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Heritage Hills Retail Plaza 471 Terry Fox Drive, Ottawa Transportation Impact Assessment

Engineering excellence. Planning precision. Inspired landscapes.

**Heritage Hills Retail Plaza
471 Terry Fox Drive**

Transportation Impact Assessment

Prepared By:

NOVATECH

Suite 200, 240 Michael Cowpland Drive
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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



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



TIA Plan Reports

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

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

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

CERTIFICATION

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

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

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Dated at Ottawa this 31 day of January, 2019.
(City)

Name: Jennifer Luong, P.Eng.
(Please Print)

Professional Title: Senior Project Manager, Transportation/Traffic

Jennifer Luong
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 full-movement 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 (l) 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 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.
- 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.

Transit

- 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.

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 full-movement 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

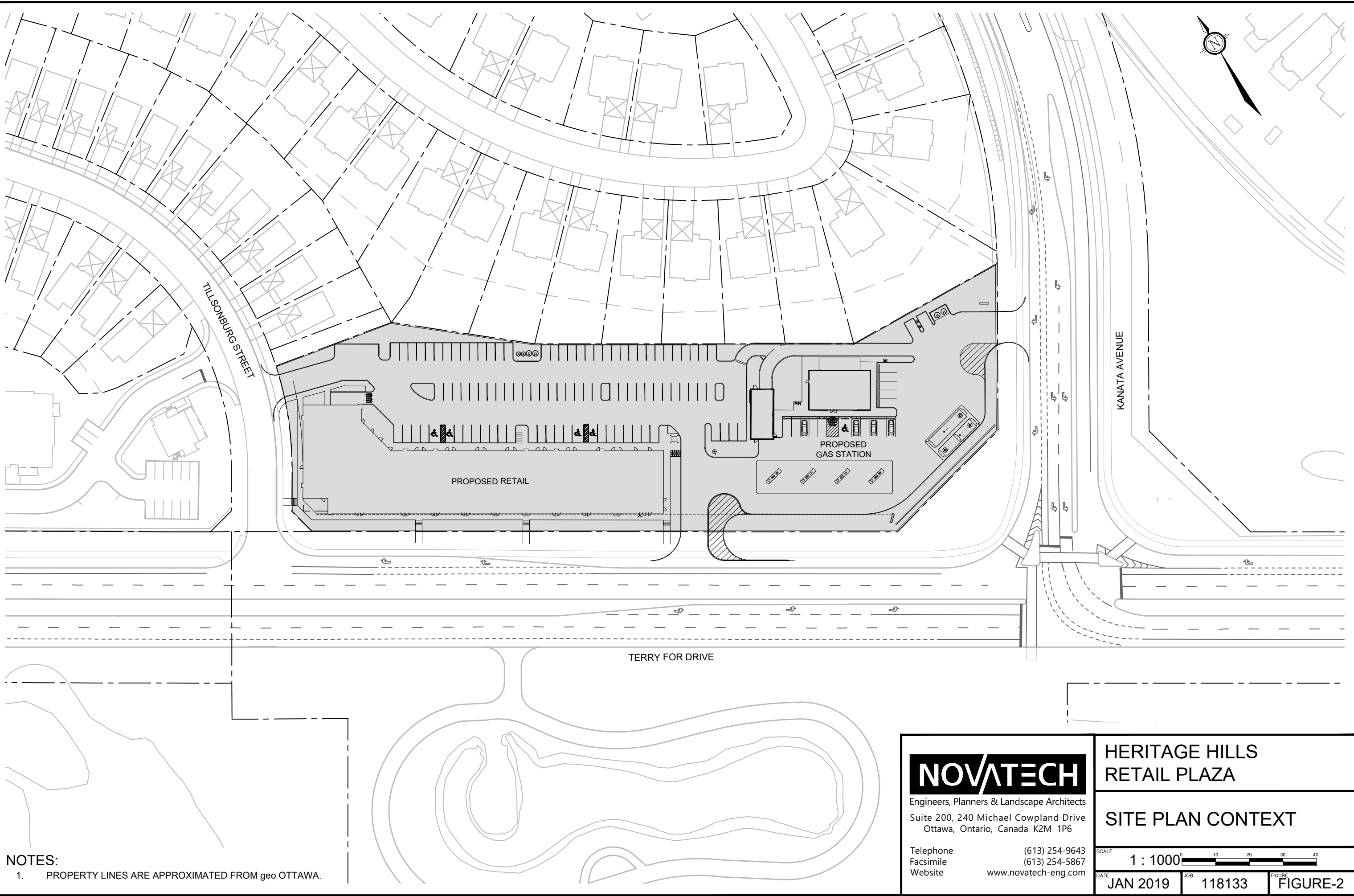
3.1 Screening Form

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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- NOTES:
1. PROPERTY LINES ARE APPROXIMATED FROM geo OTTAWA.

| | | | |
|---|---|----------------------|---------------------------|
| NOVATECH Engineers, Planners & Landscape Architects Suite 200, 240 Michael Cowpland Drive Ottawa, Ontario, Canada K2M 1P6 Telephone (613) 254-9643 Facsimile (613) 254-5867 Website www.novatech-eng.com | HERITAGE HILLS RETAIL PLAZA | | |
| | SITE PLAN CONTEXT | | |
| | SCALE 1 : 1000 0 10 20 30 40 | | |
| | DATE JAN 2019 | JOB 118133 | FIGURE FIGURE-2 |

CUT11V17 DWG 270mm X 122mm

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)

Tillsonburg Street, South Side:

- 17 driveways to residences on Tillsonburg Street

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 #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)

- 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)

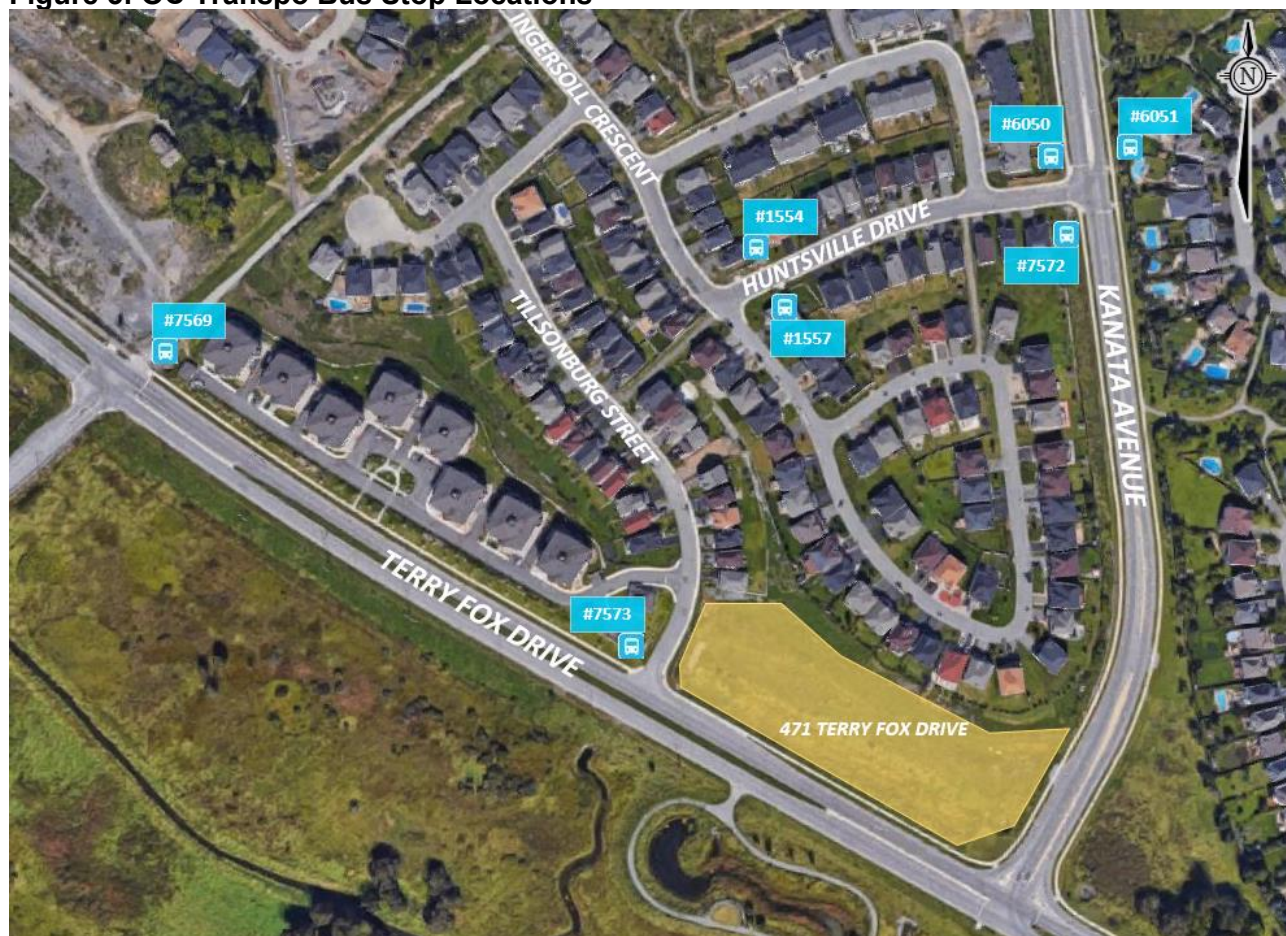
Locations of these bus stops are shown in **Figure 3**.

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).

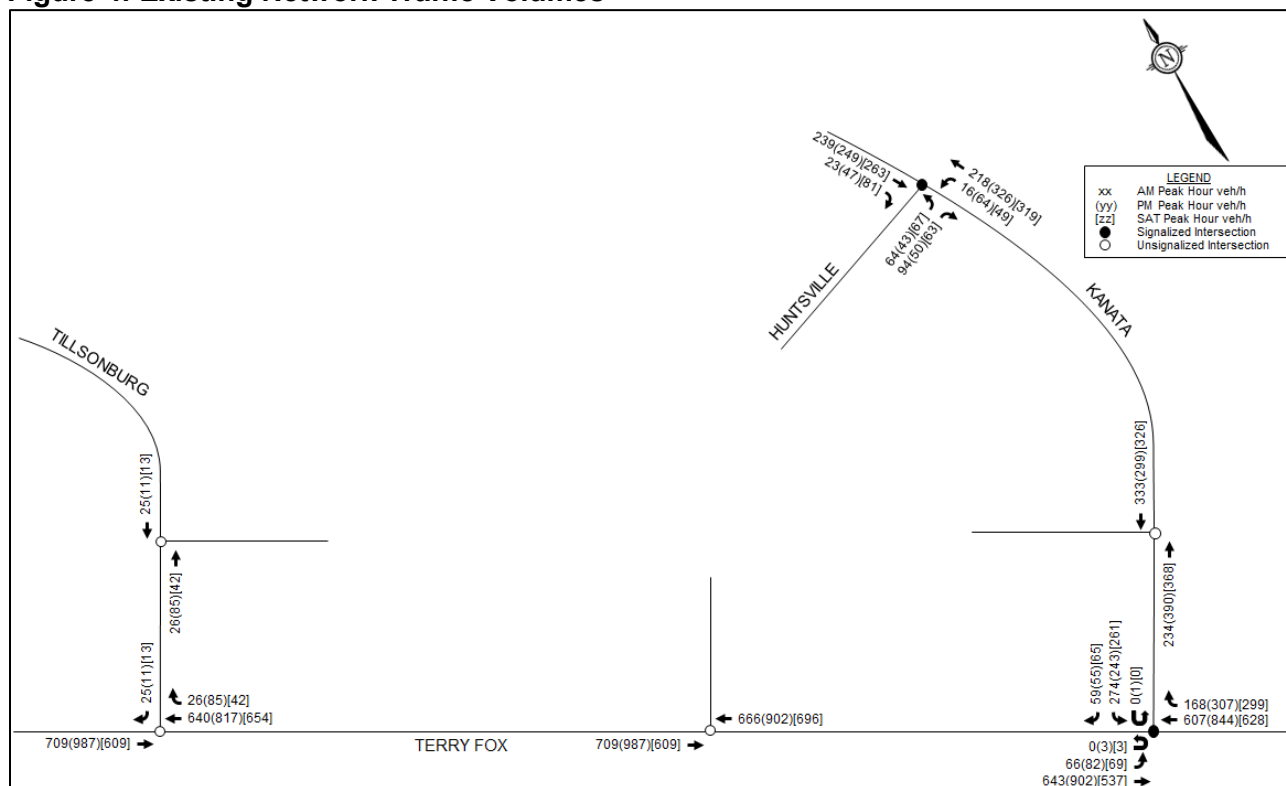
Weekday traffic counts were completed on the dates listed below by the following sources:

- | | | |
|--------------------------------------|--------------------|------------------|
| • Terry Fox Drive/Tillsonburg Street | May 27, 2015 | (City of Ottawa) |
| • 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**.

Table 2: TIA Exemptions

| Module | Element | Exemption Criteria | Exemption Status |
|--|---|--|------------------|
| Design Review Component | | | |
| 4.1 Development Design | 4.1.2 Circulation and Access | • Only required for site plans | Not Exempt |
| | 4.1.3 New Street Networks | • Only required for plans of subdivision | Exempt |
| 4.2 Parking | 4.2.1 Parking Supply | • Only required for site plans | Not Exempt |
| | 4.2.2 Spillover Parking | • Only required for site plans where parking supply is 15% below unconstrained demand | Exempt |
| Network Impact Component | | | |
| 4.5 Transportation Demand Management | <i>All elements</i> | • 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 | 4.6.1 Adjacent Neighbourhoods | • Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds | Exempt |
| 4.8 Network Concept | <i>All elements</i> | • 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 |

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**.

Table 3: Person Trip Generation

| Land Use | ITE Code | GLA/Fuel Pumps | AM Peak (PPH) ⁽¹⁾ | | | PM Peak (PPH) | | | SAT Peak (PPH) | | |
|--------------------------|----------|------------------------|------------------------------|-----------|------------|---------------|------------|------------|----------------|------------|------------|
| | | | IN | OUT | TOT | IN | OUT | TOT | IN | OUT | TOT |
| 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 |
| Total | | | 70 | 62 | 132 | 128 | 132 | 260 | 136 | 131 | 267 |

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**.

Table 4: Person Trips by Modal Share

| Travel Mode | Modal Share | | AM Peak | | | PM Peak | | | SAT Peak | | |
|--------------------------|-------------|-----|---------|-----|-----|---------|-----|-----|----------|-----|-----|
| | A/P | SAT | IN | OUT | TOT | IN | OUT | TOT | IN | OUT | TOT |
| Retail Person 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 Person 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% | | 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 Driver (Total) | | | 54 | 49 | 103 | 97 | 100 | 197 | 105 | 101 | 206 |
| Auto Passenger (Total) | | | 11 | 10 | 21 | 19 | 20 | 39 | 21 | 20 | 41 |
| Transit (Total) | | | 1 | 1 | 2 | 3 | 3 | 6 | 0 | 0 | 0 |
| Non-Auto (Total) | | | 3 | 3 | 6 | 9 | 9 | 18 | 10 | 10 | 20 |

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**.

Table 5: Internally Captured Trips

| Trip Type | AM Peak | | | PM Peak | | | SAT Peak | | |
|--------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| | IN | OUT | TOT | IN | OUT | TOT | IN | OUT | TOT |
| <i>Retail Trips</i> | 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 |
| <i>Gas Station Trips</i> | 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 |

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 follow the PM peak hour rate of 42%.

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

Table 6: Primary and Pass-by Trips

| Trip Type | AM Peak | | | PM Peak | | | SAT Peak | | |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|------------|
| | IN | OUT | TOT | IN | OUT | TOT | IN | OUT | TOT |
| <i>External Retail Trips</i> | 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 |
| <i>External Gas Station Trips</i> | 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 |

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.

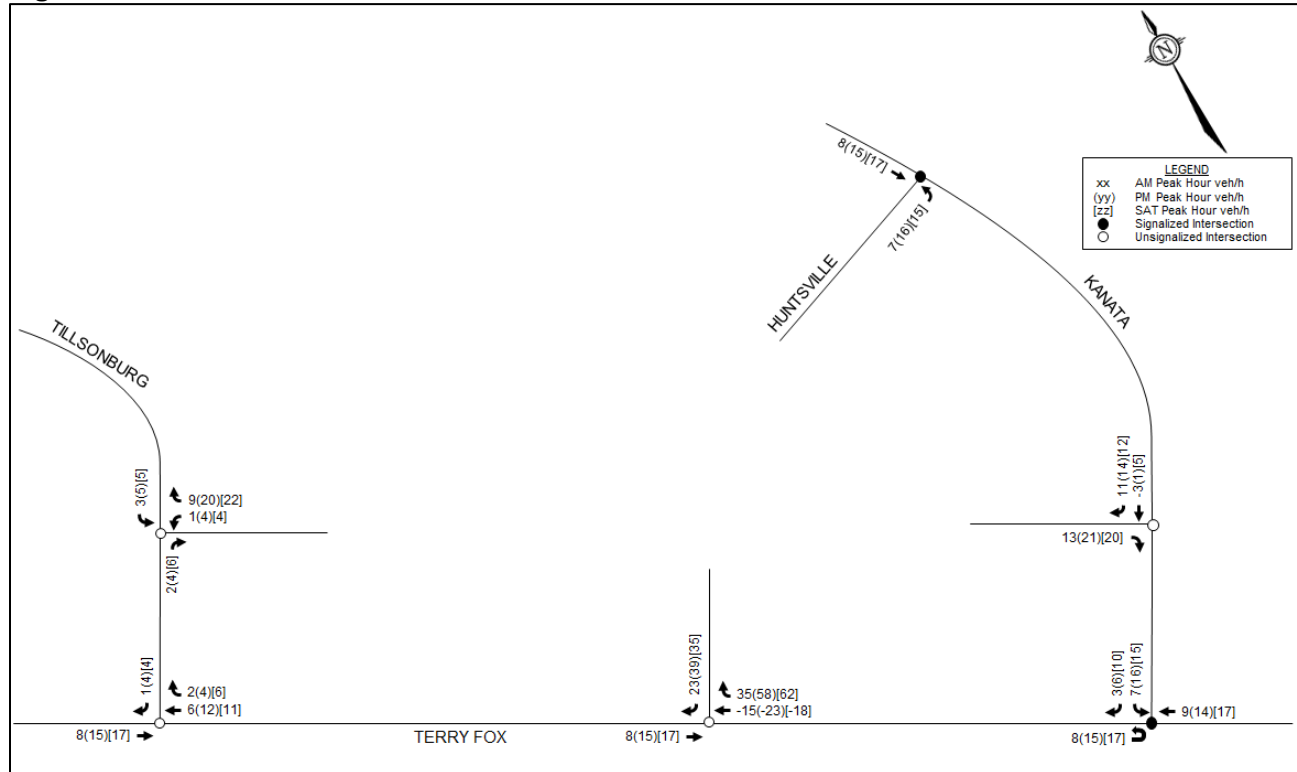
Pass-by trips generated by the proposed retail development have been distributed to the access on Terry Fox Drive. Pass-by trips generated by the proposed gas station have been distributed proportionately, with 75% assigned to the access on Terry Fox Drive and 25% assigned to the access on Kanata Avenue. 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.

Figure 5: Site-Generated Traffic


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**.

Table 7: Saturday Trip Generation - Other Area Developments

| Land Use | ITE Code | Units | SAT Peak (PPH) | | |
|--|----------|-------|----------------|-----|-----|
| | | | IN | OUT | TOT |
| Richardson Ridge Subdivision, Phase 4 (197 units in total) | | | | | |
| Single-Family Detached Housing | 210 | 41 | 26 | 23 | 49 |
| Multifamily Housing (Low-Rise) | 220 | 156 | 75 | 64 | 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 |

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 8: Saturday Trips by Modal Share - Other Area Developments

| Travel Mode | Modal Share | SAT Peak | | |
|--|-------------|----------|-----|-----|
| | | IN | OUT | TOT |
| <i>Richardson Ridge Subdivision, Phase 4</i> | | 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 |
| <i>Broughton Subdivision, Phase 3B</i> | | 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 |
| <i>Kanata Highlands Subdivision, Phase 1</i> | | 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 |

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**.

Table 9: Vehicle Trips Generated by Other Area Developments

| Development | AM Peak (VPH) | | | PM Peak (VPH) | | | SAT Peak (VPH) | | |
|----------------------------------|---------------|-----|-----|---------------|-----|-----|----------------|-----|-----|
| | IN | OUT | TOT | IN | OUT | TOT | IN | OUT | TOT |
| 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

