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16 Edgewater Street

Transportation Impact Assessment



16 Edgewater Street
Transportation Impact Assessment

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October 26, 2021

Novatech File: 121203
Ref: R-2021-139

October 26, 2021

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

Attention: Josiane Gervais
Project Manager, Infrastructure Approvals

Reference: 16 Edgewater Street
Transportation Impact Assessment Report
Our File No.: 121203

We are pleased to submit the following Transportation Impact Assessment Report in support of Zoning Amendment and Site Plan applications for 16 Edgewater Street for your review and sign-off. 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 the report, please feel free to contact the undersigned, or Jennifer Luong.

Yours truly,

NOVATECH



Rochelle Fortier, B.Eng.
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 26 day of October, 2021.
(City)

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

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

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) report has been prepared in support of Zoning Amendment and Site Plan applications for 16 Edgewater Street.

The proposed development includes a ten-storey mixed-use building with a total of 126 units and 424 square metres of ground floor commercial. A total of 25 townhouse units are proposed along the north and east limits of the property. A total of 13 work units (total of 512 square metres) will be provided along the northern limits.

The development will have one full movement access to Edgewater Street. A total of 282 vehicular parking spaces are proposed, with 21 spaces at grade and 261 spaces on two levels of underground parking. Full buildout is anticipated by 2022.

The main conclusions and recommendations of the TIA are summarized below.

Demand Rationalization

- *Existing Intersection Operations:*
 - The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is approximately 85m in the AM peak. This exceeds the left turn storage length. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 40m in the AM peak and improve the southbound left v/c ratio to 0.57, while the intersection would operate with a maximum v/c ratio of 0.66 (LOS B) for the northbound through movement in the AM peak.
 - With optimized signal timing (maintaining the existing 120 second cycle length), the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is anticipated to operate with a v/c ratio of 0.83 while the westbound through movement operates with a v/c ratio of 0.89 (LOS D) in the PM peak hour.
- *2022 Background Intersection Operations:*
 - No additional recommendations.
- *2027 Background Intersection Operations:*
 - No additional recommendations.

Development Design

- A new internal pathway system is proposed which will connect the site's at-grade parking area and the main building entrances. Connectivity to the new proposed sidewalk along Edgewater Street will be provided.
- Secure bicycle storage is provided in the underground parking garage.
- All required Transportation Demand Management (TDM) supportive design and infrastructure measures in the TDM checklist are met.

Circulation and Parking

- The site's full movement vehicular access to Edgewater Street will serve the at-grade parking and the underground parking garage.
- The fire route includes the main drive aisle and is shown on the site plan. Loading and pick up/drop off activities will occur on the south side of the building. Waste will be stored internally to the building. A garbage room is proposed in the southeast corner of the building.

- The proposed number of vehicular and bicycle parking spaces will adhere to the requirements of the City's Zoning By-law.

Boundary Streets

- Edgewater Street currently does not have any dedicated pedestrian facilities adjacent to the subject site, apart from gravel shoulders. Implementation of a 1.8m sidewalk with a 0.5m boulevard would achieve the target Pedestrian Level of Service (PLOS) C. As part of the proposed development, a 2m sidewalk is proposed along the frontage of the subject site which will match the existing conditions south of the subject site. The proposed sidewalk will achieve a PLOS D.
- Based on the Bicycle Level of Service (BLOS) criteria, the target BLOS D can be achieved by a reduction in the posted speed limit to 40km/h (operating speed of 50km/h), or by implementing bike lanes. A further review of the 2021 Ontario Traffic Manual (OTM) Book 18 Desirable Cycling Facility Pre-selection Nomograph (Urban/Suburban Context) has been conducted. Based on a speed limit of 50km/h and an AADT of 4,200, the Nomograph suggests that a designated operating space such as bike lanes could be considered. This is identified for the City's consideration as funding becomes available.

Access Intersections Design

- A new full movement access is proposed to Edgewater Street.
- The proposed access will be located 1.5m away from the southern property line measured from the edge of the access driveway. As the proposed access is located a safe distance from the access serving the adjacent property to the south and there are adequate sight lines for vehicles entering/exiting the property, a waiver to the Private Approach By-Law is recommended for the reduced offset to the southern property line. The width and location of the proposed access will adhere to all other requirements of the Private Approach By-Law and Zoning By-Law.
- The access is anticipated to operate acceptably under side street stop control.

Transportation Demand Management

- The following measures will be implemented within the proposed development:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances;
 - Display relevant transit schedules and route maps at entrances;
 - Unbundle parking from monthly rent; and
 - Provide multimodal travel option information package to new residents.

Neighbourhood Traffic Management

- The 2027 background and total traffic volumes along Edgewater Street exceed the Area Traffic Management (ATM) threshold of 300 vehicles during the peak hour for a collector roadway.
- There is sufficient capacity along Edgewater Street to accommodate traffic generated by the development and no changes to the existing roadway classification are required.

Transit

- The proposed development is anticipated to generate 16 transit trips (6 in, 10 out) during the AM peak hour, and 15 transit trips (8 in, 7 out) during the PM peak hour.
- It is anticipated that most transit trips will arrive/depart using OC Transpo stops #3504, #5410, and #2308, which primarily serve routes 61 and 88.

Intersection Multi-Modal Level of Service (MMLOS)

- A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at all study area intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes is not recommended.
- *Hazeldean Road/Edgewater Street:*
 - The left turn accommodation on the west and north approaches do not meet the target BLOS C. A reduction in operating speed for the north approach (to 40km/h) would achieve a BLOS B. Alternatively, to achieve the target BLOS C, implementation of two-stage left turn bike boxes on the eastbound and southbound approach is required.
- *Hazeldean Road/Terry Fox Drive:*
 - The intersection does not currently meet the target BLOS C. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required on all approaches. In order to achieve the target BLOS based on right turn characteristics, relocation of the bike lane to the right of the right turn lane or a reduction in the right turn lanes to less than 50m would be required on all approaches. Based on existing traffic, the maximum queue for the westbound right turn movement is 60m in the PM and the maximum queue for the southbound right movement is 100m in the PM and a reduction of the right turn storage length is not recommended for these approaches.
 - The intersection does not currently meet the target Transit Level Of Service (TLOS) D, based on delays observed in the PM peak. The City's 2031 Affordable Network includes transit signal priority and queue jump lanes at select intersections for Hazeldean Road between Stittsville Main Street to Eagleson Road. The City's 2031 Network Concept includes transit signal priority on Terry Fox Drive between Hazeldean Road and the West Transitway. These transit priority projects would improve the TLOS at the intersection.
 - The intersection does not currently meet the target Auto LOS D. The southbound through movement is currently operating with a v/c ratio of 0.93 (LOS E). With optimized signal timing (maintaining the existing 120 second cycle length), the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is anticipated to operate with a v/c ratio of 0.83 (LOS D) while the westbound through movement operates with a v/c ratio of 0.89 (LOS D) in the PM peak hour.
- *Terry Fox Drive/Edgewater Street/Charlie Rogers Place:*
 - The intersection does not currently meet the target BLOS B. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required on all approaches.
 - The intersection does not currently meet the target Truck Level of Service (TkLOS) D based on the radii on the northwest corner and only one receiving lane on Charlie Rogers Place. As this access serves the Kanata Recreation Complex and there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.
- *Terry Fox Drive/Kanata Recreation Complex:*
 - The intersection does not currently meet the target BLOS B, based on left turn characteristics alone. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required for the cyclists making the northbound, southbound, and eastbound left turns. The east leg is a

- private approach and implementation of a two stage left turn bike box on this leg would require discussion with the owner.
- The intersection does not currently meet the target TkLOS D, based on the radii on the northwest and southeast corners and only one receiving lane on the east and west approaches. The receiving lane on the east approach is 6m in width and the radius is sufficient for a private approach. The west approach serves the Kanata Recreation Complex and as there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.
 - *Terry Fox Drive/Sobeys:*
 - The intersection does not currently meet the target BLOS B, based on left turn characteristics alone. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required for cyclists making the northbound and southbound left turns. The east and west legs of the intersection are private approaches and implementation of two stage left turn bike boxes on these legs would require discussion with the owners.
 - The intersection does not currently meet the target TkLOS D, based on the radii on the northwest and southeast corners and only one receiving lane on the east and west approaches. The receiving lane on the east approach is 6m in width and the radius is sufficient for a private approach. The west approach is a loading access serving the Sobeys and as there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.

Total Intersection Operations

- *2022/2027 Total Intersection Operations:*
 - No additional recommendations as a result of site traffic.

Based on the foregoing, this development is recommended from a transportation perspective.

1.0 SCREENING

1.1 Introduction

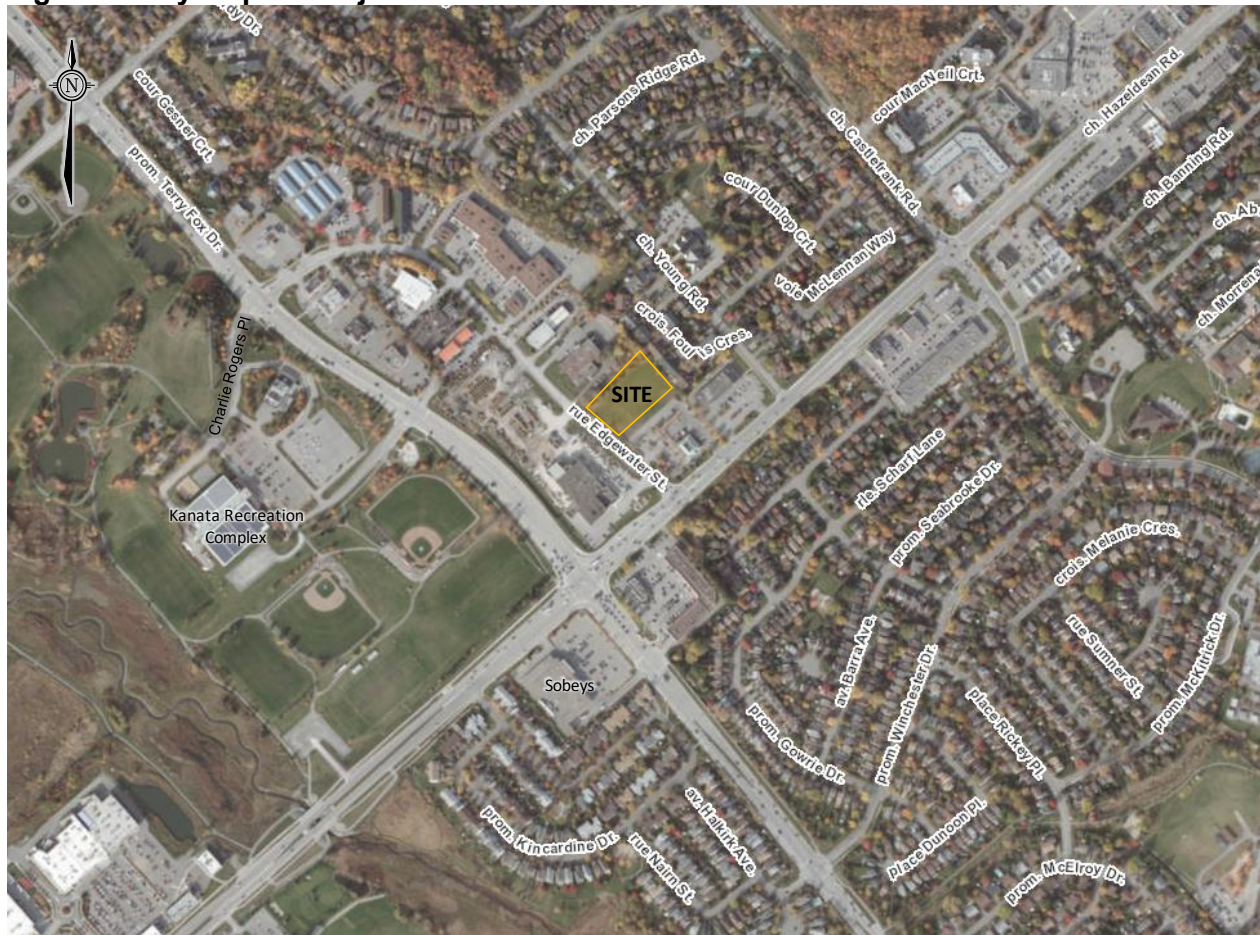
This Transportation Impact Assessment (TIA) report has been prepared in support of Zoning Amendment and Site Plan applications for 16 Edgewater Street.

The subject site is surrounded by the following:

- Light industrial uses fronting Edgewater Street to the north;
- Residential uses to the east;
- Fast food restaurant and Hazeldean Road to the south; and
- Edgewater Street and light industrial to the west.

The location and surrounding context are shown in **Figure 1**.

Figure 1: Key Map of Subject Site



GeoOttawa

1.2 Proposed Development

The site is currently zoned General Industrial Zone (IG2). A Zoning Amendment is required to permit the residential uses.

The proposed development includes a ten-storey mixed-use building with a total of 126 units and 424 square metres of ground floor commercial. A total of 25 townhouse units are proposed along the north and east limits of the property. A total of 13 work units (total of 512 square metres) will be provided along the northern limits.

The development will have one full movement access to Edgewater Street. A total of 282 vehicular parking spaces are proposed, with 21 spaces at grade and 261 spaces on two levels of underground parking.

Full buildout is anticipated by 2022. A copy of the proposed Site Plan is included in **Appendix A**.

1.3 Screening

The City of Ottawa Transportation Impact Assessment Guidelines (TIA) identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form.

The trigger results are as follows:

- Trip Generation Trigger – The development is anticipated to generate over 60 peak hour person trips; further assessment is required based on this trigger.
- Location Triggers – A review of the proposed boundary street conditions indicates that no further assessment is required based on this trigger.
- Safety Triggers – A proposed driveway is within the area of influence of the traffic control signal at Edgewater Street/Hazeldean Road; further assessment is required based on this trigger.

Based on the foregoing, the Trip Generation and Safety triggers are met. A Transportation Impact Assessment is required based on these triggers. A copy of the TIA Screening Form is included in **Appendix B**.

2.0 SCOPING

2.1 Existing Conditions

This section provides a review of existing conditions in the vicinity of the subject site including: roadways, intersections, driveways, pedestrian and cycling facilities, transit, area traffic management measures, traffic volumes, and collision records.

2.1.1 Roadways

The roadway network of the greater area surrounding the subject site is illustrated in **Figure 2**. All study area roadways are within the jurisdiction of the City of Ottawa.

Edgewater Street is a collector roadway that runs from Hazeldean Road to Terry Fox Drive. It has a two-lane rural cross-section with a regulatory speed limit of 50km/h.

Hazeldean Road is an arterial roadway that runs from Spruce Ridge Road in the west and Eagleson Road in the east, where it continues as Robertson Road. Within the vicinity of the subject site, it has a four lane urban cross-section with a posted speed of 60km/h. Hazeldean Road is a rural truck route, allowing full loads.

Terry Fox Drive is an arterial roadway that runs from Herzberg Road to Eagleson Road. Within the vicinity of the subject site, it has a four lane urban cross-section with a posted speed of 70km/h. Terry Fox Drive is a rural truck route, allowing full loads.

Charlie Rogers Place is a local roadway that provides access from Terry Fox Drive to the Kanata Recreation Complex. It has a regulatory speed limit of 50km/h.

2.1.2 Intersections

Terry Fox Drive/Edgewater Street/Charlie Rogers Place

- Signalized intersection
- Eastbound/Westbound: one left turn lane, one shared through/right turn lane
- Northbound: one left turn lane, one through lane, one shared through/right turn lane
- Southbound: one left turn lane, two through lanes, one right turn lane
- Bike lanes on north and south approaches
- Standard crosswalks on all approaches



Hazeldean Road/Edgewater Street

- Signalized intersection
- Southbound: one left turn lane, one right turn lane
- Eastbound: one left turn lane, two through lanes
- Westbound: one through lane, one shared through/right turn lane
- Bike lane on west approach
- Standard crosswalks on all approaches



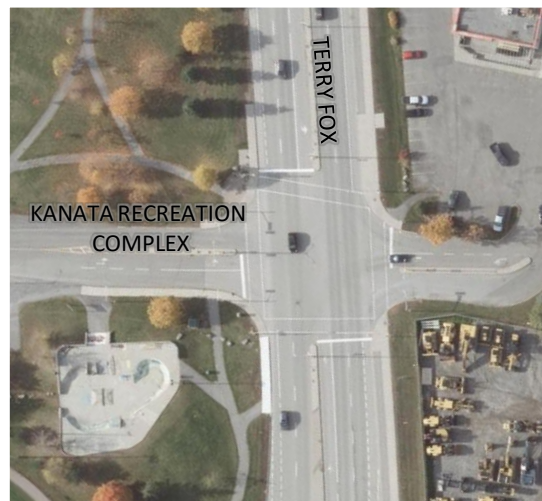
Terry Fox Drive/Hazeldean Road

- Signalized intersection
- All approaches: two left turn lanes, two through lanes, one channelized right turn lane
- Bike lanes on all approaches
- Standard crosswalks on all approaches



Terry Fox Drive/Kanata Recreation Complex

- Signalized intersection
- Eastbound/Westbound: one left turn lane, one shared through/right turn lane
- Northbound/Southbound: one left turn lane, one through lane, one shared through/right turn lane
- Bike lanes on north and south approaches
- Standard crosswalks on all approaches



Terry Fox Drive/Sobeys Access

- Signalized intersection
- Eastbound: one shared all movement lane
- Westbound: one shared left/through lane, one right turn channel
- Northbound: one left turn lane, two through lanes, one shared through/right turn lane
- Southbound: one left turn lane, one through lane, one shared through/right turn lane
- Bike lanes on north and south approaches
- Standard crosswalks on all approaches



2.1.3 Driveways

The TIA Guidelines requires a review of driveways on the boundary streets within 200m of any proposed access, which can be described as follows.

Edgewater Street, east side:

- One driveway to the fast-food restaurants at 6 Edgewater Street
- Two driveways to the light industrial building (plumbing supply store) at 20 Edgewater Street
- Two driveways to the light industrial building (automation company) at 24 Edgewater Street
- One driveway to the light industrial plaza at 26/30 Edgewater Street

Edgewater Street, west side:

- Two driveways to the light industrial building (construction machine dealer) and yard at 5/21 Edgewater Street
- One driveway to the light industrial building (cabinet store and tire shop) at 25 Edgewater Street
- One driveway to the orthodontist building at 29 Edgewater Street

2.1.4 Pedestrian and Cycling Facilities

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

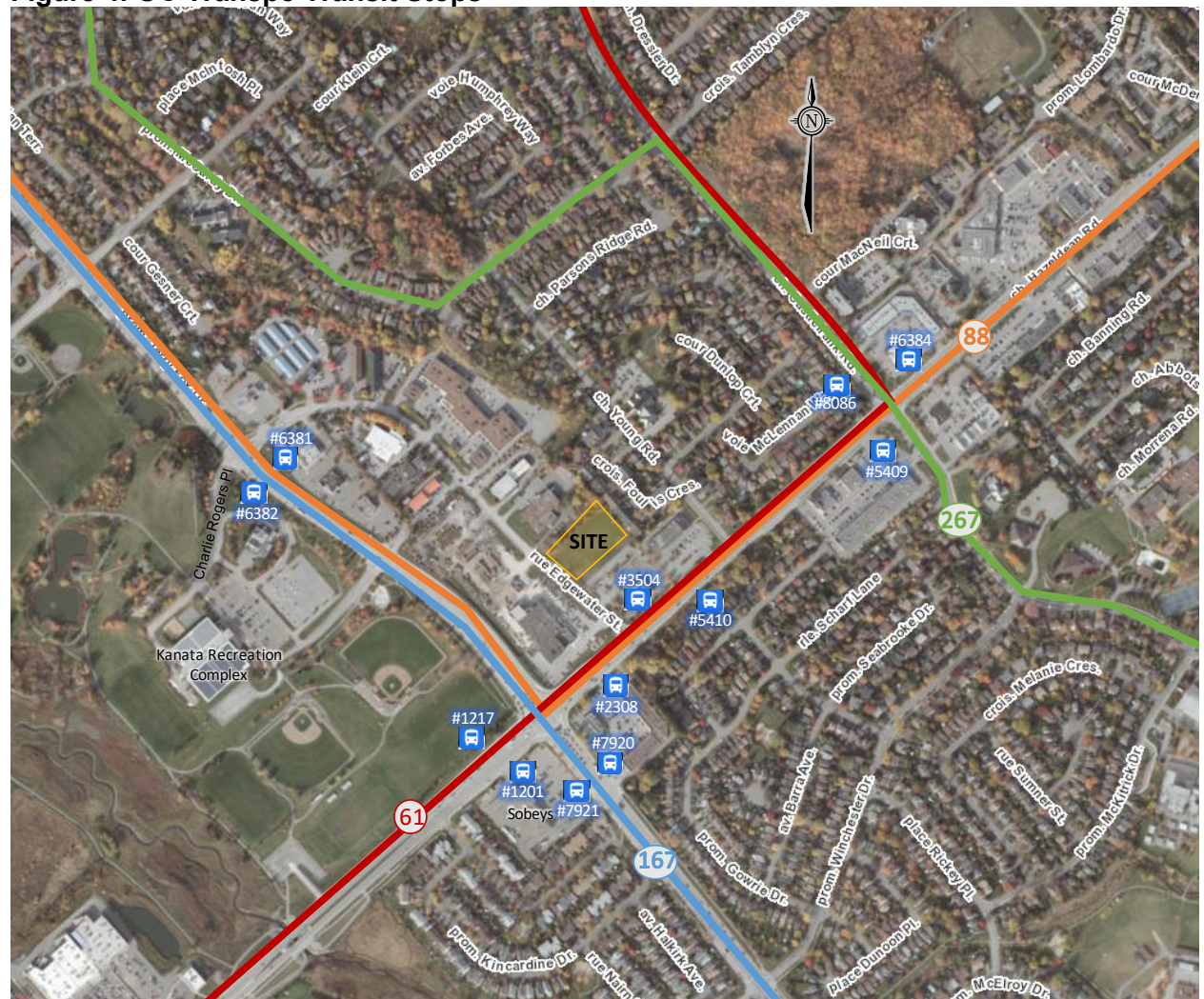
Sidewalks are provided on both sides of Terry Fox Drive and Hazeldean Road. A sidewalk is provided on the north side of Charlie Rogers Place and on the south side of the Kanata Recreation Complex access. A sidewalk is provided for 40m along the east side of Edgewater Street from Hazeldean Road to the commercial site access. Bike lanes are provided on Terry Fox Drive and on Hazeldean Road west of Edgewater Street. A series of multi-use pathways can be found around the Kanata Recreation Complex, connecting the various facilities (baseball diamonds, skateboard park, arena, soccer fields, park, etc.)

The City’s Ultimate Cycling Network identifies Terry Fox Drive and Hazeldean Road as Spine Cycling Routes. Terry Fox Drive forms part of the City’s Cross-town Bikeway #8.

2.1.5 Transit

An aerial depicting the nearest transit stops can be found in **Figure 4**. The location of the nearest OC Transpo transit stops, and the route(s) serviced at each stop is summarized in **Table 1**. OC Transpo Route information is included in **Appendix C**.

Figure 4: OC Transpo Transit Stops



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Table 1: OC Transpo Transit Stops

OC Transpo Stop	Location	Route(s) Served
#3504	North side of Hazeldean Road, east of Edgewater Street	61, 88
#5410	South side of Hazeldean Road, between Young Road and Edgewater Street	61, 88, 667, 668
#2308	South side of Hazeldean Road, between Terry Fox Drive and Edgewater Street	61, 88, 667, 668
#1217	North side of Hazeldean Road, west of Terry Fox Drive	61
#1201	South side of Hazeldean Road, west of Terry Fox Drive	61
#7920	East side of Terry Fox Drive, south of Hazeldean Road	167
#7921	West side of Terry Fox Drive, south of Hazeldean Road	167
#6381	East side of Terry Fox Drive, south of Edgewater Street	88, 167
#6382	West side of Terry Fox Drive, south of Edgewater Street	88, 167, 667, 668
#5409	South side of Hazeldean Road, west of Castlefrank Drive	88, 667, 668
#6384	North side of Hazeldean Road, east of Castlefrank Drive	88, 667, 668
#8086	West side of Castlefrank Drive, north of Hazeldean Road	267, 61

OC Transpo Route 61 travels from Terry Fox Transit Station and Stittsville to Tunney’s Pasture Transit Station. It operates seven days a week, with all day service and limited overnight service. When O-Train Line 1 is not running overnight, Route 61 is extended downtown to Rideau Station.

OC Transpo Route 88 travels from Hurdman Transit Station to Terry Fox Transit Station. It operates seven days a week, with all day service.

OC Transpo Route 167 travels from Terry Fox Transit Station to the Blackstone community. It operates Monday to Friday with selected time periods only.

OC Transpo Route 667 and 668 are school routes that serve Holy Trinity High School. They operate in the morning (with service to Holy Trinity) and in the afternoon (with service returning to the Bridlewood and Summergaze communities).

2.1.6 Area Traffic Management Measures

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress. Currently, no area traffic management measures have been implemented in the study area.

2.1.7 Traffic Volumes

Weekday traffic counts were obtained from the City of Ottawa at the study area intersections. The available weekday traffic counts were completed on the following dates:

- Hazeldean Road/Edgewater Street November 27, 2018 (Tuesday)
- Hazeldean Road/Terry Fox Drive March 3, 2016 (Thursday)
- Terry Fox Drive/Edgewater Street/Charlie Rogers Place March 3, 2016 (Thursday)
- Terry Fox Drive/Kanata Recreation Center March 8, 2016 (Tuesday)
- Terry Fox Drive/Sobeys August 17, 2016 (Wednesday)

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

2.1.8 Collision Records

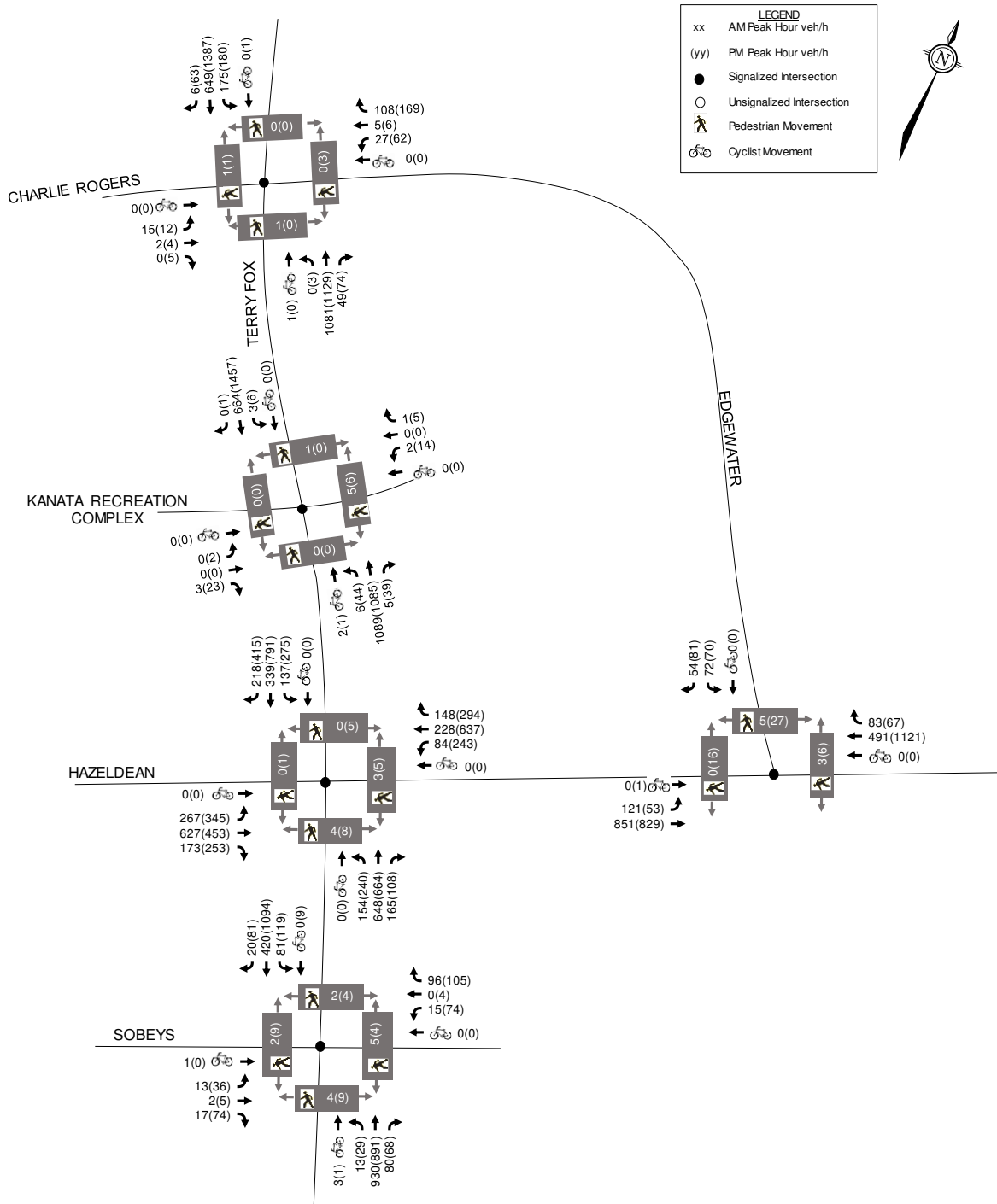
Historical collision data from the last five years was obtained from the City’s Public Works and Service Department for the study area intersection. Copies of the collision summary report are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns. The following summarizes the number of collisions at each intersection from January 1, 2015 to December 31, 2019.

Table 2: Reported Collisions

Intersection	Impact Types					Total Number of Collisions
	Angle	Sideswipe	Rear End	Turning Movement	SMV/ Other	
Hazeldean Road/Terry Fox Drive	12	13	82	10	3	120
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	8	2	19	12	3	44
Hazeldean Road/Edgewater Street	6	3	9	5	-	23
Terry Fox Drive/Sobeys	6	-	1	2	2	11
Terry Fox Drive/Kanata Recreation Complex	1	-	-	-	-	1

Figure 5: Existing Traffic Volumes



Hazeldean Road/Terry Fox Drive

A total of 120 collisions were reported at the Hazeldean Road/Terry Fox Drive intersection over the course of the last five years. Of these, there were 82 rear end collisions, 13 sideswipe collisions, 12 angle collisions, 10 turning movement collisions, and 3 single vehicle or other collisions. A total of 89 collisions were classified as property damage only while 31 caused injuries but no fatalities. Of the 120 collisions, 19 occurred under poor environmental conditions while the remaining 101 collisions occurred under clear conditions.

Of the 82 rear end collisions, 36 occurred on the southbound approach (24 southbound right turning, 11 southbound through, and 1 southbound left turning), 23 occurred on the eastbound approach (14 eastbound through, 7 eastbound right turning, 2 eastbound left turning), 12 occurred on the northbound approach (7 northbound right turning, 5 northbound through) and 11 occurred on the westbound approach (8 westbound through, 3 westbound right turning). A total of 64 rear end collisions were classified as property damage only while 18 caused injuries but no fatalities. The high frequency of rear end collisions could be attributable to high traffic volumes in the area.

Of the 13 sideswipe collisions, 5 occurred on the northbound approach, 4 occurred on the eastbound approach, 3 occurred on the southbound approach, and 1 occurred on the westbound approach.

Of the 12 angle collisions, 5 occurred between southbound and eastbound vehicles, 3 occurred between southbound and westbound vehicles, 2 occurred between northbound and eastbound vehicles, and 2 occurred between northbound and westbound vehicles.

Of the 10 turning movement collisions, 5 occurred between northbound and southbound vehicles, 2 occurred between eastbound and westbound vehicles, 2 occurred between westbound vehicles, and 1 occurred between southbound vehicles.

Terry Fox Drive/Edgewater Street/Charlie Rogers Place

A total of 44 collisions were reported at this intersection over the course of the last five years. Of these, there were 19 rear end collisions, 12 turning movement collisions, 8 angle collisions, 3 single vehicle/other collisions, and 2 sideswipe collisions. A total of 34 collisions were classified as property damage only while the other 10 collisions caused injuries but no fatalities. Of the 44 collisions, 8 occurred under poor environmental conditions while the remaining 36 occurred under clear environmental conditions.

Of the 19 rear end collisions, 9 occurred on the northbound approach, and 10 occurred on the southbound approach. Two rear end collisions caused injuries, but none caused fatalities.

Of the 12 turning movement collisions, 10 involved southbound left turning vehicles. Currently, a protected+permitted phase is provided for the southbound left movement weekdays from 3:00PM-9:00PM. Of the 10 collisions that involved southbound left turning vehicles, a total of 6 occurred during the mid-day peak (12:00PM-1:00PM). Consideration should be given to providing a protected+permitted phase for the southbound left movement during the mid-day peak.

Of the 8 angle collisions, four involved eastbound vehicles turning onto Terry Fox Drive while four involved westbound vehicles turning onto Terry Fox Drive.

Hazeldean Road/Edgewater Street

A total of 23 collisions were reported at this intersection over the course of the last five years. Of these, there were 9 rear end collisions, 6 angle collisions, 5 turning movement collisions, and 3 sideswipe collisions. A total of 16 collisions were classified as property damage only while the remaining 7 caused injuries but no fatalities.

Terry Fox Drive/Sobeys

A total of 11 collisions were reported at this intersection over the course of the last five years. Of these, there were 6 angle collisions, 2 turning movement collisions, 2 single vehicle/other collisions, and 1 rear end collision. A total of 9 collisions were classified as property damage only while the remaining 2 caused injuries but no fatalities.

Terry Fox Drive/Kanata Recreation Complex

One collision was reported at this intersection over the course of the last five years. The collision was an angle impact which caused property damage only.

2.2 Planned Conditions

2.2.1 Planned Infrastructure Projects

The City's 2031 Affordable Network includes transit signal priority and queue jump lanes at select intersections for Hazeldean Road between Stittsville Main Street to Eagleson Road.

The City's 2031 Network Concept includes transit signal priority on Terry Fox Drive between Hazeldean Road and the West Transitway.

2.2.2 Other Development

A review of the City's Development Application Search Tool has been conducted to identify any developments in the vicinity of the subject site that are being constructed, are approved, or are in the approval process. Other developments in the area are described as follows:

- A TIA report, dated December 2019, was approved in support of a Site Plan Control application for 5705 Hazeldean Road. The proposed development consists of a 47,710 square foot expansion to the existing retail development. Buildout was expected by 2021.
- A Community Transportation Study/TIS was prepared in November 2016 and revised in May 2020 in support of Zoning By-Law Amendment and Draft Plan of Subdivision application of the Kizell Lands at 5618 Hazeldean Road. The concept plan includes a total of 288 single detached dwellings, 469 townhouses, 878 low-rise multi-family dwellings, 360 high-density apartment units, 760 apartments and 350,000 square feet of retail, an elementary school and a park and ride. Full buildout is expected by 2030.

2.3 Study Area and Time Periods

The study area for this report will include the proposed site access and the Hazeldean Road/Edgewater Street, Hazeldean Road/Terry Fox Drive, Terry Fox Drive/Edgewater

Street/Charlie Rogers Place, Terry Fox Drive/Kanata Recreation Center, and Terry Fox Drive/Sobeys intersections.

Although the Hazeldean Road/Castlefrank Road and Terry Fox Drive/Maple Grove Road intersections fall within 1km of the subject site, they are not included in the study area. The Terry Fox Drive/Edgewater Street and Terry Fox Drive/Maple Grove Road intersections are spaced 300m apart. The Hazeldean Road/Edgewater Street and Hazeldean Road/Castlefrank Road intersection are spaced 450m apart. Blocking issues are not anticipated at the Terry Fox Drive/Maple Grove Road and Hazeldean Road/Castlefrank Road intersections as a result of site traffic. Existing two-way traffic along Terry Fox Drive north of Edgewater Street is 2035 vph in the AM and 2940 vph in the PM. The site is anticipated to add 15-20 vehicle trips in the AM and PM to Terry Fox (north of Edgewater). This equates to less than a 1% increase to traffic along Terry Fox Drive, north of Edgewater Street. Existing two-way traffic along Hazeldean Road east of Edgewater Street is 1500 vph in the AM and 2085 vph in the PM. The site is anticipated to add 10-15 vehicle trips in the AM and PM to Hazeldean Road (east of Edgewater). This equates to less than a 1% increase to traffic along Hazeldean Road, east of Edgewater Street. Based on the above, significant impacts are not anticipated at the Hazeldean Road/Castlefrank Road and Terry Fox Drive/Maple Grove Road intersections due to the addition of site traffic.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site generated traffic and adjacent street traffic.

The proposed development is anticipated to be fully built-out by 2022. Analysis will be completed for the 2022 buildout year and the 2027 five-year horizon.

2.4 Exemptions Review

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

Table 3: TIA Exemptions

Module	Element	Exemption Criteria	Exemption Applies
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	<ul style="list-style-type: none"> Only required for site plans 	Not Exempt
	4.1.3 New Street Networks	<ul style="list-style-type: none"> Only required for plans of subdivision 	Exempt
4.2 Parking	4.2.1 Parking Supply	<ul style="list-style-type: none"> Only required for site plans 	Not Exempt
	4.2.2 Spillover Parking	<ul style="list-style-type: none"> Only required for site plans where parking supply is 15% below unconstrained demand 	Exempt

Module	Element	Exemption Criteria	Exemption Applies
Network Impact Component			
4.5 Transportation Demand Management	<i>All elements</i>	<ul style="list-style-type: none"> Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time 	Not Exempt
4.6 Neighbourhood Traffic Management	<i>4.6.1</i> Adjacent Neighbourhoods	<ul style="list-style-type: none"> Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds 	Not Exempt
4.8 Network Concept	<i>All elements</i>	<ul style="list-style-type: none"> Only required when the proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning 	Exempt

As the trip generation trigger is met, a TIA report reviewing the Design component and the Network Impact component is required.

The traffic volumes at the Hazeldean Road/Edgewater Street intersection indicate a two-way total of approximately 330 vehicles use Edgewater Street during the AM peak hour and 271 during the PM peak hour. The TIA guidelines identify an Area Traffic Management (ATM) threshold of 300 vehicles during the peak hour for a collector roadway. Based on the above, the Neighbourhood Traffic Management Module should be included in the TIA report.

The following modules will be included in the TIA report:

- Module 4.1 – Development Design
- Module 4.2 – Parking
- Module 4.3 – Boundary Street Design
- Module 4.4 – Access Intersections Design
- Module 4.5 – Transportation Demand Management
- Module 4.6 – Neighbourhood Traffic Management
- Module 4.7 – Transit
- Module 4.9 – Intersection Design

3.0 FORECASTING

3.1 Development-Generated Traffic

3.1.1 Trip Generation

The proposed development includes a ten-storey mixed-use building with a total of 126 units and 424 square metres of ground floor commercial. A total of 25 townhouse units are proposed along the north and east limits of the property. A total of 13 work units (total of 512 square metres) will be provided along the northern limits.

The projections and analysis in the TIA are based on a previous concept which included 22 townhouses instead of 25, and 409m² of office instead of 512m². However, no significant change in results is expected due to the minor revisions.

The *TRANS Trip Generation Manual Summary Report*, prepared in October 2020 by WSP, includes data to estimate the mode shares for the AM and PM peak periods, based on district and type of development. The *TRANS Trip Generation Manual* identifies the subject site as being located within the Kanata-Stittsville district and outlines the following mode shares for residential, employment generator, and commercial generator developments in Kanata-Stittsville.

Table 4: Mode Shares for Kanata-Stittsville

Mode	Low-Rise Residential		High-Rise Residential		Employment Generator		Commercial Generator	
	AM	PM	AM	PM	AM	PM	AM	PM
Auto Driver	52%	58%	43%	55%	84%	84%	81%	73%
Auto Passenger	14%	17%	26%	19%	4%	4%	12%	22%
Transit	22%	17%	28%	21%	8%	8%	5%	1%
Cycling	0%	0%	0%	0%	1%	1%	0%	0%
Walking	11%	8%	4%	5%	3%	3%	2%	4%

The mode shares carried forward in the trip generation estimates for each land use are included in **Table 5**.

Table 5: Proposed Mode Shares

Mode	Mode Share		
	Proposed Residential	Proposed Office	Proposed Commercial
Auto Driver	52%	84%	77%
Auto Passenger	19%	4%	17%
Transit	22%	8%	3%
Cyclist	0%	1%	0%
Pedestrian	7%	3%	3%

The trips generated by the residential units have been estimated using the *TRANS Trip Generation Manual* (October 2020), which presents peak period trip generation rates for different types of housing for the AM and PM peak periods. For the Low-Rise and High-Rise Multifamily Housing land uses, the process of converting the trip generation estimates from peak period to peak hour is shown in the following tables.

Table 6: Proposed Residential – Peak Period Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp ⁽¹⁾)			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
Low-Rise Multifamily Housing	AM: 1.35 PM: 1.58	22	9	21	30	20	15	35
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	126	31	70	101	66	47	113

1. ppp: Person Trips per Peak Period

Table 4 of the *TRANS Trip Generation Manual* includes adjustment factors to convert the estimated number of person trips generated from peak period to peak hour. A breakdown of the peak hour person trips is shown in **Table 7**.

Table 7: Proposed Residential – Peak Hour Person Trip Generation

Land Use	Adj. Factor	Units	AM Peak Period (pph ⁽¹⁾)			PM Peak Period (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Low-Rise Multifamily Housing	AM: 0.50 PM: 0.44	22	5	10	15	9	6	15
High-Rise Multifamily Housing	AM: 0.50 PM: 0.44	126	16	35	51	29	21	50

1. pph: Person Trips per Peak Hour

The trips generated by the commercial and office components have been estimated using the ITE *Trip Generation Manual*, 10th Edition. Person trips were calculated using an ITE Trip to Person Trip factor of 1.28, consistent with the TIA guidelines.

Table 8: Proposed Commercial/Office – Person Trip Generation

Land Use	ITE Code	GFA	AM Peak Hour (pph)			PM Peak Hour (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Commercial	820	4,565 ft ²	3	2	5	10	12	22
Office	710	4,400 ft ²	5	1	6	1	6	7

A full breakdown of the projected peak hour person trips by modal share generated by the proposed development is included in **Table 6**.

Table 9: Person Trips by Modal Share

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOT	IN	OUT	TOT
<i>Residential Person Trips</i>		21	45	66	38	27	65
Auto Driver	52%	11	23	34	20	14	34
Auto Passenger	19%	4	9	13	7	5	12
Transit	22%	5	10	15	8	6	14
Non-Auto	7%	1	3	4	3	2	5
<i>Commercial Person Trips</i>		3	2	5	10	12	22
Auto Driver	77%	2	2	4	8	10	18
Auto Passenger	17%	1	0	1	2	2	4
Transit	3%	0	0	0	0	0	0
Non-Auto	3%	0	0	0	0	0	0
<i>Office Person Trips</i>		5	1	6	1	6	7
Auto Driver	84%	4	1	5	1	5	6
Auto Passenger	4%	0	0	0	0	0	0
Transit	8%	1	0	1	0	1	1
Non-Auto	4%	0	0	0	0	0	0
<i>Total Person Trips</i>		29	48	77	49	45	94
Total Auto Driver		17	26	43	29	29	58
Total Auto Passenger		5	9	14	9	7	16
Total Transit		6	10	16	8	7	15
Total Non-Auto		1	3	4	3	2	5

As shown in the above table, the proposed development is anticipated to generate 43 vehicle trips (17 in, 26 out) in the AM peak hour and 58 vehicle trips (29 in, 29 out) in the PM peak hour.

The commercial land use is 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, and pass-by trips are made as intermediate stops on the way to another destination. However, as the commercial development is only anticipated to generate four vehicle trips during the AM peak hour and 18 vehicle trips during the PM peak hour, pass-by trips are anticipated to be minimal. The analysis presented in this study assumes that all trips generated by the retail development are primary trips.

Due to the nature of the proposed land uses of the development, it is possible that some of the total volume of site-generated trips will be internally captured within the site (i.e., tenants from the apartments that frequent the commercial component). However, in the interest of making a conservative estimate of the likely traffic impact associated with the development, the possibility of traffic being internally captured has been ignored. The analysis presented in this study assumes that all trips generated by the proposed development are 'external' trips.

3.1.2 Trip Distribution

The distribution of traffic generated by the proposed development has been derived from existing commuter traffic patterns within the study area (i.e. outbound traffic in the morning/inbound traffic in the afternoon for residential trips, and inbound traffic in the morning/outbound traffic in the afternoon for commercial/office trips). The proposed trip distributions can be described as follows:

Residential

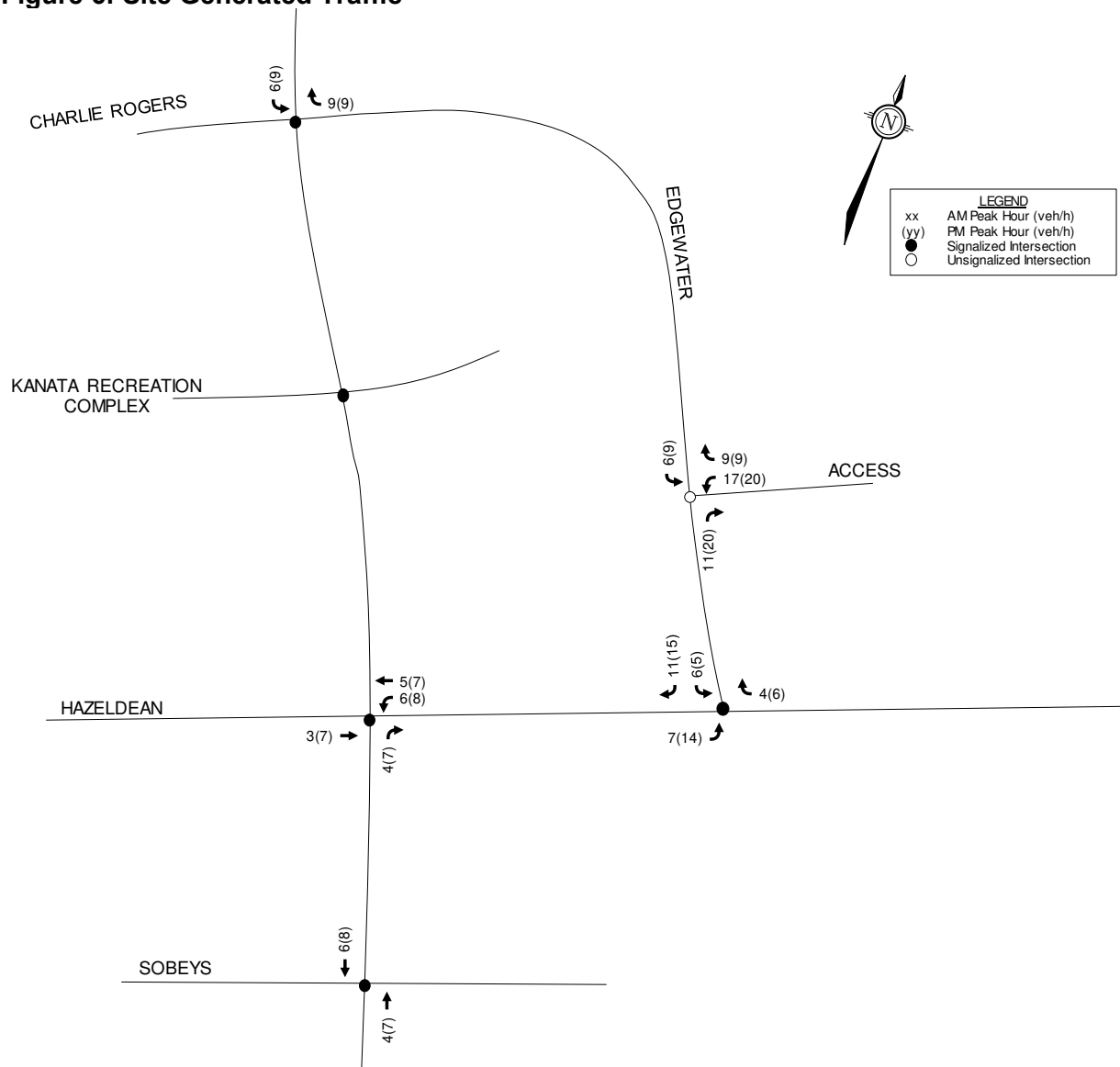
- 35% to/from the north via Terry Fox Drive
- 25% to/from the east via Hazeldean Road
- 20% to/from the south via Terry Fox Drive
- 20% to/from the west via Hazeldean Road

Commercial/Office

- 25% to/from the north via Terry Fox Drive
- 15% to/from the east via Hazeldean Road
- 30% to/from the south via Terry Fox Drive
- 30% to/from the west via Hazeldean Road

Site generated traffic volumes are shown in **Figure 6**.

Figure 6: Site Generated Traffic



3.2 Background Traffic

3.2.1 General Background Growth Rate

A review of the City of Ottawa's Long-Range Transportation Model has been conducted to determine an appropriate background growth rate for the area roadways. A summary of the City's 2011 and 2031 Long-Range Transportation Model snapshots is provided in the following table. Snapshots of the Model are included in **Appendix D**.

Table 10: Long-Range Transportation Model Summary

Roadway Segment	2011 Traffic Volumes	2031 Traffic Volumes	Growth per Annum
Hazeldean Road – east of Terry Fox Drive	1,410	1,593	0.6%
Hazeldean Road – west of Terry Fox Drive	2,352	2,475	0.3%
Terry Fox Drive – north of Hazeldean Road	2,266	2,367	0.2%
Terry Fox Drive – south of Hazeldean Road	1,651	2,079	1.3%

For the purposes of this analysis, a 1% per annum background growth rate will be applied to Hazeldean Road and Terry Fox Drive. No growth rate will be applied to the other study area roadways as the background growth rate is intended to account for growth in regional traffic which is not anticipated on lower class roads.

3.2.2 Other Area Development

Traffic generated by the development at 5705 Hazeldean Road has been added to the background traffic for the 2022 buildout year.

Full buildout of the Kizell Lands at 5618 Hazeldean Road is anticipated by 2030. For the purpose of this analysis, it is assumed that the Kizell Lands will be approximately 70% buildout by the 2027 horizon year. Development traffic for the 2027 horizon year was estimated using 70% of the 2030 scenario two traffic projections identified in the Kizell Lands CTS/TIS.

Relevant excerpts from other area developments are included in **Appendix F**.

Background traffic volumes for the 2022 buildout and 2027 horizon years are shown in **Figures 7 and 8**. Total traffic volumes for the 2022 buildout and 2027 horizon years are shown in **Figures 9 and 10**.

