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Proposed Residential Development 560 Hazeldean Road, Ottawa Transportation Impact Assessment

**Proposed Residential Development
560 Hazeldean Road
Transportation Impact Assessment**

Prepared By:

NOVATECH

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

July 2025

Novatech File: 100057
Ref: R-2025-035



Certification Form for Transportation Impact Assessment (TIA) Study Program Manager

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

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 they meet the four criteria listed below.

Certification

- ☒ 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 (Update Effective July 2023);
- ☒ 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;
- ☒ 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

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Transportation Engineering Services
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
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Revision Date: June, 2023

Transportation Impact Assessment Guidelines

☒ I am either a licensed or registered¹ professional in good standing, whose field of expertise [check ☒ appropriate field(s)]:

☒ is either transportation engineering

☐ or transportation planning.

Dated at this day of , 20.

(City)

Name:

Professional Title:

Jennifer Luong

Signature of Individual certifier that they meet the above four criteria

Office Contact Information (Please Print)

Address:

City / Postal Code:

Telephone / Extension:

E-Mail Address:

Stamp



¹ 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.

July 30, 2025

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Avenue West, 4th Floor
Ottawa, ON K1P 1J1

Attention: Ms. Rochelle Fortier-Lesage
Transportation Project Manager, Infrastructure Approvals

Dear Ms. Fortier-Lesage:

Reference: 560 Hazeldean Road
Transportation Impact Assessment
Novatech File No. 100057

We are pleased to submit the following Transportation Impact Assessment (TIA), in support of Zoning By-Law Amendment and Draft Plan of Subdivision applications at 560 Hazeldean Road, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa's *Revised Transportation Impact Assessment Guidelines* (June 2023).

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

Yours truly,

NOVATECH



Joshua Audia, P.Eng.
Project Engineer | Transportation

TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
1.0 SCREENING	1
1.1 INTRODUCTION	1
1.2 PROPOSED DEVELOPMENT	2
1.3 SCREENING FORM	2
2.0 SCOPING.....	2
2.1 EXISTING CONDITIONS	2
2.1.1 Roadways.....	2
2.1.2 Intersections	5
2.1.3 Driveways.....	8
2.1.4 Pedestrian and Cycling Facilities	8
2.1.5 Area Traffic Management	9
2.1.6 Transit	9
2.1.7 Existing Traffic Volumes	10
2.1.8 Collision Records.....	13
2.2 PLANNED CONDITIONS	18
2.2.1 Planned Transportation Projects.....	18
2.2.2 Other Area Developments	20
2.3 STUDY AREA AND TIME PERIODS	22
2.4 ACCESS DESIGN	22
2.5 DEVELOPMENT-GENERATED TRAVEL DEMAND.....	24
2.5.1 Trip Generation.....	24
2.5.2 Trip Distribution.....	26
2.5.3 Trip Assignment.....	27
2.6 EXEMPTIONS REVIEW.....	31
3.0 FORECASTING	32
3.1 OTHER AREA DEVELOPMENTS	32
3.2 GENERAL BACKGROUND GROWTH RATE	33
3.3 PROJECTED VOLUMES ON ROBERT GRANT AVENUE.....	33
3.4 FUTURE TRAFFIC VOLUME FIGURES.....	34
3.5 DEMAND RATIONALIZATION.....	34
3.5.1 Existing Traffic Conditions	34
3.5.2 2029 Background Traffic Conditions	44
3.5.3 2031 Background Traffic Conditions	46
3.5.4 2036 Background Traffic Conditions	48
4.0 ANALYSIS	50
4.1 DEVELOPMENT DESIGN	50
4.1.1 Design for Sustainable Modes	50
4.1.2 Circulation and Access	51
4.1.3 New Street Networks	51
4.2 PARKING	51
4.3 BOUNDARY STREETS	52
4.4 TRANSPORTATION DEMAND MANAGEMENT	52
4.4.1 Context for TDM	52
4.4.2 Need and Opportunity.....	53
4.4.3 TDM Program	53
4.5 TRANSIT	53

4.5.1	Transit Route Capacity	53
4.5.2	Transit Priority Requirements.....	53
4.6	INTERSECTION DESIGN.....	54
4.6.1	Intersection MMLOS	54
4.6.2	2029 Total Traffic Conditions	58
4.6.3	2031 Total Traffic Conditions	59
4.6.4	2036 Total Traffic Conditions	61
5.0	CONCLUSIONS AND RECOMMENDATIONS	64

Figures

Figure 1:	View of the Subject Site	1
Figure 2:	Roadway Network	4
Figure 3:	Pedestrian and Cycling Network	8
Figure 4:	OC Transpo Bus Stop Locations	10
Figure 5:	Existing Traffic Volumes.....	11
Figure 6:	Existing Pedestrian and Cyclist Volumes	12
Figure 7:	Planned Hazeldean Road/Robert Grant Avenue Intersection.....	19
Figure 8:	Other Area Developments	21
Figure 9:	Site-Generated Traffic Volumes (Single-Family Homes, Phase 1)	28
Figure 10:	Site-Generated Traffic Volumes (Single-Family Homes, Full Buildout)	29
Figure 11:	Site-Generated Traffic Volumes (Apartment Block)	30
Figure 12:	2029 Other Area Development-Generated Traffic Volumes	35
Figure 13:	2031/2036 Other Area Development-Generated Traffic Volumes.....	36
Figure 14:	2029 Background Traffic Volumes	37
Figure 15:	2031 Background Traffic Volumes	38
Figure 16:	2036 Background Traffic Volumes	39
Figure 17:	2029 Total Traffic Volumes	40
Figure 18:	2031 Total Traffic Volumes	41
Figure 19:	2036 Total Traffic Volumes	42

Tables

Table 1: OC Transpo Transit Stops	9
Table 2: OC Transpo Route Information	9
Table 3: Reported Collisions	13
Table 4: Kanata-Stittsville Residential Mode Shares	24
Table 5: Proposed Residential – Peak Period Trip Generation.....	25
Table 6: Proposed Residential – Peak Period Trips by Mode Share	25
Table 7: Proposed Residential – Peak Hour Trips by Mode Share	26
Table 8: TIA Exemptions	31
Table 9: Existing Intersection Analysis	34
Table 10: Existing Queues	43
Table 11: 2029 Background Intersection Analysis	44
Table 12: 2029 Background Queues.....	44
Table 13: 2031 Background Intersection Analysis	46
Table 14: 2031 Background Queues.....	46
Table 15: 2036 Background Intersection Analysis	48
Table 16: 2036 Background Queues.....	48
Table 17: Parking Requirements.....	52
Table 18: Segment MMLOS Summary.....	52
Table 19: Intersection MMLOS Summary.....	54
Table 20: 2029 Total Intersection Analysis	58
Table 21: 2029 Total Queues	58
Table 22: 2031 Total Intersection Analysis	60
Table 23: 2031 Total Queues	60
Table 24: 2036 Total Intersection Analysis	62
Table 25: 2036 Total Queues	62