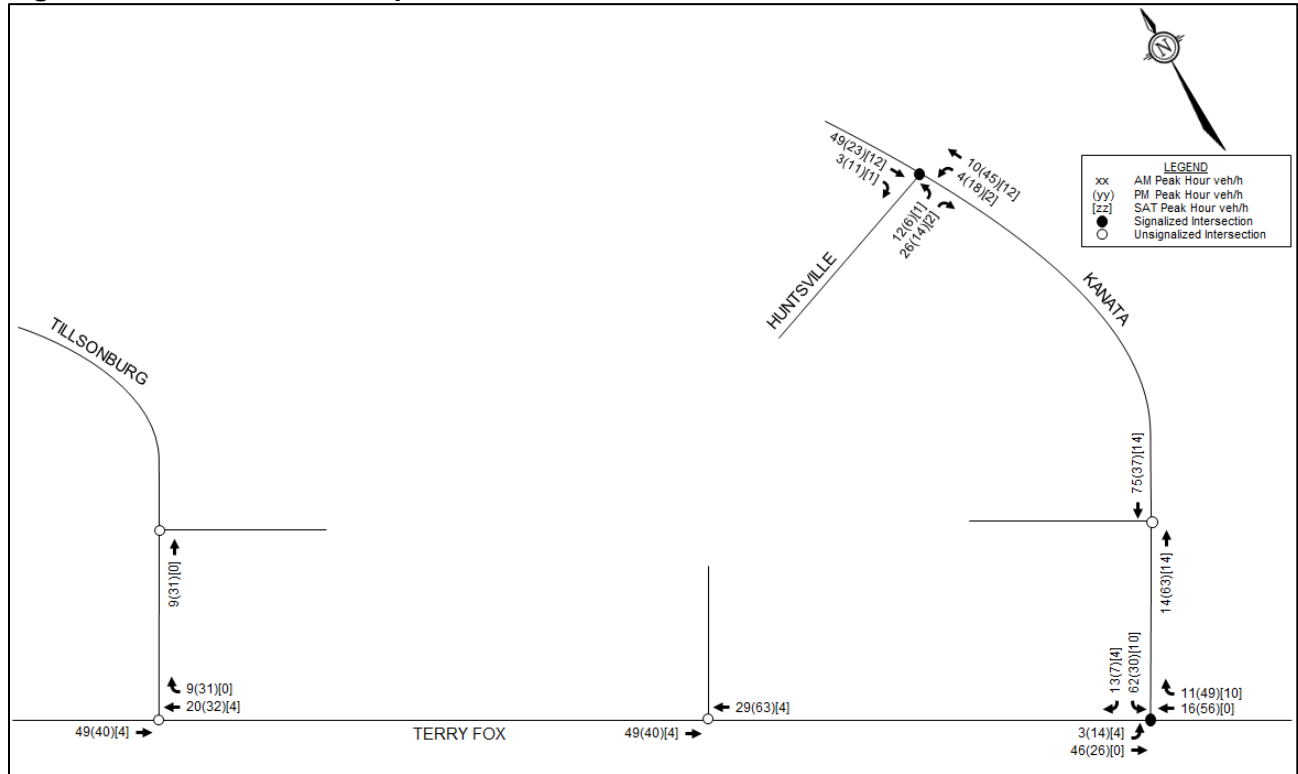


Figure 7: Other Area Developments - 2024 Traffic

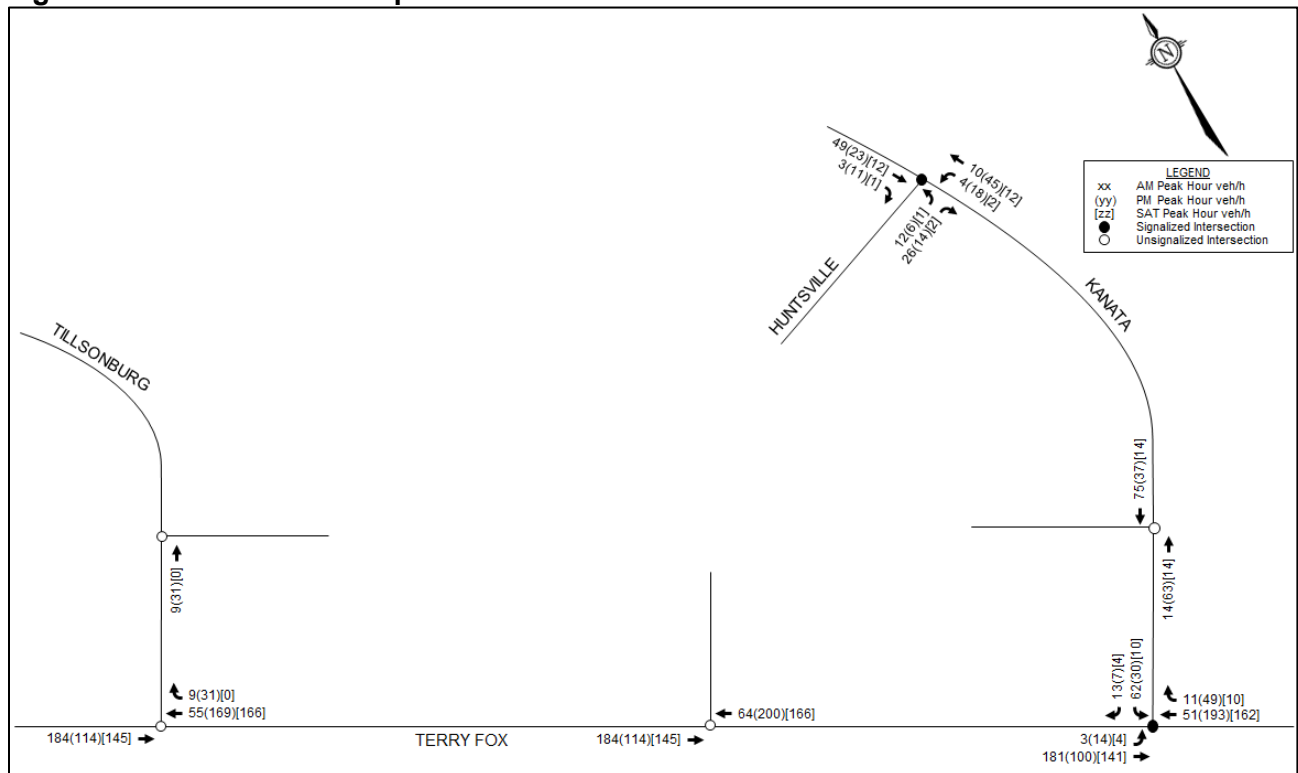


Figure 8: 2019 Background Traffic

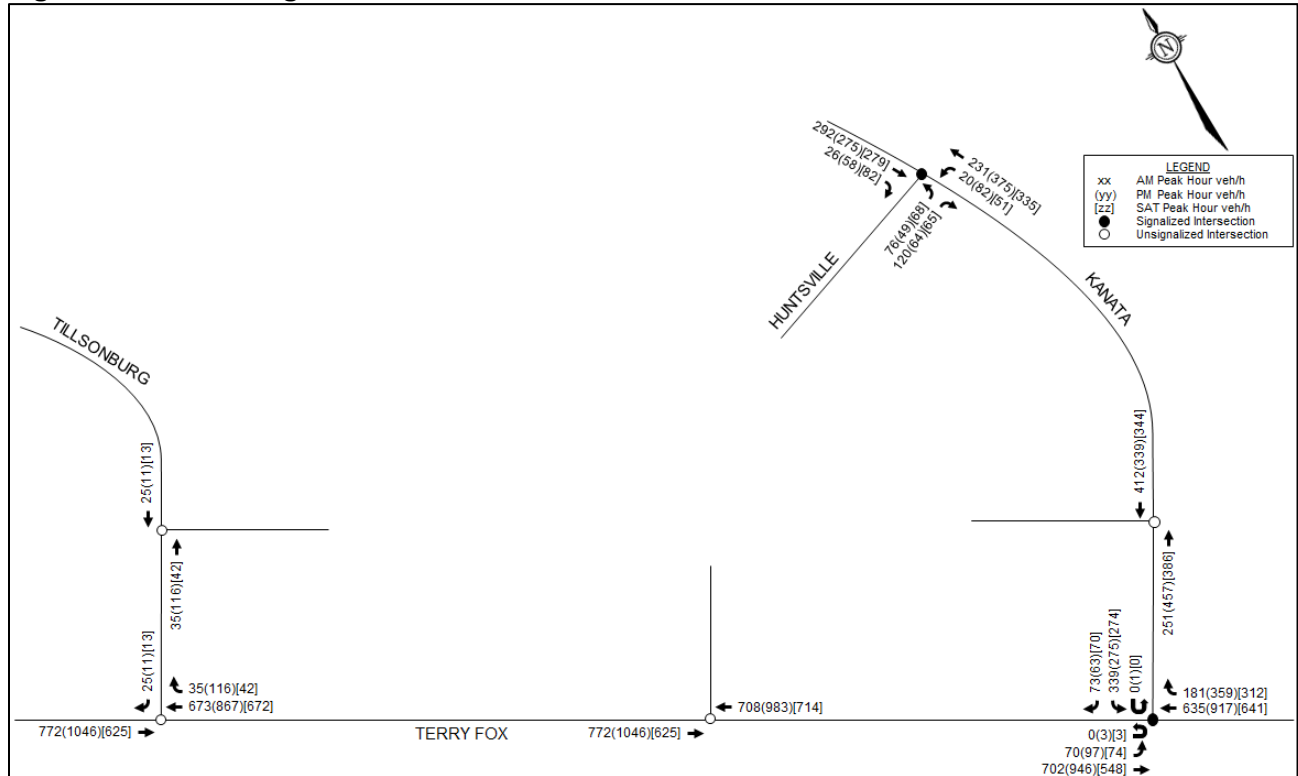


Figure 9: 2024 Background Traffic

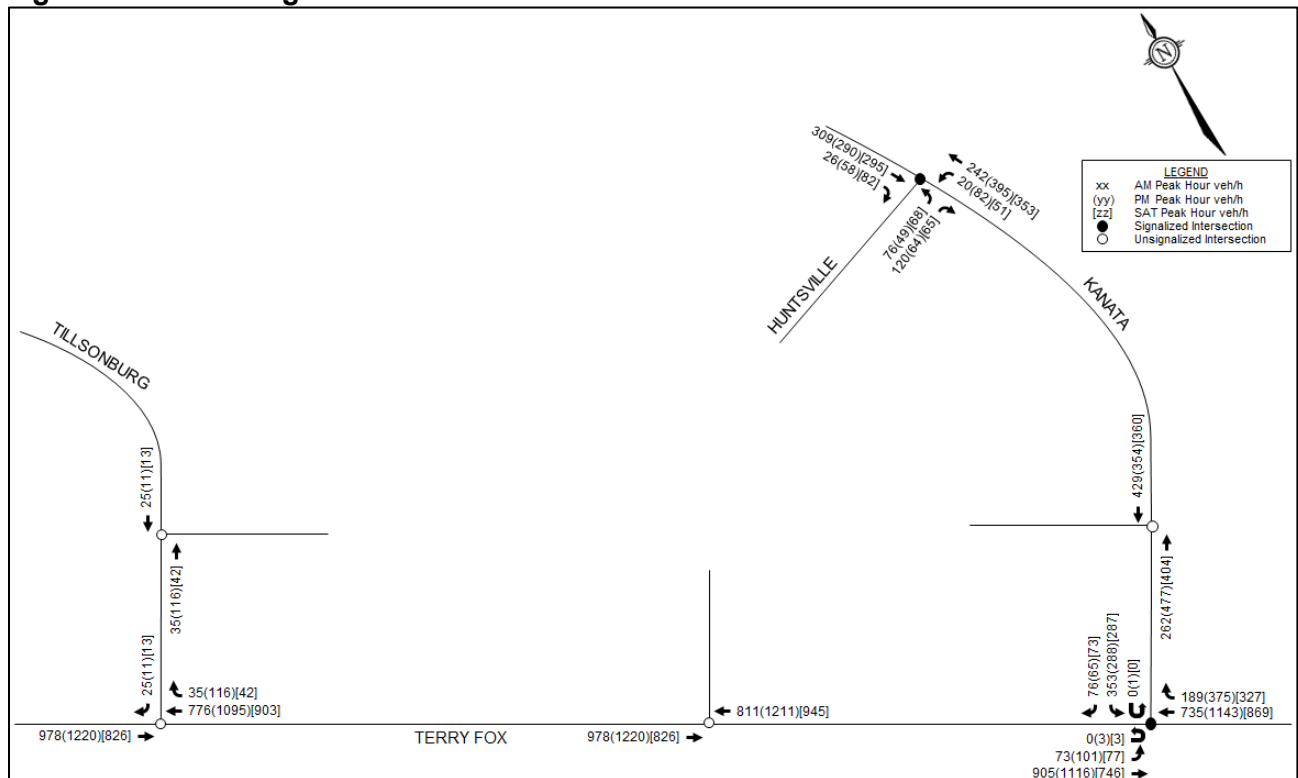


Figure 10: 2019 Total Traffic

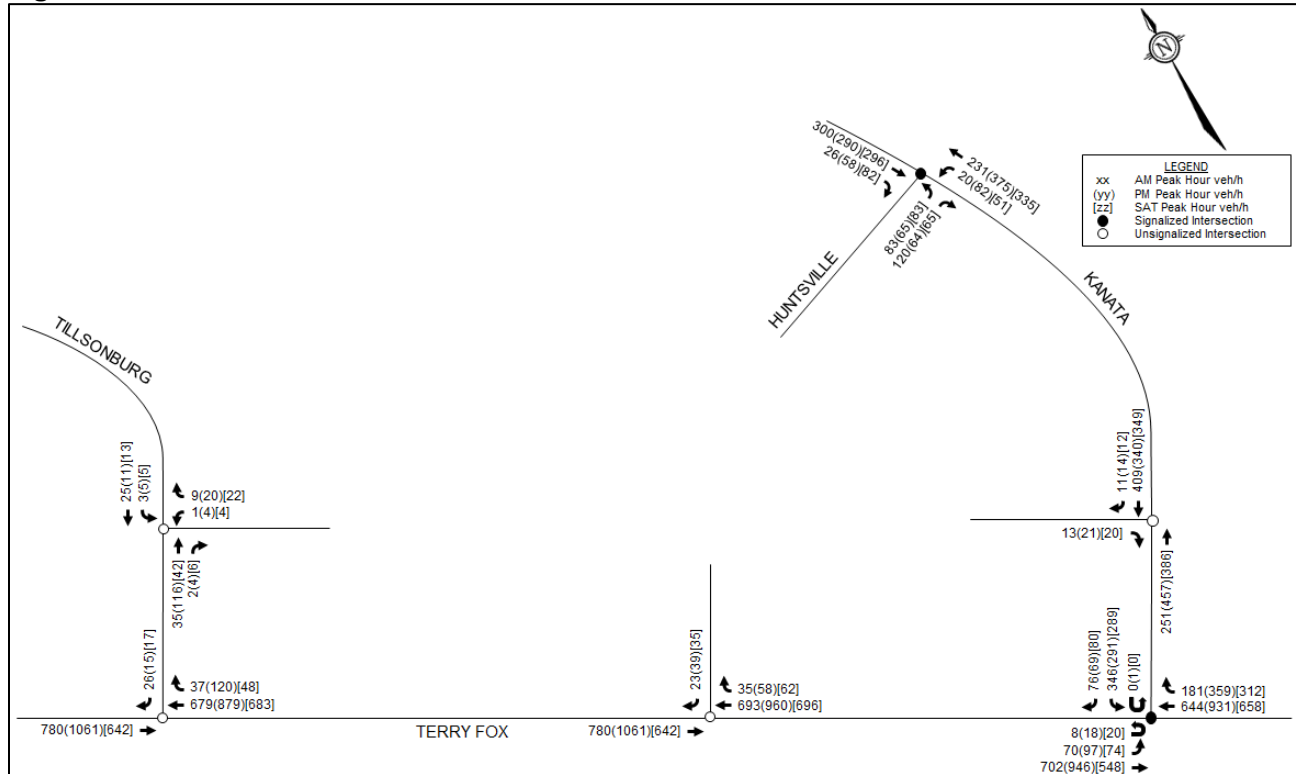
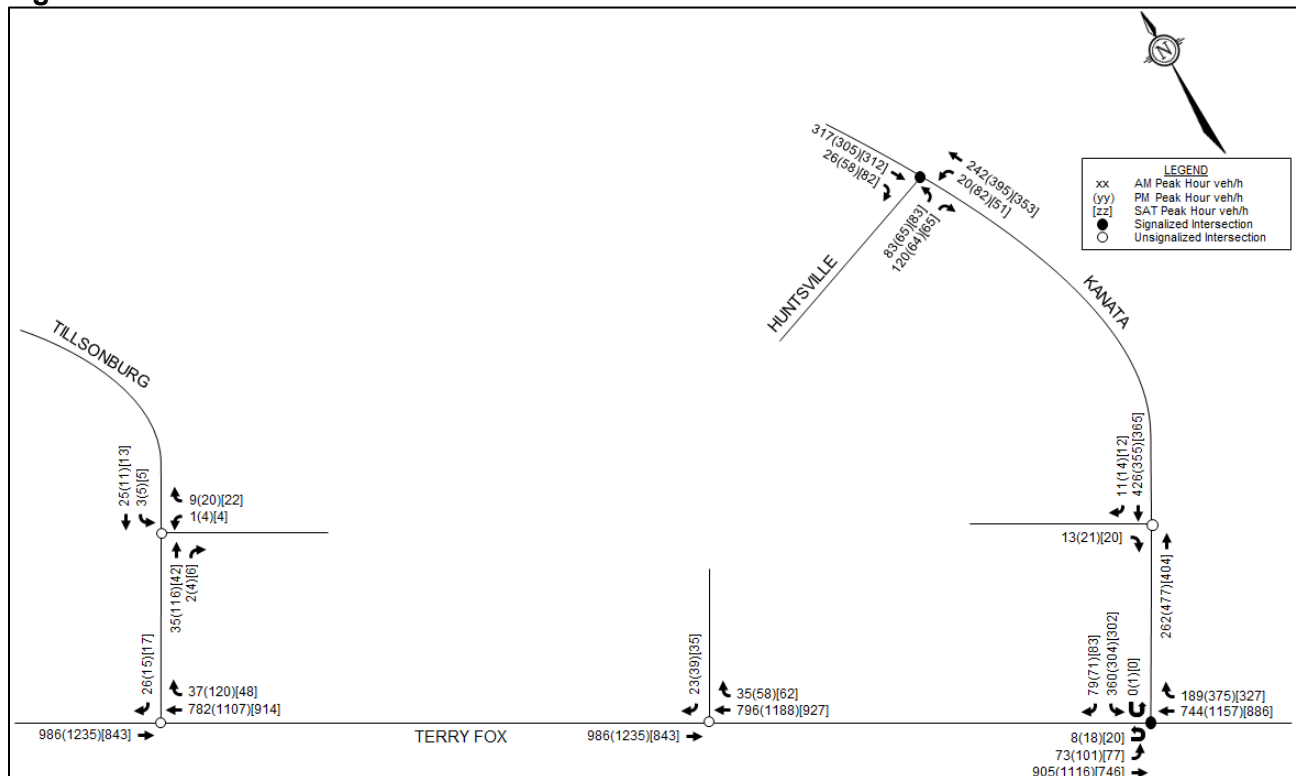


Figure 11: 2024 Total Traffic



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**.

Table 10: Parking Requirements Per Zoning By-Law

| Land Use | Rate | GFA | Required | Provided |
|----------------------------------|---------------------------------------|----------------------|-----------|------------|
| <i>Vehicle Parking</i> | | | | |
| 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 |
| <i>Bicycle Parking</i> | | | | |
| 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**.

Table 11: PLOS Segment Analysis

| Sidewalk Width | Boulevard Width | Avg. Daily Curb Lane Traffic Volume | Presence of On-Street Parking | Operating Speed ⁽¹⁾ | Segment PLOS |
|--|-----------------|-------------------------------------|-------------------------------|--------------------------------|--------------|
| Terry Fox Drive (east side) | | | | | |
| 2.0m | > 2.0m | > 3000 vpd | No | 80 km/h | D |
| Tillsonburg Street (north side) | | | | | |
| No sidewalk | | N/A | N/A | 60 km/h | F |
| Tillsonburg Street (south side) | | | | | |
| 2.0m | 0m | ≤ 3000 vpd | N/A | 60 km/h | C |
| Kanata Avenue (north side) | | | | | |
| 2.0m | 0.5 to 2.0m | ≤ 3000 vpd | N/A | 70 km/h | B |
| Kanata Avenue (south side) | | | | | |
| 2.0m | 0.5 to 2.0m | ≤ 3000 vpd | N/A | 70 km/h | B |

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**.

Table 12: BLOS Segment Analysis

| Road Class | Bike Route | Type of Bikeway | Bike Lane Width | Bike Lane Blockage | Travel Lanes | Center-line Type | Operating Speed | Segment BLOS |
|--|-------------|-----------------|-----------------|--------------------|--------------|--------------------|-----------------|--------------|
| Terry Fox Drive (Tillsonburg Street to Kanata Avenue) | | | | | | | | |
| Arterial | Spine Route | Bike Lane | 2.0m | Rare | 4 | Raised Median | 80 km/h | E |
| Tillsonburg Street (Terry Fox Drive to Wallaceburg Court) | | | | | | | | |
| Local | No Class | Mixed Traffic | - | - | 2 | None (Residential) | 60 km/h | F |
| Kanata Avenue (Terry Fox Drive to Huntsville Drive) | | | | | | | | |
| Major Collector | Local Route | Bike Lane | 2.0m | Rare | 2 | Line Markings | 70 km/h | E |

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 | | | Segment TLOS |
|---|--|----------|--------------------|--------------|
| | Congestion | Friction | Incident Potential | |
| 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) | | |
| ≤ 3.5m | 2 | A |
| Kanata Avenue (Terry Fox Drive to Huntsville Drive) | | |
| ≤ 3.5m | 1 | C |

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**.

Table 15: Auto LOS Segment Analysis

| Direction | Directional Capacity | Traffic Volumes | | | v/c Ratio and LOS | | | | | |
|---|----------------------|-----------------|---------|----------|-------------------|-----|---------|-----|----------|-----|
| | | AM Peak | PM Peak | SAT Peak | AM Peak | | PM Peak | | SAT Peak | |
| | | | | | v/c | LOS | v/c | LOS | v/c | LOS |
| Terry Fox Drive (Tillsonburg Street to Kanata Avenue) | | | | | | | | | | |
| Northbound | 2,000 vph | 666 | 902 | 696 | 0.33 | A | 0.45 | A | 0.35 | A |
| Southbound | 2,000 vph | 709 | 984 | 609 | 0.35 | A | 0.49 | A | 0.30 | A |
| Tillsonburg Street (Terry Fox Drive to Wallaceburg Court) | | | | | | | | | | |
| Eastbound | 400 vph | 26 | 85 | 42 | 0.07 | A | 0.21 | A | 0.11 | A |
| Westbound | 400 vph | 25 | 11 | 13 | 0.06 | A | 0.03 | A | 0.03 | A |
| Kanata Avenue (Terry Fox Drive to Huntsville Drive) | | | | | | | | | | |
| Eastbound | 600 vph | 234 | 389 | 368 | 0.39 | A | 0.65 | B | 0.61 | B |
| Westbound | 600 vph | 333 | 298 | 326 | 0.56 | A | 0.50 | A | 0.54 | A |

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 |
|------------|--|-----------------|--------------------|---------------------|
| Pedestrian | Sidewalk Width | 2.0m | 0m | 2.0m |
| | Boulevard Width | > 2.0m | 0m | 0.5m to 2.0m |
| | Average Daily Curb Lane Traffic Volume | > 3000 vpd | ≤ 3000 vpd | ≤ 3000 vpd |
| | On-Street Parking | No | - | - |
| | Operating Speed | 80 km/h | 60 km/h | 70 km/h |
| | Level of Service | D | F | B |
| | Target | C | C | C |
| Cyclist | Road Classification | Arterial | Local | Major Collector |
| | Bike Route Classification | Spine Route | No Classification | Local Route |
| | Type of Bikeway | Bike Lane | Mixed Traffic | Bike Lane |
| | Bike Lane Width | 2.0m | - | 2.0m |
| | Bike Lane Blocking | Rare | - | Rare |
| | Travel Lanes | 4 | 2 | 2 |
| | 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 | C | D | B |
| Transit | Facility Type | Mixed Traffic | - | Mixed Traffic |
| | Friction/Congestion/Incident Potential | Limited | - | Limited |
| | Level of Service | D | - | D |
| | Target | - | - | - |
| Truck | Lane Width | ≤ 3.5m | - | ≤ 3.5m |
| | Travel Lanes (per direction) | 2 | - | 1 |
| | Level of Service | A | - | C |
| | Target | D | - | - |
| Auto | Level of Service | A | A | B |
| | 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 (l) 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 (l).

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**.

Table 17: Intersection MMLOS Summary

| Intersection | PLOS | | BLOS | | TLOS | | TkLOS | | Auto LOS | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|
| | Actual | Target | Actual | Target | Actual | Target | Actual | Target | Actual | Target |
| Terry Fox Drive/ Kanata Avenue | F | C | F | B | E | - | C | D | B | D |
| Kanata Avenue/ Huntsville Drive | D | C | E | B | C | - | F | - | A | D |
| Terry Fox Drive/ Tillsonburg Street ⁽¹⁾ | - | - | - | - | - | - | - | - | A | D |

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 PETS I 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**.

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

| Mvmt | AM Peak | | | | PM Peak | | | | SAT Peak | | | |
|-----------|----------|-----|------------|-----|----------|-----|------------|-----|----------|-----|------------|-----|
| | Existing | | Jug Handle | | Existing | | Jug Handle | | Existing | | Jug Handle | |
| | v/c | LOS | v/c | LOS | v/c | LOS | v/c | LOS | v/c | LOS | v/c | LOS |
| NBT | 0.29 | A | 0.35 | A | 0.39 | A | 0.46 | A | 0.31 | A | 0.38 | A |
| NBR | 0.18 | A | 0.20 | A | 0.30 | A | 0.33 | A | 0.31 | A | 0.35 | A |
| SBL | 0.15 | A | 0.19 | A | 0.26 | A | 0.34 | A | 0.18 | A | 0.23 | A |
| SBT | 0.31 | A | 0.37 | A | 0.41 | A | 0.49 | A | 0.26 | A | 0.33 | A |
| WBL | 0.62 | B | 0.62 | B | 0.58 | A | 0.58 | A | 0.50 | A | 0.50 | A |
| WBT | 0.24 | A | 0.24 | A | 0.23 | A | 0.23 | A | 0.22 | A | 0.22 | A |
| Int Delay | 10.5 s | B | 14.0 s | B | 8.8 s | A | 12.9 s | B | 9.4 s | A | 13.1 s | B |

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**.

Table 19: Kanata Avenue/Huntsville Drive – Bicycle Crossing

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

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.

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

| Mvmt | AM Peak | | | | PM Peak | | | | SAT Peak | | | |
|-----------|----------|-----|---------|-----|----------|-----|---------|-----|----------|-----|---------|-----|
| | 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 | A | 0.03 | A | 0.09 | A | 0.09 | A | 0.07 | A | 0.08 | A |
| EBT | 0.20 | A | 0.20 | A | 0.27 | A | 0.27 | A | 0.28 | A | 0.28 | A |
| WBT | 0.22 | A | 0.25 | A | 0.20 | A | 0.25 | A | 0.23 | A | 0.31 | A |
| WBR | 0.03 | A | - | - | 0.05 | A | - | - | 0.08 | A | - | - |
| SBL/R | 0.55 | A | 0.55 | A | 0.46 | A | 0.46 | A | 0.42 | A | 0.42 | A |
| Int Delay | 8.4 s | A | 8.5 s | A | 5.8 s | A | 5.9 s | A | 6.4 s | A | 6.8 s | A |

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.

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

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

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.

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

| Mvmt | AM Peak | | | | PM Peak | | | | SAT Peak | | | |
|-----------|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|
| | Existing | | Modified | | Existing | | Modified | | Existing | | Modified | |
| | v/c | LOS | v/c | LOS | v/c | LOS | v/c | LOS | v/c | LOS | v/c | LOS |
| EBL | 0.03 | A | 0.03 | A | 0.09 | A | 0.13 | A | 0.07 | A | 0.13 | A |
| EBT | 0.20 | A | 0.27 | A | 0.27 | A | 0.37 | A | 0.28 | A | 0.42 | A |
| WBT | 0.22 | A | 0.33 | A | 0.20 | A | 0.34 | A | 0.23 | A | 0.47 | A |
| WBR | 0.03 | A | - | - | 0.05 | A | - | - | 0.08 | A | - | - |
| SBL/R | 0.55 | A | 0.52 | A | 0.46 | A | 0.42 | A | 0.42 | A | 0.38 | A |
| Int Delay | 8.4 s | A | 12.2 s | B | 5.8 s | A | 10.5 s | B | 6.4 s | A | 12.8 s | B |

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**.

Table 23: 2019 Background – Intersection Operations

| Intersection | AM Peak | | | PM Peak | | | SAT Peak | | |
|---|------------------|-----|-------|------------------|-----|-------|------------------|-----|-------|
| | 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 | B | WBL | 0.59 | A | WBL | 0.49 | A | WBL |
| Kanata Avenue/ Huntsville Drive | 0.59 | A | SBL/R | 0.40 | A | SBL/R | 0.41 | A | SBL/R |
| Terry Fox Drive/ Tillsonburg Street ⁽¹⁾ | 10 sec | A | WBR | 10 sec | A | WBR | 10 sec | A | 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**.

Table 24: 2024 Background – Intersection Operations

| Intersection | AM Peak | | | PM Peak | | | SAT Peak | | |
|---|------------------|-----|-------|------------------|-----|-------|------------------|-----|-------|
| | 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 | B | WBL | 0.60 | A | WBL | 0.51 | A | WBL |
| Kanata Avenue/ Huntsville Drive | 0.59 | A | SBL/R | 0.40 | A | SBL/R | 0.41 | A | SBL/R |
| Terry Fox Drive/ Tillsonburg Street ⁽¹⁾ | 10 sec | A | WBR | 10 sec | A | WBR | 10 sec | A | WBR |

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**.

Table 25: 2019 Total – Intersection Operations

| Intersection | AM Peak | | | PM Peak | | | SAT Peak | | |
|---|------------------|-----|-------|------------------|-----|-------|------------------|-----|-------|
| | 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 | B | WBL | 0.60 | A | WBL | 0.51 | A | WBL |
| Kanata Avenue/ Huntsville Drive | 0.60 | A | SBL/R | 0.44 | A | SBL/R | 0.44 | A | SBL/R |
| Terry Fox Drive/ Tillsonburg Street ⁽¹⁾ | 11 sec | B | WBR | 11 sec | B | WBR | 11 sec | B | WBR |
| Tillsonburg Street/ Site Access ⁽¹⁾ | 9 sec | A | NBL/R | 9 sec | A | NBL/R | 9 sec | A | NBL/R |
| Terry Fox Drive/ Site Access ⁽¹⁾ | 10 sec | A | WBR | 10 sec | A | WBR | 10 sec | A | WBR |
| Kanata Avenue/ Site Access ⁽¹⁾ | 9 sec | A | SBR | 9 sec | A | SBR | 9 sec | A | 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 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**.

Table 26: 2024 Total – Intersection Operations

| Intersection | AM Peak | | | PM Peak | | | SAT Peak | | |
|---|------------------|-----|-------|------------------|-----|-------|------------------|-----|-------|
| | 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 | B | WBL | 0.62 | B | WBL | 0.53 | A | WBL |
| Kanata Avenue/ Huntsville Drive | 0.60 | A | SBL/R | 0.44 | A | SBL/R | 0.44 | A | SBL/R |
| Terry Fox Drive/ Tillsonburg Street ⁽¹⁾ | 11 sec | B | WBR | 10 sec | A | WBR | 10 sec | A | WBR |
| Tillsonburg Street/ Site Access ⁽¹⁾ | 9 sec | A | NBL/R | 9 sec | A | NBL/R | 9 sec | A | NBL/R |
| Terry Fox Drive/ Site Access ⁽¹⁾ | 10 sec | A | WBR | 11 sec | B | WBR | 10 sec | A | WBR |
| Kanata Avenue/ Site Access ⁽¹⁾ | 9 sec | A | SBR | 9 sec | A | SBR | 9 sec | A | 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 (l) 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 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.
- 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.

Transit

- 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 PETS 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

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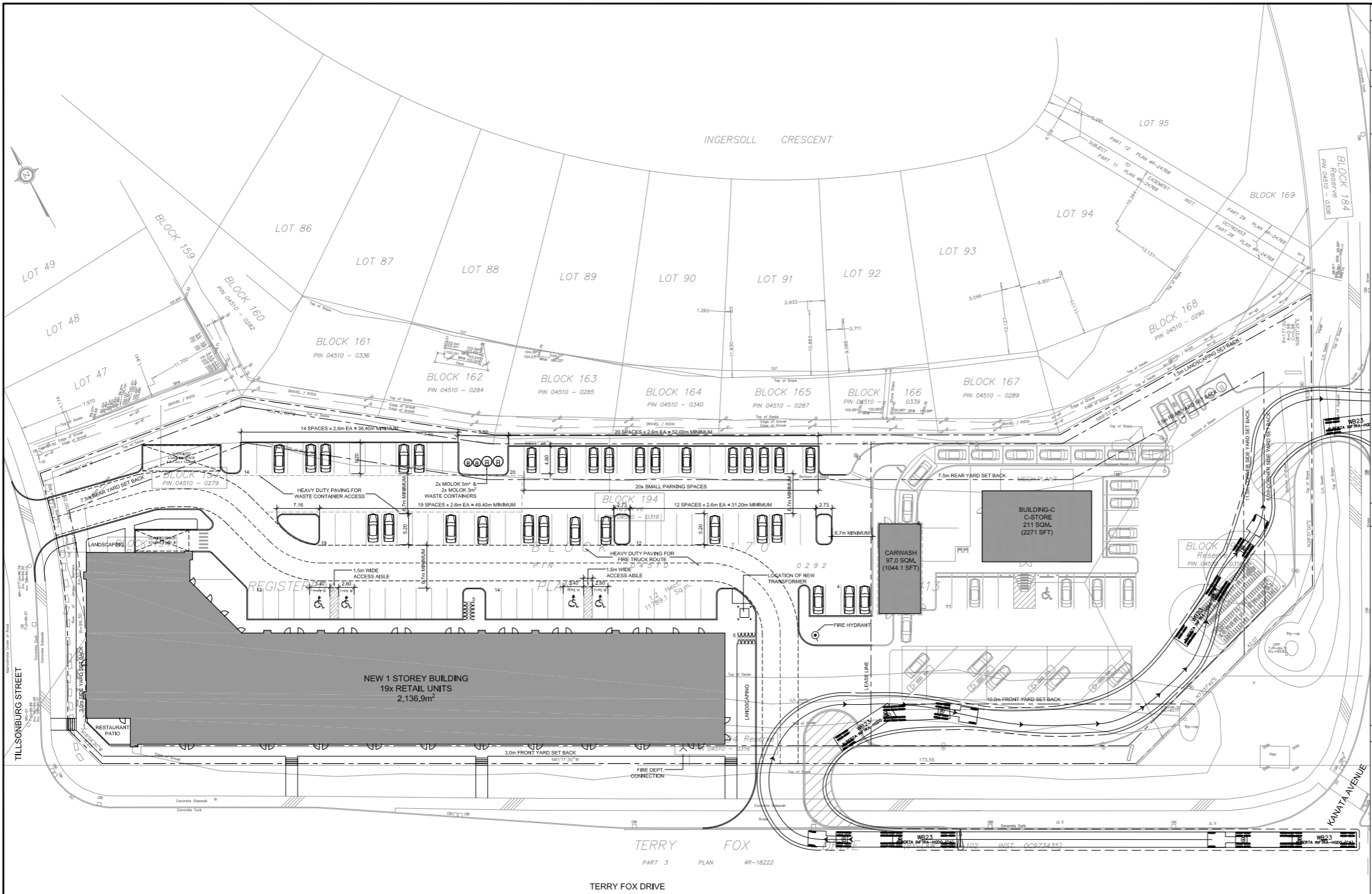
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APPENDIX A

Conceptual Site Plan



GENERAL NOTES:

- FOR PAVED SURFACES, GRADING, SITE SERVICING, DRAINAGE EROSION AND SEDIMENT CONTROL, REFER TO CIVIL DRAWINGS.
- FOR PLANTING DETAILS, REFER TO LANDSCAPE DRAWINGS.

SITE + BUILDING DATA

SITE AREA: 11,706.48m²
GROSS FLOOR AREA: 2,136.9 + 97 = 2,233.9m²
BUILDING HEIGHT(S): 17.24m
GROSS LEASABLE AREA: 2,084.5 + 54 + 84 = 2,222.5m²

GENERAL NOTES:

- DO NOT SCALE DRAWINGS; ONLY FIGURED DIMENSIONS ARE TO BE USED, WHERE DOUBT EXISTS, FILE REQUEST FOR INTERPRETATION AND REQUEST CLARITY.
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY DIMENSIONS ON SITE; REPORT DISCREPANCIES TO THE ARCHITECT PROMPTLY.
- GENERAL CONTRACTOR TO TAKE INTO ACCOUNT CONSTRUCTION TOLERANCE; GENERAL CONTRACTOR TO COORDINATE THE WORK OF DIFFERENT TRADES TO COMPLY WITH DESIGN INTENT.
- ALL WORK DESCRIBED IN THESE DRAWINGS AND SPECIFICATIONS ARE TO COMPLY WITH THE CURRENT EDITION OF THE ONTARIO BUILDING CODE (2012) OR NATIONAL BUILDING CODE (2010) INCLUDING MOST RECENT AMENDMENTS.
- DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY AND ARE TO BE READ TOGETHER.