Figure 7: 2022 Background Traffic Volumes

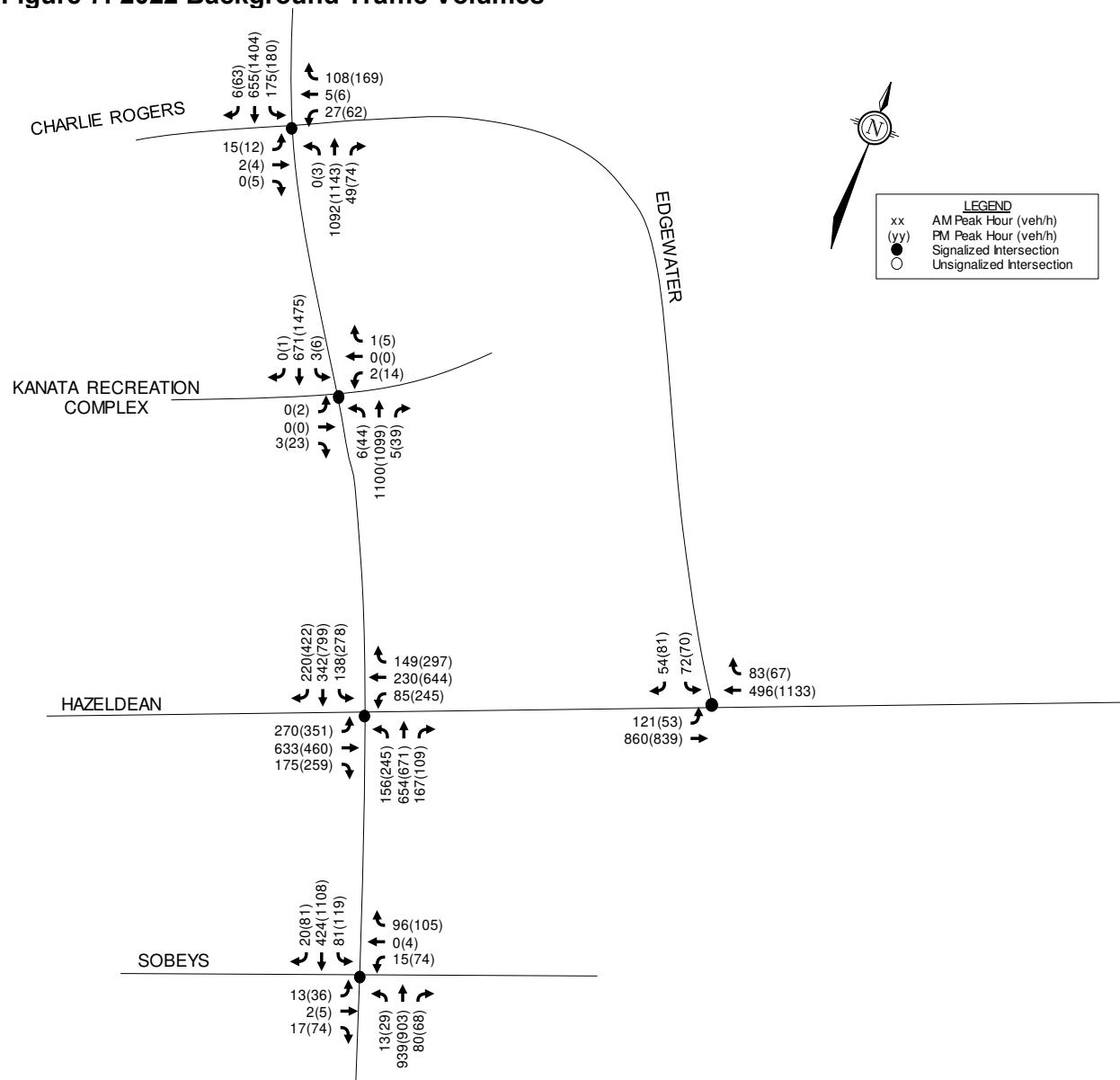


Figure 8: 2027 Background Traffic Volumes

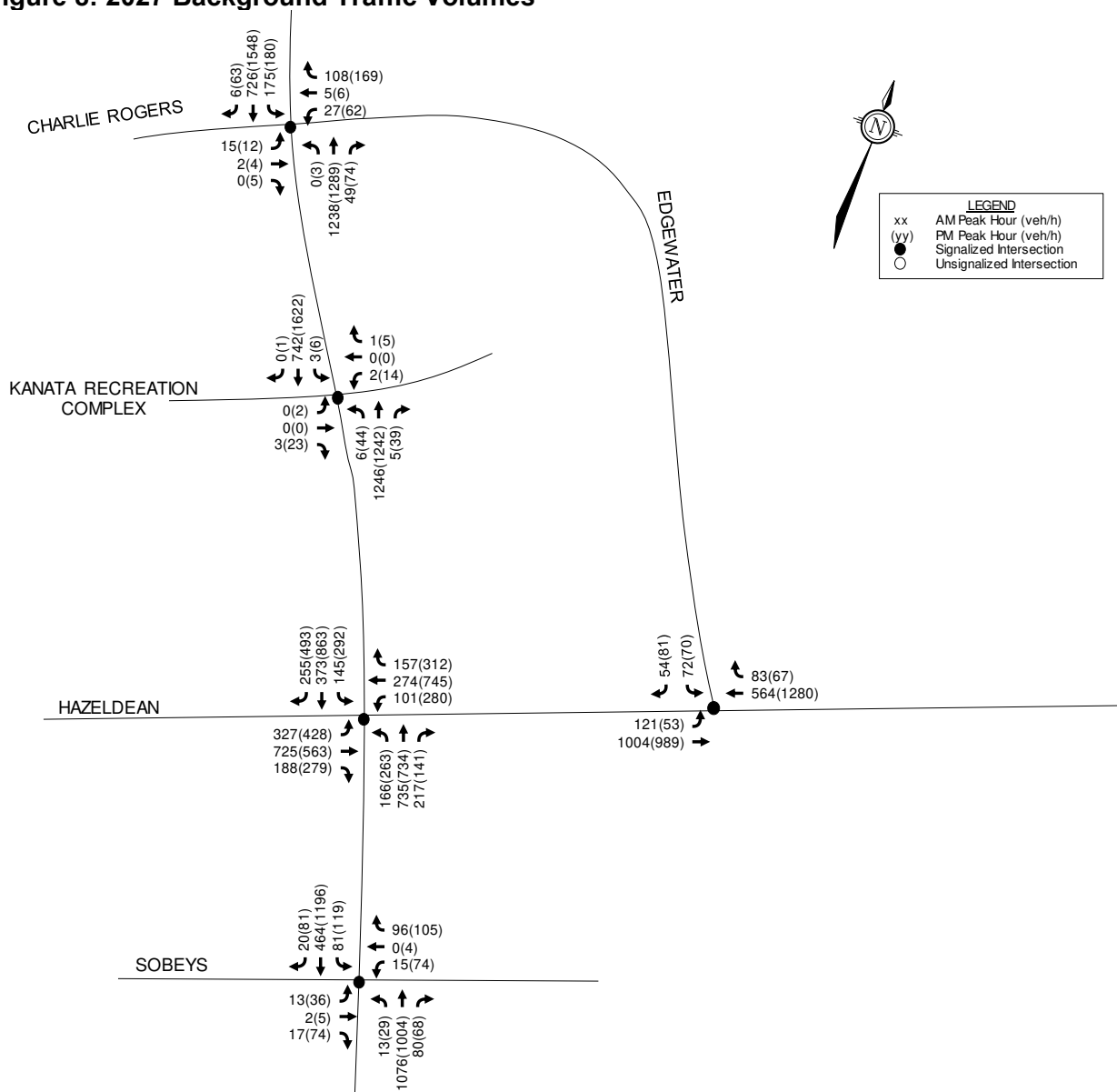


Figure 9: 2022 Total Traffic Volumes

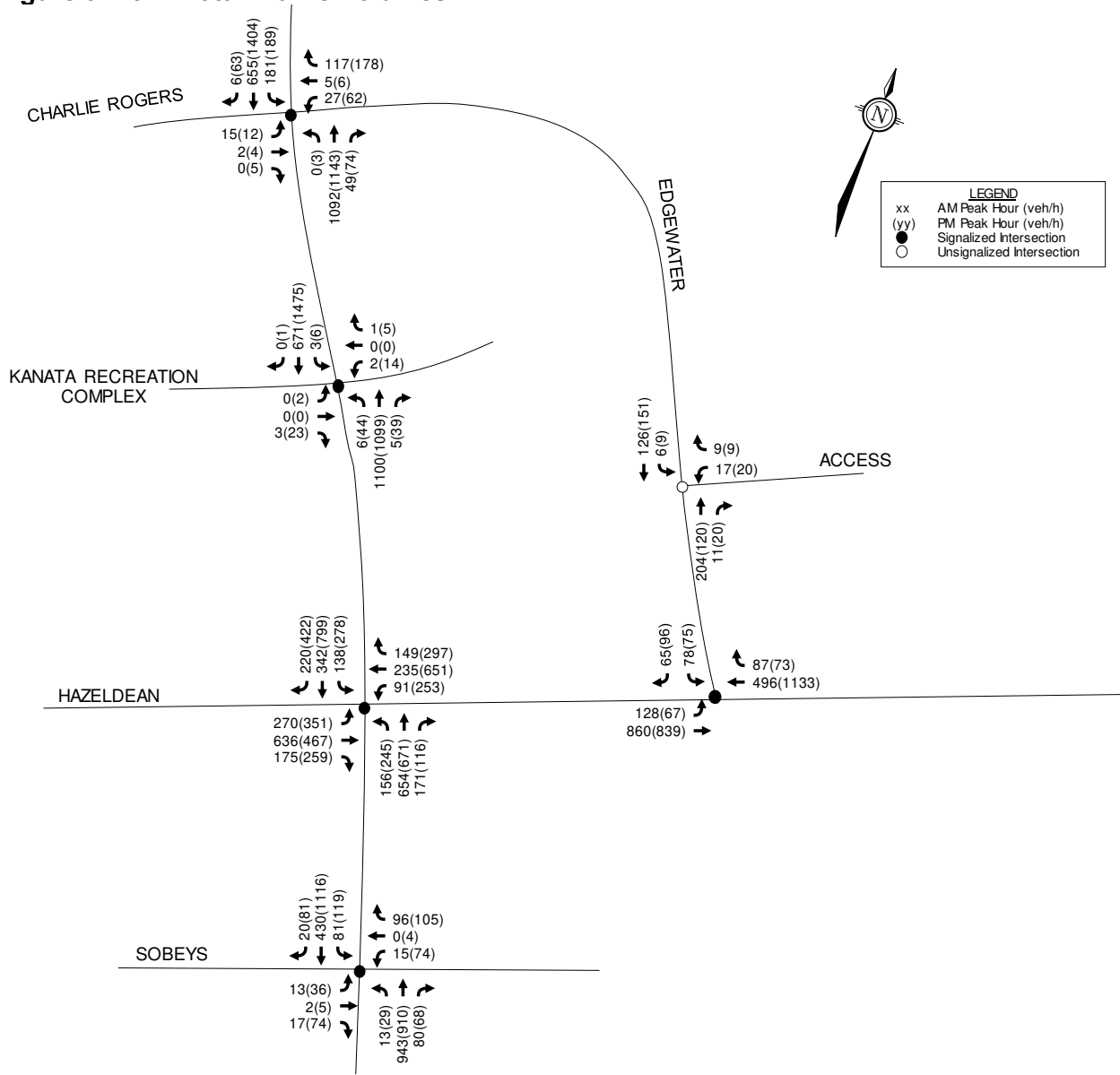
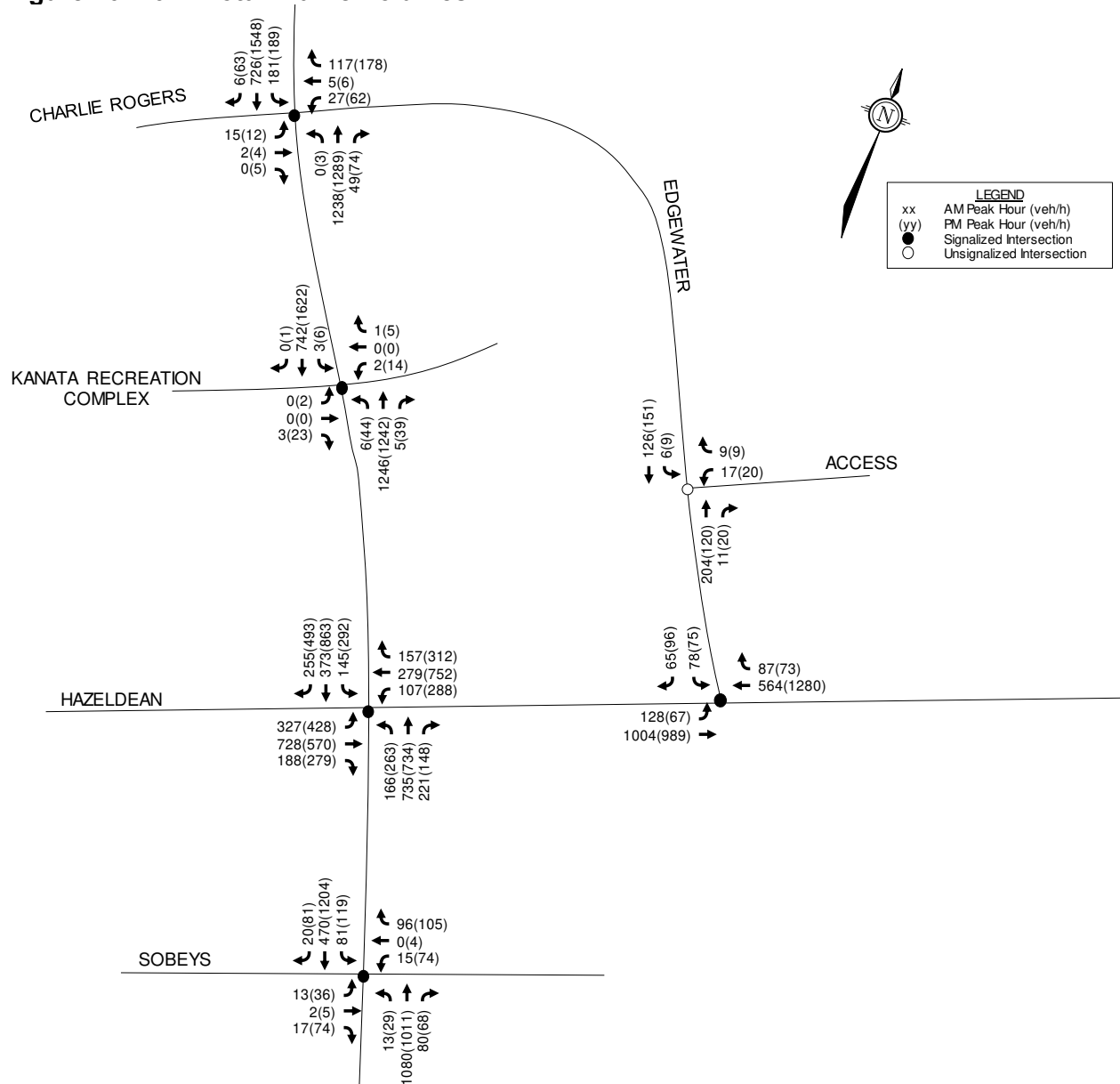


Figure 10: 2027 Total Traffic Volumes



3.3 Demand Rationalization

A review of the existing and background intersection operations has been conducted to determine if and when the projected background traffic will exceed the capacity within the study area. The target Auto LOS corresponds to a vehicle-to-capacity (v/c) ratio of 0.9 or better. The intersection parameters used in the analysis are consistent with the City of Ottawa's TIA guidelines (saturated flow rate: 1800 vphpl, PHF: 0.9 for existing conditions and 1.0 for projected conditions). Intersection lane arrangements are consistent with the existing conditions described in Section 2.1. Intersection signal timing plans were obtained from the City, and are included in **Appendix D**.

3.3.1 Existing Intersection Operations

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

Table 11: Existing Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Hazeldean Road/Edgewater Street	0.51	A	SBL	0.51	A	WBT
Hazeldean Road/Terry Fox Drive	0.74	C	EBT	0.93	E	SBT
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	0.76	C	SBL	0.65	B	NBT/ SBT
Terry Fox Drive/Kanata Recreation Complex	0.39	A	NBT	0.59	A	SBT
Terry Fox Drive/Sobeys	0.38	A	WBR	0.61	B	WBT/L

As shown in the above table, the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is currently operating with a LOS E in the PM peak. Movements at all other intersections are currently operating with a LOS C or better.

The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is approximately 85m in the AM peak. This exceeds the left turn storage length. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 40m in the AM peak and improve the southbound left v/c ratio to 0.57, while the intersection would operate with a maximum v/c ratio of 0.66 (LOS B) for the northbound through movement in the AM peak.

With optimized signal timing (maintaining the existing 120 second cycle length), the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is anticipated to operate with a v/c ratio of 0.83 while the westbound through movement operates with a v/c ratio of 0.89 (LOS D) in the PM peak hour.

The northbound queue at the Terry Fox Drive/Hazeldean Road intersection is approximately 100m in the AM peak and 120m in the PM peak. The spacing between the Terry Fox Drive/Hazeldean Road and Terry Fox Drive/Sobeys intersections is approximately 100m. Optimized signal timing in the PM peak as identified above would improve the northbound queue to 80m in the PM peak.

The westbound through queue at the Terry Fox Drive/Hazeldean Road intersection is approximately 35m in the AM peak and 100m in the PM peak. Optimized signal timing as identified above would increase the westbound through queue to 115m in the PM peak. The spacing between the Terry Fox Drive/Hazeldean Road and Hazeldean Road/Edgewater Street intersections is approximately 125m.

3.3.2 2022 Background Intersection Operations

Intersection capacity analysis has been completed for the 2022 background traffic conditions using the existing signal timing plans. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix G**.

Note that some critical movements appear to operate slightly better under projected conditions than under existing conditions; this is a result of the PHF of 1.0 for future conditions as per the TIA guidelines.

Table 12: 2022 Background Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Hazeldean Road/Edgewater Street	0.44	A	SBL	0.46	A	WBT
Hazeldean Road/Terry Fox Drive	0.72	C	EBT	0.81	D	EBL
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	0.59	A	SBL	0.59	A	SBT
Terry Fox Drive/Kanata Recreation Complex	0.35	A	NBT	0.54	A	SBT
Terry Fox Drive/Sobeys	0.36	A	WBR	0.55	A	WBT/L

Under 2022 background traffic conditions, all movements at study area intersections are anticipated to operate with a LOS D or better.

The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is anticipated to be approximately 65m in the AM peak. This exceeds the left turn storage length. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 25m in the AM peak and improve the southbound left v/c ratio to 0.50, while the intersection would operate with a maximum v/c ratio of 0.55 (LOS A) for the northbound through movement in the AM peak.

3.3.3 2027 Background Intersection Operations

Intersection capacity analysis has been completed for the 2027 background traffic conditions using the existing signal timing plans. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix G**.

Table 13: 2027 Background Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Hazeldean Road/Edgewater Street	0.44	A	SBL	0.52	A	WBT
Hazeldean Road/Terry Fox Drive	0.78	C	EBL/EBT	0.94	E	EBL/ SBT
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	0.72	C	SBL	0.65	B	SBT/NBT
Terry Fox Drive/Kanata Recreation Complex	0.40	A	NBT	0.60	A	SBT
Terry Fox Drive/Sobeys	0.36	A	WBR	0.55	A	WBT/L

Under 2027 background traffic conditions, the eastbound left and southbound through movements at the Hazeldean Road/Terry Fox Drive intersection are anticipated to operate with a LOS E in the PM peak. Movements at all other intersections are anticipated to operate with a LOS C or better.

With optimized signal timing at the Hazeldean Road/Terry Fox Drive intersection (maintaining the existing 120 second cycle length) in the PM peak, the eastbound left movement is anticipated to operate with a v/c ratio of 0.89, while the southbound through movement is anticipated to operate with a v/c ratio of 0.85. With optimized signal timing, the westbound through movement is anticipated to operate with a v/c ratio of 0.90 (LOS D).

The westbound through queue at the Terry Fox Drive/Hazeldean Road intersection is projected at 105m in the PM peak. Optimized signal timing as identified above would increase the westbound through queue to 120m in the PM peak. The spacing between the Terry Fox Drive/Hazeldean Road and Hazeldean Road/Edgewater Street intersections is approximately 125m.

The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is anticipated to be approximately 75m in the AM peak. This exceeds the left turn storage length. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 30m in the AM peak and improve the southbound left v/c ratio to 0.55, while the intersection would operate with a maximum v/c ratio of 0.64 (LOS B) for the northbound through movement in the AM peak.

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

A new internal pathway system is proposed which will connect the site's at-grade parking area and the main building entrances. Connectivity to the new proposed sidewalk along Edgewater Street will be provided.

Secure bicycle storage is provided in the underground parking garage.

OC Transpo's service design guideline for peak period service is to provide service within a five minute (400m) walk of the home, school and work location of 95% of urban residents. The nearest OC Transpo bus stops to the subject site are described in Section 2.1.5. Stops #3504, #2308, and #5410 are all located within a 250m walking distance of the subject site.

A review of the Transportation Demand Management (TDM) – Supportive Development Design and Infrastructure checklist has been conducted, and is included in **Appendix H**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met.

4.1.2 Circulation and Access

The site's full movement vehicular access to Edgewater Street will serve the at-grade parking and the underground parking garage.

The fire route includes the main drive aisle and is shown on the site plan. Loading and pick up/drop off activities will occur on the south side of the building.

Waste will be stored internally to the building. A garbage room is proposed in the southeast corner of the building.

4.2 Parking

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

Table 14: Parking Requirements

Land Use	Rate	Units/GFA	Required	Provided
<i>Vehicle Parking</i>				
Apartment	Resident: 1.2 spaces per unit Visitor: 0.2 spaces per unit	126	Resident: 151 spaces Visitor: 25 spaces	282 spaces (21 at-grade 261 underground)
Townhouse	Resident: 1 space per unit Visitor: 0.2 spaces per unit	9	Resident: 9 spaces Visitor: 2 spaces	
Stacked Townhouse	Resident: 1.2 space per unit Visitor: 0.2 spaces per unit	16	Resident: 19 spaces Visitor: 3 spaces	
Office	2.4 spaces per 100m ²	512m ²	12 spaces	
Retail Store	3.4 spaces per 100m ²	424m ²	14 spaces	
<i>Bicycle Parking</i>				
Apartment	0.5 spaces per unit	126	63 spaces	138 spaces
Townhouse	0.5 spaces per unit	25	13 spaces	
Office	1 space per 250m ²	512m ²	2 spaces	
Retail Store	1 space per 250m ²	424m ²	2 spaces	

A total of 282 vehicular parking spaces (21 at-grade and 261 underground) along with 138 bicycle parking spaces will be provided on-site, thereby meeting the requirements of the Zoning By-Law.

Per the Zoning By-Law, a loading space is not required for commercial or office space with less than 1,000m² of GFA.

For the 26 spaces required for office/retail parking, two accessible spaces (one Type A, one Type B) are required. A total of four accessible spaces are provided at-grade, including two Type A and two Type B.

4.3 Boundary Streets

This section provides a review of the boundary streets using complete streets principles. The Multi-Modal Level of Service (MMLOS) guidelines produced by IBI Group in 2015 were used to evaluate the Level of Service (LOS) of Edgewater Street for each mode of transportation. Schedule B of the City of Ottawa’s Official Plan indicates that Edgewater Street is located within the General Urban Area.

Targets for the Pedestrian LOS (PLOS), Bicycle LOS (BLOS), and Truck LOS (TkLOS) are based on the targets for roadways within the General Urban Area, as identified in Exhibit 22 of the MMLOS guidelines.

The transit level of service (TLOS) has not been evaluated for Edgewater Street as there is no regular transit route.

4.3.1 Pedestrian Level of Service (PLOS)

The PLOS along Edgewater Street has been reviewed based on the criteria presented in Exhibit 4 of the MMLOS Guidelines. A summary of the PLOS is provided in the following table.

Table 15: Pedestrian Level of Service

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed	Segment PLOS
Edgewater Street					
No sidewalk		N/A	N/A	60 km/hr	F

4.3.2 Bicycle Level of Service (BLOS)

The BLOS along Edgewater Street has been reviewed based on the criteria presented in Exhibit 11 of the MMLOS Guidelines. A summary of the BLOS is provided in the following table.

Table 16: Bicycle Level of Service

Road Class	Bike Route	Type of Bikeway	Travel Lanes (Per Direction)	Operating Speed	Segment BLOS
Edgewater Street					
Collector	N/A	Mixed Traffic	1	60 km/h	F

4.3.3 Truck Level of Service (TkLOS)

The TkLOS along Edgewater Street has been reviewed based on the criteria presented in Exhibit 19 of the MMLOS Guidelines. A summary of the TkLOS is provided in the following table.

Table 17: Truck Level of Service

Curb Lane Width	Number of Travel Lanes (Per Direction)	Segment TkLOS
Edgewater Street		
>3.7m	1	B

4.3.4 Segment MMLOS Summary

A summary of the results of the segment MMLOS analysis for the boundary roadways is provided in the following table.

Table 18: Segment MMLOS Summary

Segment	PLOS	BLOS	TkLOS
Edgewater Street	F	F	B
Target	C	D	-

Edgewater Street does not meet the target PLOS or BLOS. As Edgewater Street is not a designated truck route and does not serve transit, it has no target TLOS or TkLOS.

Edgewater Street currently does not have any dedicated pedestrian facilities adjacent to the subject site, apart from gravel shoulders. Implementation of a 1.8m sidewalk with a 0.5m boulevard would achieve the target PLOS C. As part of the proposed development, a 2m sidewalk is proposed along the frontage of the subject site which will match the existing conditions south of the subject site. The proposed sidewalk will achieve a PLOS D.

Based on the BLOS criteria, the target BLOS D can be achieved by a reduction in the posted speed limit to 40km/h (operating speed of 50km/h), or by implementing bike lanes. A further review of the 2021 Ontario Traffic Manual (OTM) Book 18 Desirable Cycling Facility Pre-selection Nomograph (Urban/Suburban Context) has been conducted. Based on a speed limit of 50km/h and an AADT of 4,200, the Nomograph suggests that a designated operating space could be considered, such as bike lanes. This is identified for the City's consideration as funding becomes available.

4.4 Access Intersections Design

A new full movement access is proposed to Edgewater Street.

Section 25 (c) of the City of Ottawa's Private Approach By-law (PABL) identifies a requirement for two-way accesses to have a width no greater than 9m, as measured at the street line. Section 107 (1)(a) of the ZBL identifies a minimum width of 6.0m and a maximum of 6.7m for a two-way driveway to a parking garage with more than 20 parking spaces. The width of the proposed access is 6m and will adhere to the requirements of the PABL and ZBL.

Section 25 (p) of the PABL identifies a requirement to provide a minimum spacing of 3m between the nearest edge of the private approach and the property line, as measured at the street line. The proposed access will be located 1.5m away from the southern property line measured from the edge of the access driveway. The nearest access to the south is located approximately 30m south of the property line. As the proposed access is located a safe distance from the access serving the adjacent property to the south and there are adequate sight lines for vehicles entering/exiting the property, a waiver to the PABL is recommended for the reduced offset to the southern property line.

Transportation Association of Canada (TAC) Geometric Design Guidelines identify a clear throat length requirement of 15m for driveways along collector roadways that serve apartment developments containing between 100 and 200 units. A clear throat length of approximately 50m is proposed, thereby exceeding this requirement.

TAC Geometric Design Guidelines identify a minimum corner clearance of 55 metres for a driveway from a signal along a collector roadway. The distance between the nearest edge of the proposed access and the Hazeldean Road ROW is approximately 95m, which exceeds the TAC spacing requirements.

Based on the projected traffic volumes at the access, the access is anticipated to operate acceptably under side street stop control. Intersection operations are reviewed further in Sections 4.8.2 and 4.8.3.

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development includes a ten-storey mixed-use building with a total of 126 units and 424 square metres of ground floor commercial.

A total of 25 townhouse units are also proposed along the north and east limits of the property. A total of 13 work units (total of 512 square metres) will be provided along the northern limits.

4.5.2 Need and Opportunity

The mode shares identified in the 2020 TRANS *Trip Generation Manual* for the typical residential commuter pattern and typical commercial generator pattern for the Kanata/Stittsville district have been used for this study.

The City's 2031 Affordable Network includes transit signal priority and queue jump lanes at select intersections for Hazeldean Road between Stittsville Main Street to Eagleson Road.

4.5.3 TDM Program

The proposed development conforms to the City's TDM initiatives by providing easy access to the local pedestrian, bicycle and transit systems as outlined in Section 4.1. A review of the TDM – Measures Checklist has been conducted for the residential component of the development and is included in **Appendix H**. The following measures will be implemented within the proposed development:

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Unbundle parking from monthly rent; and
- Provide multimodal travel option information package to new residents.

4.6 Neighbourhood Traffic Management

Edgewater Street is classified as a collector roadway and provides access to the subject site. The following table summarizes 2027 background traffic, proposed additional (site) traffic, and total traffic along Edgewater Street.

Table 19: Neighbourhood Traffic Impacts

Roadway	AM Peak			PM Peak		
	2027 Bkgd	Site	Total	2027 Bkgd	Site	Total
Edgewater Street at Hazeldean Road						
Northbound	204	11	215	120	20	140
Southbound	126	17	143	151	20	171
Two-way	330	28	358	271	40	311
Edgewater Street at Terry Fox Drive						
Eastbound	223	6	229	258	9	267
Westbound	140	9	149	237	9	246
Two-way	363	15	378	495	18	513

The City of Ottawa Area Traffic Management (ATM) guidelines identify a maximum threshold of 2,500 vehicles per day, or 300 vehicles during the peak hour for collector roadways. The 2027 background and total traffic volumes along Edgewater Street exceed the ATM threshold. However, it is noted that the overall capacity of a collector roadway is estimated at 400 vehicles per hour per lane based on the City’s TRANS Long Range Transportation Model. Total peak hour, peak directional traffic volumes along Edgewater Street at Hazeldean Road equate to a volume to capacity (v/c) ratio of 0.54 (LOS A) during the AM peak hour and 0.43 (LOS A) during the PM peak hour. Total peak hour, peak directional traffic along Edgewater Street at Terry Fox Drive equate to a v/c ratio of 0.57 (LOS A) during the AM peak hour and 0.66 (LOS B) during the PM peak hour.

As there is sufficient capacity along Edgewater Street to accommodate traffic generated by the development, no changes to the existing roadway classification are required. Based on the foregoing, no mitigation measures are recommended to offset the impacts of development generated traffic. A further review of intersection operations at the Hazeldean Road/Edgewater Street and Terry Fox Drive/Edgewater Street intersections is provided in Section 4.8.

4.7 Transit

Based on the trip generation presented in Section 3.1, the proposed development is anticipated to generate 16 transit trips (6 in, 10 out) during the AM peak hour, and 15 transit trips (8 in, 7 out) during the PM peak hour.

It is anticipated that most transit trips will arrive/depart using OC Transpo stops #3504, #5410, and #2308, which primarily serve routes 61 and 88.

4.8 Intersection Design

4.8.1 Intersection MMLoS Analysis

This section provides a review of the signalized study area intersections using the complete streets principles. The MMLoS guidelines produced by IBI Group in October 2015 were used to evaluate the LOS of all signalized study area intersections for each mode of transportation. A

review of the intersection operations for all unsignalized intersections has also been conducted. Schedule B of the City of Ottawa’s Official Plan indicates that Hazeldean Road is an arterial mainstreet while the study area is located within the General Urban Area. Aerial photos of the study area intersections are provided in Section 2.1.2.

Targets for the PLOS, BLOS, TLOS, TkLOS, and Auto LOS are based on the targets for Arterial Mainstreet (Hazeldean Road intersections) or the targets for General Urban Area (all other intersections), as identified in Exhibit 22 of the MMLOS guidelines. A summary of the results of the intersection MMLOS analysis is provided in the following table. Detailed intersection MMLOS calculations are provided in **Appendix I**.

Table 20: Intersection MMLOS Summary

Intersection	PLOS	BLOS	TLOS	TkLOS	Auto LOS
Hazeldean Road/Edgewater Street	F	F	B	C	A
Target	C	C	D	D	D
Hazeldean Road/Terry Fox Drive	F	F	F	A	E
Target	C	B	D	D	D
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	F	F	C	E	C
Target	C	B	D	D	D
Terry Fox Drive/Kanata Recreation Complex	F	F	B	E	A
Target	C	B	D	D	D
Terry Fox Drive/Sobeys	F	F	B	E	B
Target	C	B	D	D	D

Hazeldean Road/Edgewater Street

This intersection meets the target TLOS, TkLOS and Auto LOS but does not meet the target PLOS or BLOS.

A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes is not recommended.

The left turn accommodation on the west and north approaches do not meet the target BLOS C. A reduction in operating speed for the north approach (to 40km/h) would achieve a BLOS B. Alternatively, to achieve the target BLOS C, implementation of two-stage left turn bike boxes on the eastbound and southbound approach is required.

Hazeldean Road/Terry Fox Drive

This intersection meets the target TkLOS, but does not meet the target PLOS, BLOS, TLOS, or Auto LOS.

A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes is not recommended.

The intersection does not currently meet the target BLOS C. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required on all approaches. In order to achieve the target BLOS based on right turn characteristics, relocation of the bike lane to the right of the right turn lane or a reduction in the right turn lanes to less than 50m would be required on all approaches. Based on existing traffic, the maximum queue for the westbound right turn movement is 60m in the PM and the maximum queue for the southbound right movement is 100m in the PM and a reduction of the right turn storage length is not recommended for these approaches.

The intersection does not currently meet the target TLOS D, based on delays observed in the PM peak. The City's 2031 Affordable Network includes transit signal priority and queue jump lanes at select intersections for Hazeldean Road between Stittsville Main Street to Eagleson Road. The City's 2031 Network Concept includes transit signal priority on Terry Fox Drive between Hazeldean Road and the West Transitway. These transit priority projects would improve the TLOS at the intersection.

The intersection does not currently meet the target Auto LOS D. The southbound through movement is currently operating with a v/c ratio of 0.93 (LOS E). With optimized signal timing (maintaining the existing 120 second cycle length), the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is anticipated to operate with a v/c ratio of 0.83 (LOS D) while the westbound through movement operates with a v/c ratio of 0.89 (LOS D) in the PM peak hour.

Terry Fox Drive/Edgewater Street/Charlie Rogers Place

This intersection meets the target TLOS and Auto LOS, but does not meet the target PLOS, BLOS, or TkLOS.

A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes is not recommended.

The intersection does not currently meet the target BLOS B. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required on all approaches.

The intersection does not currently meet the target TkLOS D based on the radii on the northwest corner and only one receiving lane on Charlie Rogers Place. As this access serves the Kanata Recreation Complex and there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.

Terry Fox Drive/Kanata Recreation Complex

This intersection meets the target TLOS and Auto LOS, but does not meet the target PLOS, BLOS, or TkLOS.

A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes is not recommended.

The intersection does not currently meet the target BLOS B, based on left turn characteristics alone. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required for the cyclists making the northbound, southbound, and eastbound left turns. The east leg is a private approach and implementation of a two stage left turn bike box on this leg would require discussion with the owner.

The intersection does not currently meet the target TkLOS D, based on the radii on the northwest and southeast corners and only one receiving lane on the east and west approaches. The receiving lane on the east approach is 6m in width and the radius is sufficient for a private approach. The west approach serves the Kanata Recreation Complex and as there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.

Terry Fox Drive/Sobeys

This intersection meets the target TLOS and Auto LOS, but does not meet the target PLOS, BLOS, or TkLOS.

A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at this intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes along Terry Fox Drive is not recommended.

The intersection does not currently meet the target BLOS B, based on left turn characteristics alone. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required for cyclists making the northbound and southbound left turns. The east and west legs of the intersection are private approaches and implementation of two stage left turn bike boxes on these legs would require discussion with the owners.

The intersection does not currently meet the target TkLOS D, based on the radii on the northwest and southeast corners and only one receiving lane on the east and west approaches. The receiving lane on the east approach is 6m in width and the radius is sufficient for a private approach. The west approach is a loading access serving the Sobeys and as there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.

4.8.2 2022 Total Intersection Operations

Intersection capacity analysis has been completed for the 2022 total traffic conditions using the existing signal timing plans. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix J**.

Table 21: 2022 Total Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Hazeldean Road/Edgewater Street	0.46	A	SBL	0.46	A	WBT
Hazeldean Road/Terry Fox Drive	0.72	C	EBT	0.81	D	EBL
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	0.61	B	SBL	0.59	A	SBT
Terry Fox Drive/Kanata Recreation Complex	0.35	A	NBT	0.54	A	SBT
Terry Fox Drive/Sobeys	0.36	A	WBR	0.55	A	WBT/L
Edgewater Street/Access	10 sec.	B	WB	10 sec.	B	WB

Under 2022 total traffic conditions, all study area intersections are anticipated to operate with a LOS D or better.

The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is anticipated to be approximately 70m in the AM peak. This exceeds the left turn storage length. This is consistent with 2022 background traffic conditions. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 25m in the AM peak and improve the southbound left v/c ratio to 0.52, while the intersection would operate with a maximum v/c ratio of 0.55 (LOS A) for the northbound through movement in the AM peak.

4.8.3 2027 Total Intersection Operations

Intersection capacity analysis has been completed for the 2027 total traffic conditions using the existing signal timing plans. The results of the analysis are summarized in the following table for the weekday AM and PM peak hours. Detailed reports are included in **Appendix J**.

Table 22: 2027 Total Intersection Operations

Intersection	AM Peak			PM Peak		
	Max V/C or Delay	LOS	Mvmt	Max V/C or Delay	LOS	Mvmt
Hazeldean Road/Edgewater Street	0.46	A	SBL	0.52	A	WBT
Hazeldean Road/Terry Fox Drive	0.78	C	EBT/EBL	0.94	E	EBL
				0.93	E	SBT
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	0.74	C	SBL	0.66	B	NBT
Terry Fox Drive/Kanata Recreation Complex	0.40	A	NBT	0.59	A	SBT
Terry Fox Drive/Sobeys	0.36	A	WBR	0.55	A	WBT/L
Edgewater Street/Access	10 sec.	B	WB	10 sec.	B	WB

Under 2027 total traffic conditions, the eastbound left and southbound through movements at the Hazeldean Road/Terry Fox Drive intersection are anticipated to operate with a LOS E in the PM peak. Movements at all other intersections are anticipated to operate with a LOS C or better.

With optimized signal timing at the Hazeldean Road/Terry Fox Drive intersection (maintaining the existing 120 second cycle length) in the PM peak, the eastbound left movement is anticipated to operate with a v/c ratio of 0.90, while the southbound through movement is anticipated to operate with a v/c ratio of 0.86. With optimized signal timing, the westbound through movement is anticipated to operate with a v/c ratio of 0.90 (LOS D).

The westbound through queue at the Terry Fox Drive/Hazeldean Road intersection is projected at 105m in the PM peak. Optimized signal timing as identified above would increase the westbound through queue to 120m in the PM peak. This is consistent with the 2027 background traffic condition. The spacing between the Terry Fox Drive/Hazeldean Road and Hazeldean Road/Edgewater Street intersections is approximately 125m.

The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is anticipated to be approximately 80m in the AM peak. This exceeds the left turn storage length. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 30m in the AM peak and improve the southbound left v/c ratio to 0.56, while the intersection would operate with a maximum v/c ratio of 0.64 (LOS B) for the northbound through movement in the AM peak.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Demand Rationalization

- *Existing Intersection Operations:*
 - The southbound left queue at the Terry Fox Drive/Edgewater Street/Charlie Rogers Place intersection is approximately 85m in the AM peak. This exceeds the left turn storage length. A permitted+protected left turn phase for the southbound left movement in the AM peak would improve the southbound left queue to 40m in the AM peak and improve the southbound left v/c ratio to 0.57, while the intersection would operate with a maximum v/c ratio of 0.66 (LOS B) for the northbound through movement in the AM peak.
 - With optimized signal timing (maintaining the existing 120 second cycle length), the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is anticipated to operate with a v/c ratio of 0.83 while the westbound through movement operates with a v/c ratio of 0.89 (LOS D) in the PM peak hour.
- *2022 Background Intersection Operations:*
 - No additional recommendations.
- *2027 Background Intersection Operations:*
 - No additional recommendations.

Development Design

- A new internal pathway system is proposed which will connect the site's at-grade parking area and the main building entrances. Connectivity to the new proposed sidewalk along Edgewater Street will be provided.
- Secure bicycle storage is provided in the underground parking garage.
- All required Transportation Demand Management (TDM) supportive design and infrastructure measures in the TDM checklist are met.

Circulation and Parking

- The site's full movement vehicular access to Edgewater Street will serve the at-grade parking and the underground parking garage.
- The fire route includes the main drive aisle and is shown on the site plan. Loading and pick up/drop off activities will occur on the south side of the building. Waste will be stored internally to the building. A garbage room is proposed in the southeast corner of the building.
- The proposed number of vehicular and bicycle parking spaces will adhere to the requirements of the City's Zoning By-law.

Boundary Streets

- Edgewater Street currently does not have any dedicated pedestrian facilities adjacent to the subject site, apart from gravel shoulders. Implementation of a 1.8m sidewalk with a 0.5m boulevard would achieve the target Pedestrian Level of Service (PLOS) C. As part of the proposed development, a 2m sidewalk is proposed along the frontage of the subject site which will match the existing conditions south of the subject site. The proposed sidewalk will achieve a PLOS D.
- Based on the Bicycle Level of Service (BLOS) criteria, the target BLOS D can be achieved by a reduction in the posted speed limit to 40km/h (operating speed of 50km/h), or by implementing bike lanes. A further review of the 2021 Ontario Traffic Manual (OTM) Book 18 Desirable Cycling Facility Pre-selection Nomograph (Urban/Suburban Context) has been conducted. Based on a speed limit of 50km/h and an AADT of 4,200, the Nomograph suggests that a designated operating space such as bike lanes could be considered. This is identified for the City's consideration as funding becomes available.

Access Intersections Design

- A new full movement access is proposed to Edgewater Street.
- The proposed access will be located 1.5m away from the southern property line measured from the edge of the access driveway. As the proposed access is located a safe distance from the access serving the adjacent property to the south and there are adequate sight lines for vehicles entering/exiting the property, a waiver to the Private Approach By-Law is recommended for the reduced offset to the southern property line. The width and location of the proposed access will adhere to all other requirements of the Private Approach By-Law and Zoning By-Law.
- The access is anticipated to operate acceptably under side street stop control.

Transportation Demand Management

- The following measures will be implemented within the proposed development:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances;
 - Display relevant transit schedules and route maps at entrances;

- Unbundle parking from monthly rent; and
- Provide multimodal travel option information package to new residents.

Neighbourhood Traffic Management

- The 2027 background and total traffic volumes along Edgewater Street exceed the Area Traffic Management (ATM) threshold of 300 vehicles during the peak hour for a collector roadway.
- There is sufficient capacity along Edgewater Street to accommodate traffic generated by the development and no changes to the existing roadway classification are required.

Transit

- The proposed development is anticipated to generate 16 transit trips (6 in, 10 out) during the AM peak hour, and 15 transit trips (8 in, 7 out) during the PM peak hour.
- It is anticipated that most transit trips will arrive/depart using OC Transpo stops #3504, #5410, and #2308, which primarily serve routes 61 and 88.

Intersection Multi-Modal Level of Service (MMLoS)

- A reduction in the pedestrian walking distance would have the greatest improvement to the PLOS at all study area intersection. However, a reduction in the pedestrian walking distance is limited by the number of travel lanes required. Based on the existing traffic volumes, a reduction in the number of travel lanes is not recommended.
- *Hazeldean Road/Edgewater Street:*
 - The left turn accommodation on the west and north approaches do not meet the target BLOS C. A reduction in operating speed for the north approach (to 40km/h) would achieve a BLOS B. Alternatively, to achieve the target BLOS C, implementation of two-stage left turn bike boxes on the eastbound and southbound approach is required.
- *Hazeldean Road/Terry Fox Drive:*
 - The intersection does not currently meet the target BLOS C. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required on all approaches. In order to achieve the target BLOS based on right turn characteristics, relocation of the bike lane to the right of the right turn lane or a reduction in the right turn lanes to less than 50m would be required on all approaches. Based on existing traffic, the maximum queue for the westbound right turn movement is 60m in the PM and the maximum queue for the southbound right turn movement is 100m in the PM and a reduction of the right turn storage length is not recommended for these approaches.
 - The intersection does not currently meet the target Transit Level Of Service (TLOS) D, based on delays observed in the PM peak. The City's 2031 Affordable Network includes transit signal priority and queue jump lanes at select intersections for Hazeldean Road between Stittsville Main Street to Eagleson Road. The City's 2031 Network Concept includes transit signal priority on Terry Fox Drive between Hazeldean Road and the West Transitway. These transit priority projects would improve the TLOS at the intersection.
 - The intersection does not currently meet the target Auto LOS D. The southbound through movement is currently operating with a v/c ratio of 0.93 (LOS E). With optimized signal timing (maintaining the existing 120 second cycle length), the southbound through movement at the Hazeldean Road/Terry Fox Drive intersection is anticipated to operate with a v/c ratio of 0.83 (LOS D) while the

westbound through movement operates with a v/c ratio of 0.89 (LOS D) in the PM peak hour.

- *Terry Fox Drive/Edgewater Street/Charlie Rogers Place:*
 - The intersection does not currently meet the target BLOS B. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required on all approaches.
 - The intersection does not currently meet the target Truck Level of Service (TkLOS) D based on the radii on the northwest corner and only one receiving lane on Charlie Rogers Place. As this access serves the Kanata Recreation Complex and there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.
- *Terry Fox Drive/Kanata Recreation Complex:*
 - The intersection does not currently meet the target BLOS B, based on left turn characteristics alone. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required for the cyclists making the northbound, southbound, and eastbound left turns. The east leg is a private approach and implementation of a two stage left turn bike box on this leg would require discussion with the owner.
 - The intersection does not currently meet the target TkLOS D, based on the radii on the northwest and southeast corners and only one receiving lane on the east and west approaches. The receiving lane on the east approach is 6m in width and the radius is sufficient for a private approach. The west approach serves the Kanata Recreation Complex and as there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.
- *Terry Fox Drive/Sobeys:*
 - The intersection does not currently meet the target BLOS B, based on left turn characteristics alone. In order to achieve the target BLOS based on left turn characteristics, two stage left turn bike boxes would be required for cyclists making the northbound and southbound left turns. The east and west legs of the intersection are private approaches and implementation of two stage left turn bike boxes on these legs would require discussion with the owners.
 - The intersection does not currently meet the target TkLOS D, based on the radii on the northwest and southeast corners and only one receiving lane on the east and west approaches. The receiving lane on the east approach is 6m in width and the radius is sufficient for a private approach. The west approach is a loading access serving the Sobeys and as there is no evidence of trucks hitting curbs, it is presumed that the existing conditions accommodates the design vehicles and there is no recommended action.

Total Intersection Operations

- *2022/2027 Total Intersection Operations:*
 - No additional recommendations as a result of site traffic.

Based on the foregoing, this development is recommended from a transportation perspective.

NOVATECH

Prepared by:

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Senior Project Manager | Transportation/Traffic

Appendix A: Site Plan



STAMP

1 2021-10-25 Issued for Site Plan Control
REV DATE ISSUE

NOTES

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4. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY DIMENSIONS ON SITE.
5. ALL WORK SHALL BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND ALL SUPPLEMENTS AND APPLICABLE MUNICIPAL REGULATIONS.

CLIENT

PARK RIVER PROPERTIES
OTTAWA
ONTARIO, CANADA

PROJECT

EDGEWATER DEVELOPMENT

16 EDGEWATER
OTTAWA, ONTARIO

TITLE

SITE PLAN

PROJECT NO: 2020-1930
DRAWN:
APPROVED:
SCALE: 1:200
DATE PRINTED: 2021-10-26 11:02:46 AM

REV DRAWING NO.

1 A.100

SITE PLAN GENERAL NOTES:

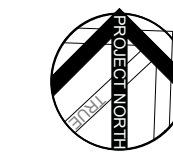
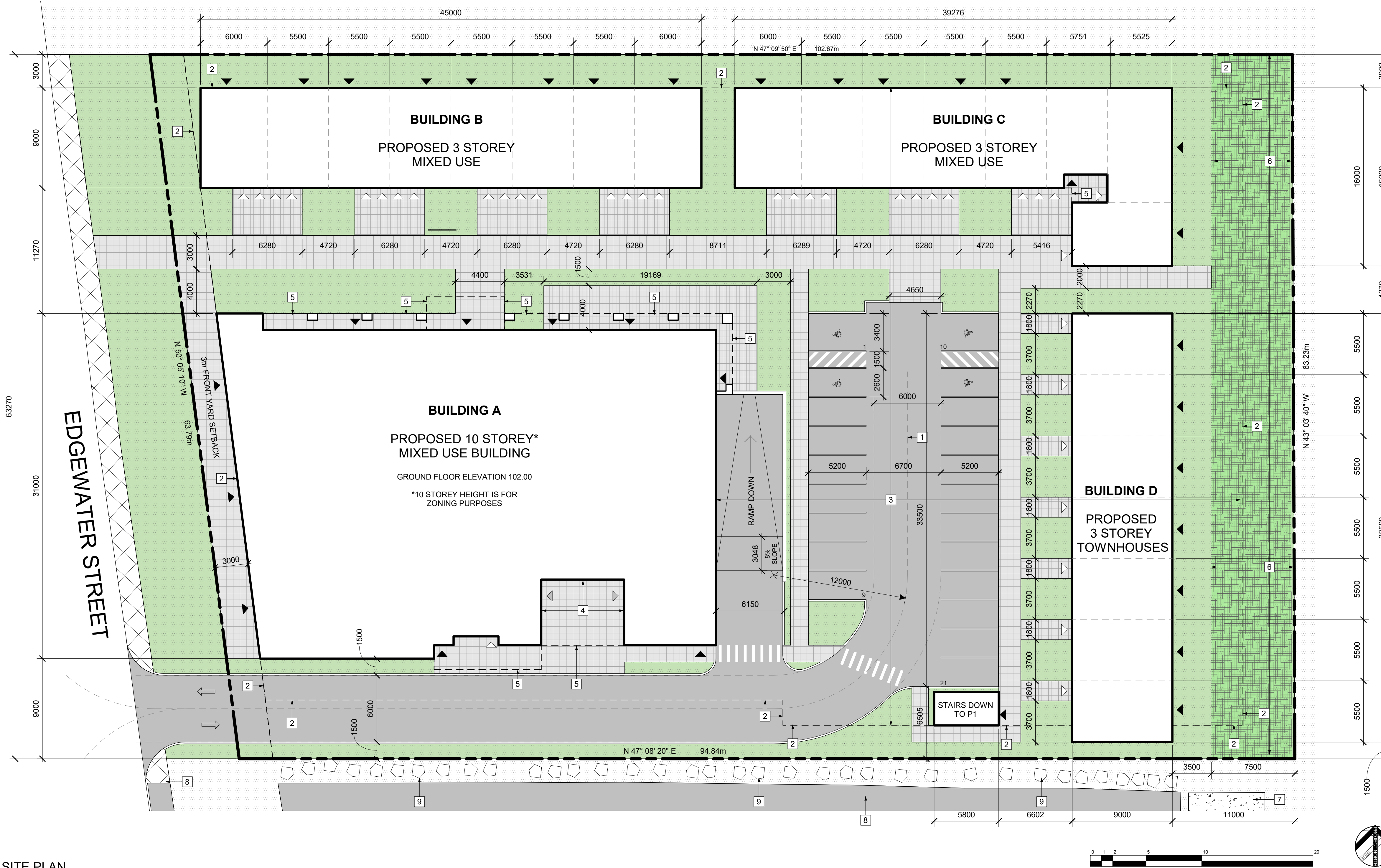
1. ALL GENERAL SITE INFORMATION AND CONDITIONS COMPILED FROM EXISTING PLANS AND SURVEYS
2. DO NOT SCALE THIS DRAWING
3. REPORT ANY DISCREPANCIES PRIOR TO COMMENCING WORK. NO RESPONSIBILITY IS BORN BY THE CONSULTANT FOR UNKNOWN SUBSURFACE CONDITIONS
4. CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY ERRORS AND/OR OMISSIONS TO THE CONSULTANT
5. REINSTATE ALL AREAS AND ITEMS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE CONSULTANT
6. CONTRACTOR TO LAYOUT PLANTING BEDS, PATHWAYS ETC. TO APPROVAL OF CONSULTANT PRIOR TO ANY JOB EXCAVATION
7. THE ACCURACY OF THE POSITION OF UTILITIES IS NOT GUARANTEED - CONTRACTOR TO VERIFY PRIOR TO EXCAVATION
8. INDIVIDUAL UTILITY COMPANY MUST BE CONTACTED FOR CONFIRMATION OF UTILITY EXISTENCE AND LOCATION PRIOR TO DIGGING
9. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE NOTED

SITE PLAN LEGEND:

- EXISTING BUILDING
- ASPHALT PAVING
- EXISTING GRASS / LANDSCAPING
- NEW SOFT LANDSCAPING - REFER TO LANDSCAPE PLANS
- CONCRETE SIDEWALK
- CONCRETE PAD
- COMMUNITY GARDEN - REFER TO LANDSCAPE PLANS FOR DETAILS
- GRAVEL/RIVERSTONE/MAINTENANCE STRIP
- STONE DUST/SAND
- PAVER TYPE 1
- PAVER TYPE 2
- BUILDING MAIN ENTRANCE
- OTHER ENTRANCE/EXIT
- SERVICE DOORS
- PROPERTY LINE
- FENCE PER LANDSCAPE
- NEW DOMESTIC WATER
- NEW SANITARY
- NEW STORM
- NEW ELECTRICAL SERVICE (BELOW GRADE)
- GAS

- CATCH BASIN
- CATCH BASIN EXISTING
- LIGHT STANDARD
- LIGHT STANDARD EXISTING
- FIRE HYDRANT
- FIRE HYDRANT EXISTING
- MANHOLE
- MANHOLE EXISTING
- UTILITY POLE
- UTILITY POLE EXISTING
- CUSTOM SYMBOL
- CUSTOM SYMBOL EXISTING
- SIAMESE CONNECTION
- DROPPED CURB

- NEW TREE
- NEW SHRUB
- EXISTING TREE



SITE PLAN

A.100 1:200

LEGAL DESCRIPTION:

PART OF LOT 30 CONCESSION 12 PART 1,
4R31503 IN THE CITY OF OTTAWA

REFERENCE SURVEY:

BASED ON INFORMATION FROM A SURVEY
PREPARED BY MCINTOSH PERRY SURVEYING
INC. DATED MAY 11, 2021.

