lag						Lead	
ead-Lag Optimize?	Yes						Yes	
/ehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	
Recall Mode	None		Max	Max	Max		Max	
Valk Time (s)	7.0		15.0	15.0	15.0			
Flash Dont Walk (s)	14.0		9.0	9.0	9.0			
Pedestrian Calls (#/hr)	0		0	0	0			
Act Effct Green (s)	10.5		24.7	24.7	24.7			
Actuated g/C Ratio	0.20		0.47	0.47	0.47			
//c Ratio	0.38		0.13	0.42	0.47			
Control Delay	14.8		10.7	12.7	12.6			
Queue Delay	0.0		0.0	0.0	0.0			
Total Delay	14.8		10.7	12.7	12.6			
_OS	В		В	В	В			
Approach Delay	14.8			12.4	12.6			
Approach LOS	В			В	В			
Queue Length 50th (m)	5.9		2.8	21.3	21.9			
Queue Length 95th (m)	17.5		8.3	40.1	42.4			
nternal Link Dist (m)	199.0			397.6	142.2			
Furn Bay Length (m)			45.0					
Base Capacity (vph)	821		411	840	821			
Starvation Cap Reductn	0		0	0	0			
Spillback Cap Reductn	0		0	0	0			
Storage Cap Reductn	0		0	0	0			
Reduced v/c Ratio	0.18		0.13	0.42	0.47			
ntersection Summary	0.11							
Area Type:	Other							
Cycle Length: 70								
Actuated Cycle Length: 52.4								
Natural Cycle: 70								
Control Type: Semi Act-Unco	bord							
Aaximum v/c Ratio: 0.47								
ntersection Signal Delay: 12					tersection I			
ntersection Capacity Utilizati	ion 50.4%			IC	CU Level of	Service A		
Analysis Period (min) 15								
Splits and Phases: 2: Kana	ata & Huntsville)						
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30 s	10 s	30 s	
↓ Ø6			
30 s			

3: Terry Fox & Tillsonburg SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		† †	^	1		1
Traffic Volume (vph)	0	609	654	42	0	13
Future Volume (vph)	0	609	654	42	0	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3390	3390	1517	0	1543
Flt Permitted						
Satd. Flow (perm)	0	3390	3390	1517	0	1543
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	234.5		319.8	
Travel Time (s)		19.8	16.9		23.0	
Confl. Peds. (#/hr)	2			2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	677	727	47	0	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	677	727	47	0	14
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	3	0.0	3
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 29.1%			IC	U Level of	f Service A
An alexand Dama al (main) 45						

Analysis Period (min) 15

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	3	<u>^</u>	↑ ↑	1	ካካ	1
Traffic Volume (vph)	70	702	635	181	339	73
Future Volume (vph)	70	702	635	181	339	73
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			100.0	0.0	0.0
Storage Lanes	1			1	2	1
Taper Length (m)	45.0				80.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor	1.00	0.00	0.00	0.96	0.57	0.98
Frt	1.00			0.96		0.90
	0.050			0.000	0.050	0.000
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1647	3293	3293	1473	3195	1473
Flt Permitted	0.410				0.950	
Satd. Flow (perm)	709	3293	3293	1417	3195	1451
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				181		73
Link Speed (k/h)		70	70		50	
Link Distance (m)		97.9	343.0		83.8	
			343.0 17.6			
Travel Time (s)	2	5.0	0.11	0	6.0	
Confl. Peds. (#/hr)	3			3		
Confl. Bikes (#/hr)				18		4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	702	635	181	339	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	702	635	181	339	73
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	Loit	6.0	5.0	. agric	10.0	. ugin
Link Offset(m)		0.0	0.0		0.0	
		2.0	2.0		2.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	18.6	93.0	93.0	18.6	18.6	18.6
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)	18.6	5.5	5.5	18.6	18.6	18.6
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)		87.5	87.5			
Detector 2 Size(m)		5.5	5.5			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Prot	Perm
	1 6111			- Chin		I CIIII
Protected Phases	•	2	6	<u>^</u>	4	4
Permitted Phases	2	-		6		4
Detector Phase	2	2	6	6	4	4
Switch Phase						

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	68.0	68.0	68.0	68.0	32.0	32.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.8	1.2	1.8	1.8	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag	0.0	0.0	0.0	0.0	0.2	0.2
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	S.U Max	S.U Max	S.U Max	S.U Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	3	3	0	0
Act Effct Green (s)	62.1	62.1	62.1	62.1	14.7	14.7
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.17	0.17
v/c Ratio	0.14	0.31	0.28	0.17	0.64	0.24
Control Delay	6.1	5.9	5.8	1.3	40.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	5.9	5.8	1.3	40.5	10.1
LOS	А	А	А	А	D	В
Approach Delay		6.0	4.8		35.1	
Approach LOS		А	А		D	
Queue Length 50th (m)	3.2	19.0	16.7	0.0	25.9	0.0
Queue Length 95th (m)	8.9	32.0	28.4	5.8	37.9	9.9
Internal Link Dist (m)		73.9	319.0		59.8	
Turn Bay Length (m)				100.0		
Base Capacity (vph)	494	2295	2295	1042	927	472
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	0.14	0.31	0.28	0.17	0.37	0.15
Intersection Summary						
Area Type:	Other					
Cycle Length: 100	Other					
Actuated Cycle Length: 89						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
	ordinated					
Maximum v/c Ratio: 0.64	E			ما	toroation	
Intersection Signal Delay: 11.					itersection	
Intersection Capacity Utilization	011 52.2%			IC	CU Level o	I Service A
Analysis Period (min) 15						
Splits and Phases: 1: Terry	Fox & Kanata	a				
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		5	•	•	1
Traffic Volume (vph)	76	120	20	231	292	26
Future Volume (vph)	76	120	20	231	292	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
	1		45.0			03.0
Storage Lanes		0	-			1
Taper Length (m)	10.0		30.0		4.00	4.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.917					0.850
Flt Protected	0.981		0.950			
Satd. Flow (prot)	1559	0	1647	1733	1733	1473
Flt Permitted	0.981		0.581			
Satd. Flow (perm)	1559	0	1007	1733	1733	1440
Right Turn on Red	1000	Yes	1007		1100	Yes
Satd. Flow (RTOR)	98	100				26
				50	F0	20
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	76	120	20	231	292	26
Shared Lane Traffic (%)				• ·		
Lane Group Flow (vph)	196	0	20	231	292	26
Enter Blocked Intersection	No	No	No	No	No	No
	Left		Left	Left	Left	
Lane Alignment		Right	Leit			Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	0.0		0.0	87.5	87.5	0.0
				67.5 5.5		
Detector 2 Size(m)					5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase			-	-	v	Ū
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1	LDR	29.7	29.7	29.7	29.7
Total Split (s)	27.0		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		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
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		0.0	0.0	0.0	0.0
Act Effct Green (s)	11.7		49.5	49.5	49.5	49.5
Actuated g/C Ratio	0.16		0.69	0.69	0.69	0.69
v/c Ratio	0.10		0.03	0.09	0.05	0.03
Control Delay	21.3		4.5	4.9	5.2	2.1
Queue Delay	0.0		4.5	4.9	0.0	0.0
Total Delay	21.3		4.5	4.9	5.2	2.1
LOS	21.3 C		4.5 A	4.9 A	J.2 A	2.1 A
Approach Delay	21.3		A	4.9	5.0	A
Approach LOS	21.3 C			4.9 A	5.0 A	
Queue Length 50th (m)	10.6		0.6	7.7	10.1	0.0
Queue Length 95th (m)	26.9		2.8	18.8	24.0	2.1
Internal Link Dist (m)	199.0		2.0	315.7	142.2	Z. I
	199.0		45.0	315.7	142.2	65.0
Turn Bay Length (m)	E10			1101	1101	
Base Capacity (vph)	543		692	1191	1191	998
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	0.36		0.03	0.19	0.25	0.03
Intersection Summary						
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 72						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.59						
Intersection Signal Delay: 9.7	1			In	tersection	LOS: A
Intersection Capacity Utilizat	ion 38.8%					f Service A
Analysis Period (min) 15						001110071
Splits and Phases: 2: Kana	ata & Huntsville	•				
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3: Terry Fox & Tillsonburg AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	772	673	35	0	25
Future Volume (vph)	0	772	673	35	0	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	772	673	35	0	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	772	673	35	0	25
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	0	0.0	U ·
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 29.6%			IC	U Level of	Service A

Intersection Capacity Utili Analysis Period (min) 15 on 29.6% CU Level of Service A

1: Terry Fox & Kanata PM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations			<u></u>	<u>**</u>	7	<u></u>	7	
Traffic Volume (vph)	2) 97	TT 946	TT 917			63	
	3				359	275		
Future Volume (vph)	3	97	946	917	359	275	63	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	
Storage Length (m)		0.0			100.0	0.0	0.0	
Storage Lanes		1			1	2	1	
Taper Length (m)		45.0				80.0		
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor		1.00			0.97		0.99	
Frt					0.850		0.850	
Flt Protected		0.950				0.950		
Satd. Flow (prot)	0	1696	3390	3390	1517	3195	1473	
It Permitted		0.295				0.950		
Satd. Flow (perm)	0	526	3390	3390	1478	3195	1453	
Right Turn on Red					Yes		Yes	
Satd. Flow (RTOR)					359		63	
Link Speed (k/h)			70	70		50		
Link Distance (m)			97.9	343.0		83.8		
Travel Time (s)			5.0	17.6		6.0		
Confl. Peds. (#/hr)		1	5.0	17.0	1	0.0		
Confl. Bikes (#/hr)		1			5		2	
Peak Hour Factor	1.00	1.00	1.00	1.00	с 1.00	1.00	1.00	
	0%	2%	1.00	2%	1.00	1.00 5%	1.00 5%	
Heavy Vehicles (%)								
Adj. Flow (vph)	3	97	946	917	359	275	63	
Shared Lane Traffic (%)	•	100	0.40	0.17	0.50	075	00	
Lane Group Flow (vph)	0	100	946	917	359	275	63	
Enter Blocked Intersection	No	No	No	No	No	No	No	
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right	
Median Width(m)			6.0	5.0		10.0		
Link Offset(m)			0.0	0.0		0.0		
Crosswalk Width(m)			2.0	2.0		2.0		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	14	24			14	24	14	
Number of Detectors	1	1	2	2	1	1	1	
Detector Template	Left	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Trailing Detector (m)	0.0	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 18.6	
Detector 1 Size(m)	18.6	18.6	5.5 CL Ex	5.5 CL Ex	18.6	18.6		
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)			87.5	87.5				
Detector 2 Size(m)			5.5	5.5				
Detector 2 Type			CI+Ex	Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)			0.0	0.0				
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases			2	6		4		
Permitted Phases	2	2	2	0	6	4	4	
					6			
Detector Phase	2	2	2	6	6	4	4	

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1: Terry Fox & Kanata PM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	68.0	68.0	68.0	68.0	68.0	32.0	32.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	1	1	0	0
Act Effct Green (s)		62.4	62.4	62.4	62.4	12.9	12.9
Actuated g/C Ratio		0.71	0.71	0.71	0.71	0.15	0.15
v/c Ratio		0.27	0.39	0.38	0.31	0.59	0.24
Control Delay		7.1	5.8	5.7	1.3	40.0	11.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		7.1	5.8	5.7	1.3	40.0	11.2
LOS		A	A	A	A	D	В
Approach Delay			5.9	4.5		34.6	_
Approach LOS			A	A		С	
Queue Length 50th (m)		4.6	25.4	24.3	0.0	20.5	0.0
Queue Length 95th (m)		12.5	39.9	38.2	6.9	31.3	9.5
Internal Link Dist (m)			73.9	319.0		59.8	
Turn Bay Length (m)					100.0		
Base Capacity (vph)		375	2418	2418	1157	942	472
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	Ũ	0	0
Reduced v/c Ratio		0.27	0.39	0.38	0.31	0.29	0.13
		Ψ.Ε.I	5.00	5.00	0.01	0.20	0.10
Intersection Summary							
Area Type:	Other						
Cycle Length: 100							
Actuated Cycle Length: 87.5							
Natural Cycle: 60							
Control Type: Actuated-Uncoc	ordinated						
Maximum v/c Ratio: 0.59							
Intersection Signal Delay: 8.9					tersection		
Intersection Capacity Utilization	n 58.6%			IC	CU Level of	Service B	
Analysis Period (min) 15							
Splits and Phases: 1: Terry	Fox & Kanata	а					
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	. Y		ሻ	↑	•	1
Traffic Volume (vph)	49	64	82	375	275	58
Future Volume (vph)	49	64	82	375	275	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
Storage Lanes	1	0.0	-0.0			1
		U	30.0			1
Taper Length (m)	10.0	1.00		1.00	1.00	1 00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.924					0.850
Flt Protected	0.979		0.950			
Satd. Flow (prot)	1568	0	1647	1733	1733	1473
Flt Permitted	0.979		0.590			
Satd. Flow (perm)	1568	0	1023	1733	1733	1440
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	64					58
Link Speed (k/h)	04 50			50	50	
				339.7	166.2	
Link Distance (m)	223.0					
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	64	82	375	275	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	82	375	275	58
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7		_010	3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
Two way Left Turn Lane	1.00	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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
			CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Type	CI+Ex		UI+EX	U+EX	U+EX	CI+EX
Detector 1 Channel	~ ~ ~		~ ~ ~	~ ~	~ ~ ~	~ ~
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel				<u>.</u>	J. <u>-</u> A	
Detector 2 Extend (s)				0.0	0.0	
	Drot		Dorm			Dorm
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7
Total Split (s)	27.0		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	0.1		0.1	0.1	0.1	0.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	S.U Max
	7.0					
Walk Time (s)			15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	10.4		53.9	53.9	53.9	53.9
Actuated g/C Ratio	0.15		0.76	0.76	0.76	0.76
v/c Ratio	0.40		0.11	0.28	0.21	0.05
Control Delay	18.1		4.0	4.5	4.1	1.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.1		4.0	4.5	4.1	1.3
LOS	В		А	А	А	А
Approach Delay	18.1			4.4	3.6	
Approach LOS	В			А	А	
Queue Length 50th (m)	5.2		2.6	13.8	9.5	0.0
Queue Length 95th (m)	16.9		6.5	25.4	18.0	2.5
Internal Link Dist (m)	199.0			315.7	142.2	
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	531		778	1319	1319	1110
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		Ũ	Ũ	Ũ	0
Reduced v/c Ratio	0.21		0.11	0.28	0.21	0.05
	0.21		0.11	0.20	5.21	0.00
Intersection Summary	Other					
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 70.8						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.40						
Intersection Signal Delay: 5.8					tersection	
Intersection Capacity Utilizati	on 45.7%			IC	CU Level of	Service A
Analysis Period (min) 15						
Splits and Phases: 2: Kana	ata & Huntsville)				
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3: Terry Fox & Tillsonburg PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u></u>	<u></u>	1		1
Traffic Volume (vph)	0	1046	867	116	0	11
Future Volume (vph)	0	1046	867	116	0	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted	•					
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)	•	50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1046	867	116	0	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1046	867	116	0	11
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ŭ	0.0	J
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 35.3%			IC	U Level of	Service A