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1 GROSS FLOOR AREA (CITY OF OTTAWA ZONING BYLAW DEFINITION FOR THE PURPOSE OF DETERMINING PARKING REQUIREMENTS: MEANS THE TOTAL AREA OF EACH FLOOR WHETHER LOCATED ABOVE, AT OR BELOW GRADE, MEASURED FROM THE INTERIORS OF OUTSIDE WALLS AND INCLUDING FLOOR AREA OCCUPIED BY INTERIOR WALLS AND FLOOR AREA CREATED BY BAY WINDOWS, BUT EXCLUDING:

FLOOR AREA OCCUPIED BY SHARED MECHANICAL, SERVICE AND ELECTRICAL EQUIPMENT THAT SERVE THE BUILDING; (BY-LAW 2008-326)

COMMON HALLWAYS, CORRIDORS, STAIRWELLS, ELEVATOR SHAFTS AND OTHER VOIDS, STEPS AND LANDINGS; (BY-LAW 2008-326) (BY-LAW 2017-302)

BICYCLE PARKING, MOTOR VEHICLE PARKING OR LOADING FACILITIES:

COMMON LAUNDRY, STORAGE AND WASHROOM FACILITIES THAT SERVE THE BUILDING OR TENANTS:

COMMON STORAGE AREAS THAT ARE ACCESSORY TO THE PRINCIPAL USE OF THE BUILDING; (BY-LAW 2008-326)

COMMON AMENITY AREA AND PLAY AREAS ACCESSORY TO A PRINCIPAL USE ON THE LOT; AND (BY-LAW 2008-326)

LIVING QUARTERS FOR A CARETAKER OF THE BUILDING, (SURFACE DE PLANCHER HORS OUVRE BRUTE)

2 GROSS LEASABLE AREA: MEANS THE TOTAL FLOOR AREA DESIGNED FOR TENANT OCCUPANCY AND EXCLUSIVE USE, MEASURED FROM THE INTERIORS OF OUTSIDE WALLS EXCLUDING FLOOR AREA OCCUPIED BY PARTY WALLS AND EXCLUDING:

FLOOR AREA OCCUPIED BY SHARED MECHANICAL, SERVICE AND ELECTRICAL EQUIPMENT THAT SERVE THE BUILDING; (BY-LAW 2008-326)

COMMON HALLWAYS, CORRIDORS, STAIRWELLS, ELEVATOR SHAFTS AND OTHER VOIDS, STEPS AND LANDINGS; (BY-LAW 2008-326)

BICYCLE PARKING, MOTOR VEHICLE PARKING OR LOADING FACILITIES:

COMMON LAUNDRY, STORAGE AND WASHROOM FACILITIES THAT SERVE THE BUILDING OR TENANTS:

COMMON STORAGE AREAS THAT ARE ACCESSORY TO THE PRINCIPAL USE OF THE BUILDING; (BY-LAW 2008-326)

COMMON AMENITY AREA AND PLAY AREAS ACCESSORY TO A PRINCIPAL USE ON THE LOT; AND (BY-LAW 2008-326) LIVING QUARTERS FOR A CARETAKER OF THE BUILDING.

ZONING: PART 10 - MIXED USE / COMMERCIAL ZONES ZONE LC7(411) - LOCAL COMMERCIAL ZONE

ZONING PROVISIONS: LC - (SECTION 190):

LOT AREA: ADDITIONAL USES AND A CONVENIENCE STORE: 4,000m² OTHER NON-RESIDENTIAL USES: 1,800m²

LOT WIDTH: 30m MINIMUM

SETBACKS:

FRONT YARD: 3m MINIMUM 10m MINIMUM - PUMP ISLANDS

CORNER SIDE YARD: 11.5m MINIMUM - PUMP ISLANDS 8m MINIMUM - OTHER BUILDINGS AND STRUCTURES

REAR YARD: 5m MINIMUM

INTERIOR SIDE YARD: 2m MINIMUM

BUILDING HEIGHT: 12.5m MAXIMUM

FLOOR SPACE INDEX: NO MAXIMUM

LANDSCAPING: ABUTTING A RESIDENTIAL ZONE: 3.0m MINIMUM ABUTTING A STREET: 3.0m MINIMUM AROUND A PARKING LOT: 1.5m MINIMUM

PARKING, QUEUING AND LOADING PROVISIONS

PARKING (SECTION 101):

MINIMUM REQUIRED: 3.4 PER 100m² OF GROSS FLOOR AREA = 83 PROVIDED: 112

80 FOR RETAIL DEVELOPMENT 16 FOR CONVENIENCE STORE

BICYCLE PARKING (SECTION 111):

MINIMUM REQUIRED: 1 PER 250m² OF GROSS FLOOR AREA = 10 PROVIDED: 10

LOADING SPACES (SECTION 113):

MINIMUM REQUIRED: 0, LC Zone, Sentence (1), PROVIDED: 2

PARKING FOR THE PHYSICALLY DISABLED (OTTAWA ACCESSIBILITY DESIGN STANDARDS):

MINIMUM REQUIRED: 4, 2x TYPE A + 2x TYPE B PROVIDED: 5, 3x TYPE A + 2x TYPE B

LEGEND

PROPERTY LINE AND SETBACKS AS INDICATED

FIRE ROUTE

FIRE DEPARTMENT CONNECTION

NEW FIRE HYDRANT

MOUNTABLE CURB

BICYCLE PARKING SPACE

ACCESSIBLE PARKING SCHEDULE

TYPE 'A'

TYPE 'B'

ACCESSIBLE PARKING STALL SIZES IN ACCORDANCE WITH CITY OF OTTAWA DESIGN GUIDELINES.

DCA

DREESSEN CARDINAL ARCHITECTS INC

A GROUP OF ARCHITECTS

1350 WELLINGTON ST. WEST OTTAWA ON K1Y 3C1 613.725.2294 WWW.ARCHITECTSDCA.COM

PROJECT TITLE: HERITAGE HILLS RETAIL 471 TERRY FOX DRIVE OTTAWA, ONTARIO

DRAWING TITLE: SITE PLAN

| | | | |
|-----------------|----------------|---------------|-------------------|
| DATE: 01 2019 | DRAWN: DR EB | JOB NO.: 3082 | DRAWING NO.: A100 |
| SCALE: 1 : 300 | REVIEWED: TD | | |

ARCHITECTURAL

APPENDIX B

TIA 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 ft² (2,137 m²) Gas Station: 3,315 ft² (308 m²) |
| Number of Accesses and Locations | - One access to Tillsonburg Street - One access to Kanata Avenue - One access to Terry Fox Drive |
| Phase of Development | 1 |
| Buildout Year | 2019 |

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

2. Trip Generation Trigger

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

| Land Use Type | Minimum Development Size |
|-------------------------------------|----------------------------|
| Single-family homes | 40 units |
| Townhomes or apartments | 90 units |
| Office | 3,500 m ² |
| Industrial | 5,000 m ² |
| Fast-food restaurant or coffee shop | 100 m ² |
| Destination retail | 1,000 m² |
| 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, the Trip Generation Trigger is satisfied.

3. Location Triggers

| | Yes | No |
|--|-----|----|
| Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks? | ✓ | |
| Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?* | | ✓ |

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

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

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

5. Summary

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

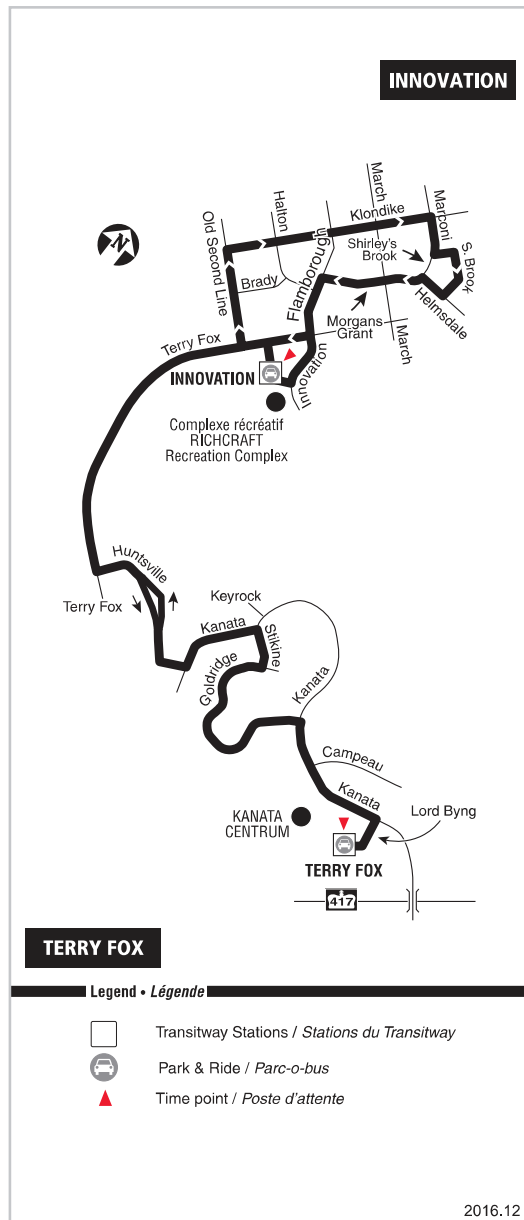
If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

APPENDIX C

OC Transpo Route Maps

165 INNOVATION TERRY FOX

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**560560**

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

Effective / En vigueur Dec. 25 déc. 2016

264

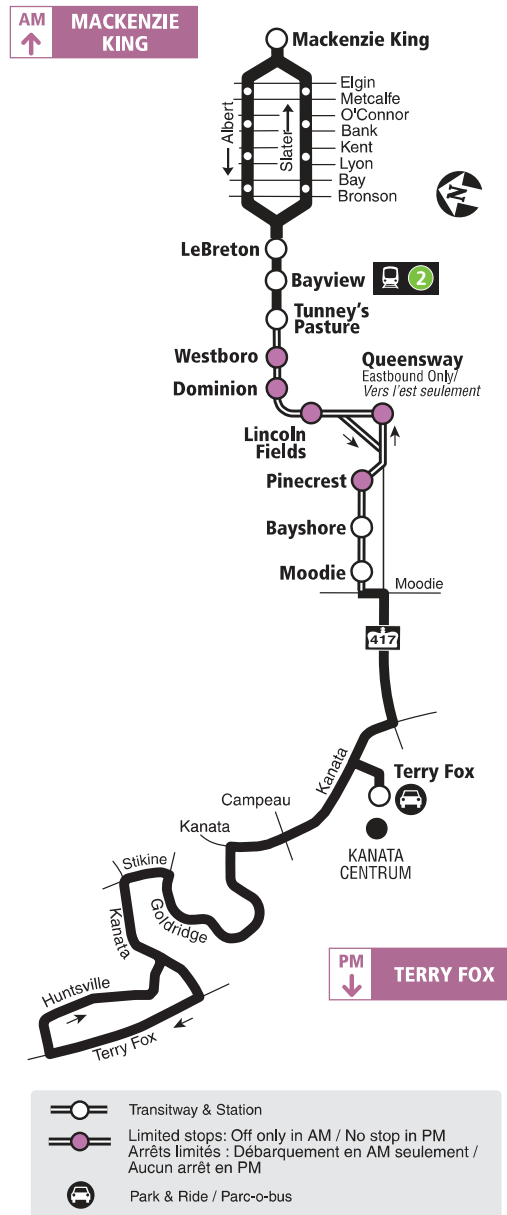
MACKENZIE KING TERRY FOX

Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2017.12



Schedule / Horaire.....613-560-1000

Text / Texto560560

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

Customer Relations

Service à la clientèle 613-842-3600

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

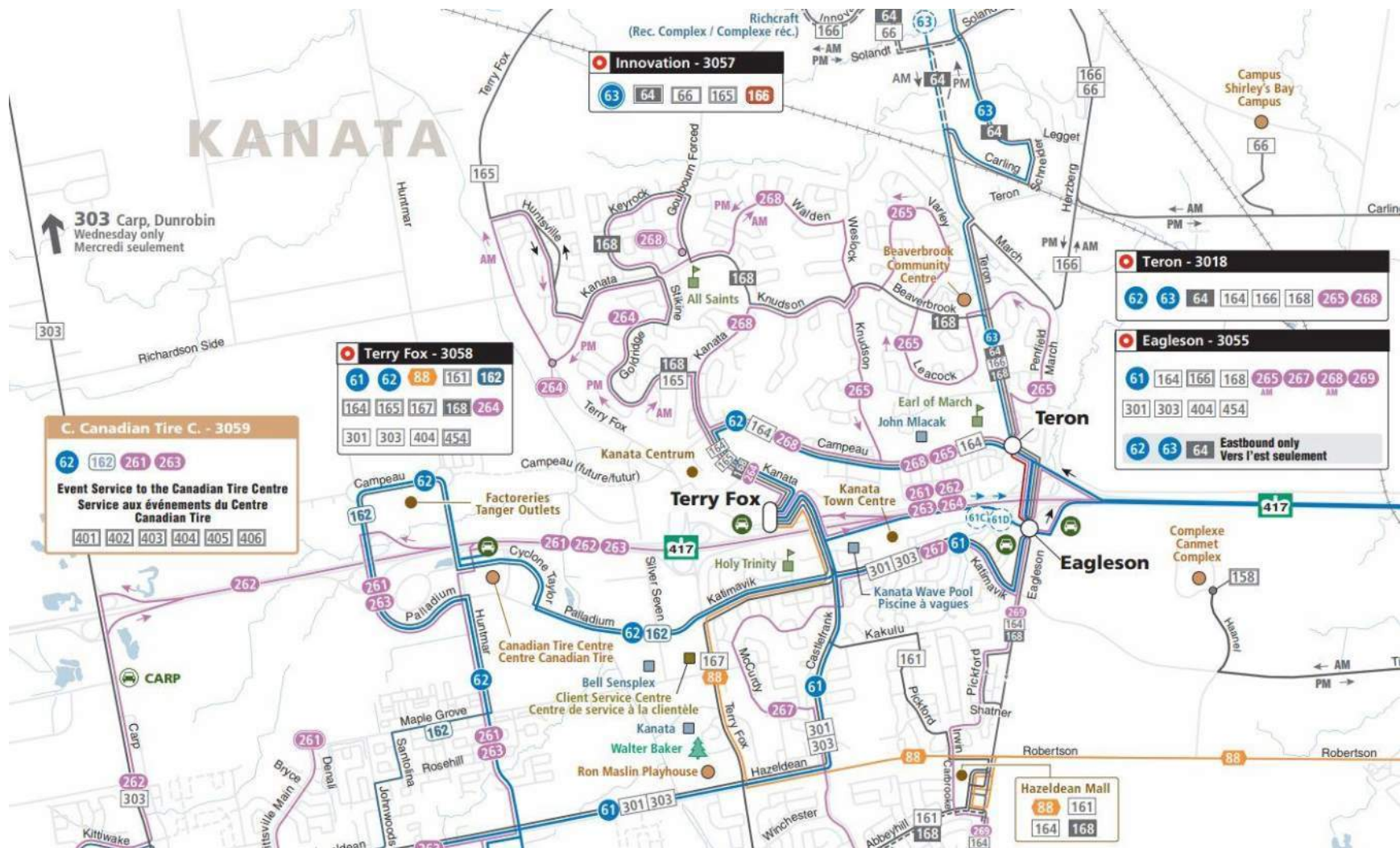
Security / Sécurité..... 613-741-2478

Effective December 24, 2017

En vigueur 24 décembre 2017



INFO 613-741-4390
octranspo.com



APPENDIX D

Traffic Count Data



Public Works - Traffic Services

Work Order
1140

Turning Movement Count - Full Study Summary Report

KANATA AVE @ TERRY FOX DR

Survey Date: Friday, June 27, 2014

Total Observed U-Turns

Northbound: 0 Southbound: 3
Eastbound: 14 Westbound: 2

AADT Factor

.80

Full Study

| TERRY FOX DR | | | | | | | | | | | KANATA AVE | | | | | | | | | | |
|---|------------|----|----|--------|------|------------|-----|--------|---------|-----|------------|----|--------|------|------|-----------|--------|---------|-------|--|-------------|
| Period | Northbound | | | | | Southbound | | | | | Eastbound | | | | | Westbound | | | | | Grand Total |
| | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | STR TOT | | | |
| 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 | 243 | 0 | 67 | 310 | 310 | 52 | 620 | 0 | 672 | 0 | 509 | 142 | 651 | 1323 | 1633 | | |
| 11:30 12:30 | 0 | 0 | 0 | 0 | 215 | 0 | 41 | 256 | 256 | 36 | 792 | 0 | 828 | 0 | 608 | 208 | 816 | 1644 | 1900 | | |
| 12:30 13:30 | 0 | 0 | 0 | 0 | 169 | 0 | 41 | 210 | 210 | 49 | 584 | 0 | 633 | 0 | 732 | 206 | 938 | 1571 | 1781 | | |
| 15:00 16:00 | 0 | 0 | 0 | 0 | 184 | 0 | 69 | 253 | 253 | 55 | 630 | 0 | 685 | 0 | 750 | 207 | 957 | 1642 | 1895 | | |
| 16:00 17:00 | 0 | 0 | 0 | 0 | 238 | 0 | 57 | 295 | 295 | 68 | 858 | 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 | 1680 | 0 | 426 | 2106 | 2106 | 453 | 5343 | 0 | 5796 | 0 | 5033 | 1665 | 6698 | 12494 | 14600 | | |
| Equ 12Hr | 0 | 0 | 0 | 0 | 2335 | 0 | 592 | 2927 | 2927 | 629 | 7426 | 0 | 8055 | 0 | 6995 | 2314 | 9309 | 17364 | 20291 | | |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | 1.39 | | | | | | | |
| Avg 12Hr | 0 | 0 | 0 | 0 | 1867 | 0 | 473 | 2341 | 2341 | 503 | 5940 | 0 | 6443 | 0 | 5595 | 1851 | 7447 | 13891 | 16232 | | |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | .80 | | | | | | | |
| Avg 24Hr | 0 | 0 | 0 | 0 | 2445 | 0 | 619 | 3066 | 3066 | 658 | 7781 | 0 | 8440 | 0 | 7329 | 2424 | 9755 | 18197 | 21263 | | |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | 1.31 | | | | | | | |

Comments:

Note: U-Turns are included in Totals.



Public Works - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

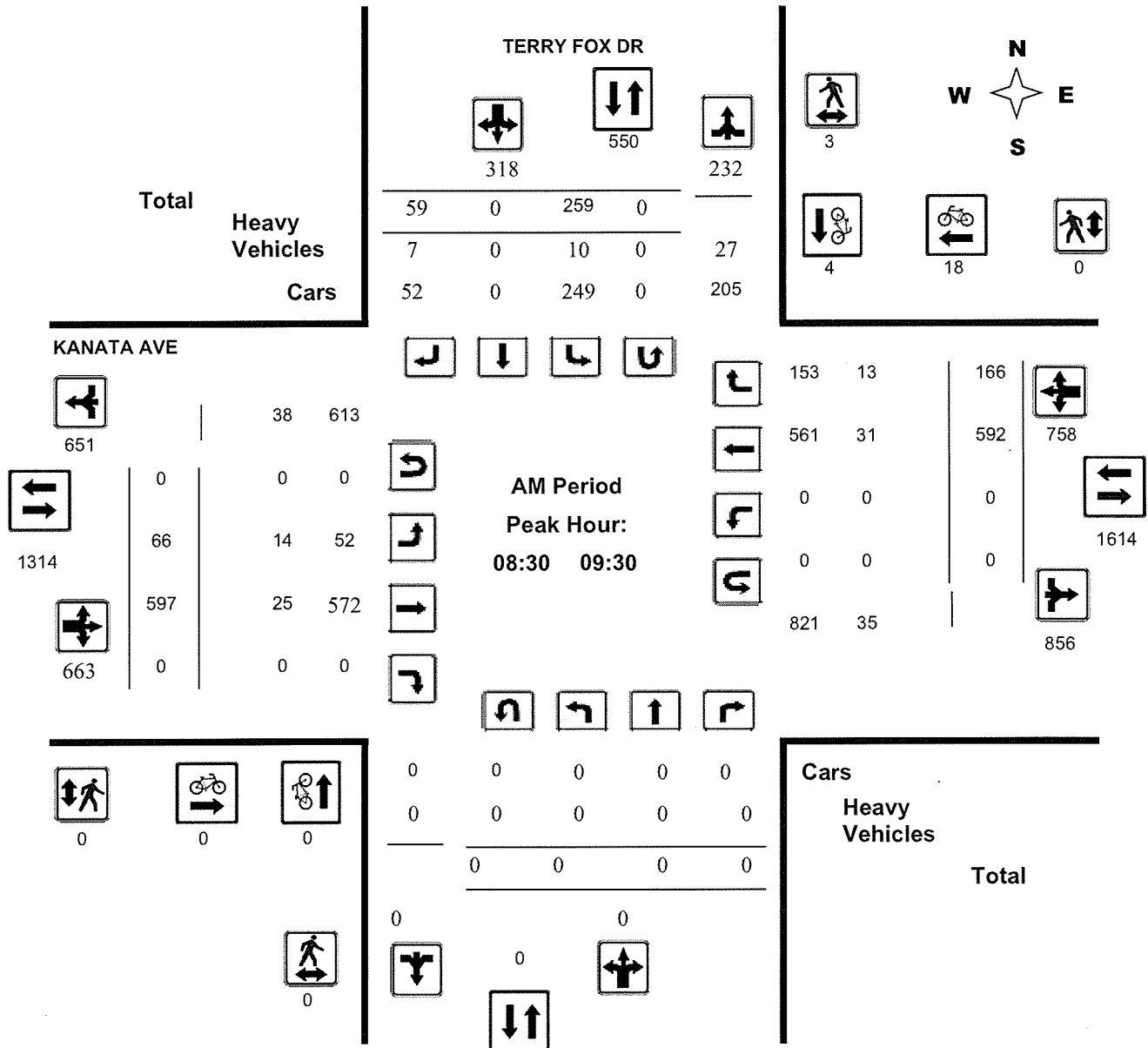
KANATA AVE @ TERRY FOX DR

Survey Date: Friday, June 27, 2014

Start Time: 07:00

WO No: 1140

Device: Jamar Technologies, Inc





Public Works - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

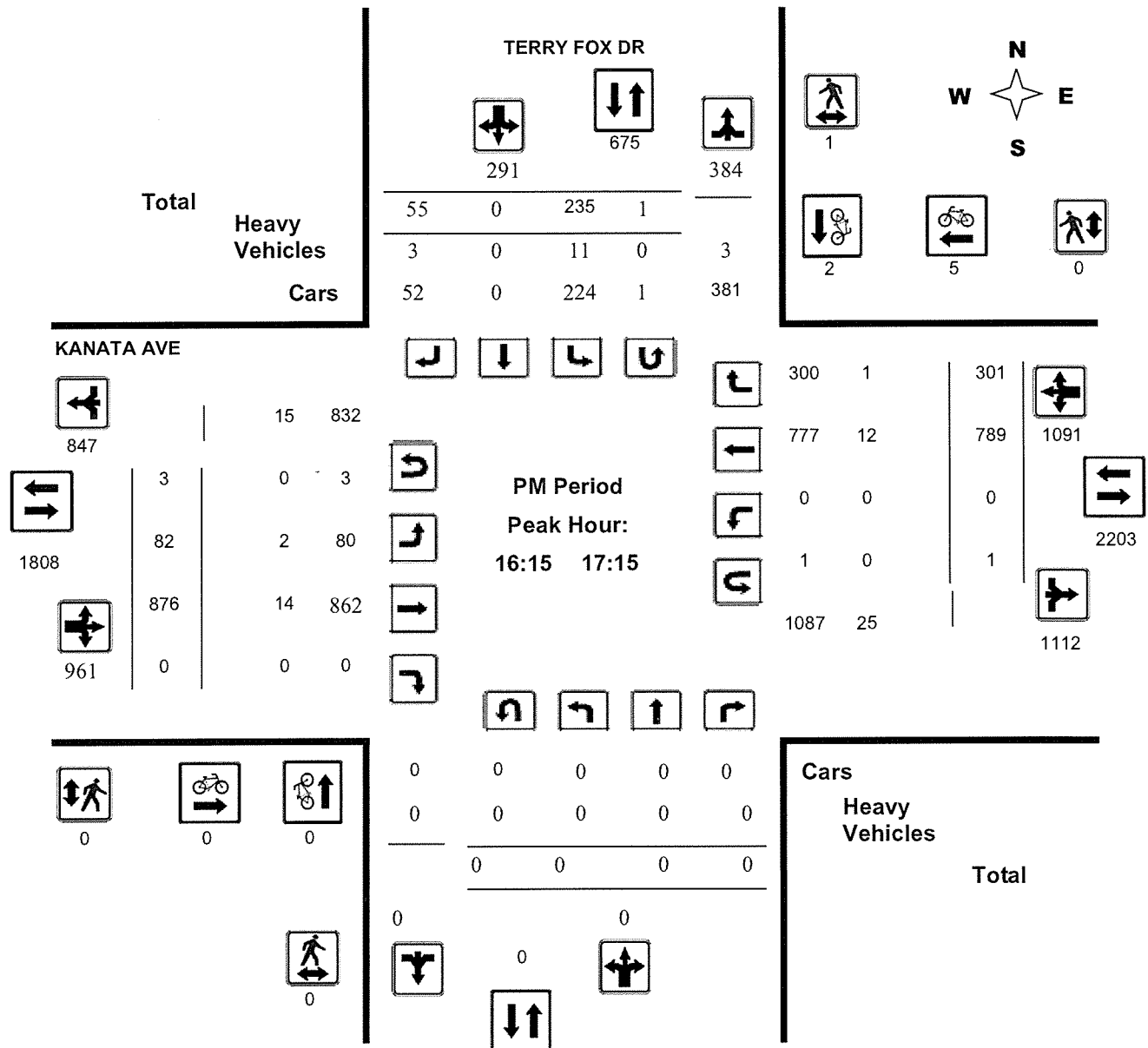
KANATA AVE @ TERRY FOX DR

Survey Date: Friday, June 27, 2014

Start Time: 07:00

WO No: 1140

Device: Jamar Technologies, Inc



Turning Movement Count - Full Study Summary Report

KANATA AVE @ TERRY FOX DR

Survey Date: Wednesday, April 11, 2018

Total Observed U-Turns

Northbound: 1 Southbound: 7
Eastbound: 0 Westbound: 1

AADT Factor

.90

Full Study
TERRY FOX DR
KANATA AVE

| | | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | | | Grand Total | | | |
|---|-------|------------|------|------|--------|------------|------|----|--------|-----------|----|----|----|-----------|------|----|------|--------|---------|-------------|--|---|---|
| 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 | | | | |
| 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 values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | 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 volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | .90 | | | | | | | | | |
| AVG 24Hr | | 0 | 7157 | 2535 | 9694 | 2201 | 6958 | 0 | 9171 | 18865 | 0 | 0 | 0 | 0 | 2620 | 0 | 2375 | 4997 | 4997 | 23862 | | | |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | 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