MUNICIPAL ADDRESS:

16 EDGEWATER STREET

DEVELOPMENT INFORMATION:

SITE AREA	6,247 m ²
BUILDING AREA	Building A 1,238 m ² Building B 405 m ² Building C 416 m ² Building D 347 m ² Total 2,406 m ²
GROSS FLOOR AREA	Building A 8,460 m ² Building B 1,086 m ² Building C 1,075 m ² Building D 927 m ² Total 11,548 m ²
BUILDING HEIGHT	Building A 30 m + 3.35 m Penthouse Building B & C 10.35 m Building D 9.35 m
ZONE	Proposed - GM2 Current - IG2
SCHEDULE 1:	AREA C SUBURBAN
SCHEDULE 1A:	AREA C
SCHEDULE 2:	DISTANCE EXCEEDS 600 m

UNIT MIX:

BUILDING A		
3 BEDROOM	18	
2 BEDROOM	27	
2 BEDROOM WITH SECONDARY SUITE	18	
ONE BEDROOM + DEN	36	
ONE BEDROOM	9	
STUDIO	18	
TOTAL	126	
RETAIL SPACE GFA	424 m ²	
BUILDING B		
GROUND FLOOR COMMERCIAL UNITS	8	
3 BEDROOM UNITS (FLOORS 2 & 3)	8	
OFFICE SPACE GFA	315 m ²	
BUILDING C		
GROUND FLOOR COMMERCIAL UNITS	5	
3 BEDROOM UNITS (FLOORS 2 & 3)	6	
3 BEDROOM TOWN HOUSE UNITS	2	
OFFICE SPACE GFA	197 m ²	
BUILDING D		
TOWN HOUSE UNITS 3 BEDROOM	9	
TOTAL COMMERCIAL SPACE GFA (OFFICE AND RETAIL)	936 m ²	

ZONING PROVISION

ZONING PROVISION	REQUIRED	PROVIDED
MIN. LOT WIDTH	No Minimum	63.78 m
MIN. LOT AREA	No Minimum	6,247 m ²
MIN. FRONT YARD SETBACK	3.0 m	3.0 m
MIN. REAR YARD SETBACK	7.5 m	11.0 m
MIN. INTERIOR YARD SETBACK	1.2 m (Residential building under 11.0 m)	1.5 m & 3.0 m
	5.0 m (Mixed-use building)	9.0 m
MAX. HEIGHT	18.0 m	BLDG A - 30.0 m BLDG B - 10.35 m BLDG C - 10.35 m BLDG D - 9.35 m
AMENITY AREA TOTAL	756 m ²	1,861 m ²
COMMUNAL AMENITY AREA	378 m ²	1,493 m ²
FLOOR SPACE INDEX	2.0	1.85
COMMERCIAL SPACE FSI	1.0 (50%)	0.15 (8%)

PARKING

	REQUIRED	PROVIDED
HIGH RISE RESIDENT VISITOR	151	176
	25	25
TOWNS (BUILDINGS B, C & D) RESIDENT VISITOR	25	25
	5	5
RETAIL STORE (BUILDING A)	14	24
OFFICE (BUILDING B AND C)	12	27
TOTAL	232	282
BICYCLE PARKING		
RESIDENTIAL BUILDINGS A, B AND C (NONE REQUIRED FOR BUILDING D)	63	126
RETAIL STORE (BUILDING A)	2	2
OFFICE (BUILDING B AND C)	2	10
TOTAL	67	138

SITE PLAN KEYNOTES:

- 1 FIRE ROUTE
- 2 EXTENT OF UNDERGROUND PARKING (P1)
- 3 EXTENT OF UNDERGROUND PARKING (P2)
- 4 DROP OFF/LOADING
- 5 OUTLINE OF BUILDING ABOVE
- 6 COMMUNITY GARDEN
- 7 EXISTING GARBAGE ENCLOSURE
- 8 EXISTING ASPHALT PARKING LOT
- 9 EXISTING STONE BARRIERS
- 10 EXTEND NEW SIDEWALK TO MEET EXISTING SIDEWALK

Appendix B: Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	16 Edgewater Street
Description of Location	East side Edgewater Street, north of Hazeldean Road
Land Use Classification	Mixed Use (residential with ground floor commercial)
Development Size (units)	25 Townhomes and 126 Apartment units
Development Size (m ²)	424m² ground floor commercial, 512 m² office
Number of Accesses and Locations	One full movement access to Edgewater Street
Phase of Development	1 Phase
Buildout Year	2022

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 m ²
Gas station or convenience market	75 m ²

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

If the proposed development size is greater than the sizes identified above, 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



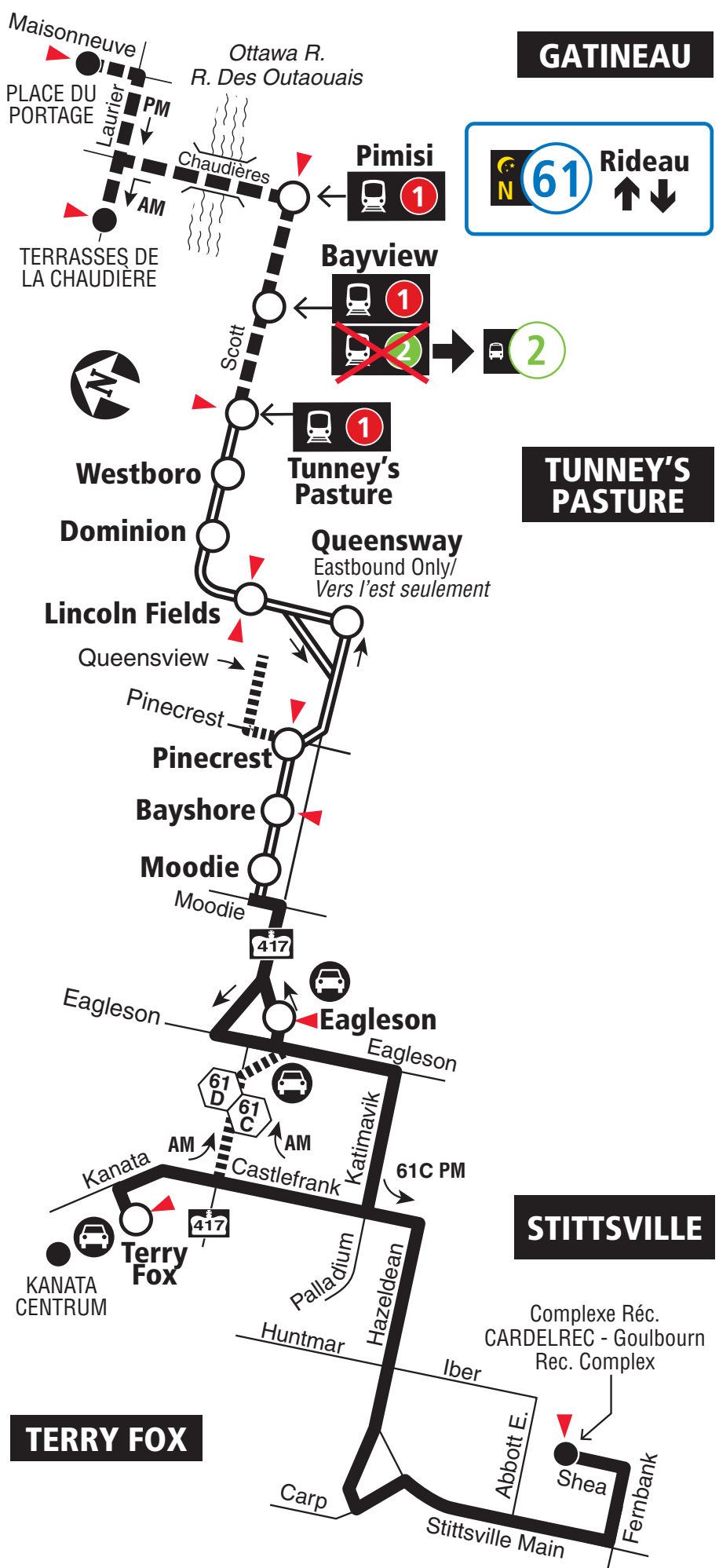
Rapid^e

TERRY FOX STITTSVILLE TUNNEY'S PASTURE GATINEAU

7 days a week / 7 jours par semaine

All day service and limited overnight

Service toute la journée et limité la nuit



- Transitway & Station
- Peak trips / Trajets de pointe
- Selected time periods / Périodes sélectionnées
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

When O-Train Line 1 is not running overnight, Route 61 will be extended downtown to Rideau Station. / Lorsque la ligne 1 de l'O-Train ne circule pas la nuit, le circuit 61 sera prolongée au centre-ville jusqu'à la station Rideau.

2020.05

Schedule / Horaire.....613-560-1000
Text / Texto560560
plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

Customer Service
Service à la clientèle 613-741-4390
Lost and Found / Objets perdus..... 613-563-4011
Security / Sécurité 613-741-2478

Effective May 3, 2020
En vigueur 3 mai 2020

INFO 613-741-4390
octranspo.com



88

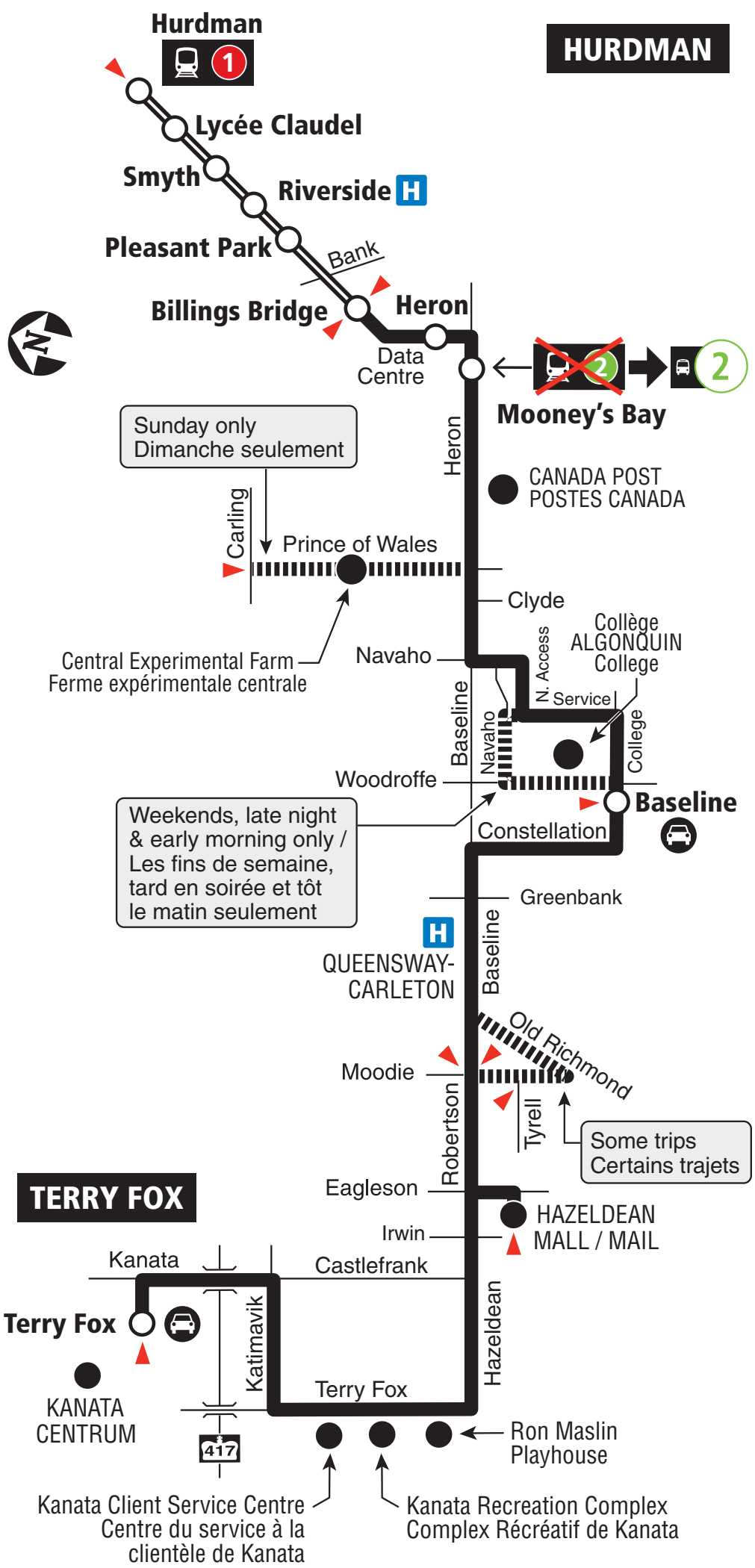
HURDMAN TERRY FOX

Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée



2020.05



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

Text / Texto560560

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

Customer Service

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

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

Security / Sécurité **613-741-2478**

Effective May 3, 2020

En vigueur 3 mai 2020



INFO 613-741-4390
octranspo.com



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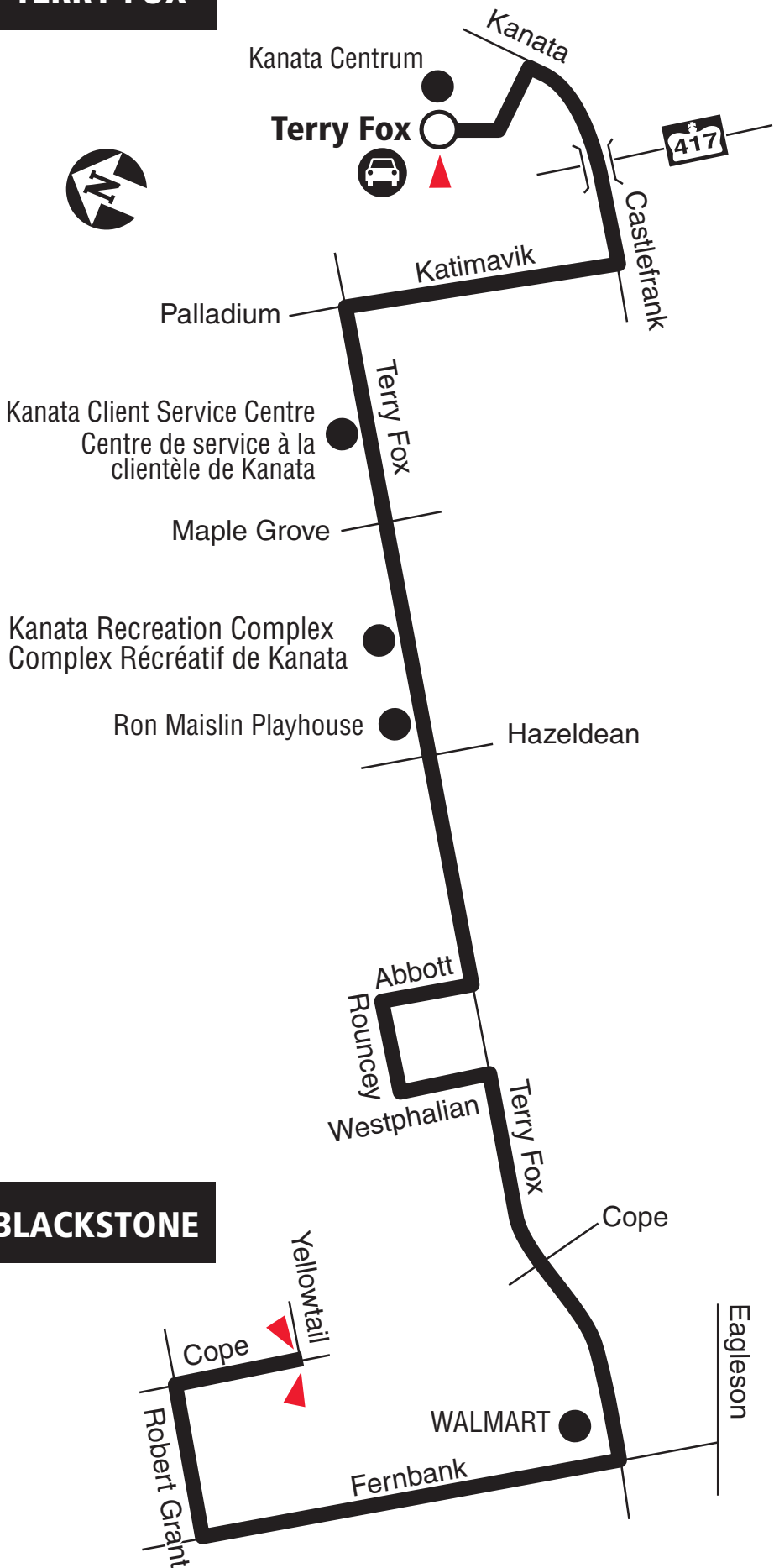
TERRY FOX BLACKSTONE

Local

Monday to Friday/ Lundi au vendredi

Selected time periods
Périodes sélectionnées

TERRY FOX



- Transitway Station / Station du Transitway
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2019.06



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

Text / Texto560560

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

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

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

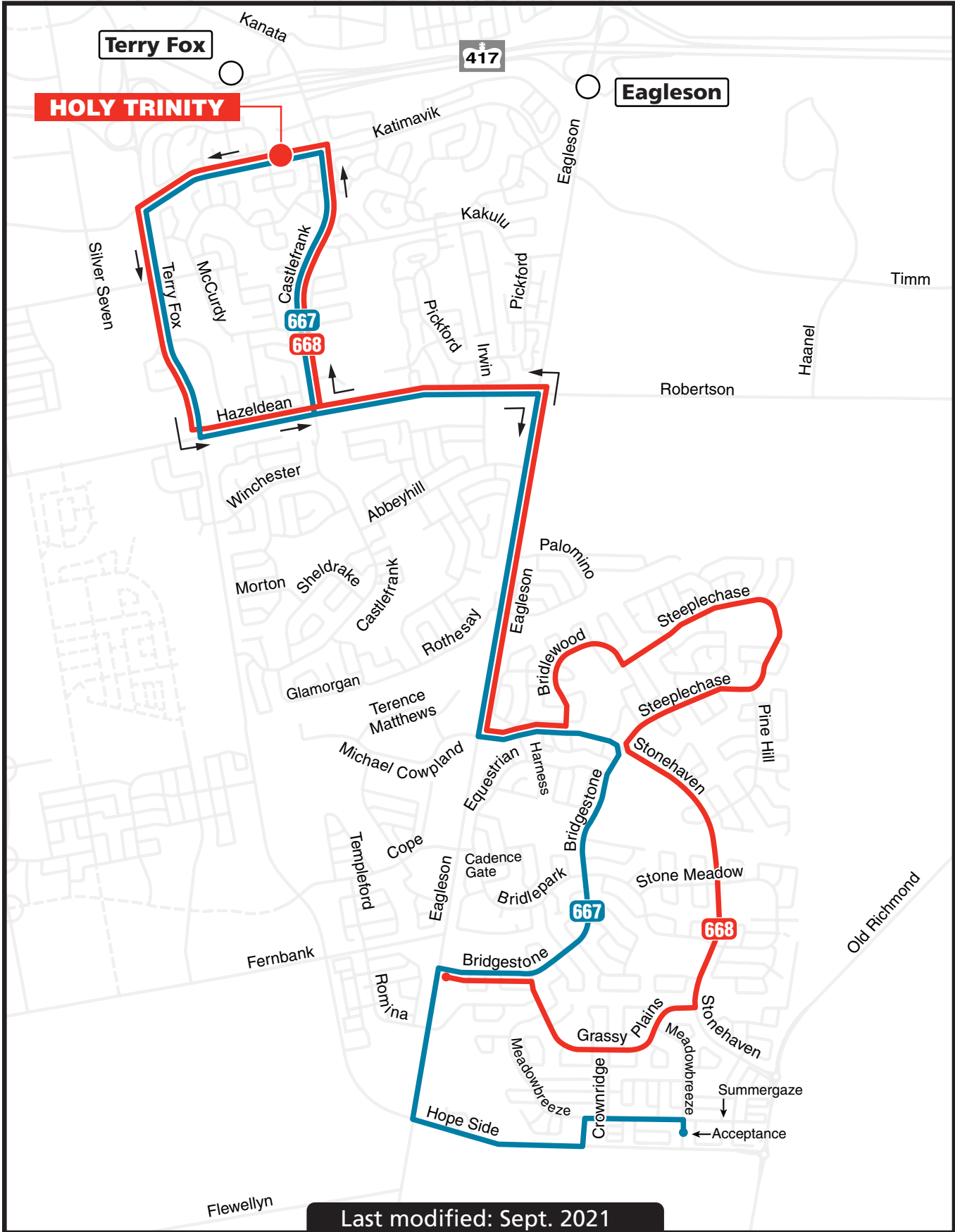
Security / Sécurité **613-741-2478**

Effective December 24, 2017

En vigueur 24 décembre 2017



INFO 613-741-4390
octranspo.com



Appendix D: Traffic Count Data



Transportation Services - Traffic Services

Turning Movement Count - Study Results

HAZELDEAN RD @ EDGEWATER ST

Survey Date: Tuesday, November 27, 2018

WO No: 38172

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, November 27, 2018

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0
 Eastbound: 7 Westbound: 8

1.00

EDGEWATER ST

HAZELDEAN RD

Period	Northbound					Southbound					Eastbound					Westbound					Grand Total
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	STR TOT	LT	ST	RT	WB TOT	STR TOT	
07:00 08:00	0	0	0	0	44	26	0	18	44	44	103	495	0	598	876	0	220	58	278	876	920
08:00 09:00	0	0	0	0	90	54	0	36	90	90	118	911	0	1029	1434	0	343	62	405	1434	1524
09:00 10:00	0	0	0	0	126	72	0	54	126	126	121	851	0	972	1546	0	491	83	574	1546	1672
11:30 12:30	0	0	0	0	121	57	0	64	121	121	96	647	0	743	1488	0	679	66	745	1488	1609
12:30 13:30	0	0	0	0	165	61	0	104	165	165	118	759	0	877	1725	0	770	78	848	1725	1890
15:00 16:00	0	0	0	0	139	61	0	78	139	139	82	650	0	732	1605	0	784	89	873	1605	1744
16:00 17:00	0	0	0	0	154	57	0	97	154	154	63	733	0	796	1851	0	984	71	1055	1851	2005
17:00 18:00	0	0	0	0	151	70	0	81	151	151	53	829	0	882	2070	0	1121	67	1188	2070	2221
Sub Total	0	0	0	0	990	458	0	532	990	990	754	5875	0	6629	12595	0	5392	574	5966	12595	13585
U Turns	0			0	0				0	0	7			7	15	8			8	15	15
Total	0	0	0	0	990	458	0	532	990	990	761	5875	0	6636	12610	8	5392	574	5974	12610	13600
EQ 12Hr	0	0	0	0	1376	637	0	739	1376	1376	1058	8166	0	9224	17528	11	7495	798	8304	17528	18904
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																			1.39		
AVG 12Hr	0	0	0	0	1376	637	0	739	1376	1376	1058	8166	0	9224	17528	11	7495	798	8304	17528	18904
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																			1.00		
AVG 24Hr	0	0	0	0	1802	834	0	968	1802	1802	1386	10697	0	12083	22960	14	9818	1045	10877	22960	24762
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.																			1.31		

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



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

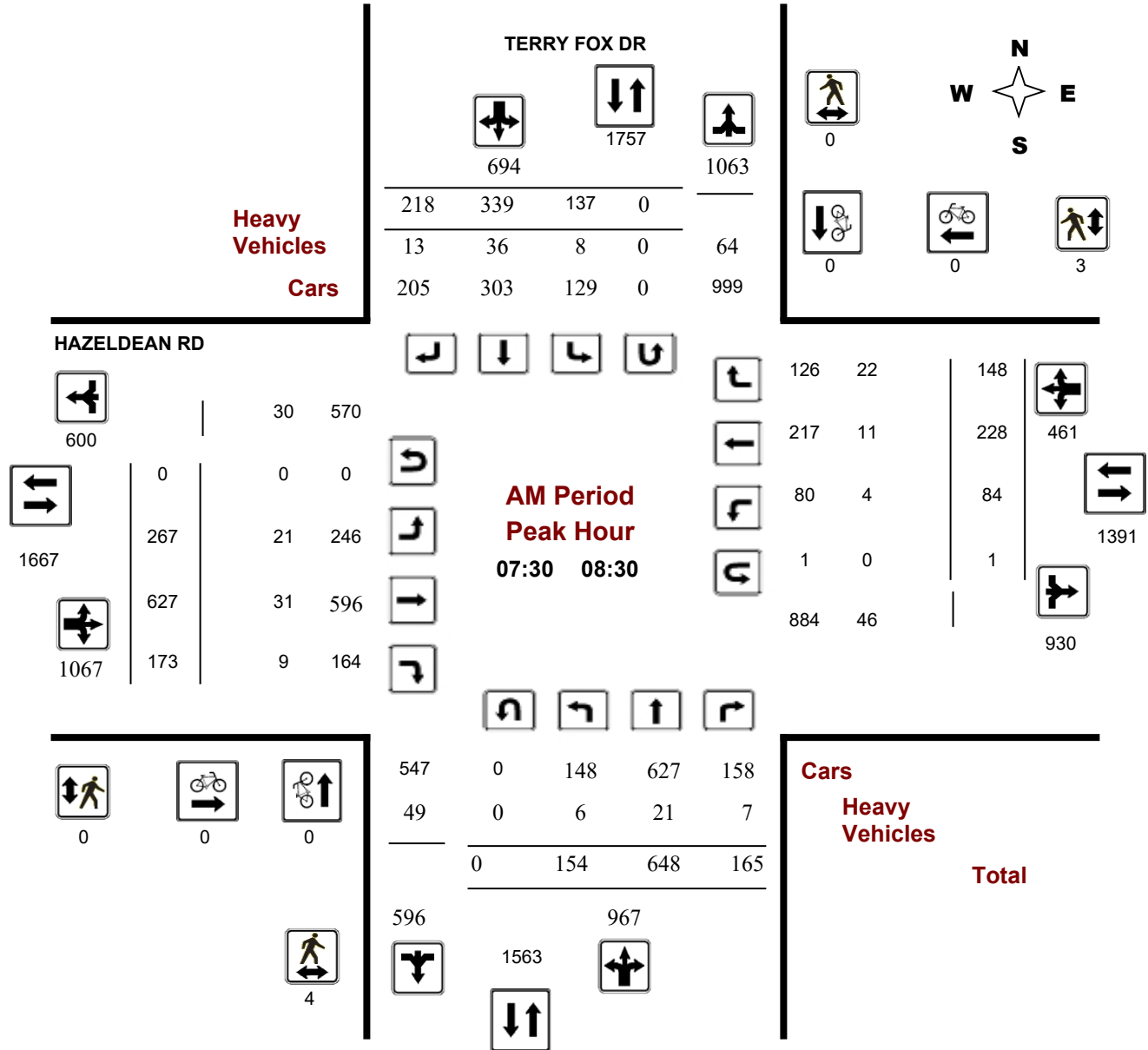
HAZELDEAN RD @ TERRY FOX DR

Survey Date: Thursday, March 03, 2016

Start Time: 07:00

WO No: 35765

Device: Miovision



Turning Movement Count - Peak Hour Diagram

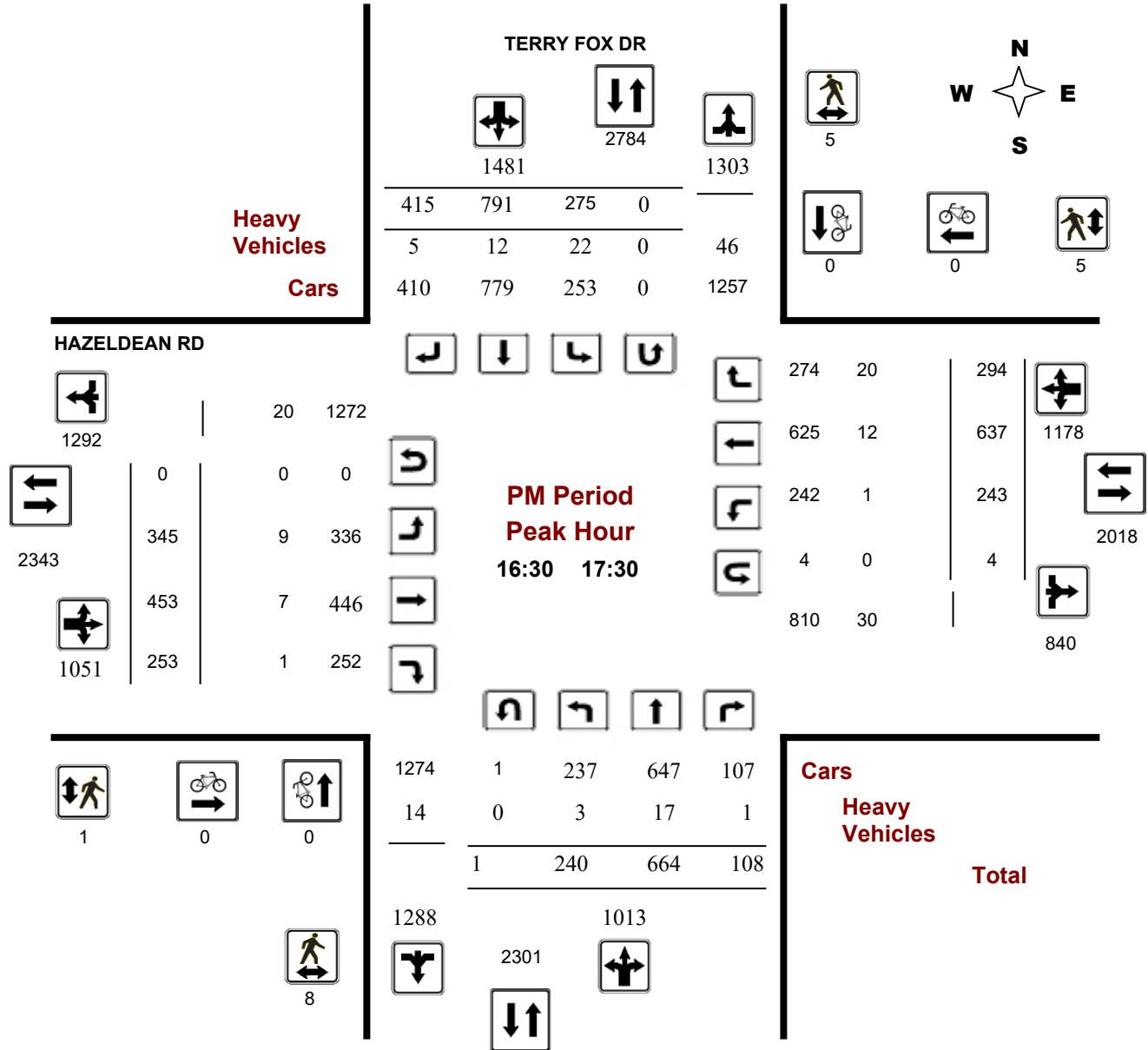
HAZELDEAN RD @ TERRY FOX DR

Survey Date: Thursday, March 03, 2016

Start Time: 07:00

WO No: 35765

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

HAZELDEAN RD @ TERRY FOX DR

Survey Date: Thursday, March 03, 2016

WO No: 35765

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, March 03, 2016

Total Observed U-Turns

AADT Factor

Northbound: 1 Southbound: 0
 Eastbound: 4 Westbound: 17

1.00

TERRY FOX DR

HAZELDEAN RD

Period	TERRY FOX DR					HAZELDEAN RD					STR TOT	Grand Total							
	Northbound			Southbound		Eastbound			Westbound										
	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	149	590	151	890	116	295	174	585	1475	273	647	120	1040	60	194	107	361	1401	2876
08:00 09:00	169	691	138	998	131	301	208	640	1638	241	544	172	957	89	249	174	512	1469	3107
09:00 10:00	182	450	151	783	195	273	201	669	1452	231	432	107	770	127	293	164	584	1354	2806
11:30 12:30	160	371	97	628	251	380	345	976	1604	316	511	196	1023	161	451	223	835	1858	3462
12:30 13:30	193	365	124	682	233	366	333	932	1614	303	442	176	921	159	456	253	868	1789	3403
15:00 16:00	221	420	87	728	218	551	387	1156	1884	320	463	240	1023	175	605	235	1015	2038	3922
16:00 17:00	258	548	120	926	250	723	405	1378	2304	329	474	258	1061	227	650	258	1135	2196	4500
17:00 18:00	248	681	122	1051	264	748	407	1419	2470	346	427	223	996	240	613	340	1193	2189	4659
Sub Total	1580	4116	990	6686	1658	3637	2460	7755	14441	2359	3940	1492	7791	1238	3511	1754	6503	14294	28735
U Turns	1			1	0			0	1	4			4	17			17	21	22
Total	1581	4116	990	6687	1658	3637	2460	7755	14442	2363	3940	1492	7795	1255	3511	1754	6520	14315	28757

EQ 12Hr 2198 5721 1376 9295 2305 5055 3419 10779 20074 3285 5477 2074 10836 1744 4880 2438 9062 19898 39972
 Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

AVG 12Hr 2198 5721 1376 9295 2305 5055 3419 10779 20074 3285 5477 2074 10836 1744 4880 2438 9062 19898 39972
 Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1.00**

AVG 24Hr 2879 7495 1803 12177 3020 6622 4479 14121 26298 4303 7175 2717 14195 2285 6393 3194 11872 26067 52365
 Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

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

Turning Movement Count - Peak Hour Diagram

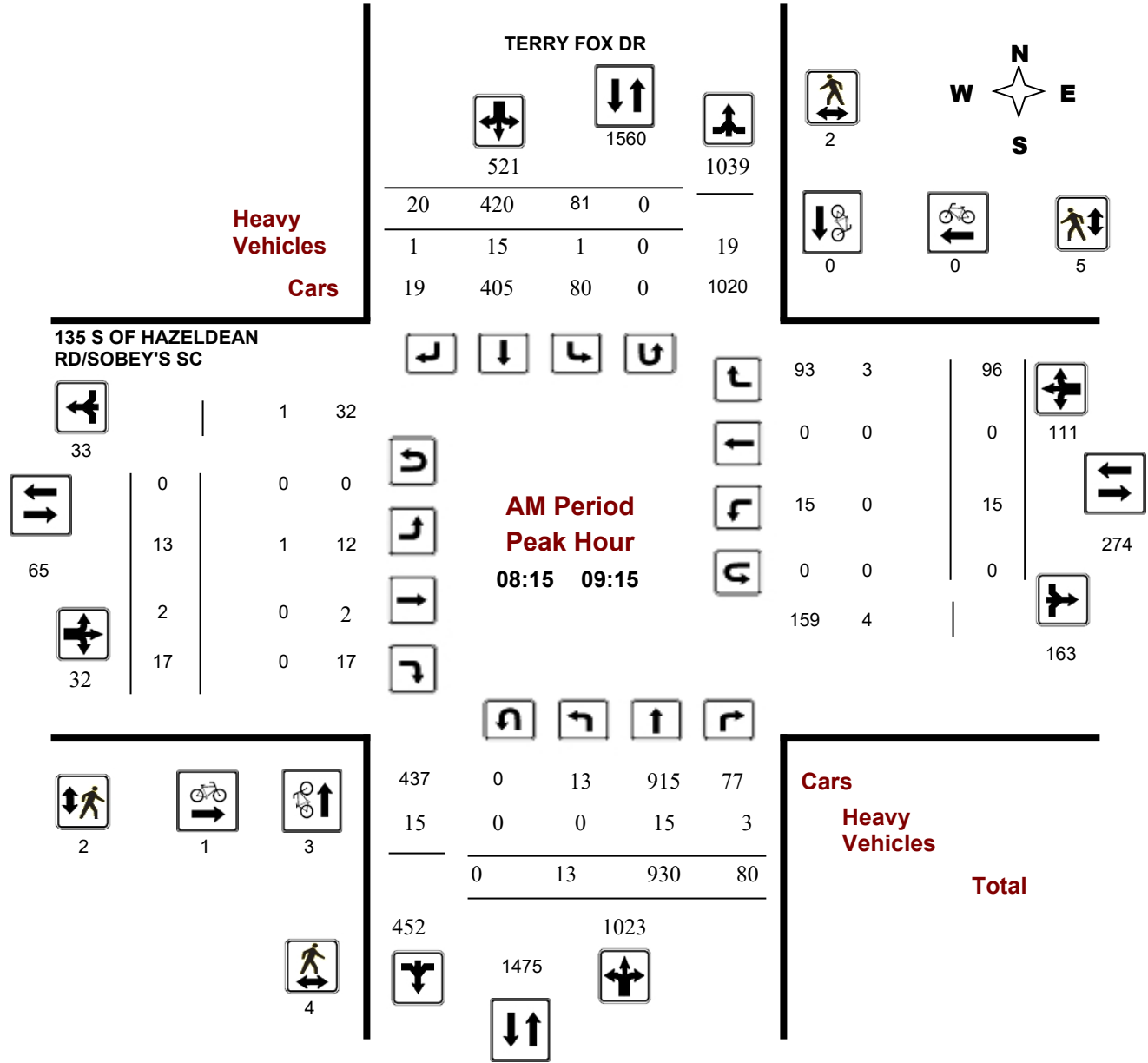
TERRY FOX DR @ 135 S OF HAZELDEAN RD/SOBEY'S S

Survey Date: Wednesday, August 17, 2016

Start Time: 07:00

WO No: 36192

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

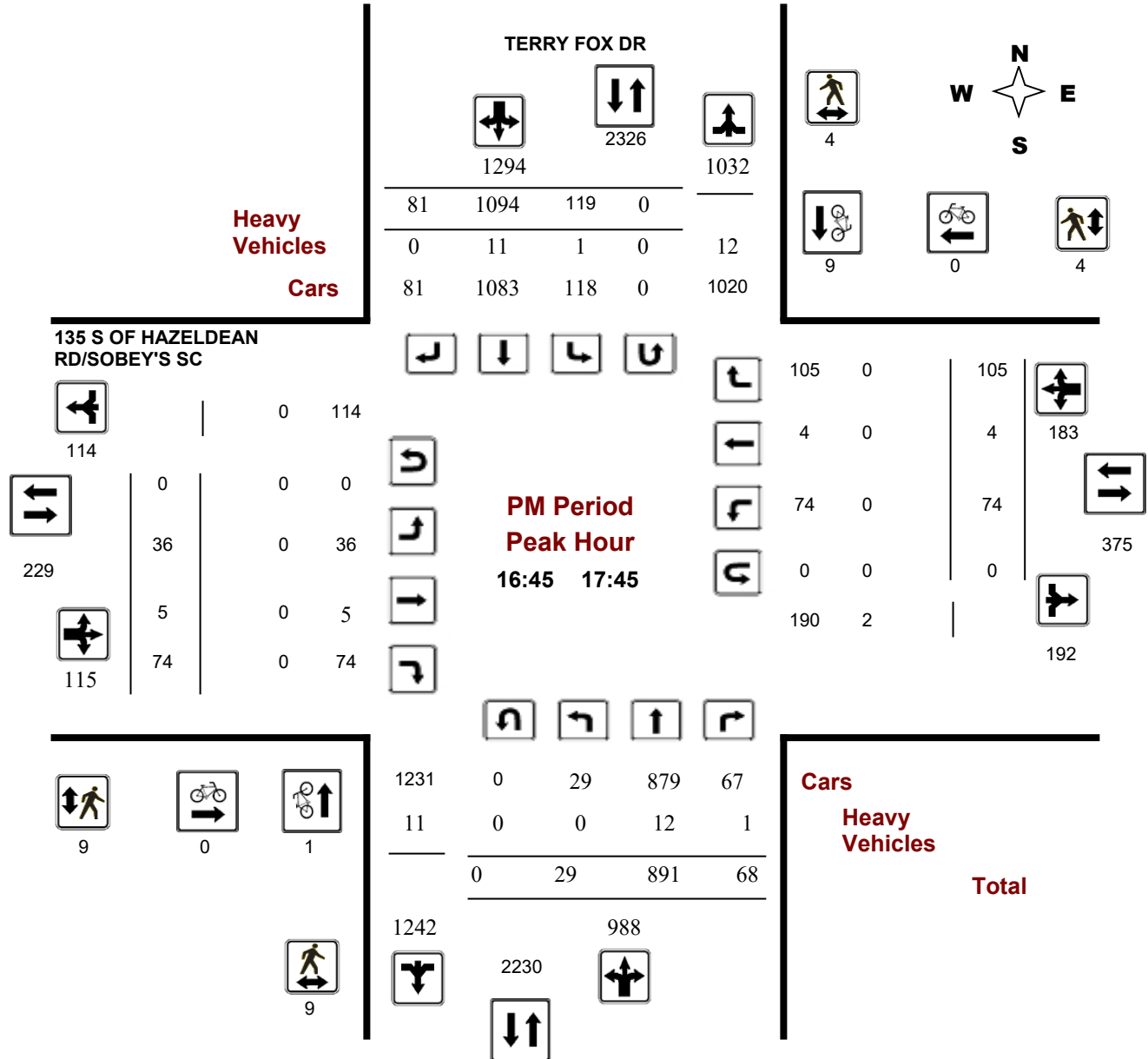
TERRY FOX DR @ 135 S OF HAZELDEAN RD/SOBEY'S S

Survey Date: Wednesday, August 17, 2016

Start Time: 07:00

WO No: 36192

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ 135 S OF HAZELDEAN RD/SOBEY'S S

Survey Date: Wednesday, August 17, 2016

WO No: 36192

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, August 17, 2016

Total Observed U-Turns

AADT Factor

Northbound: 1 Southbound: 6
 Eastbound: 0 Westbound: 0

.90

TERRY FOX DR

135 S OF HAZELDEAN RD/SOBEY'S SC

Period	TERRY FOX DR Northbound					TERRY FOX DR Southbound					135 S OF HAZELDEAN RD/SOBEY'S SC Eastbound					135 S OF HAZELDEAN RD/SOBEY'S SC Westbound					Grand Total
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	STR TOT	LT	ST	RT	WB TOT	STR TOT	
07:00 08:00	11	778	92	881	48	327	13	388	1269	13	1	9	23	27	2	96	125	148	1417		
08:00 09:00	13	901	79	993	76	408	20	504	1497	10	2	14	26	15	2	91	108	134	1631		
09:00 10:00	15	798	69	882	92	416	29	537	1419	15	3	19	37	26	2	95	123	160	1579		
11:30 12:30	23	619	64	706	172	631	60	863	1569	43	5	45	93	45	4	130	179	272	1841		
12:30 13:30	19	612	52	683	121	598	61	780	1463	39	9	31	79	60	4	146	210	289	1752		
15:00 16:00	28	635	48	711	104	852	77	1033	1744	42	5	51	98	48	6	95	149	247	1991		
16:00 17:00	26	795	52	873	101	1024	65	1190	2063	38	4	70	112	56	1	100	157	269	2332		
17:00 18:00	22	867	60	949	110	1075	84	1269	2218	33	5	62	100	78	4	111	193	293	2511		
Sub Total	157	6005	516	6678	824	5331	409	6564	13242	233	34	301	568	355	25	864	1244	1812	15054		
U Turns	1			1	6			6	7	0			0	0			0	0	7		
Total	158	6005	516	6679	830	5331	409	6570	13249	233	34	301	568	355	25	864	1244	1812	15061		
EQ 12Hr	220	8347	717	9284	1154	7410	569	9133	18417	324	47	418	789	493	35	1201	1729	2518	20935		
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																	1.39				
AVG 12Hr	198	7512	645	8355	1039	6669	512	8220	16575	292	42	376	710	444	32	1081	1557	2267	18842		
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																	.90				
AVG 24Hr	259	9841	845	10945	1361	8736	671	10768	21713	383	55	493	931	582	42	1416	2040	2971	24684		
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.																	1.31				

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

Turning Movement Count - Peak Hour Diagram

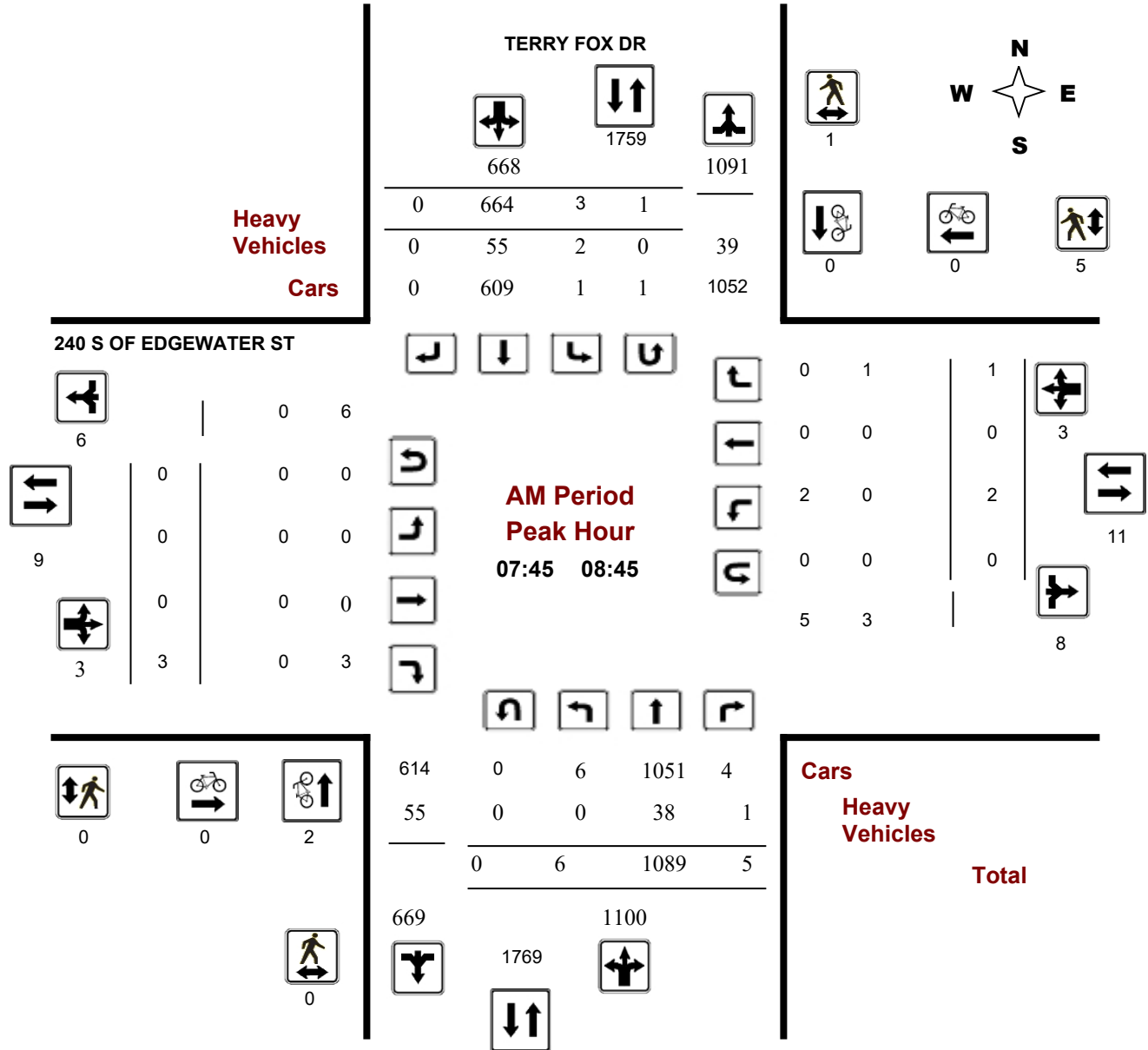
TERRY FOX DR @ 240 S OF EDGEWATER ST

Survey Date: Tuesday, March 08, 2016

Start Time: 07:00

WO No: 35777

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

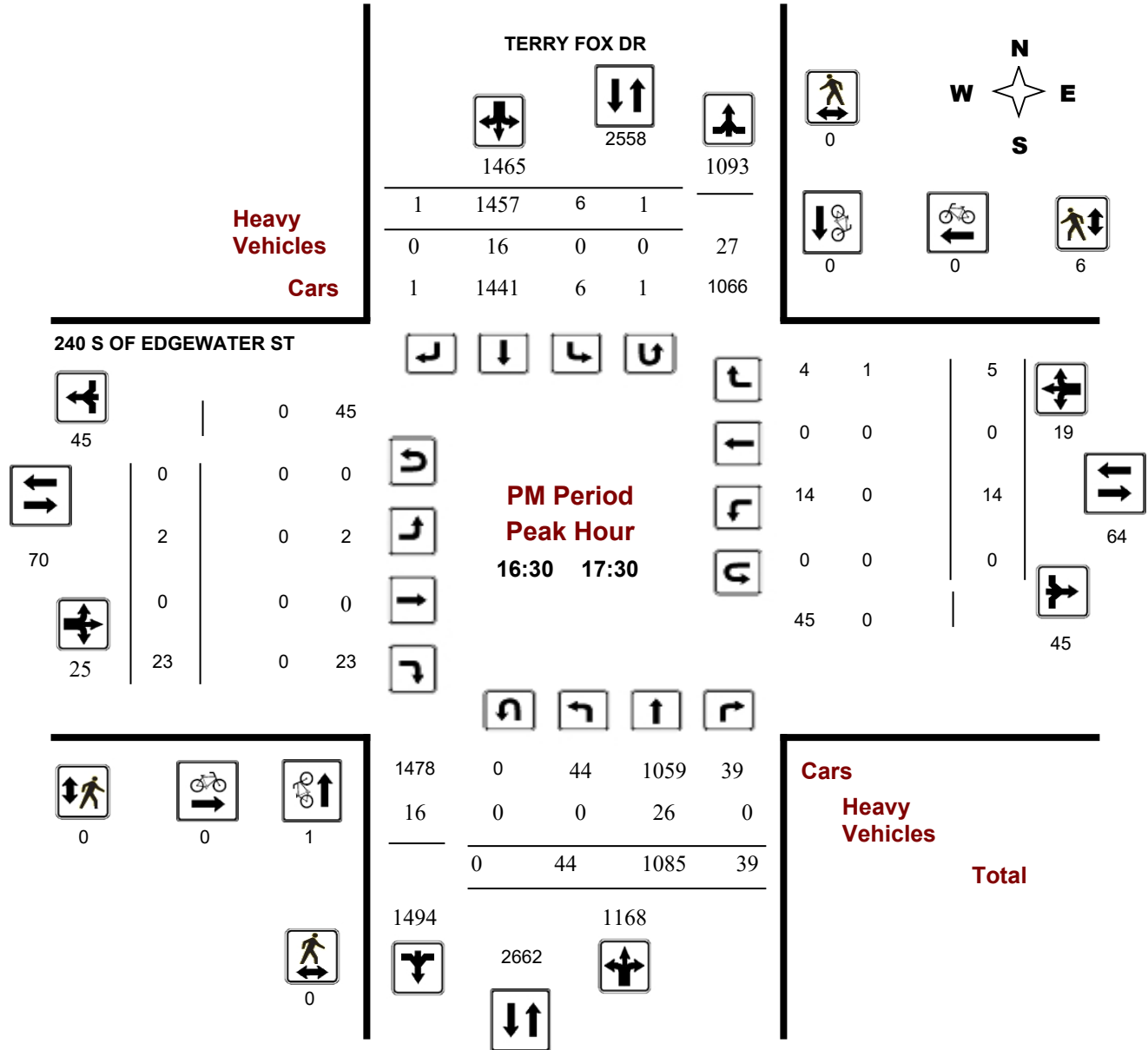
TERRY FOX DR @ 240 S OF EDGEWATER ST

Survey Date: Tuesday, March 08, 2016

Start Time: 07:00

WO No: 35777

Device: Miovision



Comments



Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ 240 S OF EDGEWATER ST

Survey Date: Tuesday, March 08, 2016

WO No: 35777

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 08, 2016

Total Observed U-Turns

AADT Factor

Northbound: 5 Southbound: 8
 Eastbound: 1 Westbound: 0
 AADT Factor: 1.00

TERRY FOX DR

240 S OF EDGEWATER ST

Period	TERRY FOX DR Northbound					TERRY FOX DR Southbound					240 S OF EDGEWATER ST Eastbound					240 S OF EDGEWATER ST Westbound					Grand Total
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	STR TOT	LT	ST	RT	WB TOT	STR TOT	
07:00 08:00	7	962	2	971		0	595	1	596	1567	0	0	0	0		0	0	0	0	0	1567
08:00 09:00	10	1062	4	1076		3	636	0	639	1715	0	0	3	3		2	0	1	3	6	1721
09:00 10:00	11	892	6	909		2	660	0	662	1571	1	0	5	6		4	0	3	7	13	1584
11:30 12:30	5	904	16	925		7	1004	0	1011	1936	2	0	7	9		7	0	8	15	24	1960
12:30 13:30	5	965	12	982		4	952	0	956	1938	1	0	8	9		16	0	11	27	36	1974
15:00 16:00	19	963	16	998		4	1061	1	1066	2064	0	0	8	8		4	0	3	7	15	2079
16:00 17:00	38	1060	23	1121		5	1354	0	1359	2480	3	0	18	21		17	0	3	20	41	2521
17:00 18:00	51	1024	33	1108		8	1398	1	1407	2515	2	1	27	30		16	0	8	24	54	2569
Sub Total	146	7832	112	8090		33	7660	3	7696	15786	9	1	76	86		66	0	37	103	189	15975
U Turns	5			5		8			8	13	1			1		0			0	1	14
Total	151	7832	112	8095		41	7660	3	7704	15799	10	1	76	87		66	0	37	103	190	15989
EQ 12Hr	210	10886	156	11252		57	10647	4	10708	21960	14	1	106	121		92	0	51	143	264	22224
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																	1.39				
AVG 12Hr	210	10886	156	11252		57	10647	4	10708	21960	14	1	106	121		92	0	51	143	264	22224
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																	1.00				
AVG 24Hr	275	14261	204	14740		75	13948	5	14028	28768	18	1	139	158		121	0	67	188	346	29114
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.																	1.31				
Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.																					

Turning Movement Count - Peak Hour Diagram

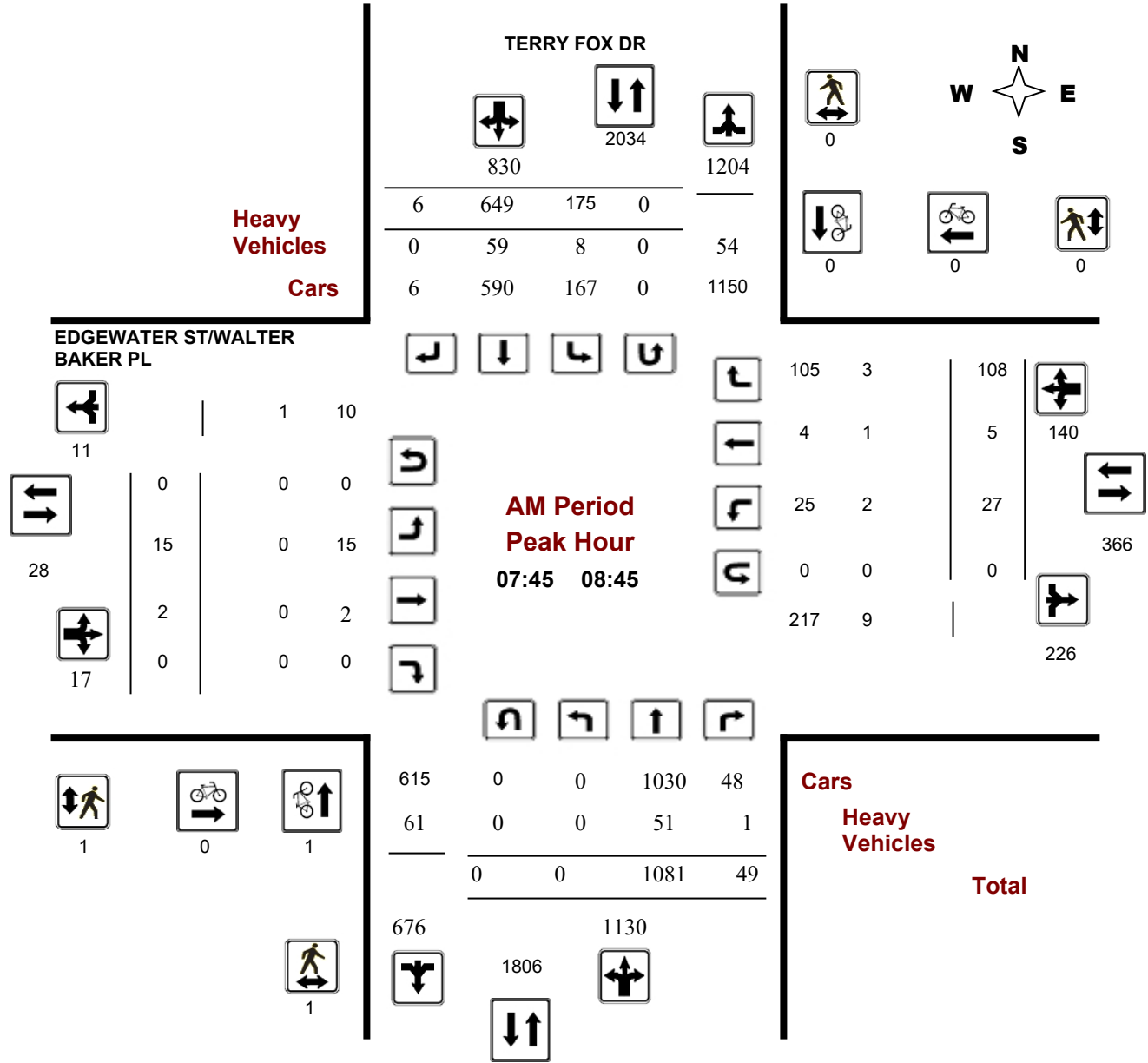
TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Survey Date: Thursday, March 03, 2016

Start Time: 07:00

WO No: 35769

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

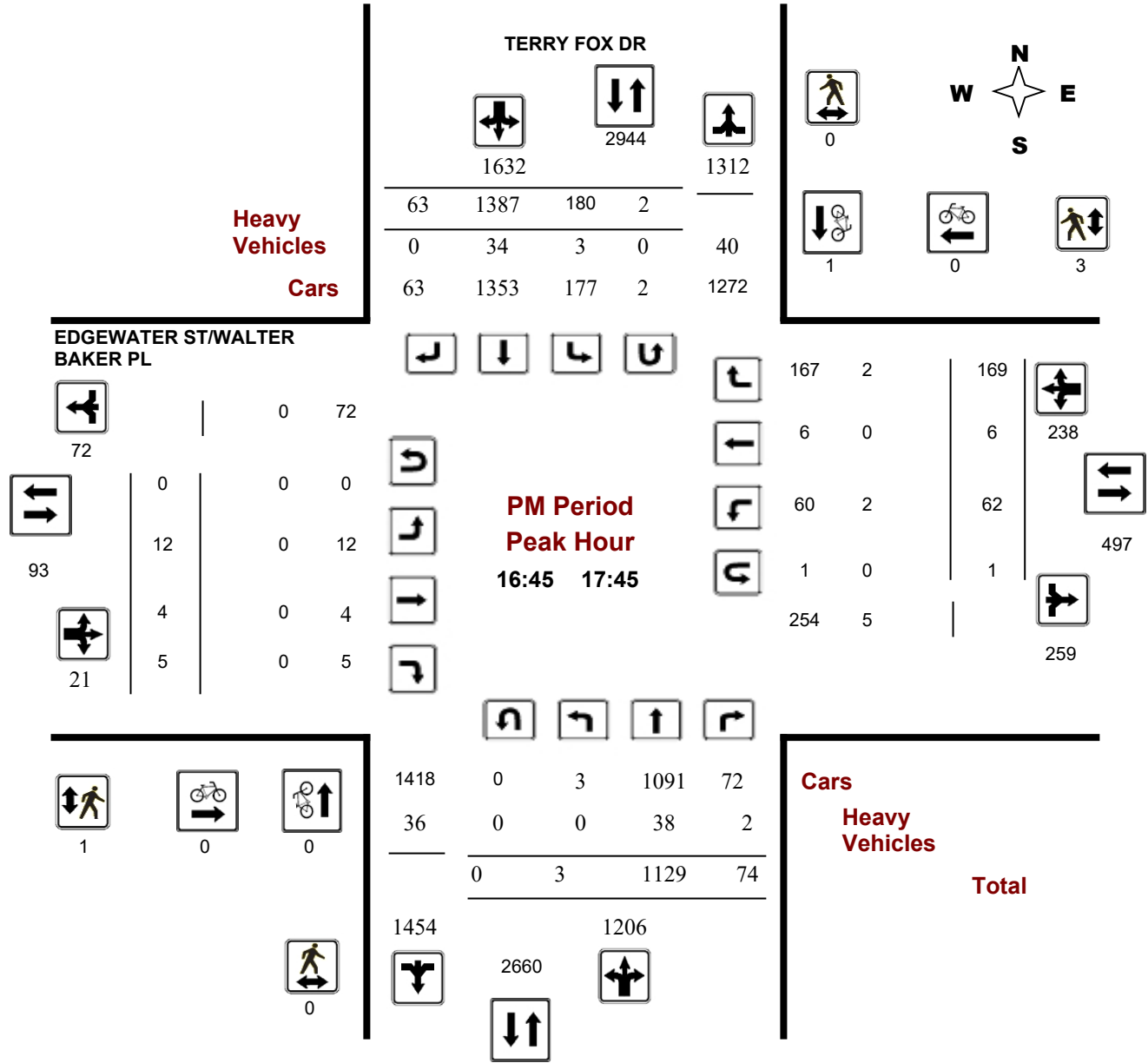
TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Survey Date: Thursday, March 03, 2016

Start Time: 07:00

WO No: 35769

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Survey Date: Thursday, March 03, 2016

WO No: 35769

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, March 03, 2016

Total Observed U-Turns

AADT Factor

Northbound: 1 Southbound: 7
 Eastbound: 0 Westbound: 3

1.00

TERRY FOX DR

EDGEWATER ST/WALTER BAKER PL

Period	TERRY FOX DR Northbound					TERRY FOX DR Southbound					EDGEWATER ST/WALTER BAKER PL Eastbound					EDGEWATER ST/WALTER BAKER PL Westbound					Grand Total
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	STR TOT	LT	ST	RT	WB TOT	STR TOT	
07:00 08:00	0	878	39	917	1593	143	531	2	676	1707	1	0	1	2	125	13	0	110	123	125	1718
08:00 09:00	0	1073	52	1125	1940	165	640	10	815	2005	17	2	0	19	175	31	5	120	156	175	2115
09:00 10:00	2	887	30	919	1725	133	658	15	806	1858	6	0	2	8	157	20	1	128	149	157	1882
11:30 12:30	1	850	60	911	2058	175	968	4	1147	2233	10	2	5	17	228	36	3	172	211	228	2286
12:30 13:30	1	907	53	961	2045	188	890	6	1084	2133	8	1	0	9	237	44	2	228	274	283	2328
15:00 16:00	0	964	44	1008	2271	132	1104	27	1263	2403	7	0	4	11	198	35	2	150	187	198	2469
16:00 17:00	4	1035	51	1090	2589	163	1308	28	1499	2752	5	1	1	7	208	43	1	157	201	208	2797
17:00 18:00	5	1100	77	1182	2806	192	1364	68	1624	2968	19	4	8	31	271	58	6	176	240	271	3077
Sub Total	13	7694	406	8113	17027	1291	7463	160	8914	19027	73	10	21	104	1645	280	20	1241	1541	1645	18672
U Turns	1			1	8	7			7	8	0			0	3			3	3	3	11
Total	14	7694	406	8114	17035	1298	7463	160	8921	19035	73	10	21	104	1648	283	20	1241	1544	1648	18683
EQ 12Hr	19	10695	564	11278	23678	1804	10374	222	12400	26678	101	14	29	144	2290	393	28	1725	2146	2290	25968
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														1.39							
AVG 12Hr	19	10695	564	11278	23678	1804	10374	222	12400	26678	101	14	29	144	2290	393	28	1725	2146	2290	25968
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														1.00							
AVG 24Hr	25	14010	739	14774	31018	2363	13590	291	16244	35018	132	18	38	188	3000	515	37	2260	2812	3000	34018
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														1.31							
Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.																					