Analysis Period (min) 15

1: Terry Fox & Kanata SAT Peak Hour

Satal. Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 312 70 50 70 50 Link Speed (k/h) 97.9 343.0 83.8 70 50 Confl. Peds. (#/hr) 1 1 1 70 50 20 Peak Hour Factor 1.00		_						,	
Lane Configurations A A F F F Traffic Volume (vph) 3 74 548 641 312 274 70 Idda I Flow (vph) 1800 100 100 100 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 1800 177 183 1473			•	-	-	•	×	-	
Lane Configurations A A F A F A F F Traffic Volume (vph) 3 74 548 641 312 274 70 Ideal Flow (vph) 1800 <		EDII	EDI	EDT			CDI	CDD	
Traffic Volume (vph) 3 74 548 641 312 274 70 Future Volume (vph) 1 70 1800	· · · · · · · · · · · · · · · · · · ·	EBO							_
Future Volume (vph) 3 74 548 641 312 274 70 ideal Flow (vphpl) 1800 173 173 175		2							
Ideal Flow (vphp) 1800 100.0 0.0 0.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Storage Langs 1 100.0 0.0 0.0 Storage Langs 1 1 2 1 Taper Length (m) 45.0 80.0 - Lane Util, Factor 0.95 1.00 0.95 1.00 0.97 1.00 Ped Bike Factor 1.00 0.95 0.95 0.860 0.850 0.850 Fit Protected 0.950 3390 3390 1473 3195 1473 Stat, Flow (prot) 0 1696 3390 3390 1478 3195 1453 Stat, Flow (prot) 0 728 3390 3390 1478 3195 1453 Stat, Flow (RDR) 70 70 50 77.6 6.0 0 100 1.00 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>									
Storage Lanes 1 1 2 1 Taper Length (m) 45.0 80.0 Lane Util, Factor 0.35 1.00 0.97 0.99 Ped Bike Factor 1.00 0.950 0.950 0.850 Fit Protected 0.950 0.950 0.950 0.950 Satd, Flow (port) 0 1696 3390 3390 1517 3195 1473 Satd, Flow (perm) 0 728 3390 3390 1478 3195 1473 Satd, Flow (perm) 0 728 3390 3390 1478 3195 1473 Satd, Flow (perm) 0 728 3390 343.0 83.8 1 Confl. Peds, (#hr) 1 2 1		1800		1800	1800				
Tape Length (m) 45.0 80.0 Lane Ulii, Factor 0.95 1.00 0.95 1.00 0.97 1.00 Ped Bike Factor 1.00 0.950 0.950 0.950 0.950 Fit Protected 0.950 0.950 0.950 0.950 Stat. File V(port) 0 1696 3390 1317 3195 1473 0.950 Stat. File V(port) 0 728 3390 1347 3195 1473 0.950 Stat. File V(port) 0 728 3390 3390 1478 3195 1473 Stats Travel Time (s) 5.0 17.6 6.0 Conf. Bikes (#/hr) 1 1 Conf. Bikes (#/hr) 1 1 Conf. Bikes (#/hr) 1.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Lane Util. Factor 0.95 1.00 0.95 0.95 1.00 0.97 1.00 Ped Bike Factor 1.00 0.95 0.95 1.00 0.97 0.99 Fit Protected 0.950 0.850 0.950 Satd. Flow (prot) 0 1696 3390 3390 1517 3195 1473 Satd. Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red 797.9 343.0 83.8 Satd. Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Peds, (#/hr) 1 1 1 Confl. Bikes (#/hr) 5 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Link Distance (m) 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Peds, (#/hr) 1 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Lane Group Flow (vph) 0 77 548 641 312 274 70 Shared Lane Traffic (%) Lane Group Flow (vph) 0 77 548 641 312 274 70 Shared Lane Traffic (%) Lane Group Flow (vph) 0 77 548 641 312 274 70 Crosswalk Width(m) 6.0 5.0 10.0 Crosswalk Width(m) 2.0 2.0 2.0 2.0 Crosswalk Width(m) 2.0 2.0 2.0 Crosswalk Width(m) 14 24 14 24 14 Number of Detectors 1 1 2 2 1 1 1 Detector Template Left Inru Thru Right Left Right Leading Detector (m) 0.0 0.0 0.0 Crosswalk Width(m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Trailing Detector (m) 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 Detector 1 Size(m) 18.6 18.6 18.6 18.6 18.6 Detector 1 Chanel Detector 1 Detectors 1 1 2 2 1 1 1 Detector Template Left Inru Thru Right Left Right Leading Detector (m) 0.0 0.0 0.0 0.0 0.0 Do 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 Detector 1 Position(m) 0.0 0.0 0.0 0.0 D			-			1		1	
Ped Bike Factor 1.00 0.97 0.99 Fit 0.850 0.850 0.850 Fit Protected 0.950 0.950 0.950 Satd, Flow (prot) 0 1696 3390 3390 1517 3195 1473 Satd, Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red Yes Yes Yes Yes Yes Satd, Flow (RTOR) 70 70 50 70 50 70 Link Speed (k/h) 70 70 50 70 50 70 Confl. Peds. (#/hr) 1 1 1 70 70 50 70 Confl. Resk (#/hr) 1 1 1 1 70 70 53 73 Adj, Flow (yoph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 0 0 0 0 0 0 0									
Fit 0.850 0.850 FIP rotected 0.950 0.950 Stid Flow (port) 0 1696 3390 1317 3195 1473 Stid Flow (perm) 0 728 3390 3390 1478 3195 1453 Stid Flow (perm) 0 728 3390 3390 1478 3195 1453 Stid Flow (RTOR) 312 70 50 17.6 6.0 1 1 1 1 1 2 2 2 2 5% 5% 5% 5% 5% 5% 40 1.00		0.95		0.95	0.95		0.97		
Fit Protected 0.950 0.950 Satd. Flow (port) 0 1696 3390 3390 1317 3195 1473 Riph Turn on Red 0.408 0.950 0.950 0.950 0.950 Satd. Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red 70 70 50 70 50 11.6 60. 0.00 0.00 0.00 83.8 1722 70 100 1.00			1.00						
Satd. Flow (prot) 0 1696 3390 3390 1517 3195 1473 FI Permitted 0.408 0.950						0.850		0.850	
Fit Permitted 0.408 0.950 Satd. Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red 728 3390 3390 1478 3195 1453 Right Turn on Red 70 70 70 70 70 Link Speed (k/h) 70 70 50 70 Link Speed (k/h) 5.0 17.6 6.0 Confl. Peds. (#/hr) 1 1 70 Confl. Peds. (#/hr) 1 1.00 1.00 1.00 1.00 Canfl. Peds. (#/hr) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 3 74 548 641 312 274 70 Lane Group Flow (vph) 0 77 548 641 312 274 70 Lane Alignment R NA Left Left Reft Right Left Right Left Right Left Right Left Right Left Right Left Right Lef									
Satd. Flow (perm) 0 728 3390 3390 1478 3195 1453 Right Turn on Red Yes Yes Yes Yes Yes Satd. Flow (RTOR) 70 70 50	Satd. Flow (prot)	0		3390	3390	1517		1473	
Right Turn on Red Yes Yes Satd. Flow (RTOR) 312 70 Link Speed (k/h) 70 70 50 Link Distance (m) 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Bikes (#/hr) 1 1 1 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Peak Hour Factor 1.00 0.00 1.00 1.00 1.00 1.00 1.00 Lane Group Flow (vph) 3 74 548 641 312 274 70 Shared Lane Taffic (%) Lane Group Flow (vph) 0 77 548 641 312 274 70 Enter Blocked Intersection No No No No No No No Lane Group Flow (vph) 0 77 548 641 312 274 70 Enter Blocked Intersection No No No No No No No No Lane Alignment RNA Left	Flt Permitted								
Said. Flow (RTOR) 312 70 Link Speed (k/h) 70 70 50 Link Distance (m) 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Peds. (#/hr) 1 1 1 Confl. Bikes (#/hr) 1 1 1 Confl. Sikes (#/hr) 1 1 0 1.00 Heavy Vehicles (%) 0% 2% 2% 2% 5% Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%)	Satd. Flow (perm)	0	728	3390	3390	1478	3195	1453	
Link Speed (k/h) 70 70 50 Link Distance (m) 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Peds. (#/hr) 1 1 1 Confl. Bikes (#/hr) 5 2 Peak Hour Factor 1.00 <td< td=""><td>Right Turn on Red</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Right Turn on Red								
Link Speed (k/h) 70 70 50 Link Distance (m) 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Peds. (#/hr) 1 1 1 Confl. Bikes (#/hr) 5 2 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Adj, Flow (ryh) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 3 74 548 641 312 274 70 Enter Blocked Intersection No No No No No No No No Link Offset(m) 0.0 0.0 0.0 0.0 0.0 1.00 1.06 <t< td=""><td>Satd. Flow (RTOR)</td><td></td><td></td><td></td><td></td><td>312</td><td></td><td>70</td><td></td></t<>	Satd. Flow (RTOR)					312		70	
Link Distance (m) 97.9 343.0 83.8 Travel Time (s) 5.0 17.6 6.0 Confl. Peds. (#/hr) 1 1 1 Confl. Bikes (#/hr) 1.00 1.00 1.00 1.00 1.00 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 0% 2% 2% 2% 5% 5% Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) Lane Group Flow (vph) 0 77 548 641 312 274 70 Eane Group Flow (vph) 0 77 548 641 312 274 70 Eane Group Flow (vph) 0 77 548 641 312 274 70 Lane Alignment R NA Left Left Right Left Right Left Right Left Right Left Right Left <td>Link Speed (k/h)</td> <td></td> <td></td> <td>70</td> <td>70</td> <td></td> <td>50</td> <td></td> <td></td>	Link Speed (k/h)			70	70		50		
Travel Time (s) 5.0 17.6 6.0 Confl. Peds. (#/hr) 1 1 1 Confl. Bikes (#/hr) 5 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Peak Hour Factor 1.00 0% 2% 2% 2% 5% 5% Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 2 2 2% 2% 5% 5% Lane Group Flow (vph) 0 77 548 641 312 274 70 Enter Blocked Intersection No No No No No No No No Lane Alignment R NA Left Left Left Right Left Right Mcdian Width(m) 2.0 2.0 2.0 Corresswalk Width(m) 2.0 2.0 Turming Speed (k/h) 14 24 14 24 14 24 Number of Detectors 1 2 2 1 1 <				97.9	343.0		83.8		
Confl. Peds. (#/hr) 1 1 1 Confl. Bikes (#/hr) 5 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 0% 2% 2% 2% 5% 5% Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 2 77 548 641 312 274 70 Eane Group Flow (vph) 0 77 548 641 312 274 70 Eane Alignment R NA Left Left Right Left Right Left Right Left Right Left Right Left Right Mo No									
Confl. Bikes (#/hr) 5 2 Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Heavy Vehicles (%) 0% 2% 2% 2% 5% 5% Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 0 77 548 641 312 274 70 Enter Blocked Intersection No No <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td>			1			1			
Peak Hour Factor 1.00								2	
Heavy Vehicles (%) 0% 2% 2% 2% 5% 5% Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 0 77 548 641 312 274 70 Enter Blocked Intersection No State State State State State		1.00	1.00	1.00	1.00		1.00		
Adj. Flow (vph) 3 74 548 641 312 274 70 Shared Lane Traffic (%) 0 77 548 641 312 274 70 Enter Blocked Intersection No No <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Shared Lane Traffic (%) Image: Constraint of the section									
Lane Group Flow (vph) 0 77 548 641 312 274 70 Enter Blocked Intersection No No <t< td=""><td></td><td>Ŭ</td><td>,,</td><td>010</td><td>011</td><td>012</td><td>211</td><td>10</td><td></td></t<>		Ŭ	,,	010	011	012	211	10	
Enter Blocked Intersection No No No No No No No No Lane Alignment R NA Left Left Left Right Left Right Left Right Left Right Median Width(m) 0.0 0.0 0.0 0.0 0.0 0.0 Crosswalk Width(m) 2.0		0	77	548	641	312	274	70	
Lane Alignment R NA Left Left Left Right Left Right Median Width(m) 6.0 5.0 10.0 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane									
Median Width(m) 6.0 5.0 10.0 Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane 106 1.06 1.06 1.06 1.06 Turning Speed (k/h) 14 24 14 24 14 Number of Detectors 1 1 2 2 1 1 Detector Template Left Left Thru Thru Right Left Right Leading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Detector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 Detector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 Detector 1 Size(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Detector 1 Queue (s) 0.0 0.0 0.0									
Link Offset(m) 0.0 0.0 0.0 Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane		N NA	Leit			Night		Night	
Crosswalk Width(m) 2.0 2.0 2.0 Two way Left Turn Lane 1.06 1.00 0.0 0.0 <									
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 14 24 14 Number of Detectors 1 1 2 2 1 1 1 Detector Template Left Left Thru Thru Right Left Right Leading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Trailing Detector (m) 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) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 Detector 1 Type Cl+Ex C									
Headway Factor 1.06 1.00 1.00 1.00<				2.0	2.0		2.0		
Turning Speed (k/h) 14 24 14 24 14 Number of Detectors 1 1 2 2 1 1 1 Detector Template Left Left Thru Thru Right Left Right Leading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Trailing Detector (m) 0.0		4 00	4.00	4.00	4.00	4.00	4.00	4.00	
Number of Detectors 1 1 2 2 1 1 1 Detector Template Left Left Thru Thru Right Left Right Leading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Trailing Detector (m) 0.0				1.06	1.06				
Detector Template Left Left Thru Thru Right Left Right Leading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Trailing Detector (m) 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 Detector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 Detector 1 Type Cl+Ex Cl+Ex <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Leading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 Trailing Detector (m) 0.0						-			
Trailing Detector (m) 0.0									
Detector 1 Position(m) 0.0	Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Detector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 Detector 1 Type CI+Ex O.0 0.0 <td< td=""><td>Trailing Detector (m)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Trailing Detector (m)								
Detector 1 Type CI+Ex CI	Detector 1 Position(m)								
Detector 1 Channel Detector 1 Extend (s) 0.0 <	Detector 1 Size(m)								
Detector 1 Channel Detector 1 Extend (s) 0.0 <	Detector 1 Type								
Detector 1 Extend (s) 0.0	Detector 1 Channel								
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									
Detector 2 Position(m) 87.5 87.5 Detector 2 Size(m) 5.5 5.5 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Perm Perm NA NA Perm Protected Phases 2 6 4									
Detector 2 Size(m) 5.5 5.5 Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Perm Perm NA NA Perm Perm Protected Phases 2 6 4 Permitted Phases 2 2 6 4		0.0	0.0			0.0	0.0	0.0	
Detector 2 Type CI+Ex CI+Ex Detector 2 Channel 0.0 0.0 Detector 2 Extend (s) 0.0 0.0 Turn Type Perm Perm NA NA Perm Protected Phases 2 6 4 Permitted Phases 2 2 6 4									
Detector 2 Channel Detector 2 Extend (s) 0.0 Turn Type Perm Protected Phases 2 6 Permitted Phases 2 6 4									
Detector 2 Extend (s) 0.0 0.0 Turn Type Perm Perm NA NA Perm Perm Protected Phases 2 6 4 Permitted Phases 2 6 4									
Turn TypePermPermNANAPermProtPermProtected Phases264Permitted Phases2264				0.0	0.0				
Protected Phases 2 6 4 Permitted Phases 2 2 6 4		Dorm	Dorm			Dorm	Drot	Dorm	
Permitted Phases 2 2 6 4		Perm	Perm			Perm		Perm	
		~	0	2	6		4	4	
Detector Phase 2 2 2 6 6 4 4				•	•				
	Detector Phase	2	2	2	6	6	4	4	

J.Audia, Novatech

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						JDL	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	58.0	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag		0.0	0.0	0.0	0.0	0.2	0.2
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	12.0	12.0	12.0	12.0	12.0	10.0	10.0
Act Effct Green (s)	U	52.8	52.8	52.8	52.8	13.8	13.8
()							
Actuated g/C Ratio		0.67 0.16	0.67 0.24	0.67 0.28	0.67 0.29	0.18 0.49	0.18 0.23
v/c Ratio							
Control Delay		7.2	6.1	6.4	1.7	31.9	8.8
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		7.2	6.1	6.4	1.7	31.9	8.8
LOS Approach Delay		А	A	A	А	C	А
Approach Delay			6.3	4.8		27.2	
Approach LOS		2.0	A	A	0.0	C	0.0
Queue Length 50th (m)		3.0	12.0	14.4	0.0	17.4	0.0
Queue Length 95th (m)		11.7	28.8	34.2	9.0	26.8	8.5
Internal Link Dist (m)			73.9	319.0	400.0	59.8	
Turn Bay Length (m)		107	0074	0074	100.0	4050	504
Base Capacity (vph)		487	2271	2271	1093	1050	524
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		0.16	0.24	0.28	0.29	0.26	0.13
Intersection Summary							
	Other						
Cycle Length: 90							
Actuated Cycle Length: 78.8							
Natural Cycle: 60							
Control Type: Actuated-Uncoor	rdinated						
Maximum v/c Ratio: 0.49							
Intersection Signal Delay: 9.3				In	tersection	LOS: A	
Intersection Capacity Utilization	า 50.5%			IC	CU Level of	Service A	
Analysis Period (min) 15							
Splits and Phases: 1: Terry I	Fox & Kanata	а					
3A							1
→ Ø2						_	
58 s							32 s
<u>↓</u>							1
Ø6							

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		5	•	•	1
Traffic Volume (vph)	68	65	51	335	279	82
Future Volume (vph)	68	65	51	335	279	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
	0.0	0.0	45.0			05.0
Storage Lanes		U				
Taper Length (m)	10.0	4.00	30.0	4 00	4 00	4 00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.934					0.850
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1578	0	1647	1733	1733	1473
Flt Permitted	0.975		0.588			
Satd. Flow (perm)	1578	0	1019	1733	1733	1440
Right Turn on Red	1010	Yes		.,	.,	Yes
Satd. Flow (RTOR)	65	100				82
	50			50	50	02
Link Speed (k/h)						
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	68	65	51	335	279	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	51	335	279	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
	3.7	Ngni	Leit	3.7	3.7	Right
Median Width(m)						
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
	0.0		0.0	93.0	93.0	0.0
Trailing Detector (m)						
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	0.0		0.0	87.5	87.5	0.0
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase			2	2	0	0
	10.0		10.0	10.0	10.0	10.0
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7
Total Split (s)	27.0		43.0	43.0	43.0	43.0
Total Split (%)	38.6%		61.4%	61.4%	61.4%	61.4%
Maximum Green (s)	21.9		37.3	37.3	37.3	37.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	0.1		0.1	0.1	0.1	0.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		9.0	9.0	9.0	9.0
Act Effct Green (s)	10.4		42.8	42.8	42.8	42.8
Actuated g/C Ratio	0.17		42.0 0.72	42.0 0.72	42.0 0.72	42.0 0.72
v/c Ratio	0.17		0.72	0.72	0.72	0.72
Control Delay	16.3 0.0		4.5	5.2	4.9	1.5
Queue Delay			0.0	0.0	0.0	0.0
Total Delay	16.3		4.5	5.2	4.9	1.5
LOS	B		А	A	A	А
Approach Delay	16.3			5.1	4.1	
Approach LOS	B		4.0	A	A	0.0
Queue Length 50th (m)	5.8		1.6	12.0	9.6	0.0
Queue Length 95th (m)	17.4		4.8	23.7	19.5	3.3
Internal Link Dist (m)	199.0		4- 0	315.7	142.2	6 - 6
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	620		730	1241	1241	1054
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	0.21		0.07	0.27	0.22	0.08
Intersection Summary						
Area Type:	Other					
Cycle Length: 70						
Actuated Cycle Length: 59.	7					
Natural Cycle: 60	-					
Control Type: Actuated-Un	coordinated					
Maximum v/c Ratio: 0.41						
Intersection Signal Delay: 6	6.4			In	tersection	LOS' A
Intersection Capacity Utiliza					CU Level o	
Analysis Period (min) 15						
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Splits and Phases: 2: Ka	nata & Huntsville					
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3: Terry Fox & Tillsonburg SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	625	672	42	0	13
Future Volume (vph)	0	625	672	42	0	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	625	672	42	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	625	672	42	0	13
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	J	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	tion 29.6%			IC	U Level of	Service A
Analycic Poriod (min) 15						