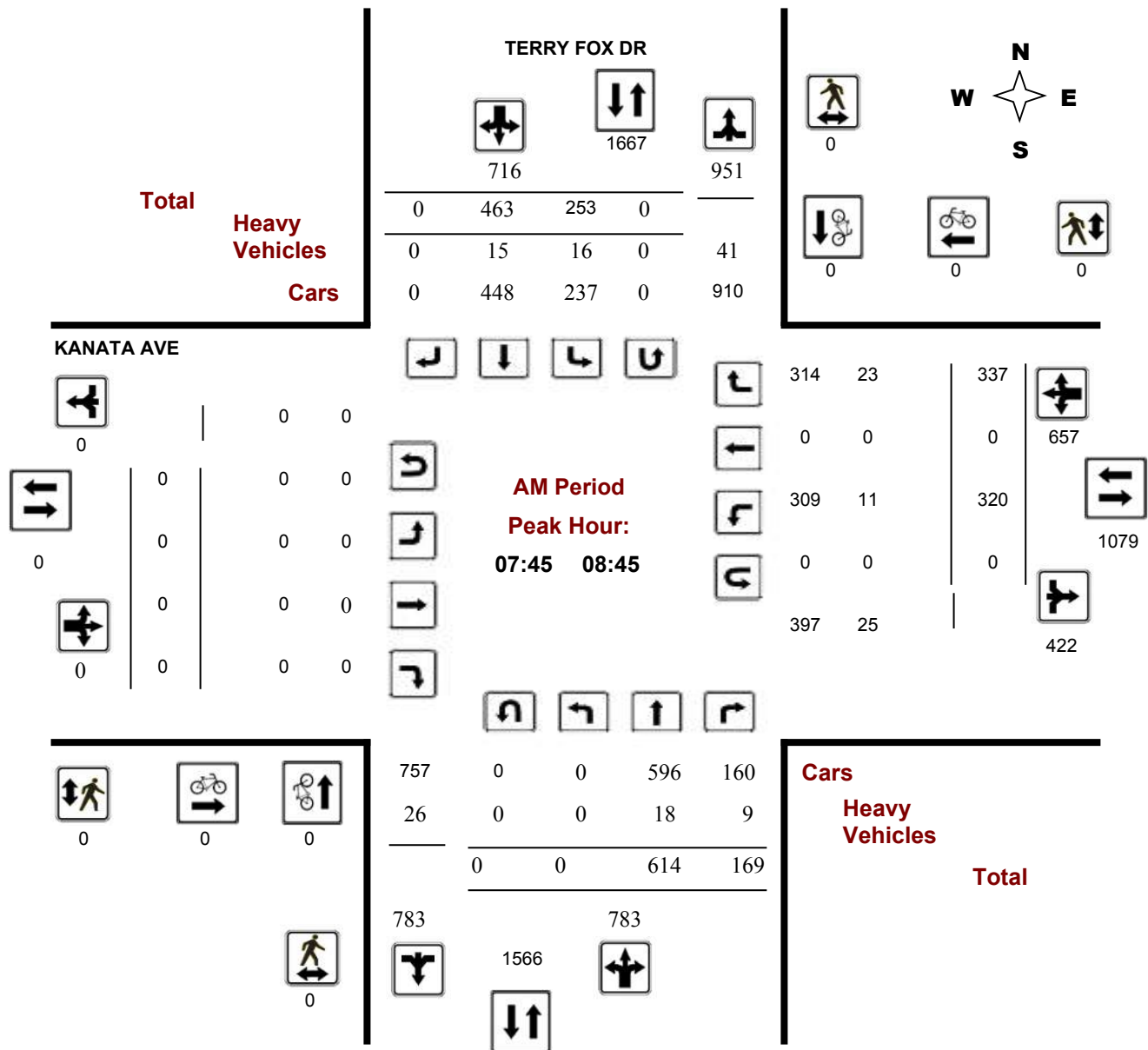
KANATA AVE @ TERRY FOX DR

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37662

Device: Miovision



Turning Movement Count - Full Study Peak Hour Diagram

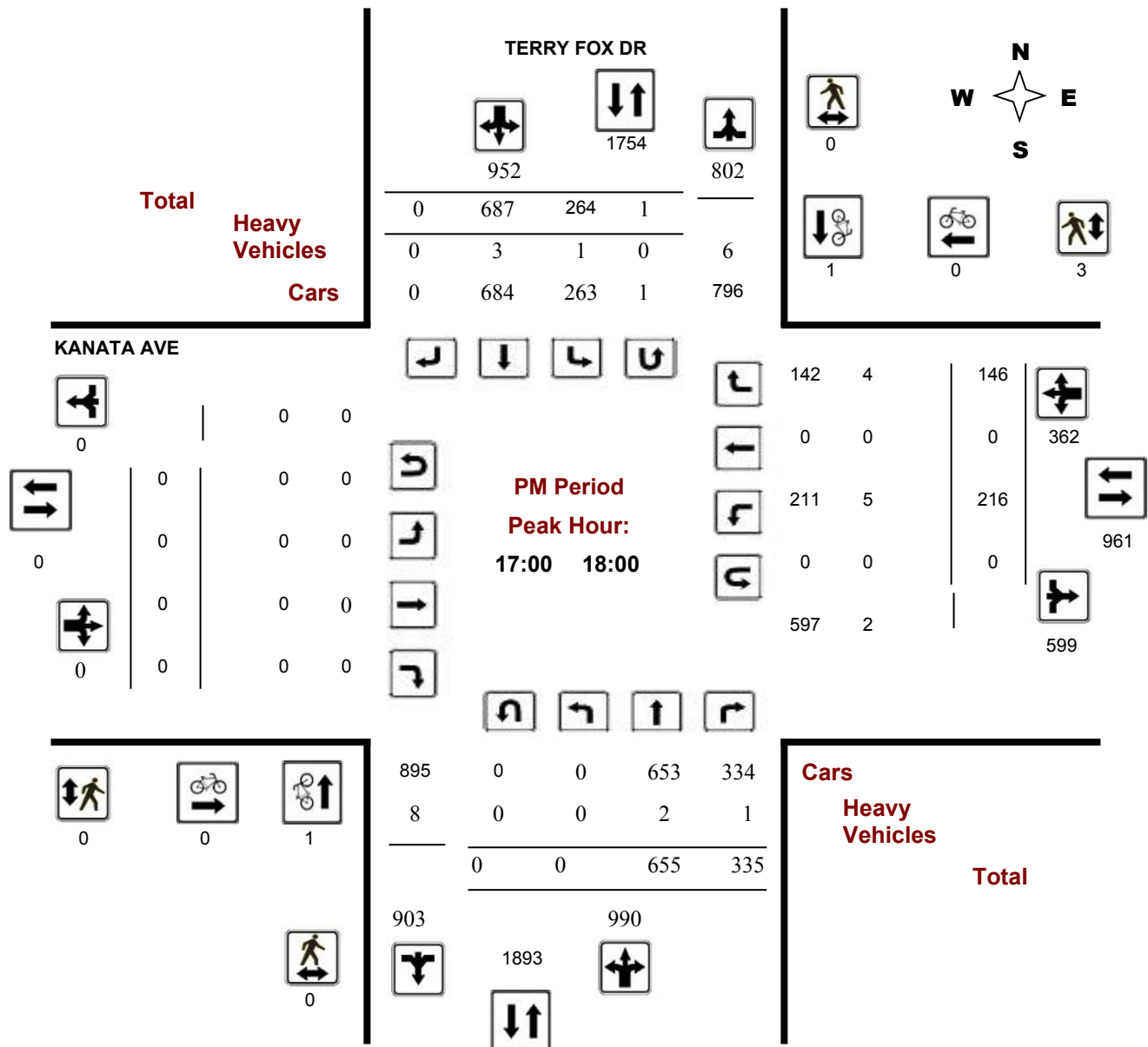
KANATA AVE @ TERRY FOX DR

Survey Date: Wednesday, April 11, 2018

Start Time: 07:00

WO No: 37662

Device: Miovision



Comments

Turning Movement Count - Full Study Summary Report

TERRY FOX DR @ TILLSONBURG ST

Survey Date: Wednesday, May 27, 2015

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 0 Westbound: 0

AADT Factor

.90

Full Study

| TERRY FOX DR | | | | | | | | | | TILLSONBURG ST | | | | | | | | | |
|---|----|------|-----|-----------|------------|------|----|-----------|------------|----------------|----|----|-------------|----|-----------|-----|-----------|------------|----------------|
| Northbound | | | | | Southbound | | | | | Eastbound | | | | | Westbound | | | | |
| Period | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | STR TOT | Grand Total |
| 07:00 08:00 | 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 values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | 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 volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | .90 | | | | | | |
| AVG 24Hr | 0 | 7704 | 362 | 8066 | 2 | 8627 | 0 | 8628 | 16694 | 0 | 0 | 0 | 0 | 0 | 0 | 231 | 231 | 231 | 16925 |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | 1.31 | | | | | | |

Comments:

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

Turning Movement Count - Peak Hour Diagram

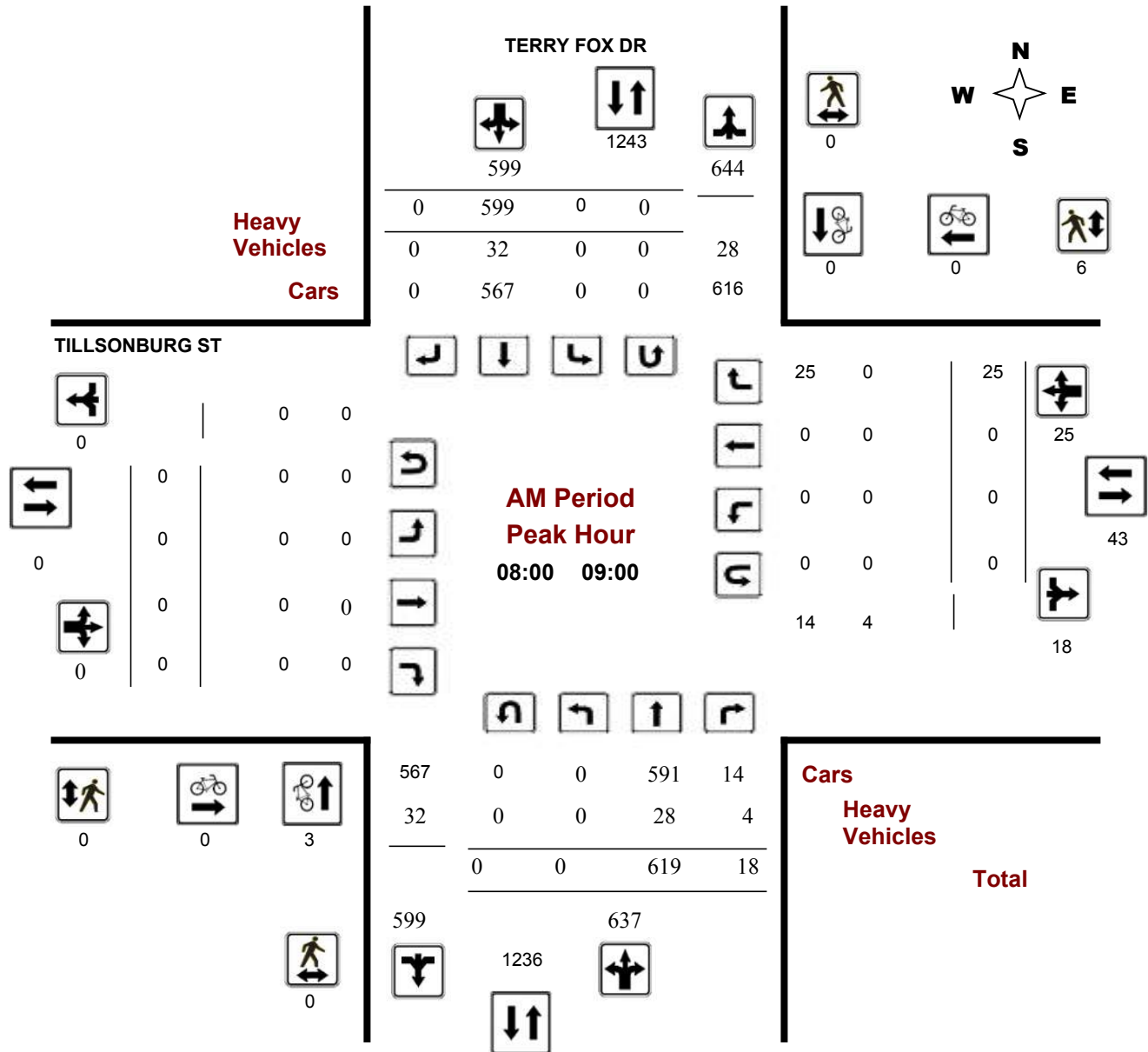
TERRY FOX DR @ TILLSONBURG ST

Survey Date: Wednesday, May 27, 2015

Start Time: 07:00

WO No: 35084

Device: Miovision



Turning Movement Count - Peak Hour Diagram

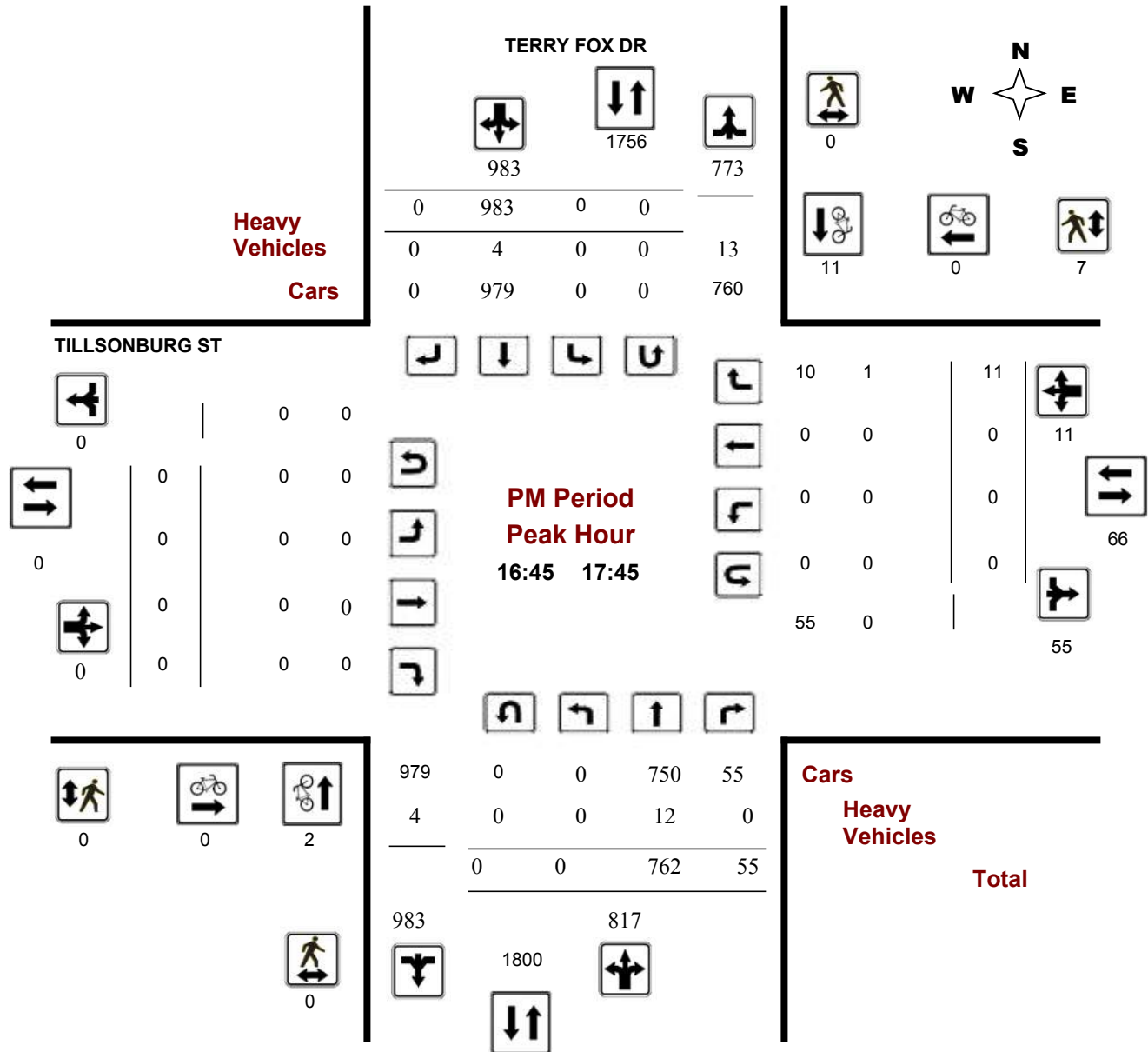
TERRY FOX DR @ TILLSONBURG ST

Survey Date: Wednesday, May 27, 2015

Start Time: 07:00

WO No: 35084

Device: Miovision



Intersection: _____

Kanata Avenue & Huntsville Drive

Survey Date: _____

Thursday, September 17, 2015

Weather: _____

Sunny

| Time | Kanata Avenue | | Huntsville Drive | | total | 15-Minute Total |
|----------------------------------|---------------|-----------|------------------|-----------|-------|-----------------|
| | NBL | SBR | EBL | EBR | | |
| 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 | 40 | 39 | 42 | | |

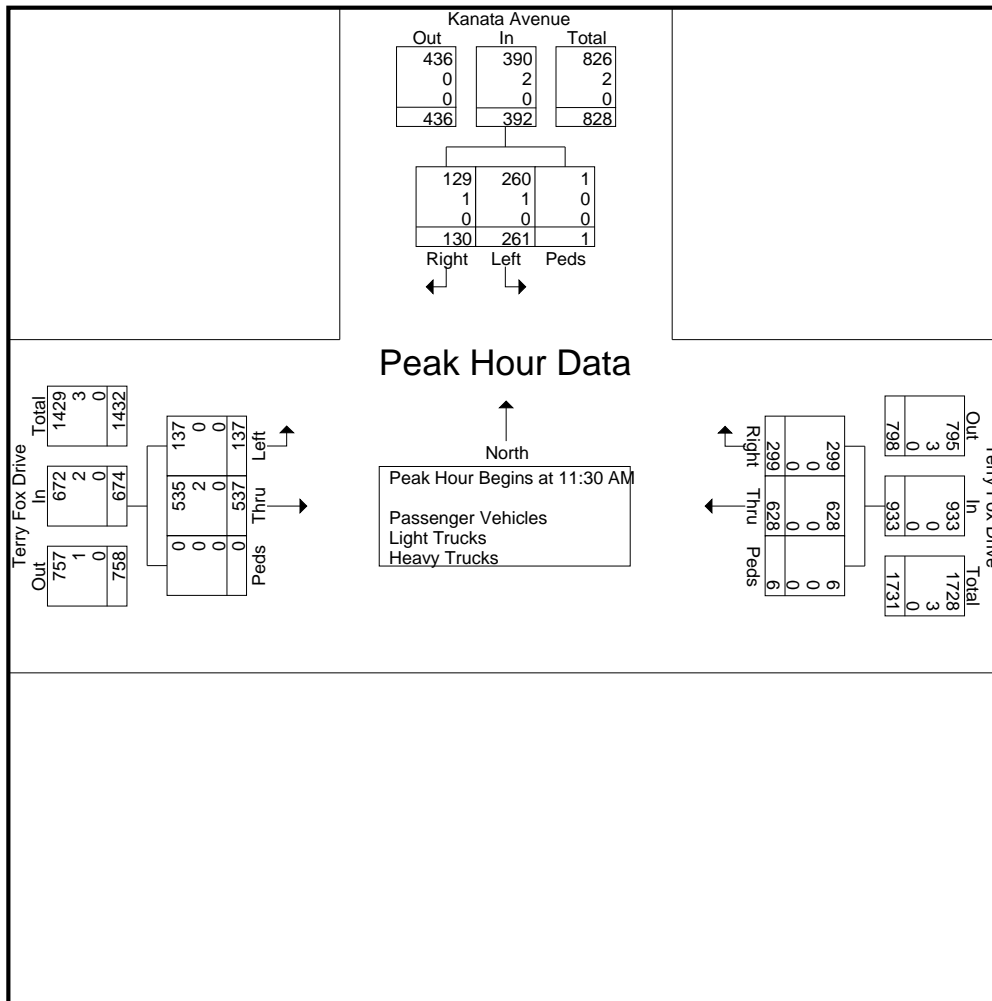
Weather: Clear
 Serial #: T12-1612&1614
 Counted by: Brad Smith & Moodie Allam
 Location: Terry Fox Dr/Kanata Ave

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 | | | | Terry Fox Drive Westbound | | | | Terry Fox Drive Eastbound | | | | |
|----------------------|-----------------------------|------|------|------------|------------------------------|------|------|------------|------------------------------|------|------|------------|------------|
| Start Time | Right | Left | Peds | App. Total | Right | Thru | Peds | App. Total | Thru | Left | Peds | 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 |

File Name : Kanata_TFox
Site Code : 11813302
Start Date : 9/15/2018
Page No : 4





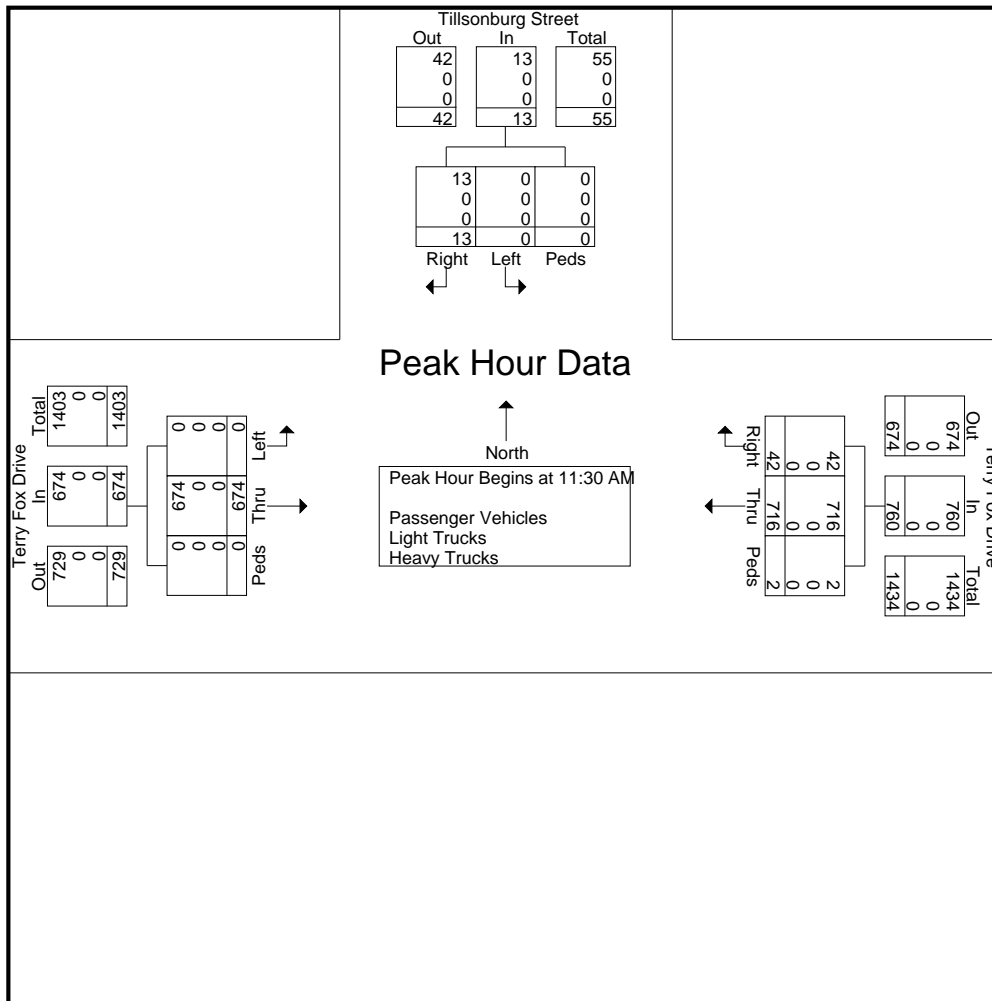
Weather: Clear
Serial #: N/A
Counted by: Josh Audia
Location: Terry Fox Dr/Tillsonburg St

File Name : TFox_Tillsonburg
Site Code : 11813303
Start Date : 9/15/2018
Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

[illegible]

File Name : TFox_Tillsonburg
Site Code : 11813303
Start Date : 9/15/2018
Page No : 4



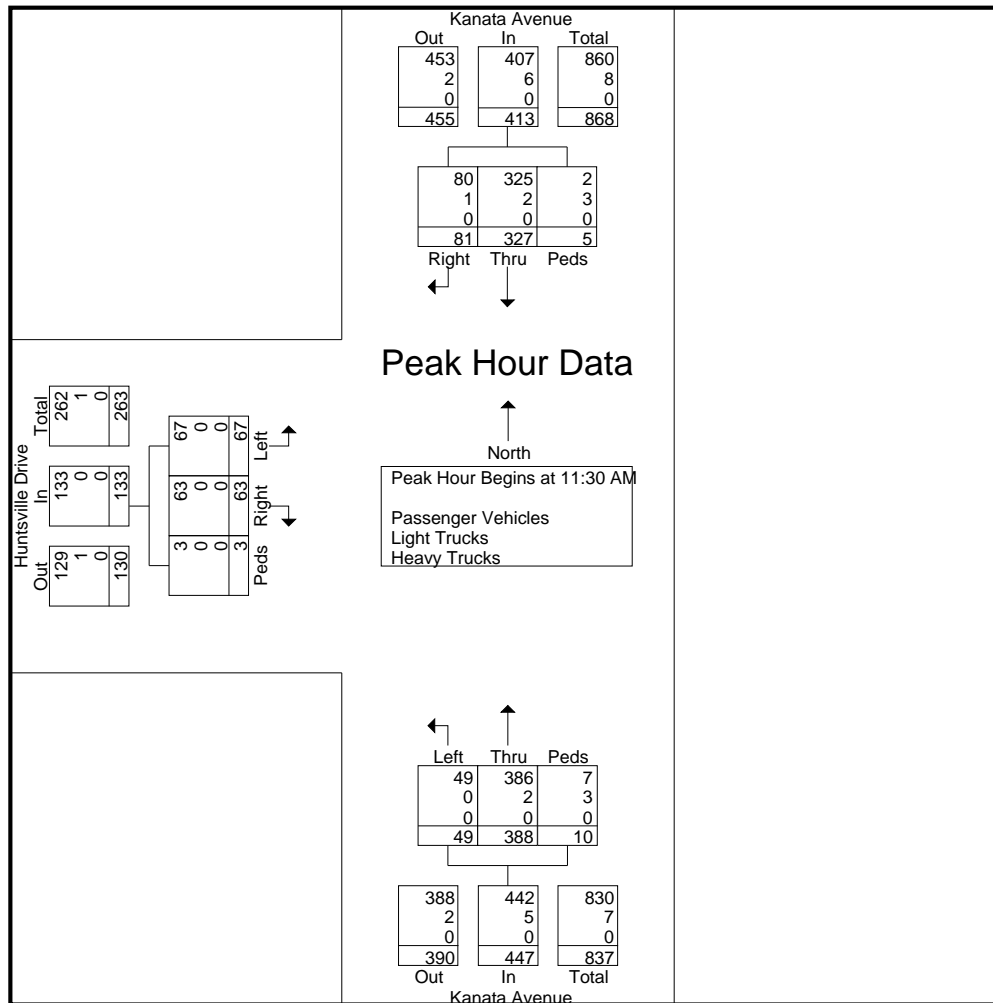
Weather: Clear
 Serial #: T12-1613
 Counted by: Cameron Chown
 Location: Kanata Ave/Huntsville Dr

File Name : kanata_huntsville
 Site Code : 11813301
 Start Date : 9/15/2018
 Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

| | Kanata Avenue Southbound | | | | Kanata Avenue Northbound | | | | Huntsville Drive Eastbound | | | | |
|----------------------|--------------------------|------|------|------------|--------------------------|------|------|------------|----------------------------|------|------|------------|------------|
| 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 |
| 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 |
| 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 | 67 | 1 | 70 | 61 | 9 | 0 | 70 | 17 | 0 | 0 | 17 | 157 |
| 01:45 PM | 5 | 70 | 0 | 75 | 72 | 10 | 1 | 83 | 24 | 7 | 2 | 33 | 191 |
| Total | 20 | 243 | 3 | 266 | 280 | 36 | 1 | 317 | 73 | 24 | 5 | 102 | 685 |
| 02:00 PM | 7 | 71 | 2 | 80 | 92 | 7 | 0 | 99 | 12 | 6 | 2 | 20 | 199 |
| 02:15 PM | 3 | 61 | 0 | 64 | 102 | 8 | 0 | 110 | 18 | 6 | 0 | 24 | 198 |
| 02:30 PM | 5 | 77 | 2 | 84 | 70 | 9 | 1 | 80 | 24 | 3 | 0 | 27 | 191 |
| 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 |
| 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 |

File Name : kanata_huntsville
Site Code : 11813301
Start Date : 9/15/2018
Page No : 4



APPENDIX E

Collision Records



City Operations - Transportation Services

Collision Details Report - Public Version

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

Location: HUNTSVILLE DR @ KANATA AVE

Traffic Control:

Total Collisions: 1

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|-------------|----------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2013-Dec-14, Sat,23:50 | Snow | Rear end | P.D. only | Loose snow | East | Slowing or stopping | Automobile, station wagon | Other motor vehicle | |
| | | | | | East | Unknown | Pick-up truck | Other motor vehicle | |

Location: KANATA AVE @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 39

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | 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 | Going ahead | Automobile, station wagon | Other motor vehicle |
| | | | | | North | Slowing or stopping | Automobile, station wagon | 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 | Turning left | 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 | Going ahead | Automobile, station wagon | Other motor vehicle |
| 2015-Dec-10, Thu,13:34 | Clear | Rear end | P.D. only | Dry | North | Going ahead | Automobile, station wagon | Other motor vehicle |
| | | | | | North | Going ahead | Automobile, station wagon | Other motor vehicle |
| | | | | | North | Slowing or stopping | Automobile, station wagon | Other motor vehicle |
| 2016-Jan-17, Sun,11:21 | Clear | Sideswipe | P.D. only | Wet | South | Changing lanes | Unknown | Other motor vehicle |
| | | | | | South | Turning right | 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 |
| | | | | | 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 |
| | | | | | North | Going ahead | Automobile, station wagon | Other motor vehicle |
| 2016-Oct-15, Sat,14:00 | Clear | Angle | Non-fatal injury | Dry | West | Turning right | Automobile, station wagon | Cyclist |
| | | | | | 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 |
| | | | | | 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 |
| | | | | | North | Going ahead | Automobile, station wagon | Other motor vehicle |
| 2016-Nov-30, Wed,18:06 | Rain | Turning movement | P.D. only | Wet | North | Going ahead | Pick-up truck | Other motor vehicle |
| | | | | | South | Turning left | Pick-up truck | Other motor vehicle |

| | | | | | | | | |
|------------------------|---------------|------------------|------------------|----------------|-------|---------------------|------------------------------|------------------------|
| 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 | 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

Analyst A
 Date 11/15/18

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt HERITAGE HILLS
 Time Period AM PEAK

LAND USE A 820

ITE LU Code RETAIL
 Size 23,849 SF

| | Total | Internal | External |
|-------|-------|----------|----------|
| Enter | 12 | 2 | 10 |
| Exit | 7 | 1 | 6 |
| Total | 19 | 3 | 16 |
| % | 100% | 16% | 84% |

Exit to External
 Enter from External

20% 1 Demand
 1 Balanced
 20% 8 Demand

20% 2 Demand
 2 Balanced
 20% 8 Demand

% Demand
 Balanced
 % Demand

% Demand
 Balanced
 % Demand

LAND USE B 944

ITE LU Code GAS STATION
 Size 8 PUMPS

| | Total | Internal | External |
|-------|-------|----------|----------|
| Enter | 42 | 1 | 41 |
| Exit | 42 | 2 | 40 |
| Total | 84 | 3 | 81 |
| % | 100% | 1% | 9% |

Exit to External
 Enter from External

Demand Balanced Demand

% Demand Balanced Demand

LAND USE C _____

ITE LU Code _____
 Size _____

| | Total | Internal | External |
|-------|-------|----------|----------|
| Enter | | | |
| Exit | | | |
| Total | | | |
| % | | | |

Enter from External
 Exit to External

Net External Trips for Multi-Use Development

| | LAND USE A | LAND USE B | LAND USE C | TOTAL |
|-------------------------|------------|------------|------------|-------|
| Enter | | | | |
| Exit | | | | |
| Total | | | | |
| Single-Use Trip Gen Est | | | | |

Source: Kaku Associates, Inc.