Appendices

Appendix A: Concept Plan
Appendix B: TIA Screening Form
Appendix C: OC Transpo Route Maps
Appendix D: Traffic Count Data
Appendix E: Collision Records
Appendix F: Other Area Developments
Appendix G: Long-Range Model Snapshots
Appendix H: Signal Timing Plans
Appendix I: Existing Synchro Analysis
Appendix J: Background Synchro Analysis
Appendix K: MMLOS Analysis
Appendix L: Transportation Demand Management
Appendix M: Total Synchro Analysis

EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment and Draft Plan of Subdivision applications for the property located at 560 Hazeldean Road. The subject property is approximately 8.65 hectares in area, and is currently occupied by the Kevin Haime Golf Centre. The existing development includes one full-movement access to Hazeldean Road.

The subject site is surrounded by the following:

- Hazeldean Road, followed by commercial uses and the Carp River to the north,
- A stormwater facility, followed by residential uses to the south,
- The Carp River, followed by residential uses to the east, and
- Residential uses, followed by Mantra Street or Bliss Crescent to the west.

The proposed development is a subdivision including 50 single-detached homes, 48 townhomes, an apartment block, and three private roadways. The concept for the block includes 185 apartment dwellings within two six-storey buildings. A total of 196 parking spaces are proposed (i.e. two parking spaces per unit). Access to the proposed development is proposed via one driveway to Hazeldean Road, one driveway to Energy Street, and one driveway to Bliss Crescent.

The development is anticipated to be constructed in two phases. Phase 1 includes the low-density residential and access to Energy Street and Bliss Crescent, with a buildout year of 2029. Phase 2 includes the apartment block and access to Hazeldean Road, with a buildout year of 2031. A subsequent Site Plan Control application will be filed in support of the apartment block. The subject site is designated as 'Corridor – Mainstreet (Hazeldean Road)' and 'Evolving Neighbourhood' on Schedule B5 of the City of Ottawa's *Official Plan*. The implemented zoning for the property is 'Agricultural Zone' (AG[263r]), and the site is located within the Fernbank Community Design Plan (CDP) area. A rezoning is required to permit the proposed residential uses.

The study area for this report includes the boundary roadway Hazeldean Road, as well as the following signalized intersections:

- Hazeldean Road/325m East of Iber Road (future Robert Grant Avenue);
- Hazeldean Road/Roger Griffiths Avenue;
- Hazeldean Road/Mantra Street/Tillage Street;
- Hazeldean Road/Terry Fox Drive;
- Hazeldean Road/Edgewater Street;
- Terry Fox Drive/Edgewater Street/Charlie Rogers Place;
- Terry Fox Drive/Tony Graham Rec Complex;
- Terry Fox Drive/Sobey's Access;
- Terry Fox Drive/Winchester Drive/Halkirk Avenue.

The selected time periods for this report are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The Phase 1 buildout year 2029, Phase 2 buildout year 2031, and horizon year 2036 have been considered.

The conclusions and recommendations of this TIA are summarized as follows:

Access Intersections

- The proposed accesses to Energy Street and Bliss Crescent will be part of Phase 1, and will connect to the existing roadway blocks that have been constructed as part of the adjacent subdivision. The driveway to Hazeldean Road will be part of Phase 2, and is proposed in approximately the same location as the existing driveway serving the golf centre.
- The proposed accesses meet the relevant provisions of the City's *Private Approach By-Law* (PABL) and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*. Parameters such as access grades and clear throat length will be confirmed in subsequent Site Plan Control applications.

Site-Generated Traffic

- The proposed development is estimated to generate 158 person trips (including 79 vehicle trips) during the AM peak hour, and 164 person trips (including 84 vehicle trips) during the PM peak hour.

Development Design

- A 3.0m-wide multi-use pathway (MUP) is proposed along the eastern side of the subject site, which will provide a connection for pedestrians and cyclists to the Carp River Pathway and the existing pathway around the perimeter of the stormwater pond immediately south of the subject site. Another pathway is proposed to run between the apartment block and low-density blocks. A pathway connection is also proposed to Street 3 at the southeast corner of the subdivision.
- Entrances to the low-density dwellings will generally be located within 400m walking distance of stop #1043. The proposed dwellings are anticipated to be located within 800m walking distance (i.e. a 10-minute walk) of stops #1042 and #1043. These stops are served by routes 61, 301, and 303. A future Site Plan Control application will confirm the walking distances between entrances to the proposed apartment dwellings and stops #1042 and #1043.
- Street 1 will connect to Energy Street, and run generally on an east-west alignment from Energy Street to Street 3. Street 1 will have a width of 8.5m, which is wide enough to accommodate a travel lane in each direction and on-street parking on one side.
- Street 2 will connect to Hazeldean Road and Bliss Crescent, and run generally on a north-south alignment from Hazeldean Road to the southern intersection with Street 3, before curving 90 degrees to connect to Bliss Crescent. Street 2 will have a width of 8.5m. The connection to Hazeldean Road will not open as part of Phase 1.
- Street 3 will connect to Street 2 in two locations approximately 185m apart (measuring centre to centre), acting as a crescent loop on a curvilinear alignment. Street 3 will have a width of 8.5m.

- The proposed 8.5m width of each private roadway can accommodate the movements of heavy vehicles, such as fire trucks and garbage trucks. The volumes on the Phase 1 private roadways are projected to be 500 vehicles per day or less, which is consistent with public lanes per TAC's *Geometric Design Guide*. TAC suggests that no special facilities are required for pedestrians or cyclists on these types of roadways.

Boundary Streets

- Hazeldean Road meets the target transit level of service (TLOS) and truck level of service (TkLOS), and does not meet the target pedestrian level of service (PLOS) and bicycle level of service (BLOS).
- Hazeldean Road achieves the best-possible PLOS D by providing sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m. To achieve the target PLOS C, a reduced operating speed of 60 km/h would be required.
- Hazeldean Road cannot achieve the target BLOS C without a reduced operating speed of 60 km/h or the implementation of off-road facilities, such as cycle tracks or a multi-use pathway. This is identified for the City's consideration.

Transportation Demand Management

- The proponent has agreed to consider the following measures at the sales centre for the low-density residential block:
 - Provide local area maps with walking/cycling access routes and key destinations;
 - Provide relevant transit schedules and route maps;
 - Provide a multimodal travel option information package.

Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
 - No study area intersections meet the target PLOS;
 - No study area intersections meet the target BLOS;
 - Seven of the nine study area intersections meet the target TLOS;
 - Four of the nine study area intersections meet the target TkLOS.
- There is limited opportunity in improving the PLOS at each intersection without reducing the number of travel lanes or restricting turning movements. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.
- In general, fully protected intersections would be required to achieve the target BLOS, given the high operating speeds and volumes on Hazeldean Road or Terry Fox Drive. This is identified for the City's consideration.
- The east approach at Hazeldean Road/Mantra Street/Tillage Street and all approaches at Hazeldean Road/Terry Fox Drive do not meet the target TLOS. The City's 2031 RTTP Network Concept and 2031 Affordable Network identifies transit signal priority and queue jump lanes on Hazeldean Road from Stittsville Main Street to Eagleson Road. The City's 2031 RTTP Network Concept identifies transit signal priority on Terry Fox Drive from Hazeldean Road to Highway 417. If implemented, it is anticipated that transit delays on these approaches could improve to achieve the target TLOS.

- Select approaches at Hazeldean Road/Mantra Street/Tillage Street, Terry Fox Drive/Edgewater Street/Charlie Rogers Place, Terry Fox Drive/Tony Graham Rec Complex, Terry Fox Drive/Sobey's Access, and Terry Fox Drive/Winchester Drive/Halkirk Avenue do not meet the target TkLOS. No recommended modifications are identified.

Existing Traffic Operations

- The southbound through and eastbound left turn movements at Hazeldean Road/Terry Fox Drive operate at an Auto LOS E during the PM peak hour. All other movements operate at the target Auto LOS D or better during both peak hours.
- There are no average (i.e. 50th-percentile) queues that extend to upstream intersections. The northbound through movement at Hazeldean Road/Terry Fox Drive and eastbound through movement at Hazeldean Road/Edgewater Street have maximum (i.e. 95th-percentile) queue lengths that extend into upstream intersections during one or both peak hours.
- The maximum westbound through queue at Hazeldean Road/Mantra Street/Tillage Street is 166m, extending through the median break serving the existing golf centre on the subject site. The median break starts approximately 120m east of the westbound stop bar on Hazeldean Road at Mantra Street/Tillage Street. Queueing through this median break is also anticipated in all future conditions.

Background Traffic Operations

- By 2036, the northbound through movement at Hazeldean Road/Terry Fox Drive and the southbound left turn movement at Terry Fox Drive/Charlie Rogers Place/Edgewater Street operate over-capacity during the AM peak hour. The southbound left turn and westbound through movements at Hazeldean Road/Robert Grant Avenue and the northbound left turn, northbound through, southbound left turn, southbound through, eastbound left turn, and westbound through movements at Hazeldean Road/Terry Fox Drive operate over-capacity during the PM peak hour.
- Synchro does not identify signal timing adjustments at Hazeldean Road/Robert Grant Avenue and Hazeldean Road/Terry Fox Drive that allow all movements to operate at the target Auto LOS D. Traffic throughout the study area may be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate travel times for drivers to make use of off-peak capacity, or alternate routes for travel.
- At Terry Fox Drive/Charlie Rogers Place/Edgewater Street, Synchro identifies that the provision of protected plus permitted southbound left turn phasing during the AM peak hour can be provided to improve the level of service for that movement, while maintaining acceptable operations for the northbound movements.

Total Traffic Operations

- Compared to the background traffic conditions, the addition of site-generated traffic is anticipated to have marginal impacts to traffic operations and queueing within the study area. The proposed access to Hazeldean Road operates acceptably during both peak hours.
- The proposed subdivision is recommended from a transportation perspective.

1.0 SCREENING

1.1 Introduction

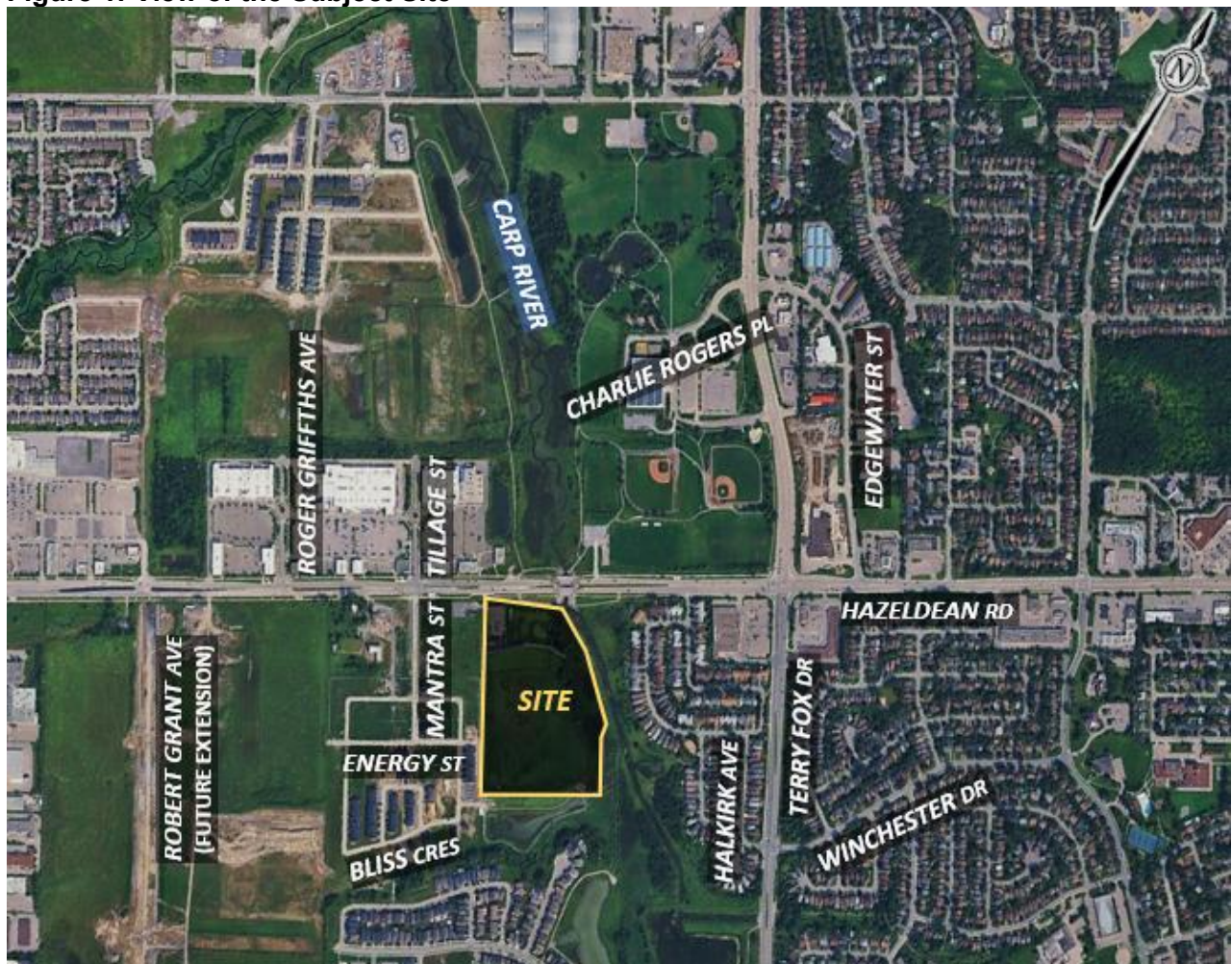
This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment and Draft Plan of Subdivision applications for the property located at 560 Hazeldean Road. The subject property is approximately 8.65 hectares in area, and is currently occupied by the Kevin Haime Golf Centre. The existing development includes one full-movement access to Hazeldean Road.