Intersection Capacity Utili Analysis Period (min) 15

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	24	<u></u>	<u>^</u>	1	ሻሻ	1
Traffic Volume (vph)	73	905	735	189	353	76
Future Volume (vph)	73	905	735	189	353	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			100.0	0.0	0.0
Storage Lanes	1			100.0	2	1
Taper Length (m)	45.0			I	80.0	1
1 0 ()		0.05	0.05	1 00		1 00
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor	1.00			0.96		0.98
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1647	3293	3293	1473	3195	1473
Flt Permitted	0.363				0.950	
Satd. Flow (perm)	628	3293	3293	1417	3195	1451
Right Turn on Red	020			Yes		Yes
Satd. Flow (RTOR)				189		76
Link Speed (k/h)		70	70	109	50	10
Link Distance (m)		97.9	343.0		83.8	
Travel Time (s)		5.0	17.6		6.0	
Confl. Peds. (#/hr)	3			3		
Confl. Bikes (#/hr)				18		4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	73	905	735	189	353	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	905	735	189	353	76
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
	Leit		5.0	Right		Right
Median Width(m)		6.0			10.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	18.6	93.0	93.0	18.6	18.6	18.6
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)	18.6	5.5	5.5	18.6	18.6	18.6
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)	0.0	87.5	87.5	0.0	0.0	0.0
Detector 2 Size(m)		5.5	5.5			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0	_	_	_
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2			6		4
Detector Phase	2	2	6	6	4	4
Switch Phase	-	-	v	v		
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	68.0	68.0	68.0	68.0	32.0	32.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.2	1.8	1.8	1.8	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag	0.0	0.0	0.0	0.0	0.2	0.2
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	7.0 18.0	7.0 18.0
	12.0	12.0	12.0	12.0	10.0 0	10.0
Pedestrian Calls (#/hr)					0 15.2	0 15.2
Act Effct Green (s)	62.1	62.1	62.1	62.1		
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.17	0.17
v/c Ratio	0.17	0.40	0.32	0.18	0.65	0.25
Control Delay	6.7	6.8	6.2	1.3	40.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	6.8	6.2	1.3	40.6	9.9
LOS	A	A	A	A	D	A
Approach Delay		6.8	5.2		35.1	
Approach LOS	_	А	А		D	
Queue Length 50th (m)	3.4	27.2	20.5	0.0	27.1	0.0
Queue Length 95th (m)	9.7	44.7	34.4	6.0	39.4	10.1
Internal Link Dist (m)		73.9	319.0		59.8	
Turn Bay Length (m)				100.0		
Base Capacity (vph)	435	2284	2284	1041	922	472
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	0.17	0.40	0.32	0.18	0.38	0.16
Intersection Summary						
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 89.5						
Natural Cycle: 60						
Control Type: Actuated-Uncoc	ordinated					
Maximum v/c Ratio: 0.65						
Intersection Signal Delay: 11.4	1			In	tersection	LOS: B
Intersection Capacity Utilization					CU Level o	
Analysis Period (min) 15						
Splits and Phases: 1: Terry	Fox & Kanat	а				
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		400	1	140	200	
Traffic Volume (vph)	76	120	20	242	309	26
Future Volume (vph)	76	120	20	242	309	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0			65.0
Storage Lanes	1	0	1			1
Taper Length (m)	10.0		30.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.917					0.850
Flt Protected	0.981		0.950			
Satd. Flow (prot)	1559	0	1647	1733	1733	1473
Flt Permitted	0.981	-	0.572			
Satd. Flow (perm)	1559	0	991	1733	1733	1440
Right Turn on Red	1000	Yes	531	1100	1100	Yes
	98	162				26
Satd. Flow (RTOR)				50	50	20
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	76	120	20	242	309	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	0	20	242	309	26
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
		Right	Leit		2.7	Right
Median Width(m)	3.7			3.7		
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel				0.0		
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
	4		0	2	U	6
Permitted Phases			2	•	•	6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7
Total Split (s)	20.1		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		47.5	47.3	47.5	47.5
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
	0.0		0.0	0.0	0.0	0.0
Lost Time Adjust (s)					0.0 5.7	
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag						
Lead-Lag Optimize?	0.0		0.0	0.0	0.0	0.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	11.7		49.5	49.5	49.5	49.5
Actuated g/C Ratio	0.16		0.69	0.69	0.69	0.69
v/c Ratio	0.59		0.03	0.20	0.26	0.03
Control Delay	21.3		4.5	5.0	5.3	2.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	21.3		4.5	5.0	5.3	2.1
LOS	С		А	А	А	А
Approach Delay	21.3			5.0	5.1	
Approach LOS	С			А	А	
Queue Length 50th (m)	10.6		0.6	8.1	10.8	0.0
Queue Length 95th (m)	26.9		2.8	19.7	25.4	2.1
Internal Link Dist (m)	199.0			315.7	142.2	
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	543		681	1191	1191	998
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	0.36		0.03	0.20	0.26	0.03
Intersection Summary	0.00		0.00	0.20	0.20	0.00
Area Type:	Other					
Cycle Length: 80	01101					
Actuated Cycle Length: 72						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.59						
Intersection Signal Delay: 9.7	1			In	Itersection	108.1
Intersection Signal Delay: 9. Intersection Capacity Utilizat	ion 38.8%					LOS: A f Service A
	1011 30.0%				O Level 0	Service A
Analysis Period (min) 15						
Splits and Phases: 2: Kana	ata & Huntsville					
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3: Terry Fox & Tillsonburg AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u></u>	<u></u>	1		*
Traffic Volume (vph)	0	978	776	35	0	25
Future Volume (vph)	0	978	776	35	0	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted	-					
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)	-	50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	978	776	35	0	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	978	776	35	0	25
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	J .	0.0	J •
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 32.6%			IC	U Level of	Service A

Analysis Period (min) 15

1: Terry Fox & Kanata PM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	EDU					<u></u> ካካ		
	2	101	↑↑ 1116	1142			6 5	
Traffic Volume (vph) Future Volume (vph)	3	101 101	1116	1143 1143	375 375	288 288	65 65	
	1800		1800	1800	1800	1800		
Ideal Flow (vphpl)	1800	1800 0.0	1800	1800	100.0	0.0	1800 0.0	
Storage Length (m)		0.0			100.0		0.0	
Storage Lanes					I	2 80.0	1	
Taper Length (m)	0.05	45.0	0.05	0.05	1.00		1 00	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor		1.00			0.97		0.99	
Frt		0.050			0.850	0.050	0.850	
Flt Protected	^	0.950	0000	0000	4547	0.950	4.470	
Satd. Flow (prot)	0	1696	3390	3390	1517	3195	1473	
Flt Permitted	^	0.222	0000	0000	4 470	0.950	4 4 5 0	
Satd. Flow (perm)	0	396	3390	3390	1478	3195	1453	
Right Turn on Red					Yes		Yes	
Satd. Flow (RTOR)					375		65	
Link Speed (k/h)			70	70		50		
Link Distance (m)			97.9	343.0		83.8		
Travel Time (s)			5.0	17.6		6.0		
Confl. Peds. (#/hr)		1			1		-	
Confl. Bikes (#/hr)					5		2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	2%	2%	2%	2%	5%	5%	
Adj. Flow (vph)	3	101	1116	1143	375	288	65	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	104	1116	1143	375	288	65	
Enter Blocked Intersection	No	No	No	No	No	No	No	
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right	
Median Width(m)			6.0	5.0		10.0		
Link Offset(m)			0.0	0.0		0.0		
Crosswalk Width(m)			2.0	2.0		2.0		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	14	24			14	24	14	
Number of Detectors	1	1	2	2	1	1	1	
Detector Template	Left	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Trailing Detector (m)	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	
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6	
Detector 1 Type	CI+Ex	Cl+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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)	0.0	0.0	87.5	87.5	0.0	0.0	0.0	
Detector 2 Size(m)			5.5	5.5				
Detector 2 Type			CI+Ex	CI+Ex				
Detector 2 Channel								
Detector 2 Extend (s)			0.0	0.0				
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases		i eiiii	2	6		4		
Permitted Phases	0	0	2	0	6	4	Λ	
	2	2 2	0	6	6	Λ	4	
Detector Phase	2	2	2	6	6	4	4	

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1: Terry Fox & Kanata PM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase	200					001	0011
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	68.0	68.0	68.0	68.0	68.0	32.0	32.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
()		0.0	0.0	0.0	0.0	0.2	0.2
Lead/Lag							
Lead-Lag Optimize?	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	1	1	0	0
Act Effct Green (s)		62.2	62.2	62.2	62.2	13.2	13.2
Actuated g/C Ratio		0.71	0.71	0.71	0.71	0.15	0.15
v/c Ratio		0.37	0.46	0.47	0.32	0.60	0.24
Control Delay		10.2	6.5	6.6	1.3	40.2	11.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		10.2	6.5	6.6	1.3	40.2	11.0
LOS		В	А	А	А	D	В
Approach Delay			6.8	5.3		34.8	
Approach LOS			А	А		С	
Queue Length 50th (m)		5.3	32.7	34.0	0.0	21.6	0.0
Queue Length 95th (m)		16.2	51.0	52.8	7.2	32.7	9.5
Internal Link Dist (m)			73.9	319.0		59.8	
Turn Bay Length (m)					100.0		
Base Capacity (vph)		281	2408	2408	1158	941	473
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		0.37	0.46	0.47	0.32	0.31	0.14
		0.01	0.40	0.71	0.02	0.01	U. 17
Intersection Summary							
Area Type:	Other						
Cycle Length: 100							
Actuated Cycle Length: 87.6							
Natural Cycle: 70							
Control Type: Actuated-Unco	ordinated						
Maximum v/c Ratio: 0.60	Soramatoa						
Intersection Signal Delay: 9.3	3			In	tersection	LOS' A	
Intersection Capacity Utilizat						f Service C	
Analysis Period (min) 15							
Splits and Phases: 1: Terr	y Fox & Kanata	a					
±€#ø2							
68 s							

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		•)	I	•	-
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		٦	•	•	1
Traffic Volume (vph)	49	64	82	395	290	58
Future Volume (vph)	49	64	82	395	290	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
	0.0	0.0	45.0	1000	1000	65.0
Storage Length (m)						
Storage Lanes	1	0	1			1
Taper Length (m)	10.0		30.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.924					0.850
Flt Protected	0.979		0.950			
Satd. Flow (prot)	1568	0	1647	1733	1733	1473
Flt Permitted	0.979		0.582			
Satd. Flow (perm)	1568	0	1009	1733	1733	1440
Right Turn on Red	1000	Yes	1000	1700	1100	Yes
	64	100				58
Satd. Flow (RTOR)				50	50	20
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	64	82	395	290	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	82	395	290	58
Enter Blocked Intersection	No	No	No	No	No	No
			Left	Left		
Lane Alignment	Left	Right	Len		Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	0.0		0.0	87.5	87.5	0.0
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase	T		2	2	U	0
	40.0		10.0	10.0	10.0	10.0
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7
Total Split (s)	27.0		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	0.1		5.1	5.1	0.1	0.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
	7.0 14.0		9.0	9.0	9.0	9.0
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	10.4		53.9	53.9	53.9	53.9
Actuated g/C Ratio	0.15		0.76	0.76	0.76	0.76
v/c Ratio	0.40		0.11	0.30	0.22	0.05
Control Delay	18.1		4.0	4.6	4.1	1.3
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.1		4.0	4.6	4.1	1.3
LOS	В		А	А	А	А
Approach Delay	18.1			4.5	3.6	
Approach LOS	В			А	А	
Queue Length 50th (m)	5.2		2.6	14.7	10.0	0.0
Queue Length 95th (m)	16.9		6.6	27.1	19.1	2.5
Internal Link Dist (m)	199.0			315.7	142.2	
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	531		768	1319	1319	1110
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		Ũ	Ũ	Ũ	0
Reduced v/c Ratio	0.21		0.11	0.30	0.22	0.05
Intersection Summary						
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 70.8						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.40						
Intersection Signal Delay: 5.8	2			In	tersection	105.1
Intersection Capacity Utilizati						Service A
Analysis Period (min) 15						OCIVICE A
Calita and Dhassay Or Kan	ata 0 I kunta dilla					
Splits and Phases: 2: Kana	ata & Huntsville	9				
Ø2						
53 s						

3: Terry Fox & Tillsonburg PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	1220	1095	116	0	11
Future Volume (vph)	0	1220	1095	116	0	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1220	1095	116	0	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1220	1095	116	0	11
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	J	0.0	J
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 42.0%			ICI	J Level of	Service A

Analysis Period (min) 15

1: Terry Fox & Kanata SAT Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		2	† †	<u></u>	1	ካካ	1	
Traffic Volume (vph)	3	77	746	869	327	287	73	
Future Volume (vph)	3	77	746	869	327	287	73	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	
Storage Length (m)		0.0			100.0	0.0	0.0	
Storage Lanes		1			1	2	1	
Taper Length (m)		45.0				80.0		
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor		1.00			0.97		0.99	
Frt					0.850		0.850	
Flt Protected		0.950				0.950		
Satd. Flow (prot)	0	1696	3390	3390	1517	3195	1473	
Flt Permitted		0.308				0.950		
Satd. Flow (perm)	0	550	3390	3390	1478	3195	1453	
Right Turn on Red					Yes		Yes	
Satd. Flow (RTOR)					327		73	
Link Speed (k/h)			70	70		50		
Link Distance (m)			97.9	343.0		83.8		
Travel Time (s)			5.0	17.6		6.0		
Confl. Peds. (#/hr)		1			1			
Confl. Bikes (#/hr)					5		2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	0%	2%	2%	2%	2%	5%	5%	
Adj. Flow (vph)	3	77	746	869	327	287	73	
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	80	746	869	327	287	73	
Enter Blocked Intersection	No	No	No	No	No	No	No	
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right	
Median Width(m)			6.0	5.0	Ŭ	10.0	Ŭ	
Link Offset(m)			0.0	0.0		0.0		
Crosswalk Width(m)			2.0	2.0		2.0		
Two way Left Turn Lane								
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	14	24			14	24	14	
Number of Detectors	1	1	2	2	1	1	1	
Detector Template	Left	Left	Thru	Thru	Right	Left	Right	
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Trailing Detector (m)	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	
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6	
Detector 1 Type	CI+Ex	Cl+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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)	0.0	0.0	87.5	87.5	0.0	0.0	0.0	
Detector 2 Size(m)			5.5	5.5				
Detector 2 Type			CI+Ex	CI+Ex				
Detector 2 Channel			OFLA	OFLA				
Detector 2 Extend (s)			0.0	0.0				
Turn Type	Perm	Perm	NA	0.0 NA	Perm	Prot	Perm	
Protected Phases	I- CIIII	i eiiii	2	6	I CIIII	4	i enn	
Permitted Phases	0	0	2	0	6	4	Λ	
Detector Phase	2 2	2 2	2	6	6 6	4	4	
Delector Fliase	2	2	2	0	0	4	4	