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Hazeldean/Terry Fox

2011 Model - Basecase

N/A

User Initials: TIMW

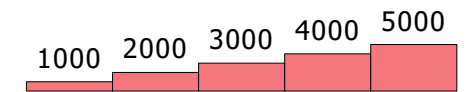
Plot Prepared: August 24, 2021

EMME Scenario: 21713

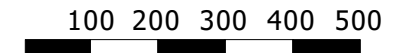


Legend

AM Peak Hour Total Traffic Volume



Distance (m)



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

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

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



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Hazeldean TerryFox

2031 Model - Basecase

N/A

User Initials: TIMW

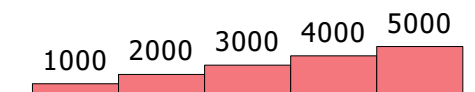
Plot Prepared: August 24, 2021

EMME Scenario: 21711

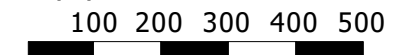


Legend

AM Peak Hour Total Traffic Volume



Distance (m)



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

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



Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

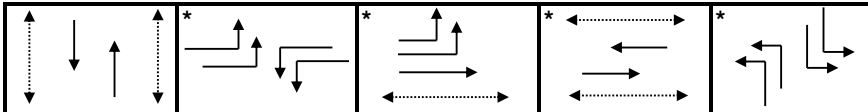
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> Hazeldean
Controller:	ATC 3	TSD: 5698
Author:	Matthew Anderson	Date: 03-Sep-2021

Existing Timing Plans†

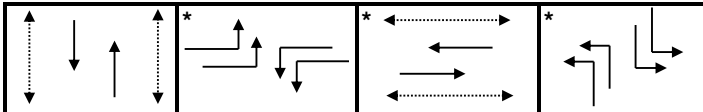
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	110	120	115			
Offset	61	73	110	X			
NB Thru	36	35	37	36	7	22	4.2+2.3
SB Thru	36	35	37	36	7	22	4.2+2.3
EB Left (fp)	22	23	23	22	-	-	3.7+2.6
WB Left (fp)	15	23	23	22	-	-	3.7+2.6
EB Thru	43	35	42	36	7	21	3.7+2.6
WB Thru	36	35	42	36	7	21	3.7+2.6
NB Left (fp)	16	17	18	21	-	-	4.2+2.3
SB Left (fp)	16	17	18	21	-	-	4.2+2.3

Phasing Sequence‡

Plan: 1



Plan: 2,3,4



Notes: 1) Plan 3 has a minimum recall of 10s green for the EW Thru phases

Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:15	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 \$59.96 (\$53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

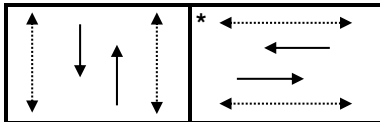
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> Edgewater / Charlie Rogers
Controller:	ATC 3	TSD: 6248
Author:	Matthew Anderson	Date: 03-Sep-2021

Existing Timing Plans†

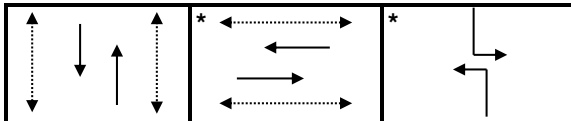
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	100	120	75			
Offset	16	25	46	X			
NB Thru	73	63	69	38	7	21	4.2 + 2.3
SB Thru	73	63	69	38	7	21	4.2 + 2.3
EB Thru	37	37	37	37	7	23	3.3 + 3.2
WB Thru	37	37	37	37	7	23	3.3 + 3.2
NB Left	-	-	14	-	-	-	4.2 + 2.4
SB Left	-	-	14	-	-	-	4.2 + 2.4

Phasing Sequence‡

Plan: 1,2,4



Plan: 3



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	22:00	4	22:30	4
15:00	3				
19:00	2				
22:00	4				

Notes

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset
- Asterisk (*) Indicates actuated phase
- (fp): Fully Protected Left Turn
- ◄.....► Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

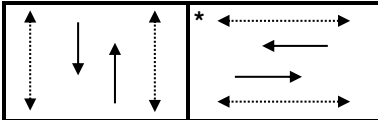
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> 240m S of Edgewater
Controller:	MS 3200	TSD: 6341
Author:	Matthew Anderson	Date: 03-Sep-2021

Existing Timing Plans†

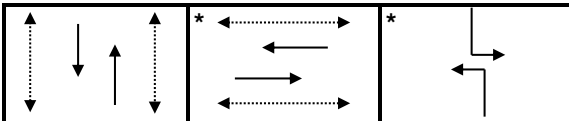
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	100	120	95			
Offset	26	60	40	X			
NB Thru	77	67	72	62	7	19	4.2 + 2.3
SB Thru	77	67	72	62	7	19	4.2 + 2.3
EB Thru	33	33	33	33	7	19	3.3 + 2.9
WB Thru	33	33	33	33	7	19	3.3 + 2.9
NB Left	-	-	15	-	-	-	4.2 + 2.3
SB Left	-	-	15	-	-	-	4.2 + 2.3

Phasing Sequence‡

Plan: 1,2,4



Plan: 3



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 \$59.96 (\$53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

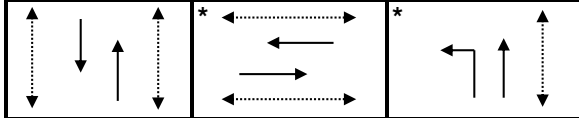
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> 130m S of Hazeldean
Controller:	ATC3	TSD: 6590
Author:	Matthew Anderson	Date: 03-Sep-2021

Existing Timing Plans†

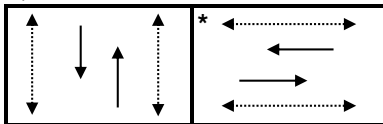
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	110	120	65			
Offset	55	72	113	X			
NB Thru	74	74	84	29	7	13	4.2 + 1.8
SB Thru	63	63	84	29	7	13	4.2 + 1.8
EB Thru	36	36	36	36	7	22	3.3 + 3.2
WB Thru	36	36	36	36	7	22	3.3 + 3.2
NB Left	11	11	-	-	-	-	4.2 + 1.8

Phasing Sequence‡

Plan: 1,2



Plan: 3,4



Schedule

Weekday

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

Saturday

Time	Plan
0:10	4
9:00	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 \$59.96 (\$53.06 + HST)

Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

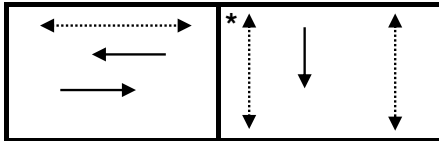
Intersection:	<i>Main:</i> Hazeldean	<i>Side:</i> Edgewater
Controller:	ATC3	TSD: 6680
Author:	Matthew Anderson	Date: 03-Sep-2021

Existing Timing Plans[†]

	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	110	120	70			
Offset	73	7	10	X			
EB Thru	76	76	68	36	-	-	3.7 + 2.5
WB Thru	76	76	68	36	7	18	3.7 + 2.5
SB Thru	34	34	34	34	7	21	3.3 + 2.8

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 \$59.96 (\$53.06 + HST)

Appendix E: Collision Records



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Aug-02, Sun,11:02	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Nov-27, Fri,17:45	Rain	Angle	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-16, Sat,10:03	Clear	Rear end	P.D. only	Slush	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	
2016-Mar-04, Fri,13:02	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-16, Wed,11:54	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-28, Mon,10:02	Rain	Angle	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Apr-15, Fri,17:20	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2016-May-13, Fri,12:24	Clear	Rear end	Non-fatal injury	Wet	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Aug-11, Thu,09:40	Clear	Rear end	P.D. only	Dry	East	Going ahead	Delivery van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Sep-19, Mon,15:40	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2017-May-13, Sat,17:30	Rain	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jun-28, Wed,19:36	Rain	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	
2017-Sep-15, Fri,14:24	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-26, Tue,14:18	Clear	Rear end	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2018-Jan-04, Thu,16:00	Clear	Angle	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-May-04, Fri,14:00	Rain	Turning movement	P.D. only	Wet	East	Turning left	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-21, Tue,15:40	Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Skidding/sliding	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Sep-13, Thu,08:19	Clear	Rear end	P.D. only	Dry	South	Going ahead	Truck - dump	Other motor vehicle	0
					South	Slowing or stopping	Passenger van	Other motor vehicle	
2018-Dec-10, Mon,09:05	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Mar-30, Sat,10:51	Freezing Rain	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-10, Wed,08:52	Clear	Angle	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-18, Fri,17:45	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Oct-28, Mon,09:46	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Police vehicle	Other motor vehicle	

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-25, Sun,10:32	Strong wind	Angle	Non-fatal injury	Ice	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Feb-10, Tue,20:36	Clear	Turning movement	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-10, Tue,17:15	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Tow truck	Other motor vehicle	
2015-Mar-24, Tue,12:40	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Pick-up truck	Other motor vehicle	
2015-May-01, Fri,19:16	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-May-13, Wed,08:44	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-23, Sat,16:12	Clear	Rear end	P.D. only	Dry	East	Going ahead	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-May-25, Mon,11:31	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jun-23, Tue,10:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Jun-23, Tue,11:40	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-13, Mon,13:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-18, Sat,10:50	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2015-Jul-23, Thu,13:18	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jul-27, Mon,17:47	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2015-Aug-06, Thu,13:32	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Aug-14, Fri,02:00	Clear	Angle	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-21, Fri,18:59	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Sep-02, Wed,10:23	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2015-Oct-03, Sat,11:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Oct-23, Fri,14:50	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2015-Oct-30, Fri,15:45	Clear	Turning movement	P.D. only	Dry	South	Turning right	Passenger van	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2015-Nov-08, Sun,13:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Passenger van	Other motor vehicle	
2015-Dec-01, Tue,15:05	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-14, Thu,07:11	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2016-Feb-16, Tue,06:52	Rain	Angle	Non-fatal injury	Loose snow	North	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-Feb-19, Fri,14:04	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Mar-02, Wed,11:20	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-07, Thu,17:00	Clear	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-May-23, Mon,11:23	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Jun-18, Sat,12:21	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Delivery van	Other motor vehicle	
2016-Jul-02, Sat,17:17	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jul-11, Mon,08:28	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Jul-15, Fri,09:28	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jul-21, Thu,18:44	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Jul-27, Wed,13:29	Clear	Angle	P.D. only	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Cyclist	
2016-Aug-16, Tue,21:11	Rain	Turning movement	Non-fatal injury	Wet	West	Going ahead	Passenger van	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2016-Oct-28, Fri,21:12	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Nov-12, Sat,13:53	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-16, Wed,14:59	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-09, Mon,19:18	Snow	Rear end	P.D. only	Slush	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Jan-28, Sat,11:26	Snow	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Feb-17, Fri,04:30	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					East	Stopped	Unknown	Other motor vehicle	
2017-Feb-28, Tue,11:10	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-16, Thu,19:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Unknown	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Mar-17, Fri,07:30	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-27, Mon,09:07	Rain	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-03, Mon,11:51	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Apr-11, Tue,16:19	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-25, Tue,12:09	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2017-May-02, Tue,12:51	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-10, Wed,17:17	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2017-May-21, Sun,20:43	Rain	Angle	Non-fatal injury	Wet	East	Turning left	Bicycle	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Cyclist	
2017-May-25, Thu,08:04	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Unknown	Other motor vehicle	
2017-Jun-19, Mon,11:20	Clear	Rear end	P.D. only	Dry	South	Turning right	Truck - closed	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2017-Jun-28, Wed,20:54	Rain	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jul-28, Fri,19:17	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Aug-17, Thu,17:45	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2017-Aug-24, Thu,11:55	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-29, Tue,10:37	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-01, Fri,13:20	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Sep-13, Wed,18:18	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-19, Tue,16:08	Clear	Rear end	P.D. only	Dry	South	Turning right	Delivery van	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-15, Sun,12:40	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-22, Sun,01:48	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2017-Nov-11, Sat,19:35	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-19, Tue,18:14	Clear	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Dec-19, Tue,19:24	Snow	Rear end	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jan-30, Tue,16:22	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2018-Feb-17, Sat,18:07	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-08, Thu,19:13	Snow	Rear end	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-20, Tue,12:38	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Apr-19, Thu,11:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Apr-26, Thu,11:00	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	
2018-Apr-27, Fri,17:20	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Apr-30, Mon,09:27	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-May-17, Thu,11:33	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-17, Thu,20:06	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-May-30, Wed,06:45	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jun-12, Tue,19:02	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Cyclist	
2018-Jul-07, Sat,09:55	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Aug-02, Thu,17:33	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-10, Fri,12:29	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-26, Sun,21:48	Clear	Turning movement	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Oct-09, Tue,13:50	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-22, Mon,11:45	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Oct-23, Tue,14:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-07, Wed,15:55	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Nov-15, Thu,20:04	Clear	Sideswipe	Non-fatal injury	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-26, Mon,13:00	Rain	Angle	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-05, Wed,18:30	Clear	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Dec-14, Fri,15:45	Freezing Rain	Rear end	P.D. only	Ice	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Dec-17, Mon,17:28	Snow	Rear end	P.D. only	Ice	East	Turning left	Truck - closed	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-18, Tue,11:45	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-26, Wed,16:00	Clear	Sideswipe	P.D. only	Wet	South	Turning left	Snow plow	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-13, Sun,23:44	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jan-19, Sat,09:43	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-07, Thu,16:09	Clear	Rear end	P.D. only	Packed snow	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Feb-27, Wed,09:22	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Truck - dump	Other motor vehicle	
2019-Apr-10, Wed,16:50	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-14, Sun,08:45	Clear	Rear end	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-16, Tue,15:30	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Passenger van	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Apr-30, Tue, 15:30	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2019-May-24, Fri, 15:11	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2019-May-26, Sun, 16:21	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Passenger van	Other motor vehicle	0
					East	Turning right	Motorcycle	Other motor vehicle	
2019-May-29, Wed, 11:44	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-02, Sun, 14:15	Clear	Rear end	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jul-11, Thu, 09:40	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-16, Tue, 15:00	Clear	Other	P.D. only	Dry	West	Reversing	Unknown	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Jul-21, Sun, 10:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Tow truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-08, Thu, 13:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-14, Wed, 17:48	Clear	SMV other	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Pedestrian	1
2019-Aug-15, Thu, 21:19	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-23, Mon, 15:05	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 120

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Nov-07, Thu,10:45	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2019-Nov-16, Sat,19:25	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-18, Mon,12:30	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-04, Wed,14:35	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-13, Fri,08:10	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2019-Dec-15, Sun,11:35	Clear	Rear end	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Dec-19, Thu,09:56	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ 135 S OF HAZELDEAN RD/SOBEY'S S

Traffic Control: Traffic signal

Total Collisions: 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jul-06, Mon,14:22	Clear	Angle	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2015-Aug-12, Wed,22:44	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-21, Sat,10:45	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



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Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: TERRY FOX DR @ 135 S OF HAZELDEAN RD/SOBEY'S S

Traffic Control: Traffic signal

Total Collisions: 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Nov-27, Fri,09:32	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Construction equipment	Other motor vehicle	
2017-Jan-13, Fri,18:00	Clear	Angle	P.D. only	Dry	East	Turning right	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-08, Sat,23:23	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-03, Tue,14:36	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-31, Fri,15:35	Clear	SMV other	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Pedestrian	1
2018-Nov-01, Thu,21:05	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Pedestrian	1
2019-Sep-05, Thu,07:50	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Oct-18, Fri,06:58	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ 240 S OF EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-14, Sat,17:12	Snow	Angle	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Traffic Control: Traffic signal

Total Collisions: 44

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

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Traffic Control: Traffic signal

Total Collisions: 44

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-14, Wed,09:00	Clear	Rear end	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2015-Jan-31, Sat,12:18	Clear	Turning movement	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Feb-27, Fri,12:19	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-14, Sat,22:01	Snow	SMV other	P.D. only	Wet	South	Going ahead	Pick-up truck	Pole (utility, power)	0
2015-Jul-18, Sat,01:05	Clear	SMV other	P.D. only	Wet	West	Turning left	Automobile, station wagon	Ran off road	0
2015-Oct-25, Sun,08:55	Clear	Angle	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-14, Sat,16:54	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Dec-11, Fri,17:40	Clear	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jan-06, Wed,10:51	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Jan-20, Wed,11:26	Clear	Rear end	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Mar-06, Sun,22:31	Clear	Rear end	P.D. only	Other	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-26, Thu,10:37	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jul-05, Tue,16:10	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Traffic Control: Traffic signal

Total Collisions: 44

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Oct-20, Thu,16:14	Rain	Rear end	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2016-Nov-06, Sun,12:28	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-07, Mon,12:34	Clear	Angle	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-Dec-17, Sat,09:45	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-31, Sat,19:44	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Jan-22, Sun,13:15	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-02, Thu,09:15	Snow	Rear end	P.D. only	Ice	South	Stopped	School bus	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-07, Fri,21:22	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2017-Apr-18, Tue,16:15	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-21, Wed,18:46	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Aug-11, Fri,12:20	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Traffic Control: Traffic signal

Total Collisions: 44

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Sep-09, Sat,11:58	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-24, Sun,13:00	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-13, Mon,11:38	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Delivery van	Other motor vehicle	
2017-Nov-15, Wed,15:02	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-29, Fri,13:58	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-29, Thu,21:30	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Apr-12, Thu,14:48	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jun-02, Sat,13:55	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-20, Thu,11:25	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-13, Sat,11:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Making "U" turn	Automobile, station wagon	Other motor vehicle	
2018-Dec-20, Thu,10:30	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Passenger van	Other motor vehicle	
2019-Feb-03, Sun,20:09	Freezing Rain	Angle	Non-fatal injury	Slush	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: TERRY FOX DR @ EDGEWATER ST/WALTER BAKER PL

Traffic Control: Traffic signal

Total Collisions: 44

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-May-23, Thu,14:10	Clear	Turning movement	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-18, Tue,11:02	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Cyclist	
2019-Aug-22, Thu,10:42	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Delivery van	Other motor vehicle	
2019-Aug-23, Fri,17:00	Clear	SMV other	Non-fatal injury	Dry	North	Slowing or stopping	Motorcycle	Skidding/sliding	0
2019-Oct-19, Sat,09:56	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-16, Sat,17:00	Clear	Angle	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-24, Sun,17:11	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-05, Thu,22:26	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Appendix F: Relevant Excerpts from Other Transportation Studies

STEP 3 - FORECASTING

MODULE 3.1 - Development-generated Travel Demand

Element 3.1.1 – Trip Generation and Mode Shares

The proposed development will consist of three individual retail buildings which are labeled as Box D, Pad B and CPU B as shown in the conceptual site plan of Figure 2.2. The buildings are distributed throughout the shopping centre site sharing parking with other building uses and utilizing the existing site accesses onto Hazeldean Road and Huntmar Drive. The buildings will consist of a retail use with tenants not secured to date. The proposed development (all three buildings) will have a combined gross floor area of 4,432.1 m² (47,710 ft²) as detailed in Table 2.1. The number of expected site generated trips utilized the trip statistical data in the Institute of Transportation Engineers (ITE) document, *Trip Generation Manual 10th Edition*. Since the proposed additional retail is part of the larger retail on site, the study will utilize the Average Trip Rate for a “Shopping Center” ITE 820 Land Use. The trip rate for the weekday peak PM hour of the adjacent street traffic shown in Table 3.1 with the ITE trip data graph provided as Exhibit 3.1 in the Appendix.

**TABLE 3.1
 VEHICLE TRIP GENERATION RATES AND DIRECTIONAL SPLITS**

Peak Hour	Peak PM Hour	
Trip Rate	3.81 T/1000 ft ²	
Directional Distribution	48% Entering	52% Exiting

The modal share was determined using statistical data for the Kanata/Stittsville area in the *2011 NCR Household Origin-Destination Survey* (page 117) for a weekday peak PM hour, The modal share in Table 3.2 recognizes that travel trends to an outdoor shopping centre generally have a lower transit and cycling share than most destinations.

The auto-trips are shown in Table 3.3 and are the product of the gross floor area of the total of all three building proposed in the application (Table 2.1), and the peak hour trip generation rates of Table 3.1. The number of person-trips was determined by the number of auto-trips calculated from the ITE trip rates, and multiplied by 1.28 (from the TIA Guidelines) to convert auto-trips to person-trips. Table 3.3 shows the future peak hour auto-trips and person-trips.

**TABLE 3.2
 MODE SHARE SUMMARY (Person-Trips)**

FUTURE MODE SHARE TARGETS FOR THE DEVELOPMENT		
Travel Mode	Mode Share Target	Rationale
Transit	10%	Retail store land use
Walking	10%	Retail store land use
Cycling	3%	Consistent with the City's 2011 NCR Household O-D Survey
Auto Passenger	22%	Consistent with the proximity to residential development and the City's 2011 NCR Household O-D Survey
Auto Driver	55%	

**TABLE 3.3
 TOTAL PEAK HOUR SITE GENERATED TRIPS**

Trips	AUTO-TRIP GENERATION	FUTURE PERSON-TRIPS
	Peak PM Hr.	Peak PM Hr.
Retail	182 Auto-Trips	233 Person-Trips

The percentage of primary and pass-by trips was determined by examination of the statistical data in the ITE *Trip Generation Handbook, 3rd Edition*. The document shows the average weekday peak PM hour pass-by vehicle percentage to be between 20 and 35 percent for a "Shopping Centre" (ITE Land Use Code 820). The study has assumed a pass-by percentage of 20 percent which was applied to all modes for the peak PM hour based on the ITE data, surrounding residential area, and the roadway network. Table 3.4 shows the primary and pass-by person-trips during the peak PM hour.

**TABLE 3.4
 PRIMARY AND PASS-BY PERSON-TRIPS**

UNIT TYPE	PEAK PM HR.
	Total
Primary Trips	207
Pass-By Trips	<u>26</u>
Total Trips	233

The peak hour person-trips per mode were determined by the product of the peak hour person-trips from Table 3.4 and the mode share from Table 3.2. The mode share in Table 3.2 was applied to both the site generated primary trips and pass-by trips. The weekday peak PM hour person-trips for all modes are shown in Table 3.5.

**TABLE 3.5
 FUTURE DEVELOPMENT GENERATED PERSON-TRIPS**

TRAVEL MODE	DEVELOPMENT GENERATED PERSON-TRIPS	
	PRIMARY TRIPS	PASS-BY TRIPS
	Peak PM Hr.	Peak PM Hr.
Transit	19 per./trips	5 per./trips
Walking	19 per./trips	5 per./trips
Cycling	5 per./trips	1 per./trips
Auto Passenger	41 per./trips	10 per./trips
Auto Driver	<u>102 per./trips</u>	<u>26 per./trips</u>
Total Trips	186 per./trips	47 per./trips

The TIA Guidelines allow for three Trip Reduction Factors that may be applied to the expected development trips. Below discusses the three factors, with the second factor providing a trip reduction for the development:

1. Deduction of Existing Development Trips - The proposed site contains a mixture of retail and commercial uses. All existing buildings on the site will remain, with the trips generated by the existing site uses assigned as background traffic. The TIA has not applied any further trip reductions for the existing development.
2. Pass-by Vehicular Trips - The total number of site generated trips is a combination of primary trips and pass-by trips. As previously discussed in Element 3.1.1, the analysis has utilized a 20 percent pass-by trip percentage of the total trips for the expected weekday peak PM hour.

The analysis has assumed that one auto driver trip would equal one vehicle trip. The site would generate 128 auto driver or vehicular trips during the peak PM hour as shown in Table 3.6. The trips have been proportioned to expected primary and pass-by vehicular trips. The pass-by trips would provide a trip reduction to the background traffic.

3. Synergy or Internalization – The Shoppes at Fairwinds is a large shopping centre at the northeast corner of Hazeldean Road and Huntmar Drive. The shopping

centre currently has a grocery store, two banks each with a drive-through ATM, a drug store, and various retail stores. As documented in the *ITE Trip Generation Handbook, 3rd Edition*, the trip data for a shopping centre land use considers a shopping centre as a stand-alone development which reflects the mixed-use nature and shared trips of the development. The TIA has not applied any further trip reductions for internalization of site trips.

**TABLE 3.6
 PRIMARY AND PASS-BY AUTO DRIVER TRIPS**

UNIT TYPE	WEEKDAY PEAK PM HR.		
	TOTAL	ENTER	EXIT
Primary Trips	102	49 (48%)	53 (52%)
Pass-By Trips	<u>26</u>	<u>12 (48%)</u>	<u>14 (52%)</u>
Total Trips	128	61	67

Element 3.1.2 – Trip Distribution

The distribution of site generated primary trips for the proposed retail development was determined by examining the size of residential development in the surrounding area and the distance the development is from the Shoppes at Fairwinds shopping centre. The pass-by trips were distributed at the same proportion as the peak PM hour background traffic along Hazeldean Road and Huntmar Drive (Iber Road). Table 3.7 shows the distribution of primary and pass-by trips which will be used in the peak PM hour traffic analysis.

**TABLE 3.7
 PRIMARY AND PASS-BY TRIP DISTRIBUTION**

ROAD SEGMENT	PRIMARY TRIPS		PASS-BY TRIPS	
	TO	FROM	TO	FROM
North along Huntmar Road	30%	30%	15%	20%
South along Iber Road	15%	15%	15%	15%
East along Hazeldean Road	15%	15%	30%	40%
West along Hazeldean Road	40%	40%	40%	25%

Element 3.1.3 – Trip Assignment

The trip assignment has examined the site generated trips with respect to the shortest and most convenient routes to/from the development. The trip distribution as discussed in Element 3.1.2 was applied to the weekday peak PM hour primary and pass-by trips shown in Table 3.7. Figure 3.1 presents the peak hour primary trips to/from the site, and Figure 3.2 the pass-by trips.

MODULE 3.2 - Background Network Travel Demands

Element 3.2.1 – Transportation Network Plans

The City of Ottawa *Transportation Master Plan 2013* was reviewed to identify transit and roadway projects in the vicinity of the development. The documents examined did not identify any changes to the transit or roadway network within the time horizon of the TIA study which would impact the operation of the retail shopping centre. The Hazeldean Road widened in 2010 and the construction of Huntmar Drive in 2008 are both accounted for in the background traffic and trips to/from the site. The construction of the N-S Arterial Road adjacent to the east limit of the site will be completed beyond the horizon year of the study.

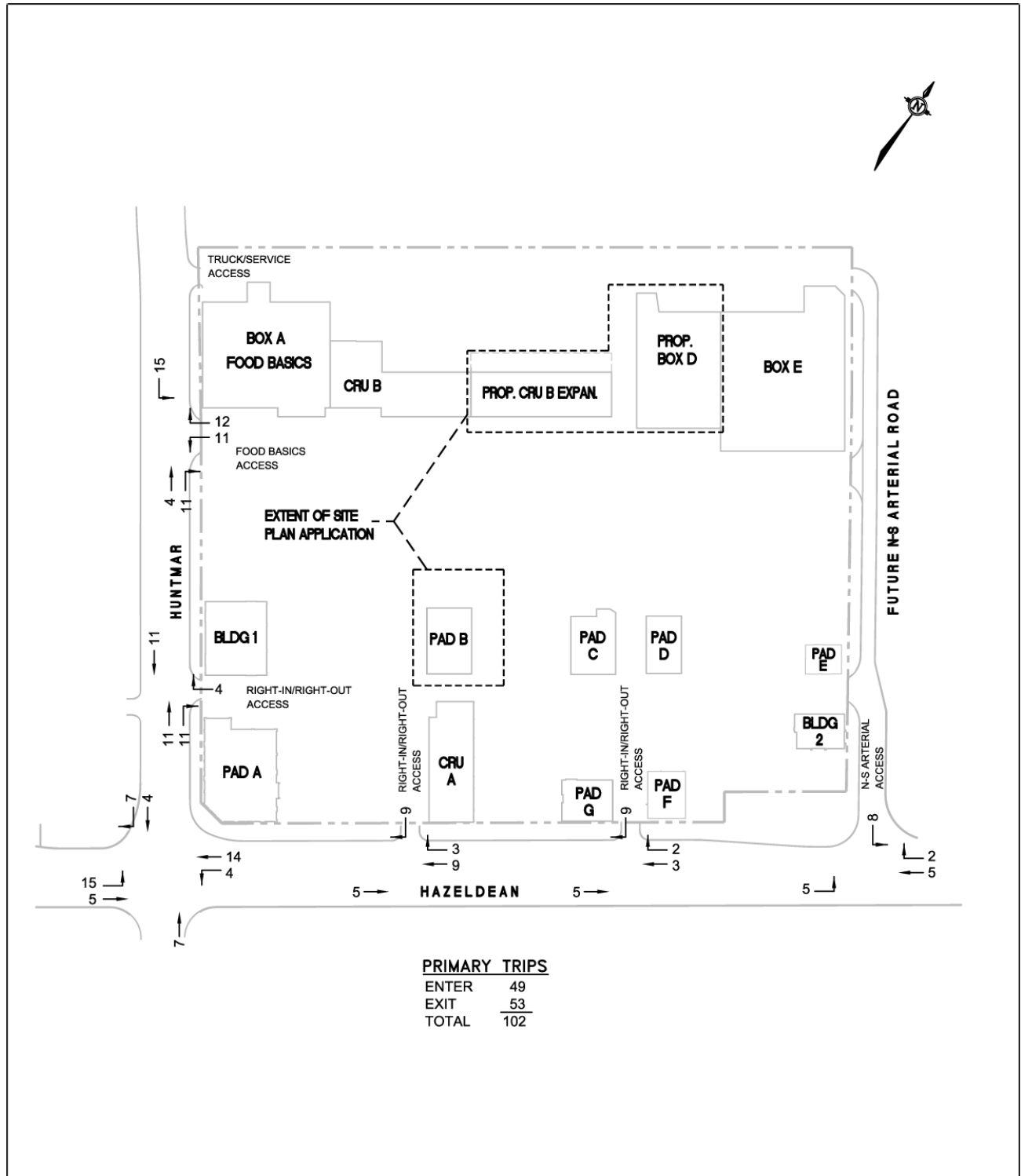
Element 3.2.2 – Background Growth

To determine the growth in background traffic, the study has compared historical traffic counts obtained from the City of Ottawa at the Hazeldean/Huntmar intersection between the year of 2008 and 2016. The counts determined that the volume of background traffic increased at an annual compounded rate of less than 3.0 percent. The study has utilized a 3.0 percent annual compounded increase in background traffic which was applied to all of the approaches at the Hazeldean/N-S Arterial and Hazeldean/Huntmar intersections. Traffic along Huntmar Drive was increased at 5.0 percent determined from historical counts taken at the Huntmar/Food Basics intersection. The increase is in agreement with the *Shoppes at Fairwinds, 5649 and 5705 Hazeldean Road TIS Addendum – 2* dated March 7, 2016 prepared by this firm. The increase would account for future development north of the site and the construction of the N-S Arterial Road.

Additional development of the shopping centre site which is not reflected in the 2016 traffic counts consists of “Building 1” which has not been constructed to date and would be located at the northeast corner of Huntmar Drive and the first right-in/right-out access, and “Building 2” which was constructed in 2018 as a fast-food restaurant (Benny & Co.) at the northwest corner of Hazeldean Road and N-S Arterial Road. The expected traffic from the two buildings on site was determined in the *Shoppes at Fairwinds, 5649 and 5705 Hazeldean Road TIS Addendum – 2*.

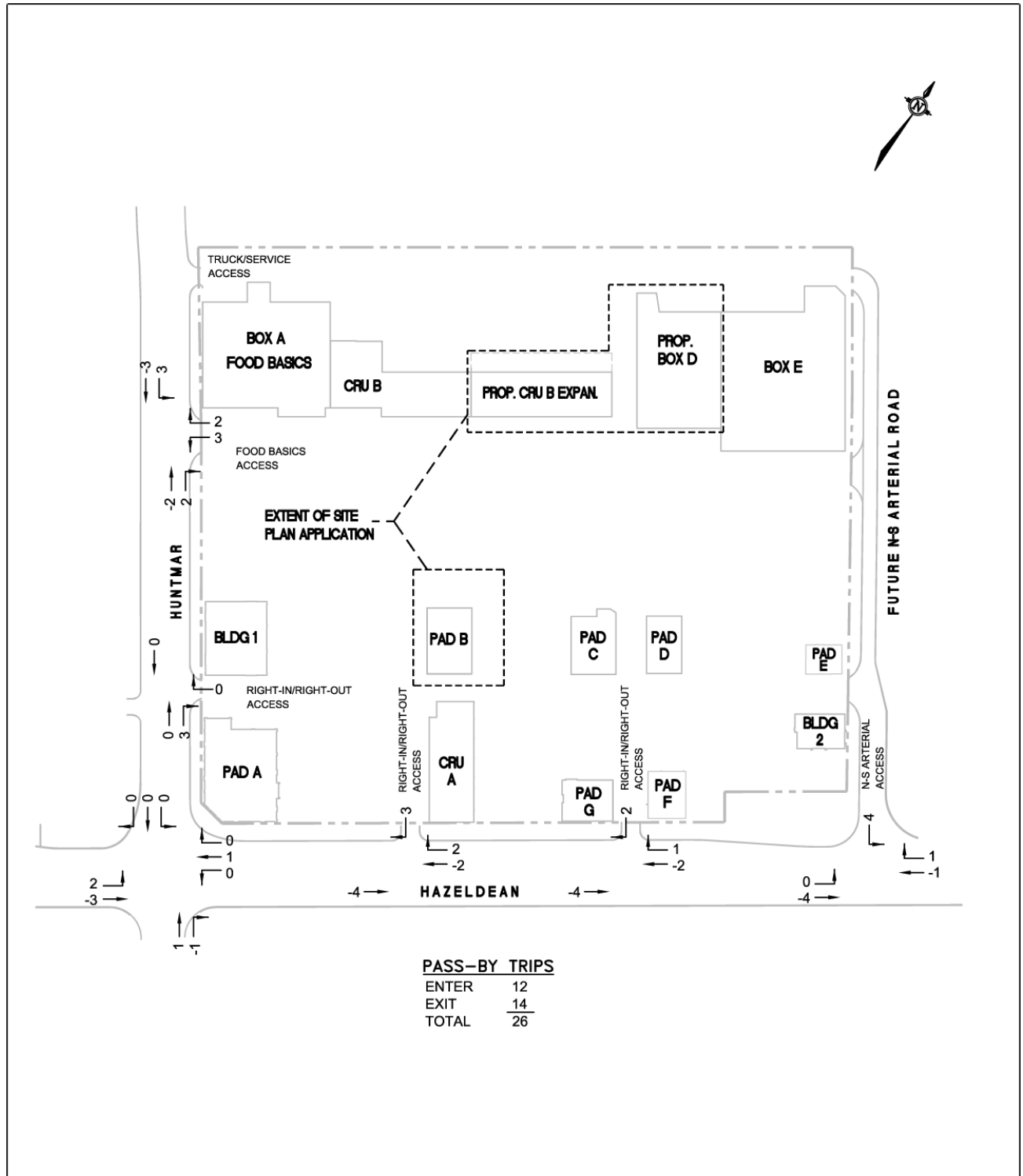
The background traffic includes the 3.0 percent annual compounded increase in traffic along Hazeldean Road and 5.0 percent along Huntmar Drive, plus the expected trips from the two buildings on site discussed in the March 7, 2016 TIS. Figure 3.3 shows the 2021 peak PM hour background traffic and Figure 3.4 the expected 2026 traffic.

**FIGURE 3.1
 PEAK PM HOUR SITE GENERATED PRIMARY TRIPS**



NOT TO SCALE

FIGURE 3.2
PEAK PM HOUR SITE GENERATED PASS-BY TRIPS



NOT TO SCALE

- 288 Single Detached Dwellings
- 469 Townhouse Dwellings
- 878 Multi-Family Housing Dwellings (Low Rise)
- 297 Apartment Units (High Density)
- 191 Apartments and 140,910ft² of Retail (Mixed Use)
- 580 Student Elementary School
- 375 Parking Space Parking and Ride

However, the proposed development intends to subdivide the property and rezone the respective lots and blocks to facilitate development that aligns with the direction of the Fernbank CDP, and to address the introduction of a future LRT station at the northern end of the property, which was not accounted for in the preparation of the CDP. This is achieved by providing transit supportive uses within a 600 metre walking distance of the LRT station in accordance with the City of Ottawa's Transit Oriented Development (TOD) Guidelines.

Blocks 318 and 319 will accommodate high density development, with approximately 360 apartment units. Blocks 315 to 317 will accommodate mixed-use development, with approximately 760 apartment units and 351,334ft² of retail development, and will surround and be integrated with the planned Hazeldean transit station and park and ride. Due to the higher density, these blocks are anticipated to be developed in line with the future BRT or LRT extension to this area. As the timing for the BRT/LRT extension is unknown at this point in time, a future scenario has been developed to review the impacts of the development permitted under the proposed zoning once the BRT/LRT is extended.

3.0 FORECASTING

3.1 Development Generated Travel Demand

3.1.1 Trip Generation

Trips generated by the residential portion of the proposed development have been estimated using relevant rates for the suburban area in Table 3.18 of the *2009 TRANS Trip Generation Study Report*. Trips generated by the proposed retail, school, and park and ride developments have been estimated using the relevant peak hour rates identified in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. The trips generated by the proposed development during the weekday AM and PM peak hours for each scenario are summarized in **Table 2** below.

Table 2: ITE Trip Generation – Scenario One

Land Use	Code	Units/ GFA (ft ²)	AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
<i>Scenario One</i>								
Single Detached Dwellings	210	288	59	143	202	163	96	259
Townhouse Dwellings	224	469	94	159	253	210	123	333
Multi-Family Dwellings	232	878	125	279	404	226	178	404
High Density	223	297	21	65	86	68	42	110
Mixed-Use (Residential)	222	191	13	42	55	43	26	69
Mixed-Use (Retail)	820	140,910	138	84	222	336	364	700
Elementary School	520	580	210	179	389	47	52	99
Park and Ride	090	325	100	27	127	38	114	152
<i>Scenario Two</i>								
Single Detached Dwellings	210	288	59	143	202	163	96	259
Townhouse Dwellings	224	94	159	253	210	123	333	234
Multi-Family Dwellings	232	878	125	279	404	226	178	404
High Density	223	360	25	79	104	82	51	133
Mixed-Use (Residential)	222	760	53	167	220	170	104	274
Mixed-Use (Retail)	820	351,334	203	124	327	661	716	1,377
Elementary School	520	580	210	179	389	47	52	99
Park and Ride	090	325	100	27	127	38	114	152

Trips generated using the TRANS rates have been converted to person trips using the modal shares presented in Table 3.13 of the TRANS report. Trips generated using the ITE rates have been converted to person trips using a factor of 1.28, consistent with the City's 2017 Transportation Impact Assessment Guidelines. It is noteworthy that the trips generated by the elementary school and park and ride have not been converted to person trips due to the nature of the land uses. Person trips generated by the proposed residential and retail developments are summarized in **Table 3** below.

Table 3: Person Trip Generation – Scenario One

Land Use	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
<i>Scenario One</i>						
Single Detached Dwellings	106	261	367	255	150	405
Townhouse Dwellings	180	307	487	338	199	537
Multi-Family Dwellings	285	633	918	514	404	918
High Density	47	148	195	155	95	250
Mixed-Use (Residential)	30	95	125	97	60	157
Mixed-Use (Retail)	176	108	284	430	466	896
Total	824	1,552	2,376	1,789	1,374	3,163
<i>Scenario Two</i>						
Single Detached Dwellings	106	261	367	255	150	405
Townhouse Dwellings	180	307	487	338	199	537
Multi-Family Dwellings	285	633	918	514	404	918
High Density	57	179	236	187	115	302
Mixed-Use (Residential)	120	380	500	386	237	623
Mixed-Use (Retail)	260	159	419	846	917	1,763
Total	1,008	1,919	2,927	2,526	2,022	4,548

As the high-density blocks are located in close proximity to the mixed-use developments, a portion of the person trips generated by the high density and mixed-use blocks will be internally captured and will not show up at the area intersections. Internal capture rates identified in the ITE Trip Generation Handbook, 3rd Edition were applied to the person trips generated by the development of Blocks 315 to 319 to determine the number of trips to be internally captured. Internal capture summary sheets are included in **Appendix D**. A summary of the person trips that are internally captured between Blocks 315 to 319 is provided in **Table 4**.

Table 4: Internally Captured Person Trips (Blocks 315 to 319)

Land Use	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
<i>Scenario One</i>						
Residential	2	2	4	116	43	159
Retail	2	2	4	43	116	159
<i>Scenario Two</i>						
Residential	4	6	10	238	85	323
Retail	6	4	10	85	238	323

A review of the modal share data in the City's TRANS O-D Survey report has been conducted. A review of trips from/within the district during the AM peak and to/within the district during the PM peak has been conducted to understand the modal shares for residential developments within the Kanata/Stittsville District. The following modal shares have been derived from the TRANS report:

- 60% Auto Driver
- 20% Auto Passenger
- 10% Transit
- 10% Non-Auto

The approved Fernbank Community Design Plan (CDP) Transportation Master Plan (TMP) identifies a minimum target transit modal share of 20% within the Fernbank Community. As such, the TRANS modal shares have been adjusted to reflect the target 20% transit modal share. The following modal shares adjust the above Auto Driver and Auto Passenger modal shares down by 5% to increase the Transit modal share by 10%.

- 55% Auto Driver
- 15% Auto Passenger
- 20% Transit
- 10% Non-Auto

Table 5 below summarizes the person trips by modal share for scenario one.

Table 5: Person Trips by Modal Share – Scenario One

Travel Mode		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Single Detached Dwellings							
<i>Total Person Trips</i>		106	261	367	255	150	405
Auto Driver	55%	58	144	202	140	82	222
Auto Passenger	15%	16	39	55	38	23	61
Transit	20%	21	52	73	51	30	81
Bike/Walk	10%	11	26	37	26	15	41
Townhouse Dwellings							
<i>Total Person Trips</i>		180	307	487	338	199	537
Auto Driver	55%	99	169	268	185	110	295
Auto Passenger	15%	27	46	73	51	30	81
Transit	20%	36	61	97	68	39	107
Bike/Walk	10%	18	31	49	34	20	54
Multi-Family Dwellings							
<i>Total Person Trips</i>		285	633	918	514	404	918
Auto Driver	55%	156	348	504	283	221	504
Auto Passenger	15%	43	95	138	77	61	138
Transit	20%	57	127	184	103	81	184
Bike/Walk	10%	29	63	92	51	41	92
High Density and Mixed-Use Dwellings							
<i>Total Person Trips</i>		75	241	316	136	112	248
Auto Driver	55%	41	133	174	75	61	136
Auto Passenger	15%	11	36	47	20	17	37
Transit	20%	15	48	63	27	23	50
Bike/Walk	10%	8	24	32	14	11	25
Mixed-Use (Retail)							
<i>Total Person Trips</i>		174	106	280	387	350	737
Auto Driver	55%	96	58	154	213	192	405
Auto Passenger	15%	26	16	42	58	53	111
Transit	20%	35	21	56	77	70	147
Bike/Walk	10%	17	11	28	39	35	74
Total Auto Driver		450	852	1,302	896	666	1,562
Total Auto Passenger		123	232	355	244	184	428
Total Transit		164	309	473	326	243	569
Total Bike/Walk		83	155	238	164	122	286

When the future BRT/LRT is extended to this area, the development within 600m of the future Hazeldean Road LRT/BRT station will be located within a Transit Oriented Development (TOD) zone. For the purposes of scenario two, all developments north of Cranesbill Road/Street 15 have been assumed to be located within the future TOD zone. The modal shares associated with developments within the TOD zone reflect a higher transit modal share, and reduced auto modal share. However, as the proposed development is located in a suburban context, the City's TOD modal shares have been adjusted to reflect a higher auto modal share associated with the Kanata/Stittsville District.

For the purposes of scenario two, the adjusted TOD modal shares have been applied to all residential development north of Cranesbill Road/Street 15, while the modal shares presented in

scenario one have been applied to all other residential development. Although the retail uses are located in close proximity to the future Hazeldean BRT/LRT station, the modal shares are anticipated to be generally consistent with the Kanata/Stittsville area. As such, the modal shares used for the retail development in scenario one have been maintained.

Table 6 below summarizes the person trips by modal share for scenario two.

Table 6: Person Trips by Modal Share – Scenario Two

Travel Mode		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Single Detached Dwellings							
<i>Total Person Trips</i>		106	261	367	255	150	405
Auto Driver	55%/30%	54	135	189	130	77	207
Auto Passenger	15%/5%	15	35	50	35	20	55
Transit	20%/50%	26	63	89	62	38	100
Bike/Walk	10%/15%	11	28	39	28	15	43
Townhouse Dwellings							
<i>Total Person Trips</i>		180	307	487	338	199	537
Auto Driver	55%/30%	78	135	213	148	87	235
Auto Passenger	15%/5%	19	32	51	36	20	56
Transit	20%/50%	61	102	163	112	68	180
Bike/Walk	10%/15%	22	38	60	42	24	66
Multi-Family Dwellings							
<i>Total Person Trips</i>		285	633	918	514	404	918
Auto Driver	55%/30%	131	293	424	238	186	414
Auto Passenger	15%/5%	33	73	106	59	47	106
Transit	20%/50%	87	193	280	157	123	280
Bike/Walk	10%/15%	34	74	108	60	48	108
High Density and Mixed-Use Dwellings							
<i>Total Person Trips</i>		173	553	726	335	267	602
Auto Driver	30%	52	166	218	101	80	181
Auto Passenger	5%	9	27	36	17	13	30
Transit	50%	86	277	363	167	134	301
Bike/Walk	15%	26	83	109	50	40	90
Mixed-Use (Retail)							
<i>Total Person Trips</i>		254	155	409	761	679	1,440
Auto Driver	55%	140	85	225	419	373	792
Auto Passenger	15%	38	23	61	114	102	216
Transit	20%	51	31	82	152	136	288
Bike/Walk	10%	25	16	41	76	68	144
Total Auto Driver		455	814	1,269	1,036	803	1,839
Total Auto Passenger		114	190	304	261	202	463
Total Transit		311	666	977	650	499	1,149
Total Bike/Walk		118	239	357	256	195	451

The commercial land uses are 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 and pass-by trips are made as intermediate stops on the way to another destination. Peak hour pass-by trips have been estimated based on a pass-by rate of 34%. The *ITE Trip Generation Handbook, 10th*

Edition identifies this percentage as an average rate for the Shopping Centre land use. The pass-by trips generated by the retail development are part of the observed background traffic and do not constitute 'new' trips on the adjacent road network. The primary and pass-by trip generation for the retail development is summarized in the following table.

Table 7: Retail Primary and Pass-by Trips

Trip Type	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Scenario One						
Total Auto Trips	140	85	225	419	373	792
Pass-by Trips	39	39	78	135	135	270
Primary Trips	101	46	147	284	238	522
Scenario Two						
Total Auto Trips	76	47	123	228	204	432
Pass-by Trips	21	21	42	74	74	148
Primary Trips	55	26	81	154	130	284

3.1.2 Trip Distribution

The projected distribution of vehicular trips generated by the proposed development has been derived with appropriate consideration given to several key factors, including:

- The size and nature of the proposed development
- The location of the subdivision access roadways with respect to the adjacent roadway system
- The principles of logical trip routing

Trips generated by the proposed residential, commercial, park and ride and elementary school have been distributed differently due to the nature of the land uses.

Residential Trips

The distribution of trips generated by the residential development is consistent with the Fernbank TMP as well as similar development applications within the Fernbank CDP lands. Residential trips generated by the proposed development were distributed to the road network as follows:

- 35% to/from the north via Robert Grant Avenue
- 55% to/from the east via Abbott Street/Hazeldean Road/Street 3
- 5% to/from the south via Robert Grant Avenue
- 5% to/from the west via Abbott Street/Hazeldean Road

The proposed residential dwellings will be accessed via the proposed local and collector road network. The Robert Grant Avenue/Cranesbill Road/Street 15 and Robert Grant Avenue/Abbott Street intersections will be full movement roundabouts. The Mixed-Use Block 317 will be accessed via a signalized intersection along Hazeldean Road. The Abbott Street/Street 1 intersection will provide full movement access. The Street 3, Street 8, Street 13, and Street 16 intersections along Robert Grant Avenue are anticipated to be restricted to right-in right-out by build-out due to safety and capacity reasons (i.e. excessive delays exiting onto Robert Grant Avenue).

Residential trips generated by the proposed development were assigned to the access roadways based on density location and principles of logical trip routing. All trips to/from the north, south, and west are assumed to arrive and depart the subject lands using the intersections along Robert Grant Avenue. A portion of the trips from the residential dwellings east of Robert Grant Avenue, who are destined to/from the east are assumed to travel through the adjacent subdivision to Hazeldean Road. The remainder of trips to/from the east will use Robert Grant Avenue to connect to Hazeldean Road, or travel east through the Fernbank CDP lands via Abbott Street.

Commercial Trips

The proposed retail developments have been assumed to serve the overall Fernbank Community. The Fernbank Community was split into zones based on the existing/future road network. Trips were then distributed to/from each zone within the Fernbank Community based on the size of the zone. Retail trips generated by the proposed development were distributed to the road network as follows:

- 35% to/from the west via Hazeldean Road and Abbott Street
- 40% to/from the south via Robert Grant Avenue
- 15% to/from the east via Hazeldean Road and Cranesbill Road
- 10% to/from the subject development via intersections along Robert Grant Avenue

Pass-by trips generated by the commercial development have been distributed to the commercial accesses based on the background traffic projections.