The subject site is surrounded by the following:

- Hazeldean Road, followed by commercial uses and the Carp River to the north,
- A stormwater facility, followed by residential uses to the south,
- The Carp River, followed by residential uses to the east, and
- Residential uses, followed by Mantra Street or Bliss Crescent to the west.

An aerial of the vicinity around the subject site is provided in **Figure 1**.

Figure 1: View of the Subject Site



1.2 Proposed Development

The proposed development is a subdivision including 50 single-detached homes, 48 townhomes, an apartment block, and three private roadways. The concept for the block includes 185 apartment dwellings within two six-storey buildings. A total of 196 parking spaces are proposed (i.e. two parking spaces per unit). Access to the proposed development is proposed via one driveway to Hazeldean Road, one driveway to Energy Street, and one driveway to Bliss Crescent.

The development is anticipated to be constructed in two phases. Phase 1 includes the low-density residential and access to Energy Street and Bliss Crescent, with a buildout year of 2029. Phase 2 includes the apartment block and access to Hazeldean Road, with a buildout year of 2031. A subsequent Site Plan Control application will be filed in support of the apartment block. The subject site is designated as 'Corridor – Mainstreet (Hazeldean Road)' and 'Evolving Neighbourhood' on Schedule B5 of the City of Ottawa's *Official Plan*. The implemented zoning for the property is 'Agricultural Zone' (AG[263r]), and the site is located within the Fernbank Community Design Plan (CDP) area. A rezoning is required to permit the proposed residential uses.

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

1.3 Screening Form

The City's *Revised TIA Guidelines* identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form, which is included in **Appendix B**. 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 – The development proposes a new connection to a designated Transit Priority Corridor, and is located within a Design Priority Area (Hazeldean Road Mainstreet Corridor); further assessment is **required** based on this trigger.
- Safety Triggers – The proposed development proposes an access within 150m of an adjacent signal, within auxiliary lanes of an intersection, and makes use of an existing median break; further assessment is **required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

Hazeldean Road is an arterial roadway that generally runs on an east-west alignment between Spruce Ridge Road and Eagleson Road (continuing east as Robertson Road). Within the study area, Hazeldean Road has a posted speed limit of 60 km/h, and generally has a four-lane divided urban cross-section with concrete sidewalks on both sides of the roadway. Hazeldean Road includes bike lanes in both directions west of Edgewater Street. Hazeldean Road is a truck route, allowing full loads. Street parking is not permitted.

Terry Fox Drive is an arterial roadway that generally runs on a north-south alignment between Eagleson Road (continuing east as Hope Side Road) and March Road (continuing as a major collector roadway). Within the study area, Terry Fox Drive has a posted speed limit of 70 km/h, and generally has a four-lane divided urban cross-section. Concrete sidewalks are continuously provided on the east side of Terry Fox Drive within the study area, and concrete sidewalks or asphalt pathways are provided on the west side. Terry Fox includes bike lanes in both directions. Terry Fox Drive is a truck route, allowing full loads. Street parking is not permitted.

Edgewater Street is a collector roadway that runs on a curvilinear alignment between Hazeldean Road and Terry Fox Drive (continuing west as Charlie Rogers Place). Within the study area, Edgewater Street has an unposted regulatory speed limit of 50 km/h, and generally has a two-lane undivided rural cross-section that is urbanized within the proximity of Hazeldean Road and Terry Fox Drive. Limited sidewalks are provided on the outside of Edgewater Street within the proximity of Hazeldean Road and Terry Fox Drive. Edgewater Street is not a truck route. Street parking is permitted in select locations on both sides of the roadway.

Winchester Drive is a collector roadway that generally runs on an east-west alignment between Terry Fox Drive (continuing west as Halkirk Avenue) and Castlefrank Road. Within the study area, Winchester Drive has a posted speed limit of 40 km/h, and a two-lane undivided urban cross-section. A concrete sidewalk is continuously provided on the south side of the roadway. Painted edge lines are provided in both directions. Winchester Drive is not a truck route. Street parking is generally permitted.

Roger Griffiths Avenue is a local roadway that generally runs on a north-south alignment for a distance of approximately 230m north of Hazeldean Road. Roger Griffiths Avenue has also been constructed for a distance of approximately 375m south of Maple Grove Road, however the two sections are currently discontinuous. Within the study area, Roger Griffiths Avenue has an unposted regulatory speed limit of 50 km/h, and a two-lane divided urban cross-section. Concrete sidewalks are provided on both sides of the roadway. Roger Griffiths Avenue is not a truck route. Street parking is not permitted.

Tillage Street is a local roadway that generally runs on a north-south alignment for a distance of approximately 230m north of Hazeldean Road (continuing south of Hazeldean Road as Mantra Street). Within the study area, Tillage Street has an unposted regulatory speed limit of 50 km/h, and a two-lane divided urban cross-section. Concrete sidewalks are provided on both sides of the roadway. Tillage Street is not a truck route. Street parking is not permitted.