LOS A A A A C A Approach Delay 6.9 5.7 27.3 Approach LOS A A C Queue Length 50th (m) 3.3 17.8 21.8 0.0 18.4 0.0 Queue Length 95th (m) 13.2 40.8 49.2 9.2 28.0 8.7 Internal Link Dist (m) 73.9 319.0 59.8 100.0 Base Capacity (vph) 367 2262 2262 1095 1051 527 Starvation Cap Reductn 0 <th></th> <th>4</th> <th>≯</th> <th>-</th> <th>+</th> <th>•</th> <th>1</th> <th>~</th>		4	≯	-	+	•	1	~
Switch Phase Minimum Initial (s) 10.0	Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s) 10.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td><u></u></td><td></td></td<>							<u></u>	
Minimum Split (s) 25.0 25.0 25.0 25.0 25.0 31.2 31.2 Total Split (s) 58.0 58.0 58.0 58.0 58.0 58.0 35.0 32.0 Total Split (s) 64.4% 64.4% 64.4% 64.4% 56.4% 55.0% 35.6% 35.8% 35.8% 37.3 AllRed Time (s) 4.2 4.2 4.2 4.2 4.2 4.2 4.2 3.7 3.7 AllRed Time (s) 1.8 <td< td=""><td></td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td><td>10.0</td></td<>		10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s) 58.0 58.0 58.0 58.0 58.0 32.0 32.0 Total Split (%) 64.4% 64.4% 64.4% 64.4% 64.4% 52.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Total Split (%) 64.4% 64.4% 64.4% 64.4% 35.6% 35.6% Maximum Green (s) 52.0 52.0 52.0 52.0 52.0 52.0 25.8 25.8 Vellow Time (s) 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 2.4 3.7 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
Maximum Green (s) 52.0 52.0 52.0 52.0 52.0 52.0 52.0 25.8 25.8 Yellow Time (s) 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lost Time (s) 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lost Time (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Lead/Lag Lead/Lag Vehicle Extension (s) 3.0								
Yellow Time (s) 4.2 4.2 4.2 4.2 4.2 3.7 3.7 All-Red Time (s) 1.8								
All-Red Time (s) 1.8 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lost Time Adjust (s) 0.0	· · · · · · · · · · · · · · · · · · ·							
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.								
Total Lost Time (s) 6.0 6.0 6.0 6.0 6.2 6.2 Lead/Lag Optimize? Vehicle Extension (s) 3.0		1.0						
Lead/Lag Optimize? Vehicle Extension (s) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 Recall Mode Max Max Max Max Max Max None None Walk Time (s) 7.0 7.0 7.0 7.0 7.0 7.0 7.0 Flash Dont Walk (s) 12.0 12.0 12.0 12.0 18.0 18.0 Pedestrian Calls (#/hr) 0 0 0 6 6 6 1 1 Act Effct Green (s) 52.5 52.5 52.5 52.5 52.5 13.9 13.9 Actuated g/C Ratio 0.67 0.67 0.67 0.67 0.18 0.18 v/c Ratio 0.22 0.33 0.38 0.30 0.51 0.23 Control Delay 8.4 6.8 7.2 1.7 32.0 8.7 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 8.4 6.8 7.2 1.7 32.0 8.7 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 8.4 6.8 7.2 1.7 32.0 8.7 Queue Length S0th (m) 3.3 17.8 21.8 0.0 18.4 0.0 Queue Length S0th (m) 13.2 40.8 49.2 9.2 28.0 8.7 Internal Link Dist (m) 73.9 319.0 59.8 Turn Bay Length (m) 132 40.8 49.2 9.2 28.0 8.7 Itar Bay Length (m) 1367 2262 2262 1095 1051 527 Starvation Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 Storage Cap Reductn 0 0 Storage Cap Reductn 0 Storage Cap Reductn 0 Control Type: Actuated-Uncoordinated Maximum v/c Ratio 0.51 Intersection Signal Delay: 9.4 Intersection Signal Delay: 9.4 Intersection Signal Delay: 9.4 Intersection Signal Delay: 9.4 Intersection LOS: A Intersection LOS: A Intersection LOS: A Intersection Signal Delay: 9.4 Intersection Signal Delay: 9.4 Intersection LOS: A Intersection LOS: A Intersection Signal Delay: 9.4 Intersection Signal D								
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Vehicle Extension (s) 3.0 3								
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Flash Dont Walk (s) 12.0 12.0 12.0 12.0 12.0 18.0 18.0 Pedestrian Calls (#/hr) 0 0 0 6 6 1 1 Act Effct Green (s) 52.5 52.5 52.5 52.5 52.5 13.9 13.9 Actuated g/C Ratio 0.67 0.67 0.67 0.67 0.18 0.18 0.18 vic Ratio 0.22 0.33 0.38 0.30 0.51 0.23 Control Delay 8.4 6.8 7.2 1.7 32.0 8.7 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 8.4 6.8 7.2 1.7 32.0 8.7 LOS A A A C A Approach LOS A A A C Queue Length 50th (m) 13.2 40.8 49.2 9.2 28.0 8.7 Internal Link Dist (m) 73.9 319.0 59.8 100.0 59.8 100.0 52.7 Starwation Cap Reductn								
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Queue Length 50th (m) 3.3 17.8 21.8 0.0 18.4 0.0 Queue Length 95th (m) 13.2 40.8 49.2 9.2 28.0 8.7 Internal Link Dist (m) 73.9 319.0 59.8 100.0 59.8 Turn Bay Length (m) 100.0 100.0 100.0 100.0 0								
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Turn Bay Length (m) 100.0 Base Capacity (vph) 367 2262 2262 1095 1051 527 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0	Queue Length 95th (m)		13.2			9.2		8.7
Turn Bay Length (m) 100.0 Base Capacity (vph) 367 2262 2262 1095 1051 527 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0	Internal Link Dist (m)			73.9	319.0		59.8	
Base Capacity (vph) 367 2262 2262 1095 1051 527 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 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 0 Storage Cap Reductn 0 </td <td>Turn Bay Length (m)</td> <td></td> <td></td> <td></td> <td></td> <td>100.0</td> <td></td> <td></td>	Turn Bay Length (m)					100.0		
Starvation Cap Reductin 0 <td>Base Capacity (vph)</td> <td></td> <td>367</td> <td>2262</td> <td>2262</td> <td>1095</td> <td>1051</td> <td>527</td>	Base Capacity (vph)		367	2262	2262	1095	1051	527
Spillback Cap Reductn 0								
Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.22 0.33 0.38 0.30 0.27 0.14 Intersection Summary Area Type: Other Cycle Length: 90 Actuated Cycle Length: 78.7 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection Capacity Utilization 57.5% Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata 2 32 s				0	0	0		
Reduced v/c Ratio 0.22 0.33 0.38 0.30 0.27 0.14 Intersection Summary Area Type: Other Cycle Length: 90 Actuated Cycle Length: 78.7 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection Capacity Utilization 57.5% Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata 2 32 s								
Intersection Summary Area Type: Other Cycle Length: 90 Actuated Cycle Length: 78.7 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection Capacity Utilization 57.5% Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata 2 58 s 2 32 s	Reduced v/c Ratio							
Area Type: Other Cycle Length: 90 Actuated Cycle Length: 78.7 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection LOS: A Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata Splits and Phases: 1: Terry Fox & Kanata				5.00	5.00	2.00		
Cycle Length: 90 Actuated Cycle Length: 78.7 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata 20 58 s 22 s		Other						
Actuated Cycle Length: 78.7 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection Capacity Utilization 57.5% Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata Splits and Phases: 1: Terry Fox & Kanata 32 s		Uther						
Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata Splits and Phases: 1: Terry Fox & Kanata 32 s								
Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection LOS: A Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata Splits and Phases: 1: Terry Fox & Kanata	Actuated Cycle Length: 78.7							
Maximum v/c Ratio: 0.51 Intersection Signal Delay: 9.4 Intersection LOS: A Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata								
Intersection Signal Delay: 9.4 Intersection LOS: A Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata 58 s 32 s 58 s 32 s		rdinated						
Intersection Capacity Utilization 57.5% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata								
Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata 58 s 58 s 5								
Splits and Phases: 1: Terry Fox & Kanata		n 57.5%			IC	CU Level of	Service B	
58 s 32 s	Analysis Period (min) 15							
58 s 32 s	Splits and Phases: 1: Terry	Fox & Kanat	а					
58 s 32 s	5A							1
	Ø2						_	
4 [▲] Ø6	58 s							32 s
Ø6	4 ⁴							9
	Ø6							_

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		٦	•	•	1
Traffic Volume (vph)	68	65	51	353	295	82
Future Volume (vph)	68	65	51	353	295	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
Storage Lanes	1	0.0	45.0			03.0
		U	-			I
Taper Length (m)	10.0	4.00	30.0	4.00	4.00	4.00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.934					0.850
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1578	0	1647	1733	1733	1473
Flt Permitted	0.975		0.580			
Satd. Flow (perm)	1578	0	1005	1733	1733	1440
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	65	100				82
Link Speed (k/h)	50			50	50	02
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	68	65	51	353	295	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	51	353	295	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	, agin	Lon	3.7	3.7	. agin
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
Two way Left Turn Lane	1.00	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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	Cl+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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
			Feilli			Felli
Protected Phases	4		^	2	6	~
Permitted Phases			2		-	6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

J.Audia, Novatech

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1	LBR	29.7	29.7	29.7	29.7
Total Split (s)	27.0		43.0	43.0	43.0	43.0
Total Split (%)	38.6%		61.4%	61.4%	61.4%	61.4%
Maximum Green (s)	21.9		37.3	37.3	37.3	37.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	0.1		0.1	0.1	0.1	0.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		9.0	9.0	9.0	9.0
Act Effct Green (s)	10.4		42.8	42.8	42.8	42.8
Actuated g/C Ratio	0.17		42.0	42.0 0.72	42.0	42.0 0.72
v/c Ratio	0.17		0.72	0.72	0.72	0.72
	16.3				0.24 5.0	0.08
Control Delay	0.0		4.5	5.3		
Queue Delay			0.0	0.0	0.0	0.0
Total Delay	16.3		4.5	5.3	5.0	1.5
LOS	B		А	A	A	А
Approach Delay	16.3			5.2	4.2	
Approach LOS	B		4.0	A	A	0.0
Queue Length 50th (m)	5.8		1.6	12.8	10.3	0.0
Queue Length 95th (m)	17.4		4.8	25.2	20.7	3.3
Internal Link Dist (m)	199.0		4= 0	315.7	142.2	6 - 6
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	620		719	1241	1241	1054
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	0.21		0.07	0.28	0.24	0.08
Intersection Summary						
Area Type:	Other					
Cycle Length: 70						
Actuated Cycle Length: 59.	7					
Natural Cycle: 60						
Control Type: Actuated-Und	coordinated					
Maximum v/c Ratio: 0.41						
Intersection Signal Delay: 6	5.4			In	tersection	LOS: A
Intersection Capacity Utiliza					CU Level of	
Analysis Period (min) 15						
Calita and Dharasan C. K.	nata 0					
Splits and Phases: 2: Ka	nata & Huntsville	•				-
1 ø2						
43 s						

3: Terry Fox & Tillsonburg SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u></u>	<u></u>	1		1
Traffic Volume (vph)	0	826	903	42	0	13
Future Volume (vph)	0	826	903	42	0	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	826	903	42	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	826	903	42	0	13
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ū	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 36.3%			IC	U Level of	Service A

Analysis Period (min) 15

1: Terry Fox & Kanata AM Peak Hour

	_	≯	-+	-	•	1	1
	EBU	EDI	EDT			CDI	SBR
Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	
Lane Configurations	0		††		7	ካካ	1
Traffic Volume (vph)	8	70	702	644	181	346	76
Future Volume (vph)	8	70	702	644	181	346	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0			100.0	0.0	0.0
Storage Lanes		1			1	2	1
Taper Length (m)		45.0				80.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor		1.00			0.96		0.98
Frt					0.850		0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1647	3293	3293	1473	3195	1473
Flt Permitted		0.405				0.950	
Satd. Flow (perm)	0	700	3293	3293	1417	3195	1451
Right Turn on Red	V	100	0200	0200	Yes	5100	Yes
Satd. Flow (RTOR)					181		76
Link Speed (k/h)			70	70	101	50	10
Link Distance (m)			97.9	343.0		83.8	
Travel Time (s)		2	5.0	17.6	2	6.0	
Confl. Peds. (#/hr)		3			3		4
Confl. Bikes (#/hr)		4.00	4	1	18	4.00	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	70	702	644	181	346	76
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	78	702	644	181	346	76
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(m)			6.0	5.0	Ŭ	10.0	Ŭ
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			2.0	2.0		2.0	
Two way Left Turn Lane			2.0	2.0		2.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	1.06	24	1.00	1.00	1.06	24	1.06
Turning Speed (k/h)			0	0			
Number of Detectors	1	1	2	2	1 Diabt	1	1 Diacht
Detector Template	Left	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6
Trailing Detector (m)	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
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	0.0	0.0	87.5	87.5	0.0	0.0	0.0
			67.5 5.5	67.5 5.5			
Detector 2 Size(m)							
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm
Protected Phases			2	6		4	
Permitted Phases	2	2			6		4
			•	•		4	
Detector Phase	2	2	2	6	6	4	4

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1: Terry Fox & Kanata AM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2	
Total Split (s)	68.0	68.0	68.0	68.0	68.0	32.0	32.0	
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%	
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	25.8	25.8	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7	
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5	
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2	
Lead/Lag		0.0	0.0	0.0	0.0	0.2	0.2	
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0	
Pedestrian Calls (#/hr)	0	0	0	3	3	0	0	
Act Effct Green (s)	0	62.1	62.1	62.1	62.1	15.0	15.0	
Actuated g/C Ratio		02.1	02.1	02.1	02.1	0.17	0.17	
v/c Ratio		0.16	0.70	0.28	0.17	0.65	0.17	
Control Delay		6.4	6.0	5.9	1.3	40.5	9.9	
Queue Delay		0.4	0.0	0.0	0.0	0.0	0.0	
Total Delay		6.4	6.0	5.9	1.3	40.5	9.9	
LOS		0.4 A	0.0 A	J.9 A	1.3 A	40.5 D	9.9 A	
Approach Delay		A	6.1	4.9	A	35.0	A	
Approach LOS			0.1 A	4.9 A		35.0 C		
Queue Length 50th (m)		3.6	19.2	17.2	0.0	26.5	0.0	
Queue Length 95th (m)		10.0	32.3	29.3	0.0 5.9	38.8	10.2	
Internal Link Dist (m)		10.0	73.9	29.5 319.0	5.9	59.8	10.2	
			13.9	319.0	100.0	09.0		
Turn Bay Length (m) Base Capacity (vph)		486	2289	2289	100.0	924	473	
					0			
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		0.16	0.31	0.28	0.17	0.37	0.16	
Intersection Summary								
	other							
Cycle Length: 100								
Actuated Cycle Length: 89.3								
Natural Cycle: 60								
Control Type: Actuated-Uncoord	inated							
Maximum v/c Ratio: 0.65								
Intersection Signal Delay: 11.6					tersection			
Intersection Capacity Utilization	52.7%			IC	U Level of	f Service A	۱	
Analysis Period (min) 15								
Splits and Phases: 1: Terry Fo	ox & Kanat	а						
*								1 Aug.
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W.		<u>الالال</u>		<u></u>	<u></u>
Traffic Volume (vph)	83	120	20	231	T 300	26
Future Volume (vph)	83	120	20	231	300	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
Storage Lanes	0.0	0.0	45.0			05.0
	-	U	•			I
Taper Length (m)	10.0	4.00	30.0	4 00	4 00	4 00
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.000					0.98
Frt	0.920					0.850
Flt Protected	0.980		0.950			
Satd. Flow (prot)	1563	0	1647	1733	1733	1473
Flt Permitted	0.980		0.577			
Satd. Flow (perm)	1563	0	1000	1733	1733	1440
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	90					26
Link Speed (k/h)	50			50	50	20
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
	10.1			24.0	12.0	4
Confl. Bikes (#/hr)	4.00	1.00	1.00	1 00	1 00	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	83	120	20	231	300	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	203	0	20	231	300	26
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)	2.0			2.0	2.0	
Two way Left Turn Lane	2.0			2.0	2.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
	24	1.00	24	1.00	1.00	1.00
Turning Speed (k/h)		14		0	0	
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	0.0		0.0	87.5	87.5	0.0
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase			_	_	-	
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7	
Total Split (s)	27.0		53.0	53.0	53.0	53.0	
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%	
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3	
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7	
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7	
Lead/Lag	0.1		0.1	0.1	0.1	0.1	
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	
Recall Mode	None		Max	Max	Max	Max	
Walk Time (s)	7.0		15.0	15.0	15.0	15.0	
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	14.0		9.0	9.0	9.0	9.0 0	
Act Effct Green (s)	12.1		49.2	49.2	49.2	49.2	
	0.17		0.68	0.68	49.2 0.68	49.2 0.68	
Actuated g/C Ratio v/c Ratio	0.17		0.08	0.88	0.00	0.00	
Control Delay	22.9		4.8	5.2	5.5	2.2	
Queue Delay	0.0		0.0	0.0	0.0	0.0	
Total Delay	22.9		4.8	5.2	5.5	2.2	
LOS	C		А	A	A	А	
Approach Delay	22.9			5.1	5.2		
Approach LOS	C			A	A		
Queue Length 50th (m)	12.3		0.6	7.9	10.8	0.0	
Queue Length 95th (m)	29.3		2.9	19.5	25.6	2.2	
Internal Link Dist (m)	199.0			315.7	142.2		
Turn Bay Length (m)			45.0			65.0	
Base Capacity (vph)	538		682	1182	1182	990	
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	0.38		0.03	0.20	0.25	0.03	
Intersection Summary							
Area Type:	Other						
Cycle Length: 80							
Actuated Cycle Length: 72.1							
Natural Cycle: 60							
Control Type: Actuated-Unco	ordinated						
Maximum v/c Ratio: 0.60							
Intersection Signal Delay: 9.8	}			In	tersection	LOS' A	
Intersection Capacity Utilizati					CU Level of		
Analysis Period (min) 15	011 00.2 /0						
Splits and Phases: 2: Kana	ata & Huntsville						
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3: Terry Fox & Tillsonburg AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	780	679	37	0	26
Future Volume (vph)	0	780	679	37	0	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	780	679	37	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	780	679	37	0	26
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ŭ	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 29.8%			IC	U Level of	Service A

Intersection Capacity Utilization 29.8% Analysis Period (min) 15 ICU Level of Service A

4: Tillsonburg & Full Access AM Peak Hour

Lane Group WBL WBR NBT NBR SBL SBT Lane Configurations Y 1 9 35 2 3 25 Traffic Volume (vph) 1 9 35 2 3 25 Future Volume (vph) 1 9 35 2 3 25 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Fit Protected 0.995 0.993 0.995 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Fit Permitted 0.995 0.995 0.995 0.995 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 110 17.7 Link Distance (m) 5
Traffic Volume (vph) 1 9 35 2 3 25 Future Volume (vph) 1 9 35 2 3 25 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frt 0.878 0.993 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 0.995 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 50 50 50 1125 1114 1121 0 0 1725 Link Speed (k/h) 50 50 50 50 50 1114 1125 1114 1125 1114 1125 1114 1121 1120 1125 1114 1120 1120 <t< th=""></t<>
Traffic Volume (vph) 1 9 35 2 3 25 Future Volume (vph) 1 9 35 2 3 25 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frt 0.878 0.993 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 <td< td=""></td<>
Ideal Flow (vphpl) 1800 1600 1.00 <th1.00< th=""> 1.00 1.00</th1.00<>
Lane Util. Factor 1.00 <th1.00< th=""> 1.00 1.00</th1.00<>
Frt 0.878 0.993 Flt Protected 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 0.995 0.995 0.995 0.995 Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7 17.7
Fit Protected 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Fit Permitted 0.995 0.995 0.995 0.995 0.995 0.995 Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 100 Link Distance (m) 52.0 79.4 246.5 17.7 Travel Time (s) 3.7 5.7 17.7
Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 <t< td=""></t<>
Fit Permitted 0.995 0.995 Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 100 100 110
Link Speed (k/h) 50 50 50 Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Travel Time (s) 3.7 5.7 17.7
Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00
Adj. Flow (vph) 1 9 35 2 3 25
Shared Lane Traffic (%)
Lane Group Flow (vph) 10 0 37 0 0 28
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) 2.0 2.0 2.0
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
Sign Control Stop Free Free
Intersection Summary
Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 14.0% ICU Level of Service A Analysis Period (min) 15