Park and Ride Trips

The proposed park and ride has been assumed to serve the Fernbank Community north of Abbott Street. The proposed park and ride is assumed to have right-in right-out access along Hazeldean Road. Similar to the commercial distribution, the Fernbank Community north of Abbott Street was split into zones based on the existing/future road network. Trips were then distributed to/from each zone within the Fernbank Community north of Abbott Street based on the size of the zone. A high-level concept of the park and ride was obtained from City staff, and is included in **Appendix E**. Due to the proximity to adjacent signalized intersections along Hazeldean Road, and consistent with the high-level concept, the park and ride is assumed to only have right-in right-out access on Hazeldean Road. As access is assumed to be limited to right-in right-out on Hazeldean Road, the arrival and departure distributions will be different. Park and ride trips generated by the proposed development were distributed to the road network as follows:

Arrival

- 55% from the west via Hazeldean Road and Abbott Street
- 20% from the east via Abbott Street and Cranesbill Road
- 25% from the subject development via intersections along Robert Grant Avenue

Departure

- All trips will depart the study area to the east via Hazeldean Road

Elementary School Trips

For the purposes of this analysis, the proposed elementary school has been assumed to serve the subject lands, as well as the 570 Hazeldean Road (Mattamy) and 590 Hazeldean Road (Richcraft) lands to the east. Based on the overall unit counts for the three subdivisions, approximately 75% of the trips to/from the elementary school will be internally captured within the

local road network and will not appear at the study area intersections. The remaining 25% have been assumed to cross Robert Grant Avenue to the western portion of the subject subdivision.

Traffic volumes generated by the proposed development under scenario one are shown in **Figure 6**. Traffic volumes generated by the proposed development under scenario two are shown in **Figure 7**.

3.2 Background Network Travel Demand

3.2.1 Transportation Network Plans

3.2.2 Background Growth

The 590 Hazeldean Road Transportation Impact Study (September 2013) prepared for the Richcraft Homes subdivision, assessed 2020 traffic projections for Richcraft's buildout year, as well as a 2025 five-year horizon. The 2025 analysis included the Hazeldean Road/North-South Arterial (Robert Grant Avenue) intersection and reflected the future extension of the North-South Arterial (Robert Grant Avenue) to Palladium Drive. An excerpt from the 590 Hazeldean Road TIS showing the approved 2025 traffic projections is included in **Appendix F**.

For the purpose of this study, a 2% annual growth rate has been applied to the 2025 traffic projections identified in the 590 Hazeldean Road TIS for the following movements at the Hazeldean Road/existing Toys R Us access/future North-South Arterial intersection in order to estimate 2030 background traffic volumes:

- eastbound and westbound through movements, and
- eastbound left and southbound right turn movements.

This 2% growth rate is consistent with the Fernbank TMP and other recent transportation studies prepared for development parcels within the Fernbank Community.

The Fernbank TMP estimated through traffic growth along the North-South Arterial (Robert Grant Avenue) from Hazeldean Road to Fernbank Road and along Abbott Street from Iber Road to Terry Fox Drive. The Fernbank TMP's screenline analysis indicated that during the 2031 PM peak hour, the North-South Arterial (Robert Grant Avenue) is expected to carry a southbound 'through' traffic volume of 200 vehicles from Hazeldean Road to Fernbank Road, functioning as a bypass for traffic to and from Stittsville that would otherwise use Stittsville Main Street. The corresponding northbound 'through' traffic volume is assumed to be 110 vehicles, which results in a 65/35 split in favour of southbound traffic. This split was a previous assumption of the TMP's screenline analysis and is carried forward for the purpose of this study.

Similarly, Abbott Street is expected to carry a westbound traffic volume of 200 vehicles during the 2031 PM peak hour. Based on the aforementioned assumption of a 65/35 split, Abbott Street is expected to carry an eastbound PM peak traffic volume of 110 vehicles.

The above assumptions regarding through traffic on the North-South Arterial and Abbott Street were developed as part of an addendum to the Transportation Brief (October 2012) prepared in support of the Abbott-Fernbank subdivision. The Abbott-Fernbank subdivision included the construction of Robert Grant Avenue between Abbott Street and Fernbank Road. These assumptions are carried forward for the purpose of this study.

Figure 6: Site Generated Traffic Volumes – Scenario One

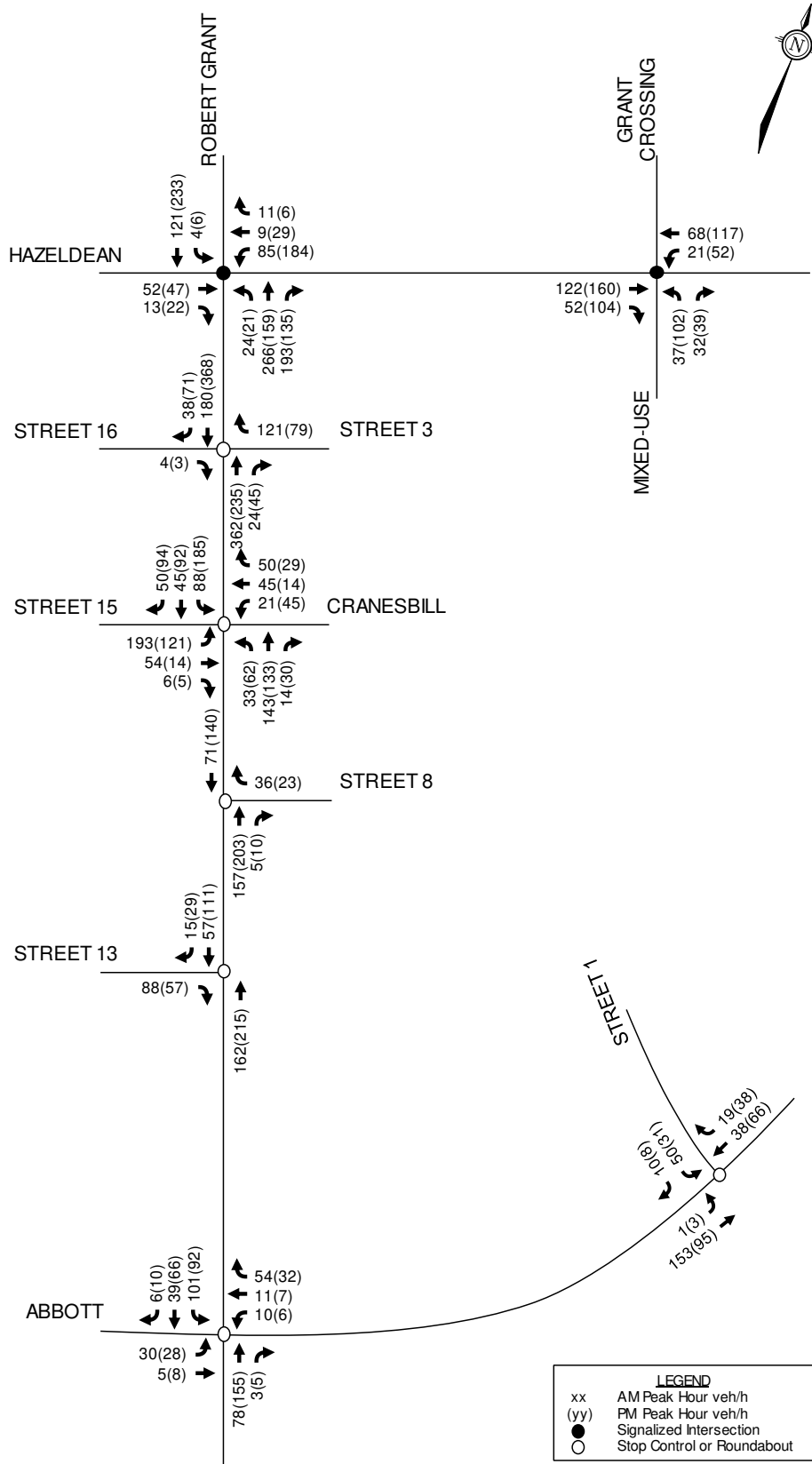
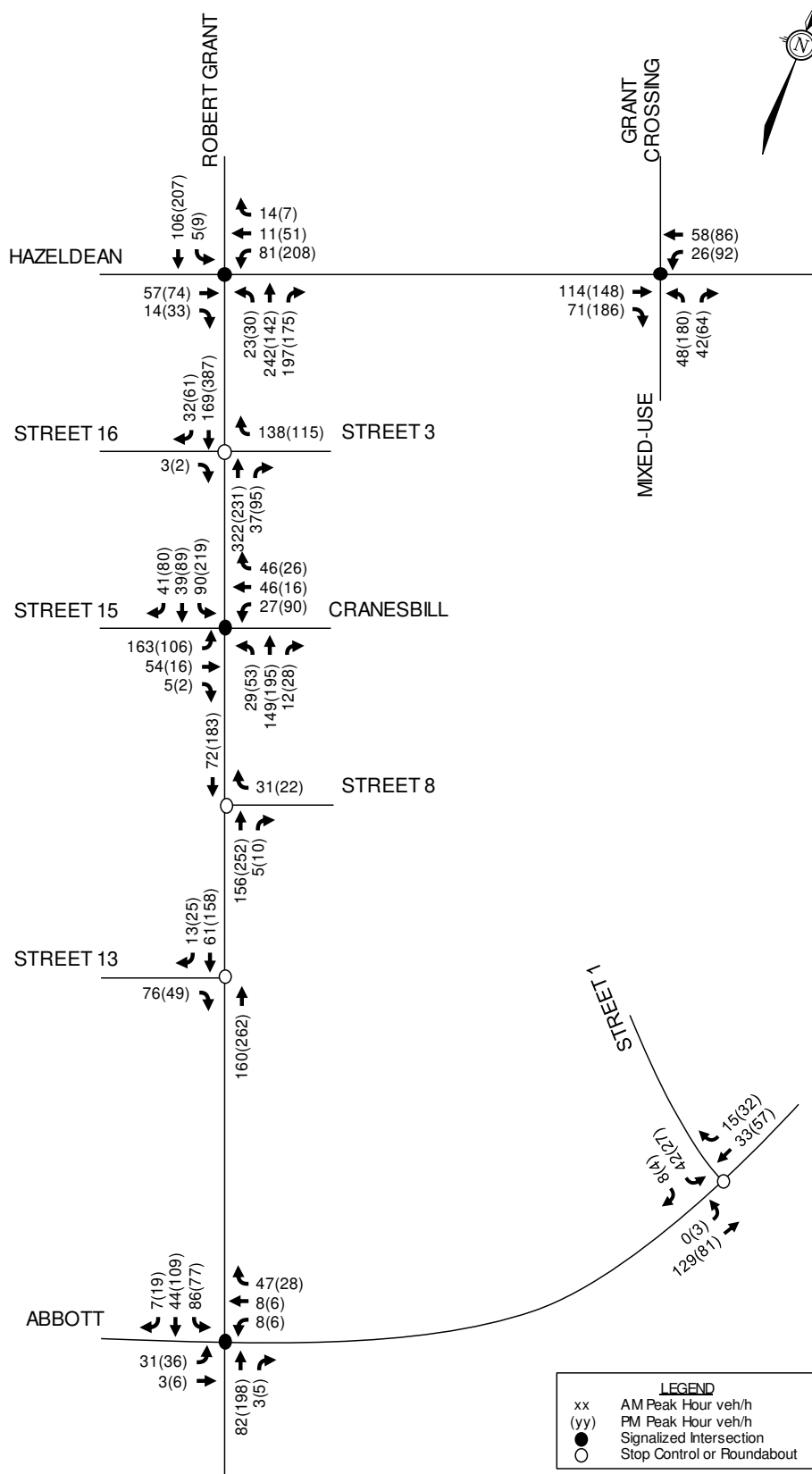


























Figure 7: Site Generated Traffic – Scenario Two



Appendix G: Synchro Reports (Existing/Background Traffic)

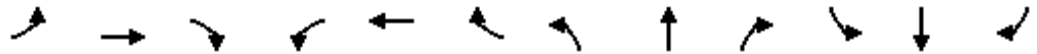
3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
Existing Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	627	173	84	228	148	154	648	165	137	339	218
Future Volume (vph)	267	627	173	84	228	148	154	648	165	137	339	218
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00					0.98	1.00		
Fr't			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3106	3293	1473	3195	3293	1345	3225	3357	1488	3164	3115	1459
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3106	3293	1449	3185	3293	1345	3225	3357	1465	3158	3115	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192			224			222			242
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)			4	4					3	3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	5%	5%	5%	5%	15%	4%	3%	4%	6%	11%	6%
Adj. Flow (vph)	297	697	192	93	253	164	171	720	183	152	377	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	297	697	192	93	253	164	171	720	183	152	377	242
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	22.0	43.0	43.0	15.0	36.0	36.0	16.0	36.0	36.0	16.0	36.0	36.0
Total Split (%)	20.0%	39.1%	39.1%	13.6%	32.7%	32.7%	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%
Maximum Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
Existing Traffic Volumes

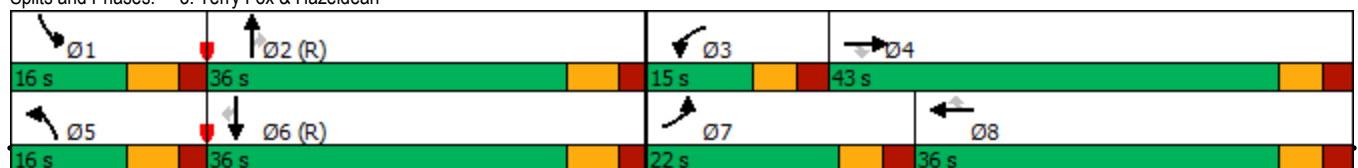


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		4	4		0	0		3	3		0	0
Act Effct Green (s)	14.5	31.4	31.4	8.0	22.4	22.4	10.1	37.8	37.8	9.7	37.4	37.4
Actuated g/C Ratio	0.13	0.29	0.29	0.07	0.20	0.20	0.09	0.34	0.34	0.09	0.34	0.34
v/c Ratio	0.73	0.74	0.35	0.40	0.38	0.36	0.58	0.62	0.28	0.54	0.36	0.37
Control Delay	56.7	40.6	5.8	50.8	36.1	8.9	61.0	31.2	4.2	54.7	26.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	56.7	40.6	5.8	50.8	36.1	8.9	61.0	31.4	4.2	54.7	26.0	7.6
LOS	E	D	A	D	D	A	E	C	A	D	C	A
Approach Delay		39.0			30.1			31.5			25.9	
Approach LOS		D			C			C			C	
90th %ile Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
90th %ile Term Code	Max	Max	Max	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	15.7	34.0	34.0	8.7	27.0	27.0	12.2	29.9	29.9	11.8	29.5	29.5
70th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Max	Coord	Coord	Gap	Coord	Coord
50th %ile Green (s)	15.7	30.9	30.9	8.6	23.8	23.8	11.1	34.3	34.3	10.6	33.8	33.8
50th %ile Term Code	Max	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	13.9	27.7	27.7	7.6	21.4	21.4	9.8	39.8	39.8	9.3	39.3	39.3
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	11.4	27.7	27.7	0.0	10.0	10.0	7.9	55.5	55.5	7.5	55.1	55.1
10th %ile Term Code	Gap	Hold	Hold	Skip	Min	Min	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	250	550	19	79	190	25	142	538	34	122	258	67
Fuel Used(l)	28	56	7	7	16	4	15	46	4	15	27	10
CO Emissions (g/hr)	514	1041	121	130	290	71	282	864	72	273	500	183
NOx Emissions (g/hr)	99	201	23	25	56	14	55	167	14	53	97	35
VOC Emissions (g/hr)	119	240	28	30	67	16	65	199	17	63	115	42
Dilemma Vehicles (#)	0	23	0	0	8	0	0	29	0	0	15	0
Queue Length 50th (m)	31.5	71.8	0.0	10.0	24.4	0.0	18.2	71.2	1.2	16.3	33.9	2.5
Queue Length 95th (m)	45.7	85.7	14.9	18.2	34.2	15.0	28.0	98.7	11.6	20.8	50.3	38.8
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	443	1098	611	252	889	526	305	1153	649	292	1060	656
Starvation Cap Reductn	0	0	0	0	0	0	0	44	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.63	0.31	0.37	0.28	0.31	0.56	0.65	0.28	0.52	0.36	0.37

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 61 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 32.6
 Intersection LOS: C
 Intersection Capacity Utilization 72.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Terry Fox & Hazeldean



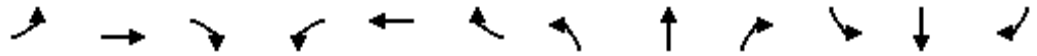
6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
Existing Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	108	0	1081	49	175	649	6
Future Volume (vph)	15	2	0	27	5	108	0	1081	49	175	649	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.857			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1503	0	1784	3278	0	1647	3172	1517
Flt Permitted	0.644			0.757						0.197		
Satd. Flow (perm)	1149	1784	0	1286	1503	0	1784	3278	0	341	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					77			7				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			694.2			243.7			226.6	
Travel Time (s)		13.3			50.0			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	17	2	0	30	6	120	0	1201	54	194	721	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	2	0	30	126	0	0	1255	0	194	721	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		34.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		73.0	73.0		73.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		66.4%	66.4%		66.4%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		66.5	66.5		66.5	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
Existing Traffic Volumes



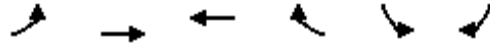
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0		1	1	1
Act Effct Green (s)	14.4	14.4		14.4	14.4			82.6		82.6	82.6	82.6
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.75		0.75	0.75	0.75
v/c Ratio	0.11	0.01		0.18	0.48			0.51		0.76	0.30	0.01
Control Delay	39.7	35.5		43.9	28.1			13.1		33.3	5.7	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.7	35.5		43.9	28.1			13.1		33.3	5.7	0.0
LOS	D	D		D	C			B		C	A	A
Approach Delay		39.3			31.1			13.1			11.5	
Approach LOS		D			C			B			B	
90th %ile Green (s)	30.0	30.0		30.0	30.0		67.0	67.0		67.0	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	Coord
70th %ile Green (s)	11.8	11.8		11.8	11.8		85.2	85.2		85.2	85.2	85.2
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
Stops (vph)	14	3		25	60			725		92	201	0
Fuel Used(l)	1	0		3	11			66		12	24	0
CO Emissions (g/hr)	19	3		61	209			1221		219	440	2
NOx Emissions (g/hr)	4	1		12	40			236		42	85	0
VOC Emissions (g/hr)	4	1		14	48			282		50	102	0
Dilemma Vehicles (#)	0	0		0	0			41		0	30	0
Queue Length 50th (m)	3.4	0.4		6.9	14.4			137.6		16.2	17.6	0.0
Queue Length 95th (m)	8.2	2.2		12.5	23.3			70.2		#84.7	49.8	0.0
Internal Link Dist (m)		160.3			670.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	318	494		356	472			2464		256	2382	1122
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.05	0.00		0.08	0.27			0.51		0.76	0.30	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 13.9
 Intersection Capacity Utilization 68.6%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater

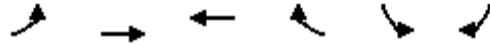




Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	851	491	83	72	54
Future Volume (vph)	121	851	491	83	72	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.978			0.850
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1679	3357	3194	0	1572	1459
Fit Permitted	0.410				0.950	
Satd. Flow (perm)	721	3357	3194	0	1566	1459
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			34			60
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		694.2	
Travel Time (s)		9.4	14.0		50.0	
Confl. Peds. (#/hr)	5			5	3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	6%	2%	10%	6%
Adj. Flow (vph)	134	946	546	92	80	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	946	638	0	80	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8

7: Hazeldean & Edgewater
AM Peak

16 Edgewater Street
Existing Traffic Volumes

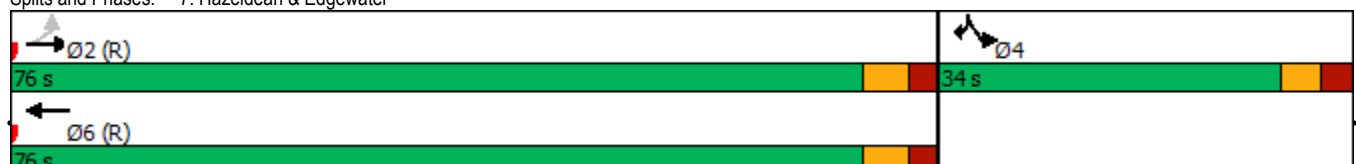


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			5		0	0
Act Effct Green (s)	90.3	90.3	90.3		11.8	11.8
Actuated g/C Ratio	0.82	0.82	0.82		0.11	0.11
v/c Ratio	0.23	0.34	0.24		0.48	0.29
Control Delay	4.9	4.2	3.2		67.2	28.4
Queue Delay	0.0	0.2	0.0		0.0	0.0
Total Delay	4.9	4.3	3.2		67.2	28.4
LOS	A	A	A		E	C
Approach Delay		4.4	3.2		50.6	
Approach LOS		A	A		D	
90th %ile Green (s)	82.2	82.2	82.2		15.5	15.5
90th %ile Term Code	Coord	Coord	Coord		Gap	Gap
70th %ile Green (s)	84.9	84.9	84.9		12.8	12.8
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	86.8	86.8	86.8		10.9	10.9
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	87.7	87.7	87.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	103.8	103.8	103.8		0.0	0.0
10th %ile Term Code	Coord	Coord	Coord		Skip	Skip
Stops (vph)	33	212	120		68	24
Fuel Used(l)	3	21	17		10	5
CO Emissions (g/hr)	59	393	314		186	98
NOx Emissions (g/hr)	11	76	61		36	19
VOC Emissions (g/hr)	14	91	72		43	23
Dilemma Vehicles (#)	0	61	22		0	0
Queue Length 50th (m)	7.1	27.3	14.2		17.2	3.2
Queue Length 95th (m)	m17.3	47.3	24.0		m26.8	m11.5
Internal Link Dist (m)		132.7	209.0		670.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	591	2756	2628		398	414
Starvation Cap Reductn	0	827	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.23	0.49	0.24		0.20	0.14

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 73 (66%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.5
 Intersection LOS: A
 Intersection Capacity Utilization 52.9%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Hazeldean & Edgewater





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2	17	15	0	96	13	930	80	81	420	20
Future Volume (vph)	13	2	17	15	0	96	13	930	80	81	420	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Fr _t		0.927				0.850		0.988			0.993	
Flt Protected		0.980			0.950		0.950			0.950		
Satd. Flow (prot)	0	1569	0	0	1695	1502	1695	4792	0	1695	3297	0
Flt Permitted		0.880			0.734		0.439			0.242		
Satd. Flow (perm)	0	1408	0	0	1304	1481	782	4792	0	431	3297	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				107		24			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	2		4	4		2	2		5	5		2
Confl. Bikes (#/hr)			1						3			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	2%	2%	2%	2%	3%	2%	2%	4%	2%	4%	5%
Adj. Flow (vph)	14	2	19	17	0	107	14	1033	89	90	467	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	17	107	14	1122	0	90	489	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	11.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	11.0	74.0		63.0	63.0	
Total Split (%)	32.7%	32.7%		32.7%	32.7%	32.7%	10.0%	67.3%		57.3%	57.3%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	5.0	68.0		57.0	57.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	

12: Terry Fox & Sobeyes/500 Hazeldean
AM Peak

16 Edgewater Street
Existing Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0		13.0		13.0	13.0	
Pedestrian Calls (#/hr)	4	4		2	2	2		5		2	2	
Act Effct Green (s)		13.8			13.8	13.8	83.7	83.7		79.0	79.0	
Actuated g/C Ratio		0.13			0.13	0.13	0.76	0.76		0.72	0.72	
v/c Ratio		0.18			0.10	0.38	0.02	0.31		0.29	0.21	
Control Delay		24.8			40.2	11.1	5.2	5.0		6.6	2.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		24.8			40.2	11.1	5.2	5.0		6.6	2.8	
LOS		C			D	B	A	A		A	A	
Approach Delay		24.8			15.1			5.0			3.4	
Approach LOS		C			B			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	5.5	68.5		57.0	57.0	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Max	Coord		Coord	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	5.8	87.5		75.7	75.7	
70th %ile Term Code	Min	Min		Min	Min	Min	Gap	Coord		Coord	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
50th %ile Term Code	Min	Min		Min	Min	Min	Skip	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
30th %ile Term Code	Hold	Hold		Min	Min	Min	Skip	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
10th %ile Term Code	Hold	Hold		Min	Min	Min	Skip	Coord		Coord	Coord	
Stops (vph)		16			14	16	4	290		17	46	
Fuel Used(l)		1			1	2	1	38		2	8	
CO Emissions (g/hr)		23			16	32	9	708		38	147	
NOx Emissions (g/hr)		4			3	6	2	137		7	28	
VOC Emissions (g/hr)		5			4	7	2	163		9	34	
Dilemma Vehicles (#)		0			0	0	0	46		0	6	
Queue Length 50th (m)		3.2			3.4	0.0	0.5	18.2		1.0	2.6	
Queue Length 95th (m)		10.5			8.3	12.9	3.4	47.5		7.4	14.1	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		391			349	475	641	3651		309	2370	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	20		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.09			0.05	0.23	0.02	0.31		0.29	0.21	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 55 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 5.6

Intersection LOS: A

Intersection Capacity Utilization 56.4%

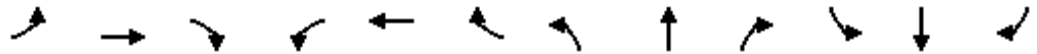
ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 12: Terry Fox & Sobeyes/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	2	0	1	6	1089	5	3	664	0
Future Volume (vph)	0	0	3	2	0	1	6	1089	5	3	664	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Fr _t		0.850			0.850			0.999				
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1784	1517	0	1695	1497	0	1695	3351	0	1441	3202	0
Flt Permitted				0.769			0.371			0.223		
Satd. Flow (perm)	1784	1517	0	1372	1497	0	662	3351	0	338	3202	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		243			87			1				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		157.2			86.7			83.3				243.7
Travel Time (s)		11.3			6.2			4.3				12.5
Confl. Peds. (#/hr)	1						1		5	5		
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	20%	20%	8%	2%
Adj. Flow (vph)	0	0	3	2	0	1	7	1210	6	3	738	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	2	1	0	7	1216	0	3	738	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		32.5	32.5		32.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		77.0	77.0		77.0	77.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		70.5	70.5		70.5	70.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.5	6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		1	1		5	5		0	0	
Act Effct Green (s)		13.2		13.2	13.2		102.3	102.3		102.3	102.3	
Actuated g/C Ratio		0.12		0.12	0.12		0.93	0.93		0.93	0.93	
v/c Ratio		0.01		0.01	0.00		0.01	0.39		0.01	0.25	
Control Delay		0.0		38.0	0.0		6.7	5.2		0.7	0.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		0.0		38.0	0.0		6.7	5.2		0.7	0.5	
LOS		A		D	A		A	A		A	A	
Approach Delay					25.3			5.2				0.5
Approach LOS					C			A				A
90th %ile Green (s)	26.0	26.0		26.0	26.0		71.3	71.3		71.3	71.3	
90th %ile Term Code	Hold	Hold		Ped	Ped		Coord	Coord		Coord	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
70th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
50th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0		3	0		3	191		0	6	
Fuel Used(l)		0		0	0		0	41		0	14	
CO Emissions (g/hr)		1		3	0		6	763		1	254	
NOx Emissions (g/hr)		0		1	0		1	147		0	49	
VOC Emissions (g/hr)		0		1	0		1	176		0	59	
Dilemma Vehicles (#)		0		0	0		0	28		0	1	
Queue Length 50th (m)		0.0		0.4	0.0		0.0	0.2		0.0	0.0	
Queue Length 95th (m)		0.0		2.3	0.0		m1.6	95.9		m0.1	4.2	
Internal Link Dist (m)		133.2			62.7			59.3			219.7	
Turn Bay Length (m)				20.0			35.0			35.0		
Base Capacity (vph)		553		334	430		615	3115		314	2977	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.01		0.01	0.00		0.01	0.39		0.01	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 26 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 3.4

Intersection LOS: A

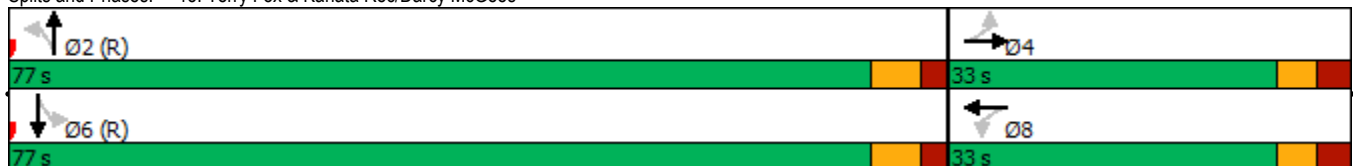
Intersection Capacity Utilization 51.3%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
Existing Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	453	253	243	637	294	240	664	108	275	791	415
Future Volume (vph)	345	453	253	243	637	294	240	664	108	275	791	415
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.99
Fr _t			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3249	3390	1483	3260	3390	1419	3286	3357	1489	3094	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			242			231			146			313
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	383	503	281	270	708	327	267	738	120	306	879	461
Shared Lane Traffic (%)												
Lane Group Flow (vph)	383	503	281	270	708	327	267	738	120	306	879	461
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	23.0	42.0	42.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0	37.0	37.0
Total Split (%)	19.2%	35.0%	35.0%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%	30.8%	30.8%
Maximum Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
Existing Traffic Volumes

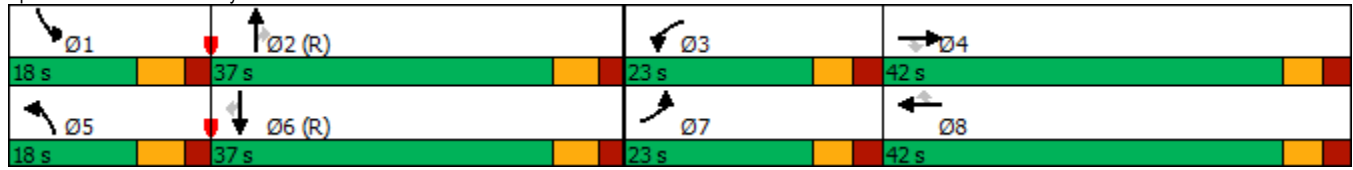


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	16.4	33.8	33.8	14.6	32.0	32.0	12.6	31.5	31.5	14.5	33.5	33.5
Actuated g/C Ratio	0.14	0.28	0.28	0.12	0.27	0.27	0.10	0.26	0.26	0.12	0.28	0.28
v/c Ratio	0.86	0.53	0.48	0.68	0.78	0.60	0.78	0.84	0.24	0.81	0.93	0.72
Control Delay	70.4	38.3	9.4	55.5	41.9	15.3	81.7	47.3	2.7	60.9	62.9	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	70.4	38.3	9.4	55.5	41.9	15.3	81.7	47.4	2.7	60.9	62.9	30.1
LOS	E	D	A	E	D	B	F	D	A	E	E	C
Approach Delay		41.9			38.1			50.8			53.3	
Approach LOS		D			D			D			D	
90th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	16.7	34.8	34.8	15.1	33.2	33.2	14.0	30.5	30.5	14.0	30.5	30.5
50th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	16.7	33.3	33.3	13.4	30.0	30.0	14.1	30.5	30.5	17.2	33.6	33.6
30th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	15.0	29.5	29.5	11.0	25.5	25.5	11.7	35.4	35.4	18.5	42.2	42.2
10th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	320	369	43	223	576	128	228	596	8	229	706	240
Fuel Used(l)	39	39	11	21	48	12	28	58	2	30	90	31
CO Emissions (g/hr)	730	720	200	388	889	216	517	1074	33	559	1669	574
NOx Emissions (g/hr)	141	139	39	75	172	42	100	207	6	108	322	111
VOC Emissions (g/hr)	168	166	46	90	205	50	119	248	8	129	385	132
Dilemma Vehicles (#)	0	14	0	0	23	0	0	26	0	0	14	0
Queue Length 50th (m)	45.9	52.0	6.7	31.7	80.9	26.2	34.3	88.0	0.0	37.1	~119.4	66.4
Queue Length 95th (m)	#69.7	68.0	28.8	39.4	99.8	60.1	#55.8	#118.7	4.3	#67.3	#160.0	99.5
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	453	1008	611	457	1008	584	344	880	498	376	945	642
Starvation Cap Reductn	0	0	0	0	0	0	0	5	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.50	0.46	0.59	0.70	0.56	0.78	0.84	0.24	0.81	0.93	0.72

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 46.4
 Intersection LOS: D
 Intersection Capacity Utilization 83.5%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean



6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
Existing Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	5	62	6	169	3	1129	74	180	1387	63
Future Volume (vph)	12	4	5	62	6	169	3	1129	74	180	1387	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.99		1.00								0.98
Fr _t		0.910			0.855			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1611	0	1616	1502	0	1695	3269	0	1647	3172	1517
Flt Permitted	0.375			0.751			0.144			0.136		
Satd. Flow (perm)	669	1611	0	1276	1502	0	257	3269	0	236	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			181			8				73
Link Speed (k/h)		50			50			70				70
Link Distance (m)		184.3			696.7			243.7				226.6
Travel Time (s)		13.3			50.2			12.5				11.7
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	13	4	6	69	7	188	3	1254	82	200	1541	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	10	0	69	195	0	3	1336	0	200	1541	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		9.5	34.5		9.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	69.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	57.5%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		9.5	62.5		9.5	62.5	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
Existing Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		1.0	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		4.5	6.5		4.5	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0			0			1	1
Act Effct Green (s)	15.2	15.2		15.2	15.2		82.6	75.0		93.8	89.8	89.8
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.69	0.62		0.78	0.75	0.75
v/c Ratio	0.15	0.05		0.43	0.56		0.01	0.65		0.61	0.65	0.06
Control Delay	46.3	27.8		49.6	14.2		2.3	13.4		15.8	11.6	2.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.3	27.8		49.6	14.2		2.3	13.4		15.8	11.6	2.3
LOS	D	C		D	B		A	B		B	B	A
Approach Delay		38.3			23.5			13.3				11.7
Approach LOS		D			C			B				B
90th %ile Green (s)	30.0	30.0		30.0	30.0		5.8	62.5		10.0	66.7	66.7
90th %ile Term Code	Ped	Ped		Hold	Hold		Gap	Coord		Max	Coord	Coord
70th %ile Green (s)	14.1	14.1		14.1	14.1		0.0	71.9		16.5	92.9	92.9
70th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
50th %ile Green (s)	11.8	11.8		11.8	11.8		0.0	76.2		14.5	95.2	95.2
50th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	80.9		11.6	97.0	97.0
30th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	83.5		9.0	97.0	97.0
10th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
Stops (vph)	12	6		54	40		0	929		49	665	5
Fuel Used(l)	1	0		8	14		0	77		8	67	1
CO Emissions (g/hr)	17	9		143	269		1	1432		143	1250	28
NOx Emissions (g/hr)	3	2		28	52		0	276		28	241	5
VOC Emissions (g/hr)	4	2		33	62		0	330		33	288	6
Dilemma Vehicles (#)	0	0		0	0		0	15		0	57	0
Queue Length 50th (m)	2.9	0.9		14.9	5.4		0.2	103.8		8.1	62.7	0.0
Queue Length 95th (m)	7.7	5.1		25.3	22.6		m0.3	180.8		#43.3	194.2	6.0
Internal Link Dist (m)		160.3			672.7			219.7			202.6	
Turn Bay Length (m)	25.0			40.0			35.0			35.0		45.0
Base Capacity (vph)	170	413		324	516		299	2046		330	2372	1126
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.02		0.21	0.38		0.01	0.65		0.61	0.65	0.06

Intersection Summary

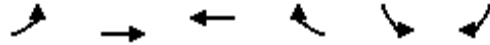
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 13.4
 Intersection Capacity Utilization 71.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
Existing Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	829	1121	67	70	81
Future Volume (vph)	53	829	1121	67	70	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99		1.00		0.99	
Frt			0.992			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1601	3390	3344	0	1662	1517
Flt Permitted	0.185				0.950	
Satd. Flow (perm)	310	3390	3344	0	1650	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11			81
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		696.7	
Travel Time (s)		9.4	14.0		50.2	
Confl. Peds. (#/hr)	27			27	6	16
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	2%	2%	4%	4%	2%
Adj. Flow (vph)	59	921	1246	74	78	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	921	1320	0	78	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3

7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
Existing Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			20		10	10
Act Effct Green (s)	93.4	93.4	93.4		14.3	14.3
Actuated g/C Ratio	0.78	0.78	0.78		0.12	0.12
v/c Ratio	0.24	0.35	0.51		0.39	0.36
Control Delay	9.9	7.7	6.5		48.1	12.8
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	9.9	7.8	6.5		48.1	12.8
LOS	A	A	A		D	B
Approach Delay		8.0	6.5		29.2	
Approach LOS		A	A		C	
90th %ile Green (s)	79.8	79.8	79.8		27.9	27.9
90th %ile Term Code	Coord	Coord	Coord		Ped	Ped
70th %ile Green (s)	94.9	94.9	94.9		12.8	12.8
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	96.7	96.7	96.7		11.0	11.0
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
10th %ile Term Code	Coord	Coord	Coord		Min	Min
Stops (vph)	20	320	413		58	31
Fuel Used(l)	2	27	43		9	7
CO Emissions (g/hr)	33	493	806		159	127
NOx Emissions (g/hr)	6	95	155		31	25
VOC Emissions (g/hr)	8	114	186		37	29
Dilemma Vehicles (#)	0	34	50		0	0
Queue Length 50th (m)	5.1	42.5	41.4		17.1	2.2
Queue Length 95th (m)	m10.7	59.5	100.3		m23.2	m7.1
Internal Link Dist (m)		132.7	209.0		672.7	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	241	2637	2603		386	414
Starvation Cap Reductn	0	679	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	0.47	0.51		0.20	0.22

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 8.6

Intersection LOS: A

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

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

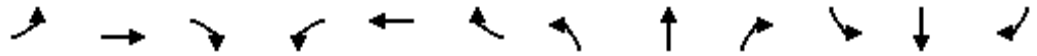
Splits and Phases: 7: Hazeldean & Edgewater



12: Terry Fox & Sobeyes/500 Hazeldean
PM Peak

16 Edgewater Street
Existing Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	5	74	74	4	105	29	891	68	119	1094	81
Future Volume (vph)	36	5	74	74	4	105	29	891	68	119	1094	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.98			0.99	0.98	1.00	1.00		1.00	1.00	
Fr _t		0.914				0.850		0.989			0.990	
Fl _t Protected		0.985			0.954		0.950			0.950		
Satd. Flow (prot)	0	1583	0	0	1702	1517	1695	4806	0	1695	3344	0
Fl _t Permitted		0.863			0.577		0.183			0.250		
Satd. Flow (perm)	0	1385	0	0	1021	1491	326	4806	0	445	3344	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71				117		21			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	4		9	9		4	9		4	4		9
Confl. Bikes (#/hr)									1			9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	6	82	82	4	117	32	990	76	132	1216	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	86	117	32	1066	0	132	1306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	26.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	84.0	84.0		84.0	84.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	78.0	78.0		78.0	78.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0	13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	9	9		4	4	4	4	4		9	9	
Act Effct Green (s)		16.5			16.5	16.5	91.0	91.0		91.0	91.0	
Actuated g/C Ratio		0.14			0.14	0.14	0.76	0.76		0.76	0.76	
v/c Ratio		0.51			0.61	0.38	0.13	0.29		0.39	0.51	
Control Delay		28.1			65.2	10.7	7.2	5.3		3.7	1.9	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.4	
Total Delay		28.1			65.2	10.7	7.2	5.3		3.7	2.4	
LOS		C			E	B	A	A		A	A	
Approach Delay		28.1			33.8			5.3			2.5	
Approach LOS		C			C			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	78.5	78.5		78.5	78.5	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Coord	Coord		Coord	Coord	
70th %ile Green (s)	17.4	17.4		17.4	17.4	17.4	90.1	90.1		90.1	90.1	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
50th %ile Green (s)	14.6	14.6		14.6	14.6	14.6	92.9	92.9		92.9	92.9	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
30th %ile Green (s)	11.7	11.7		11.7	11.7	11.7	95.8	95.8		95.8	95.8	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	97.5	97.5		97.5	97.5	
10th %ile Term Code	Min	Min		Min	Min	Min	Coord	Coord		Coord	Coord	
Stops (vph)		49			71	15	10	276		9	105	
Fuel Used(l)		5			6	2	1	36		2	19	
CO Emissions (g/hr)		84			109	33	23	677		38	362	
NOx Emissions (g/hr)		16			21	6	4	131		7	70	
VOC Emissions (g/hr)		19			25	8	5	156		9	84	
Dilemma Vehicles (#)		0			0	0	0	40		0	10	
Queue Length 50th (m)		12.5			19.7	0.0	1.6	21.7		1.3	6.2	
Queue Length 95th (m)		27.7			32.3	14.4	7.3	44.2		m2.3	m9.6	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		394			250	454	247	3648		337	2538	
Starvation Cap Reductn		0			0	0	0	0		0	654	
Spillback Cap Reductn		0			0	1	0	64		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.32			0.34	0.26	0.13	0.30		0.39	0.69	

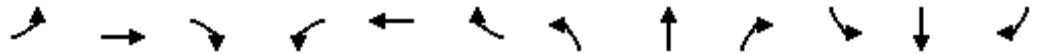
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 113 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 6.9
 Intersection LOS: A
 Intersection Capacity Utilization 75.4%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Terry Fox & Sobey's/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	23	14	0	5	44	1085	39	6	1457	1
Future Volume (vph)	2	0	23	14	0	5	44	1085	39	6	1457	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Fr _t		0.850			0.850			0.995				
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1517	0	1695	1289	0	1695	3369	0	1695	3390	0
Fl _t Permitted	0.754			0.740			0.117			0.214		
Satd. Flow (perm)	1345	1517	0	1320	1289	0	209	3369	0	381	3390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		167			198			5				
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		145.8			86.7			83.3			243.7	
Travel Time (s)		10.5			6.2			4.3			12.5	
Confl. Peds. (#/hr)									6	6		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	2	0	26	16	0	6	49	1206	43	7	1619	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	26	0	16	6	0	49	1249	0	7	1620	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		9.5	32.5		9.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		10.5	65.5		10.5	65.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	

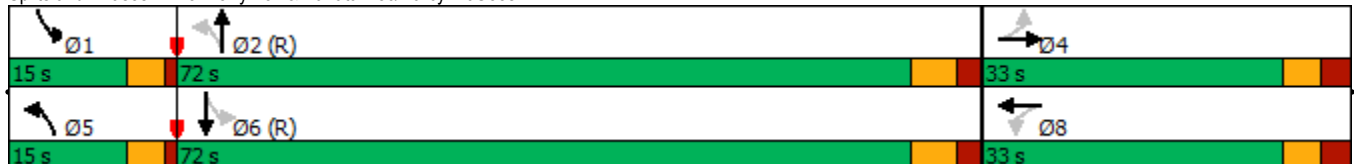


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		1.0	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		4.5	6.5		4.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0			6			0	
Act Effct Green (s)	10.0	10.0		10.0	10.0		105.1	104.3		101.7	96.6	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.88	0.87		0.85	0.80	
v/c Ratio	0.02	0.09		0.15	0.02		0.19	0.43		0.02	0.59	
Control Delay	51.0	0.7		54.4	0.2		1.7	2.6		2.3	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	0.7		54.4	0.2		1.7	2.6		2.3	5.0	
LOS	D	A		D	A		A	A		A	A	
Approach Delay		4.2			39.6			2.6			5.0	
Approach LOS		A			D			A			A	
90th %ile Green (s)	10.0	10.0		10.0	10.0		6.7	87.0		5.8	86.1	
90th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Gap	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0		6.3	97.3		0.0	86.5	
70th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Skip	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0		6.1	97.3		0.0	86.7	
50th %ile Term Code	Min	Min		Hold	Hold		Gap	Coord		Skip	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		5.5	113.5		0.0	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Gap	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		0.0	113.5		0.0	113.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Skip	Coord		Skip	Coord	
Stops (vph)	3	0		15	0		1	278		1	284	
Fuel Used(l)	0	0		1	0		1	44		0	47	
CO Emissions (g/hr)	3	6		19	1		23	809		3	874	
NOx Emissions (g/hr)	1	1		4	0		4	156		1	169	
VOC Emissions (g/hr)	1	1		4	0		5	187		1	202	
Dilemma Vehicles (#)	0	0		0	0		0	4		0	59	
Queue Length 50th (m)	0.4	0.0		3.6	0.0		0.3	3.8		0.2	36.3	
Queue Length 95th (m)	3.1	0.0		10.7	0.0		m0.2	102.3		m0.5	63.0	
Internal Link Dist (m)		121.8			62.7			59.3			219.7	
Turn Bay Length (m)	20.0			20.0			35.0			35.0		
Base Capacity (vph)	300	468		294	441		314	2929		450	2727	
Starvation Cap Reductn	0	0		0	0		0	0		0	49	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.06		0.05	0.01		0.16	0.43		0.02	0.60	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 4.2
 Intersection Capacity Utilization 61.5%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



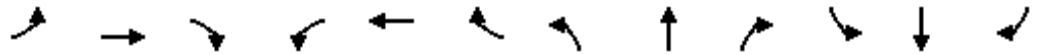
6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
Existing Traffic Volumes (Mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	108	0	1081	49	175	649	6
Future Volume (vph)	15	2	0	27	5	108	0	1081	49	175	649	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.857			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1503	0	1784	3278	0	1647	3172	1517
Flt Permitted	0.641			0.757						0.137		
Satd. Flow (perm)	1144	1784	0	1286	1503	0	1784	3278	0	237	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					120			6				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			694.2			243.7			226.6	
Travel Time (s)		13.3			50.0			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	17	2	0	30	6	120	0	1201	54	194	721	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	2	0	30	126	0	0	1255	0	194	721	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		11.6	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		59.0	59.0		14.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		53.6%	53.6%		12.7%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		52.5	52.5		7.4	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
Existing Traffic Volumes (Mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.4	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.6	6.5	6.5
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0			1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			63.8		82.9	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.58		0.75	0.75	0.75
v/c Ratio	0.12	0.01		0.18	0.43			0.66		0.57	0.30	0.01
Control Delay	40.3	36.0		40.9	19.0			22.0		14.7	5.6	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	40.3	36.0		40.9	19.0			22.0		14.7	5.6	0.0
LOS	D	D		D	B			C		B	A	A
Approach Delay		39.8			23.2			22.0			7.5	
Approach LOS		D			C			C			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		52.5	52.5		7.9	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Max	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		64.9	64.9		15.5	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Gap	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		66.2	66.2		14.2	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		67.5	67.5		12.9	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		67.8	67.8		12.6	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
Stops (vph)	14	3		25	66			886		46	197	0
Fuel Used(l)	1	0		3	11			80		7	23	0
CO Emissions (g/hr)	19	3		59	197			1496		134	436	2
NOx Emissions (g/hr)	4	1		11	38			289		26	84	0
VOC Emissions (g/hr)	4	1		14	45			345		31	101	0
Dilemma Vehicles (#)	0	0		0	0			36		0	30	0
Queue Length 50th (m)	3.4	0.4		5.3	3.2			143.9		7.9	17.6	0.0
Queue Length 95th (m)	8.2	2.2		14.6	24.4			73.4		#39.5	49.8	0.0
Internal Link Dist (m)		160.3			670.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	317	494		356	503			1903		340	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.05	0.00		0.08	0.25			0.66		0.57	0.30	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 16.5
 Intersection LOS: B
 Intersection Capacity Utilization 68.6%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



























3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
Existing Traffic Volumes (Optimized)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	345	453	253	243	637	294	240	664	108	275	791	415
Future Volume (vph)	345	453	253	243	637	294	240	664	108	275	791	415
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.99
Fr _t			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3249	3390	1483	3260	3390	1419	3286	3357	1489	3094	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			249			241			146			323
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	383	503	281	270	708	327	267	738	120	306	879	461
Shared Lane Traffic (%)												
Lane Group Flow (vph)	383	503	281	270	708	327	267	738	120	306	879	461
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	23.0	35.6	35.6	22.4	35.0	35.0	19.0	40.4	40.4	21.6	43.0	43.0
Total Split (%)	19.2%	29.7%	29.7%	18.7%	29.2%	29.2%	15.8%	33.7%	33.7%	18.0%	35.8%	35.8%
Maximum Green (s)	16.7	29.3	29.3	16.1	28.7	28.7	12.5	33.9	33.9	15.1	36.5	36.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

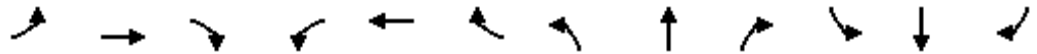
3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	633	175	85	230	149	156	654	167	138	342	220
Future Volume (vph)	270	633	175	85	230	149	156	654	167	138	342	220
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00					0.98	1.00		
Friction			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3106	3293	1473	3195	3293	1345	3225	3357	1488	3164	3115	1459
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3106	3293	1449	3184	3293	1345	3225	3357	1465	3157	3115	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			224			222			222
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)			4	4					3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	5%	5%	5%	5%	15%	4%	3%	4%	6%	11%	6%
Adj. Flow (vph)	270	633	175	85	230	149	156	654	167	138	342	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	270	633	175	85	230	149	156	654	167	138	342	220
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	22.0	43.0	43.0	15.0	36.0	36.0	16.0	36.0	36.0	16.0	36.0	36.0
Total Split (%)	20.0%	39.1%	39.1%	13.6%	32.7%	32.7%	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%
Maximum Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes

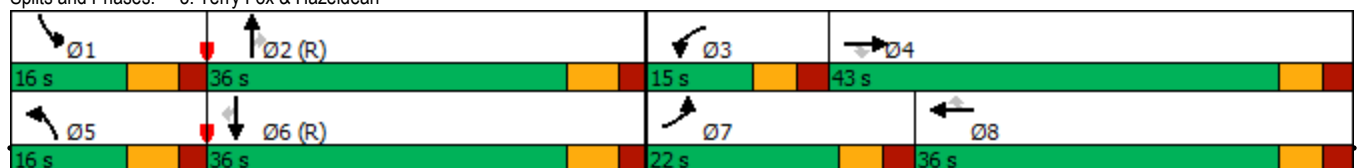


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		4	4		0	0		3	3		0	0
Act Effct Green (s)	14.0	29.3	29.3	7.8	20.7	20.7	10.1	40.0	40.0	9.7	39.6	39.6
Actuated g/C Ratio	0.13	0.27	0.27	0.07	0.19	0.19	0.09	0.36	0.36	0.09	0.36	0.36
v/c Ratio	0.69	0.72	0.34	0.37	0.37	0.34	0.53	0.54	0.25	0.49	0.30	0.33
Control Delay	55.1	41.5	6.2	50.6	37.6	7.9	57.8	28.2	3.5	52.6	24.1	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	41.5	6.2	50.6	37.6	7.9	57.8	28.2	3.5	52.6	24.1	7.1
LOS	E	D	A	D	D	A	E	C	A	D	C	A
Approach Delay		39.2			30.4			28.7			24.4	
Approach LOS		D			C			C			C	
90th %ile Green (s)	15.7	35.2	35.2	8.7	28.2	28.2	11.0	29.5	29.5	11.0	29.5	29.5
90th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	15.7	31.3	31.3	8.7	24.3	24.3	11.9	33.1	33.1	11.3	32.5	32.5
70th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
50th %ile Green (s)	14.8	28.2	28.2	8.3	21.7	21.7	10.6	37.8	37.8	10.1	37.3	37.3
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	13.1	24.9	24.9	7.4	19.2	19.2	9.4	43.2	43.2	8.9	42.7	42.7
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	10.6	26.9	26.9	0.0	10.0	10.0	7.6	56.6	56.6	7.2	56.2	56.2
10th %ile Term Code	Gap	Hold	Hold	Skip	Min	Min	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	252	555	21	80	192	22	138	519	32	119	251	66
Fuel Used(l)	28	57	7	7	16	4	15	44	4	14	26	10
CO Emissions (g/hr)	513	1059	125	131	297	68	274	824	69	267	488	182
NOx Emissions (g/hr)	99	204	24	25	57	13	53	159	13	52	94	35
VOC Emissions (g/hr)	118	244	29	30	69	16	63	190	16	62	112	42
Dilemma Vehicles (#)	0	21	0	0	8	0	0	29	0	0	15	0
Queue Length 50th (m)	28.7	66.0	0.0	9.1	22.6	0.0	14.7	59.8	0.0	14.7	29.0	0.0
Queue Length 95th (m)	42.0	78.5	14.6	17.0	32.1	11.8	25.8	88.3	12.1	18.0	45.5	35.4
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	443	1098	600	252	889	526	307	1222	674	295	1122	667
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.58	0.29	0.34	0.26	0.28	0.51	0.54	0.25	0.47	0.30	0.33

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	61 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	95
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	31.5
Intersection LOS:	C
Intersection Capacity Utilization:	72.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Terry Fox & Hazeldean



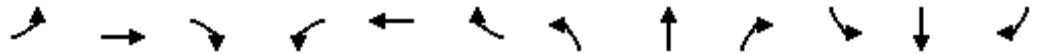
6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	108	0	1092	49	175	655	6
Future Volume (vph)	15	2	0	27	5	108	0	1092	49	175	655	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.857			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1503	0	1784	3278	0	1647	3172	1517
Flt Permitted	0.684			0.757						0.228		
Satd. Flow (perm)	1220	1784	0	1286	1503	0	1784	3278	0	395	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					99			7				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			694.2			243.7			226.6	
Travel Time (s)		13.3			50.0			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	108	0	1092	49	175	655	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	113	0	0	1141	0	175	655	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		34.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		73.0	73.0		73.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		66.4%	66.4%		66.4%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		66.5	66.5		66.5	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes

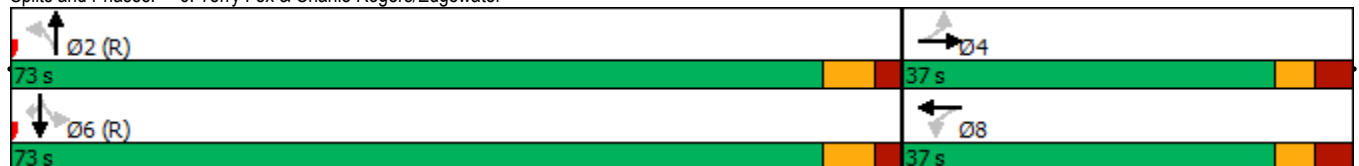


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0		1	1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			83.0		83.0	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.75		0.75	0.75	0.75
v/c Ratio	0.10	0.01		0.17	0.41			0.46		0.59	0.27	0.01
Control Delay	39.6	36.0		40.5	16.7			12.3		19.3	5.4	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.6	36.0		40.5	16.7			12.3		19.3	5.4	0.0
LOS	D	D		D	B			B		B	A	A
Approach Delay		39.2			21.3			12.3			8.3	
Approach LOS		D			C			B			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		67.0	67.0		67.0	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
Stops (vph)	15	3		25	51			659		85	195	0
Fuel Used(l)	1	0		3	10			62		10	23	0
CO Emissions (g/hr)	20	3		59	187			1161		178	435	2
NOx Emissions (g/hr)	4	1		11	36			224		34	84	0
VOC Emissions (g/hr)	5	1		14	43			268		41	100	0
Dilemma Vehicles (#)	0	0		0	0			65		0	30	0
Queue Length 50th (m)	3.0	0.4		6.2	6.5			86.6		11.3	15.6	0.0
Queue Length 95th (m)	7.5	2.2		10.8	14.1			70.3		#66.6	44.4	0.0
Internal Link Dist (m)		160.3			670.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	338	494		356	488			2475		298	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.04	0.00		0.08	0.23			0.46		0.59	0.27	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.6
 Intersection Capacity Utilization 68.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater

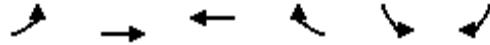




Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	860	496	83	72	54
Future Volume (vph)	121	860	496	83	72	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.978			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1679	3357	3194	0	1572	1459
Flt Permitted	0.434				0.950	
Satd. Flow (perm)	763	3357	3194	0	1566	1459
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			33			54
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		694.2	
Travel Time (s)		9.4	14.0		50.0	
Confl. Peds. (#/hr)	5			5	3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	10%	6%
Adj. Flow (vph)	121	860	496	83	72	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	860	579	0	72	54
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8

7: Hazeldean & Edgewater
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes

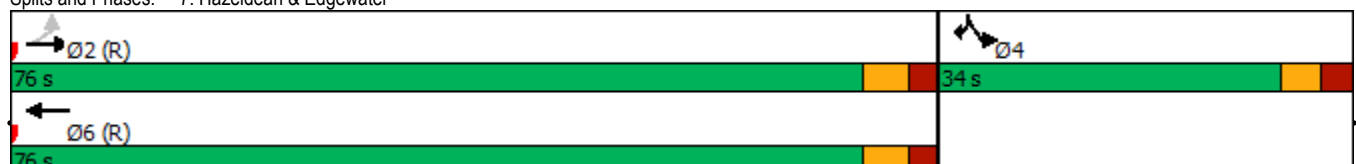


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			5		0	0
Act Effct Green (s)	90.7	90.7	90.7		11.4	11.4
Actuated g/C Ratio	0.82	0.82	0.82		0.10	0.10
v/c Ratio	0.19	0.31	0.22		0.44	0.27
Control Delay	3.9	3.4	2.9		67.3	29.5
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	3.9	3.6	2.9		67.3	29.5
LOS	A	A	A		E	C
Approach Delay		3.6	2.9		51.1	
Approach LOS		A	A		D	
90th %ile Green (s)	83.0	83.0	83.0		14.7	14.7
90th %ile Term Code	Coord	Coord	Coord		Gap	Gap
70th %ile Green (s)	85.6	85.6	85.6		12.1	12.1
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	87.3	87.3	87.3		10.4	10.4
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	87.7	87.7	87.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	103.8	103.8	103.8		0.0	0.0
10th %ile Term Code	Coord	Coord	Coord		Skip	Skip
Stops (vph)	28	188	115		67	24
Fuel Used(l)	3	20	17		10	5
CO Emissions (g/hr)	54	373	311		186	99
NOx Emissions (g/hr)	10	72	60		36	19
VOC Emissions (g/hr)	13	86	72		43	23
Dilemma Vehicles (#)	0	50	23		0	0
Queue Length 50th (m)	5.9	23.1	12.2		15.4	2.8
Queue Length 95th (m)	13.9	37.8	20.6		m29.3	m14.4
Internal Link Dist (m)		132.7	209.0		670.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	629	2768	2640		398	410
Starvation Cap Reductn	0	849	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.19	0.45	0.22		0.18	0.13

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 73 (66%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 6.9
 Intersection LOS: A
 Intersection Capacity Utilization 52.9%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Hazeldean & Edgewater





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2	17	15	0	96	13	939	80	81	424	20
Future Volume (vph)	13	2	17	15	0	96	13	939	80	81	424	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Fr t		0.928				0.850		0.988			0.993	
Flt Protected		0.980			0.950		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1695	1502	1695	4792	0	1695	3297	0
Flt Permitted		0.870			0.736		0.459			0.269		
Satd. Flow (perm)	0	1393	0	0	1308	1481	817	4792	0	478	3297	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				96		23			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	2		4	4		2	2		5	5		2
Confl. Bikes (#/hr)			1						3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	2%	2%	3%	2%	2%	4%	2%	4%	5%
Adj. Flow (vph)	13	2	17	15	0	96	13	939	80	81	424	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	15	96	13	1019	0	81	444	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	11.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	11.0	74.0		63.0	63.0	
Total Split (%)	32.7%	32.7%		32.7%	32.7%	32.7%	10.0%	67.3%		57.3%	57.3%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	5.0	68.0		57.0	57.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	

12: Terry Fox & Sobeys/500 Hazeldean
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0		13.0		13.0	13.0	
Pedestrian Calls (#/hr)	4	4		2	2	2		5		2	2	
Act Effct Green (s)		13.8			13.8	13.8	87.0	88.2		83.5	83.5	
Actuated g/C Ratio		0.13			0.13	0.13	0.79	0.80		0.76	0.76	
v/c Ratio		0.17			0.09	0.36	0.02	0.26		0.22	0.18	
Control Delay		25.1			39.8	11.2	5.2	4.4		5.2	2.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		25.1			39.8	11.2	5.2	4.4		5.2	2.8	
LOS		C			D	B	A	A		A	A	
Approach Delay		25.1			15.1			4.4			3.2	
Approach LOS		C			B			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	5.5	68.5		57.0	57.0	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Max	Coord		Coord	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	5.8	87.5		75.7	75.7	
70th %ile Term Code	Min	Min		Min	Min	Min	Gap	Coord		Coord	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
50th %ile Term Code	Min	Min		Min	Min	Min	Skip	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
30th %ile Term Code	Hold	Hold		Min	Min	Min	Skip	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	104.0		104.0	104.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Coord	Coord	
Stops (vph)		17			15	16	4	252		13	45	
Fuel Used(l)		1			1	2	1	36		2	8	
CO Emissions (g/hr)		23			16	32	9	673		34	147	
NOx Emissions (g/hr)		5			3	6	2	130		6	28	
VOC Emissions (g/hr)		5			4	7	2	155		8	34	
Dilemma Vehicles (#)		0			0	0	0	39		0	5	
Queue Length 50th (m)		3.0			3.0	0.0	0.5	16.0		0.9	2.3	
Queue Length 95th (m)		9.9			7.6	12.2	3.2	42.2		6.8	13.1	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		386			350	467	690	3846		363	2505	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.08			0.04	0.21	0.02	0.26		0.22	0.18	

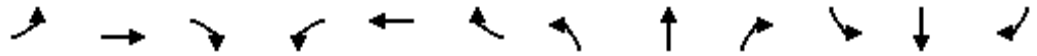
Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 55 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 5.1
 Intersection Capacity Utilization 56.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 12: Terry Fox & Sobeys/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	2	0	1	6	1100	5	3	671	0
Future Volume (vph)	0	0	3	2	0	1	6	1100	5	3	671	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Fr t		0.850			0.850			0.999				
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1784	1517	0	1695	1497	0	1695	3351	0	1441	3202	0
Flt Permitted				0.769			0.397			0.252		
Satd. Flow (perm)	1784	1517	0	1372	1497	0	708	3351	0	382	3202	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		280			110			1				
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.2			86.7			83.3			243.7	
Travel Time (s)		11.3			6.2			4.3			12.5	
Confl. Peds. (#/hr)	1						1		5	5		
Confl. Bikes (#/hr)												2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	20%	20%	8%	2%
Adj. Flow (vph)	0	0	3	2	0	1	6	1100	5	3	671	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	2	1	0	6	1105	0	3	671	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		32.5	32.5		32.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		77.0	77.0		77.0	77.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		70.5	70.5		70.5	70.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.5	6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		1	1		5	5		0	0	
Act Effct Green (s)		13.2		13.2	13.2		102.3	102.3		102.3	102.3	
Actuated g/C Ratio		0.12		0.12	0.12		0.93	0.93		0.93	0.93	
v/c Ratio		0.01		0.01	0.00		0.01	0.35		0.01	0.23	
Control Delay		0.0		38.0	0.0		6.7	4.6		0.7	0.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		0.0		38.0	0.0		6.7	4.6		0.7	0.4	
LOS		A		D	A		A	A		A	A	
Approach Delay					25.3			4.6				0.4
Approach LOS					C			A				A
90th %ile Green (s)	26.0	26.0		26.0	26.0		71.3	71.3		71.3	71.3	
90th %ile Term Code	Hold	Hold		Ped	Ped		Coord	Coord		Coord	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
70th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
50th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0		3	0		2	180		0	7	
Fuel Used(l)		0		0	0		0	40		0	14	
CO Emissions (g/hr)		1		3	0		5	751		1	257	
NOx Emissions (g/hr)		0		1	0		1	145		0	50	
VOC Emissions (g/hr)		0		1	0		1	173		0	59	
Dilemma Vehicles (#)		0		0	0		0	31		0	1	
Queue Length 50th (m)		0.0		0.4	0.0		0.0	0.0		0.0	0.0	
Queue Length 95th (m)		0.0		2.3	0.0		m1.4	82.6		m0.1	3.8	
Internal Link Dist (m)		133.2			62.7			59.3			219.7	
Turn Bay Length (m)				20.0			35.0			35.0		
Base Capacity (vph)		581		334	447		658	3115		355	2977	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.01		0.01	0.00		0.01	0.35		0.01	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 26 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 3.1

Intersection LOS: A

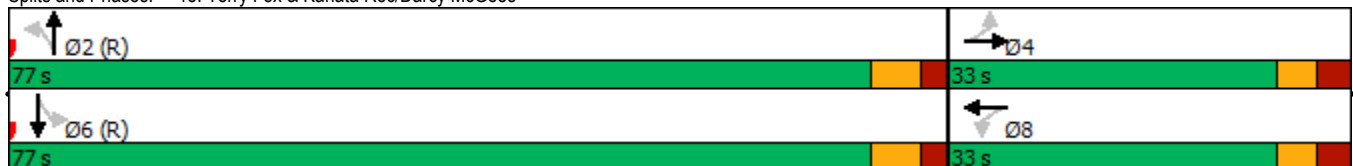
Intersection Capacity Utilization 51.6%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



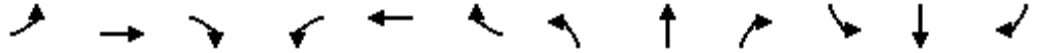
3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	460	259	245	644	297	245	671	109	278	799	422
Future Volume (vph)	351	460	259	245	644	297	245	671	109	278	799	422
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.99
Fr't			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3390	1483	3259	3390	1419	3286	3357	1489	3093	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			251			239			146			323
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	351	460	259	245	644	297	245	671	109	278	799	422
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	460	259	245	644	297	245	671	109	278	799	422
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	23.0	42.0	42.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0	37.0	37.0
Total Split (%)	19.2%	35.0%	35.0%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%	30.8%	30.8%
Maximum Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes

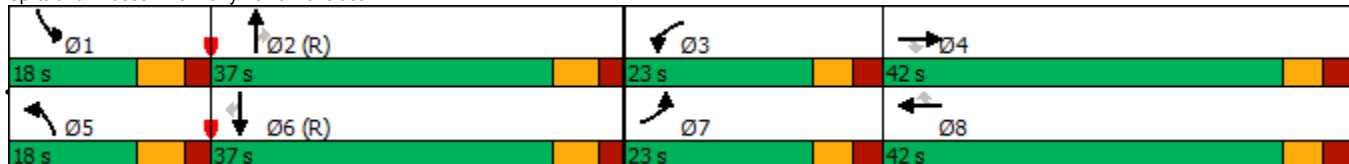


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	16.0	32.0	32.0	13.9	29.9	29.9	12.6	34.1	34.1	14.4	35.8	35.8
Actuated g/C Ratio	0.13	0.27	0.27	0.12	0.25	0.25	0.10	0.28	0.28	0.12	0.30	0.30
v/c Ratio	0.81	0.51	0.45	0.64	0.76	0.56	0.71	0.70	0.21	0.75	0.79	0.63
Control Delay	65.5	39.0	7.1	54.3	43.0	13.8	76.1	39.8	2.0	56.7	51.3	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	39.0	7.1	54.3	43.0	13.8	76.1	39.8	2.0	56.7	51.3	24.6
LOS	E	D	A	D	D	B	E	D	A	E	D	C
Approach Delay		40.0			38.0			44.5			44.8	
Approach LOS		D			D			D			D	
90th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	16.7	34.4	34.4	15.8	33.5	33.5	13.7	30.5	30.5	13.7	30.5	30.5
70th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	16.7	32.9	32.9	14.2	30.4	30.4	14.5	30.5	30.5	16.8	32.8	32.8
50th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	16.4	31.0	31.0	12.6	27.2	27.2	12.9	34.6	34.6	16.2	37.9	37.9
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	13.6	26.0	26.0	10.3	22.7	22.7	10.6	44.5	44.5	13.6	47.5	47.5
10th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	328	378	29	222	580	111	237	586	7	242	732	221
Fuel Used(l)	39	40	10	21	49	11	27	54	2	30	84	29
CO Emissions (g/hr)	720	738	187	386	908	200	511	1000	31	557	1568	532
NOx Emissions (g/hr)	139	142	36	74	175	39	99	193	6	108	303	103
VOC Emissions (g/hr)	166	170	43	89	209	46	118	231	7	128	362	123
Dilemma Vehicles (#)	0	14	0	0	22	0	0	27	0	0	15	0
Queue Length 50th (m)	41.6	47.9	1.4	28.8	74.3	19.4	31.5	78.1	0.0	32.4	106.2	54.1
Queue Length 95th (m)	#60.9	61.8	20.6	34.4	89.7	51.3	#49.3	65.5	2.8	#59.0	#138.0	86.8
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	453	1008	617	457	1008	590	351	954	528	371	1012	673
Starvation Cap Reductn	0	0	0	0	0	0	0	6	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.46	0.42	0.54	0.64	0.50	0.70	0.71	0.21	0.75	0.79	0.63

Intersection Summary























Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 42.0
 Intersection LOS: D
 Intersection Capacity Utilization 83.9%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean



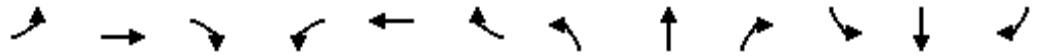
6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	5	62	6	169	3	1143	74	180	1404	63
Future Volume (vph)	12	4	5	62	6	169	3	1143	74	180	1404	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.99		1.00								0.98
Fr t		0.917			0.855			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1624	0	1616	1502	0	1695	3269	0	1647	3172	1517
Flt Permitted	0.438			0.752			0.169			0.172		
Satd. Flow (perm)	782	1624	0	1278	1502	0	302	3269	0	298	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			169			8				73
Link Speed (k/h)		50			50			70				70
Link Distance (m)		184.3			696.7			243.7				226.6
Travel Time (s)		13.3			50.2			12.5				11.7
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	12	4	5	62	6	169	3	1143	74	180	1404	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	9	0	62	175	0	3	1217	0	180	1404	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		9.5	34.5		9.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	69.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	57.5%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		9.5	62.5		9.5	62.5	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes

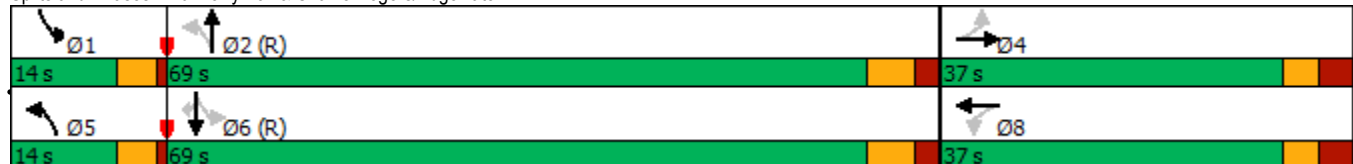


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		1.0	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		4.5	6.5		4.5	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0			0			1	1
Act Effct Green (s)	14.9	14.9		14.9	14.9		86.0	78.4		94.0	90.0	90.0
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.72	0.65		0.78	0.75	0.75
v/c Ratio	0.12	0.04		0.39	0.52		0.01	0.57		0.54	0.59	0.06
Control Delay	45.0	29.8		48.9	13.3		1.7	10.7		10.2	10.3	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	45.0	29.8		48.9	13.3		1.7	10.7		10.2	10.3	2.0
LOS	D	C		D	B		A	B		B	B	A
Approach Delay		38.5			22.6			10.7			10.0	
Approach LOS		D			C			B			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		5.8	62.5		10.0	66.7	66.7
90th %ile Term Code	Ped	Ped		Hold	Hold		Gap	Coord		Max	Coord	Coord
70th %ile Green (s)	13.3	13.3		13.3	13.3		0.0	77.2		12.0	93.7	93.7
70th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
50th %ile Green (s)	11.2	11.2		11.2	11.2		0.0	82.0		9.3	95.8	95.8
50th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	84.7		7.8	97.0	97.0
30th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	85.6		6.9	97.0	97.0
10th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
Stops (vph)	11	7		53	40		0	822		44	631	5
Fuel Used(l)	1	1		8	14		0	70		7	65	1
CO Emissions (g/hr)	16	10		142	266		1	1308		124	1204	28
NOx Emissions (g/hr)	3	2		27	51		0	252		24	232	5
VOC Emissions (g/hr)	4	2		33	61		0	302		29	278	6
Dilemma Vehicles (#)	0	0		0	0		0	15		0	58	0
Queue Length 50th (m)	2.6	0.9		13.8	4.5		0.1	89.0		6.9	51.1	0.0
Queue Length 95th (m)	7.3	4.9		23.1	20.0		m0.1	161.4		24.0	163.1	5.1
Internal Link Dist (m)		160.3			672.7			219.7			202.6	
Turn Bay Length (m)	25.0			40.0			35.0			35.0		45.0
Base Capacity (vph)	198	416		324	507		336	2138		346	2380	1130
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.06	0.02		0.19	0.35		0.01	0.57		0.52	0.59	0.06

Intersection Summary

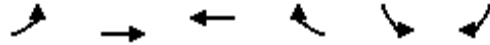
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.4
 Intersection Capacity Utilization 72.3%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	839	1133	67	70	81
Future Volume (vph)	53	839	1133	67	70	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99		1.00		0.99	
Frt			0.992			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1601	3390	3344	0	1662	1517
Flt Permitted	0.214				0.950	
Satd. Flow (perm)	358	3390	3344	0	1650	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11			81
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		696.7	
Travel Time (s)		9.4	14.0		50.2	
Confl. Peds. (#/hr)	27			27	6	16
Confl. Bikes (#/hr)				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	4%	4%	2%
Adj. Flow (vph)	53	839	1133	67	70	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	839	1200	0	70	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3

7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			20		10	10
Act Effct Green (s)	93.6	93.6	93.6		14.1	14.1
Actuated g/C Ratio	0.78	0.78	0.78		0.12	0.12
v/c Ratio	0.19	0.32	0.46		0.36	0.33
Control Delay	8.9	7.1	5.9		47.3	10.8
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	8.9	7.2	5.9		47.3	10.8
LOS	A	A	A		D	B
Approach Delay		7.3	5.9		27.8	
Approach LOS		A	A		C	
90th %ile Green (s)	79.8	79.8	79.8		27.9	27.9
90th %ile Term Code	Coord	Coord	Coord		Ped	Ped
70th %ile Green (s)	95.6	95.6	95.6		12.1	12.1
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	97.3	97.3	97.3		10.4	10.4
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
10th %ile Term Code	Coord	Coord	Coord		Min	Min
Stops (vph)	20	296	387		60	32
Fuel Used(l)	2	26	42		9	7
CO Emissions (g/hr)	32	475	786		159	126
NOx Emissions (g/hr)	6	92	152		31	24
VOC Emissions (g/hr)	7	110	181		37	29
Dilemma Vehicles (#)	0	36	50		0	0
Queue Length 50th (m)	4.4	37.1	34.3		15.6	2.6
Queue Length 95th (m)	m9.7	53.7	86.3		m22.4	m7.1
Internal Link Dist (m)		132.7	209.0		672.7	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	279	2644	2611		386	414
Starvation Cap Reductn	0	705	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.19	0.43	0.46		0.18	0.20

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 8.0

Intersection LOS: A

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Hazeldean & Edgewater



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	5	74	74	4	105	29	903	68	119	1108	81
Future Volume (vph)	36	5	74	74	4	105	29	903	68	119	1108	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.98			0.99	0.98	1.00	1.00		1.00	1.00	
Fr _t		0.913				0.850		0.989			0.990	
Fl _t Protected		0.985			0.955		0.950			0.950		
Satd. Flow (prot)	0	1581	0	0	1704	1517	1695	4807	0	1695	3345	0
Fl _t Permitted		0.866			0.606		0.214			0.280		
Satd. Flow (perm)	0	1388	0	0	1072	1491	381	4807	0	498	3345	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72				105		20			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	4		9	9		4	9		4	4		9
Confl. Bikes (#/hr)									1			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	5	74	74	4	105	29	903	68	119	1108	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	78	105	29	971	0	119	1189	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	26.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	84.0	84.0		84.0	84.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	78.0	78.0		78.0	78.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	

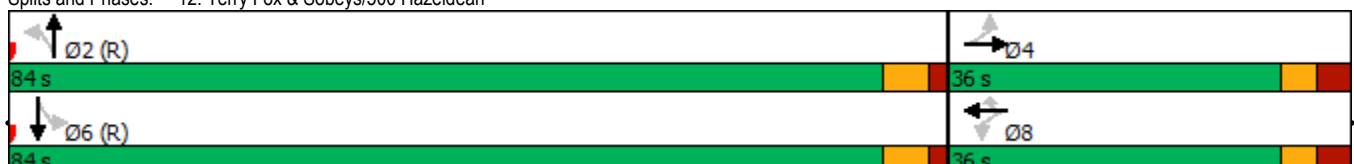
























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0	13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	9	9		4	4	4	4	4		9	9	
Act Effct Green (s)		15.9			15.9	15.9	91.6	91.6		91.6	91.6	
Actuated g/C Ratio		0.13			0.13	0.13	0.76	0.76		0.76	0.76	
v/c Ratio		0.47			0.55	0.37	0.10	0.26		0.31	0.46	
Control Delay		24.9			61.4	11.1	6.3	4.9		2.5	1.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.3	
Total Delay		24.9			61.4	11.1	6.3	4.9		2.5	1.8	
LOS		C			E	B	A	A		A	A	
Approach Delay		24.9			32.6			5.0			1.9	
Approach LOS		C			C			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	78.5	78.5		78.5	78.5	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0		16.0	16.0	16.0	91.5	91.5		91.5	91.5	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.4	13.4		13.4	13.4	13.4	94.1	94.1		94.1	94.1	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.9	10.9		10.9	10.9	10.9	96.6	96.6		96.6	96.6	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	97.5	97.5		97.5	97.5	
10th %ile Term Code	Min	Min		Min	Min	Min	Coord	Coord		Coord	Coord	
Stops (vph)		44			71	16	8	267		5	76	
Fuel Used(l)		4			6	2	1	36		2	18	
CO Emissions (g/hr)		77			106	34	21	671		33	334	
NOx Emissions (g/hr)		15			20	7	4	129		6	64	
VOC Emissions (g/hr)		18			24	8	5	155		8	77	
Dilemma Vehicles (#)		0			0	0	0	40		0	10	
Queue Length 50th (m)		9.4			17.9	0.0	1.3	18.2		1.1	5.3	
Queue Length 95th (m)		23.7			29.4	13.6	6.5	39.5		m2.4	9.4	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		395			263	445	290	3675		380	2557	
Starvation Cap Reductn		0			0	0	0	0		0	678	
Spillback Cap Reductn		0			0	0	0	12		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.29			0.30	0.24	0.10	0.27		0.31	0.63	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 113 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 6.2
 Intersection LOS: A
 Intersection Capacity Utilization 75.8%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Terry Fox & Sobey's/500 Hazeldean



													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	2	0	23	14	0	5	44	1099	39	6	1475	1	
Future Volume (vph)	2	0	23	14	0	5	44	1099	39	6	1475	1	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0	
Storage Lanes	1		0	1		0	1		0	1		0	
Taper Length (m)	20.0			10.0			55.0			75.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Ped Bike Factor								1.00		1.00			
Fr _t		0.850			0.850			0.995					
Fl _t Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1695	1517	0	1695	1289	0	1695	3369	0	1695	3390	0	
Fl _t Permitted	0.754			0.742			0.143			0.245			
Satd. Flow (perm)	1345	1517	0	1324	1289	0	255	3369	0	436	3390	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		175			213			5					
Link Speed (k/h)		50			50			70				70	
Link Distance (m)		145.8			86.7			83.3				243.7	
Travel Time (s)		10.5			6.2			4.3				12.5	
Confl. Peds. (#/hr)									6	6			
Confl. Bikes (#/hr)									1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%	2%	2%	
Adj. Flow (vph)	2	0	23	14	0	5	44	1099	39	6	1475	1	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	2	23	0	14	5	0	44	1138	0	6	1476	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)		3.7			3.7			3.7				3.7	
Link Offset(m)		0.0			0.0			0.0				0.0	
Crosswalk Width(m)		4.9			4.9			4.9				4.9	
Two way Left Turn Lane													
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
Turning Speed (k/h)	24		14	24		14	24		14	24		14	
Number of Detectors	1	2		1	2		1	2		1	2		
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru		
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5		
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8		
Detector 1 Type	Cl+Ex	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	0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 2 Position(m)		28.7			28.7			28.7			28.7		
Detector 2 Size(m)		1.8			1.8			1.8			1.8		
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0			0.0		
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA		
Protected Phases		4			8		5	2		1	6		
Permitted Phases	4			8			2			6			
Detector Phase	4	4		8	8		5	2		1	6		
Switch Phase													
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0		
Minimum Split (s)	32.2	32.2		32.2	32.2		9.5	32.5		9.5	32.5		
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0		
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%		
Maximum Green (s)	26.8	26.8		26.8	26.8		10.5	65.5		10.5	65.5		
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2		

15: Terry Fox & Kanata Rec/Darcy McGees
PM Peak

16 Edgewater Street
2022 Background Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		1.0	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		4.5	6.5		4.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0			6			0	
Act Effct Green (s)	10.0	10.0		10.0	10.0		105.1	104.3		101.8	96.6	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.88	0.87		0.85	0.80	
v/c Ratio	0.02	0.08		0.13	0.02		0.15	0.39		0.01	0.54	
Control Delay	51.0	0.6		53.9	0.2		1.2	2.3		2.0	4.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	0.6		53.9	0.2		1.2	2.3		2.0	4.4	
LOS	D	A		D	A		A	A		A	A	
Approach Delay		4.6			39.8			2.2			4.4	
Approach LOS		A			D			A			A	
90th %ile Green (s)	10.0	10.0		10.0	10.0		6.6	87.1		5.7	86.2	
90th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Gap	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0		6.2	97.3		0.0	86.6	
70th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Skip	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0		6.0	97.3		0.0	86.8	
50th %ile Term Code	Min	Min		Hold	Hold		Gap	Coord		Skip	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		5.5	113.5		0.0	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Gap	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		0.0	113.5		0.0	113.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Skip	Coord		Skip	Coord	
Stops (vph)	3	0		16	0		1	237		1	257	
Fuel Used(l)	0	0		1	0		1	42		0	46	
CO Emissions (g/hr)	3	6		20	1		23	777		3	848	
NOx Emissions (g/hr)	1	1		4	0		4	150		1	164	
VOC Emissions (g/hr)	1	1		5	0		5	179		1	196	
Dilemma Vehicles (#)	0	0		0	0		0	5		0	62	
Queue Length 50th (m)	0.4	0.0		3.1	0.0		0.2	3.7		0.2	33.0	
Queue Length 95th (m)	3.1	0.0		9.8	0.0		m0.3	93.4		m0.4	48.3	
Internal Link Dist (m)		121.8			62.7			59.3			219.7	
Turn Bay Length (m)	20.0			20.0			35.0			35.0		
Base Capacity (vph)	300	474		295	453		351	2930		493	2729	
Starvation Cap Reductn	0	0		0	0		0	0		0	49	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.05		0.05	0.01		0.13	0.39		0.01	0.55	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 3.7

Intersection LOS: A

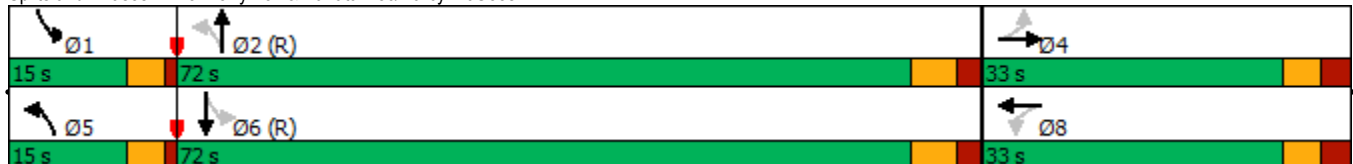
Intersection Capacity Utilization 62.0%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	108	0	1092	49	175	655	6
Future Volume (vph)	15	2	0	27	5	108	0	1092	49	175	655	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.857			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1503	0	1784	3278	0	1647	3172	1517
Flt Permitted	0.684			0.757						0.185		
Satd. Flow (perm)	1220	1784	0	1286	1503	0	1784	3278	0	321	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					108			6				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			694.2			243.7			226.6	
Travel Time (s)		13.3			50.0			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	108	0	1092	49	175	655	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	113	0	0	1141	0	175	655	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		6			6
Detector Phase	4	4		8	8		2	2	1	6		6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		10.2	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		59.0	59.0		14.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		53.6%	53.6%		12.7%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		52.5	52.5		8.8	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Background Traffic Volumes (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		5.2	6.5	6.5
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0			1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			69.2		84.3	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.63		0.77	0.75	0.75
v/c Ratio	0.10	0.01		0.17	0.40			0.55		0.50	0.27	0.01
Control Delay	39.6	36.0		39.4	17.9			17.1		9.7	5.4	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.6	36.0		39.4	17.9			17.1		9.7	5.4	0.0
LOS	D	D		D	B			B		A	A	A
Approach Delay		39.2			22.0			17.1			6.3	
Approach LOS		D			C			B			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		52.5	52.5		9.3	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Max	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		71.3	71.3		10.5	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Gap	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		73.4	73.4		8.4	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		74.0	74.0		7.8	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		74.9	74.9		6.9	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
Stops (vph)	15	3		25	71			804		46	195	0
Fuel Used(l)	1	0		3	11			73		7	23	0
CO Emissions (g/hr)	20	3		59	197			1357		122	435	2
NOx Emissions (g/hr)	4	1		11	38			262		24	84	0
VOC Emissions (g/hr)	5	1		14	45			313		28	100	0
Dilemma Vehicles (#)	0	0		0	0			39		0	30	0
Queue Length 50th (m)	3.0	0.4		4.8	3.4			92.5		6.5	15.6	0.0
Queue Length 95th (m)	7.5	2.2		13.2	21.6			73.2		24.3	44.4	0.0
Internal Link Dist (m)		160.3			670.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	338	494		356	494			2064		357	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.04	0.00		0.08	0.23			0.55		0.49	0.27	0.01

Intersection Summary

























Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 13.4
 Intersection Capacity Utilization 67.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



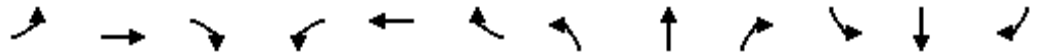
3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	326	724	189	103	276	157	166	744	225	145	375	256
Future Volume (vph)	326	724	189	103	276	157	166	744	225	145	375	256
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00					0.98	1.00		
Friction			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3106	3293	1473	3195	3293	1345	3225	3357	1488	3164	3115	1459
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3106	3293	1449	3185	3293	1345	3225	3357	1465	3158	3115	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189			224			222			256
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)			4	4					3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	5%	5%	5%	5%	15%	4%	3%	4%	6%	11%	6%
Adj. Flow (vph)	326	724	189	103	276	157	166	744	225	145	375	256
Shared Lane Traffic (%)												
Lane Group Flow (vph)	326	724	189	103	276	157	166	744	225	145	375	256
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	22.0	43.0	43.0	15.0	36.0	36.0	16.0	36.0	36.0	16.0	36.0	36.0
Total Split (%)	20.0%	39.1%	39.1%	13.6%	32.7%	32.7%	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%
Maximum Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes

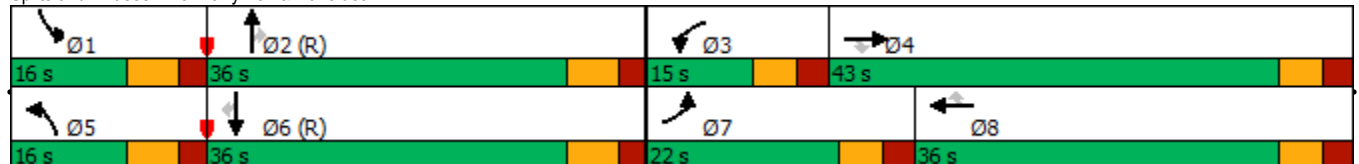


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		4	4		0	0		3	3		0	0
Act Effct Green (s)	14.9	31.1	31.1	8.1	24.3	24.3	9.9	35.6	35.6	9.6	35.3	35.3
Actuated g/C Ratio	0.14	0.28	0.28	0.07	0.22	0.22	0.09	0.32	0.32	0.09	0.32	0.32
v/c Ratio	0.78	0.78	0.35	0.44	0.38	0.33	0.57	0.68	0.36	0.53	0.38	0.40
Control Delay	59.3	42.1	5.7	51.7	35.1	8.2	60.1	33.9	5.9	54.5	27.0	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	59.3	42.1	5.7	51.7	35.1	8.2	60.1	34.0	5.9	54.5	27.0	8.1
LOS	E	D	A	D	D	A	E	C	A	D	C	A
Approach Delay		41.1			30.4			32.3			25.9	
Approach LOS		D			C			C			C	
90th %ile Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
90th %ile Term Code	Max	Max	Max	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	15.7	34.8	34.8	8.7	27.8	27.8	11.4	29.5	29.5	11.4	29.5	29.5
70th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	15.7	31.8	31.8	8.7	24.8	24.8	11.0	33.5	33.5	10.4	32.9	32.9
50th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	15.0	28.5	28.5	7.9	21.4	21.4	9.7	38.9	38.9	9.1	38.3	38.3
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	12.3	23.9	23.9	6.4	18.0	18.0	7.8	46.7	46.7	7.4	46.3	46.3
10th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	306	642	21	97	226	26	151	631	63	129	291	79
Fuel Used(l)	34	66	7	9	19	4	16	55	6	15	30	12
CO Emissions (g/hr)	641	1222	133	161	344	74	301	1031	117	288	563	217
NOx Emissions (g/hr)	124	236	26	31	66	14	58	199	23	56	109	42
VOC Emissions (g/hr)	148	282	31	37	79	17	69	238	27	66	130	50
Dilemma Vehicles (#)	0	27	0	0	9	0	0	33	0	0	17	0
Queue Length 50th (m)	35.0	74.4	0.0	10.9	26.5	0.0	17.6	74.9	9.6	15.5	34.1	3.1
Queue Length 95th (m)	#50.4	89.6	14.8	19.8	36.9	13.7	27.5	#102.6	16.8	19.8	49.8	41.1
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	443	1098	609	252	889	526	299	1087	624	289	999	641
Starvation Cap Reductn	0	0	0	0	0	0	0	34	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.66	0.31	0.41	0.31	0.30	0.56	0.71	0.36	0.50	0.38	0.40

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 61 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 33.6
 Intersection LOS: C
 Intersection Capacity Utilization 75.4%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean

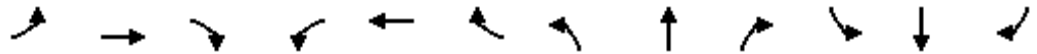




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	108	0	1246	49	175	729	6
Future Volume (vph)	15	2	0	27	5	108	0	1246	49	175	729	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.857			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1503	0	1784	3277	0	1647	3172	1517
Flt Permitted	0.684			0.757						0.187		
Satd. Flow (perm)	1220	1784	0	1286	1503	0	1784	3277	0	324	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					70			6				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			694.2			243.7			226.6	
Travel Time (s)		13.3			50.0			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	108	0	1246	49	175	729	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	113	0	0	1295	0	175	729	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		34.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		73.0	73.0		73.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		66.4%	66.4%		66.4%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		66.5	66.5		66.5	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0		1	1	1
Act Effct Green (s)	14.2	14.2		14.2	14.2			82.8		82.8	82.8	82.8
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.75		0.75	0.75	0.75
v/c Ratio	0.10	0.01		0.16	0.44			0.52		0.72	0.31	0.01
Control Delay	39.3	35.5		43.1	26.8			13.7		30.5	5.7	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.3	35.5		43.1	26.8			13.7		30.5	5.7	0.0
LOS	D	D		D	C			B		C	A	A
Approach Delay		38.8			30.0			13.7			10.4	
Approach LOS		D			C			B			B	
90th %ile Green (s)	30.0	30.0		30.0	30.0		67.0	67.0		67.0	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	Coord
70th %ile Green (s)	11.1	11.1		11.1	11.1		85.9	85.9		85.9	85.9	85.9
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
Stops (vph)	15	3		25	62			879		89	225	0
Fuel Used(l)	1	0		3	11			78		11	27	0
CO Emissions (g/hr)	20	3		60	208			1450		209	494	2
NOx Emissions (g/hr)	4	1		12	40			280		40	95	0
VOC Emissions (g/hr)	5	1		14	48			334		48	114	0
Dilemma Vehicles (#)	0	0		0	0			65		0	33	0
Queue Length 50th (m)	3.0	0.4		6.3	12.0			145.2		13.7	17.8	0.0
Queue Length 95th (m)	7.5	2.2		11.0	19.9			70.3		#76.3	50.4	0.0
Internal Link Dist (m)		160.3			670.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	338	494		356	467			2467		244	2387	1123
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.04	0.00		0.08	0.24			0.52		0.72	0.31	0.01

Intersection Summary

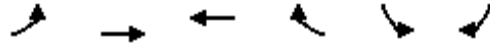
Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 13.6
 Intersection Capacity Utilization 73.4%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



7: Hazeldean & Edgewater
AM Peak

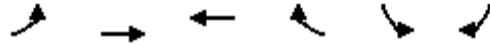
16 Edgewater Street
2027 Background Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	1011	568	83	72	54
Future Volume (vph)	121	1011	568	83	72	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.981			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1679	3357	3203	0	1572	1459
Flt Permitted	0.404				0.950	
Satd. Flow (perm)	711	3357	3203	0	1566	1459
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			29			54
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		694.2	
Travel Time (s)		9.4	14.0		50.0	
Confl. Peds. (#/hr)	5			5	3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	10%	6%
Adj. Flow (vph)	121	1011	568	83	72	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	1011	651	0	72	54
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8

7: Hazeldean & Edgewater
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes

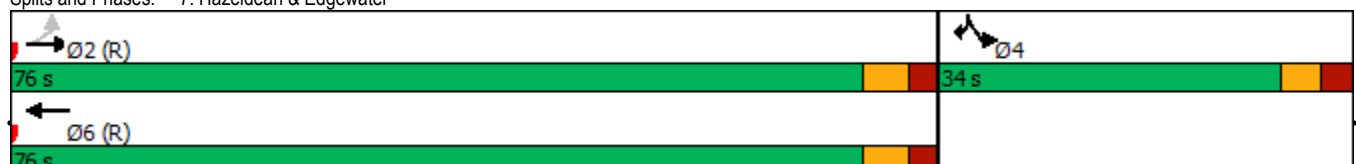


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			5		0	0
Act Effct Green (s)	90.7	90.7	90.7		11.4	11.4
Actuated g/C Ratio	0.82	0.82	0.82		0.10	0.10
v/c Ratio	0.21	0.37	0.25		0.44	0.27
Control Delay	4.8	4.3	3.1		67.1	29.4
Queue Delay	0.0	0.2	0.0		0.0	0.0
Total Delay	4.8	4.4	3.1		67.1	29.4
LOS	A	A	A		E	C
Approach Delay		4.5	3.1		51.0	
Approach LOS		A	A		D	
90th %ile Green (s)	83.0	83.0	83.0		14.7	14.7
90th %ile Term Code	Coord	Coord	Coord		Gap	Gap
70th %ile Green (s)	85.6	85.6	85.6		12.1	12.1
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	87.3	87.3	87.3		10.4	10.4
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	87.7	87.7	87.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	103.8	103.8	103.8		0.0	0.0
10th %ile Term Code	Coord	Coord	Coord		Skip	Skip
Stops (vph)	32	252	134		70	24
Fuel Used(l)	3	25	19		10	5
CO Emissions (g/hr)	58	469	354		187	99
NOx Emissions (g/hr)	11	90	68		36	19
VOC Emissions (g/hr)	13	108	82		43	23
Dilemma Vehicles (#)	0	77	25		0	0
Queue Length 50th (m)	5.6	29.3	14.3		15.7	3.0
Queue Length 95th (m)	m15.3	50.9	23.7		m25.5	m11.0
Internal Link Dist (m)		132.7	209.0		670.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	586	2768	2646		398	410
Starvation Cap Reductn	0	812	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	0.52	0.25		0.18	0.13

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 73 (66%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 7.1
 Intersection LOS: A
 Intersection Capacity Utilization 52.9%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Hazeldean & Edgewater

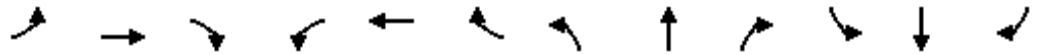




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2	17	15	0	96	13	1093	80	81	467	20
Future Volume (vph)	13	2	17	15	0	96	13	1093	80	81	467	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Fr _t		0.928				0.850		0.990			0.994	
Fl _t Protected		0.980			0.950		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1695	1502	1695	4804	0	1695	3300	0
Fl _t Permitted		0.870			0.736		0.440			0.229		
Satd. Flow (perm)	0	1393	0	0	1308	1481	783	4804	0	408	3300	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				96		20			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	2		4	4		2	2		5	5		2
Confl. Bikes (#/hr)			1						3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	2%	2%	3%	2%	2%	4%	2%	4%	5%
Adj. Flow (vph)	13	2	17	15	0	96	13	1093	80	81	467	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	15	96	13	1173	0	81	487	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	11.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	11.0	74.0		63.0	63.0	
Total Split (%)	32.7%	32.7%		32.7%	32.7%	32.7%	10.0%	67.3%		57.3%	57.3%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	5.0	68.0		57.0	57.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	

12: Terry Fox & Sobeyes/500 Hazeldean
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0		13.0		13.0	13.0	
Pedestrian Calls (#/hr)	4	4		2	2	2		5		2	2	
Act Effct Green (s)		13.8			13.8	13.8	87.0	88.2		83.5	83.5	
Actuated g/C Ratio		0.13			0.13	0.13	0.79	0.80		0.76	0.76	
v/c Ratio		0.17			0.09	0.36	0.02	0.30		0.26	0.19	
Control Delay		25.1			39.8	11.2	5.2	4.6		6.0	2.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		25.1			39.8	11.2	5.2	4.6		6.0	2.7	
LOS		C			D	B	A	A		A	A	
Approach Delay		25.1			15.1			4.7				3.1
Approach LOS		C			B			A				A
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	5.5	68.5		57.0	57.0	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Max	Coord		Coord	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	5.8	87.5		75.7	75.7	
70th %ile Term Code	Min	Min		Min	Min	Min	Gap	Coord		Coord	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
50th %ile Term Code	Min	Min		Min	Min	Min	Skip	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
30th %ile Term Code	Hold	Hold		Min	Min	Min	Skip	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	104.0		104.0	104.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Coord	Coord	
Stops (vph)		17			15	16	4	303		16	46	
Fuel Used(l)		1			1	2	1	42		2	8	
CO Emissions (g/hr)		23			16	32	9	789		37	157	
NOx Emissions (g/hr)		5			3	6	2	152		7	30	
VOC Emissions (g/hr)		5			4	7	2	182		9	36	
Dilemma Vehicles (#)		0			0	0	0	45		0	6	
Queue Length 50th (m)		3.0			3.0	0.0	0.5	19.3		0.9	2.6	
Queue Length 95th (m)		9.9			7.6	12.2	3.2	50.5		6.6	13.7	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		386			350	467	665	3856		309	2507	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	1	0	52		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.08			0.04	0.21	0.02	0.31		0.26	0.19	

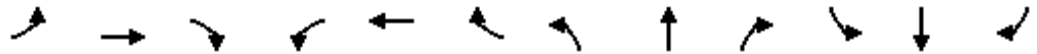
Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 55 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 5.2
 Intersection Capacity Utilization 59.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 12: Terry Fox & Sobeyes/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	2	0	1	6	1254	5	3	745	0
Future Volume (vph)	0	0	3	2	0	1	6	1254	5	3	745	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Fr t		0.850			0.850			0.999				
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1784	1517	0	1695	1497	0	1695	3351	0	1441	3202	0
Flt Permitted				0.769			0.369			0.212		
Satd. Flow (perm)	1784	1517	0	1372	1497	0	658	3351	0	321	3202	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		239			79			1				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		157.2			86.7			83.3				243.7
Travel Time (s)		11.3			6.2			4.3				12.5
Confl. Peds. (#/hr)	1						1		5	5		
Confl. Bikes (#/hr)												2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	20%	20%	8%	2%
Adj. Flow (vph)	0	0	3	2	0	1	6	1254	5	3	745	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	2	1	0	6	1259	0	3	745	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		32.5	32.5		32.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		77.0	77.0		77.0	77.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		70.5	70.5		70.5	70.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.5	6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		1	1		5	5		0	0	
Act Effct Green (s)		13.2		13.2	13.2		102.3	102.3		102.3	102.3	
Actuated g/C Ratio		0.12		0.12	0.12		0.93	0.93		0.93	0.93	
v/c Ratio		0.01		0.01	0.00		0.01	0.40		0.01	0.25	
Control Delay		0.0		38.0	0.0		7.2	5.5		0.7	0.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		0.0		38.0	0.0		7.2	5.5		0.7	0.4	
LOS		A		D	A		A	A		A	A	
Approach Delay					25.3			5.5				0.4
Approach LOS					C			A				A
90th %ile Green (s)	26.0	26.0		26.0	26.0		71.3	71.3		71.3	71.3	
90th %ile Term Code	Hold	Hold		Ped	Ped		Coord	Coord		Coord	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
70th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
50th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0		3	0		3	255		0	7	
Fuel Used(l)		0		0	0		0	49		0	15	
CO Emissions (g/hr)		1		3	0		6	912		1	285	
NOx Emissions (g/hr)		0		1	0		1	176		0	55	
VOC Emissions (g/hr)		0		1	0		1	210		0	66	
Dilemma Vehicles (#)		0		0	0		0	32		0	1	
Queue Length 50th (m)		0.0		0.4	0.0		0.0	0.2		0.0	0.0	
Queue Length 95th (m)		0.0		2.3	0.0		m1.3	100.2		m0.1	3.8	
Internal Link Dist (m)		133.2			62.7			59.3			219.7	
Turn Bay Length (m)				20.0			35.0			35.0		
Base Capacity (vph)		550		334	424		612	3115		298	2977	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.01		0.01	0.00		0.01	0.40		0.01	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 26 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 3.6

Intersection LOS: A

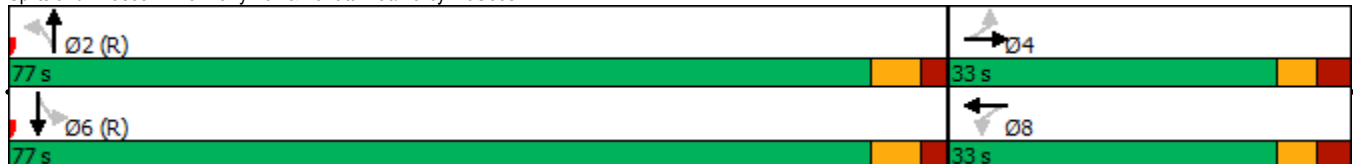
Intersection Capacity Utilization 56.1%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Future Volume (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.99
Fr _t			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3249	3390	1483	3263	3390	1419	3286	3357	1489	3094	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			239			229			146			310
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Shared Lane Traffic (%)												
Lane Group Flow (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	23.0	42.0	42.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0	37.0	37.0
Total Split (%)	19.2%	35.0%	35.0%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%	30.8%	30.8%
Maximum Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes

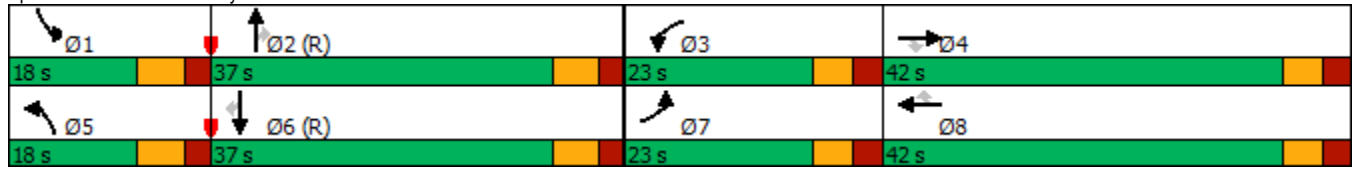


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	16.7	34.5	34.5	14.9	32.6	32.6	12.2	31.5	31.5	13.6	32.8	32.8
Actuated g/C Ratio	0.14	0.29	0.29	0.12	0.27	0.27	0.10	0.26	0.26	0.11	0.27	0.27
v/c Ratio	0.94	0.57	0.47	0.70	0.80	0.57	0.79	0.84	0.29	0.83	0.94	0.77
Control Delay	80.8	39.0	9.3	56.4	42.3	14.3	84.0	47.5	5.0	63.6	63.9	33.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	80.8	39.0	9.3	56.4	42.3	14.3	84.0	47.6	5.0	63.6	63.9	33.9
LOS	F	D	A	E	D	B	F	D	A	E	E	C
Approach Delay		46.5			38.8			50.6			54.9	
Approach LOS		D			D			D			D	
90th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	16.7	35.4	35.4	15.6	34.3	34.3	12.9	30.5	30.5	12.9	30.5	30.5
50th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	16.7	33.8	33.8	13.9	31.0	31.0	13.8	30.5	30.5	16.2	32.9	32.9
30th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	16.7	31.8	31.8	11.4	26.5	26.5	11.4	35.4	35.4	15.8	39.8	39.8
10th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	383	463	47	263	672	129	252	662	22	248	782	293
Fuel Used(l)	51	48	12	25	56	12	31	64	3	33	99	38
CO Emissions (g/hr)	956	898	219	459	1040	220	577	1197	58	609	1849	713
NOx Emissions (g/hr)	185	173	42	89	201	42	111	231	11	117	357	138
VOC Emissions (g/hr)	221	207	50	106	240	51	133	276	13	140	426	164
Dilemma Vehicles (#)	0	17	0	0	27	0	0	29	0	0	15	0
Queue Length 50th (m)	51.7	58.3	6.6	33.2	84.5	23.5	34.0	88.1	0.1	35.5	~116.1	74.4
Queue Length 95th (m)	#81.7	76.0	28.6	41.8	105.1	56.7	#54.4	#119.2	7.9	#62.9	#156.9	#110.2
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	453	1008	609	457	1008	583	335	880	498	351	927	634
Starvation Cap Reductn	0	0	0	0	0	0	0	5	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.55	0.46	0.62	0.74	0.54	0.79	0.84	0.29	0.83	0.94	0.77

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.94
Intersection Signal Delay:	48.0
Intersection LOS:	D
Intersection Capacity Utilization:	89.2%
ICU Level of Service:	E
Analysis Period (min):	15
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean



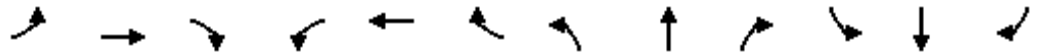
6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	5	62	6	169	3	1291	74	180	1549	63
Future Volume (vph)	12	4	5	62	6	169	3	1291	74	180	1549	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.99		1.00								0.98
Fr _t		0.917			0.855			0.992				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1624	0	1616	1502	0	1695	3272	0	1647	3172	1517
Flt Permitted	0.438			0.752			0.141			0.133		
Satd. Flow (perm)	782	1624	0	1278	1502	0	252	3272	0	231	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			169			7				73
Link Speed (k/h)		50			50			70				70
Link Distance (m)		184.3			696.7			243.7				226.6
Travel Time (s)		13.3			50.2			12.5				11.7
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	12	4	5	62	6	169	3	1291	74	180	1549	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	9	0	62	175	0	3	1365	0	180	1549	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		9.5	34.5		9.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	69.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	57.5%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		9.5	62.5		9.5	62.5	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		1.0	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		4.5	6.5		4.5	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0			0			1	1
Act Effct Green (s)	14.9	14.9		14.9	14.9		84.0	76.4		94.0	90.0	90.0
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.70	0.64		0.78	0.75	0.75
v/c Ratio	0.12	0.04		0.39	0.52		0.01	0.65		0.58	0.65	0.06
Control Delay	45.0	29.8		48.5	12.9		2.0	12.2		14.1	11.5	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	45.0	29.8		48.5	12.9		2.0	12.3		14.1	11.5	2.0
LOS	D	C		D	B		A	B		B	B	A
Approach Delay		38.5			22.2			12.2				11.5
Approach LOS		D			C			B				B
90th %ile Green (s)	30.0	30.0		30.0	30.0		5.8	62.5		10.0	66.7	66.7
90th %ile Term Code	Ped	Ped		Hold	Hold		Gap	Coord		Max	Coord	Coord
70th %ile Green (s)	13.3	13.3		13.3	13.3		0.0	74.0		15.2	93.7	93.7
70th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
50th %ile Green (s)	11.2	11.2		11.2	11.2		0.0	78.5		12.8	95.8	95.8
50th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	82.5		10.0	97.0	97.0
30th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	84.6		7.9	97.0	97.0
10th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
Stops (vph)	11	7		52	36		0	1024		50	736	5
Fuel Used(l)	1	1		8	14		0	85		7	75	1
CO Emissions (g/hr)	16	10		141	263		1	1579		139	1389	28
NOx Emissions (g/hr)	3	2		27	51		0	305		27	268	5
VOC Emissions (g/hr)	4	2		33	61		0	364		32	320	6
Dilemma Vehicles (#)	0	0		0	0		0	15		0	64	0
Queue Length 50th (m)	2.6	0.9		13.4	4.4		0.1	103.0		6.9	61.2	0.0
Queue Length 95th (m)	7.3	4.9		22.8	19.4		m0.3	188.7		#31.6	196.2	5.1
Internal Link Dist (m)		160.3			672.7			219.7			202.6	
Turn Bay Length (m)	25.0			40.0			35.0			35.0		45.0
Base Capacity (vph)	198	416		324	507		298	2086		316	2380	1130
Starvation Cap Reductn	0	0		0	0		0	8		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.06	0.02		0.19	0.35		0.01	0.66		0.57	0.65	0.06