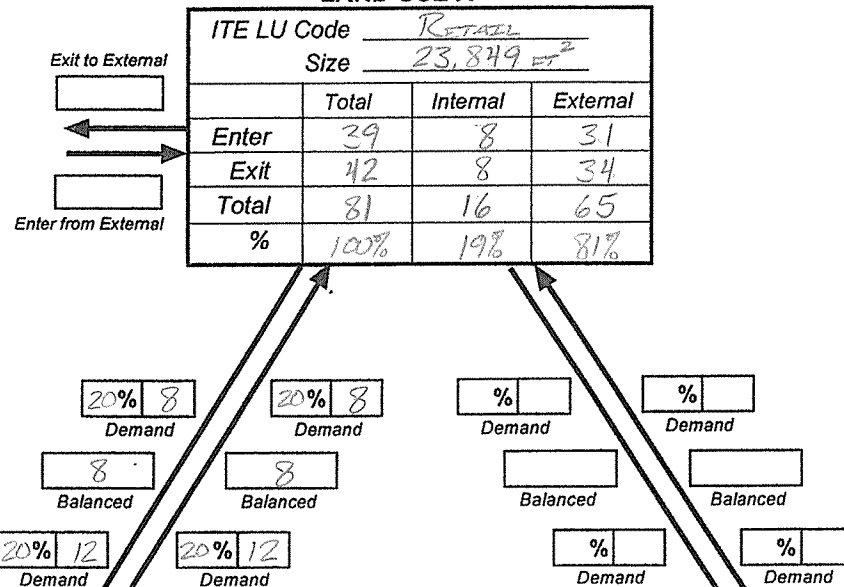
INTERNAL CAPTURE

Analyst
 Date 11/15/18

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt HERITAGE HILLS
 Time Period PM PEAK

LAND USE A 820



LAND USE B 944

| | | | |
|--------------------------------|-------|---------------------|----------|
| ITE LU Code <u>GAS STATION</u> | | Size <u>8 PUMPS</u> | |
| | Total | Internal | External |
| Enter | 58 | 8 | 50 |
| Exit | 58 | 8 | 50 |
| Total | 116 | 16 | 100 |
| % | 100% | 13% | 87% |

LAND USE C

| | | |
|--------|----------|--------|
| Demand | Balanced | Demand |
| % | | % |
| | | |
| % | | % |
| Demand | Balanced | Demand |

| | | | |
|---|-------|----------------------------------|----------|
| ITE LU Code <u> </u> | | Size <u> </u> | |
| | Total | Internal | External |
| Enter | | | |
| Exit | | | |
| Total | | | |
| % | | | |

Net External Trips for Multi-Use Development

| | LAND USE A | LAND USE B | LAND USE C | TOTAL |
|-------------------------|------------|------------|------------|-------|
| Enter | | | | |
| Exit | | | | |
| Total | | | | |
| Single-Use Trip Gen Est | | | | |

Source: Kaku Associates, Inc.

INTERNAL CAPTURE

Analyst K
Date 11/15/18

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

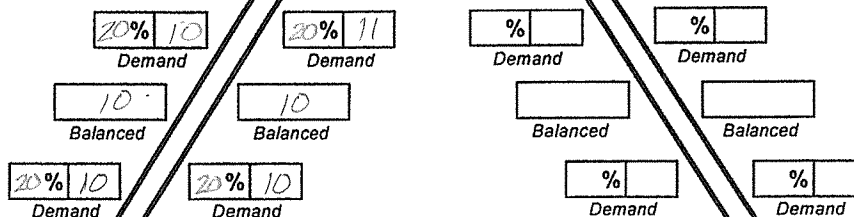
Name of Dvlpt HERITAGE HILLS
Time Period SAT PEAK

LAND USE A 820

ITE LU Code RETAIL
Size 23,849 FT²

| | | | |
|-------|-------|----------|----------|
| | Total | Internal | External |
| Enter | 53 | 10 | 43 |
| Exit | 49 | 10 | 39 |
| Total | 102 | 20 | 82 |
| % | 100% | 19% | 81% |

Exit to External
Enter from External



LAND USE B 944

ITE LU Code GAS STATION
Size 8 PUMPS

| | | | |
|-------|-------|----------|----------|
| | Total | Internal | External |
| Enter | 52 | 10 | 42 |
| Exit | 52 | 10 | 42 |
| Total | 104 | 20 | 84 |
| % | 100% | 19% | 81% |

Exit to External
Enter from External

LAND USE C _____

ITE LU Code _____
Size _____

| | | | |
|-------|-------|----------|----------|
| | Total | Internal | External |
| Enter | | | |
| Exit | | | |
| Total | | | |
| % | | | |

Enter from External
Exit to External

Net External Trips for Multi-Use Development

| | LAND USE A | LAND USE B | LAND USE C | TOTAL |
|-------------------------|------------|------------|------------|-------|
| Enter | | | | |
| Exit | | | | |
| Total | | | | |
| Single-Use Trin Gen Est | | | | |

Source: Kaku Associates, Inc.

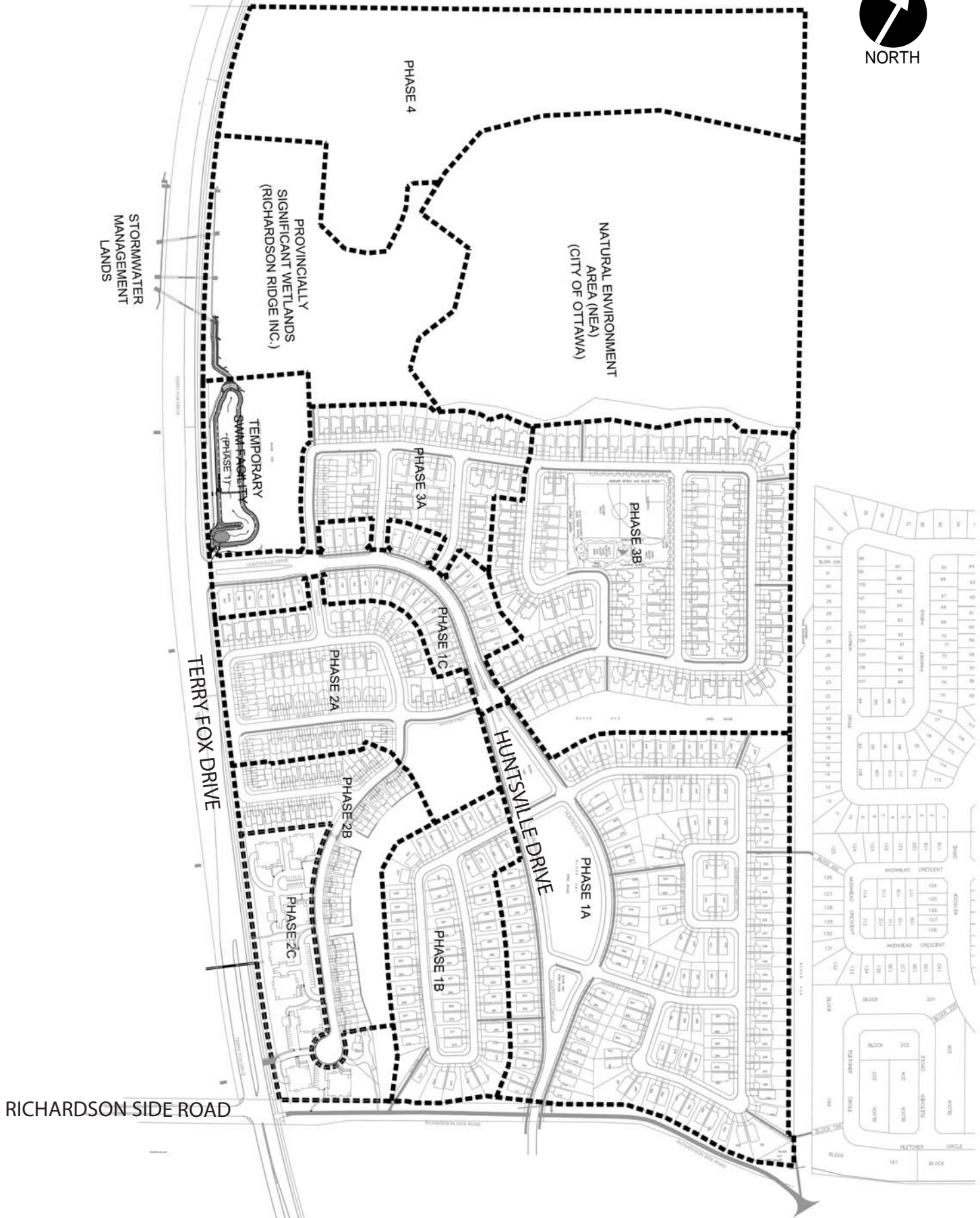
INTERNAL CAPTURE

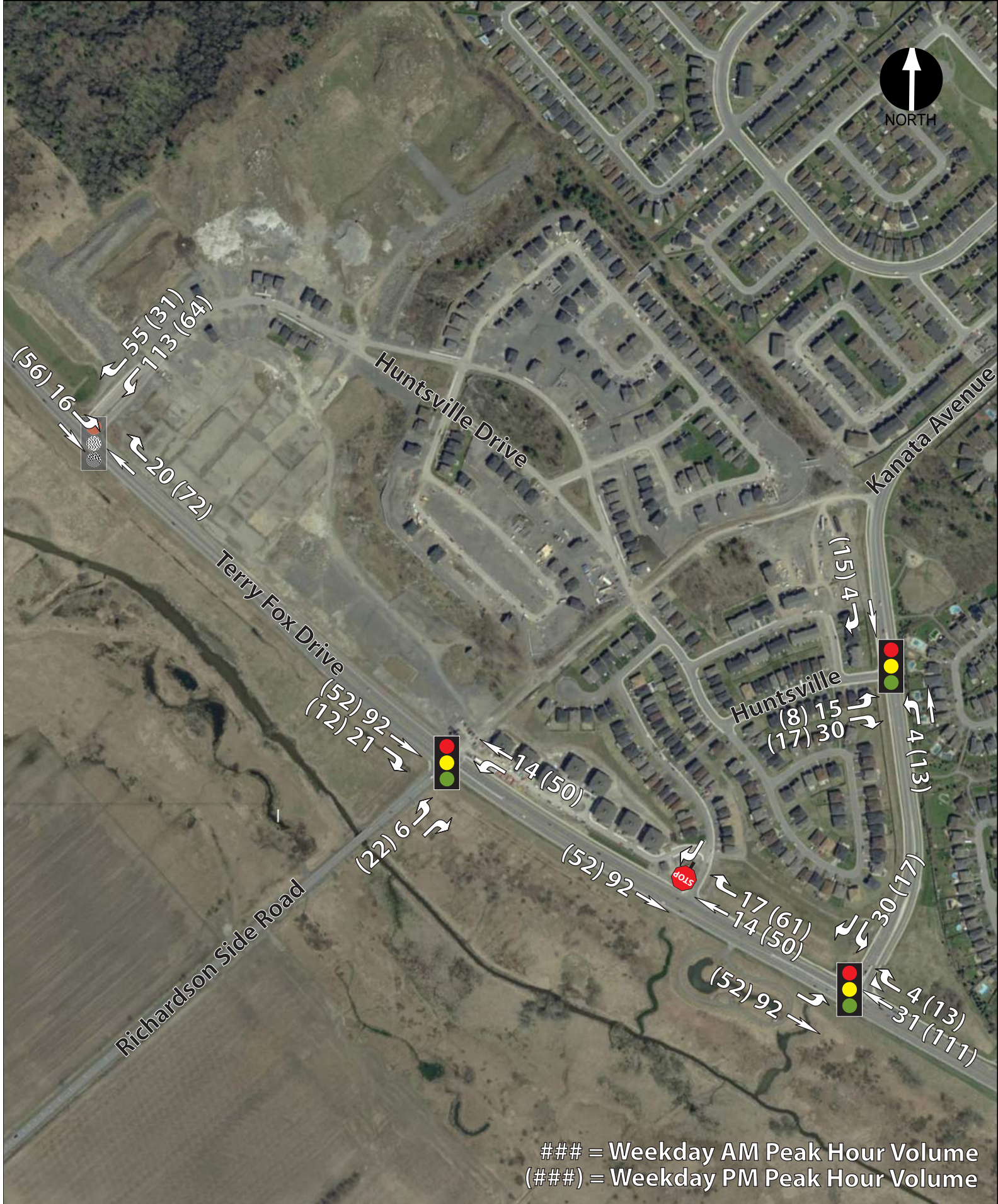
APPENDIX G

Other Area Developments

Other Area Developments

Richardson Ridge Subdivision (Phases 1-3)





Other Area Developments

Richardson Ridge Subdivision (Phase 4)



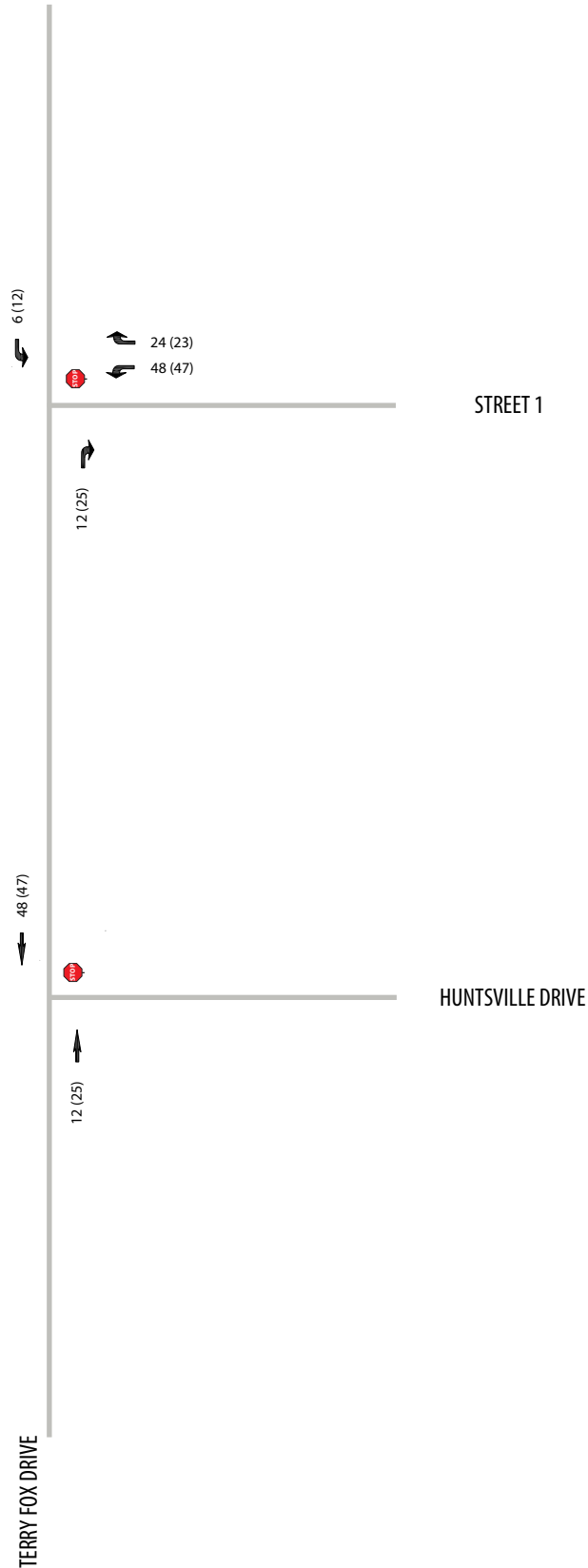
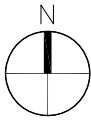
Richardson Ridge Phase 4
Transportation Impact Study

Exhibit 1
Site Location

PROJECT No. 39606
DATE: JULY 2016
SCALE:



PHASES 4 VOLUMES



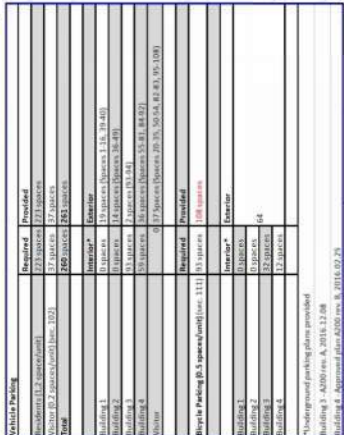
LEGEND

XX (XX) - AM (PM) PEAK HOUR TRAFFIC VOLUMES



Other Area Developments

Broughton Subdivision (Phase 3B)



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.

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

| 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 |

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.

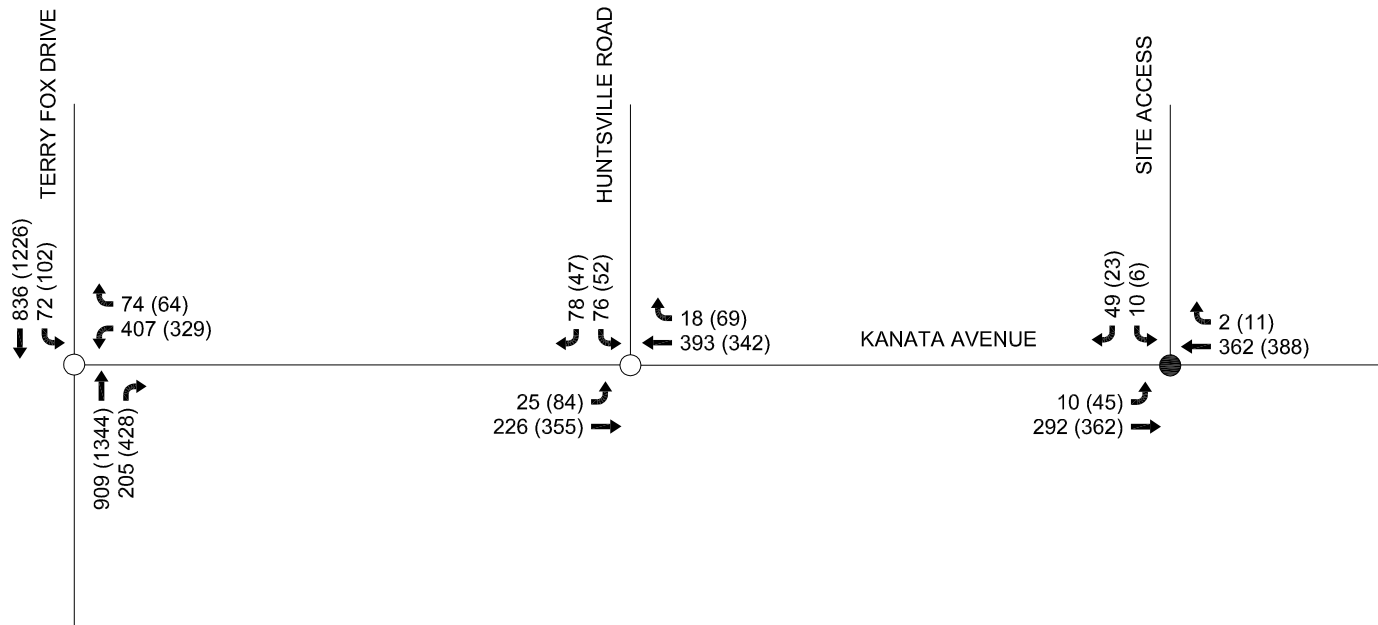
3.3.2 Trip Assignment

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-Stittsville 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**
 - 35% to/from the north (evenly split between Terry Fox Drive and Kanata Avenue)
 - 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**.



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

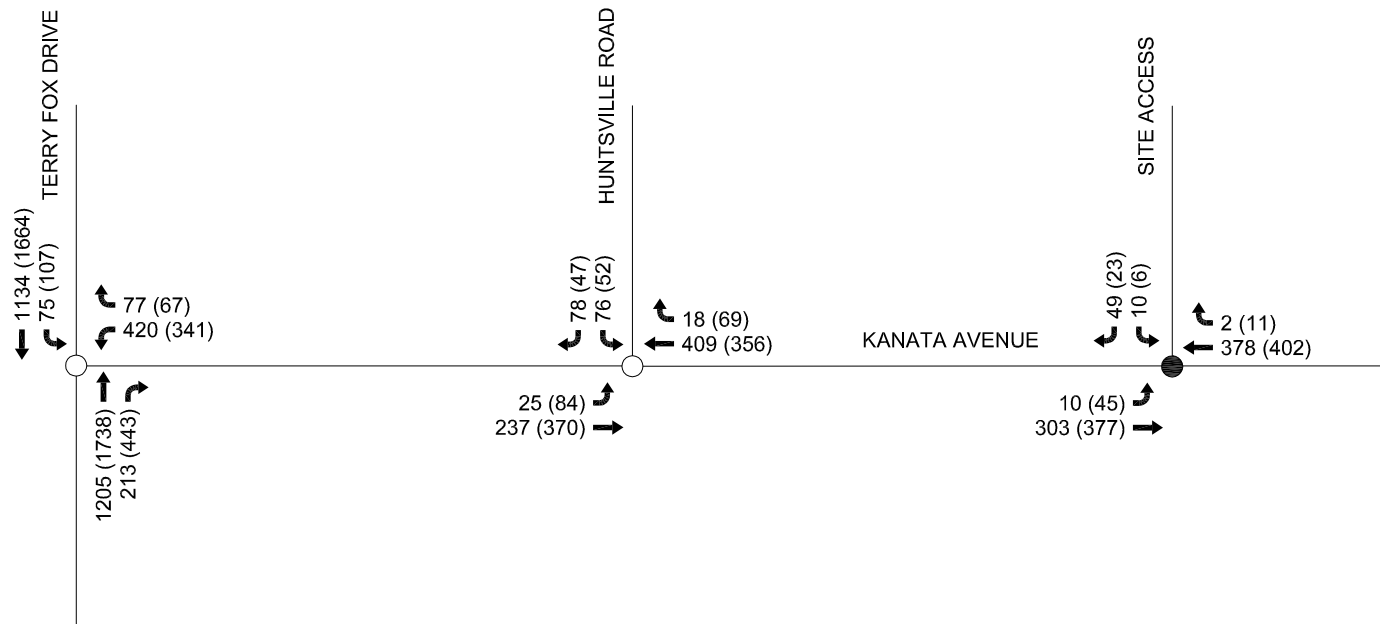
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- xx VPH AM Peak Hour
- (xx) VPH PM Peak Hour

KANATA LAKES 124 BATTERSEA CRESCENT 2018 TOTAL TRAFFIC

12/21/2016 110105 FIGURE 3



Engineers, Planners & Landscape Architects

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Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LEGEND

- Unsignalized Intersection
- Signalized Intersection
- xx VPH AM Peak Hour
- (xx) VPH PM Peak Hour

KANATA LAKES
124 BATTERSEA CRESCENT

2023 TOTAL TRAFFIC

12/21/2016 110105 **FIGURE 4**

Other Area Developments

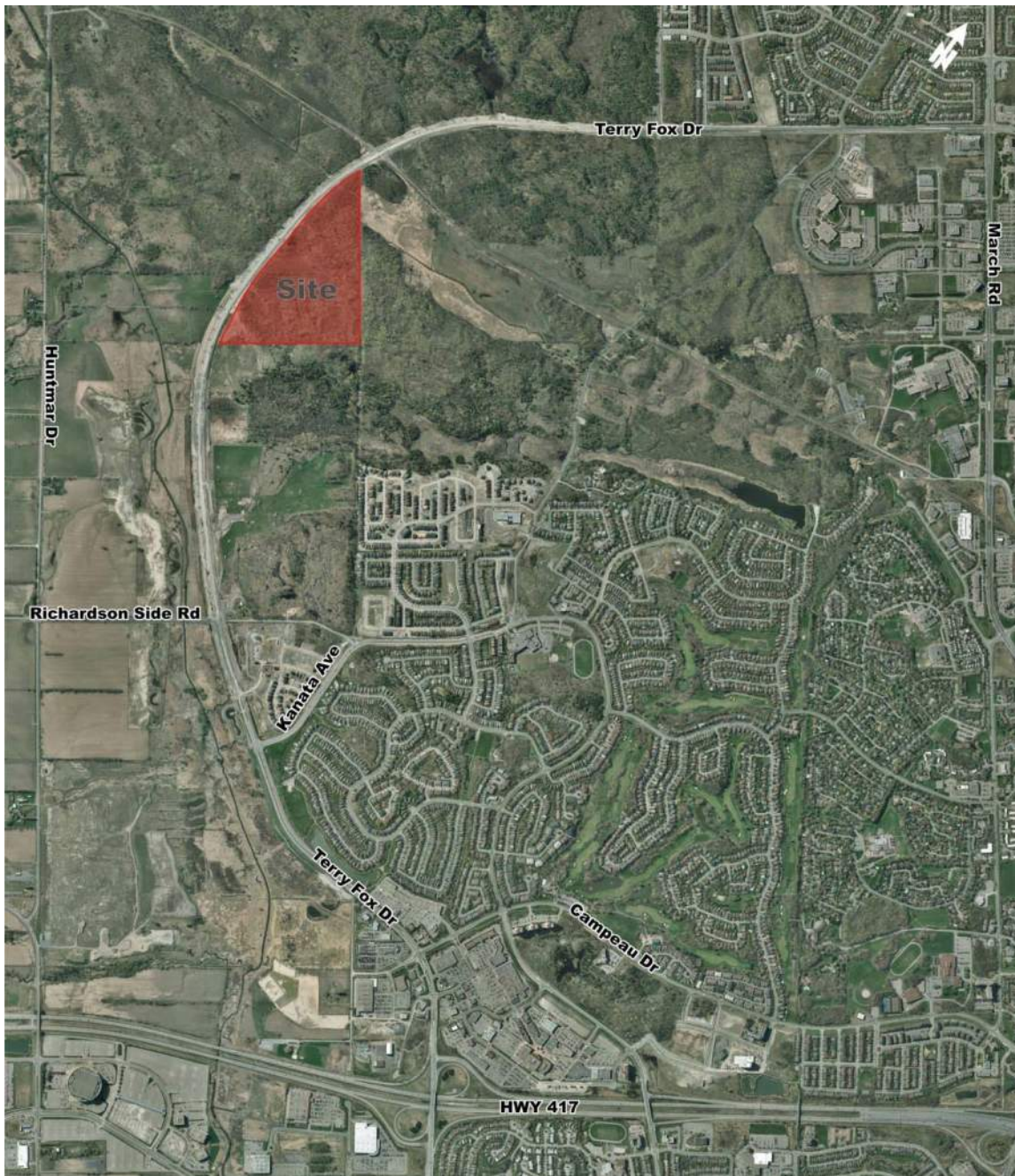
Kanata Highlands (Phase 1)