Analysis Period (min) 15

5: Terry Fox & RIRO Access AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u></u>	≜t ≽			1
Traffic Volume (vph)	0	780	693	35	0	23
Future Volume (vph)	0	780	693	35	0	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	45.0				10.0	
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993			0.865
Flt Protected						
Satd. Flow (prot)	0	4732	3270	0	0	1499
Flt Permitted						
Satd. Flow (perm)	0	4732	3270	0	0	1499
Link Speed (k/h)		70	50	-	50	
Link Distance (m)		136.7	97.9		60.2	
Travel Time (s)		7.0	7.0		4.3	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				18		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	780	693	35	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	780	728	0	0	23
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.0	3.0	Ŭ	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 31.4%			IC	U Level of	Service A
Analysis Pariod (min) 15						

Intersection Capacity Utiliz Analysis Period (min) 15

	≯	\mathbf{i}	1	1	ţ	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		1		•	<u> ተተኑ</u>	
Traffic Volume (vph)	0	13	0	251	409	11
Future Volume (vph)	0	13	0	251	409	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	0.0			25.0
Storage Lanes	0	1	0			1
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.996	
Flt Protected						
Satd. Flow (prot)	0	1499	0	1733	4713	0
Flt Permitted	•		-			
Satd. Flow (perm)	0	1499	0	1733	4713	0
Link Speed (k/h)	50		-	50	50	
Link Distance (m)	62.5			83.8	339.7	
Travel Time (s)	4.5			6.0	24.5	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	13	0	251	409	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	13	0	251	420	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0	J -		2.0	2.0	J •
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized	10.001					
Intersection Capacity Utilizati	on 18.6%			IC	U Level of	Service A
Analysis Period (min) 15						

1: Terry Fox & Kanata PM Peak Hour

ne Group EBU EBL EBT WBT WBR SBL SBR affic Volume (vph) 18 97 946 931 359 291 69 affic Volume (vph) 18 97 946 931 359 291 69 affic Volume (vph) 18 97 946 931 359 291 69 affic Volume (vph) 1800 1800 1800 1800 1800 1800 1800 orage Lanes 1 1 2 1 2 1 per Length (m) 45.0 80.0 80.0 97 0.99 td Flow (prot) 0 1700 3390 3390 1517 3195 1473 td Flow (prot) 0 519 3390 3390 1473 3195 1453 spl Turn o Red 70 70 50 186 60 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	T WIT Cak Hour	_	•		+	•	6	1
ne Configurations i			-	-		`	-	-
affic Volume (vph) 18 97 946 931 359 291 69 ture Volume (vph) 180 970 946 931 359 291 69 all Flow (vph) 1800 1800 1800 1800 1800 1800 1800 orage Langth (m) 0.0 100.0 0.0 0.0 0.0 0.0 per Length (m) 45.0 80.0 80.0 80.0 0.97 1.00 dBike Factor 0.955 1.00 0.97 0.99 0.850 0.850 Protected 0.950 0.950 0.950 0.950 0.950 0.950 tdt Flow (port) 0 519 3390 3390 1478 3195 1473 per langth (m) 0 5.0 17.6 6.0 0.010 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lane Group	EBU						
affic Volume (vph) 18 97 946 931 359 291 69 atlar Vov (vph) 180 1800	Lane Configurations		3			1	ካካ	
Bal Flow (vphp) 1800 100.0 0.0	Traffic Volume (vph)		97					
orage Length (m) 0.0 100.0 0.0 0.0 orage Lanes 1 1 2 1 per Length (m) 45.0 80.0 - ne Util, Factor 0.95 1.00 0.95 0.95 1.00 0.97 0.99 d Bike Factor 1.00 0.950 0.950 0.850 0.850 0.850 1 Protected 0.950 0.950 0.950 0.950 0.950 0.950 tdt, Flow (perm) 0 519 3390 3390 1478 3195 1453 ght Turn on Red	Future Volume (vph)							
orage Lanes 1 1 2 1 per Length (m) 45.0 80.0 abge Length (m) 45.0 80.0 abge Length (m) 45.0 80.0 abge Length (m) 0.95 0.95 0.00 abge Length (m) 0.95 0.95 0.97 0.99 abge Length (m) 0 1700 3390 3390 1517 3195 1473 Premitted 0.290 0.950 0.950 0.950 0.950 itd. Flow (perm) 0 519 3390 3390 1478 3195 1453 pit Turn on Red 97.9 343.0 83.8 8 8 avel Time (s) 5.0 17.6 6.0 5 100 1.00	Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
ppic Length (m) 45.0 80.0 ne Util, Factor 0.95 1.00 0.95 1.00 0.97 1.00 d Bike Factor 1.00 0.950 0.97 0.99 1.00 0.977 0.99 t 0.850 0.950 0.950 0.950 0.950 1.00 0.950 1.01 0.950 1.02 0.950 1.03 0.950 1.03 0.950 1.03 0.950 1.03 0.950 1.03 0.950 1.03 0.950 1.03 0.950 1.05 1.73 0.950 1.05 1.73 0.950 1.05 1.75 1.73 0.950 1.05 1.76 6.0 1.73 1.95 1.453 90 90 97.9 343.0 8.38 2.84 2.94 2.94 2.94 2.94 2.94 2.94 2.94 2.94 2.94 2.94 5.95 5.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 <td>Storage Length (m)</td> <td></td> <td>0.0</td> <td></td> <td></td> <td>100.0</td> <td>0.0</td> <td>0.0</td>	Storage Length (m)		0.0			100.0	0.0	0.0
Ine Util. Factor 0.95 1.00 0.95 1.00 0.97 1.00 d Bike Factor 1.00 0.950 0.850 0.850 1 Protected 0.950 0.950 0.950 1 Protected 0.290 0.950 1 Promitted 0.290 0.950 1 theremitted 0.290 0.950 1 the Rive (prom) 0 519 3390 3390 1473 yes Yes Yes 950 1453 ght Turn on Red 70 70 50 1453 hk Speed (kh) 70 70 50 1453 avel Time (s) 5.0 17.6 6.0 100 nnfl. Peds. (#/hr) 1 1 1 100 avel Vehicles (%) 0% 2% 2% 5% 5% gaavy Vehicles (%) 0% 2% 2% 5% 5% gaavy Vehicles (%) 0% 15 946 931 359	Storage Lanes		1			1	2	1
Ine Util. Factor 0.95 1.00 0.95 1.00 0.97 1.00 d Bike Factor 1.00 0.950 0.850 0.850 1 Protected 0.950 0.950 0.950 1 Protected 0.290 0.950 0.950 1 Premitted 0.290 0.950 0.950 1 td. Flow (prom) 0 519 3390 3390 1473 yes Yes Yes Yes 969 kb Speed (kh) 70 70 50 1.00 nk Distance (m) 97.9 343.0 83.8 38 avel Time (s) 5.0 17.6 6.0 1.00 nnfl. Peds. (#/hr) 1 1 1 1 100 avel Vehicles (%) 0% 2% 2% 2% 5% 5% gaavy Vehicles (%) 0% 115 946 931 359 291 69 atrad Lane Traffic (%) 18 97 946	Taper Length (m)		45.0				80.0	
t	Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00
t	Ped Bike Factor		1.00			0.97		0.99
Protected 0.950 0.950 tdt. Flow (prot) 0 1700 3390 3390 1517 3195 1473 Permitted 0.290 0.950 0.950 0.950 tdt. Flow (perm) 0 519 3390 3390 1478 3195 1453 ght Turn on Red 70 70 50 1473 1473 1453 k Speed (k/h) 70 70 50 17.6 6.0 100 100 1.00 <t< td=""><td>Frt</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Frt							
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1 Permitted 0.290 0.950 tid. Flow (perm) 0 519 3390 3390 1478 3195 1453 ght Turn on Red 70 70 50 768 Yes Ye	Satd. Flow (prot)	0		3390	3390	1517		1473
titl. Flow (perm) 0 519 3390 3390 1478 3195 1453 ght Turn on Red 76 76 76 76 70 50 hk Speed (kh) 70 70 50 70 70 50 nk Distance (m) 97.9 343.0 83.8 3390 1478 3195 1453 avel Time (s) 5.0 17.6 6.0 50 77.6 50 50 nRL Bikes (#hr) 1 1 1 1 100 1.00	Flt Permitted							
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tid. Flow (RTOR) 359 69 hk Speed (k/h) 70 70 70 nk Distance (m) 97.9 343.0 83.8 avel Time (s) 5.0 17.6 6.0 onfl. Peds. (#/hr) 1 1 1 onfl. Reds. (#/hr) 1 1 1 onfl. Reds. (#/hr) 1.00 1.00 1.00 1.00 1.00 1.00 saw Vehicles (%) 0% 2% 2% 2% 5% 5% gi, Flow (vph) 18 97 946 931 359 291 69 arared Lane Traffic (%) 0 115 946 931 359 291 69 arared Lane Traffic (%) 0 0.15.0 10.0 n.0 No No No ter Blocked Intersection No No No No No No No No way Left Turn Lane 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 <td></td> <td></td> <td>0.0</td> <td></td> <td></td> <td></td> <td>0100</td> <td></td>			0.0				0100	
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bak Hour Factor 1.00			1					n
basy Vehicles (%) 0% 2% 2% 2% 2% 5% 5% ij. Flow (vph) 18 97 946 931 359 291 69 nared Lane Traffic (%) 0 115 946 931 359 291 69 nee Group Flow (vph) 0 115 946 931 359 291 69 nee Alignment R NA Left Left Right Left Lift Right 14 24 14 24 14 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 24 14 26 26		1 00	1.00	1.00	1.00		1.00	
ij. Flow (vph) 18 97 946 931 359 291 69 nared Lane Traffic (%) 0 115 946 931 359 291 69 nared Lane Traffic (%) No								
Arrian et Lane Traffic (%) 0 115 946 931 359 291 69 inter Group Flow (vph) 0 115 946 931 359 291 69 inter Blocked Intersection No								
Ine Group Flow (vph) 0 115 946 931 359 291 69 Inter Blocked Intersection No No <t< td=""><td></td><td>18</td><td>97</td><td>946</td><td>931</td><td>359</td><td>291</td><td>69</td></t<>		18	97	946	931	359	291	69
Inter Blocked Intersection No No <th< td=""><td></td><td>0</td><td>445</td><td>0.40</td><td>004</td><td>250</td><td>004</td><td>00</td></th<>		0	445	0.40	004	250	004	00
Ine Alignment R NA Left Left Left Right Left Right edian Width(m) 6.0 5.0 10.0 0.0 0.0 0.0 nk Offset(m) 0.0 0.0 0.0 0.0 0.0 0.0 vo way Left Turn Lane 2.0 2.0 2.0 2.0 2.0 vo way Left Turn Lane	,							
edian Width(m) 6.0 5.0 10.0 nk Offset(m) 0.0 0.0 0.0 osswalk Width(m) 2.0 2.0 2.0 vo way Left Turn Lane								
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Dosswalk Width(m) 2.0 2.0 2.0 vo way Left Turn Lane								
vo way Left Turn Lane padway Factor 1.06 1.00 0.0 <td< td=""><td>Link Offset(m)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Link Offset(m)							
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Imber of Detectors 1 1 2 2 1	Headway Factor	1.06	1.06	1.06	1.06			1.06
Left Left Thru Thru Right Left Right ading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 ailing Detector (m) 0.0 <td>Turning Speed (k/h)</td> <td>14</td> <td>24</td> <td></td> <td></td> <td>14</td> <td>24</td> <td>14</td>	Turning Speed (k/h)	14	24			14	24	14
ading Detector (m) 18.6 18.6 93.0 93.0 18.6 18.6 18.6 ailing Detector (m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 betector 1 Position(m) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 betector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 betector 1 Size(m) 18.6 18.6 5.5 5.5 18.6 18.6 18.6 betector 1 Type CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex CI+Ex betector 1 Channel 0.0	Number of Detectors	1	1	2	2	1	1	1
ading Detector (m) 18.6 18.6 93.0 93.0 18.6 1	Detector Template	Left	Left	Thru	Thru	Right	Left	Right
ailing Detector (m) 0.0	Leading Detector (m)							
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Base control 18.6 18.6 18.6 5.5 18.6 10.0 10.0								
Extector 1 Type CI+Ex								
atector 1 Channel atector 1 Extend (s) 0.0								
extector 1 Extend (s) 0.0		OF EX	OT EX	OI - EX	OI - EX	OI LA	OI' EX	OT EX
Detector 1 Queue (s) 0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
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stector 2 Position(m) 87.5 87.5 stector 2 Size(m) 5.5 5.5 stector 2 Type CI+Ex CI+Ex stector 2 Channel 0.0 0.0 urn Type Perm Perm NA otected Phases 2 6 4 ermitted Phases 2 2 6 4								
stector 2 Size(m) 5.5 5.5 stector 2 Type CI+Ex CI+Ex stector 2 Channel 0.0 0.0 urn Type Perm Perm NA NA Perm Perm otected Phases 2 6 4 4		0.0	0.0			0.0	0.0	0.0
etector 2 Type CI+Ex CI+Ex etector 2 Channel etector 2 Extend (s) 0.0 0.0 Irrn Type Perm Perm NA NA Perm Prot Perm otected Phases 2 6 4 ermitted Phases 2 2 6 4								
etector 2 Channel etector 2 Extend (s) 0.0 0.0 Irrn Type Perm Perm NA NA Perm Prot Perm otected Phases 2 6 4 ermitted Phases 2 2 6 4								
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ermitted Phases 2 2 6 4	Turn Type	Perm	Perm			Perm		Perm
				2	6		4	
staater Dhana 2 2 2 C C C A A	Permitted Phases							
	Detector Phase	2	2	2	6	6	4	4

Control Delay 8.1 6.0 5.9 1.3 40.2 10.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 8.1 6.0 5.9 1.3 40.2 10.9 LOS A A A A D B Approach Delay 6.2 4.6 34.6 Approach LOS A A A C Queue Length 50th (m) 5.6 25.8 25.4 0.0 21.9 0.0 Queue Length 95th (m) 15.2 40.9 40.0 7.1 33.0 9.9 Internal Link Dist (m) 73.9 319.0 59.8 70.0 21.9 0.0 Base Capacity (vph) 368 2405 2405 1152 941 477 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th></th> <th>1</th> <th>≯</th> <th>-</th> <th>+</th> <th>*</th> <th>1</th> <th>-</th>		1	≯	-	+	*	1	-
Switch Phase Minimum Initial (s) 10.0 <t< th=""><th>l ane Group</th><th>FBU</th><th>FBI</th><th>FBT</th><th>WBT</th><th>WBR</th><th>SBI</th><th>SBR</th></t<>	l ane Group	FBU	FBI	FBT	WBT	WBR	SBI	SBR
Minimum Initial (s) 10.0							<u></u>	ODIX
Minimum Split (s) 25.0 25.0 25.0 25.0 25.0 31.2 31.2 Total Split (%) 68.0 68.0 68.0 68.0 32.0 32.0 Total Split (%) 68.0% 68.0% 68.0% 68.0% 68.0% 68.0% 32.0% 32.0% Maximum Green (s) 62.0 62.1 62.1 62.1 62.1 62.1 62		10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s) 68.0 68.0 68.0 68.0 68.0 32.0 32.0 Total Split (%) 68.0% 68.0% 68.0% 68.0% 68.0% 68.0% 32.0% 32.0% Maximum Green (s) 62.0 60.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.2 62.1 13.2 13.2 40.2 10.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0								
Total Split (%) 68.0% 68.0% 68.0% 68.0% 32.0% 32.0% Maximum Green (s) 62.0 62.0 62.0 62.0 22.8 25.8 Vellow Time (s) 1.8 1.8 1.8 1.8 1.8 2.4.2 4.2 3.7 3.7 All-Red Time (s) 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lost Time (s) 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lead/Lag Optimize?								
Maximum Green (s) 62.0 62.0 62.0 62.0 25.8 25.8 Yellow Time (s) 1.8 1.8 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lost Time Adjust (s) 0.0								
Yellow Time (s) 4.2 4.2 4.2 4.2 3.7 3.7 All-Red Time (s) 1.8 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lest Time Adjust (s) 0.0 <								
All-Red Time (s) 1.8 1.8 1.8 1.8 1.8 1.8 2.5 2.5 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 6.0 6.0 6.0 6.0 6.0 6.2 6.2 Lead/Lag Optimize? Vehicle Extension (s) 3.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
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Total Lost Time (s) 6.0 6.0 6.0 6.0 6.0 6.0 6.2 6.2 Lead-Lag Optimize? Vehicle Extension (s) 3.0 3.		1.0						
Lead/Lag Optimize? Vehicle Extension (s) 3.0 Control Los Call field f								
Lead-Lag Optimize? Vehicle Extension (s) 3.0 4.0 10.0 0.0 </td <td></td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.2</td> <td>0.2</td>			0.0	0.0	0.0	0.0	0.2	0.2
Vehicle Extension (s) 3.0 3.								
Recall Mode Max Max <th< td=""><td></td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td></th<>		2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk Time (s) 7.0								
Flash Dont Walk (s) 12.0 12.0 12.0 12.0 12.0 18.0 18.0 Pedestrian Calls (#/hr) 0 0 0 1 1 0 0 Act Effct Green (s) 62.1 62.1 62.1 62.1 13.2 13.2 Actuated g/C Ratio 0.71 0.71 0.71 0.71 0.71 0.71 0.15 0.15 Vic Ratio 0.31 0.39 0.39 0.31 0.60 0.25 Control Delay 8.1 6.0 5.9 1.3 40.2 10.9 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 LOS A A A A D B A A A D B Approach LOS A A A A C Queue Length 50th (m) 5.6 25.8 25.4 0.0 21.9 0.0 Queue Length 50th (m) 5.6 25.8 24.05 115.2 94.1 477 Starvation Cap Reductn 0 0								
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Spillback Cap Reductn 0 14 Intersection Signal Delay 0<								
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Intersection Summary Area Type: Other Cycle Length: 100 Actuated Cycle Length: 87.6 Natural Cycle: 60 Control Type: Actuated-Uncoordinated Maximum v/c Ratio: 0.60 Intersection Signal Delay: 9.2 Intersection Capacity Utilization 59.4% Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata			-					
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Intersection Capacity Utilization 59.4% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 1: Terry Fox & Kanata	Maximum v/c Ratio: 0.60							
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Splits and Phases: 1: Terry Fox & Kanata	Intersection Capacity Utilization	on 59.4%			IC	CU Level o	f Service B	
*	Analysis Period (min) 15							
*	Splits and Phases: 1. Terry	Fox & Kanat	а					
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		ሻ	↑		1
Traffic Volume (vph)	65	64	82	375	290	58
Future Volume (vph)	65	64	82	375	290	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0			65.0
Storage Lanes	1	0	1			1
Taper Length (m)	10.0		30.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.933					0.850
Flt Protected	0.975		0.950			0.000
Satd. Flow (prot)	1577	0	1647	1733	1733	1473
Flt Permitted	0.975	0	0.582	1100	1100	1710
Satd. Flow (perm)	1577	0	1009	1733	1733	1440
	13/1	Yes	1009	1/00	1/00	Yes
Right Turn on Red		res				
Satd. Flow (RTOR)	61			50	50	58
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	65	64	82	375	290	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	82	375	290	58
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	3		3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
Two way Left Turn Lane	2.0			2.0	2.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
		1.06		1.00	1.00	
Turning Speed (k/h)	24	14	24	0	0	14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	0.0		0.0	87.5	87.5	0.0
Detector 2 Size(m)				5.5	5.5	
				5.5 Cl+Ex		
Detector 2 Type				CI+EX	CI+Ex	
Detector 2 Channel				~ ~	~ ~	
Detector 2 Extend (s)			_	0.0	0.0	_
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1	LBIX	29.7	29.7	29.7	29.7
Total Split (s)	27.0		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		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
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		0.0	0.0	0.0	0.0
Act Effct Green (s)	10.6		52.9	52.9	52.9	52.9
Actuated g/C Ratio	0.15		0.76	0.76	0.76	0.76
v/c Ratio	0.44		0.10	0.29	0.22	0.05
Control Delay	20.5		4.2	4.7	4.3	1.4
Queue Delay	0.0		0.0	0.0	4.5	0.0
Total Delay	20.5		4.2	4.7	4.3	1.4
LOS	20.0 C		A	A	A.	A
Approach Delay	20.5			4.6	3.8	
Approach LOS	20.5 C			A.	0.0 A	
Queue Length 50th (m)	7.2		2.6	13.8	10.0	0.0
Queue Length 95th (m)	20.0		7.0	27.2	20.3	2.7
Internal Link Dist (m)	199.0		1.0	315.7	142.2	2.1
Turn Bay Length (m)	133.0		45.0	515.7	174.4	65.0
Base Capacity (vph)	536		45.0 761	1308	1308	1101
Starvation Cap Reductn	0		0	0	1308	0
Spillback Cap Reductn	0		0	0	0	0
	0		0	0	0	0
Storage Cap Reductn						
Reduced v/c Ratio	0.24		0.11	0.29	0.22	0.05
Intersection Summary						
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 70						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.44						
Intersection Signal Delay: 6.5	5			In	tersection	LOS: A
Intersection Capacity Utilizati				IC	U Level of	f Service A
Analysis Period (min) 15						
Splits and Phases: 2: Kana	ata & Huntsville)				
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53 s						