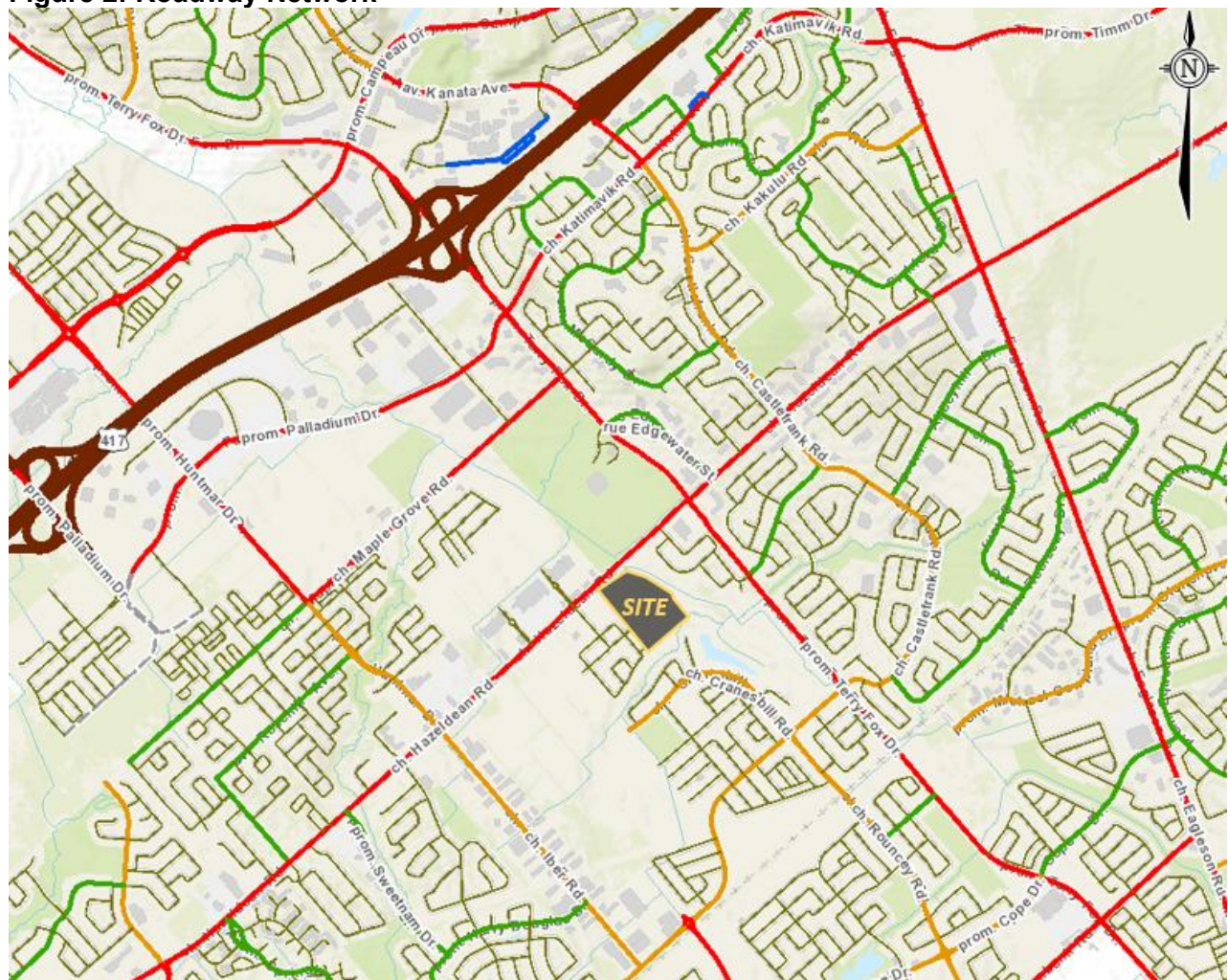
Mantra Street is a local roadway that is partially constructed, and generally runs on a north-south alignment between Energy Street and Hazeldean Road (continuing north as Tillage Street). Within the study area, Mantra Street is planned to have a two-lane, partially-divided urban cross-section, and is assumed to have a speed limit of 50 km/h. Concrete sidewalks are planned for both sides of the roadway. Mantra Street is not a truck route. Based on the width of Mantra Street, it is anticipated that street parking is/will be permitted on one side of the roadway.

Charlie Rogers Place is a local roadway that generally runs on an east-west alignment for a distance of approximately 190m west of Terry Fox Drive (continuing east of Terry Fox Drive as Edgewater Street). Within the study area, Charlie Rogers Place has an unposted regulatory speed limit of 50 km/h, and a two-lane cross-section that is partially divided and urbanized from Terry Fox Drive to Ron Maslin Way, and undivided and rural west of Ron Maslin Way. An asphalt sidewalk is provided on the north side of the roadway. Charlie Rogers Place is not a truck route. Street parking is not permitted.

Halkirk Avenue is a local roadway that runs on a curvilinear alignment between Kincardine Drive and Terry Fox Drive (continuing east as Winchester Drive). Within the study area, Halkirk Avenue has an unposted regulatory speed limit of 50 km/h, and a two-lane undivided urban cross-section. No sidewalks are provided on Halkirk Avenue. Halkirk Avenue is not a truck route. Street parking is generally permitted.

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

Figure 2: Roadway Network



2.1.2 Intersections

The following study area intersections are described based on existing conditions. At the time of writing this TIA, the intersection at Hazeldean Road/325m East of Iber Road is currently under construction, and will be Hazeldean Road/Robert Grant Avenue in future conditions. Further discussion of this intersection is included in Section 2.2.1.

Hazeldean Road @ 325m East of Iber Road

- Signalized three-legged intersection
- North Approach (The Shoppes at Fairwinds): one left turn lane and one right turn lane
- East Approach (Hazeldean Road): two through lanes, one pocket bike lane, and one channelized right turn lane
- West Approach (Hazeldean Road): one left turn lane, two through lanes, and one bike lane
- Standard crosswalks on all approaches



Hazeldean Road @ Roger Griffiths Avenue

- Signalized three-legged intersection
- North Approach (Roger Griffiths Avenue): two left turn lanes and one right turn lane
- East Approach (Hazeldean Road): two through lanes, one pocket bike lane, and one channelized right turn lane
- West Approach (Hazeldean Road): one left turn lane, two through lanes, and one bike lane
- Standard crosswalks on all approaches



Hazeldean Road @ Mantra Street/Tillage Street

- Signalized four-legged intersection
- North Approach (Tillage Street): two left turn lanes and one through/right turn lane
- South Approach (Mantra Street): one left turn lane and one shared through/right turn lane
- East Approach (Hazeldean Road): one left turn lane, two through lanes, and one channelized right turn lane
- West Approach (Hazeldean Road): one left turn lane, one through lane, and one shared through/right turn lane
- Standard crosswalks on all approaches
- Bike boxes on north, south, and east approaches
- Protected intersection on southwest and southeast corners complete with crossside



Hazeldean Road @ Terry Fox Drive

- Signalized four-legged intersection
- North Approach (Terry Fox Drive): two left turn lanes, two through lanes, one pocket bike lane, and one channelized right turn lane
- South Approach (Terry Fox Drive): two left turn lanes, two through lanes, one pocket bike lane, and one channelized right turn lane
- East Approach (Hazeldean Road): two left turn lanes, two through lanes, one pocket bike lane, and one channelized right turn lane
- West Approach (Hazeldean Road): two left turn lanes, two through lanes, one pocket bike lane, and one channelized right turn lane
- Standard crosswalks on all approaches