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



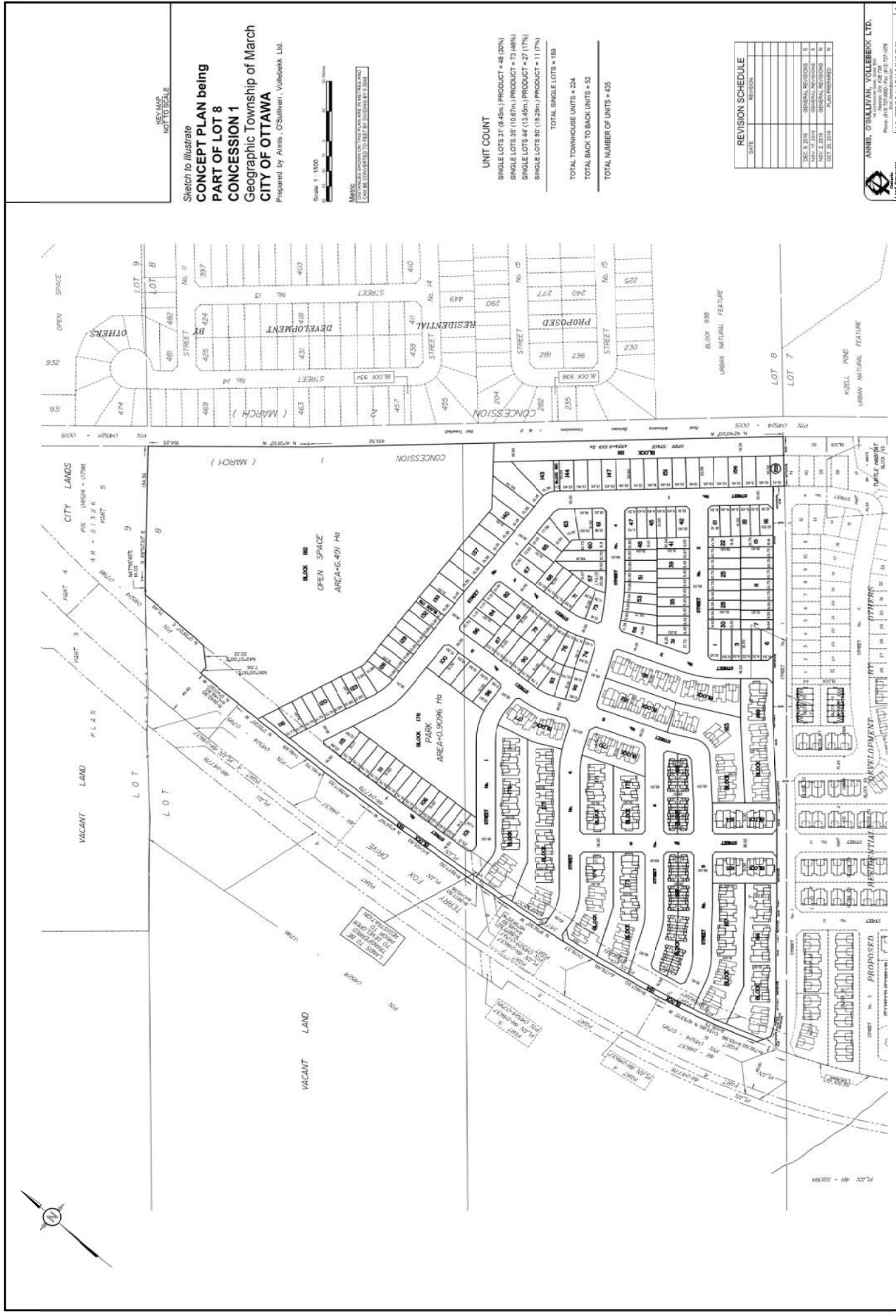


Figure 2: Proposed Plan of Subdivision

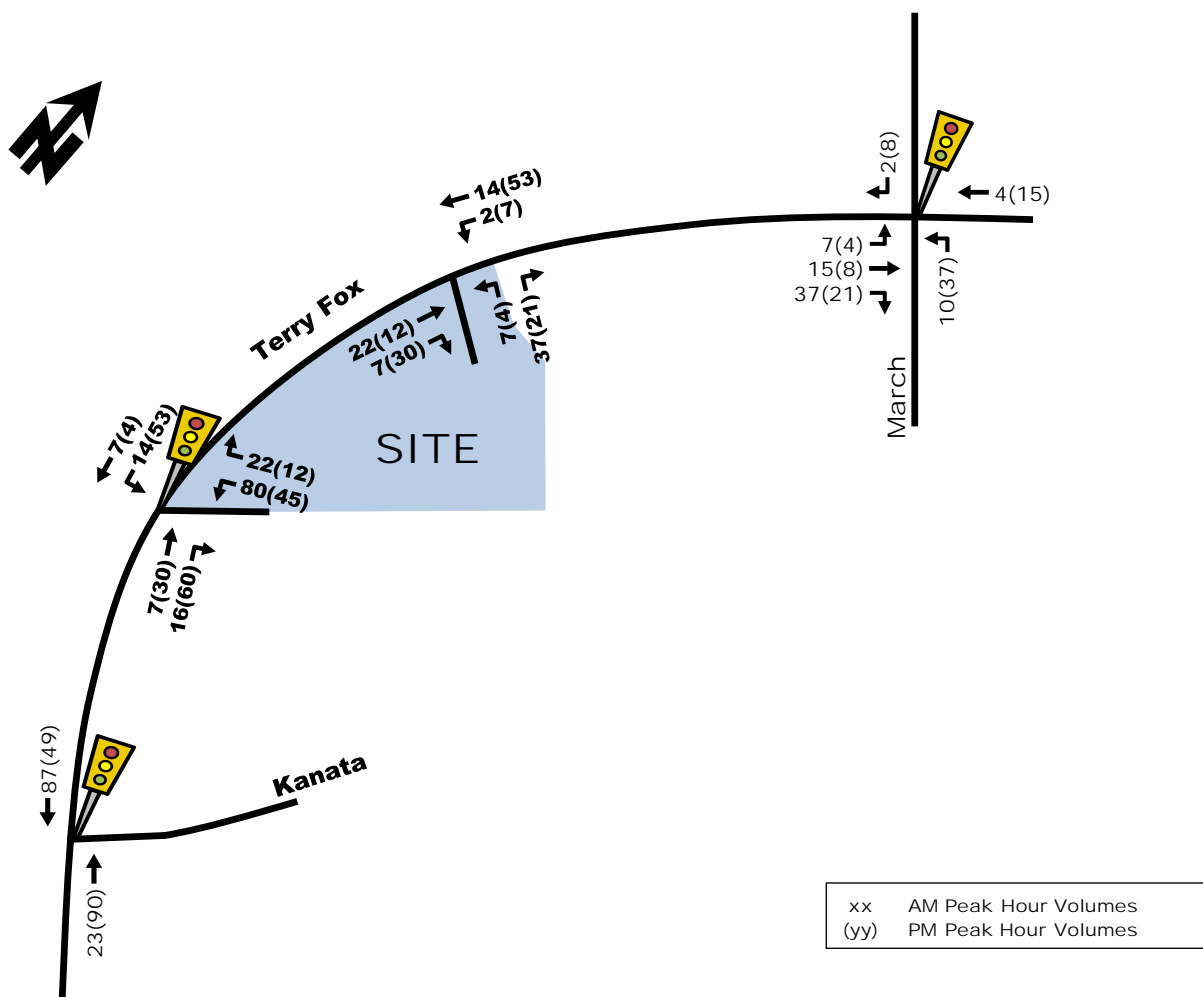
As shown in Table 4, the resulting number of potential “new” two-way vehicle trips generated by the proposed subdivision and approximately 185 veh/h and 230 veh/h during the morning and afternoon peak hours, respectively. It is these volumes that will be assigned to the proposed site intersections and 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 two 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)

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.

Figure 1: Local Context

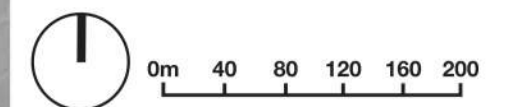


KANATA HIGHLANDS / HAUTES TERRES DE KANATA PHASE 2

PREFERRED PLAN / PLAN PRIVILÉGIÉ

LEGEND / LÉGENDE

- RICHCRAFT PROPERTY BOUNDARY /
LIMITES DE LA PROPRIÉTÉ DE RICHCRAFT
- DEVELOPABLE AREA /
SECTEUR D'AMÉNAGEMENT
- 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
- 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
- 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

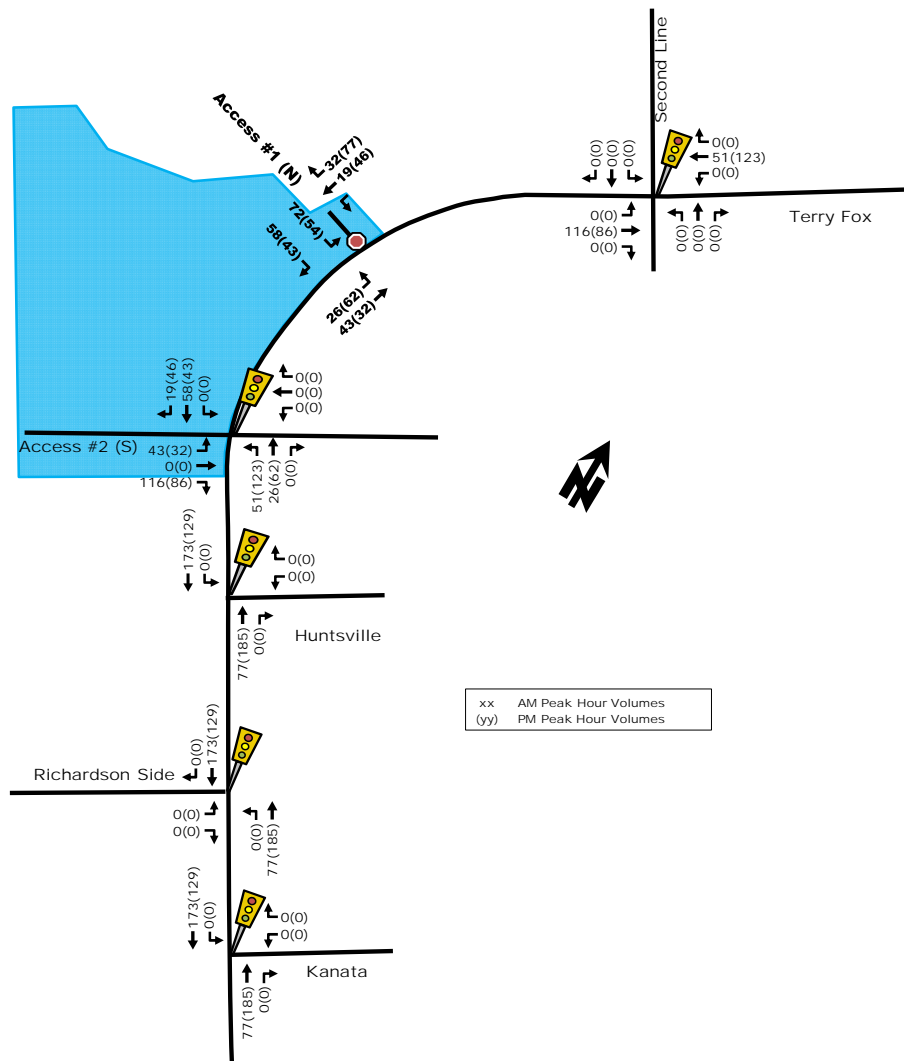


DATE
MAY 29, 2018

FOTENN
Planning + Design



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-supportive design & infrastructure measures: <i>Non-residential developments</i> | | 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 | <input checked="" type="checkbox"/> |
| BASIC | 1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations | <input checked="" type="checkbox"/> |
| BASIC | 1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort | <input checked="" type="checkbox"/> |
| 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 (<i>see Official Plan policy 4.3.3</i>) | <input type="checkbox"/> - 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 (<i>see Official Plan policy 4.3.12</i>) | <input checked="" type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Non-residential developments</i> | | 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 (<i>see Official Plan policy 4.3.10</i>) | <input checked="" type="checkbox"/> |
| 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 (<i>see Official Plan policy 4.3.10</i>) | <input checked="" type="checkbox"/> |
| 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 (<i>see Official Plan policy 4.3.11</i>) | <input checked="" type="checkbox"/> |
| BASIC | 1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops | <input checked="" type="checkbox"/> |
| BASIC | 1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| 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) | <input type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Non-residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|---|--|
| 2. WALKING & CYCLING: END-OF-TRIP FACILITIES | | |
| 2.1 Bicycle parking | | |
| REQUIRED | 2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i>) | <input checked="" type="checkbox"/> |
| 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 <i>Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| 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 <i>Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| 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 <i>Zoning By-law Section 111</i>) | <input type="checkbox"/> - 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) | <input type="checkbox"/> |
| 2.3 Shower & change facilities | | |
| BASIC | 2.3.1 Provide shower and change facilities for the use of active commuters | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| 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) | <input type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Non-residential developments</i> | | 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 | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| BETTER | 3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| BETTER | 4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement | <input type="checkbox"/> |
| 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 (<i>see Zoning By-law Section 94</i>) | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Non-residential developments</i> | | 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 | <input checked="" type="checkbox"/> |
| 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 | <input type="checkbox"/> |
| BASIC | 6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (<i>see Zoning By-law Section 104</i>) | <input type="checkbox"/> |
| 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>) | <input type="checkbox"/> |
| 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) | <input type="checkbox"/> |
| 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 | <input type="checkbox"/> |

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**.

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

| CRITERIA | North Approach | | South Approach | | East Approach | | West Approach | |
|----------------------------------|-------------------------|------|----------------|---|---------------------|------|---------------|-----|
| PETSİ SCORE | | | | | | | | |
| CROSSING DISTANCE CONDITIONS | | | | | | | | |
| Median > 2.4m in Width | No | 23 | N/A | 0 | No | 6 | N/A | 0 |
| Lanes Crossed (3.5m Lane Width) | 8 | | N/A | | 9 | | N/A | |
| 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 |
| PETSİ 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 | | E | | - | | B | | - |
| OVERALL | | F | | - | | F | | - |

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

| CRITERIA | North Approach | | South Approach | | East Approach | | West Approach | |
|----------------------------------|-----------------------|------|----------------|---|--------------------------|------|-------------------------|------|
| PETSİ SCORE | | | | | | | | |
| CROSSING DISTANCE CONDITIONS | | | | | | | | |
| Median > 2.4m in Width | No | 105 | N/A | 0 | No | 72 | No | 88 |
| Lanes Crossed (3.5m Lane Width) | 3 | | N/A | | 5 | | 4 | |
| 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 |
| PETSİ SCORE | | 71 | | - | | 55 | | 62 |
| LOS | | C | | - | | D | | C |
| 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 | | B | | - | | D | | D |
| OVERALL | | C | | - | | D | | D |

Table 3: BLOS Intersection Analysis

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

Table 4: TLOS Intersection Analysis

| Approach | Delay ⁽¹⁾ | TLOS |
|---------------------------------------|----------------------|------|
| Terry Fox Drive/Kanata Avenue | | |
| North Approach | 5 sec | B |
| South Approach | 5 sec | B |
| East Approach | 35 sec | E |
| Kanata Avenue/Huntsville Drive | | |
| North Approach | 20 sec | C |
| East Approach | 5 sec | B |
| West Approach | 5 sec | B |

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/Kanata Avenue | | | |
| South Approach | > 15m | 1 | C |
| East Approach | > 15m | 2 | A |
| Kanata Avenue/Huntsville Drive | | | |
| North Approach | < 10m | 1 | F |
| East Approach | < 10m | 1 | F |

Table 6: Auto LOS Intersection Analysis – Existing

| Intersection | AM Peak | | | PM Peak | | | SAT Peak | | |
|---|------------------|-----|-------|------------------|-----|-------|------------------|-----|-------|
| | 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 | B | WBL | 0.58 | A | WBL | 0.50 | A | WBL |
| Kanata Avenue/Huntsville Drive | 0.55 | A | SBL/R | 0.46 | A | SBL/R | 0.42 | A | SBL/R |
| Terry Fox Drive/Tillsonburg Street ⁽¹⁾ | 10 sec | A | WBR | 10 sec | A | WBR | 10 sec | A | WBR |

1. Unsignalized intersection

Table 7: Intersection MMLOS Summary

| Intersection | | Terry Fox Drive/Kanata Avenue | | | Kanata Avenue/Huntsville Drive | | |
|--------------|------------------------------|-------------------------------|-------------|---------------|--------------------------------|---------------|--------------|
| | | North | South | East | North | East | West |
| Pedestrian | 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 |
| | Parallel Radius | 15m to 25m | - | 15m to 25m | 5m to 10m | - | 5m to 10m |
| | Parallel Channel | Smart Channel | - | Smart Channel | No Channel | - | No Channel |
| | Perpendicular Radius | - | - | 15m to 25m | - | - | - |
| | 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 | C | D | D |
| | Target | F | | | D | | |
| Cyclist | 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 | - |
| | Two-Stage Bike Box | No | - | No | No | - | No |
| | Lanes Crossed for Left Turns | 2 | - | 0 | 0 | - | 1 |
| | 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 |
| | Level of Service | F | D | D | D | D | E |
| | Target | F | | | E | | |
| | Target | B | | | B | | |
| Transit | Average Signal Delay | 5 sec | 5 sec | 35 sec | 20 sec | 5 sec | 5 sec |
| | Level of Service | B | B | E | C | B | B |
| | Target | E | | | C | | |
| Truck | Turning Radius | - | > 15m | > 15m | < 10m | < 10m | - |
| | Receiving Lanes | - | 1 | 2 | 1 | 1 | - |
| | Level of Service | - | C | A | F | F | - |
| | Target | C | | | F | | |
| | Target | D | | | - | | |
| Auto | Level of Service | B | | | A | | |
| | Target | D | | | D | | |

APPENDIX J

Signal Timing Plans

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

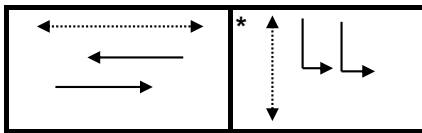
| | | |
|----------------------|-----------------|--------------------------|
| Intersection: | Main: Terry Fox | Side: Kanata |
| Controller: | ATC-3 | TSD: 6586 |
| Author: | Yassine Bennani | Date: 07-Sep-2018 |

Existing Timing Plans[†]

| | Plan | | | | Ped Minimum Time | | |
|---------------|--------------|---------------|--------------|------------|------------------|----|---------|
| | AM Peak 1 | Off Peak 2 | PM Peak 3 | Night 4 | Walk | DW | A+R |
| Cycle | 100 | 90 | 100 | 70 | | | |
| Offset | X | X | X | X | | | |
| 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 | | Saturday | | Sunday | |
|---------|------|----------|------|--------|------|
| Time | Plan | Time | Plan | Time | Plan |
| 0:10 | 4 | 0:10 | 4 | 0:10 | 4 |
| 6:30 | 1 | 9:00 | 2 | 8:00 | 2 |
| 9:30 | 2 | 22:30 | 4 | 22:30 | 4 |
| 15:00 | 3 | | | | |
| 19:00 | 2 | | | | |
| 23:00 | 4 | | | | |

Notes

[†]: Time for each direction includes amber and all red intervals

[‡]: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◀.....▶ Pedestrian signal

Cost is \$56.50 (\$50 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

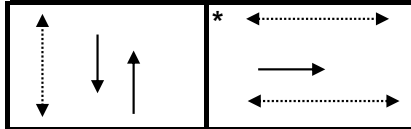
| | | |
|----------------------|-----------------|--------------------------|
| Intersection: | Main: Kanata | Side: Huntsville |
| Controller: | MS-3200 | TSD: 6812 |
| Author: | Yassine Bennani | Date: 07-Sep-2018 |

Existing Timing Plans[†]

| | Plan | | | | Ped Minimum Time | | |
|---------------|--------------|---------------|--------------|------------|------------------|----|---------|
| | AM Peak 1 | Off Peak 2 | PM Peak 3 | Night 4 | Walk | DW | A+R |
| Cycle | 80 | 70 | 80 | 70 | | | |
| Offset | X | X | X | X | | | |
| 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

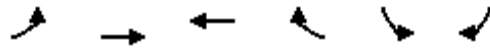
(fp): Fully Protected Left Turn

◄.....► Pedestrian signal

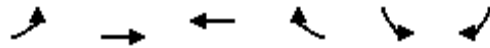
Cost is \$56.50 (\$50 + HST)

APPENDIX K

Synchro Analysis



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| 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 | | | | 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 | | | | | | |
| 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 |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 6 | 6 | 4 | 4 |
| Switch Phase | | | | | | |



| 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 | 1.8 | 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 |
| 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 | A | A | A | A | D | B |
| Approach Delay | | 5.5 | 4.5 | | 35.1 | |
| Approach LOS | | 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-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 10.5

Intersection LOS: B

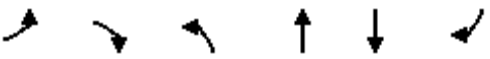





Intersection Capacity Utilization 49.5%


ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata

| | |
|-----------------------|-----------------------|
| 02 68 s | 04 32 s |
| 06 68 s | |

| |  | | | | | |
|----------------------------|---|-------|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| Traffic Volume (vph) | 64 | 94 | 16 | 218 | 239 | 23 |
| Future Volume (vph) | 64 | 94 | 16 | 218 | 239 | 23 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Storage Length (m) | 0.0 | 0.0 | 40.0 | | | 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 | 0.920 | | | | | 0.850 |
| Flt Protected | 0.980 | | 0.950 | | | |
| Satd. Flow (prot) | 1563 | 0 | 1647 | 1733 | 1733 | 1473 |
| Flt Permitted | 0.980 | | 0.595 | | | |
| Satd. Flow (perm) | 1563 | 0 | 1031 | 1733 | 1733 | 1440 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 91 | | | | | 26 |
| 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. Bikes (#/hr) | | | | | | 4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 71 | 104 | 18 | 242 | 266 | 26 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 175 | 0 | 18 | 242 | 266 | 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 | | | | | | |
| 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 | | 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 |
| 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 | | | | Cl+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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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) | 11.3 | | 50.2 | 50.2 | 50.2 | 50.2 |
| Actuated g/C Ratio | 0.16 | | 0.69 | 0.69 | 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 | C | | A | A | A | A |
| Approach Delay | 20.2 | | | 4.7 | 4.6 | |
| Approach LOS | C | | | A | A | |
| 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

Actuated Cycle Length: 72.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 8.4

Intersection LOS: A

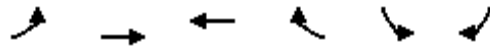
Intersection Capacity Utilization 32.9%

ICU Level of Service A

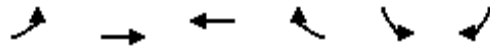
Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville

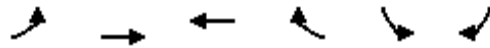




| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|-------|-------|------------------------|-------|-------|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | ↑ | | ↑ |
| Traffic Volume (vph) | 0 | 709 | 640 | 26 | 0 | 25 |
| Future Volume (vph) | 0 | 709 | 640 | 26 | 0 | 25 |
| Ideal Flow (vphpl) | 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 | | 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 28.7% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR | Ø3 |
|----------------------------|-------|-------|-------|-------|-------|-------|----|
| Lane Configurations | | | | | | | |
| 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 | 0.374 | | | | 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 | | | | | | | |
| 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 | |
| Protected Phases | | 2 | 6 | | 4 | | 3 |
| Permitted Phases | 2 | | | 6 | | 4 | |
| Detector Phase | 2 | 2 | 6 | 6 | 4 | 4 | |
| Switch Phase | | | | | | | |



| 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 | B | B | B | A | D | B | |
| Approach Delay | | 10.3 | 8.4 | | 35.1 | | |
| Approach LOS | | B | A | | 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-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 49.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata

| | | |
|------|------|------|
| | | |
| 58 s | 10 s | 32 s |
| | | |
| 58 s | | |







2: Kanata & Huntsville
AM Peak Hour

471 Terry Fox Drive
Existing Traffic - Identified Modifications

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR | Ø3 |
|----------------------------|-------|-------|-------|-------|-------|-------|----|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 64 | 94 | 16 | 218 | 239 | 23 | |
| Future Volume (vph) | 64 | 94 | 16 | 218 | 239 | 23 | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | |
| Storage Length (m) | 0.0 | 0.0 | 40.0 | | | 65.0 | |
| Storage Lanes | 1 | 0 | 1 | | | 0 | |
| 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 | | |
| Frt | 0.920 | | | | 0.988 | | |
| Flt Protected | 0.980 | | 0.950 | | | | |
| Satd. Flow (prot) | 1563 | 0 | 1647 | 1733 | 1709 | 0 | |
| Flt Permitted | 0.980 | | 0.574 | | | | |
| Satd. Flow (perm) | 1563 | 0 | 995 | 1733 | 1709 | 0 | |
| Right Turn on Red | | Yes | | | | Yes | |
| Satd. Flow (RTOR) | 96 | | | | 8 | | |
| 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. Bikes (#/hr) | | | | | | 4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | |
| Adj. Flow (vph) | 71 | 104 | 18 | 242 | 266 | 26 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 175 | 0 | 18 | 242 | 292 | 0 | |
| 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 | | |
| 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 Type | CI+Ex | | CI+Ex | CI+Ex | CI+Ex | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 1 Queue (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 1 Delay (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 2 Position(m) | | | | 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 | | |
| Protected Phases | 4 | | | 2 | 6 | 3 | |
| Permitted Phases | | | 2 | | | | |
| Detector Phase | 4 | | 2 | 2 | 6 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 5.0 | |

2: Kanata & Huntsville
AM Peak Hour

471 Terry Fox Drive
Existing Traffic - Identified Modifications

| |  |  |  |  |  |  | |
|-------------------------|---|---|---|---|---|---|------|
| 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 | | 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 | | |
| Total Lost Time (s) | 5.1 | | 5.7 | 5.7 | 5.7 | | |
| Lead/Lag | Lag | | | | | | 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 | | |
| Flash Dont Walk (s) | 14.0 | | 9.0 | 9.0 | 9.0 | | |
| Pedestrian Calls (#/hr) | 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 | | |
| v/c Ratio | 0.52 | | 0.03 | 0.27 | 0.33 | | |
| Control Delay | 18.1 | | 8.7 | 10.2 | 10.5 | | |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 18.1 | | 8.7 | 10.2 | 10.5 | | |
| LOS | B | | A | B | B | | |
| Approach Delay | 18.1 | | | 10.1 | 10.5 | | |
| Approach LOS | B | | | 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 | | |
| Internal Link Dist (m) | 199.0 | | | 397.6 | 142.2 | | |
| Turn Bay Length (m) | | | 40.0 | | | | |
| Base Capacity (vph) | 649 | | 516 | 899 | 891 | | |
| 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 | 0.27 | | 0.03 | 0.27 | 0.33 | | |

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 66.1

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 12.2

Intersection LOS: B

Intersection Capacity Utilization 33.6%

ICU Level of Service A

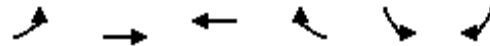
Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville

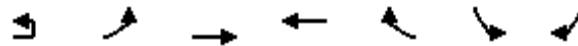
| | |
|------|------|
| | |
| 40 s | 10 s |
| 40 s | 30 s |

3: Terry Fox & Tillsonburg
AM Peak Hour

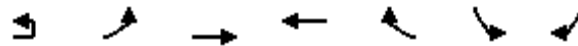
471 Terry Fox Drive
Existing Traffic - Identified Modifications



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|-------|-------|------------------------|-------|-------|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | ↑ | | ↑ |
| 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 | | 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 28.7% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| 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) | | 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 | 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | | 62.5 | 62.5 | 62.5 | 62.5 | 12.7 | 12.7 |
| Actuated g/C Ratio | | 0.71 | 0.71 | 0.71 | 0.71 | 0.15 | 0.15 |
| v/c Ratio | | 0.26 | 0.41 | 0.39 | 0.30 | 0.58 | 0.23 |
| Control Delay | | 7.0 | 5.9 | 5.7 | 1.3 | 40.0 | 11.3 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 7.0 | 5.9 | 5.7 | 1.3 | 40.0 | 11.3 |
| LOS | | A | A | A | A | D | B |
| Approach Delay | | | 6.0 | 4.5 | | 34.7 | |
| Approach LOS | | | A | A | | C | |
| Queue Length 50th (m) | | 4.2 | 27.2 | 24.8 | 0.0 | 20.1 | 0.0 |
| Queue Length 95th (m) | | 11.7 | 42.6 | 39.0 | 6.7 | 30.8 | 9.3 |
| 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) | | 367 | 2423 | 2423 | 1153 | 942 | 471 |
| 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 | | 0.26 | 0.41 | 0.39 | 0.30 | 0.29 | 0.13 |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 87.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 8.8

Intersection LOS: A

Intersection Capacity Utilization 56.5%

ICU Level of Service B

Analysis Period (min) 15


Splits and Phases: 1: Terry Fox & Kanata



2: Kanata & Huntsville
PM Peak Hour

471 Terry Fox Drive
Existing Traffic

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 43 | 50 | 64 | 326 | 248 | 47 |
| Future Volume (vph) | 43 | 50 | 64 | 326 | 248 | 47 |
| 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 | 0.927 | | | | | 0.850 |
| Flt Protected | 0.977 | | 0.950 | | | |
| Satd. Flow (prot) | 1570 | 0 | 1647 | 1733 | 1733 | 1473 |
| Flt Permitted | 0.977 | | 0.590 | | | |
| Satd. Flow (perm) | 1570 | 0 | 1023 | 1733 | 1733 | 1442 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 56 | | | | | 52 |
| 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. Bikes (#/hr) | | | | | | 2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 48 | 56 | 71 | 362 | 276 | 52 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 104 | 0 | 71 | 362 | 276 | 52 |
| 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 |
| 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 | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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) | 8.0 | | 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 | | 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 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 |
| 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