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 76.6%

ICU Level of Service D

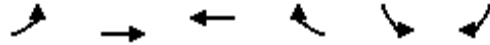
Analysis Period (min) 15

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

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

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	988	1280	67	70	81
Future Volume (vph)	53	988	1280	67	70	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99		1.00		0.99	
Frt			0.993			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1601	3390	3349	0	1662	1517
Flt Permitted	0.179				0.950	
Satd. Flow (perm)	300	3390	3349	0	1650	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			9			75
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		696.7	
Travel Time (s)		9.4	14.0		50.2	
Confl. Peds. (#/hr)	27			27	6	16
Confl. Bikes (#/hr)				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	4%	4%	2%
Adj. Flow (vph)	53	988	1280	67	70	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	988	1347	0	70	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3

7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			20		10	10
Act Effct Green (s)	93.6	93.6	93.6		14.1	14.1
Actuated g/C Ratio	0.78	0.78	0.78		0.12	0.12
v/c Ratio	0.23	0.37	0.52		0.36	0.33
Control Delay	8.9	7.0	6.5		47.9	12.5
Queue Delay	0.0	0.2	0.0		0.0	0.0
Total Delay	8.9	7.2	6.5		47.9	12.5
LOS	A	A	A		D	B
Approach Delay		7.3	6.5		28.9	
Approach LOS		A	A		C	
90th %ile Green (s)	79.8	79.8	79.8		27.9	27.9
90th %ile Term Code	Coord	Coord	Coord		Ped	Ped
70th %ile Green (s)	95.6	95.6	95.6		12.1	12.1
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	97.3	97.3	97.3		10.4	10.4
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
10th %ile Term Code	Coord	Coord	Coord		Min	Min
Stops (vph)	19	363	470		60	37
Fuel Used(l)	2	30	49		9	7
CO Emissions (g/hr)	32	567	915		159	130
NOx Emissions (g/hr)	6	109	177		31	25
VOC Emissions (g/hr)	7	131	211		37	30
Dilemma Vehicles (#)	0	25	56		0	0
Queue Length 50th (m)	4.2	42.0	41.4		15.3	2.2
Queue Length 95th (m)	m8.7	60.4	103.8		m22.0	m6.6
Internal Link Dist (m)		132.7	209.0		672.7	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	234	2644	2614		386	410
Starvation Cap Reductn	0	681	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.23	0.50	0.52		0.18	0.20

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 8.2

Intersection LOS: A

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Hazeldean & Edgewater





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	5	74	74	4	105	29	1013	68	119	1199	81
Future Volume (vph)	36	5	74	74	4	105	29	1013	68	119	1199	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.98			0.99	0.98	1.00	1.00		1.00	1.00	
Fr _t		0.913				0.850		0.991			0.991	
Fl _t Protected		0.985			0.955		0.950			0.950		
Satd. Flow (prot)	0	1581	0	0	1704	1517	1695	4818	0	1695	3349	0
Fl _t Permitted		0.866			0.606		0.191			0.247		
Satd. Flow (perm)	0	1388	0	0	1072	1491	340	4818	0	440	3349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72				105		18			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	4		9	9		4	9		4	4		9
Confl. Bikes (#/hr)									1			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	5	74	74	4	105	29	1013	68	119	1199	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	78	105	29	1081	0	119	1280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	26.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	84.0	84.0		84.0	84.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	78.0	78.0		78.0	78.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0	13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	9	9		4	4	4	4	4		9	9	
Act Effct Green (s)		15.9			15.9	15.9	91.6	91.6		91.6	91.6	
Actuated g/C Ratio		0.13			0.13	0.13	0.76	0.76		0.76	0.76	
v/c Ratio		0.47			0.55	0.37	0.11	0.29		0.35	0.50	
Control Delay		24.9			61.4	11.1	6.7	5.1		3.0	1.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.4	
Total Delay		24.9			61.4	11.1	6.7	5.1		3.0	2.0	
LOS		C			E	B	A	A		A	A	
Approach Delay		24.9			32.6			5.2			2.1	
Approach LOS		C			C			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	78.5	78.5		78.5	78.5	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0		16.0	16.0	16.0	91.5	91.5		91.5	91.5	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.4	13.4		13.4	13.4	13.4	94.1	94.1		94.1	94.1	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.9	10.9		10.9	10.9	10.9	96.6	96.6		96.6	96.6	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	97.5	97.5		97.5	97.5	
10th %ile Term Code	Min	Min		Min	Min	Min	Coord	Coord		Coord	Coord	
Stops (vph)		44			71	16	8	306		8	95	
Fuel Used(l)		4			6	2	1	41		2	20	
CO Emissions (g/hr)		77			106	34	21	756		36	373	
NOx Emissions (g/hr)		15			20	7	4	146		7	72	
VOC Emissions (g/hr)		18			24	8	5	174		8	86	
Dilemma Vehicles (#)		0			0	0	0	45		0	10	
Queue Length 50th (m)		9.4			17.9	0.0	1.4	20.9		1.0	5.6	
Queue Length 95th (m)		23.7			29.4	13.6	6.6	45.0		m2.0	m9.0	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		395			263	445	259	3684		336	2560	
Starvation Cap Reductn		0			0	0	0	0		0	671	
Spillback Cap Reductn		0			0	1	0	62		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.29			0.30	0.24	0.11	0.30		0.35	0.68	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 113 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 6.2
 Intersection LOS: A
 Intersection Capacity Utilization 78.5%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Terry Fox & Sobey's/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	23	14	0	5	44	1244	39	6	1623	1
Future Volume (vph)	2	0	23	14	0	5	44	1244	39	6	1623	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Fr t		0.850			0.850			0.995				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1517	0	1695	1289	0	1695	3370	0	1695	3390	0
Flt Permitted	0.754			0.742			0.117			0.206		
Satd. Flow (perm)	1345	1517	0	1324	1289	0	209	3370	0	368	3390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		167			194			4				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		145.8			86.7			83.3				243.7
Travel Time (s)		10.5			6.2			4.3				12.5
Confl. Peds. (#/hr)									6	6		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	2	0	23	14	0	5	44	1244	39	6	1623	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	23	0	14	5	0	44	1283	0	6	1624	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		9.5	32.5		9.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		10.5	65.5		10.5	65.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	

15: Terry Fox & Kanata Rec/Darcy McGees
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		1.0	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		4.5	6.5		4.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0			6			0	
Act Effct Green (s)	10.0	10.0		10.0	10.0		105.1	104.3		101.8	96.6	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.88	0.87		0.85	0.80	
v/c Ratio	0.02	0.08		0.13	0.02		0.17	0.44		0.02	0.60	
Control Delay	51.0	0.6		53.9	0.2		1.4	2.6		2.3	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	0.6		53.9	0.2		1.4	2.6		2.3	5.0	
LOS	D	A		D	A		A	A		A	A	
Approach Delay		4.6			39.8			2.5			5.0	
Approach LOS		A			D			A			A	
90th %ile Green (s)	10.0	10.0		10.0	10.0		6.6	87.1		5.7	86.2	
90th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Gap	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0		6.2	97.3		0.0	86.6	
70th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Skip	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0		6.0	97.3		0.0	86.8	
50th %ile Term Code	Min	Min		Hold	Hold		Gap	Coord		Skip	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		5.5	113.5		0.0	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Gap	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		0.0	113.5		0.0	113.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Skip	Coord		Skip	Coord	
Stops (vph)	3	0		16	0		1	248		1	333	
Fuel Used(l)	0	0		1	0		1	47		0	53	
CO Emissions (g/hr)	3	6		20	1		23	867		3	988	
NOx Emissions (g/hr)	1	1		4	0		4	167		1	191	
VOC Emissions (g/hr)	1	1		5	0		5	200		1	228	
Dilemma Vehicles (#)	0	0		0	0		0	5		0	66	
Queue Length 50th (m)	0.4	0.0		3.1	0.0		0.2	3.7		0.2	35.7	
Queue Length 95th (m)	3.1	0.0		9.8	0.0		m0.2	m100.8		m0.5	62.3	
Internal Link Dist (m)		121.8			62.7			59.3			219.7	
Turn Bay Length (m)	20.0			20.0			35.0			35.0		
Base Capacity (vph)	300	468		295	438		314	2931		440	2729	
Starvation Cap Reductn	0	0		0	0		0	0		0	48	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.05		0.05	0.01		0.14	0.44		0.01	0.61	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 4.2

Intersection LOS: A

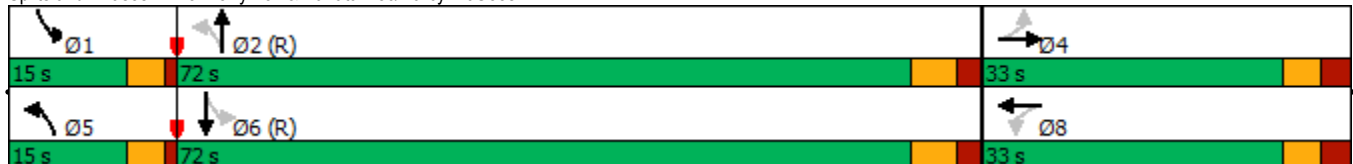
Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



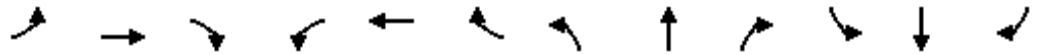
6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	108	0	1246	49	175	729	6
Future Volume (vph)	15	2	0	27	5	108	0	1246	49	175	729	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.857			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1503	0	1784	3277	0	1647	3172	1517
Flt Permitted	0.684			0.757						0.132		
Satd. Flow (perm)	1220	1784	0	1286	1503	0	1784	3277	0	229	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					108			5				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			694.2			243.7			226.6	
Travel Time (s)		13.3			50.0			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	108	0	1246	49	175	729	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	113	0	0	1295	0	175	729	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		6			6
Detector Phase	4	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		11.6	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		59.0	59.0		14.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		53.6%	53.6%		12.7%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		52.5	52.5		7.4	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Background Traffic Volumes (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.4	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.6	6.5	6.5
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0			1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			65.1		82.9	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.59		0.75	0.75	0.75
v/c Ratio	0.10	0.01		0.17	0.40			0.67		0.55	0.30	0.01
Control Delay	39.6	36.0		41.5	19.4			21.7		14.0	5.6	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.6	36.0		41.5	19.4			21.7		14.0	5.6	0.0
LOS	D	D		D	B			C		B	A	A
Approach Delay		39.2			23.6			21.7			7.2	
Approach LOS		D			C			C			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		52.5	52.5		7.9	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Max	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		65.8	65.8		14.6	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Gap	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		67.3	67.3		13.1	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		69.1	69.1		11.3	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		70.6	70.6		9.8	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
Stops (vph)	15	3		26	69			1059		46	223	0
Fuel Used(l)	1	0		3	11			94		7	26	0
CO Emissions (g/hr)	20	3		60	199			1745		133	491	2
NOx Emissions (g/hr)	4	1		12	38			337		26	95	0
VOC Emissions (g/hr)	5	1		14	46			402		31	113	0
Dilemma Vehicles (#)	0	0		0	0			16		0	33	0
Queue Length 50th (m)	3.0	0.4		4.8	2.5			149.8		7.1	17.8	0.0
Queue Length 95th (m)	7.5	2.2		13.4	22.1			73.3		#31.9	50.4	0.0
Internal Link Dist (m)		160.3			670.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	338	494		356	494			1940		318	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.04	0.00		0.08	0.23			0.67		0.55	0.30	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 16.4
 Intersection LOS: B
 Intersection Capacity Utilization 73.4%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes (optimized)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Future Volume (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3249	3390	1483	3263	3390	1419	3286	3357	1489	3094	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			233			225			146			328
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Shared Lane Traffic (%)												
Lane Group Flow (vph)	425	558	278	284	741	312	263	739	145	292	867	490
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	24.0	37.1	37.1	22.9	36.0	36.0	18.0	40.0	40.0	20.0	42.0	42.0
Total Split (%)	20.0%	30.9%	30.9%	19.1%	30.0%	30.0%	15.0%	33.3%	33.3%	16.7%	35.0%	35.0%
Maximum Green (s)	17.7	30.8	30.8	16.6	29.7	29.7	11.5	33.5	33.5	13.5	35.5	35.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Background Traffic Volumes (optimized)

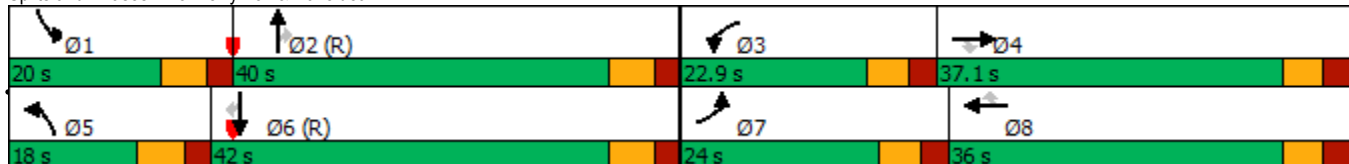


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	17.5	31.9	31.9	14.8	29.2	29.2	11.5	34.4	34.4	13.3	36.2	36.2
Actuated g/C Ratio	0.15	0.27	0.27	0.12	0.24	0.24	0.10	0.29	0.29	0.11	0.30	0.30
v/c Ratio	0.89	0.62	0.49	0.70	0.90	0.61	0.84	0.77	0.27	0.85	0.85	0.72
Control Delay	72.7	42.5	11.0	55.7	53.0	16.9	89.4	41.1	4.5	64.6	54.4	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.0
Total Delay	72.7	42.5	11.0	55.7	53.0	16.9	89.4	41.6	4.5	64.6	54.5	29.8
LOS	E	D	B	E	D	B	F	D	A	E	D	C
Approach Delay		45.7			45.1			47.9			48.9	
Approach LOS		D			D			D			D	
90th %ile Green (s)	17.7	30.8	30.8	16.6	29.7	29.7	11.5	33.5	33.5	13.5	35.5	35.5
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	17.7	30.8	30.8	16.6	29.7	29.7	11.5	33.5	33.5	13.5	35.5	35.5
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	17.7	31.8	31.8	15.6	29.7	29.7	11.5	33.5	33.5	13.5	35.5	35.5
50th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	17.7	33.5	33.5	13.9	29.7	29.7	11.5	33.5	33.5	13.5	35.5	35.5
30th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	16.7	32.4	32.4	11.4	27.1	27.1	11.4	38.0	38.0	12.6	39.2	39.2
10th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	390	481	53	263	681	137	252	661	22	268	822	289
Fuel Used(l)	49	50	12	25	62	13	32	61	3	34	95	37
CO Emissions (g/hr)	911	937	229	456	1158	237	597	1128	57	629	1763	681
NOx Emissions (g/hr)	176	181	44	88	224	46	115	218	11	121	340	131
VOC Emissions (g/hr)	210	216	53	105	267	55	138	260	13	145	407	157
Dilemma Vehicles (#)	0	19	0	0	29	0	0	30	0	0	20	0
Queue Length 50th (m)	51.2	61.0	8.1	33.2	89.0	24.9	34.1	85.0	0.1	35.3	115.3	72.9
Queue Length 95th (m)	#78.2	80.6	32.1	41.9	#121.1	59.3	#54.4	79.0	7.4	#56.1	#138.1	106.5
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	480	900	564	454	839	520	315	962	530	349	1023	680
Starvation Cap Reductn	0	0	0	0	0	0	0	43	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	5	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.62	0.49	0.63	0.88	0.60	0.83	0.80	0.27	0.84	0.85	0.72

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 47.0
 Intersection LOS: D
 Intersection Capacity Utilization 89.2%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean



Appendix H: TDM Checklists

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

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

TDM-supportive design & infrastructure measures: <i>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	✓
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	✓
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	✓
1.2 Facilities for walking & cycling		
REQUIRED	1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (<i>see Official Plan policy 4.3.3</i>)	<input type="checkbox"/> N/A - no rapid transit within 600m
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>)	✓

TDM-supportive design & infrastructure measures: <i>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>)	✓
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>)	✓
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>)	✓
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	✓
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<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>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 resident-owned bicycles, plus the expected peak number of visitor cyclists	<input type="checkbox"/>
2.2 Secure bicycle parking		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	<input checked="" type="checkbox"/>
2.3 Bicycle repair station		
BETTER	2.3.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>
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"/>

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
4. RIDESHARING		
4.1 Pick-up & drop-off facilities		
BASIC	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input type="checkbox"/>
5. CARSHARING & BIKESHARING		
5.1 Carshare parking spaces		
BETTER	5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (<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"/>
6. PARKING		
6.1 Number of parking spaces		
REQUIRED	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	✓
BASIC	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<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 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	<input type="checkbox"/>

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend	
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
1. TDM PROGRAM MANAGEMENT		
1.1 Program coordinator		
BASIC	★ 1.1.1 Designate an internal coordinator, or contract with an external coordinator	<input type="checkbox"/>
1.2 Travel surveys		
BETTER	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	<input type="checkbox"/>
2. WALKING AND CYCLING		
2.1 Information on walking/cycling routes & destinations		
BASIC	2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances (<i>multi-family, condominium</i>)	✓
2.2 Bicycle skills training		
BETTER	2.2.1 Offer on-site cycling courses for residents, or subsidize off-site courses	<input type="checkbox"/>

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
3. TRANSIT		
3.1 Transit information		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances (<i>multi-family, condominium</i>)	<input checked="" type="checkbox"/>
BETTER	3.1.2 Provide real-time arrival information display at entrances (<i>multi-family, condominium</i>)	<input type="checkbox"/>
3.2 Transit fare incentives		
BASIC ★	3.2.1 Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	<input type="checkbox"/>
BETTER	3.2.2 Offer at least one year of free monthly transit passes on residence purchase/move-in	<input type="checkbox"/>
3.3 Enhanced public transit service		
BETTER ★	3.3.1 Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels (<i>subdivision</i>)	<input type="checkbox"/>
3.4 Private transit service		
BETTER	3.4.1 Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	<input type="checkbox"/>
4. CARSHARING & BIKESHARING		
4.1 Bikeshare stations & memberships		
BETTER	4.1.1 Contract with provider to install on-site bikeshare station (<i>multi-family</i>)	<input type="checkbox"/>
BETTER	4.1.2 Provide residents with bikeshare memberships, either free or subsidized (<i>multi-family</i>)	<input type="checkbox"/>
4.2 Carshare vehicles & memberships		
BETTER	4.2.1 Contract with provider to install on-site carshare vehicles and promote their use by residents	<input type="checkbox"/>
BETTER	4.2.2 Provide residents with carshare memberships, either free or subsidized	<input type="checkbox"/>
5. PARKING		
5.1 Priced parking		
BASIC ★	5.1.1 Unbundle parking cost from purchase price (<i>condominium</i>)	<input type="checkbox"/>
BASIC ★	5.1.2 Unbundle parking cost from monthly rent (<i>multi-family</i>)	<input checked="" type="checkbox"/>

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
6. TDM MARKETING & COMMUNICATIONS		
6.1 Multimodal travel information		
BASIC ★	6.1.1 Provide a multimodal travel option information package to new residents	<input checked="" type="checkbox"/>
6.2 Personalized trip planning		
BETTER ★	6.2.1 Offer personalized trip planning to new residents	<input type="checkbox"/>

Appendix I: MMLOS Calculations

Pedestrian Level of Service (PLOS)

Criteria	North Approach		East Approach		West Approach	
Hazeldean Road/Edgewater Street						
PETSI SCORE						
<i>CROSSING DISTANCE CONDITIONS</i>						
Median > 2.4m in Width	No	39	No	55	No	39
Lanes Crossed (3.5m Lane Width)	7		6		7	
<i>SIGNAL PHASING AND TIMING</i>						
Left Turn Conflict	Permissive	-8	Permissive	-8	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	No Right Turn/Prohibited	0	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>						
Parallel Radius	> 15m to 25m	-8	No Right Turn	0	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn	0	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0
<i>CROSSING TREATMENT</i>						
Treatment	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		2		35		15
LOS		F		E		F
DELAY SCORE						
Cycle Length		110		120		120
Pedestrian Walk Time		51.8		6.9		6.9
DELAY SCORE		15.4		53.3		53.3
LOS		B		E		E
OVERALL		F		E		F

Criteria	North Approach		South Approach		East Approach		West Approach	
Hazeldean Road/Terry Fox Drive								
PETSI SCORE								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +		10 +	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 25m	-9	> 25m	-9
Parallel Right Turn Channel	Conventional with Receiving	-3	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
Perpendicular Radius	> 25m	-9	> 25m	-9	> 15m to 25m	-8	> 15m to 25m	-8
Perpendicular Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional with Receiving	-3	Conventional without Receiving	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		-44			-41			-44
LOS		F			F			F
DELAY SCORE								
Cycle Length		110		120		120		120
Pedestrian Walk Time		8.7		14.7		8.5		8.5
DELAY SCORE		46.6			46.2			51.8
LOS		E			E			E
OVERALL		F			F			F

Criteria	North Approach		South Approach		East Approach		West Approach	
Terry Fox Drive/Edgewater Street/Charlie Rogers Place								
PETSI SCORE								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	23	No	39	No	39	No	39
Lanes Crossed (3.5m Lane Width)	8		7		7		7	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Perm + Prot	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 10m to 15m	-6	> 5m to 10m	-5	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		-12			5			4
LOS		F			F			F
DELAY SCORE								
Cycle Length		120		120		120		120
Pedestrian Walk Time		7.5		7.5		41.5		41.5
DELAY SCORE		52.7			52.7			25.7
LOS		E			E			C
OVERALL		F			F			F

Criteria	North Approach		South Approach		East Approach		West Approach	
Terry Fox Drive/Kanata Recreation Complex								
PETSI SCORE								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	39	No	39	No	39	No	39
Lanes Crossed (3.5m Lane Width)	7		7		7		7	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Perm + Prot	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		4	PETSI SCORE		4	PETSI SCORE		4
LOS		F	LOS		F	LOS		F
DELAY SCORE								
Cycle Length		120		120		120		120
Pedestrian Walk Time		7.8		7.8		46.5		46.5
DELAY SCORE		52.5	DELAY SCORE		52.5	DELAY SCORE		22.5
LOS		E	LOS		E	LOS		C
OVERALL		F	OVERALL		F	OVERALL		F

Criteria	North Approach	South Approach	East Approach	West Approach				
Terry Fox Drive/Sobeys								
PETSI SCORE								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	-10	No	23	No	23	No	72
Lanes Crossed (3.5m Lane Width)	10 +		8		8		5	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 10m to 15m	-6	> 5m to 10m	-5	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	Conventional without Receiving	0	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	> 10m to 15m	-6	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	Conventional without Receiving	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		-41			-11			37
LOS		F			F			E
DELAY SCORE								
Cycle Length		120		120		110		110
Pedestrian Walk Time		7.5		7.5		55.0		44.0
DELAY SCORE		52.7			52.7			19.8
LOS		E			E			B
OVERALL		F			F			E

Bicycle Level of Service (BLOS)

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Hazeldean Road/Edgewater Street				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane <25m	A
		Left Turn Accommodation	One Lane Crossed; 60km/hr	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	N/A	-
West Approach	Bike Lane	Right Turn Lane Characteristics	N/A	-
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
Hazeldean Road/Terry Fox Drive				
North Approach	Bike Lane	Right Turn Lane Characteristics	Right Turn Lane >50m	D
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
South Approach	Bike Lane	Right Turn Lane Characteristics	Right Turn Lane <50m	B
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
East Approach	Bike Lane	Right Turn Lane Characteristics	Right Turn Lane >50m	D
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
West Approach	Bike Lane	Right Turn Lane Characteristics	Right Turn Lane >50m	D
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
Terry Fox Drive/Edgewater Street/Charlie Rogers Place				
North Approach	Bike Lane	Right Turn Lane Characteristics	Right Turn Lane <50m	B
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
South Approach	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	One Lane Crossed; 60km/h	F
West Approach	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	One Lane Crossed; 60km/h	F

Approach	Bikeway Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Terry Fox Drive/Kanata Recreation Complex				
North Approach	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
South Approach	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	One Lane Crossed; 40km/h	B
West Approach	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	One Lane Crossed; 60km/h	F
Terry Fox Drive/Sobeys				
North Approach	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	Two Lanes Crossed; 70km/h	F
South Approach	Bike Lane	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	Three Lanes Crossed; 70km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane <25m	A
		Left Turn Accommodation	One Lane Crossed; 40km/h	B
West Approach	Mixed Traffic	Right Turn Lane Characteristics	No Impact to LTS	A
		Left Turn Accommodation	No Lane Crossed; 50km/h	B

Transit Level of Service (TLOS)

Approach	Delay (sec.) ¹		TLOS
	AM Peak	PM Peak	
Hazeldean Road/Edgewater Street			
North Approach ²	-	-	-
East Approach	3 sec.	7 sec.	B
West Approach	4 sec.	8 sec.	B
Hazeldean Road/Terry Fox Drive			
North Approach	26 sec.	53 sec.	F
South Approach	32 sec.	51 sec.	F
East Approach	30 sec.	38 sec.	E
West Approach	39 sec.	42 sec.	F
Terry Fox Drive/Edgewater Street/Charlie Rogers Place			
North Approach	12 sec.	12 sec.	C
South Approach	13 sec.	13 sec.	C
East Approach ²	-	-	-
West Approach ²	-	-	-
Terry Fox Drive/Kanata Recreation Complex			
North Approach	1 sec.	5 sec.	B
South Approach	5 sec.	3 sec.	B
East Approach ²	-	-	-
West Approach ²	-	-	-
Terry Fox Drive/Sobeys			
North Approach	3 sec.	3 sec.	B
South Approach	5 sec.	5 sec.	B
East Approach ²	-	-	-
West Approach ²	-	-	-

1. Delay based on Synchro analysis
2. Transit does not serve this approach

Truck Level of Service (TkLOS)

Approach	Effective Corner Radius	Number of Receiving Lanes on Departure from Intersection	LOS
Hazeldean Road/Edgewater Street			
North Approach	10m to 15m	Two	B
East Approach	> 15m	One	C
West Approach	N/A	N/A	-
Hazeldean Road/Terry Fox Drive			
North Approach	> 15m	Two	A
South Approach	> 15m	Two	A
East Approach	> 15m	Two	A
West Approach	> 15m	Two	A
Terry Fox Drive/Edgewater Street/Charlie Rogers Place			
North Approach	10m to 15m	One	E
South Approach	10m to 15m	Two	B
East Approach	> 15m	Two	A
West Approach	10m to 15m	Two	B
Terry Fox Drive/Kanata Recreation Complex			
North Approach	10m to 15m	One	E
South Approach	10m to 15m	One	E
East Approach	10m to 15m	Two	B
West Approach	10m to 15m	Two	B
Terry Fox Drive/Sobeys			
North Approach	10m to 15m	One	E
South Approach	10m to 15m	One	E
East Approach	10m to 15m	Two	B
West Approach	< 10m	Two	D

Vehicle Level of Service (Auto LOS)

























Signalized Intersection	AM Peak			PM Peak		
	Max V/C	LOS	Mvmt	Max V/C	LOS	Mvmt
Hazeldean Road/Edgewater Street	0.51	A	SBL	0.51	A	WBT
Hazeldean Road/Terry Fox Drive	0.74	C	EBT	0.93	E	SBT
Terry Fox Drive/Edgewater Street/Charlie Rogers Place	0.76	C	SBL	0.65	B	NBT/ SBT
Terry Fox Drive/Kanata Recreation Complex	0.39	A	NBT	0.59	A	SBT
Terry Fox Drive/Sobeys	0.38	A	WBR	0.61	B	WBT/L

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

Appendix J: Synchro Reports (Total Traffic)

3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	637	175	90	235	149	156	654	172	138	342	220
Future Volume (vph)	270	637	175	90	235	149	156	654	172	138	342	220
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00					0.98	1.00		
Fr't			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3106	3293	1473	3195	3293	1345	3225	3357	1488	3164	3115	1459
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3106	3293	1449	3184	3293	1345	3225	3357	1465	3157	3115	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			224			222			222
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)			4	4					3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	5%	5%	5%	5%	15%	4%	3%	4%	6%	11%	6%
Adj. Flow (vph)	270	637	175	90	235	149	156	654	172	138	342	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	270	637	175	90	235	149	156	654	172	138	342	220
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	22.0	43.0	43.0	15.0	36.0	36.0	16.0	36.0	36.0	16.0	36.0	36.0
Total Split (%)	20.0%	39.1%	39.1%	13.6%	32.7%	32.7%	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%
Maximum Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes

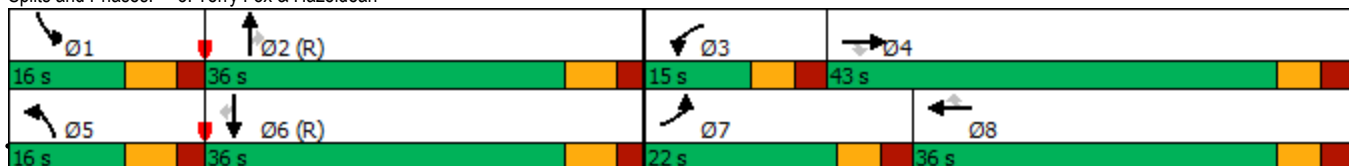


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		4	4		0	0		3	3		0	0
Act Effct Green (s)	14.0	29.4	29.4	7.9	20.8	20.8	10.1	39.9	39.9	9.7	39.5	39.5
Actuated g/C Ratio	0.13	0.27	0.27	0.07	0.19	0.19	0.09	0.36	0.36	0.09	0.36	0.36
v/c Ratio	0.69	0.72	0.34	0.39	0.38	0.34	0.53	0.54	0.26	0.50	0.31	0.33
Control Delay	55.1	41.6	6.2	51.1	37.7	7.7	57.9	28.3	3.7	52.7	24.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	41.6	6.2	51.1	37.7	7.7	57.9	28.3	3.7	52.7	24.2	7.1
LOS	E	D	A	D	D	A	E	C	A	D	C	A
Approach Delay		39.2			30.8			28.7			24.4	
Approach LOS		D			C			C			C	
90th %ile Green (s)	15.7	35.3	35.3	8.7	28.3	28.3	10.9	29.5	29.5	10.9	29.5	29.5
90th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	15.7	31.4	31.4	8.7	24.4	24.4	11.9	33.0	33.0	11.3	32.4	32.4
70th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
50th %ile Green (s)	14.8	28.3	28.3	8.5	22.0	22.0	10.6	37.5	37.5	10.1	37.0	37.0
50th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	13.1	25.0	25.0	7.5	19.4	19.4	9.4	43.0	43.0	8.9	42.5	42.5
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	10.6	26.9	26.9	0.0	10.0	10.0	7.6	56.6	56.6	7.2	56.2	56.2
10th %ile Term Code	Gap	Hold	Hold	Skip	Min	Min	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	252	559	21	84	197	22	139	520	33	119	251	66
Fuel Used(l)	28	57	7	7	16	4	15	44	4	14	26	10
CO Emissions (g/hr)	513	1067	125	139	304	67	275	826	72	268	488	182
NOx Emissions (g/hr)	99	206	24	27	59	13	53	159	14	52	94	35
VOC Emissions (g/hr)	118	246	29	32	70	16	63	190	17	62	113	42
Dilemma Vehicles (#)	0	21	0	0	8	0	0	29	0	0	15	0
Queue Length 50th (m)	28.7	66.4	0.0	9.6	23.0	0.0	14.9	60.1	0.0	14.7	29.2	0.0
Queue Length 95th (m)	42.0	79.0	14.6	17.7	32.5	11.6	25.8	88.5	12.5	18.0	45.5	35.4
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	443	1098	600	252	889	526	307	1218	672	295	1119	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.58	0.29	0.36	0.26	0.28	0.51	0.54	0.26	0.47	0.31	0.33

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 61 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 31.6
 Intersection LOS: C
 Intersection Capacity Utilization 73.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Terry Fox & Hazeldean



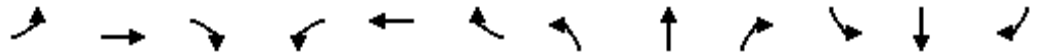
6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	116	0	1092	49	181	655	6
Future Volume (vph)	15	2	0	27	5	116	0	1092	49	181	655	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.856			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1502	0	1784	3278	0	1647	3172	1517
Flt Permitted	0.659			0.757						0.228		
Satd. Flow (perm)	1176	1784	0	1286	1502	0	1784	3278	0	395	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					99			7				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			558.9			243.7			226.6	
Travel Time (s)		13.3			40.2			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	116	0	1092	49	181	655	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	121	0	0	1141	0	181	655	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		34.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		73.0	73.0		73.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		66.4%	66.4%		66.4%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		66.5	66.5		66.5	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0		1	1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			83.0		83.0	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.75		0.75	0.75	0.75
v/c Ratio	0.10	0.01		0.17	0.44			0.46		0.61	0.27	0.01
Control Delay	39.8	36.0		41.3	19.2			12.4		20.3	5.4	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.8	36.0		41.3	19.2			12.4		20.3	5.4	0.0
LOS	D	D		D	B			B		C	A	A
Approach Delay		39.4			23.2			12.4			8.6	
Approach LOS		D			C			B			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		67.0	67.0		67.0	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Coord	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
Stops (vph)	15	3		25	58			665		88	195	0
Fuel Used(l)	1	0		3	10			63		10	23	0
CO Emissions (g/hr)	20	3		53	177			1167		187	435	2
NOx Emissions (g/hr)	4	1		10	34			225		36	84	0
VOC Emissions (g/hr)	5	1		12	41			269		43	100	0
Dilemma Vehicles (#)	0	0		0	0			64		0	30	0
Queue Length 50th (m)	3.0	0.4		6.1	9.3			87.7		12.0	15.6	0.0
Queue Length 95th (m)	7.5	2.2		11.1	17.4			70.4		#70.2	44.4	0.0
Internal Link Dist (m)		160.3			534.9			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	326	494		356	488			2475		298	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.05	0.00		0.08	0.25			0.46		0.61	0.27	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 11.9
 Intersection Capacity Utilization 73.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



7: Hazeldean & Edgewater
AM Peak

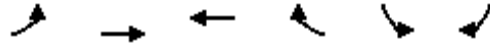
16 Edgewater Street
2022 Total Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	130	860	496	86	77	64
Future Volume (vph)	130	860	496	86	77	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.978			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1679	3357	3194	0	1572	1459
Flt Permitted	0.433				0.950	
Satd. Flow (perm)	762	3357	3194	0	1566	1459
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			35			64
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		134.2	
Travel Time (s)		9.4	14.0		9.7	
Confl. Peds. (#/hr)	5			5	3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	10%	6%
Adj. Flow (vph)	130	860	496	86	77	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	860	582	0	77	64
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8

7: Hazeldean & Edgewater
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes

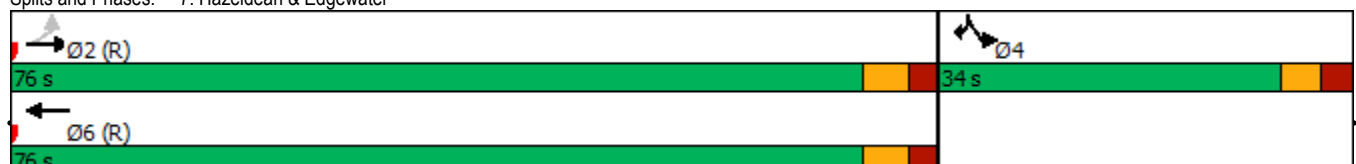


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			5		0	0
Act Effct Green (s)	90.5	90.5	90.5		11.7	11.7
Actuated g/C Ratio	0.82	0.82	0.82		0.11	0.11
v/c Ratio	0.21	0.31	0.22		0.46	0.30
Control Delay	4.1	3.5	3.0		66.3	26.8
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	4.1	3.7	3.0		66.3	26.8
LOS	A	A	A		E	C
Approach Delay		3.7	3.0		48.4	
Approach LOS		A	A		D	
90th %ile Green (s)	82.5	82.5	82.5		15.2	15.2
90th %ile Term Code	Coord	Coord	Coord		Gap	Gap
70th %ile Green (s)	85.2	85.2	85.2		12.5	12.5
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	87.0	87.0	87.0		10.7	10.7
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	87.7	87.7	87.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	103.8	103.8	103.8		0.0	0.0
10th %ile Term Code	Coord	Coord	Coord		Skip	Skip
Stops (vph)	31	190	117		71	26
Fuel Used(l)	3	20	17		7	3
CO Emissions (g/hr)	59	375	314		121	51
NOx Emissions (g/hr)	11	72	61		23	10
VOC Emissions (g/hr)	14	86	73		28	12
Dilemma Vehicles (#)	0	51	23		0	0
Queue Length 50th (m)	6.4	23.1	12.4		16.3	2.9
Queue Length 95th (m)	14.9	38.0	21.2		m30.2	m15.5
Internal Link Dist (m)		132.7	209.0		110.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	626	2761	2633		398	417
Starvation Cap Reductn	0	847	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	0.45	0.22		0.19	0.15

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 73 (66%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 52.9%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Hazeldean & Edgewater



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2	17	15	0	96	13	944	80	81	429	20
Future Volume (vph)	13	2	17	15	0	96	13	944	80	81	429	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Fr _t		0.928				0.850		0.988			0.993	
Flt Protected		0.980			0.950		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1695	1502	1695	4792	0	1695	3297	0
Flt Permitted		0.870			0.736		0.457			0.268		
Satd. Flow (perm)	0	1393	0	0	1308	1481	814	4792	0	477	3297	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				96		23			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	2		4	4		2	2		5	5		2
Confl. Bikes (#/hr)			1						3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	2%	2%	3%	2%	2%	4%	2%	4%	5%
Adj. Flow (vph)	13	2	17	15	0	96	13	944	80	81	429	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	15	96	13	1024	0	81	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	11.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	11.0	74.0		63.0	63.0	
Total Split (%)	32.7%	32.7%		32.7%	32.7%	32.7%	10.0%	67.3%		57.3%	57.3%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	5.0	68.0		57.0	57.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0		13.0		13.0	13.0	
Pedestrian Calls (#/hr)	4	4		2	2	2		5		2	2	
Act Effct Green (s)		13.8			13.8	13.8	87.0	88.2		83.5	83.5	
Actuated g/C Ratio		0.13			0.13	0.13	0.79	0.80		0.76	0.76	
v/c Ratio		0.17			0.09	0.36	0.02	0.27		0.22	0.18	
Control Delay		25.1			39.8	11.2	5.2	4.4		5.2	2.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		25.1			39.8	11.2	5.2	4.4		5.2	2.8	
LOS		C			D	B	A	A		A	A	
Approach Delay		25.1			15.1			4.4				3.1
Approach LOS		C			B			A				A
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	5.5	68.5		57.0	57.0	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Max	Coord		Coord	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	5.8	87.5		75.7	75.7	
70th %ile Term Code	Min	Min		Min	Min	Min	Gap	Coord		Coord	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
50th %ile Term Code	Min	Min		Min	Min	Min	Skip	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
30th %ile Term Code	Hold	Hold		Min	Min	Min	Skip	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	104.0		104.0	104.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Coord	Coord	
Stops (vph)		17			15	16	4	253		13	45	
Fuel Used(l)		1			1	2	1	36		2	8	
CO Emissions (g/hr)		23			16	32	9	676		33	148	
NOx Emissions (g/hr)		5			3	6	2	131		6	28	
VOC Emissions (g/hr)		5			4	7	2	156		8	34	
Dilemma Vehicles (#)		0			0	0	0	39		0	5	
Queue Length 50th (m)		3.0			3.0	0.0	0.5	16.1		0.9	2.3	
Queue Length 95th (m)		9.9			7.6	12.2	3.2	42.5		6.7	13.1	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		386			350	467	688	3846		362	2505	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.08			0.04	0.21	0.02	0.27		0.22	0.18	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	55 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.36
Intersection Signal Delay:	5.1
Intersection Capacity Utilization:	56.7%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	B

Splits and Phases: 12: Terry Fox & Sobeyes/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	2	0	1	6	1100	5	3	671	0
Future Volume (vph)	0	0	3	2	0	1	6	1100	5	3	671	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Fr t		0.850			0.850			0.999				
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1784	1517	0	1695	1497	0	1695	3351	0	1441	3202	0
Flt Permitted				0.769			0.397			0.252		
Satd. Flow (perm)	1784	1517	0	1372	1497	0	708	3351	0	382	3202	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		280			110			1				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		157.2			86.7			83.3				243.7
Travel Time (s)		11.3			6.2			4.3				12.5
Confl. Peds. (#/hr)	1						1		5	5		
Confl. Bikes (#/hr)												2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	20%	20%	8%	2%
Adj. Flow (vph)	0	0	3	2	0	1	6	1100	5	3	671	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	2	1	0	6	1105	0	3	671	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		32.5	32.5		32.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		77.0	77.0		77.0	77.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		70.5	70.5		70.5	70.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	

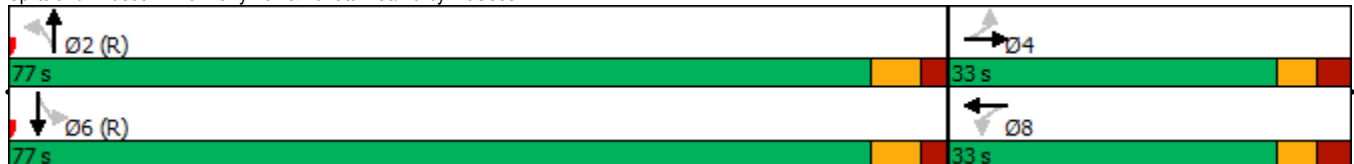


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.5	6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		1	1		5	5		0	0	
Act Effct Green (s)		13.2		13.2	13.2		102.3	102.3		102.3	102.3	
Actuated g/C Ratio		0.12		0.12	0.12		0.93	0.93		0.93	0.93	
v/c Ratio		0.01		0.01	0.00		0.01	0.35		0.01	0.23	
Control Delay		0.0		38.0	0.0		6.7	4.6		0.7	0.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		0.0		38.0	0.0		6.7	4.6		0.7	0.4	
LOS		A		D	A		A	A		A	A	
Approach Delay					25.3			4.6				0.4
Approach LOS					C			A				A
90th %ile Green (s)	26.0	26.0		26.0	26.0		71.3	71.3		71.3	71.3	
90th %ile Term Code	Hold	Hold		Ped	Ped		Coord	Coord		Coord	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
70th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
50th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0		3	0		2	180		0	7	
Fuel Used(l)		0		0	0		0	40		0	14	
CO Emissions (g/hr)		1		3	0		5	751		1	257	
NOx Emissions (g/hr)		0		1	0		1	145		0	50	
VOC Emissions (g/hr)		0		1	0		1	173		0	59	
Dilemma Vehicles (#)		0		0	0		0	31		0	1	
Queue Length 50th (m)		0.0		0.4	0.0		0.0	0.0		0.0	0.0	
Queue Length 95th (m)		0.0		2.3	0.0		m1.4	82.6		m0.1	3.8	
Internal Link Dist (m)		133.2			62.7			59.3			219.7	
Turn Bay Length (m)				20.0			35.0			35.0		
Base Capacity (vph)		581		334	447		658	3115		355	2977	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.01		0.01	0.00		0.01	0.35		0.01	0.23	

Intersection Summary










Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 26 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 3.1
 Intersection Capacity Utilization 51.6%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



























11: Edgewater & Access
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	8	204	12	6	126
Future Volume (Veh/h)	15	8	204	12	6	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	8	204	12	6	126
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			134			
pX, platoon unblocked						
vC, conflicting volume	348	210			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	210			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	646	830			1354	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	23	216	132			
Volume Left	15	0	6			
Volume Right	8	12	0			
cSH	700	1700	1354			
Volume to Capacity	0.03	0.13	0.00			
Queue Length 95th (m)	0.8	0.0	0.1			
Control Delay (s)	10.3	0.0	0.4			
Lane LOS	B		A			
Approach Delay (s)	10.3	0.0	0.4			
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			22.2%	ICU Level of Service		A
Analysis Period (min)			15			

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	466	259	253	652	297	245	671	117	278	799	422
Future Volume (vph)	351	466	259	253	652	297	245	671	117	278	799	422
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.99
Fr't			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3248	3390	1483	3259	3390	1419	3286	3357	1489	3093	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			249			239			146			322
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	351	466	259	253	652	297	245	671	117	278	799	422
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	466	259	253	652	297	245	671	117	278	799	422
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	23.0	42.0	42.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0	37.0	37.0
Total Split (%)	19.2%	35.0%	35.0%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%	30.8%	30.8%
Maximum Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes

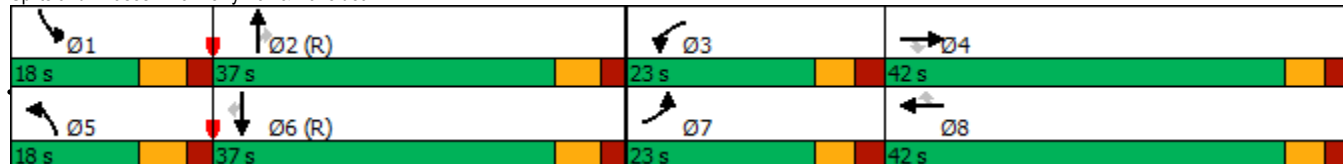


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	16.0	32.0	32.0	14.1	30.1	30.1	12.6	34.0	34.0	14.2	35.7	35.7
Actuated g/C Ratio	0.13	0.27	0.27	0.12	0.25	0.25	0.10	0.28	0.28	0.12	0.30	0.30
v/c Ratio	0.81	0.51	0.45	0.66	0.77	0.56	0.71	0.71	0.22	0.76	0.79	0.63
Control Delay	65.5	39.1	7.3	54.6	43.0	13.5	76.5	39.9	2.4	57.3	51.5	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	39.1	7.3	54.6	43.0	13.5	76.5	39.9	2.4	57.3	51.5	24.8
LOS	E	D	A	D	D	B	E	D	A	E	D	C
Approach Delay		40.1			38.2			44.4			45.1	
Approach LOS		D			D			D			D	
90th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	16.7	34.4	34.4	16.1	33.8	33.8	13.4	30.5	30.5	13.4	30.5	30.5
70th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	16.7	32.9	32.9	14.5	30.7	30.7	14.5	30.5	30.5	16.5	32.5	32.5
50th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	16.4	31.1	31.1	12.8	27.5	27.5	12.9	34.3	34.3	16.2	37.6	37.6
30th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	13.6	26.1	26.1	10.5	23.0	23.0	10.6	44.2	44.2	13.6	47.2	47.2
10th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	328	382	31	229	589	110	237	587	10	242	733	221
Fuel Used(l)	39	40	10	21	49	11	28	54	2	30	85	29
CO Emissions (g/hr)	720	748	189	399	920	199	513	1002	37	559	1572	533
NOx Emissions (g/hr)	139	144	36	77	178	38	99	193	7	108	303	103
VOC Emissions (g/hr)	166	172	44	92	212	46	118	231	8	129	363	123
Dilemma Vehicles (#)	0	14	0	0	22	0	0	27	0	0	15	0
Queue Length 50th (m)	41.6	48.6	1.7	29.5	75.2	19.4	31.4	77.9	0.0	32.6	106.2	54.3
Queue Length 95th (m)	#60.9	62.6	21.1	35.9	90.9	50.6	#49.7	64.8	3.9	#59.0	#138.0	87.0
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	453	1008	616	457	1008	590	349	951	526	368	1007	671
Starvation Cap Reductn	0	0	0	0	0	0	0	6	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.46	0.42	0.55	0.65	0.50	0.70	0.71	0.22	0.76	0.79	0.63

Intersection Summary























Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 42.1
 Intersection LOS: D
 Intersection Capacity Utilization 84.1%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean



6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	5	62	6	178	3	1143	74	189	1404	63
Future Volume (vph)	12	4	5	62	6	178	3	1143	74	189	1404	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.99		1.00								0.98
Fr t		0.917			0.855			0.991				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1624	0	1616	1503	0	1695	3269	0	1647	3172	1517
Flt Permitted	0.406			0.752			0.170			0.171		
Satd. Flow (perm)	724	1624	0	1278	1503	0	303	3269	0	296	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			178			8				73
Link Speed (k/h)		50			50			70				70
Link Distance (m)		184.3			574.2			243.7				226.6
Travel Time (s)		13.3			41.3			12.5				11.7
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	12	4	5	62	6	178	3	1143	74	189	1404	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	9	0	62	184	0	3	1217	0	189	1404	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		9.5	34.5		9.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	69.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	57.5%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		9.5	62.5		9.5	62.5	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes

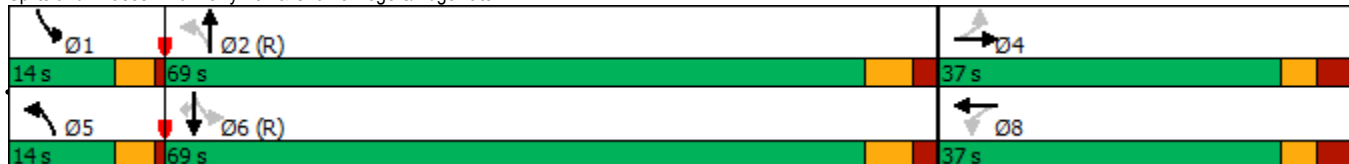


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		1.0	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		4.5	6.5		4.5	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0			21.0			21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0			0			1	1
Act Effct Green (s)	14.9	14.9		14.9	14.9		85.5	77.9		94.0	90.0	90.0
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.71	0.65		0.78	0.75	0.75
v/c Ratio	0.13	0.04		0.39	0.54		0.01	0.57		0.56	0.59	0.06
Control Delay	45.5	29.8		48.9	13.1		2.0	11.1		10.6	10.3	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	45.5	29.8		48.9	13.1		2.0	11.1		10.6	10.3	2.0
LOS	D	C		D	B		A	B		B	B	A
Approach Delay		38.8			22.1			11.0			10.0	
Approach LOS		D			C			B			B	
90th %ile Green (s)	30.0	30.0		30.0	30.0		5.8	62.5		10.0	66.7	66.7
90th %ile Term Code	Ped	Ped		Hold	Hold		Gap	Coord		Max	Coord	Coord
70th %ile Green (s)	13.3	13.3		13.3	13.3		0.0	76.3		12.9	93.7	93.7
70th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
50th %ile Green (s)	11.2	11.2		11.2	11.2		0.0	81.2		10.1	95.8	95.8
50th %ile Term Code	Hold	Hold		Gap	Gap		Skip	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	84.4		8.1	97.0	97.0
30th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		0.0	85.2		7.3	97.0	97.0
10th %ile Term Code	Hold	Hold		Min	Min		Skip	Coord		Gap	Coord	Coord
Stops (vph)	11	7		54	39		0	835		46	631	5
Fuel Used(l)	1	1		7	13		0	71		7	65	1
CO Emissions (g/hr)	16	10		129	237		1	1324		131	1204	28
NOx Emissions (g/hr)	3	2		25	46		0	256		25	232	5
VOC Emissions (g/hr)	4	2		30	55		0	305		30	278	6
Dilemma Vehicles (#)	0	0		0	0		0	15		0	58	0
Queue Length 50th (m)	2.7	0.9		13.7	4.7		0.1	90.0		7.3	51.1	0.0
Queue Length 95th (m)	7.3	4.9		23.0	19.7		m0.1	161.7		25.2	163.1	5.1
Internal Link Dist (m)		160.3			550.2			219.7			202.6	
Turn Bay Length (m)	25.0			40.0			35.0			35.0		45.0
Base Capacity (vph)	184	416		324	514		336	2125		349	2380	1130
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.07	0.02		0.19	0.36		0.01	0.57		0.54	0.59	0.06

Intersection Summary

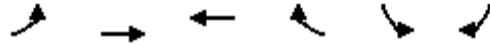
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.6
 Intersection Capacity Utilization 73.4%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	67	839	1133	74	76	97
Future Volume (vph)	67	839	1133	74	76	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99		0.99		0.99	
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1601	3390	3338	0	1662	1517
Flt Permitted	0.212				0.950	
Satd. Flow (perm)	354	3390	3338	0	1650	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			12			97
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		122.2	
Travel Time (s)		9.4	14.0		8.8	
Confl. Peds. (#/hr)	27			27	6	16
Confl. Bikes (#/hr)				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	4%	4%	2%
Adj. Flow (vph)	67	839	1133	74	76	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	839	1207	0	76	97
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3

7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			20		10	10
Act Effct Green (s)	93.4	93.4	93.4		14.3	14.3
Actuated g/C Ratio	0.78	0.78	0.78		0.12	0.12
v/c Ratio	0.24	0.32	0.46		0.39	0.37
Control Delay	9.7	7.1	6.0		48.5	10.6
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	9.7	7.2	6.0		48.5	10.6
LOS	A	A	A		D	B
Approach Delay		7.4	6.0		27.3	
Approach LOS		A	A		C	
90th %ile Green (s)	79.8	79.8	79.8		27.9	27.9
90th %ile Term Code	Coord	Coord	Coord		Ped	Ped
70th %ile Green (s)	95.1	95.1	95.1		12.6	12.6
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	96.9	96.9	96.9		10.8	10.8
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
10th %ile Term Code	Coord	Coord	Coord		Min	Min
Stops (vph)	25	294	395		64	35
Fuel Used(l)	2	25	43		5	3
CO Emissions (g/hr)	41	474	796		96	50
NOx Emissions (g/hr)	8	91	154		19	10
VOC Emissions (g/hr)	10	109	183		22	12
Dilemma Vehicles (#)	0	36	50		0	0
Queue Length 50th (m)	5.5	36.7	35.5		17.0	2.6
Queue Length 95th (m)	m12.0	53.7	87.2		m25.1	7.7
Internal Link Dist (m)		132.7	209.0		98.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	275	2639	2601		386	427
Starvation Cap Reductn	0	707	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	0.43	0.46		0.20	0.23

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 8.2

Intersection LOS: A

Intersection Capacity Utilization 74.0%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 7: Hazeldean & Edgewater



12: Terry Fox & Sobeys/500 Hazeldean
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	5	74	74	4	105	29	911	68	119	1116	81
Future Volume (vph)	36	5	74	74	4	105	29	911	68	119	1116	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.98			0.99	0.98	1.00	1.00		1.00	1.00	
Fr _t		0.913				0.850		0.990			0.990	
Flt Protected		0.985			0.955		0.950			0.950		
Satd. Flow (prot)	0	1581	0	0	1704	1517	1695	4812	0	1695	3345	0
Flt Permitted		0.866			0.606		0.212			0.277		
Satd. Flow (perm)	0	1388	0	0	1072	1491	377	4812	0	493	3345	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72				105		20			13	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	4		9	9		4	9		4	4		9
Confl. Bikes (#/hr)									1			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	5	74	74	4	105	29	911	68	119	1116	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	78	105	29	979	0	119	1197	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	26.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	84.0	84.0		84.0	84.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	78.0	78.0		78.0	78.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	