Hazeldean Road @ Edgewater Street

- Signalized three-legged intersection
- North Approach (Edgewater Street): one left turn lane and one right turn lane
- East Approach (Hazeldean Road): one through lane and one shared through/right turn lane
- West Approach (Hazeldean Road): one left turn lane, two through lanes, and one bike lane
- Standard crosswalks on all approaches

Terry Fox Drive @ Edgewater Street/
Charlie Rogers Place

- Signalized four-legged intersection
- North Approach (Terry Fox Drive): one left turn lane, two through lanes, one pocket bike lane, and one right turn lane
- South Approach (Terry Fox Drive): one left turn lane, one through lane, one shared through/right turn lane, and one bike lane
- East Approach (Edgewater Street): one left turn lane and one shared through/right turn lane
- West Approach (Charlie Rogers Place): one left turn lane and one shared through/right turn lane
- Standard crosswalks on all approaches



Terry Fox Drive @ Tony Graham Rec Complex

- Signalized four-legged intersection
- North Approach (Terry Fox Drive):
one left turn lane, one through lane, one shared through/right turn lane, and one bike lane
- South Approach (Terry Fox Drive):
one left turn lane, one through lane, one shared through/right turn lane, and one bike lane
- East Approach (access to 41 Edgewater):
one left turn lane and one shared through/right turn lane
- West Approach (access to Tony Graham Rec Complex):
one left turn lane and one shared through/right turn lane
- Standard crosswalks on all approaches



Terry Fox Drive @ Sobey's Access

- Signalized four-legged intersection
- North Approach (Terry Fox Drive):
one left turn lane, one through lane, one shared through/right turn lane, and one bike lane
- South Approach (Terry Fox Drive):
one left turn lane, two through lanes, one shared through/right turn lane, and one bike lane
- East Approach (access to 500 Hazeldean):
one shared left turn/through lane and one channelized right turn lane
- West Approach (access to Sobey's):
one shared left turn/through/right turn lane
- Standard crosswalks on all approaches



Terry Fox Drive @ Winchester Drive/Halkirk Avenue

- Signalized four-legged intersection
- North Approach (Terry Fox Drive):
one left turn lane, two through lanes, one pocket bike lane, and one right turn lane
- South Approach (Terry Fox Drive):
one left turn lane, one through lane, one shared through/right turn lane, and one bike lane
- East Approach (Winchester Drive):
one left turn lane and one shared through/right turn lane
- West Approach (Halkirk Avenue):
one left turn lane and one shared through/right turn lane
- Standard crosswalks on all approaches



2.1.3 Driveways

In accordance with the *Revised TIA Guidelines*, a review of the existing adjacent driveways along the boundary roads are provided as follows:

Hazeldean Road, north side

- One City maintenance entrance east of 5497 Hazeldean Road.

Hazeldean Road, south side

- No adjacent driveways.

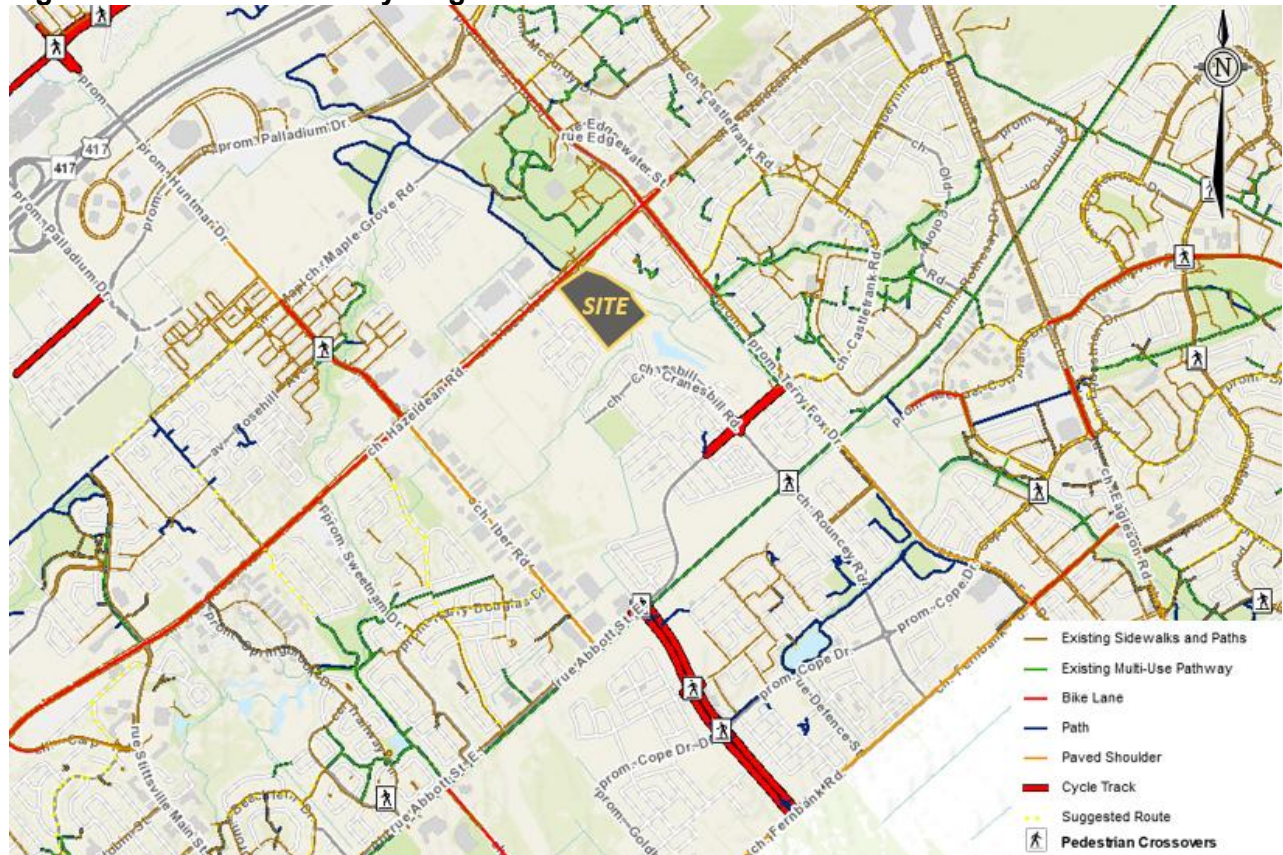
2.1.4 Pedestrian and Cycling Facilities

Within the study area, pedestrian facilities are currently provided on both sides of Hazeldean Road, Terry Fox Drive, Roger Griffiths Avenue, Tillage Street, on one side of Winchester Drive, Mantra Street, and Charlie Rogers Place. Pedestrian facilities are planned for both sides of Mantra Street.