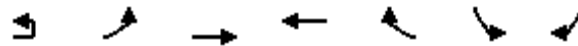
Splits and Phases: 2: Kanata & Huntsville



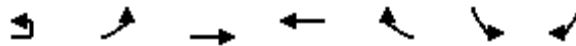
| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| Traffic Volume (vph) | 0 | 987 | 817 | 85 | 0 | 11 |
| Future Volume (vph) | 0 | 987 | 817 | 85 | 0 | 11 |
| Ideal Flow (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 | | 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 | 33.8% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

1: Terry Fox & Kanata
PM Peak Hour

471 Terry Fox Drive
Existing Traffic - Identified Modifications



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR | Ø3 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|----|
| Lane Configurations | | | | | | | | |
| 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) | | 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 | 1696 | 3390 | 3390 | 1517 | 3195 | 1473 | |
| Flt Permitted | | 0.263 | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 469 | 3390 | 3390 | 1477 | 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | | |
| Detector 2 Type | | | Cl+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 | | 3 |
| Permitted Phases | 2 | 2 | | | 6 | | 4 | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 | |



| 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 | |
| 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) | | 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 | | B | B | B | A | D | B | |
| Approach Delay | | | 11.5 | 8.5 | | 34.5 | | |
| Approach LOS | | | B | A | | 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) | | | 210.5 | 319.0 | | 397.6 | | |
| Turn Bay Length (m) | | 95.0 | | | 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 | |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 87

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 56.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata

| | | | | | |
|------|----|------|----|------|----|
| | Ø2 | | Ø3 | | Ø4 |
| 58 s | | 10 s | | 32 s | |
| | Ø6 | | | | |
| 58 s | | | | | |







2: Kanata & Huntsville
PM Peak Hour

471 Terry Fox Drive
Existing Traffic - Identified Modifications

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR | Ø3 |
|----------------------------|-------|-------|-------|-------|-------|-------|----|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 43 | 50 | 64 | 326 | 248 | 47 | |
| Future Volume (vph) | 43 | 50 | 64 | 326 | 248 | 47 | |
| 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 | | | 0 | |
| 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 | | |
| Frt | 0.927 | | | | 0.979 | | |
| Flt Protected | 0.977 | | 0.950 | | | | |
| Satd. Flow (prot) | 1570 | 0 | 1647 | 1733 | 1691 | 0 | |
| Flt Permitted | 0.977 | | 0.557 | | | | |
| Satd. Flow (perm) | 1570 | 0 | 965 | 1733 | 1691 | 0 | |
| Right Turn on Red | | Yes | | | | Yes | |
| Satd. Flow (RTOR) | 56 | | | | 15 | | |
| 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. Bikes (#/hr) | | | | | | 2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | |
| Adj. Flow (vph) | 48 | 56 | 71 | 362 | 276 | 52 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 104 | 0 | 71 | 362 | 328 | 0 | |
| 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 | | |
| 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 Type | CI+Ex | | CI+Ex | CI+Ex | CI+Ex | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 1 Queue (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 1 Delay (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 2 Position(m) | | | | 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 | | |
| Protected Phases | 4 | | | 2 | 6 | 3 | |
| Permitted Phases | | | 2 | | | | |
| Detector Phase | 4 | | 2 | 2 | 6 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | |

2: Kanata & Huntsville
PM Peak Hour

471 Terry Fox Drive
Existing Traffic - Identified Modifications

| |  |  |  |  |  |  | |
|-------------------------|---|---|---|---|---|---|------|
| 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 | | 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 | | |
| Total Lost Time (s) | 5.1 | | 5.7 | 5.7 | 5.7 | | |
| Lead/Lag | Lag | | | | | | 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 | | |
| Flash Dont Walk (s) | 14.0 | | 9.0 | 9.0 | 9.0 | | |
| Pedestrian Calls (#/hr) | 0 | | 0 | 0 | 0 | | |
| Act Effct Green (s) | 7.6 | | 34.6 | 34.6 | 34.6 | | |
| Actuated g/C Ratio | 0.13 | | 0.57 | 0.57 | 0.57 | | |
| v/c Ratio | 0.42 | | 0.13 | 0.37 | 0.34 | | |
| Control Delay | 19.4 | | 8.4 | 9.7 | 9.0 | | |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 19.4 | | 8.4 | 9.7 | 9.0 | | |
| LOS | B | | A | A | A | | |
| Approach Delay | 19.4 | | | 9.5 | 9.0 | | |
| Approach LOS | B | | | A | A | | |
| Queue Length 50th (m) | 4.7 | | 3.3 | 19.7 | 16.5 | | |
| Queue Length 95th (m) | 15.7 | | 9.4 | 38.9 | 33.7 | | |
| Internal Link Dist (m) | 199.0 | | | 397.6 | 142.2 | | |
| Turn Bay Length (m) | | | 45.0 | | | | |
| 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 | | |

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 60.7

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 10.5

Intersection LOS: B

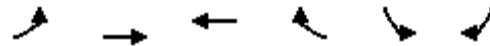
Intersection Capacity Utilization 40.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville

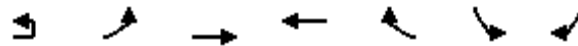
| | |
|------|------|
| | |
| 40 s | 10 s |
| 40 s | 30 s |



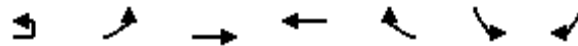
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|-------|-------|------------------------|-------|-------|
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| Traffic Volume (vph) | 0 | 987 | 817 | 85 | 0 | 11 |
| Future Volume (vph) | 0 | 987 | 817 | 85 | 0 | 11 |
| Ideal Flow (vphpl) | 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 | | 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 33.8% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |

1: Terry Fox & Kanata
SAT Peak Hour

471 Terry Fox Drive
Existing Traffic



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↰ | ↰↰ | ↰↰ | ↰ | ↰↰ | ↰ |
| Traffic Volume (vph) | 3 | 69 | 537 | 628 | 299 | 261 | 65 |
| Future Volume (vph) | 3 | 69 | 537 | 628 | 299 | 261 | 65 |
| 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) | | 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 | | 0.381 | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 677 | 3390 | 3390 | 1465 | 3288 | 1497 |
| Right Turn on Red | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 332 | | 72 |
| 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) | | 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 (%) | | | | | | | |
| 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 | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |



| 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 |
| 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 | 6 | 6 | 1 | 1 |
| Act Effct Green (s) | | 52.5 | 52.5 | 52.5 | 52.5 | 13.8 | 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 | | A | A | A | A | C | A |
| Approach Delay | | | 6.5 | 5.0 | | 27.2 | |
| Approach LOS | | | A | A | | C | |
| 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

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 78.6

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 9.4

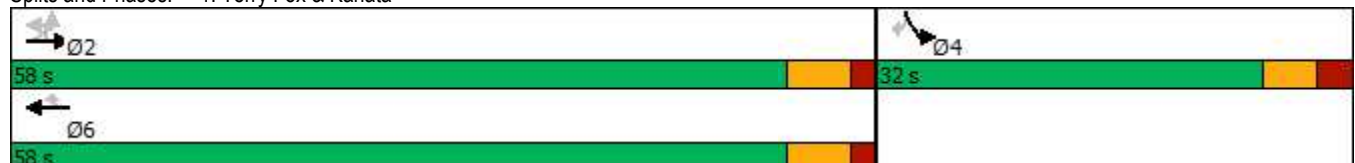
Intersection LOS: A







Intersection Capacity Utilization 50.6%


ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  | | | | | |
|----------------------------|---|-------|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | | | | 0.850 |
| Flt Protected | 0.975 | | 0.950 | | | |
| Satd. Flow (prot) | 1625 | 0 | 1695 | 1784 | 1784 | 1517 |
| Flt Permitted | 0.975 | | 0.581 | | | |
| Satd. Flow (perm) | 1621 | 0 | 1032 | 1784 | 1784 | 1475 |
| Right Turn on Red | | 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 | | | 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) | | | | 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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) | 10.4 | | 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 | 0.42 | | 0.07 | 0.28 | 0.23 | 0.08 |
| Control Delay | 16.3 | | 4.6 | 5.2 | 5.0 | 1.4 |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.3 | | 4.6 | 5.2 | 5.0 | 1.4 |
| LOS | B | | A | A | A | A |
| Approach Delay | 16.3 | | | 5.2 | 4.1 | |
| Approach LOS | B | | | A | A | |
| Queue Length 50th (m) | 6.4 | | 1.7 | 12.7 | 10.1 | 0.0 |
| Queue Length 95th (m) | 18.4 | | 5.0 | 25.3 | 20.4 | 3.6 |
| Internal Link Dist (m) | 199.0 | | | 397.6 | 142.2 | |
| Turn 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 |

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 59.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 6.4

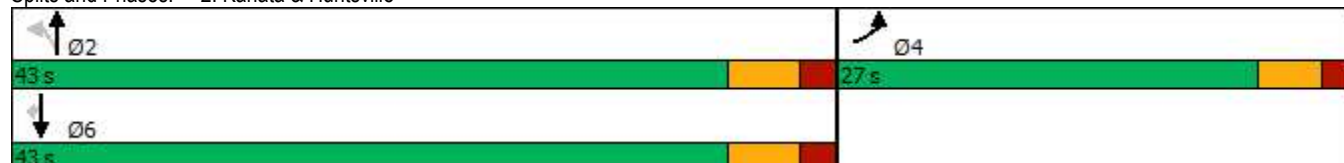
Intersection LOS: A

Intersection Capacity Utilization 50.4%

ICU Level of Service A







Analysis Period (min) 15

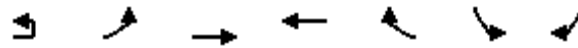
Splits and Phases: 2: Kanata & Huntsville



3: Terry Fox & Tillsonburg
SAT Peak Hour

471 Terry Fox Drive
Existing Traffic

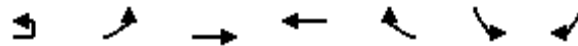
| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↑ | | ↑ |
| Traffic Volume (vph) | 0 | 609 | 654 | 42 | 0 | 13 |
| Future Volume (vph) | 0 | 609 | 654 | 42 | 0 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 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 | | 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 29.1% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR | Ø3 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-----|
| Lane Configurations | | ↰ | ↰↰ | ↰↰ | ↰ | ↰↰ | ↰ | |
| Traffic Volume (vph) | 3 | 69 | 537 | 628 | 299 | 261 | 65 | |
| Future Volume (vph) | 3 | 69 | 537 | 628 | 299 | 261 | 65 | |
| 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) | | 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 | | 50 | | |
| Link 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 (%) | | | | | | | | |
| 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 | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | CI+Ex | |
| Detector 1 Channel | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 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 | |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 5.0 |

1: Terry Fox & Kanata
SAT Peak Hour

471 Terry Fox Drive
Existing Traffic - Identified Modifications



| 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 | | | | | | 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 | 1 | 1 | |
| Act Effct Green (s) | | 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 | B | A | C | A | |
| Approach Delay | | | 11.8 | 9.0 | | 27.1 | | |
| Approach LOS | | | B | 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) | | | 210.5 | 319.0 | | 397.6 | | |
| Turn Bay Length (m) | | 95.0 | | | 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 | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | 0.23 | 0.33 | 0.38 | 0.35 | 0.27 | 0.13 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 78.3

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 13.1

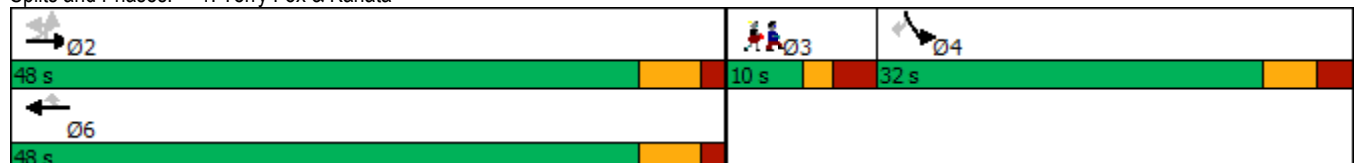
Intersection LOS: B

Intersection Capacity Utilization 50.6%







ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR | Ø3 |
|----------------------------|-------|-------|-------|-------|-------|-------|----|
| Lane Configurations | | | | | | | |
| 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 | | | 0 | |
| 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 | | 0.99 | | |
| Frt | 0.934 | | | | 0.968 | | |
| Flt Protected | 0.975 | | 0.950 | | | | |
| Satd. Flow (prot) | 1625 | 0 | 1695 | 1784 | 1716 | 0 | |
| Flt Permitted | 0.975 | | 0.491 | | | | |
| Satd. Flow (perm) | 1621 | 0 | 873 | 1784 | 1716 | 0 | |
| Right Turn on Red | | Yes | | | | Yes | |
| Satd. Flow (RTOR) | 70 | | | | 24 | | |
| 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 | 382 | 0 | |
| 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 | | |
| 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 Type | CI+Ex | | CI+Ex | CI+Ex | CI+Ex | | |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 1 Queue (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 1 Delay (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Detector 2 Position(m) | | | | 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 | | |
| Protected Phases | 4 | | | 2 | 6 | 3 | |
| Permitted Phases | | | 2 | | | | |
| Detector Phase | 4 | | 2 | 2 | 6 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 5.0 | |

| |  |  |  |  |  |  | |
|-------------------------|---|---|---|---|---|---|------|
| 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 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | 0.0 | 0.0 | | |
| Total Lost Time (s) | 5.1 | | 5.7 | 5.7 | 5.7 | | |
| Lead/Lag | Lag | | | | | | 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 | | |
| 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 | | |
| v/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 | | |
| LOS | B | | B | B | B | | |
| Approach Delay | 14.8 | | | 12.4 | 12.6 | | |
| Approach LOS | B | | | B | B | | |
| Queue Length 50th (m) | 5.9 | | 2.8 | 21.3 | 21.9 | | |
| Queue Length 95th (m) | 17.5 | | 8.3 | 40.1 | 42.4 | | |
| Internal Link Dist (m) | 199.0 | | | 397.6 | 142.2 | | |
| Turn 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 | | |

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 52.4

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 12.8

Intersection LOS: B







Intersection Capacity Utilization 50.4%

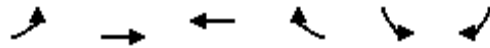
ICU Level of Service A

Analysis Period (min) 15

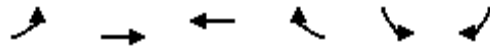
Splits and Phases: 2: Kanata & Huntsville

| | | |
|------|------|------|
| | | |
| 30 s | 10 s | 30 s |
| | | |
| 30 s | | |

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | 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 | 29.1% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| 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 | | | 0.96 | | 0.98 |
| Frt | | | | 0.850 | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1647 | 3293 | 3293 | 1473 | 3195 | 1473 |
| Flt Permitted | 0.410 | | | | 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 | |
| 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) | 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) | | 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 |
| 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 |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 6 | 6 | 4 | 4 |
| Switch Phase | | | | | | |



| 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 | 1.8 | 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 |
| 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) | 62.1 | 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 | A | A | A | A | D | B |
| Approach Delay | | 6.0 | 4.8 | | 35.1 | |
| Approach LOS | | A | A | | 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

Actuated Cycle Length: 89

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 11.5

Intersection LOS: B

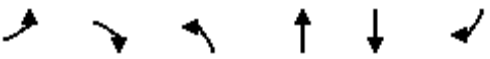





Intersection Capacity Utilization 52.2%







ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  | | | | | |
|----------------------------|---|-------|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | | 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 | | 0.581 | | | |
| Satd. Flow (perm) | 1559 | 0 | 1007 | 1733 | 1733 | 1440 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 98 | | | | | 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) | 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 |
| 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 |
| 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|
| 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 | | | | | | |
| 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) | 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 | 0.19 | 0.25 | 0.03 |
| Control Delay | 21.3 | | 4.5 | 4.9 | 5.2 | 2.1 |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.3 | | 4.5 | 4.9 | 5.2 | 2.1 |
| LOS | C | | A | A | A | A |
| Approach Delay | 21.3 | | | 4.9 | 5.0 | |
| Approach LOS | C | | | A | 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 | | | 315.7 | 142.2 | |
| Turn Bay Length (m) | | | 45.0 | | | 65.0 |
| 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-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 9.1

Intersection LOS: A

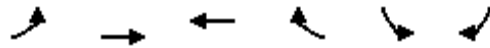
Intersection Capacity Utilization 38.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville

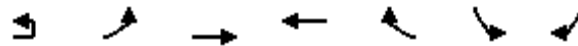




| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | ↑ | | ↑ |
| Traffic Volume (vph) | 0 | 772 | 673 | 35 | 0 | 25 |
| Future Volume (vph) | 0 | 772 | 673 | 35 | 0 | 25 |
| Ideal Flow (vphpl) | 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 | |
| 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 29.6% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 3 | 97 | 946 | 917 | 359 | 275 | 63 |
| Future Volume (vph) | 3 | 97 | 946 | 917 | 359 | 275 | 63 |
| 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 | | 0.295 | | | | 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 | | | 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 | 97 | 946 | 917 | 359 | 275 | 63 |
| Shared Lane Traffic (%) | | | | | | | |
| 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 |
| 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 | 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 |



| 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 | B |
| Approach Delay | | | 5.9 | 4.5 | | 34.6 | |
| Approach LOS | | | A | A | | C | |
| 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 | 0 | 0 | 0 |
| Reduced v/c Ratio | | 0.27 | 0.39 | 0.38 | 0.31 | 0.29 | 0.13 |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 87.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 8.9

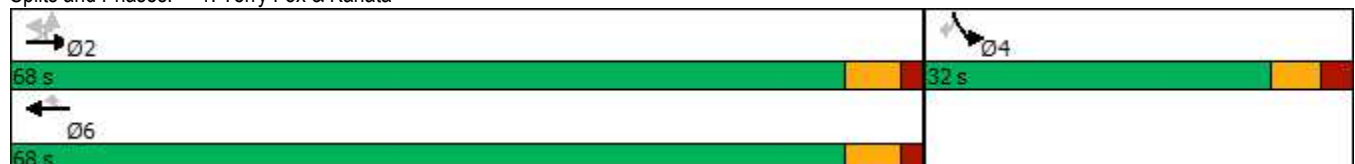
Intersection LOS: A












Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | | 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 | 0.924 | | | | | 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) | 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 | 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 | | | 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) | | | | 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |



| 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 | | | | | | |
| 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) | 10.4 | | 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 | B | | A | A | A | A |
| Approach Delay | 18.1 | | | 4.4 | 3.6 | |
| Approach LOS | B | | | A | A | |
| 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 | | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.21 | | 0.11 | 0.28 | 0.21 | 0.05 |

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 70.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 5.8

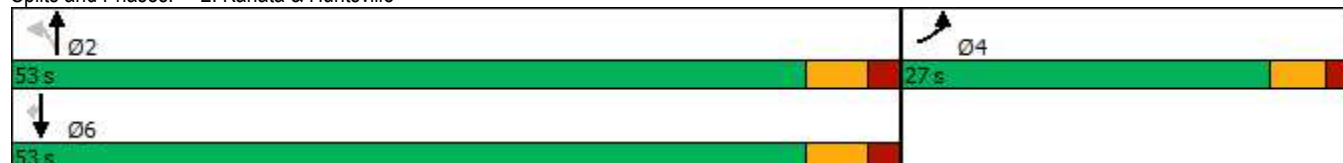
Intersection LOS: A

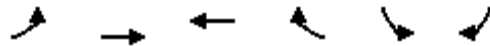
Intersection Capacity Utilization 45.7%

ICU Level of Service A

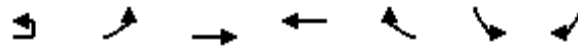
Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville





| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | 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 | 35.3% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 3 | 74 | 548 | 641 | 312 | 274 | 70 |
| Future Volume (vph) | 3 | 74 | 548 | 641 | 312 | 274 | 70 |
| 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 | | 0.408 | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 728 | 3390 | 3390 | 1478 | 3195 | 1453 |
| 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. 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 | 74 | 548 | 641 | 312 | 274 | 70 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 77 | 548 | 641 | 312 | 274 | 70 |
| 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | 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) | | 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 | 6 | 6 | 1 | 1 |
| Act Effct Green (s) | | 52.8 | 52.8 | 52.8 | 52.8 | 13.8 | 13.8 |
| Actuated g/C Ratio | | 0.67 | 0.67 | 0.67 | 0.67 | 0.18 | 0.18 |
| v/c Ratio | | 0.16 | 0.24 | 0.28 | 0.29 | 0.49 | 0.23 |
| 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 | | A | A | A | A | C | A |
| Approach Delay | | | 6.3 | 4.8 | | 27.2 | |
| Approach LOS | | | A | A | | C | |
| 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 | | 59.8 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| 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

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 78.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 9.3

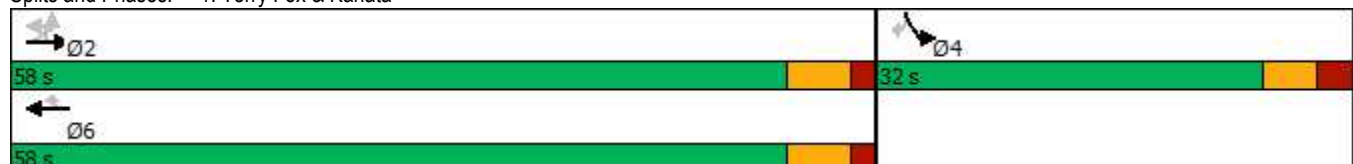
Intersection LOS: A












Intersection Capacity Utilization 50.5%







ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | | 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 | 0.934 | | | | | 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 | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 65 | | | | | 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) | 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 |
| 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 | 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 |
| 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 | | | | Cl+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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|
| 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 | | | | | | |
| 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) | 10.4 | | 42.8 | 42.8 | 42.8 | 42.8 |
| Actuated g/C Ratio | 0.17 | | 0.72 | 0.72 | 0.72 | 0.72 |
| v/c Ratio | 0.41 | | 0.07 | 0.27 | 0.22 | 0.08 |
| Control Delay | 16.3 | | 4.5 | 5.2 | 4.9 | 1.5 |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.3 | | 4.5 | 5.2 | 4.9 | 1.5 |
| LOS | B | | A | A | A | A |
| Approach Delay | 16.3 | | | 5.1 | 4.1 | |
| Approach LOS | B | | | A | A | |
| 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 | | | 315.7 | 142.2 | |
| 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-Uncoordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 6.4

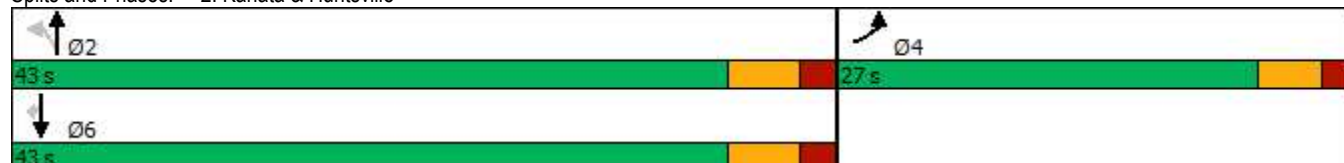
Intersection LOS: A







Intersection Capacity Utilization 45.9%

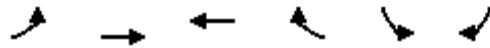
ICU Level of Service A

Analysis Period (min) 15

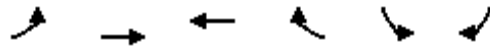
Splits and Phases: 2: Kanata & Huntsville



| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | 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 | 29.6% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| 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 | | | 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 | | | 0.96 | | 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 | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | 189 | | 76 |
| 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) | 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 |
| 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 |
| 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 |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 6 | 6 | 4 | 4 |
| Switch Phase | | | | | | |



| 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 | 1.8 | 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 |
| 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) | 62.1 | 62.1 | 62.1 | 62.1 | 15.2 | 15.2 |
| 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 | | A | A | | 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-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.4

Intersection LOS: B












Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 98 | | | | | 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) | 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 |
| 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) | | | | 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |



| 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 | | | | | | |
| 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) | 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 | C | | A | A | A | A |
| Approach Delay | 21.3 | | | 5.0 | 5.1 | |
| Approach LOS | C | | | A | A | |
| 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

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 72

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 9.1

Intersection LOS: A

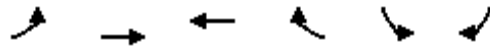
Intersection Capacity Utilization 38.8%

ICU Level of Service A

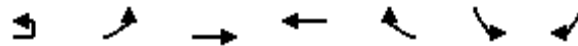
Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville

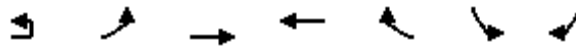




| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| Traffic Volume (vph) | 0 | 978 | 776 | 35 | 0 | 25 |
| Future Volume (vph) | 0 | 978 | 776 | 35 | 0 | 25 |
| Ideal Flow (vphpl) | 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 | | 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 32.6% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 3 | 101 | 1116 | 1143 | 375 | 288 | 65 |
| Future Volume (vph) | 3 | 101 | 1116 | 1143 | 375 | 288 | 65 |
| 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 | | 0.222 | | | | 0.950 | |
| 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | | 62.2 | 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 | | B | A | A | A | D | B |
| Approach Delay | | | 6.8 | 5.3 | | 34.8 | |
| Approach LOS | | | A | A | | C | |
| 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 |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 87.6

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 9.3

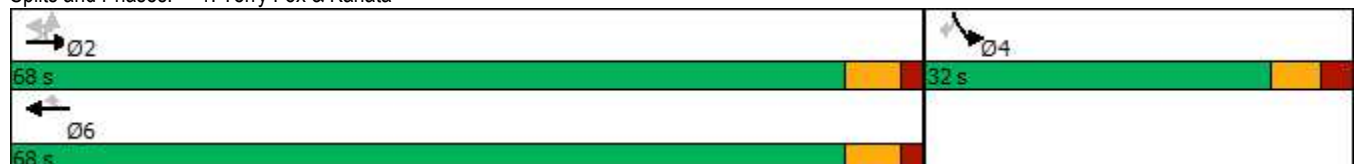
Intersection LOS: A












Intersection Capacity Utilization 65.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 |
| 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 | 0.924 | | | | | 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 | | Yes | | | | Yes |
| Satd. Flow (RTOR) | 64 | | | | | 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) | 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 |
| 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 |
| 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |



| 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 | | | | | | |
| 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) | 10.4 | | 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 | B | | A | A | A | A |
| Approach Delay | 18.1 | | | 4.5 | 3.6 | |
| Approach LOS | B | | | A | A | |
| 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 | | 0 | 0 | 0 | 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-Uncoordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 5.8

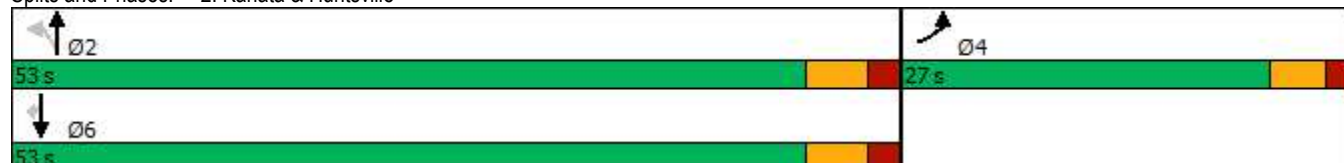
Intersection LOS: A







Intersection Capacity Utilization 46.5%

ICU Level of Service A

Analysis Period (min) 15

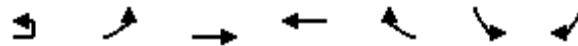
Splits and Phases: 2: Kanata & Huntsville



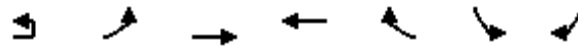
| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| Traffic Volume (vph) | 0 | 1220 | 1095 | 116 | 0 | 11 |
| Future Volume (vph) | 0 | 1220 | 1095 | 116 | 0 | 11 |
| Ideal 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 | | 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 | 42.0% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

1: Terry Fox & Kanata
SAT Peak Hour

471 Terry Fox Drive
2024 Background Traffic



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| 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 | | 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | 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) | | 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 | 6 | 6 | 1 | 1 |
| Act Effct Green (s) | | 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 |
| 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 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| 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 |
| Storage Cap Reductn | | 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