3: Terry Fox & Tillsonburg PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u>†</u> †	^	1		1
Traffic Volume (vph)	0	1061	879	120	0	15
Future Volume (vph)	0	1061	879	120	0	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1061	879	120	0	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1061	879	120	0	15
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	-	0.0	-
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 35.6%			IC	U Level of	Service A

Intersection Capacity Utili Analysis Period (min) 15 on 35.6% CU Level of Service A

4: Tillsonburg & Full Access PM Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		el el			र्स
Traffic Volume (vph)	4	20	116	4	5	11
Future Volume (vph)	4	20	116	4	5	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.887		0.995			
Flt Protected	0.992					0.985
Satd. Flow (prot)	1525	0	1725	0	0	1707
Flt Permitted	0.992					0.985
Satd. Flow (perm)	1525	0	1725	0	0	1707
Link Speed (k/h)	50		50			50
Link Distance (m)	52.0		79.4			246.5
Travel Time (s)	3.7		5.7			17.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	20	116	4	5	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	120	0	0	16
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	Ŭ	0.0	Ū		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		2.0			2.0
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	
Sign Control	Stop		Free			Free
Intersection Summary	0.11					
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 16.7%			IC	U Level of	Service A
Analysis Period (min) 15						

Analysis Period (min) 15

5: Terry Fox & RIRO Access PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		*††	≜1 ≽			1		
Traffic Volume (vph)	0	1061	960	58	0	39		
Future Volume (vph)	0	1061	960	58	0	39		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	1.0			0.0	0.0	0.0		
Storage Lanes	1			0	0	1		
Taper Length (m)	45.0				10.0			
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00		
Ped Bike Factor								
Frt			0.991			0.865		
Flt Protected								
Satd. Flow (prot)	0	4732	3264	0	0	1499		
Flt Permitted								
Satd. Flow (perm)	0	4732	3264	0	0	1499		
Link Speed (k/h)		70	50		50			
Link Distance (m)		136.7	97.9		60.2			
Travel Time (s)		7.0	7.0		4.3			
Confl. Peds. (#/hr)	1			1				
Confl. Bikes (#/hr)				5				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	0	1061	960	58	0	39		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	1061	1018	0	0	39		
Enter Blocked Intersection	No	Yes	Yes	No	No	No		
Lane Alignment	Left	Left	Left	Right	Left	Right		
Median Width(m)		3.0	3.0	Ŭ	0.0	Ŭ		
Link Offset(m)		0.0	0.0		0.0			
Crosswalk Width(m)		2.0	2.0		2.0			
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	24	14		
Sign Control		Free	Free		Stop			
Intersection Summary								
Area Type:	Other							
Control Type: Unsignalized								
Intersection Capacity Utilization 40.0% ICU Level of Service A								

Intersection Capacity Utilization 40.0% Analysis Period (min) 15

ICU Level of Service A

	≯	\mathbf{r}	1	1	Ŧ	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		1		†	<u> ተተ</u> ኑ	
Traffic Volume (vph)	0	21	0	457	340	14
Future Volume (vph)	0	21	0	457	340	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	0.0			25.0
Storage Lanes	0	1	0			1
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.994	
Flt Protected						
Satd. Flow (prot)	0	1499	0	1733	4704	0
Flt Permitted						
Satd. Flow (perm)	0	1499	0	1733	4704	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	62.5			83.8	339.7	
Travel Time (s)	4.5			6.0	24.5	
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	21	0	457	340	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	0	457	354	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0	<u> </u>		2.0	2.0	<u> </u>
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Sign Control	Stop			Free	Free	
•						
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	ion 28.7%			IC	U Level of	Service A
Analysis Period (min) 15						

1: Terry Fox & Kanata SAT Peak Hour

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≤ ≯ → ← < ∖ √	1
Lane Group EBU EBL EBT WBT WBR SBL SB	SBR
	r 80
	80 80
	800
	0.0
Storage Lanes 1 1 2	1
Taper Length (m) 45.0 80.0	
	1.00
).99
Frt 0.850 0.85	850
Fit Protected 0.950 0.950	
	473
Flt Permitted 0.400 0.950	
	453
	Yes
Satd. Flow (RTOR) 312 8	80
Link Speed (k/h) 70 70 50	
Link Distance (m) 97.9 343.0 83.8	
Travel Time (s) 5.0 17.6 6.0	
Confl. Peds. (#/hr) 1 1	
	2
	1.00
	5%
	80
Shared Lane Traffic (%)	00
	80
	No
	light
Median Width(m) 6.0 5.0 10.0	
Link Offset(m) 0.0 0.0 0.0	
Crosswalk Width(m) 2.0 2.0 2.0	
Two way Left Turn Lane	
	1.06
	14
	1
	light
	18.6
	0.0
	0.0
	18.6
Detector 1 Type CI+Ex CI	
Detector 1 Type CI+EX CI+EX CI+EX CI+EX CI+EX CI+EX CI+EX CI+EX CI+EX	τ⊑X
	0.0
	0.0
	0.0
	0.0
Detector 2 Position(m) 87.5 87.5	
Detector 2 Size(m) 5.5 5.5	
Detector 2 Type CI+Ex CI+Ex	
Detector 2 Channel	
Detector 2 Extend (s) 0.0 0.0	
Turn Type Perm Perm NA NA Perm Prot Per	erm
Protected Phases 2 6 4	·
	4
Permitted Phases 2 2 6	4

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						001	OBIN
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	58.0	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.8	1.8	1.8	1.8	1.2	2.5	2.5
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag		0.0	0.0	0.0	0.0	0.2	0.2
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	6	6	10.0	10.0
Act Effct Green (s)	V	52.5	52.5	52.5	52.5	14.0	14.0
Actuated g/C Ratio		0.67	0.67	0.67	0.67	0.18	0.18
v/c Ratio		0.20	0.24	0.29	0.29	0.51	0.25
Control Delay		7.6	6.2	6.5	1.7	32.0	8.6
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		7.6	6.2	6.5	1.7	32.0	8.6
LOS		A	A	A	A	C	A
Approach Delay		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	6.4	5.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	26.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS			A	A		20.0 C	
Queue Length 50th (m)		3.9	12.2	15.3	0.0	18.5	0.0
Queue Length 95th (m)		14.2	28.8	35.3	9.0	28.2	9.1
Internal Link Dist (m)		11.2	73.9	319.0	0.0	59.8	0.1
Turn Bay Length (m)			10.0	010.0	100.0	00.0	
Base Capacity (vph)		477	2260	2260	1089	1051	531
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		0.20	0.24	0.29	0.29	0.27	0.15
		0.20	V.2 1	5.20	0.20	V.21	0.10
Intersection Summary							
	Other						
Cycle Length: 90							
Actuated Cycle Length: 78.7							
Natural Cycle: 60							
Control Type: Actuated-Uncoo	rdinated						
Maximum v/c Ratio: 0.51							
Intersection Signal Delay: 9.5					tersection		
Intersection Capacity Utilization	n 51.4%			IC	CU Level of	f Service A	
Analysis Period (min) 15							
Splits and Phases: 1: Terry	Fox & Kanat	а					1.200
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		ሻ	↑	•	1
Traffic Volume (vph)	83	65	51	335	296	82
Future Volume (vph)	83	65	51	335	296	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0			65.0
Storage Lanes	1	0.0	10.0			1
Taper Length (m)	10.0	U	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	
Ped Bike Factor	0.044					0.98
Frt	0.941		0.070			0.850
Flt Protected	0.973		0.950			
Satd. Flow (prot)	1587	0	1647	1733	1733	1473
Flt Permitted	0.973		0.579			
Satd. Flow (perm)	1587	0	1004	1733	1733	1440
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	59					82
Link Speed (k/h)	50			50	50	02
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	4
Confl. Bikes (#/hr)		4	4.00		4.00	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	83	65	51	335	296	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	51	335	296	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	0		3.7	3.7	J
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
					CI+Ex	Cl+Ex
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	OI+EX	UI+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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
	Drot		Dorm			Perm
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4		^	2	6	^
Permitted Phases			2	-		6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1	LBIX	29.7	29.7	29.7	29.7
Total Split (s)	27.0		43.0	43.0	43.0	43.0
Total Split (%)	38.6%		61.4%	61.4%	61.4%	61.4%
Maximum Green (s)	21.9		37.3	37.3	37.3	37.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	0.1		0.1	0.1	0.1	0.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	7.0 14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	14.0 0		9.0	9.0	9.0 0	9.0
Act Effct Green (s)	10.7		42.2	42.2	42.2	42.2
	0.18		42.2 0.71	42.2 0.71	42.2 0.71	42.2 0.71
Actuated g/C Ratio v/c Ratio	0.18		0.71	0.71	0.71	0.71
Control Delay	0.44 18.3				0.24 5.2	0.08
	0.0		4.8 0.0	5.4 0.0	5.2 0.0	1.6 0.0
Queue Delay						
Total Delay	18.3		4.8	5.4	5.2	1.6
LOS Anneach Dalau	B		А	A	A	А
Approach Delay	18.3			5.3	4.4	
Approach LOS	B		4.0	A	A	0.0
Queue Length 50th (m)	7.7		1.6	12.0	10.3	0.0
Queue Length 95th (m)	20.1		5.1	25.1	22.0	3.5
Internal Link Dist (m)	199.0		4= 0	315.7	142.2	0-0
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	622		712	1229	1229	1045
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	0.24		0.07	0.27	0.24	0.08
Intersection Summary						
Area Type:	Other					
Cycle Length: 70						
Actuated Cycle Length: 59.	4					
Natural Cycle: 60						
Control Type: Actuated-Und	coordinated					
Maximum v/c Ratio: 0.44						
Intersection Signal Delay: 7	7.0			In	tersection	LOS: A
Intersection Capacity Utiliza					CU Level of	
Analysis Period (min) 15						
Splits and Phases: 2: Ka	nata & Huntsville					
Tø2						
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3: Terry Fox & Tillsonburg SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		*	<u></u>	1		1	
Traffic Volume (vph)	0	642	683	48	0	17	
Future Volume (vph)	0	642	683	48	0	17	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Storage Length (m)	0.0			55.0	0.0	0.0	
Storage Lanes	0			1	0	1	
Taper Length (m)	10.0				10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Ped Bike Factor							
Frt				0.850		0.865	
Flt Protected							
Satd. Flow (prot)	0	3293	3293	1473	0	1499	
Flt Permitted							
Satd. Flow (perm)	0	3293	3293	1473	0	1499	
Link Speed (k/h)		50	50		50		
Link Distance (m)		274.9	136.7		79.4		
Travel Time (s)		19.8	9.8		5.7		
Confl. Peds. (#/hr)	1			1			
Confl. Bikes (#/hr)				5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	642	683	48	0	17	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	642	683	48	0	17	
Enter Blocked Intersection	No	Yes	Yes	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(m)		5.0	5.0		0.0		
Link Offset(m)		0.0	0.0		0.0		
Crosswalk Width(m)		2.0	2.0		2.0		
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	24	14	
Sign Control		Free	Free		Stop		
Intersection Summary							
Area Type:	Other						
Control Type: Unsignalized							
Intersection Capacity Utilization 29.9% ICU Level of Service A							

Intersection Capacity Utilization 29.9% Analysis Period (min) 15 ICU Level of Service A

4: Tillsonburg & Full Access SAT Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		el 🕴			ę
Traffic Volume (vph)	4	22	42	6	5	13
Future Volume (vph)	4	22	42	6	5	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.983			
Flt Protected	0.992					0.986
Satd. Flow (prot)	1523	0	1704	0	0	1709
Flt Permitted	0.992					0.986
Satd. Flow (perm)	1523	0	1704	0	0	1709
Link Speed (k/h)	50		50			50
Link Distance (m)	52.0		79.4			246.5
Travel Time (s)	3.7		5.7			17.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	22	42	6	5	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	48	0	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	<u> </u>	0.0	U ·		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		2.0			2.0
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	
Sign Control	Stop		Free			Free
Intersection Summary						
	Other					
Area Type: Control Type: Unsignalized	Other					
Intersection Capacity Utilization	on 15.1%				U Level of	Sonvice A
Analysis Period (min) 15	01113.4 %				O Level OI	Service A

Analysis Period (min) 15

5: Terry Fox & RIRO Access SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		***	≜1 ≱			1		
Traffic Volume (vph)	0	642	696	62	0	35		
Future Volume (vph)	0	642	696	62	0	35		
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800		
Storage Length (m)	1.0			0.0	0.0	0.0		
Storage Lanes	1			0	0	1		
Taper Length (m)	45.0				10.0			
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00		
Ped Bike Factor								
Frt			0.988			0.865		
Flt Protected								
Satd. Flow (prot)	0	4732	3254	0	0	1499		
Flt Permitted								
Satd. Flow (perm)	0	4732	3254	0	0	1499		
Link Speed (k/h)		70	50		50			
Link Distance (m)		136.7	97.9		60.2			
Travel Time (s)		7.0	7.0		4.3			
Confl. Peds. (#/hr)	1			1				
Confl. Bikes (#/hr)				5				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	0	642	696	62	0	35		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	642	758	0	0	35		
Enter Blocked Intersection	No	Yes	Yes	No	No	No		
Lane Alignment	Left	Left	Left	Right	Left	Right		
Median Width(m)		3.0	3.0	Ŭ	0.0	J		
Link Offset(m)		0.0	0.0		0.0			
Crosswalk Width(m)		2.0	2.0		2.0			
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	24	14		
Sign Control		Free	Free		Stop			
Intersection Summary								
Area Type:	Other							
Control Type: Unsignalized								
	Intersection Capacity Utilization 32.4% ICU Level of Service A							

Intersection Capacity Utilization 32.4% Analysis Period (min) 15 ICU Level of Service A