12: Terry Fox & Sobey's/500 Hazeldean
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0	13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	9	9		4	4	4	4	4		9	9	
Act Effct Green (s)		15.9			15.9	15.9	91.6	91.6		91.6	91.6	
Actuated g/C Ratio		0.13			0.13	0.13	0.76	0.76		0.76	0.76	
v/c Ratio		0.47			0.55	0.37	0.10	0.27		0.32	0.47	
Control Delay		24.9			61.4	11.1	6.4	4.9		2.5	1.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.3	
Total Delay		24.9			61.4	11.1	6.4	4.9		2.5	1.8	
LOS		C			E	B	A	A		A	A	
Approach Delay		24.9			32.6			5.0			1.9	
Approach LOS		C			C			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	78.5	78.5		78.5	78.5	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0		16.0	16.0	16.0	91.5	91.5		91.5	91.5	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.4	13.4		13.4	13.4	13.4	94.1	94.1		94.1	94.1	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.9	10.9		10.9	10.9	10.9	96.6	96.6		96.6	96.6	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	97.5	97.5		97.5	97.5	
10th %ile Term Code	Min	Min		Min	Min	Min	Coord	Coord		Coord	Coord	
Stops (vph)		44			71	16	8	269		6	76	
Fuel Used(l)		4			6	2	1	36		2	18	
CO Emissions (g/hr)		77			106	34	21	676		34	336	
NOx Emissions (g/hr)		15			20	7	4	130		7	65	
VOC Emissions (g/hr)		18			24	8	5	156		8	77	
Dilemma Vehicles (#)		0			0	0	0	41		0	10	
Queue Length 50th (m)		9.4			17.9	0.0	1.3	18.4		1.1	5.3	
Queue Length 95th (m)		23.7			29.4	13.6	6.5	39.9		m2.3	9.3	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		395			263	445	287	3679		376	2557	
Starvation Cap Reductn		0			0	0	0	0		0	674	
Spillback Cap Reductn		0			0	0	0	13		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.29			0.30	0.24	0.10	0.27		0.32	0.64	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 113 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 6.2
 Intersection LOS: A
 Intersection Capacity Utilization 76.1%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Terry Fox & Sobey's/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	23	14	0	5	44	1099	39	6	1475	1
Future Volume (vph)	2	0	23	14	0	5	44	1099	39	6	1475	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00		1.00		
Fr t		0.850			0.850			0.995				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1517	0	1695	1289	0	1695	3369	0	1695	3390	0
Flt Permitted	0.754			0.742			0.143			0.245		
Satd. Flow (perm)	1345	1517	0	1324	1289	0	255	3369	0	436	3390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		175			213			5				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		145.8			86.7			83.3				243.7
Travel Time (s)		10.5			6.2			4.3				12.5
Confl. Peds. (#/hr)									6	6		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	2	0	23	14	0	5	44	1099	39	6	1475	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	23	0	14	5	0	44	1138	0	6	1476	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		9.5	32.5		9.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		10.5	65.5		10.5	65.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	

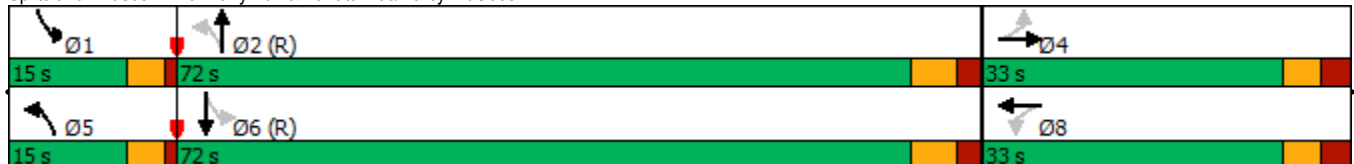


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		1.0	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		4.5	6.5		4.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0			6			0	
Act Effct Green (s)	10.0	10.0		10.0	10.0		105.1	104.3		101.8	96.6	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.88	0.87		0.85	0.80	
v/c Ratio	0.02	0.08		0.13	0.02		0.15	0.39		0.01	0.54	
Control Delay	51.0	0.6		53.9	0.2		1.2	2.3		2.0	4.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	0.6		53.9	0.2		1.2	2.3		2.0	4.4	
LOS	D	A		D	A		A	A		A	A	
Approach Delay		4.6			39.8			2.2			4.4	
Approach LOS		A			D			A			A	
90th %ile Green (s)	10.0	10.0		10.0	10.0		6.6	87.1		5.7	86.2	
90th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Gap	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0		6.2	97.3		0.0	86.6	
70th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Skip	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0		6.0	97.3		0.0	86.8	
50th %ile Term Code	Min	Min		Hold	Hold		Gap	Coord		Skip	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		5.5	113.5		0.0	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Gap	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		0.0	113.5		0.0	113.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Skip	Coord		Skip	Coord	
Stops (vph)	3	0		16	0		1	239		1	257	
Fuel Used(l)	0	0		1	0		1	42		0	46	
CO Emissions (g/hr)	3	6		20	1		23	779		3	848	
NOx Emissions (g/hr)	1	1		4	0		4	150		1	164	
VOC Emissions (g/hr)	1	1		5	0		5	180		1	196	
Dilemma Vehicles (#)	0	0		0	0		0	5		0	62	
Queue Length 50th (m)	0.4	0.0		3.1	0.0		0.2	3.7		0.2	33.0	
Queue Length 95th (m)	3.1	0.0		9.8	0.0		m0.3	93.7		m0.4	48.3	
Internal Link Dist (m)		121.8			62.7			59.3			219.7	
Turn Bay Length (m)	20.0			20.0			35.0			35.0		
Base Capacity (vph)	300	474		295	453		351	2930		493	2729	
Starvation Cap Reductn	0	0		0	0		0	0		0	49	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.05		0.05	0.01		0.13	0.39		0.01	0.55	

Intersection Summary










Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 3.7
 Intersection Capacity Utilization 62.0%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



11: Edgewater & Access
PM Peak

16 Edgewater Street
2022 Total Traffic Volumes

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	9	120	21	9	151
Future Volume (Veh/h)	22	9	120	21	9	151
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	22	9	120	21	9	151
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			122			
pX, platoon unblocked						
vC, conflicting volume	300	130			141	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	130			141	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			99	
cM capacity (veh/h)	688	919			1442	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	31	141	160			
Volume Left	22	0	9			
Volume Right	9	21	0			
cSH	742	1700	1442			
Volume to Capacity	0.04	0.08	0.01			
Queue Length 95th (m)	1.0	0.0	0.1			
Control Delay (s)	10.1	0.0	0.5			
Lane LOS	B		A			
Approach Delay (s)	10.1	0.0	0.5			
Approach LOS	B					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			26.2%	ICU Level of Service		A
Analysis Period (min)			15			

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes (Mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	116	0	1092	49	181	655	6
Future Volume (vph)	15	2	0	27	5	116	0	1092	49	181	655	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.856			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1502	0	1784	3278	0	1647	3172	1517
Flt Permitted	0.659			0.757						0.184		
Satd. Flow (perm)	1176	1784	0	1286	1502	0	1784	3278	0	319	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					116			6				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			558.9			243.7			226.6	
Travel Time (s)		13.3			40.2			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	116	0	1092	49	181	655	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	121	0	0	1141	0	181	655	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		6			6
Detector Phase	4	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		10.2	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		59.0	59.0		14.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		53.6%	53.6%		12.7%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		52.5	52.5		8.8	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2022 Total Traffic Volumes (Mitigated)

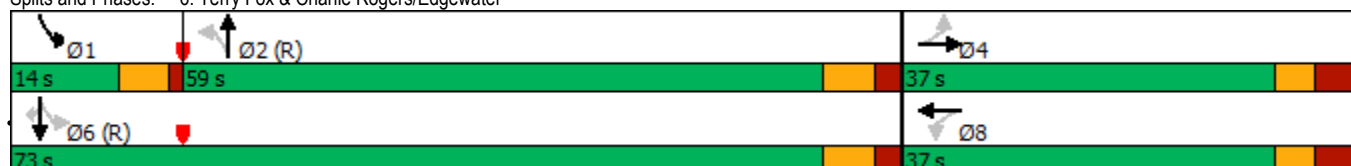


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		5.2	6.5	6.5
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0			1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			69.0		84.3	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.63		0.77	0.75	0.75
v/c Ratio	0.10	0.01		0.17	0.41			0.55		0.52	0.27	0.01
Control Delay	39.8	36.0		39.6	17.7			17.3		10.0	5.4	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.8	36.0		39.6	17.7			17.3		10.0	5.4	0.0
LOS	D	D		D	B			B		A	A	A
Approach Delay		39.4			21.7			17.3			6.4	
Approach LOS		D			C			B			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		52.5	52.5		9.3	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Max	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		70.8	70.8		11.0	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Gap	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		73.1	73.1		8.7	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		73.8	73.8		8.0	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		74.7	74.7		7.1	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
Stops (vph)	15	3		24	75			809		48	195	0
Fuel Used(l)	1	0		3	10			73		7	23	0
CO Emissions (g/hr)	20	3		52	181			1364		127	435	2
NOx Emissions (g/hr)	4	1		10	35			263		25	84	0
VOC Emissions (g/hr)	5	1		12	42			315		29	100	0
Dilemma Vehicles (#)	0	0		0	0			39		0	30	0
Queue Length 50th (m)	3.0	0.4		4.7	3.5			92.6		6.7	15.6	0.0
Queue Length 95th (m)	7.5	2.2		13.2	22.8			73.3		25.1	44.4	0.0
Internal Link Dist (m)		160.3			534.9			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	326	494		356	500			2057		357	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.05	0.00		0.08	0.24			0.55		0.51	0.27	0.01

Intersection Summary

























Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 13.5
 Intersection Capacity Utilization 72.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



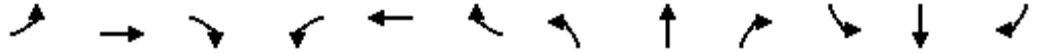
3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	327	729	188	106	279	157	166	735	222	145	373	255
Future Volume (vph)	327	729	188	106	279	157	166	735	222	145	373	255
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	1.00					0.98	1.00		
Fr't			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3106	3293	1473	3195	3293	1345	3225	3357	1488	3164	3115	1459
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3106	3293	1449	3185	3293	1345	3225	3357	1465	3158	3115	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			188			224			222			255
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)			4	4					3	3		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	5%	5%	5%	5%	15%	4%	3%	4%	6%	11%	6%
Adj. Flow (vph)	327	729	188	106	279	157	166	735	222	145	373	255
Shared Lane Traffic (%)												
Lane Group Flow (vph)	327	729	188	106	279	157	166	735	222	145	373	255
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	22.0	43.0	43.0	15.0	36.0	36.0	16.0	36.0	36.0	16.0	36.0	36.0
Total Split (%)	20.0%	39.1%	39.1%	13.6%	32.7%	32.7%	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%
Maximum Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		4	4		0	0		3	3		0	0
Act Effct Green (s)	14.9	31.2	31.2	8.1	24.5	24.5	9.8	35.5	35.5	9.5	35.2	35.2
Actuated g/C Ratio	0.14	0.28	0.28	0.07	0.22	0.22	0.09	0.32	0.32	0.09	0.32	0.32
v/c Ratio	0.78	0.78	0.34	0.45	0.38	0.33	0.58	0.68	0.36	0.53	0.37	0.40
Control Delay	59.5	42.2	5.7	52.0	35.1	8.1	60.2	33.7	5.8	54.5	27.0	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	59.5	42.2	5.7	52.0	35.1	8.1	60.2	33.9	5.8	54.5	27.0	8.1
LOS	E	D	A	D	D	A	E	C	A	D	C	A
Approach Delay		41.2			30.6			32.2			25.9	
Approach LOS		D			C			C			C	
90th %ile Green (s)	15.7	36.7	36.7	8.7	29.7	29.7	9.5	29.5	29.5	9.5	29.5	29.5
90th %ile Term Code	Max	Max	Max	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	15.7	35.0	35.0	8.7	28.0	28.0	11.2	29.5	29.5	11.2	29.5	29.5
70th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	15.7	31.9	31.9	8.7	24.9	24.9	11.0	33.4	33.4	10.4	32.8	32.8
50th %ile Term Code	Max	Gap	Gap	Max	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
30th %ile Green (s)	15.0	28.6	28.6	8.0	21.6	21.6	9.7	38.7	38.7	9.1	38.1	38.1
30th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
10th %ile Green (s)	12.3	24.0	24.0	6.5	18.2	18.2	7.8	46.5	46.5	7.4	46.1	46.1
10th %ile Term Code	Gap	Gap	Gap	Gap	Hold	Hold	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	307	647	21	101	229	25	151	625	60	130	290	79
Fuel Used(l)	35	66	7	9	19	4	16	55	6	16	30	12
CO Emissions (g/hr)	643	1232	132	166	348	73	301	1018	114	289	560	217
NOx Emissions (g/hr)	124	238	25	32	67	14	58	196	22	56	108	42
VOC Emissions (g/hr)	148	284	30	38	80	17	69	235	26	67	129	50
Dilemma Vehicles (#)	0	27	0	0	9	0	0	32	0	0	17	0
Queue Length 50th (m)	35.1	75.0	0.0	11.3	26.8	0.0	17.6	73.9	2.5	15.5	34.0	3.1
Queue Length 95th (m)	#50.6	90.5	14.8	20.2	37.3	13.5	27.4	100.8	16.7	19.8	49.7	41.0
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	443	1098	608	252	889	526	298	1084	623	288	996	640
Starvation Cap Reductn	0	0	0	0	0	0	0	33	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.66	0.31	0.42	0.31	0.30	0.56	0.70	0.36	0.50	0.37	0.40

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 61 (55%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 33.7

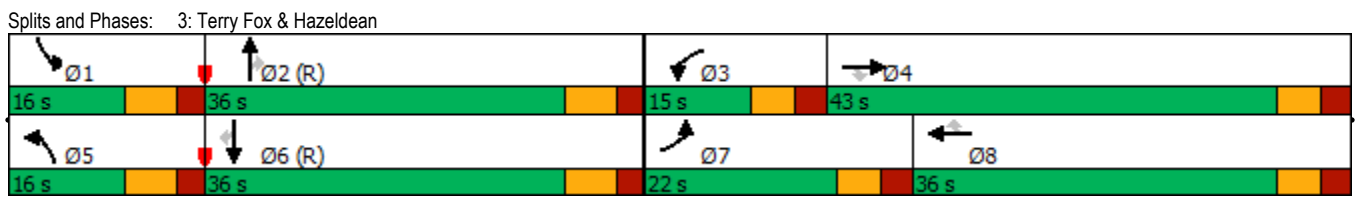
Intersection LOS: C

Intersection Capacity Utilization 75.6%

ICU Level of Service D























Analysis Period (min) 15

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



6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	116	0	1238	49	181	726	6
Future Volume (vph)	15	2	0	27	5	116	0	1238	49	181	726	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr t					0.856			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1502	0	1784	3277	0	1647	3172	1517
Flt Permitted	0.660			0.757						0.189		
Satd. Flow (perm)	1178	1784	0	1286	1502	0	1784	3277	0	328	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					71			6				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			558.9			243.7			226.6	
Travel Time (s)		13.3			40.2			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	116	0	1238	49	181	726	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	121	0	0	1287	0	181	726	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		34.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		73.0	73.0		73.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		66.4%	66.4%		66.4%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		66.5	66.5		66.5	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	6.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0		1	1	1
Act Effct Green (s)	14.3	14.3		14.3	14.3			82.7		82.7	82.7	82.7
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.75		0.75	0.75	0.75
v/c Ratio	0.10	0.01		0.16	0.47			0.52		0.74	0.30	0.01
Control Delay	39.2	35.5		43.6	28.7			13.7		31.9	5.7	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.2	35.5		43.6	28.7			13.7		31.9	5.7	0.0
LOS	D	D		D	C			B		C	A	A
Approach Delay		38.8			31.4			13.7			10.9	
Approach LOS		D			C			B			B	
90th %ile Green (s)	30.0	30.0		30.0	30.0		67.0	67.0		67.0	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Coord	Coord	Coord
70th %ile Green (s)	11.7	11.7		11.7	11.7		85.3	85.3		85.3	85.3	85.3
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		87.0	87.0		87.0	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Coord	Coord	Coord
Stops (vph)	15	3		25	68			875		93	225	0
Fuel Used(l)	1	0		3	11			78		12	26	0
CO Emissions (g/hr)	20	3		54	198			1443		221	493	2
NOx Emissions (g/hr)	4	1		10	38			278		43	95	0
VOC Emissions (g/hr)	5	1		12	46			333		51	114	0
Dilemma Vehicles (#)	0	0		0	0			65		0	33	0
Queue Length 50th (m)	3.0	0.4		6.2	14.4			144.0		14.6	17.7	0.0
Queue Length 95th (m)	7.5	2.2		11.3	22.7			70.5		#79.3	50.2	0.0
Internal Link Dist (m)		160.3			534.9			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	326	494		356	467			2464		246	2383	1122
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.05	0.00		0.08	0.26			0.52		0.74	0.30	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 16 (15%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 13.9
 Intersection Capacity Utilization 78.1%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater

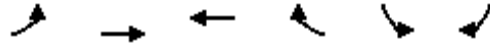




Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	130	1004	564	86	77	64
Future Volume (vph)	130	1004	564	86	77	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.980			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1679	3357	3200	0	1572	1459
Flt Permitted	0.405				0.950	
Satd. Flow (perm)	713	3357	3200	0	1566	1459
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30			64
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		134.2	
Travel Time (s)		9.4	14.0		9.7	
Confl. Peds. (#/hr)	5			5	3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	6%	2%	10%	6%
Adj. Flow (vph)	130	1004	564	86	77	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	1004	650	0	77	64
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8

7: Hazeldean & Edgewater
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes

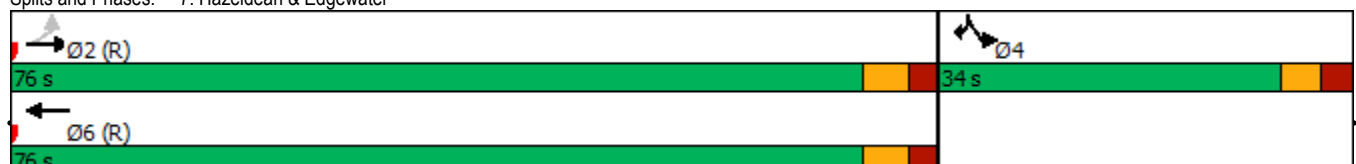


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			5		0	0
Act Effct Green (s)	90.5	90.5	90.5		11.7	11.7
Actuated g/C Ratio	0.82	0.82	0.82		0.11	0.11
v/c Ratio	0.22	0.36	0.25		0.46	0.30
Control Delay	5.1	4.4	3.2		66.4	26.7
Queue Delay	0.0	0.2	0.0		0.0	0.0
Total Delay	5.1	4.6	3.2		66.4	26.7
LOS	A	A	A		E	C
Approach Delay		4.6	3.2		48.4	
Approach LOS		A	A		D	
90th %ile Green (s)	82.5	82.5	82.5		15.2	15.2
90th %ile Term Code	Coord	Coord	Coord		Gap	Gap
70th %ile Green (s)	85.2	85.2	85.2		12.5	12.5
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	87.0	87.0	87.0		10.7	10.7
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	87.7	87.7	87.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	103.8	103.8	103.8		0.0	0.0
10th %ile Term Code	Coord	Coord	Coord		Skip	Skip
Stops (vph)	35	254	136		73	27
Fuel Used(l)	3	25	19		7	3
CO Emissions (g/hr)	63	470	356		122	51
NOx Emissions (g/hr)	12	91	69		24	10
VOC Emissions (g/hr)	15	108	82		28	12
Dilemma Vehicles (#)	0	78	25		0	0
Queue Length 50th (m)	7.0	29.8	14.5		16.6	3.1
Queue Length 95th (m)	m16.6	51.1	24.3		m26.5	m12.5
Internal Link Dist (m)		132.7	209.0		110.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	586	2761	2637		398	417
Starvation Cap Reductn	0	810	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	0.51	0.25		0.19	0.15

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 73 (66%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 7.3
 Intersection LOS: A
 Intersection Capacity Utilization 52.9%
 ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Hazeldean & Edgewater





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2	17	15	0	96	13	1081	80	81	469	20
Future Volume (vph)	13	2	17	15	0	96	13	1081	80	81	469	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00	0.99	1.00	1.00		1.00	1.00	
Fr _t		0.928				0.850		0.990			0.994	
Flt Protected		0.980			0.950		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1695	1502	1695	4804	0	1695	3300	0
Flt Permitted		0.870			0.736		0.440			0.232		
Satd. Flow (perm)	0	1393	0	0	1308	1481	783	4804	0	413	3300	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				96		20			6	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	2		4	4		2	2		5	5		2
Confl. Bikes (#/hr)			1						3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	2%	2%	3%	2%	2%	4%	2%	4%	5%
Adj. Flow (vph)	13	2	17	15	0	96	13	1081	80	81	469	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	15	96	13	1161	0	81	489	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	5	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	11.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	11.0	74.0		63.0	63.0	
Total Split (%)	32.7%	32.7%		32.7%	32.7%	32.7%	10.0%	67.3%		57.3%	57.3%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	5.0	68.0		57.0	57.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0		13.0		13.0	13.0	
Pedestrian Calls (#/hr)	4	4		2	2	2		5		2	2	
Act Effct Green (s)		13.8			13.8	13.8	87.0	88.2		83.5	83.5	
Actuated g/C Ratio		0.13			0.13	0.13	0.79	0.80		0.76	0.76	
v/c Ratio		0.17			0.09	0.36	0.02	0.30		0.26	0.20	
Control Delay		25.1			39.8	11.2	5.2	4.6		5.9	2.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		25.1			39.8	11.2	5.2	4.6		5.9	2.7	
LOS		C			D	B	A	A		A	A	
Approach Delay		25.1			15.1			4.6				3.1
Approach LOS		C			B			A				A
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	5.5	68.5		57.0	57.0	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Max	Coord		Coord	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	5.8	87.5		75.7	75.7	
70th %ile Term Code	Min	Min		Min	Min	Min	Gap	Coord		Coord	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
50th %ile Term Code	Min	Min		Min	Min	Min	Skip	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	0.0	87.5		87.5	87.5	
30th %ile Term Code	Hold	Hold		Min	Min	Min	Skip	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	0.0	0.0	104.0		104.0	104.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Skip	Skip	Coord		Coord	Coord	
Stops (vph)		17			15	16	4	298		16	46	
Fuel Used(l)		1			1	2	1	42		2	8	
CO Emissions (g/hr)		23			16	32	9	779		37	158	
NOx Emissions (g/hr)		5			3	6	2	150		7	30	
VOC Emissions (g/hr)		5			4	7	2	180		8	36	
Dilemma Vehicles (#)		0			0	0	0	44		0	7	
Queue Length 50th (m)		3.0			3.0	0.0	0.5	19.1		0.9	2.6	
Queue Length 95th (m)		9.9			7.6	12.2	3.2	49.8		6.6	13.7	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		386			350	467	665	3856		313	2507	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	40		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.08			0.04	0.21	0.02	0.30		0.26	0.20	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	55 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.36
Intersection Signal Delay:	5.1
Intersection Capacity Utilization:	59.5%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	B

Splits and Phases: 12: Terry Fox & Sobeys/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	2	0	1	6	1246	5	3	742	0
Future Volume (vph)	0	0	3	2	0	1	6	1246	5	3	742	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00		
Fr t		0.850			0.850			0.999				
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1784	1517	0	1695	1497	0	1695	3351	0	1441	3202	0
Flt Permitted				0.769			0.370			0.214		
Satd. Flow (perm)	1784	1517	0	1372	1497	0	660	3351	0	324	3202	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		241			80			1				
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		157.2			86.7			83.3			243.7	
Travel Time (s)		11.3			6.2			4.3			12.5	
Confl. Peds. (#/hr)	1						1		5	5		
Confl. Bikes (#/hr)												2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	20%	20%	8%	2%
Adj. Flow (vph)	0	0	3	2	0	1	6	1246	5	3	742	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	2	1	0	6	1251	0	3	742	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		32.5	32.5		32.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		77.0	77.0		77.0	77.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		70.5	70.5		70.5	70.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		2.3	2.3		2.3	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.5	6.5		6.5	6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		1	1		5	5		0	0	
Act Effct Green (s)		13.2		13.2	13.2		102.3	102.3		102.3	102.3	
Actuated g/C Ratio		0.12		0.12	0.12		0.93	0.93		0.93	0.93	
v/c Ratio		0.01		0.01	0.00		0.01	0.40		0.01	0.25	
Control Delay		0.0		38.0	0.0		7.2	5.4		0.7	0.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		0.0		38.0	0.0		7.2	5.4		0.7	0.4	
LOS		A		D	A		A	A		A	A	
Approach Delay					25.3			5.4				0.4
Approach LOS					C			A				A
90th %ile Green (s)	26.0	26.0		26.0	26.0		71.3	71.3		71.3	71.3	
90th %ile Term Code	Hold	Hold		Ped	Ped		Coord	Coord		Coord	Coord	
70th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
70th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
50th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		103.5	103.5		103.5	103.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		0		3	0		2	233		0	7	
Fuel Used(l)		0		0	0		0	48		0	15	
CO Emissions (g/hr)		1		3	0		5	888		1	284	
NOx Emissions (g/hr)		0		1	0		1	171		0	55	
VOC Emissions (g/hr)		0		1	0		1	205		0	66	
Dilemma Vehicles (#)		0		0	0		0	32		0	1	
Queue Length 50th (m)		0.0		0.4	0.0		0.0	0.1		0.0	0.0	
Queue Length 95th (m)		0.0		2.3	0.0		m1.3	99.8		m0.1	3.8	
Internal Link Dist (m)		133.2			62.7			59.3			219.7	
Turn Bay Length (m)				20.0			35.0			35.0		
Base Capacity (vph)		551		334	425		613	3115		301	2977	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.01		0.01	0.00		0.01	0.40		0.01	0.25	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 26 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 3.6

Intersection LOS: A

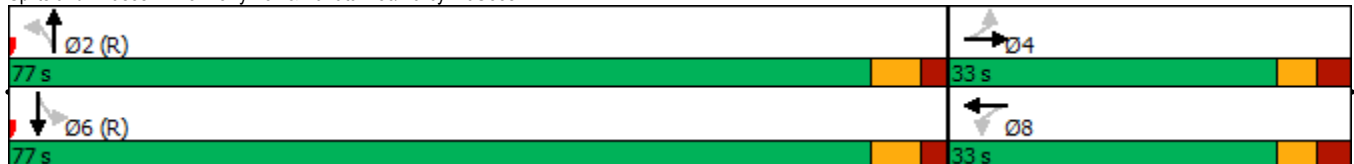
Intersection Capacity Utilization 55.9%

ICU Level of Service B

Analysis Period (min) 15










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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



11: Edgewater & Access
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	8	204	12	6	126
Future Volume (Veh/h)	15	8	204	12	6	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	8	204	12	6	126
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			134			
pX, platoon unblocked						
vC, conflicting volume	348	210			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	210			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	646	830			1354	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	23	216	132			
Volume Left	15	0	6			
Volume Right	8	12	0			
cSH	700	1700	1354			
Volume to Capacity	0.03	0.13	0.00			
Queue Length 95th (m)	0.8	0.0	0.1			
Control Delay (s)	10.3	0.0	0.4			
Lane LOS	B		A			
Approach Delay (s)	10.3	0.0	0.4			
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			22.2%	ICU Level of Service		A
Analysis Period (min)			15			

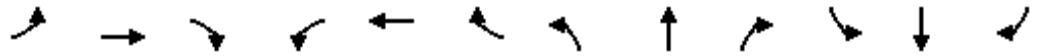
3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Future Volume (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	0.99		0.99
Fr _t			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3249	3390	1483	3263	3390	1419	3286	3357	1489	3077	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			239			312			149			309
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Shared Lane Traffic (%)												
Lane Group Flow (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	23.0	42.0	42.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0	37.0	37.0
Total Split (%)	19.2%	35.0%	35.0%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%	30.8%	30.8%
Maximum Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes

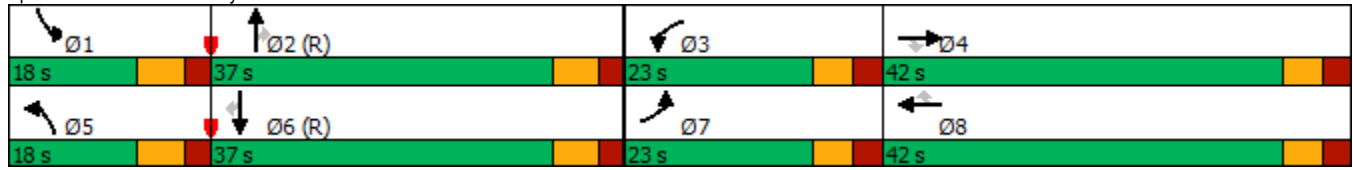


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	16.7	34.6	34.6	14.9	32.9	32.9	12.1	31.4	31.4	13.4	32.7	32.7
Actuated g/C Ratio	0.14	0.29	0.29	0.12	0.27	0.27	0.10	0.26	0.26	0.11	0.27	0.27
v/c Ratio	0.94	0.58	0.47	0.71	0.81	0.51	0.79	0.08	0.30	0.84	0.93	0.78
Control Delay	82.0	39.1	9.3	56.6	42.6	9.8	84.7	30.6	5.0	64.9	64.0	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.0	39.1	9.3	56.6	42.6	9.8	84.7	30.6	5.0	64.9	64.0	34.5
LOS	F	D	A	E	D	A	F	C	A	E	E	C
Approach Delay		47.0			38.0			52.0			55.3	
Approach LOS		D			D			D			E	
90th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
90th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	16.7	35.7	35.7	16.7	35.7	35.7	11.5	30.5	30.5	11.5	30.5	30.5
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	16.7	35.7	35.7	15.7	34.7	34.7	12.5	30.5	30.5	12.5	30.5	30.5
50th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	16.7	34.1	34.1	14.0	31.4	31.4	13.8	30.5	30.5	15.8	32.5	32.5
30th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	16.7	32.0	32.0	11.5	26.8	26.8	11.4	35.1	35.1	15.8	39.5	39.5
10th %ile Term Code	Max	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	385	474	47	265	685	90	252	45	24	249	782	297
Fuel Used(l)	52	49	12	25	57	9	31	5	3	33	99	39
CO Emissions (g/hr)	970	917	220	465	1061	177	579	85	61	615	1844	723
NOx Emissions (g/hr)	187	177	42	90	205	34	112	16	12	119	356	140
VOC Emissions (g/hr)	224	212	51	107	245	41	134	19	14	142	425	167
Dilemma Vehicles (#)	0	18	0	0	27	0	0	3	0	0	15	0
Queue Length 50th (m)	52.1	59.5	6.8	33.8	85.7	12.3	33.9	5.5	0.1	35.6	~115.1	75.4
Queue Length 95th (m)	#82.4	77.5	28.7	42.8	107.4	48.2	#54.6	9.4	8.3	#62.9	#155.8	#112.7
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	453	1008	609	457	1008	641	333	879	499	347	923	632
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.56	0.46	0.63	0.75	0.49	0.79	0.08	0.30	0.84	0.93	0.78

Intersection Summary























Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 47.8
 Intersection LOS: D
 Intersection Capacity Utilization 89.5%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean



6: Terry Fox & Charlie Rogers/Edgewater
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes

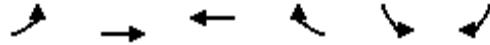
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	5	62	6	178	3	1289	74	189	1548	63
Future Volume (vph)	12	4	5	62	6	178	3	1289	74	189	1548	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor		0.99		1.00								0.98
Fr t		0.917			0.855			0.992				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1624	0	1616	1503	0	1695	3272	0	1647	3172	1517
Flt Permitted	0.406			0.752			0.142			0.131		
Satd. Flow (perm)	724	1624	0	1278	1503	0	253	3272	0	227	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			178			7				73
Link Speed (k/h)		50			50			70				70
Link Distance (m)		184.3			574.2			243.7				226.6
Travel Time (s)		13.3			41.3			12.5				11.7
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	12	4	5	62	6	178	3	1289	74	189	1548	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	9	0	62	184	0	3	1363	0	189	1548	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		9.5	34.5		9.5	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	69.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	57.5%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		9.5	62.5		9.5	62.5	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	4.2

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



7: Hazeldean & Edgewater
PM Peak

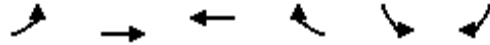
16 Edgewater Street
2027 Total Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	67	989	1280	74	76	97
Future Volume (vph)	67	989	1280	74	76	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0			0.0	20.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	45.0				20.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.99		1.00		0.99	
Fr _t			0.992			0.850
Fl _t Protected	0.950				0.950	
Satd. Flow (prot)	1601	3390	3344	0	1662	1517
Fl _t Permitted	0.177				0.950	
Satd. Flow (perm)	297	3390	3344	0	1650	1517
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			10			75
Link Speed (k/h)		60	60		50	
Link Distance (m)		156.7	233.0		122.2	
Travel Time (s)		9.4	14.0		8.8	
Confl. Peds. (#/hr)	27			27	6	16
Confl. Bikes (#/hr)				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	2%	4%	4%	2%
Adj. Flow (vph)	67	989	1280	74	76	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	989	1354	0	76	97
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		7.4	7.4		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (m)	6.1	30.5	30.5		6.1	6.1
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)	6.1	1.8	1.8		6.1	6.1
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)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Prot
Protected Phases		2	6		4	4
Permitted Phases	2					
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	24.2	24.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7		3.3	3.3

7: Hazeldean & Edgewater
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	2.5	2.5	2.5		2.8	2.8
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2		6.1	6.1
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		None	None
Walk Time (s)			7.0		7.0	7.0
Flash Dont Walk (s)			18.0		21.0	21.0
Pedestrian Calls (#/hr)			20		10	10
Act Effct Green (s)	93.4	93.4	93.4		14.3	14.3
Actuated g/C Ratio	0.78	0.78	0.78		0.12	0.12
v/c Ratio	0.29	0.37	0.52		0.39	0.39
Control Delay	10.1	6.9	6.6		49.9	17.1
Queue Delay	0.0	0.2	0.0		0.0	0.0
Total Delay	10.1	7.1	6.6		49.9	17.1
LOS	B	A	A		D	B
Approach Delay		7.3	6.6		31.5	
Approach LOS		A	A		C	
90th %ile Green (s)	79.8	79.8	79.8		27.9	27.9
90th %ile Term Code	Coord	Coord	Coord		Ped	Ped
70th %ile Green (s)	95.1	95.1	95.1		12.6	12.6
70th %ile Term Code	Coord	Coord	Coord		Gap	Gap
50th %ile Green (s)	96.9	96.9	96.9		10.8	10.8
50th %ile Term Code	Coord	Coord	Coord		Gap	Gap
30th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
30th %ile Term Code	Coord	Coord	Coord		Min	Min
10th %ile Green (s)	97.7	97.7	97.7		10.0	10.0
10th %ile Term Code	Coord	Coord	Coord		Min	Min
Stops (vph)	26	358	478		65	44
Fuel Used(l)	2	30	50		5	3
CO Emissions (g/hr)	42	563	925		98	63
NOx Emissions (g/hr)	8	109	178		19	12
VOC Emissions (g/hr)	10	130	213		23	15
Dilemma Vehicles (#)	0	23	56		0	0
Queue Length 50th (m)	5.3	41.8	42.8		17.3	3.2
Queue Length 95th (m)	m11.2	60.0	104.6		m23.9	m11.8
Internal Link Dist (m)		132.7	209.0		98.2	
Turn Bay Length (m)	35.0				20.0	
Base Capacity (vph)	231	2639	2606		386	410
Starvation Cap Reductn	0	687	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.29	0.51	0.52		0.20	0.24

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 10 (8%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 8.6

Intersection LOS: A

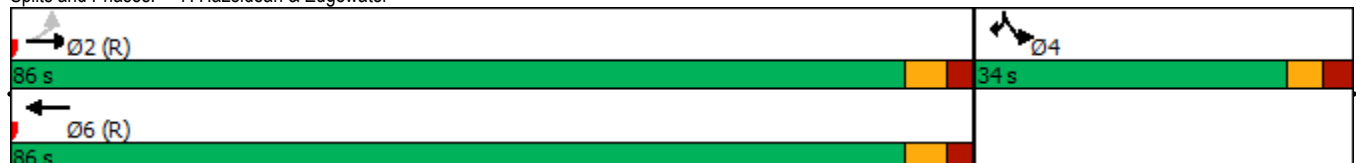
Intersection Capacity Utilization 78.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 7: Hazeldean & Edgewater



12: Terry Fox & Sobeys/500 Hazeldean
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	5	74	74	4	105	29	1012	68	119	1204	81
Future Volume (vph)	36	5	74	74	4	105	29	1012	68	119	1204	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		15.0	35.0		0.0	30.0		0.0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (m)	30.0			30.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor		0.98			0.99	0.98	1.00	1.00		1.00	1.00	
Fr _t		0.913				0.850		0.991			0.991	
Fl _t Protected		0.985			0.955		0.950			0.950		
Satd. Flow (prot)	0	1581	0	0	1704	1517	1695	4818	0	1695	3349	0
Fl _t Permitted		0.866			0.606		0.189			0.247		
Satd. Flow (perm)	0	1388	0	0	1072	1491	336	4818	0	440	3349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72				105		18			12	
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		86.2			56.3			261.0			137.1	
Travel Time (s)		6.2			4.1			13.4			7.1	
Confl. Peds. (#/hr)	4		9	9		4	9		4	4		9
Confl. Bikes (#/hr)									1			9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	36	5	74	74	4	105	29	1012	68	119	1204	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	78	105	29	1080	0	119	1285	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		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		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5	35.5	26.0	26.0		26.0	26.0	
Total Split (s)	36.0	36.0		36.0	36.0	36.0	84.0	84.0		84.0	84.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	29.5	29.5		29.5	29.5	29.5	78.0	78.0		78.0	78.0	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	4.2	4.2		4.2	4.2	
All-Red Time (s)	3.2	3.2		3.2	3.2	3.2	1.8	1.8		1.8	1.8	

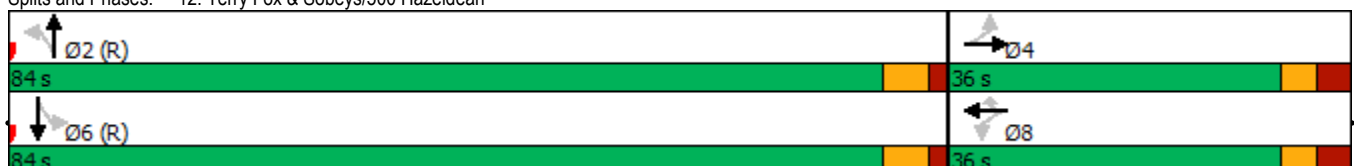


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5	6.5	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0	13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	9	9		4	4	4	4	4		9	9	
Act Effct Green (s)		15.9			15.9	15.9	91.6	91.6		91.6	91.6	
Actuated g/C Ratio		0.13			0.13	0.13	0.76	0.76		0.76	0.76	
v/c Ratio		0.47			0.55	0.37	0.11	0.29		0.35	0.50	
Control Delay		24.9			61.4	11.1	6.7	5.1		3.0	1.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.4	
Total Delay		24.9			61.4	11.1	6.7	5.1		3.0	2.0	
LOS		C			E	B	A	A		A	A	
Approach Delay		24.9			32.6			5.2			2.1	
Approach LOS		C			C			A			A	
90th %ile Green (s)	29.0	29.0		29.0	29.0	29.0	78.5	78.5		78.5	78.5	
90th %ile Term Code	Ped	Ped		Ped	Ped	Ped	Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0		16.0	16.0	16.0	91.5	91.5		91.5	91.5	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.4	13.4		13.4	13.4	13.4	94.1	94.1		94.1	94.1	
50th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.9	10.9		10.9	10.9	10.9	96.6	96.6		96.6	96.6	
30th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Coord	Coord	
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	97.5	97.5		97.5	97.5	
10th %ile Term Code	Min	Min		Min	Min	Min	Coord	Coord		Coord	Coord	
Stops (vph)		44			71	16	8	306		8	95	
Fuel Used(l)		4			6	2	1	41		2	20	
CO Emissions (g/hr)		77			106	34	21	756		36	374	
NOx Emissions (g/hr)		15			20	7	4	146		7	72	
VOC Emissions (g/hr)		18			24	8	5	174		8	86	
Dilemma Vehicles (#)		0			0	0	0	45		0	11	
Queue Length 50th (m)		9.4			17.9	0.0	1.4	20.9		1.0	5.6	
Queue Length 95th (m)		23.7			29.4	13.6	6.6	45.0		m2.0	m9.1	
Internal Link Dist (m)		62.2			32.3			237.0			113.1	
Turn Bay Length (m)						15.0	35.0			30.0		
Base Capacity (vph)		395			263	445	256	3684		336	2560	
Starvation Cap Reductn		0			0	0	0	0		0	667	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.29			0.30	0.24	0.11	0.29		0.35	0.68	

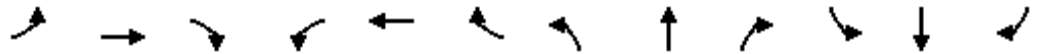
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 113 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 6.2
 Intersection LOS: A
 Intersection Capacity Utilization 78.6%
 ICU Level of Service D
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Terry Fox & Sobeys/500 Hazeldean



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	23	14	0	5	44	1242	39	6	1622	1
Future Volume (vph)	2	0	23	14	0	5	44	1242	39	6	1622	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	20.0		0.0	20.0		0.0	35.0		0.0	35.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	20.0			10.0			55.0			75.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								1.00				
Fr t		0.850			0.850			0.995				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1517	0	1695	1289	0	1695	3370	0	1695	3390	0
Flt Permitted	0.754			0.742			0.117			0.206		
Satd. Flow (perm)	1345	1517	0	1324	1289	0	209	3370	0	368	3390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		167			194			4				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		145.8			86.7			83.3				243.7
Travel Time (s)		10.5			6.2			4.3				12.5
Confl. Peds. (#/hr)									6	6		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	2%	2%	20%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	2	0	23	14	0	5	44	1242	39	6	1622	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	23	0	14	5	0	44	1281	0	6	1623	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		9.5	32.5		9.5	32.5	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	26.8	26.8		26.8	26.8		10.5	65.5		10.5	65.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.5	4.2		3.5	4.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.9	2.9		2.9	2.9		1.0	2.3		1.0	2.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		4.5	6.5		4.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0			6			0	
Act Effct Green (s)	10.0	10.0		10.0	10.0		105.1	104.3		101.8	96.6	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.88	0.87		0.85	0.80	
v/c Ratio	0.02	0.08		0.13	0.02		0.17	0.44		0.02	0.59	
Control Delay	51.0	0.6		53.9	0.2		2.7	2.9		2.3	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.0	0.6		53.9	0.2		2.7	2.9		2.3	5.0	
LOS	D	A		D	A		A	A		A	A	
Approach Delay		4.6			39.8			2.9			5.0	
Approach LOS		A			D			A			A	
90th %ile Green (s)	10.0	10.0		10.0	10.0		6.6	87.1		5.7	86.2	
90th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Gap	Coord	
70th %ile Green (s)	10.0	10.0		10.0	10.0		6.2	97.3		0.0	86.6	
70th %ile Term Code	Min	Min		Min	Min		Gap	Coord		Skip	Coord	
50th %ile Green (s)	10.0	10.0		10.0	10.0		6.0	97.3		0.0	86.8	
50th %ile Term Code	Min	Min		Hold	Hold		Gap	Coord		Skip	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0		5.5	113.5		0.0	103.5	
30th %ile Term Code	Skip	Skip		Skip	Skip		Gap	Coord		Skip	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		0.0	113.5		0.0	113.5	
10th %ile Term Code	Skip	Skip		Skip	Skip		Skip	Coord		Skip	Coord	
Stops (vph)	3	0		16	0		5	265		1	332	
Fuel Used(l)	0	0		1	0		1	48		0	53	
CO Emissions (g/hr)	3	6		20	1		27	885		3	987	
NOx Emissions (g/hr)	1	1		4	0		5	171		1	190	
VOC Emissions (g/hr)	1	1		5	0		6	204		1	228	
Dilemma Vehicles (#)	0	0		0	0		0	20		0	66	
Queue Length 50th (m)	0.4	0.0		3.1	0.0		0.7	24.1		0.2	35.7	
Queue Length 95th (m)	3.1	0.0		9.8	0.0		m1.3	m35.0		m0.5	62.3	
Internal Link Dist (m)		121.8			62.7			59.3			219.7	
Turn Bay Length (m)	20.0			20.0			35.0			35.0		
Base Capacity (vph)	300	468		295	438		314	2931		440	2729	
Starvation Cap Reductn	0	0		0	0		0	0		0	48	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.01	0.05		0.05	0.01		0.14	0.44		0.01	0.61	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 40 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15










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

Splits and Phases: 15: Terry Fox & Kanata Rec/Darcy McGees



11: Edgewater & Access
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	9	120	21	9	151
Future Volume (Veh/h)	22	9	120	21	9	151
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	22	9	120	21	9	151
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			122			
pX, platoon unblocked						
vC, conflicting volume	300	130			141	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	130			141	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			99	
cM capacity (veh/h)	688	919			1442	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	31	141	160			
Volume Left	22	0	9			
Volume Right	9	21	0			
cSH	742	1700	1442			
Volume to Capacity	0.04	0.08	0.01			
Queue Length 95th (m)	1.0	0.0	0.1			
Control Delay (s)	10.1	0.0	0.5			
Lane LOS	B		A			
Approach Delay (s)	10.1	0.0	0.5			
Approach LOS	B					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			26.2%	ICU Level of Service		A
Analysis Period (min)			15			

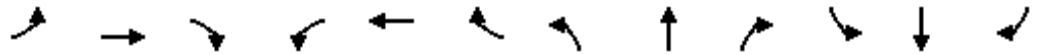
6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	2	0	27	5	116	0	1238	49	181	726	6
Future Volume (vph)	15	2	0	27	5	116	0	1238	49	181	726	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	25.0		0.0	40.0		0.0	35.0		0.0	35.0		45.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	45.0			65.0			75.0			65.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00								0.98
Fr _t					0.856			0.994				0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1695	1784	0	1616	1502	0	1784	3277	0	1647	3172	1517
Flt Permitted	0.659			0.757						0.142		
Satd. Flow (perm)	1176	1784	0	1286	1502	0	1784	3277	0	246	3172	1482
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					116			5				35
Link Speed (k/h)		50			50			70			70	
Link Distance (m)		184.3			558.9			243.7			226.6	
Travel Time (s)		13.3			40.2			12.5			11.7	
Confl. Peds. (#/hr)			1	1			1					1
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	2%	7%	20%	3%	2%	5%	2%	5%	9%	2%
Adj. Flow (vph)	15	2	0	27	5	116	0	1238	49	181	726	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	2	0	27	121	0	0	1287	0	181	726	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		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	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2		6			6
Detector Phase	4	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	37.0	37.0		37.0	37.0		34.5	34.5		10.2	34.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		59.0	59.0		14.0	73.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		53.6%	53.6%		12.7%	66.4%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		52.5	52.5		8.8	66.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak

16 Edgewater Street
2027 Total Traffic Volumes (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	2.3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		5.2	6.5	6.5
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	3.0
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0		23.0	23.0		21.0	21.0		21.0	21.0	21.0
Pedestrian Calls (#/hr)	1	1		0	0		0	0			1	1
Act Effct Green (s)	14.0	14.0		14.0	14.0			67.1		84.3	83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13			0.61		0.77	0.75	0.75
v/c Ratio	0.10	0.01		0.17	0.41			0.64		0.56	0.30	0.01
Control Delay	39.8	36.0		41.0	16.6			16.5		13.0	5.6	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	39.8	36.0		41.0	16.6			16.5		13.0	5.6	0.0
LOS	D	D		D	B			B		B	A	A
Approach Delay		39.4			21.0			16.5			7.1	
Approach LOS		D			C			B			A	
90th %ile Green (s)	30.0	30.0		30.0	30.0		52.5	52.5		9.3	67.0	67.0
90th %ile Term Code	Ped	Ped		Hold	Hold		Coord	Coord		Max	Coord	Coord
70th %ile Green (s)	10.0	10.0		10.0	10.0		67.5	67.5		14.3	87.0	87.0
70th %ile Term Code	Min	Min		Min	Min		Coord	Coord		Gap	Coord	Coord
50th %ile Green (s)	10.0	10.0		10.0	10.0		69.6	69.6		12.2	87.0	87.0
50th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
30th %ile Green (s)	10.0	10.0		10.0	10.0		72.2	72.2		9.6	87.0	87.0
30th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
10th %ile Green (s)	10.0	10.0		10.0	10.0		73.6	73.6		8.2	87.0	87.0
10th %ile Term Code	Hold	Hold		Min	Min		Coord	Coord		Gap	Coord	Coord
Stops (vph)	15	3		21	57			939		51	222	0
Fuel Used(l)	1	0		3	9			83		7	26	0
CO Emissions (g/hr)	20	3		51	172			1546		138	489	2
NOx Emissions (g/hr)	4	1		10	33			298		27	94	0
VOC Emissions (g/hr)	5	1		12	40			356		32	113	0
Dilemma Vehicles (#)	0	0		0	0			39		0	33	0
Queue Length 50th (m)	3.0	0.4		4.5	0.4			104.0		6.7	17.7	0.0
Queue Length 95th (m)	7.5	2.2		10.7	15.3			102.5		#32.7	50.2	0.0
Internal Link Dist (m)		160.3			534.9			219.7			202.6	
Turn Bay Length (m)	25.0			40.0						35.0		45.0
Base Capacity (vph)	326	494		356	500			2000		326	2393	1126
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.05	0.00		0.08	0.24			0.64		0.56	0.30	0.01

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 6.5 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 13.3
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Terry Fox & Charlie Rogers/Edgewater



3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes (Optimized)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Future Volume (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Storage Lanes	2		1	2		1	1		1	2		1
Taper Length (m)	100.0			65.0			40.0			80.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.98	1.00		0.98	0.99		0.99
Fr't			0.850			0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3257	3390	1517	3288	3390	1446	3288	3357	1517	3106	3390	1517
Fit Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3249	3390	1483	3263	3390	1419	3286	3357	1489	3077	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			234			312			149			331
Link Speed (k/h)		60			60			70			70	
Link Distance (m)		342.2			156.7			137.1			234.2	
Travel Time (s)		20.5			9.4			7.1			12.0	
Confl. Peds. (#/hr)	5		8	8		5	1		5	5		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	2%	2%	2%	7%	2%	3%	2%	8%	2%	2%
Adj. Flow (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Shared Lane Traffic (%)												
Lane Group Flow (vph)	428	569	279	288	753	312	263	74	149	292	863	493
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.3	34.3	34.3	11.3	34.3	34.3	11.5	35.5	35.5	11.5	35.5	35.5
Total Split (s)	24.0	37.1	37.1	23.4	36.5	36.5	18.0	39.5	39.5	20.0	41.5	41.5
Total Split (%)	20.0%	30.9%	30.9%	19.5%	30.4%	30.4%	15.0%	32.9%	32.9%	16.7%	34.6%	34.6%
Maximum Green (s)	17.7	30.8	30.8	17.1	30.2	30.2	11.5	33.0	33.0	13.5	35.0	35.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6	2.6	2.3	2.3	2.3	2.3	2.3	2.3

3: Terry Fox & Hazeldean
PM Peak

16 Edgewater Street
2027 Total Traffic Volumes (Optimized)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		8	8		5	5		5	5		1	1
Act Effct Green (s)	17.5	32.1	32.1	15.1	29.6	29.6	11.5	33.9	33.9	13.3	35.7	35.7
Actuated g/C Ratio	0.15	0.27	0.27	0.13	0.25	0.25	0.10	0.28	0.28	0.11	0.30	0.30
v/c Ratio	0.90	0.63	0.49	0.70	0.90	0.53	0.84	0.08	0.28	0.85	0.86	0.73
Control Delay	73.3	42.5	10.9	55.3	52.6	11.0	89.4	28.7	4.6	64.6	55.0	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total Delay	73.3	42.5	10.9	55.3	52.6	11.0	89.4	28.7	4.6	64.6	55.2	30.0
LOS	E	D	B	E	D	B	F	C	A	E	E	C
Approach Delay		45.9			43.6			54.2			49.3	
Approach LOS		D			D			D			D	
90th %ile Green (s)	17.7	30.8	30.8	17.1	30.2	30.2	11.5	33.0	33.0	13.5	35.0	35.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
70th %ile Green (s)	17.7	30.8	30.8	17.1	30.2	30.2	11.5	33.0	33.0	13.5	35.0	35.0
70th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Coord	Coord	Max	Coord	Coord
50th %ile Green (s)	17.7	32.2	32.2	15.7	30.2	30.2	11.5	33.0	33.0	13.5	35.0	35.0
50th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
30th %ile Green (s)	17.7	33.9	33.9	14.0	30.2	30.2	11.5	33.0	33.0	13.5	35.0	35.0
30th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Coord	Coord	Max	Coord	Coord
10th %ile Green (s)	16.9	32.8	32.8	11.5	27.4	27.4	11.4	37.5	37.5	12.6	38.7	38.7
10th %ile Term Code	Gap	Hold	Hold	Gap	Gap	Gap	Gap	Coord	Coord	Gap	Coord	Coord
Stops (vph)	393	491	53	264	692	93	252	45	23	268	818	291
Fuel Used(l)	50	51	12	25	63	10	32	4	3	34	95	37
CO Emissions (g/hr)	921	956	230	459	1173	184	597	83	60	629	1762	687
NOx Emissions (g/hr)	178	184	44	89	226	36	115	16	11	121	340	133
VOC Emissions (g/hr)	213	220	53	106	271	42	138	19	14	145	406	158
Dilemma Vehicles (#)	0	19	0	0	29	0	0	3	0	0	20	0
Queue Length 50th (m)	51.6	62.2	8.0	33.8	90.3	12.3	34.0	5.3	0.1	35.3	114.8	73.2
Queue Length 95th (m)	#79.0	82.4	32.1	42.4	#122.6	49.2	#54.6	9.1	7.8	#56.1	#138.9	107.0
Internal Link Dist (m)		318.2			132.7			113.1			210.2	
Turn Bay Length (m)	190.0		95.0	40.0		80.0	25.0		40.0	155.0		220.0
Base Capacity (vph)	480	906	568	468	853	590	315	948	527	349	1009	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	9	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.63	0.49	0.62	0.88	0.53	0.83	0.08	0.28	0.84	0.86	0.73

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 47.3
 Intersection LOS: D
 Intersection Capacity Utilization 89.5%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Terry Fox & Hazeldean