Within the study area, no existing roadways are identified in the Crosstown Bikeway Network. The existing section and future extension of Robert Grant Avenue is identified in the Crosstown Bikeway Network. Bike lanes are provided on Hazeldean Road and Terry Fox Drive (north of Winchester Drive). The bike lanes on Terry Fox Drive transition to paved shoulders south of Winchester Drive.

The pedestrian and cycling network of the greater area surrounding the subject site is illustrated in **Figure 3**.

Figure 3: Pedestrian and Cycling Network



2.1.5 Area Traffic Management

Within the study area, there are no Area Traffic Management (ATM) studies that are in progress.

Area speed limit signs of 40 km/h, 'traffic calmed neighbourhood' signage, centreline flex posts and '40 KM/H' pavement markings have been implemented on Winchester Drive.

2.1.6 Transit

The locations of OC Transpo bus stops relevant to the subject site are described in **Table 1**, and are shown in **Figure 4**. A summary of the various routes which serve the study area is included in **Table 2**. Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

Table 1: OC Transpo Transit Stops

Stop	Location	Routes Served
#1042	North side of Hazeldean Road, west of Tillage Street	61, 301, 303
#1043	South side of Hazeldean Road, east of Mantra Street	61, 301, 303
#1201	South side of Hazeldean Road, east of Kincardine Drive	61, 301, 303
#1217	North side of Hazeldean Road, west of Kincardine Drive	61, 301, 303
#2308	South side of Hazeldean Road, west of Edgewater Street	61, 68, 301, 303, 646, 667, 668
#3504	North side of Hazeldean Road, east of Edgewater Street	61, 68, 301, 303, 646
#7920	East side of Terry Fox Drive, south of Hazeldean Road	67
#7921	West side of Terry Fox Drive, south of Hazeldean Road	67

Table 2: OC Transpo Route Information

Route	From ↔ To	Frequency
61	Tunney's Pasture ↔ Stittsville / Terry Fox	30-minute headways; all day and limited overnight service, seven days a week
67	Terry Fox & Tunney's Pasture ↔ Cope	30-minute headways; all day service, Monday to Friday
68	Baseline ↔ Terry Fox	15- to 30-minute headways; all day service, seven days a week
301	Bayshore / Carlingwood ↔ Richmond / Stittsville	Free rural shopping route; service is inbound in AM and outbound in PM
303	Bayshore / Carlingwood ↔ Dunrobin / Carp / Stittsville	Free rural shopping route; service is inbound in AM and outbound in PM
646	Canterbury H.S. ↔ Terry Fox	School route; service at select times on school days only
667	Holy Trinity H.S. ↔ Hope Side	School route; service at select times on school days only
668	Holy Trinity H.S. ↔ Bridlewood	School route; service at select times on school days only

Figure 4: OC Transpo Bus Stop Locations



2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa or Novatech have been used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. These counts were completed on the dates listed below:

• Hazeldean Road/325m East of Iber Road	March 4, 2020
• Hazeldean Road/Roger Griffiths Avenue	April 9, 2025
• Hazeldean Road/Mantra Street/Tillage Street	April 9, 2025
• Hazeldean Road/Terry Fox Drive	October 29, 2024
• Hazeldean Road/Edgewater Street	April 10, 2025
• Terry Fox Drive/Edgewater Street/Charlie Rogers Place	April 10, 2025
• Terry Fox Drive/Tony Graham Rec Complex	January 30, 2024
• Terry Fox Drive/Sobey's Access	April 10, 2025
• Terry Fox Drive/Winchester Drive/Halkirk Avenue	April 10, 2025

It is noted that active transportation volumes observed in the above traffic counts may be lower than typical conditions, as the counts were conducted outside of the warmest months. Since Hazeldean Road/325m East of Iber Road was counted prior to the COVID-19 pandemic, peak direction through volumes on Hazeldean Road have been balanced to be within 10% of volumes observed at Roger Griffiths Avenue. Based on the traffic count data, the average annual daily traffic (AADT) of Hazeldean Road across the subject site's frontage is approximately 25,170 vehicles per day (vpd). All traffic count data previously discussed are included in **Appendix D**. Vehicular traffic volumes and active transportation volumes within the study area are shown in **Figure 5** and **Figure 6**, respectively.