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		1		•	4†1	-
Traffic Volume (vph)	0	20	0	386	349	12
Future Volume (vph)	0	20	0	386	349	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	0.0			25.0
Storage Lanes	0	1	0			1
Taper Length (m)	10.0	•	10.0			•
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.995	
Flt Protected					0.000	
Satd. Flow (prot)	0	1499	0	1733	4708	0
Flt Permitted	0	1100	Ŭ			Ŭ
Satd. Flow (perm)	0	1499	0	1733	4708	0
Link Speed (k/h)	50	1100	Ŭ	50	50	Ŭ
Link Distance (m)	62.5			83.8	339.7	
Travel Time (s)	4.5			6.0	24.5	
Confl. Bikes (#/hr)				0.0	•	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	386	349	12
Shared Lane Traffic (%)	•		•		0.0	•=
Lane Group Flow (vph)	0	20	0	386	361	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0	ragin	Lon	2.0	2.0	rugin
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24	1.00	1.00	14
Sign Control	Stop		- ·	Free	Free	
-	etop			1100	1100	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	04.00/			10		Comilan A
Analysis Period (min) 15	on 24.8%			IC	CU Level of	Service A

1: Terry Fox & Kanata AM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
	EDU							
Lane Configurations	0	70	† †	*		<u>ካካ</u>		
Traffic Volume (vph)	8	73	905	744	189	360	79	
Future Volume (vph)	8	73	905	744	189	360	79	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	
Storage Length (m)		0.0			100.0	0.0	0.0	
Storage Lanes		1			1	2	1	
Taper Length (m)		45.0				80.0		
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor		1.00			0.96		0.98	
Frt					0.850		0.850	
Flt Protected		0.950				0.950		
Satd. Flow (prot)	0	1647	3293	3293	1473	3195	1473	
Flt Permitted		0.359				0.950		
Satd. Flow (perm)	0	621	3293	3293	1417	3195	1451	
Right Turn on Red	5	9 <u></u> 1	0200	0200	Yes	0100	Yes	
Satd. Flow (RTOR)					189		79	
			70	70	109	50	19	
Link Speed (k/h)								
Link Distance (m)			97.9	343.0		83.8		
Travel Time (s)		^	5.0	17.6	^	6.0		
Confl. Peds. (#/hr)		3			3			
Confl. Bikes (#/hr)					18		4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	8	73	905	744	189	360	79	
Shared Lane Traffic (%)								
ane Group Flow (vph)	0	81	905	744	189	360	79	
Enter Blocked Intersection	No	No	No	No	No	No	No	
_ane Alignment	R NA	Left	Left	Left	Right	Left	Right	
Median Width(m)			6.0	5.0	Ŭ	10.0	Ū	
ink Offset(m)			0.0	0.0		0.0		
Crosswalk Width(m)			2.0	2.0		2.0		
Two way Left Turn Lane			2.0	2.0		2.0		
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	14	24	1.00	1.00	1.00	24	14	
	14	24	2	2	14	24	14	
Number of Detectors							-	
Detector Template	Left	Left	Thru	Thru	Right	Left	Right	
_eading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
Trailing Detector (m)	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	
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6	
Detector 1 Type	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel								
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	0.0	0.0	87.5	87.5			0.0	
Detector 2 Size(m)			5.5	5.5				
Detector 2 Type			CI+Ex	Cl+Ex				
Detector 2 Channel								
			0.0	0.0				
Detector 2 Extend (s)	-	D	0.0	0.0	D.	P (D-	
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm	
Protected Phases	-		2	6	-	4		
Permitted Phases	2	2			6		4	
Detector Phase	2	2	2	6	6	4	4	
Switch Phase								

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1: Terry Fox & Kanata AM Peak Hour

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2	
Total Split (s)	68.0	68.0	68.0	68.0	68.0	32.0	32.0	
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%	
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	25.8	25.8	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7	
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2	
Lead/Lag		0.0	0.0	0.0	0.0	0.2	0.2	
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	Max	Max	Max	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0	
Pedestrian Calls (#/hr)	0	0	0	3	3	0	0	
Act Effct Green (s)	v	62.1	62.1	62.1	62.1	15.4	15.4	
Actuated g/C Ratio		0.69	0.69	0.69	0.69	0.17	0.17	
v/c Ratio		0.19	0.40	0.33	0.18	0.66	0.25	
Control Delay		7.0	6.9	6.3	1.3	40.6	9.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		7.0	6.9	6.3	1.3	40.6	9.7	
LOS		7.0 A	0.5 A	0.5 A	1.5 A	40.0 D	3.7 A	
Approach Delay		Л	6.9	5.3	Л	35.0	7	
Approach LOS			0.5 A	0.0 A		D		
Queue Length 50th (m)		3.9	27.3	21.0	0.0	27.7	0.0	
Queue Length 95th (m)		10.9	45.1	35.2	6.1	40.2	10.2	
Internal Link Dist (m)		10.5	73.9	319.0	0.1	59.8	10.2	
Turn Bay Length (m)			10.5	010.0	100.0	00.0		
Base Capacity (vph)		429	2278	2278	1038	919	474	
Starvation Cap Reductn		4 <u>2</u> 5	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		0.19	0.40	0.33	0.18	0.39	0.17	
Intersection Summary		0.10	0.40	0.00	0.10	0.00	0.17	
	Other							
Cycle Length: 100								
Actuated Cycle Length: 89.7								
Natural Cycle: 60								
Control Type: Actuated-Uncoord	linated							
Maximum v/c Ratio: 0.66	inaleu							
Intersection Signal Delay: 11.5				In	tersection			
Intersection Capacity Utilization	56 0%				CU Level of)	
Analysis Period (min) 15	50.0 /0			IC)	
Analysis Feliou (IIIII) 13								
Splits and Phases: 1: Terry Fo	ox & Kanat	a						<u> </u>
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			•	<u> </u>	
Traffic Volume (vph)	83	120	20	1 242	317	26
Future Volume (vph)	83	120	20	242	317	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
Storage Lanes	1	0.0	45.0			1
Taper Length (m)	10.0	U	30.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.98
Frt	0.920					0.98
	0.920		0.950			0.000
Fit Protected		0		1700	1700	1470
Satd. Flow (prot)	1563	0	1647	1733	1733	1473
Flt Permitted	0.980	^	0.568	4700	4700	4440
Satd. Flow (perm)	1563	0	985	1733	1733	1440
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	90					26
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	83	120	20	242	317	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	203	0	20	242	317	26
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)	2.0			2.0	2.0	
Two way Left Turn Lane	2.0			2.0	2.0	
	1.06	1.06	1.06	1.06	1.06	1.06
Headway Factor				1.00	1.00	
Turning Speed (k/h)	24	14	24	0	0	14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	0.0		0.0	87.5	87.5	0.0
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
				0.0	0.0	
Detector 2 Extend (s)	Duct		Deares	0.0	0.0	D
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4		•	2	6	<u>^</u>
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7
Total Split (s)	20.1		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	J.1		5.7	5.1	5.1	J.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode				Max		Max
	None		Max		Max	
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	12.1		49.2	49.2	49.2	49.2
Actuated g/C Ratio	0.17		0.68	0.68	0.68	0.68
v/c Ratio	0.60		0.03	0.20	0.27	0.03
Control Delay	22.9		4.8	5.2	5.6	2.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	22.9		4.8	5.2	5.6	2.2
LOS	С		А	А	А	А
Approach Delay	22.9			5.2	5.3	
Approach LOS	С			А	А	
Queue Length 50th (m)	12.3		0.6	8.4	11.6	0.0
Queue Length 95th (m)	29.3		2.9	20.5	27.2	2.2
Internal Link Dist (m)	199.0			315.7	142.2	
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	538		672	1182	1182	990
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	0.38		0.03	0.20	0.27	0.03
Intersection Summary						
Area Type:	Other					
Cycle Length: 80	01101					
Actuated Cycle Length: 72.1						
Natural Cycle: 60						
Control Type: Actuated-Unco	ordinated					
Maximum v/c Ratio: 0.60						
	7			ما	toreaction	
Intersection Signal Delay: 9.7					tersection	LOS: A f Service A
Intersection Capacity Utilizati	1011 39.270				O Level 0	Service A
Analysis Period (min) 15						
Splits and Phases: 2: Kana	ata & Huntsville					
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3: Terry Fox & Tillsonburg AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u></u>	<u></u>	1		1
Traffic Volume (vph)	0	986	782	37	0	26
Future Volume (vph)	0	986	782	37	0	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	986	782	37	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	986	782	37	0	26
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ŭ	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 32.8%			IC	U Level of	Service A

Analysis Period (min) 15

4: Tillsonburg & Full Access AM Peak Hour

Lane Group WBL WBR NBT NBR SBL SBT Lane Configurations Y 1 9 35 2 3 25 Traffic Volume (vph) 1 9 35 2 3 25 Future Volume (vph) 1 9 35 2 3 25 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Fit Protected 0.995 0.993 0.995 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Fit Permitted 0.995 0.995 0.995 0.995 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 110 17.7 Link Distance (m) 5
Traffic Volume (vph) 1 9 35 2 3 25 Future Volume (vph) 1 9 35 2 3 25 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frt 0.878 0.993 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 0.995 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 50 50 50 1125 1114 1121 0 0 1725 Link Speed (k/h) 50 50 50 50 50 1114 1125 1114 1125 1114 1125 1114 1121 1120 1125 1114 1120 1120 <t< th=""></t<>
Traffic Volume (vph) 1 9 35 2 3 25 Future Volume (vph) 1 9 35 2 3 25 Ideal Flow (vphpl) 1800 1800 1800 1800 1800 1800 Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 Frt 0.878 0.993 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 <td< td=""></td<>
Ideal Flow (vphpl) 1800 1600 1.00 <th1.00< th=""> 1.00 1.00</th1.00<>
Lane Util. Factor 1.00 <th1.00< th=""> 1.00 1.00</th1.00<>
Frt 0.878 0.993 Flt Protected 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 0.995 0.995 0.995 0.995 Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7 17.7
Fit Protected 0.995 0.995 Satd. Flow (prot) 1514 0 1721 0 0 1725 Fit Permitted 0.995 0.995 0.995 0.995 0.995 0.995 Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 100 Link Distance (m) 52.0 79.4 246.5 17.7 Travel Time (s) 3.7 5.7 17.7
Satd. Flow (prot) 1514 0 1721 0 0 1725 Flt Permitted 0.995 <t< td=""></t<>
Fit Permitted 0.995 0.995 Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Satd. Flow (perm) 1514 0 1721 0 0 1725 Link Speed (k/h) 50 50 50 50 100 100 110
Link Speed (k/h) 50 50 50 Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Link Distance (m) 52.0 79.4 246.5 Travel Time (s) 3.7 5.7 17.7
Travel Time (s) 3.7 5.7 17.7
Peak Hour Factor 1.00 1.00 1.00 1.00 1.00 1.00
Adj. Flow (vph) 1 9 35 2 3 25
Shared Lane Traffic (%)
Lane Group Flow (vph) 10 0 37 0 0 28
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) 2.0 2.0 2.0
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
Sign Control Stop Free Free
Intersection Summary
Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 14.0% ICU Level of Service A Analysis Period (min) 15

Analysis Period (min) 15

5: Terry Fox & RIRO Access AM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	≜ ⊅			1
Traffic Volume (vph)	0	986	796	35	0	23
Future Volume (vph)	0	986	796	35	0	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	45.0				10.0	
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.994			0.865
Flt Protected						
Satd. Flow (prot)	0	4732	3274	0	0	1499
Flt Permitted						
Satd. Flow (perm)	0	4732	3274	0	0	1499
Link Speed (k/h)		70	50		50	
Link Distance (m)		136.7	97.9		60.2	
Travel Time (s)		7.0	7.0		4.3	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				18		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	986	796	35	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	986	831	0	0	23
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.0	3.0	U ·	0.0	U U
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 34.4%			IC	U Level of	Service A

Intersection Capacity Utili Analysis Period (min) 15 on 34.4% CU Level of Service A

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		1		•	<u> ተ</u> ተኈ	
Traffic Volume (vph)	0	13	0	262	426	11
Future Volume (vph)	0	13	0	262	426	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	0.0			25.0
Storage Lanes	0	1	0			1
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor						0.01
Frt		0.865			0.996	
Flt Protected					0.000	
Satd. Flow (prot)	0	1499	0	1733	4713	0
Flt Permitted	Ū	1100	Ŭ			v
Satd. Flow (perm)	0	1499	0	1733	4713	0
Link Speed (k/h)	50	1100	Ŭ	50	50	v
Link Distance (m)	62.5			83.8	339.7	
Travel Time (s)	4.5			6.0	24.5	
Confl. Bikes (#/hr)	1.0			0.0	21.0	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	13	0	262	426	11
Shared Lane Traffic (%)	Ū		Ŭ	202	120	••
Lane Group Flow (vph)	0	13	0	262	437	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0	rugin	Lon	2.0	2.0	rugin
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
Two way Left Turn Lane	2.0			2.0	2.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24	1.00	1.00	1.00
Sign Control	Stop	17	4 7	Free	Free	T
	0.00			1100	1166	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 18.9%			IC	U Level of	Service A
Analysis Period (min) 15						
,						

1: Terry Fox & Kanata PM Peak Hour

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	5011	501	FDT	MOT			000	
Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		3	† †	^	1	ካካ	1	
Traffic Volume (vph)	18	101	1116	1157	375	304	71	
uture Volume (vph)	18	101	1116	1157	375	304	71	
leal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	
torage Length (m)		0.0			100.0	0.0	0.0	
Storage Lanes		1			1	2	1	
aper Length (m)		45.0				80.0		
ane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor		1.00			0.97		0.99	
rt					0.850		0.850	
It Protected		0.950			0.000	0.950	0.000	
atd. Flow (prot)	0	1700	3390	3390	1517	3195	1473	
	0	0.217	2290	2230	1317	0.950	1475	
t Permitted	0		2200	2200	4470		4450	
atd. Flow (perm)	0	388	3390	3390	1478	3195	1453	
ight Turn on Red					Yes		Yes	
atd. Flow (RTOR)					375		71	
nk Speed (k/h)			70	70		50		
nk Distance (m)			97.9	343.0		83.8		
avel Time (s)			5.0	17.6		6.0		
onfl. Peds. (#/hr)		1			1			
onfl. Bikes (#/hr)					5		2	
ak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
avy Vehicles (%)	0%	2%	2%	2%	2%	5%	5%	
. Flow (vph)	18	101	1116	1157	375	304	71	
ared Lane Traffic (%)	10	101	1110	1107	515	50-	11	
ane Group Flow (vph)	0	119	1116	1157	375	304	71	
,								
nter Blocked Intersection	No	No	No	No	No	No	No	
ane Alignment	R NA	Left	Left	Left	Right	Left	Right	
edian Width(m)			6.0	5.0		10.0		
nk Offset(m)			0.0	0.0		0.0		
osswalk Width(m)			2.0	2.0		2.0		
wo way Left Turn Lane								
eadway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
urning Speed (k/h)	14	24			14	24	14	
umber of Detectors	1	1	2	2	1	1	1	
etector Template	Left	Left	Thru	Thru	Right	Left	Right	
eading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6	
railing Detector (m)	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	
Detector 1 Position(m)								
()	18.6	18.6	5.5	5.5 Clu Fii	18.6	18.6	18.6	
etector 1 Type	CI+Ex	CI+Ex	CI+Ex	Cl+Ex	Cl+Ex	CI+Ex	CI+Ex	
etector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
etector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
etector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
etector 2 Position(m)			87.5	87.5				
etector 2 Size(m)			5.5	5.5				
etector 2 Type			CI+Ex	CI+Ex				
etector 2 Channel								
etector 2 Extend (s)			0.0	0.0				
	Perm	Perm	NA	NA	Perm	Prot	Perm	
Turn Type	Feilii	Feilli			Peilli		Feilli	
Protected Phases	_	~	2	6	^	4	4	
Permitted Phases	2	2	•	•	6		4	
etector Phase	2	2	2	6	6	4	4	

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase	200			.,.,			
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	68.0	68.0	68.0	68.0	68.0	32.0	32.0
Total Split (%)	68.0%	68.0%	68.0%	68.0%	68.0%	32.0%	32.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	4.2	4.2	4.2	4.2	4.2	2.5	2.5
	1.0						2.5 0.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	1	1	0	0
Act Effct Green (s)		62.0	62.0	62.0	62.0	13.6	13.6
Actuated g/C Ratio		0.71	0.71	0.71	0.71	0.15	0.15
v/c Ratio		0.43	0.47	0.48	0.32	0.62	0.25
Control Delay		12.3	6.7	6.9	1.4	40.4	10.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		12.3	6.7	6.9	1.4	40.4	10.7
LOS		В	А	А	А	D	В
Approach Delay			7.2	5.5		34.7	
Approach LOS			А	А		С	
Queue Length 50th (m)		6.6	33.6	35.4	0.0	22.9	0.0
Queue Length 95th (m)		20.8	52.2	55.1	7.3	34.5	9.9
Internal Link Dist (m)		_0.0	73.9	319.0		59.8	0.0
Turn Bay Length (m)			10.0	010.0	100.0	00.0	
Base Capacity (vph)		274	2395	2395	1154	939	477
Starvation Cap Reductn		0	2000	2000	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		0.43	0.47	0.48	0.32	0.32	0.15
		0.45	0.47	0.40	0.52	0.52	0.10
Intersection Summary							
Area Type:	Other						
Cycle Length: 100							
Actuated Cycle Length: 87.8							
Natural Cycle: 80							
Control Type: Actuated-Uncod	ordinated						
Maximum v/c Ratio: 0.62	oraniatoa						
Intersection Signal Delay: 9.7				In	tersection	LOS' A	
Intersection Capacity Utilization						f Service C	2
Analysis Period (min) 15	011 00.470						,
,							
Splits and Phases: 1: Terry	Fox & Kanat	а					
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101							