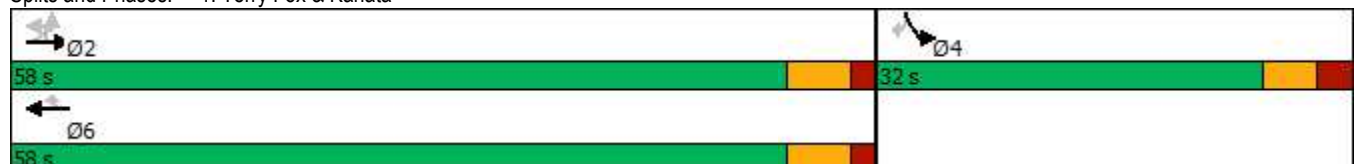
Intersection LOS: A

Intersection Capacity Utilization 57.5%

ICU Level of Service B












Analysis Period (min) 15







Splits and Phases: 1: Terry Fox & Kanata



2: Kanata & Huntsville
SAT Peak Hour

471 Terry Fox Drive
2024 Background Traffic

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | | 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 | 0.934 | | | | | 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 | | | | | 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) | 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 | | | 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) | | | | 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|
| 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 | | | | | | |
| 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) | 10.4 | | 42.8 | 42.8 | 42.8 | 42.8 |
| Actuated g/C Ratio | 0.17 | | 0.72 | 0.72 | 0.72 | 0.72 |
| v/c Ratio | 0.41 | | 0.07 | 0.28 | 0.24 | 0.08 |
| Control Delay | 16.3 | | 4.5 | 5.3 | 5.0 | 1.5 |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.3 | | 4.5 | 5.3 | 5.0 | 1.5 |
| LOS | B | | A | A | A | A |
| Approach Delay | 16.3 | | | 5.2 | 4.2 | |
| Approach LOS | B | | | A | A | |
| 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 | | | 315.7 | 142.2 | |
| 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-Uncoordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 6.4

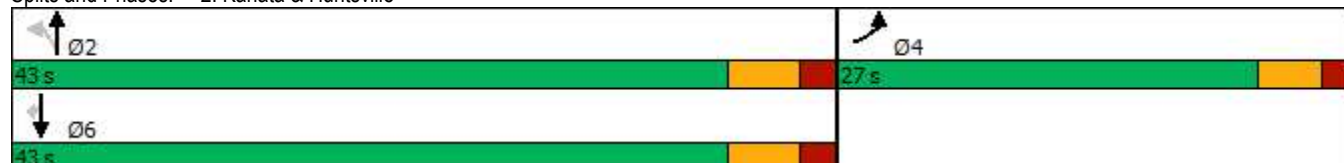
Intersection LOS: A







Intersection Capacity Utilization 46.8%

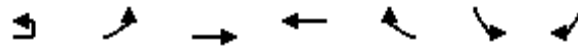
ICU Level of Service A

Analysis Period (min) 15

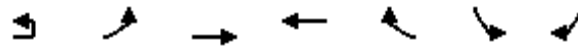
Splits and Phases: 2: Kanata & Huntsville



| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | 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 | 36.3% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↰ | ↰↰ | ↰↰ | ↰ | ↰↰ | ↰ |
| 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 | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 181 | | 76 |
| 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) | | 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 | 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 | | 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 | CI+Ex | CI+Ex | CI+Ex |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 |
| Switch Phase | | | | | | | |



| 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 | | | | | | | |
| 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) | | 62.1 | 62.1 | 62.1 | 62.1 | 15.0 | 15.0 |
| Actuated g/C Ratio | | 0.70 | 0.70 | 0.70 | 0.70 | 0.17 | 0.17 |
| v/c Ratio | | 0.16 | 0.31 | 0.28 | 0.17 | 0.65 | 0.25 |
| Control Delay | | 6.4 | 6.0 | 5.9 | 1.3 | 40.5 | 9.9 |
| Queue Delay | | 0.0 | 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 | | A | A | A | A | D | A |
| Approach Delay | | | 6.1 | 4.9 | | 35.0 | |
| Approach LOS | | | A | A | | 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 | 5.9 | 38.8 | 10.2 |
| Internal Link Dist (m) | | | 73.9 | 319.0 | | 59.8 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| Base Capacity (vph) | | 486 | 2289 | 2289 | 1040 | 924 | 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 | | 0.16 | 0.31 | 0.28 | 0.17 | 0.37 | 0.16 |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 89.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.6

Intersection LOS: B












Intersection Capacity Utilization 52.7%


ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata

| | |
|-----------------------|-----------------------|
| 02 68 s | 04 32 s |
| 06 68 s | |

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| Traffic Volume (vph) | 83 | 120 | 20 | 231 | 300 | 26 |
| Future Volume (vph) | 83 | 120 | 20 | 231 | 300 | 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 | 0.920 | | | | | 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 | |
| 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 | 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 | | | | | | |
| 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 | | 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 |
| 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 | | | | Cl+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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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) | 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 | 0.25 | 0.03 |
| 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 | | A | A | A | A |
| 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-Uncoordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 9.8

Intersection LOS: A







Intersection Capacity Utilization 39.2%










ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville

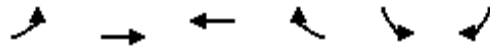


| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| Traffic Volume (vph) | 0 | 780 | 679 | 37 | 0 | 26 |
| Future Volume (vph) | 0 | 780 | 679 | 37 | 0 | 26 |
| Ideal Flow (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 | | 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 | 29.8% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |












| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| 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 | | | |
| Flt Protected | 0.995 | | | | | 0.995 |
| Satd. Flow (prot) | 1514 | 0 | 1721 | 0 | 0 | 1725 |
| Flt Permitted | 0.995 | | | | | 0.995 |
| Satd. Flow (perm) | 1514 | 0 | 1721 | 0 | 0 | 1725 |
| 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) | 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 | | | | | | |

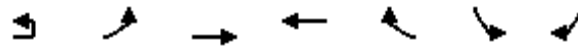
5: Terry Fox & RIRO Access
AM Peak Hour

471 Terry Fox Drive
2019 Total Traffic

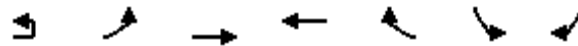


| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | ↑↑↑↑ | ↑↑ | | | ↑ |
| Traffic Volume (vph) | 0 | 780 | 693 | 35 | 0 | 23 |
| Future Volume (vph) | 0 | 780 | 693 | 35 | 0 | 23 |
| Ideal Flow (vphpl) | 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 | | 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 31.4% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |    | |
| 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 | | | 2.0 | 2.0 | |
| 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 | Stop | | | Free | Free | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization 18.6% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 18 | 97 | 946 | 931 | 359 | 291 | 69 |
| Future Volume (vph) | 18 | 97 | 946 | 931 | 359 | 291 | 69 |
| 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 | 1700 | 3390 | 3390 | 1517 | 3195 | 1473 |
| Flt Permitted | | 0.290 | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 519 | 3390 | 3390 | 1478 | 3195 | 1453 |
| Right Turn on Red | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 359 | | 69 |
| 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) | 18 | 97 | 946 | 931 | 359 | 291 | 69 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 115 | 946 | 931 | 359 | 291 | 69 |
| 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | | 62.1 | 62.1 | 62.1 | 62.1 | 13.2 | 13.2 |
| Actuated g/C Ratio | | 0.71 | 0.71 | 0.71 | 0.71 | 0.15 | 0.15 |
| v/c 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 |
| 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 | | 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 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| Base Capacity (vph) | | 368 | 2405 | 2405 | 1152 | 941 | 477 |
| 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 | | 0.31 | 0.39 | 0.39 | 0.31 | 0.31 | 0.14 |

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

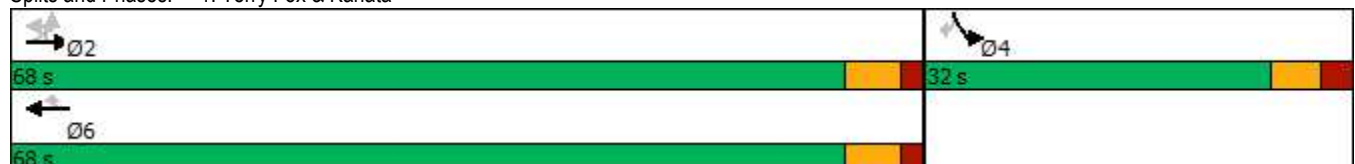
Intersection LOS: A












Intersection Capacity Utilization 59.4%


ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | | | |
| Satd. Flow (prot) | 1577 | 0 | 1647 | 1733 | 1733 | 1473 |
| Flt Permitted | 0.975 | | 0.582 | | | |
| Satd. Flow (perm) | 1577 | 0 | 1009 | 1733 | 1733 | 1440 |
| 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 | 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 | | | 3.7 | 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) | | | | 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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) | 10.6 | | 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 | | 0.11 | 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 | 0.0 | 0.0 |
| Total Delay | 20.5 | | 4.2 | 4.7 | 4.3 | 1.4 |
| LOS | C | | A | A | A | A |
| Approach Delay | 20.5 | | | 4.6 | 3.8 | |
| Approach LOS | C | | | A | 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 | | | 315.7 | 142.2 | |
| Turn Bay Length (m) | | | 45.0 | | | 65.0 |
| Base Capacity (vph) | 536 | | 761 | 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 | 0.29 | 0.22 | 0.05 |

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 70

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 6.5

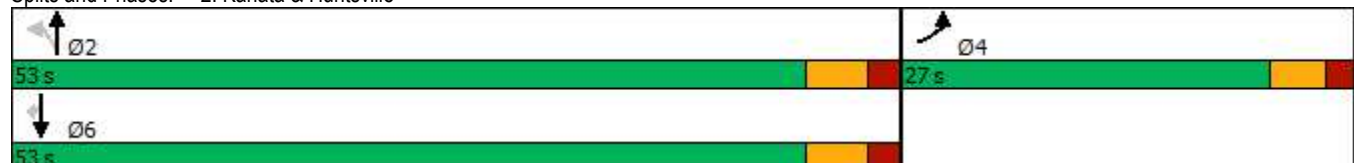
Intersection LOS: A







Intersection Capacity Utilization 46.5%

ICU Level of Service A

Analysis Period (min) 15










Splits and Phases: 2: Kanata & Huntsville



| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | 35.6% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |







4: Tillsonburg & Full Access
PM Peak Hour












471 Terry Fox Drive
2019 Total Traffic

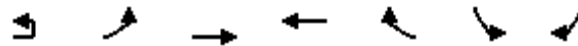
| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Volume (vph) | 4 | 20 | 116 | 4 | 5 | 11 |
| Future Volume (vph) | 4 | 20 | 116 | 4 | 5 | 11 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 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 | | 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 16.7% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |

5: Terry Fox & RIRO Access
PM Peak Hour

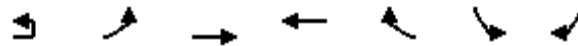
471 Terry Fox Drive
2019 Total Traffic

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑↑↑ | ↑↑↔ | | | ↗ |
| 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 | | 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 | 40.0% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |    | |
| 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 | | | 2.0 | 2.0 | |
| 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 | Stop | | | Free | Free | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 28.7% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 20 | 74 | 548 | 658 | 312 | 289 | 80 |
| Future Volume (vph) | 20 | 74 | 548 | 658 | 312 | 289 | 80 |
| 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 | 1702 | 3390 | 3390 | 1517 | 3195 | 1473 |
| Flt Permitted | | 0.400 | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 716 | 3390 | 3390 | 1478 | 3195 | 1453 |
| Right Turn on Red | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 312 | | 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 | | |
| 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) | 20 | 74 | 548 | 658 | 312 | 289 | 80 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 94 | 548 | 658 | 312 | 289 | 80 |
| 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | 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) | | 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 | 6 | 6 | 1 | 1 |
| Act Effct Green (s) | | 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 | | 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) | | | 73.9 | 319.0 | | 59.8 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| 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 |

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: 9.5

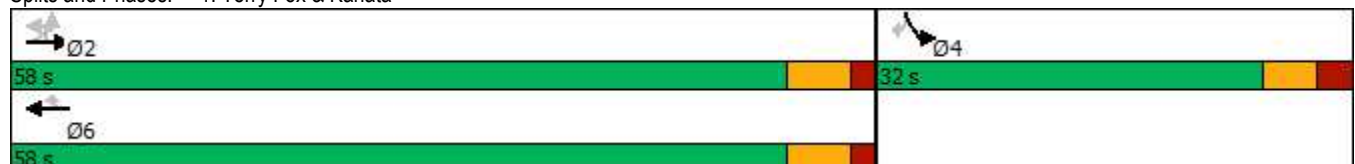
Intersection LOS: A












Intersection Capacity Utilization 51.4%


ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Terry Fox & Kanata



| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| 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 | 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 | 0.941 | | | | | 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 | |
| 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 | 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 | | | 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 | 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 |
| 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 | | | | Cl+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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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 | 0.27 | 0.24 | 0.08 |
| Control Delay | 18.3 | | 4.8 | 5.4 | 5.2 | 1.6 |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 18.3 | | 4.8 | 5.4 | 5.2 | 1.6 |
| LOS | B | | A | A | A | A |
| Approach Delay | 18.3 | | | 5.3 | 4.4 | |
| Approach LOS | B | | | A | A | |
| 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 | | | 315.7 | 142.2 | |
| 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-Uncoordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 7.0

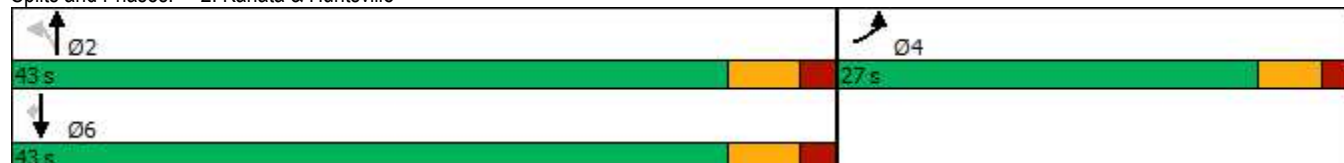
Intersection LOS: A

Intersection Capacity Utilization 47.6%

ICU Level of Service A







Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville












3: Terry Fox & Tillsonburg
SAT Peak Hour

471 Terry Fox Drive
2019 Total Traffic

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | |
| Analysis Period (min) | 15 | | | | | |







4: Tillsonburg & Full Access
SAT Peak Hour












471 Terry Fox Drive
2019 Total Traffic

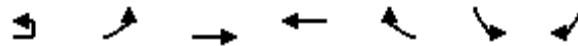
| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| Traffic Volume (vph) | 4 | 22 | 42 | 6 | 5 | 13 |
| Future Volume (vph) | 4 | 22 | 42 | 6 | 5 | 13 |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 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 Utilization 15.4% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |

5: Terry Fox & RIRO Access
SAT Peak Hour

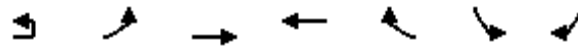
471 Terry Fox Drive
2019 Total Traffic

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑↑↑ | ↑↑↔ | | | ↗ |
| 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 | | 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 | 32.4% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |    | |
| 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 | | | | | | |
| Satd. Flow (prot) | 0 | 1499 | 0 | 1733 | 4708 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1499 | 0 | 1733 | 4708 | 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 | 20 | 0 | 386 | 349 | 12 |
| Shared Lane Traffic (%) | | | | | | |
| 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 | | | 2.0 | 2.0 | |
| 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 | Stop | | | Free | Free | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization 24.8% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↰ | ↰↰ | ↰↰ | ↰ | ↰↰ | ↰ |
| 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 | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 189 | | 79 |
| 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) | | 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 (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 81 | 905 | 744 | 189 | 360 | 79 |
| 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 | CI+Ex | CI+Ex | CI+Ex |
| Detector 1 Channel | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 |
| Switch Phase | | | | | | | |



| 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 | | | | | | | |
| 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) | | 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 | | A | A | A | A | D | A |
| Approach Delay | | | 6.9 | 5.3 | | 35.0 | |
| Approach LOS | | | A | 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) | | | 73.9 | 319.0 | | 59.8 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| Base Capacity (vph) | | 429 | 2278 | 2278 | 1038 | 919 | 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 | | 0.19 | 0.40 | 0.33 | 0.18 | 0.39 | 0.17 |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 89.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 11.5

Intersection LOS: B

Intersection Capacity Utilization 56.0%

ICU Level of Service B







Analysis Period (min) 15







Splits and Phases: 1: Terry Fox & Kanata

| | |
|------------|------------|
| 02 68 s | 04 32 s |
| 06 68 s | |

2: Kanata & Huntsville
AM Peak Hour

471 Terry Fox Drive
2024 Total Traffic

| |  | | | | | |
|----------------------------|---|-------|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| Traffic Volume (vph) | 83 | 120 | 20 | 242 | 317 | 26 |
| Future Volume (vph) | 83 | 120 | 20 | 242 | 317 | 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 | 0.920 | | | | | 0.850 |
| Flt Protected | 0.980 | | 0.950 | | | |
| Satd. Flow (prot) | 1563 | 0 | 1647 | 1733 | 1733 | 1473 |
| Flt Permitted | 0.980 | | 0.568 | | | |
| 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 | | | | | | |
| 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|
| 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 | | | | | | |
| 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) | 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 | C | | A | A | A | A |
| Approach Delay | 22.9 | | | 5.2 | 5.3 | |
| Approach LOS | C | | | A | A | |
| 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

Actuated Cycle Length: 72.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 9.7

Intersection LOS: A

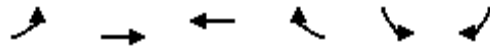
Intersection Capacity Utilization 39.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Kanata & Huntsville














| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|--------------|------------------------|-------|-------|------|-------|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | ↑ | | ↑ |
| 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 | | 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 32.8% | | ICU Level of Service A | | | | |
| Analysis Period (min) 15 | | | | | | |

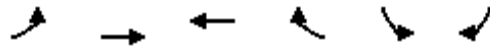
4: Tillsonburg & Full Access
AM Peak Hour

471 Terry Fox Drive
2024 Total Traffic












| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| 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 | | | |
| Flt Protected | 0.995 | | | | | 0.995 |
| Satd. Flow (prot) | 1514 | 0 | 1721 | 0 | 0 | 1725 |
| Flt Permitted | 0.995 | | | | | 0.995 |
| Satd. Flow (perm) | 1514 | 0 | 1721 | 0 | 0 | 1725 |
| 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) | 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 | | | | | |

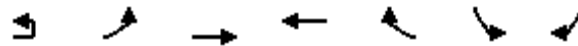
5: Terry Fox & RIRO Access
AM Peak Hour

471 Terry Fox Drive
2024 Total Traffic

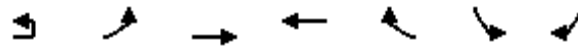


| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|-------|-------|-------|------------------------|------|-------|
| Lane Configurations | | ↑↑↑↑ | ↑↑ | | | ↑ |
| Traffic Volume (vph) | 0 | 986 | 796 | 35 | 0 | 23 |
| Future Volume (vph) | 0 | 986 | 796 | 35 | 0 | 23 |
| Ideal Flow (vphpl) | 1800 | 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 | | 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 34.4% | | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | | |

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |    | |
| 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 | | | | | | |
| 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 | 262 | 426 | 11 |
| Shared Lane Traffic (%) | | | | | | |
| 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 | | | 2.0 | 2.0 | |
| 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 | Stop | | | Free | Free | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 18.9% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 18 | 101 | 1116 | 1157 | 375 | 304 | 71 |
| Future Volume (vph) | 18 | 101 | 1116 | 1157 | 375 | 304 | 71 |
| 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 | 1700 | 3390 | 3390 | 1517 | 3195 | 1473 |
| Flt Permitted | | 0.217 | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 388 | 3390 | 3390 | 1478 | 3195 | 1453 |
| Right Turn on Red | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 375 | | 71 |
| 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) | 18 | 101 | 1116 | 1157 | 375 | 304 | 71 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 119 | 1116 | 1157 | 375 | 304 | 71 |
| 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | | 62.0 | 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 | | B | A | A | A | D | B |
| Approach Delay | | | 7.2 | 5.5 | | 34.7 | |
| Approach LOS | | | A | A | | C | |
| 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) | | | 73.9 | 319.0 | | 59.8 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| Base Capacity (vph) | | 274 | 2395 | 2395 | 1154 | 939 | 477 |
| 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 | | 0.43 | 0.47 | 0.48 | 0.32 | 0.32 | 0.15 |

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 87.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 9.7

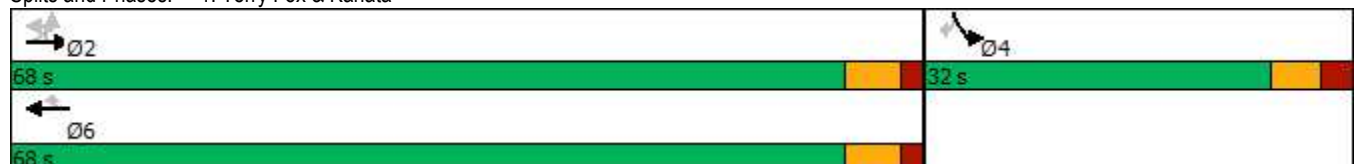
Intersection LOS: A

Intersection Capacity Utilization 66.4%

ICU Level of Service C

Analysis Period (min) 15


Splits and Phases: 1: Terry Fox & Kanata



2: Kanata & Huntsville
PM Peak Hour

471 Terry Fox Drive
2024 Total Traffic

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| 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 | | | |
| Satd. Flow (prot) | 1577 | 0 | 1647 | 1733 | 1733 | 1473 |
| Flt Permitted | 0.975 | | 0.574 | | | |
| Satd. Flow (perm) | 1577 | 0 | 995 | 1733 | 1733 | 1440 |
| 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 | | | 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) | | | | 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  | | | | | |
|-------------------------|---|-----|-------|-------|-------|-------|
| 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 | | | | | | |
| 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) | 10.6 | | 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 | | 0.11 | 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 | | A | A | A | A |
| 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-Uncoordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 6.5

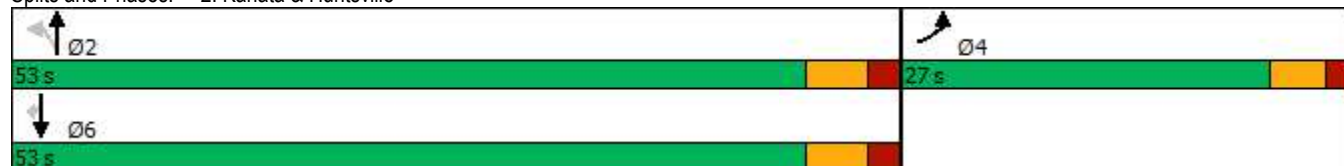
Intersection LOS: A







Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15










Splits and Phases: 2: Kanata & Huntsville



| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | 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 | 42.3% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

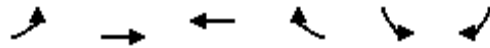
4: Tillsonburg & Full Access
PM Peak Hour

471 Terry Fox Drive
2024 Total Traffic












| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| 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 | | 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 16.7% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |

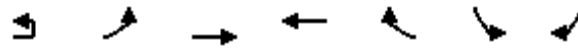
5: Terry Fox & RIRO Access
PM Peak Hour

471 Terry Fox Drive
2024 Total Traffic

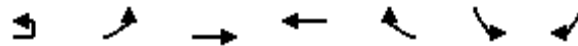


| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | ↑↑↑↑ | ↑↑ | | | ↑ |
| Traffic Volume (vph) | 0 | 1235 | 1188 | 58 | 0 | 39 |
| Future Volume (vph) | 0 | 1235 | 1188 | 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 | | 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 | 46.6% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |    | |
| 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 | | | 2.0 | 2.0 | |
| 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 | Stop | | | Free | Free | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization 29.8% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |



| Lane Group | EBU | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | |
| 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) | | 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 | 1702 | 3390 | 3390 | 1517 | 3195 | 1473 |
| Flt Permitted | | 0.301 | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 539 | 3390 | 3390 | 1478 | 3195 | 1453 |
| Right Turn on Red | | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | 327 | | 83 |
| 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) | 20 | 77 | 746 | 886 | 327 | 302 | 83 |
| Shared Lane Traffic (%) | | | | | | | |
| 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 | Cl+Ex | Cl+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) | | | 87.5 | 87.5 | | | |
| Detector 2 Size(m) | | | 5.5 | 5.5 | | | |
| Detector 2 Type | | | Cl+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 | | | 6 | | 4 |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 4 | 4 |



| 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) | 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) | | 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 | 6 | 6 | 1 | 1 |
| Act Effct Green (s) | | 52.3 | 52.3 | 52.3 | 52.3 | 14.2 | 14.2 |
| Actuated g/C Ratio | | 0.66 | 0.66 | 0.66 | 0.66 | 0.18 | 0.18 |
| v/c Ratio | | 0.27 | 0.33 | 0.39 | 0.30 | 0.53 | 0.25 |
| Control Delay | | 9.3 | 6.9 | 7.3 | 1.7 | 32.2 | 8.4 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 9.3 | 6.9 | 7.3 | 1.7 | 32.2 | 8.4 |
| LOS | | A | A | A | A | C | A |
| Approach Delay | | | 7.1 | 5.8 | | 27.1 | |
| Approach LOS | | | A | A | | C | |
| Queue Length 50th (m) | | 4.3 | 18.2 | 22.8 | 0.0 | 19.4 | 0.0 |
| Queue Length 95th (m) | | 16.4 | 40.8 | 50.4 | 9.2 | 29.4 | 9.2 |
| Internal Link Dist (m) | | | 73.9 | 319.0 | | 59.8 | |
| Turn Bay Length (m) | | | | | 100.0 | | |
| 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-Uncoordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 9.6

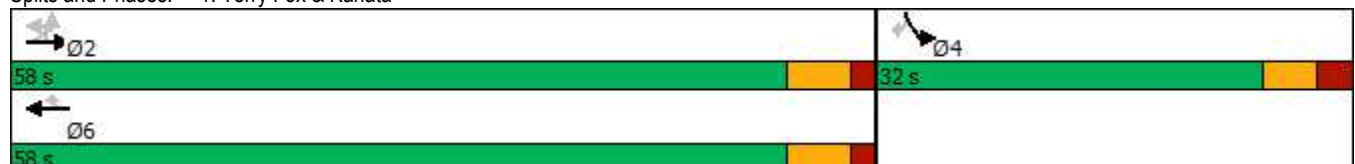
Intersection LOS: A

Intersection Capacity Utilization 58.4%

ICU Level of Service B












Analysis Period (min) 15







Splits and Phases: 1: Terry Fox & Kanata



2: Kanata & Huntsville
SAT Peak Hour

471 Terry Fox Drive
2024 Total Traffic

| |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | |  |  |  |  |
| Traffic Volume (vph) | 83 | 65 | 51 | 353 | 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 | | | 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 | 0.941 | | | | | 0.850 |
| Flt Protected | 0.973 | | 0.950 | | | |
| Satd. Flow (prot) | 1587 | 0 | 1647 | 1733 | 1733 | 1473 |
| Flt Permitted | 0.973 | | 0.571 | | | |
| 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 |
| 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 | | | | | | |
| Minimum Initial (s) | 10.0 | | 10.0 | 10.0 | 10.0 | 10.0 |

| |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|
| 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 | | | | | | |
| 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 | B | | A | A | A | A |
| Approach Delay | 18.3 | | | 5.4 | 4.5 | |
| Approach LOS | B | | | A | A | |
| 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 | |
| Turn Bay Length (m) | | | 45.0 | | | 65.0 |
| Base Capacity (vph) | 622 | | 702 | 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 | 0.29 | 0.25 | 0.08 |

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 59.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 7.0

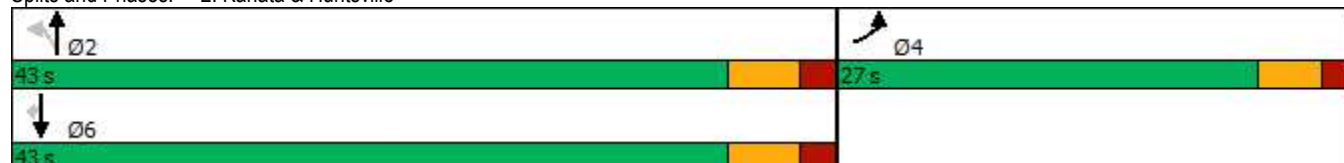
Intersection LOS: A







Intersection Capacity Utilization 48.5%

ICU Level of Service A

Analysis Period (min) 15










Splits and Phases: 2: Kanata & Huntsville



| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | | ↑↑ | ↑↑ | ↗ | | ↗ |
| 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 | | 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 | 36.7% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |










4: Tillsonburg & Full Access
SAT Peak Hour







471 Terry Fox Drive
2024 Total Traffic

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  | |  | | |  |
| 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 Utilization 15.4% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |

5: Terry Fox & RIRO Access
SAT Peak Hour

471 Terry Fox Drive
2024 Total Traffic

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | | |  |
| 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 | | | | | | |
| 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 | 843 | 927 | 62 | 0 | 35 |
| Shared Lane Traffic (%) | | | | | | |
| 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) | | 3.0 | 3.0 | | 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 | 39.1% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

| |  | | | | | |
|---|---|---|------|---|---|-------|
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |    | |
| 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 | | | | | | |
| Frt | | 0.865 | | | 0.995 | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1499 | 0 | 1733 | 4708 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1499 | 0 | 1733 | 4708 | 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 | 20 | 0 | 404 | 365 | 12 |
| Shared Lane Traffic (%) | | | | | | |
| 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 | | | 2.0 | 2.0 | |
| 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 | Stop | | | Free | Free | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization 25.8% | ICU Level of Service A | | | | | |
| Analysis Period (min) 15 | | | | | | |