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥		ሻ	↑	•	1
Traffic Volume (vph)	65	64	82	395	305	58
Future Volume (vph)	65	64	82	395	305	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0			65.0
Storage Lanes	1	0	1			1
Taper Length (m)	10.0		30.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						0.98
Frt	0.933					0.850
Flt Protected	0.975		0.950			0.000
Satd. Flow (prot)	1577	0	1647	1733	1733	1473
Flt Permitted	0.975	0	0.574	1100	1100	1710
	0.975	0	0.574 995	1733	1733	1440
Satd. Flow (perm)	15/7	-	995	1/33	1/33	
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	61					58
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	65	64	82	395	305	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	82	395	305	58
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7	. ugin	Lon	3.7	3.7	rugin
Link Offset(m)	0.0			0.0	0.0	
	0.0 2.0			2.0	2.0	
Crosswalk Width(m)	2.0			2.0	2.0	
Two way Left Turn Lane	4.00	1.00	1.00	1.00	1.00	4.00
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	18.6		18.6	5.5	5.5	18.6
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel	UT EA					
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase			2	-	v	
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
winning in initial (3)	10.0		10.0	10.0	10.0	10.0

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Synchro 10 Report

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1		29.7	29.7	29.7	29.7
Total Split (s)	27.0		53.0	53.0	53.0	53.0
Total Split (%)	33.8%		66.3%	66.3%	66.3%	66.3%
Maximum Green (s)	21.9		47.3	47.3	47.3	47.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	0.1		0.1	0.1	0.1	0.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	14.0 0		9.0 0	9.0		9.0
	10.6			52.9	0 52 0	52.9
Act Effct Green (s)			52.9		52.9	
Actuated g/C Ratio	0.15		0.76	0.76	0.76	0.76
v/c Ratio	0.44		0.11	0.30	0.23	0.05
Control Delay	20.5		4.3	4.8	4.4	1.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	20.5		4.3	4.8	4.4	1.4
LOS	C		А	A	A	А
Approach Delay	20.5			4.7	3.9	
Approach LOS	C			A	A	
Queue Length 50th (m)	7.2		2.6	14.7	10.6	0.0
Queue Length 95th (m)	20.0		7.0	28.8	21.6	2.7
Internal Link Dist (m)	199.0			315.7	142.2	
Turn Bay Length (m)			45.0			65.0
Base Capacity (vph)	536		751	1308	1308	1101
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	0.24		0.11	0.30	0.23	0.05
Intersection Summary	•					
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 70						
Natural Cycle: 60						
Control Type: Actuated-Unco	oordinated					
Maximum v/c Ratio: 0.44						
Intersection Signal Delay: 6.5					tersection	
Intersection Capacity Utilizat	ion 47.4%			IC	CU Level of	f Service A
Analysis Period (min) 15						
Splits and Phases: 2: Kan	ata & Huntsville)				
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E2 a						
20.5						

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3: Terry Fox & Tillsonburg PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		<u></u>	*	1		1
Traffic Volume (vph)	0	1235	1107	120	0	15
Future Volume (vph)	0	1235	1107	120	0	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1235	1107	120	0	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1235	1107	120	0	15
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ŭ	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 42.3%			IC	U Level of	Service A
Analysis Daried (usin) 45				10		

Intersection Capacity Utili Analysis Period (min) 15

4: Tillsonburg & Full Access PM Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		eî 🕺			र्स
Traffic Volume (vph)	4	20	116	4	5	11
Future Volume (vph)	4	20	116	4	5	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.887		0.995			
Flt Protected	0.992					0.985
Satd. Flow (prot)	1525	0	1725	0	0	1707
Flt Permitted	0.992					0.985
Satd. Flow (perm)	1525	0	1725	0	0	1707
Link Speed (k/h)	50		50			50
Link Distance (m)	52.0		79.4			246.5
Travel Time (s)	3.7		5.7			17.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	20	116	4	5	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	120	0	0	16
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7	Ŭ	0.0	Ŭ		0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	2.0		2.0			2.0
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	
Sign Control	Stop		Free			Free
Intersection Summary						
· · · · · ·	Other					
Area Type:	Other					
Control Type: Unsignalized	an 16.70/			10	ال مرما ج	Convior A
Intersection Capacity Utilization	011 10.7%			IC IC	U Level of	Service A

Analysis Period (min) 15

5: Terry Fox & RIRO Access PM Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		***	≜1 ≱			*
Traffic Volume (vph)	0	1235	1188	58	0	39
Future Volume (vph)	0	1235	1188	58	0	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	45.0				10.0	
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993			0.865
Flt Protected						
Satd. Flow (prot)	0	4732	3270	0	0	1499
Flt Permitted						
Satd. Flow (perm)	0	4732	3270	0	0	1499
Link Speed (k/h)		70	50		50	
Link Distance (m)		136.7	97.9		60.2	
Travel Time (s)		7.0	7.0		4.3	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1235	1188	58	0	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1235	1246	0	0	39
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.0	3.0	J	0.0	Ū
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	ion 46.6%			IC	U Level of	Service A

Intersection Capacity Utilization 46.6% Analysis Period (min) 15

ICU Level of Service A

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		1		•	<u> ተተኑ</u>	
Traffic Volume (vph)	0	21	0	477	355	14
Future Volume (vph)	0	21	0	477	355	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	0.0			25.0
Storage Lanes	0	1	0			1
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor						
Frt		0.865			0.994	
Flt Protected						
Satd. Flow (prot)	0	1499	0	1733	4704	0
Flt Permitted	-		-			-
Satd. Flow (perm)	0	1499	0	1733	4704	0
Link Speed (k/h)	50		-	50	50	-
Link Distance (m)	62.5			83.8	339.7	
Travel Time (s)	4.5			6.0	24.5	
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	21	0	477	355	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	0	477	369	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0	J -		2.0	2.0	J -
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
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	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 29.8%			IC	U Level of	Service A
Analysis Period (min) 15						

1: Terry Fox & Kanata SAT Peak Hour

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	_ ●		-	-		•	*
Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		Ä	^	<u>^</u>	1	ካካ	1
Traffic Volume (vph)	20	77	746	886	327	302	83
Future Volume (vph)	20	77	746	886	327	302	83
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	1000	0.0			100.0	0.0	0.0
Storage Lanes		1			100.0	2	1
Taper Length (m)		45.0			•	80.0	•
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor	0.00	1.00	0.00	0.00	0.97	0.01	0.99
Frt		1.00			0.850		0.850
Flt Protected		0.950			0.000	0.950	0.000
Satd. Flow (prot)	0	1702	3390	3390	1517	3195	1473
Flt Permitted	0	0.301	0000	0000	1017	0.950	1410
Satd. Flow (perm)	0	539	3390	3390	1478	3195	1453
Right Turn on Red	U		0090	0090	Yes	5195	Yes
Satd. Flow (RTOR)					327		83
Link Speed (k/h)			70	70	321	50	05
Link Distance (m)			97.9	343.0		83.8	
Travel Time (s)			97.9 5.0	343.0 17.6		6.0	
Confl. Peds. (#/hr)		1	5.0	0.11	1	0.0	
Confl. Bikes (#/hr)		1			5		2
Peak Hour Factor	1.00	1.00	1.00	1.00	с 1.00	1.00	1.00
	0%	2%	2%	2%	2%	1.00 5%	5%
Heavy Vehicles (%)							
Adj. Flow (vph)	20	77	746	886	327	302	83
Shared Lane Traffic (%)	0	07	740	000	207	200	0.2
Lane Group Flow (vph)	0	97	746	886	327	302	83
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(m)			6.0	5.0		10.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			2.0	2.0		2.0	
Two way Left Turn Lane							
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2	1	1	1
Detector Template	Left	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	18.6	18.6	93.0	93.0	18.6	18.6	18.6
Trailing Detector (m)	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
Detector 1 Size(m)	18.6	18.6	5.5	5.5	18.6	18.6	18.6
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)			87.5	87.5			
Detector 2 Size(m)			5.5	5.5			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA	Perm	Prot	Perm
Protected Phases			2	6		4	
Permitted Phases	2	2	_		6		4
Detector Phase	2	2	2	6	6	4	4
	2	2	2	0	0	т	7

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Synchro 10 Report

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Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase	200					001	0011
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	31.2	31.2
Total Split (s)	58.0	58.0	58.0	58.0	58.0	32.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	64.4%	35.6%	35.6%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	25.8	25.8
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	3.7	3.7
All-Red Time (s)	1.8	1.8	1.8	1.8	1.8	2.5	2.5
Lost Time Adjust (s)	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.2	6.2
Lead/Lag		0.0	0.0	0.0	0.0	0.2	0.2
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	18.0	18.0
Pedestrian Calls (#/hr)	12.0	12.0	12.0	12.0	12.0	10.0	10.0
Act Effct Green (s)	U	52.3	52.3	52.3	52.3	14.2	14.2
		52.3 0.66	52.3 0.66	52.3 0.66	52.3 0.66	0.18	0.18
Actuated g/C Ratio v/c Ratio		0.66	0.66	0.66	0.66	0.18	0.18
Control Delay		9.3	0.33 6.9	0.39 7.3	0.30	0.53 32.2	0.25 8.4
Queue Delay		9.5	0.9	0.0	0.0	52.2 0.0	0.4 0.0
,		0.0 9.3	0.0 6.9	0.0 7.3	0.0	32.2	0.0 8.4
Total Delay LOS		9.3 A					
Approach Delay		A	A 7.1	A 5.8	А	C 27.1	А
			7.1 A	5.0 A		27.1 C	
Approach LOS		4.3	18.2	22.8	0.0	19.4	0.0
Queue Length 50th (m)					0.0 9.2		0.0 9.2
Queue Length 95th (m)		16.4	40.8	50.4	9.2	29.4	9.2
Internal Link Dist (m)			73.9	319.0	100.0	59.8	
Turn Bay Length (m)		257	0054	0054	100.0	1050	E04
Base Capacity (vph)		357	2251	2251	1091	1052	534
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		0.27	0.33	0.39	0.30	0.29	0.16
Intersection Summary							
Area Type:	Other						
Cycle Length: 90							
Actuated Cycle Length: 78.7							
Natural Cycle: 60							
Control Type: Actuated-Uncoord	dinated						
Maximum v/c Ratio: 0.53							
Intersection Signal Delay: 9.6				In	tersection	LOS: A	
Intersection Capacity Utilization	58.4%				CU Level of		
Analysis Period (min) 15					2010101		
Splits and Phases: 1: Terry F	ox & Kanat	а					
S							- A.
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58 s							32 s
							10
Ø6							

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	- M	LDIX			<u> </u>	
Traffic Volume (vph)	83	65	51	353	T 312	82
Future Volume (vph)	83	65	51	353	312	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	45.0	1000	1000	65.0
Storage Lanes	0.0	0.0	45.0			05.0
Taper Length (m)	10.0	0	30.0			1
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	0.98
Frt	0.941					0.90
Fit Protected	0.941		0.950			0.000
		0		1700	1700	1170
Satd. Flow (prot)	1587	0	1647	1733	1733	1473
Flt Permitted	0.973	^	0.571	1700	1700	1440
Satd. Flow (perm)	1587	0	990	1733	1733	1440
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	59					82
Link Speed (k/h)	50			50	50	
Link Distance (m)	223.0			339.7	166.2	
Travel Time (s)	16.1			24.5	12.0	
Confl. Bikes (#/hr)						4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	83	65	51	353	312	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	51	353	312	82
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)	2.0			2.0	2.0	
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	24			14
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (m)	18.6		18.6	93.0	93.0	18.6
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
()	18.6		18.6	0.0 5.5	0.0 5.5	18.6
Detector 1 Size(m)						
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)				87.5	87.5	
Detector 2 Size(m)				5.5	5.5	
Detector 2 Type				CI+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases			2			6
Detector Phase	4		2	2	6	6
Switch Phase			-	-	U	Ū
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0
	10.0		10.0	10.0	10.0	10.0

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Synchro 10 Report

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Split (s)	26.1	LDR	29.7	29.7	29.7	29.7
Total Split (s)	27.0		43.0	43.0	43.0	43.0
Total Split (%)	38.6%		61.4%	61.4%	61.4%	61.4%
Maximum Green (s)	21.9		37.3	37.3	37.3	37.3
Yellow Time (s)	3.3		3.7	3.7	3.7	3.7
All-Red Time (s)	1.8		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		5.7	5.7	5.7	5.7
Lead/Lag	5.1		5.1	5.1	5.1	5.1
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	Max
Walk Time (s)	7.0		15.0	15.0	15.0	15.0
Flash Dont Walk (s)	14.0		9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	10.7		42.2	42.2	42.2	42.2
Actuated g/C Ratio	0.18		0.71	0.71	0.71	0.71
v/c Ratio	0.44		0.07	0.29	0.25	0.08
Control Delay	18.3		4.8	5.5	5.3	1.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.3		4.8	5.5	5.3	1.6
LOS	В		А	А	А	А
Approach Delay	18.3			5.4	4.5	
Approach LOS	В			А	А	
Queue Length 50th (m)	7.7		1.6	12.8	11.0	0.0
Queue Length 95th (m)	20.1		5.1	26.7	23.3	3.5
Internal Link Dist (m)	199.0		••••	315.7	142.2	0.0
Turn Bay Length (m)	100.0		45.0	0.011		65.0
Base Capacity (vph)	622		702	1229	1229	1045
Starvation Cap Reductn	022		0	0	0	045
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.24		0.07	0.29	0.25	0.08
Intersection Summary						
Area Type:	Other					
Cycle Length: 70						
Actuated Cycle Length: 59.4	1					
Natural Cycle: 60						
Control Type: Actuated-Unc	cordinated					
Maximum v/c Ratio: 0.44	ooraniatoa					
Intersection Signal Delay: 7	0			In	tersection	
Intersection Capacity Utiliza					CU Level of	
Analysis Period (min) 15	1011 40.070			IC.		
, ()						
Splits and Phases: 2: Kar	nata & Huntsville	•				
A an						
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Has						

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3: Terry Fox & Tillsonburg SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	^	1		1
Traffic Volume (vph)	0	843	914	48	0	17
Future Volume (vph)	0	843	914	48	0	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0			55.0	0.0	0.0
Storage Lanes	0			1	0	1
Taper Length (m)	10.0				10.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	3293	3293	1473	0	1499
Flt Permitted						
Satd. Flow (perm)	0	3293	3293	1473	0	1499
Link Speed (k/h)		50	50		50	
Link Distance (m)		274.9	136.7		79.4	
Travel Time (s)		19.8	9.8		5.7	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	843	914	48	0	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	843	914	48	0	17
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		5.0	5.0	Ŭ	0.0	Ŭ
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
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	24	14
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	ion 36.7%			IC	U Level of	Service A

Intersection Capacity Utilization 36.7% Analysis Period (min) 15 ICU Level of Service A

4: Tillsonburg & Full Access SAT Peak Hour

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	¥		el e			र्च
Traffic Volume (vph)	4	22	42	6	5	13
Future Volume (vph)	4	22	42	6	5	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.983			
Flt Protected	0.992					0.986
Satd. Flow (prot)	1523	0	1704	0	0	1709
Flt Permitted	0.992					0.986
Satd. Flow (perm)	1523	0	1704	0	0	1709
Link Speed (k/h)	50		50			50
Link Distance (m)	52.0		79.4			246.5
Travel Time (s)	3.7		5.7			17.7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	22	42	6	5	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	48	0	0	18
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)	2.0		2.0			2.0
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	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizati	on 15.4%			IC	U Level of	Service A
Analysis Period (min) 15						

Analysis Period (min) 15

5: Terry Fox & RIRO Access SAT Peak Hour

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		^	≜1 ≱			1
Traffic Volume (vph)	0	843	927	62	0	35
Future Volume (vph)	0	843	927	62	0	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	1.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	45.0				10.0	
Lane Util. Factor	1.00	0.91	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.991			0.865
Flt Protected						
Satd. Flow (prot)	0	4732	3264	0	0	1499
Flt Permitted	Ū					
Satd. Flow (perm)	0	4732	3264	0	0	1499
Link Speed (k/h)		70	50	v	50	
Link Distance (m)		136.7	97.9		60.2	
Travel Time (s)		7.0	7.0		4.3	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)	•			5		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	843	927	62	0	35
Shared Lane Traffic (%)	5	510	521	VL	v	
Lane Group Flow (vph)	0	843	989	0	0	35
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	Lon	3.0	3.0	rugitt	0.0	rugin
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		2.0	2.0		2.0	
Two way Left Turn Lane		2.0	2.0		2.0	
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	14
Sign Control		Free	Free		Stop	
					0.00	
Intersection Summary	01					
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization	on 39.1%			IC	U Level of	Service A

Intersection Capacity Utili Analysis Period (min) 15 on 39.1% CU Level of Service A

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		1		•	4† \$	
Traffic Volume (vph)	0	20	0	404	365	12
Future Volume (vph)	0	20	0	404	365	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	0.0			25.0
Storage Lanes	0	1	0			1
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	0.91
Ped Bike Factor						0.01
Frt		0.865			0.995	
Flt Protected					0.000	
Satd. Flow (prot)	0	1499	0	1733	4708	0
Flt Permitted	Ū	1100	Ŭ			v
Satd. Flow (perm)	0	1499	0	1733	4708	0
Link Speed (k/h)	50	1100	Ŭ	50	50	v
Link Distance (m)	62.5			83.8	339.7	
Travel Time (s)	4.5			6.0	24.5	
Confl. Bikes (#/hr)	1.0			0.0	21.0	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	20	0	404	365	12
Shared Lane Traffic (%)	Ū	20	v	101	000	
Lane Group Flow (vph)	0	20	0	404	377	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0	rugin	Lon	2.0	2.0	rugin
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	2.0			2.0	2.0	
Two way Left Turn Lane	2.0			2.0	2.0	
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24	1.00	1.00	1.00
Sign Control	Stop	17	2 7	Free	Free	17
	0100			1100	1100	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilizat	ion 25.8%			IC	U Level of	Service A
Analysis Period (min) 15						
• • • •						