Figure 5: Existing Traffic Volumes

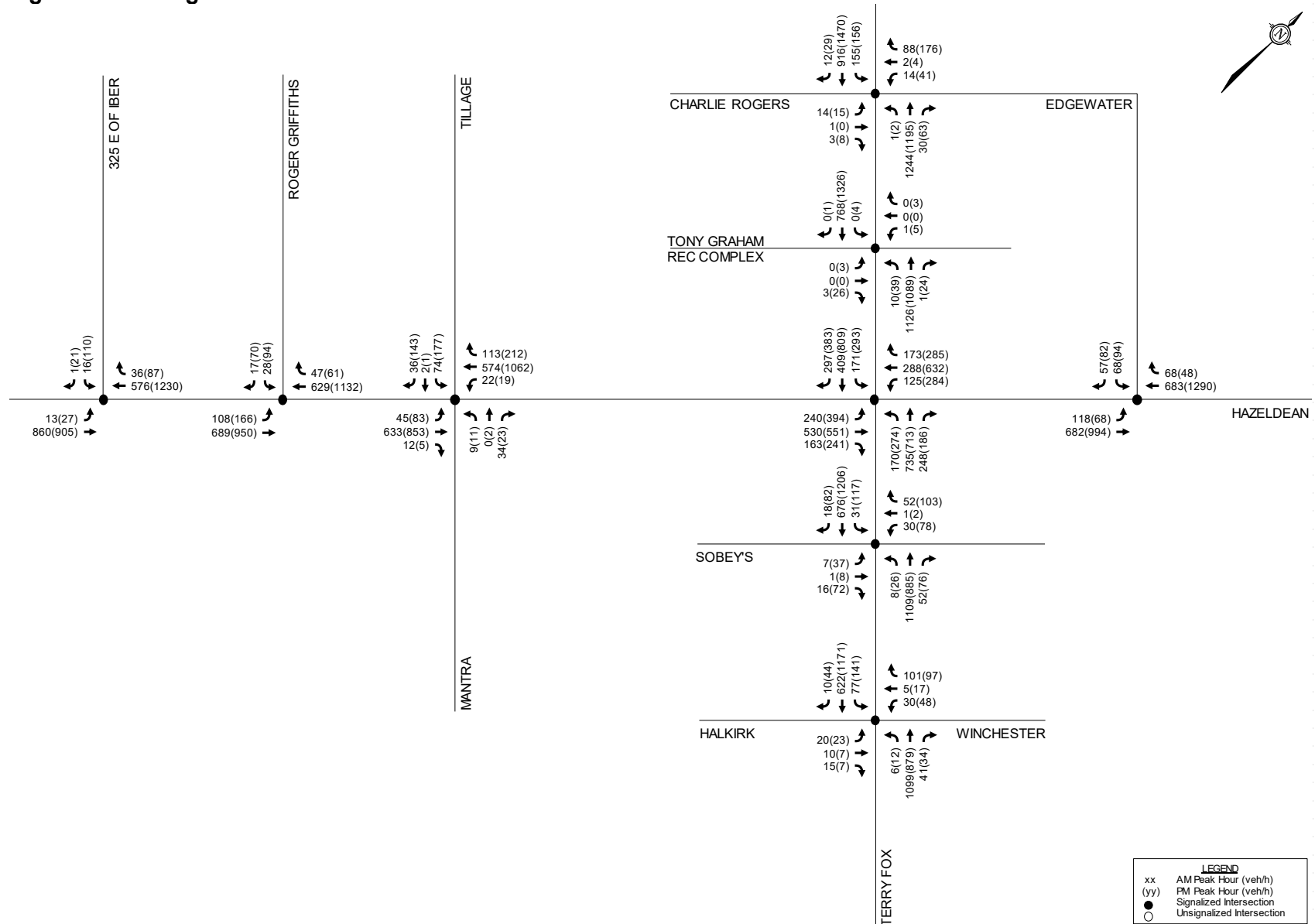
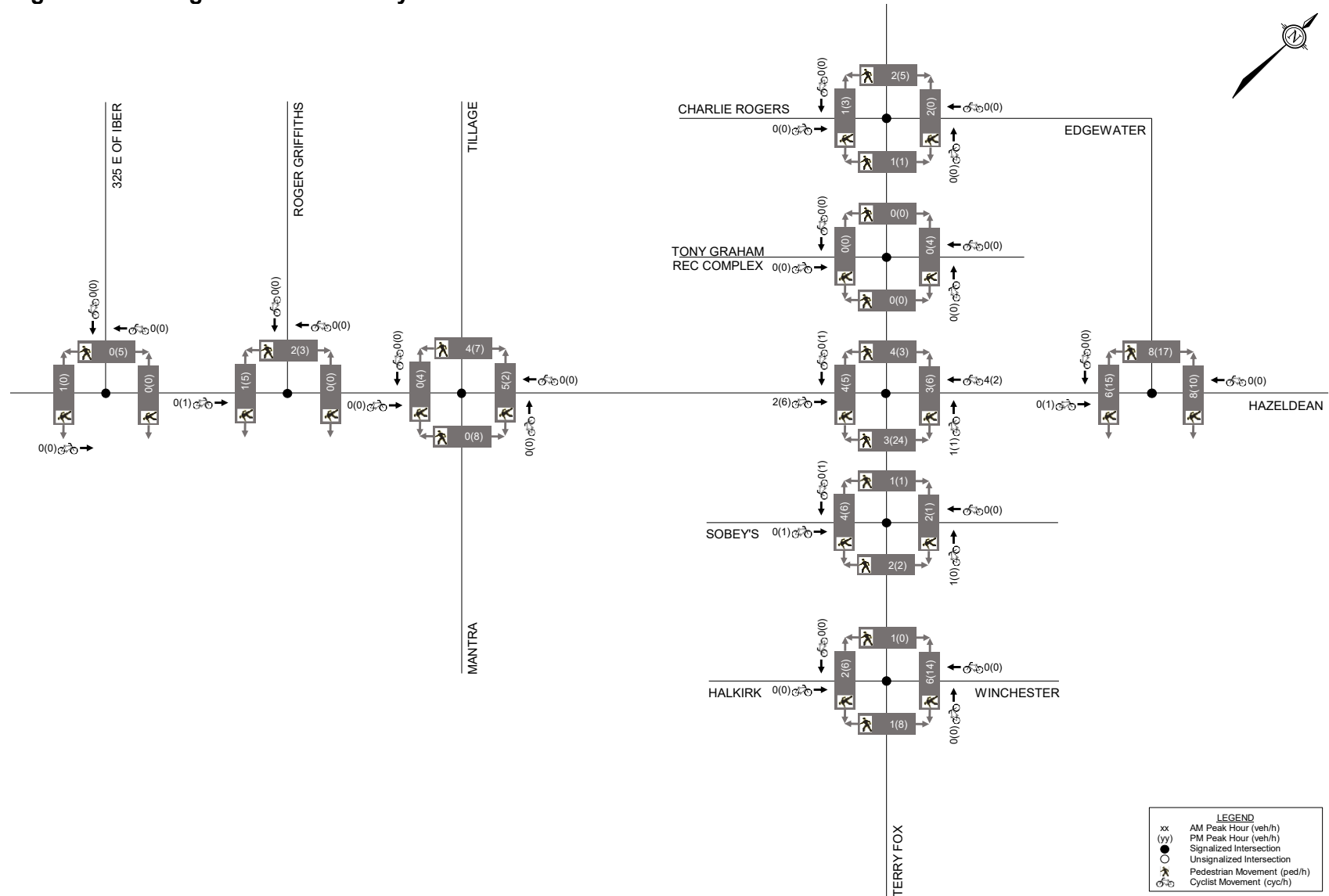


Figure 6: Existing Pedestrian and Cyclist Volumes



2.1.8 Collision Records

Historical collision data from the last five full years available was obtained from the City's Public Works and Service Department for the study area intersections and midblock segments. Copies of the collision summary reports are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the *Revised TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2018 to December 31, 2022 is summarized in **Table 3**.

Table 3: Reported Collisions

Location	Impact Types					Total
	Angle	Rear End	Sideswipe	Turning Mvmt	SMV ⁽¹⁾ / Other	
Intersections						
Hazeldean Rd/ 325m East of Iber Rd	1	1	-	1	-	3
Hazeldean Rd/ Roger Griffiths Ave	1	2	1	2	2	8
Hazeldean Rd/ Mantra St/Tillage St	1	5	1	3	1	11
Hazeldean Rd/ Terry Fox Dr	11	85	13	13	6	128
Hazeldean Rd/ Edgewater St	4	6	2	3	3	18
Terry Fox Dr/ Edgewater St/Charlie Rogers Pl	7	13	6	13	1	40
Terry Fox Dr/ Tony Graham Rec Complex	-	1	1	1	-	3
Terry Fox Dr/ Sobey's Access	5	1	1	2	2	11
Terry Fox Dr/ Winchester Dr/Halkirk Ave	3	12	1	4	1	21
Midblock Segments						
Hazeldean Rd btwn 325m E of Iber Rd & Roger Griffiths Ave	-	1	-	-	-	1
Hazeldean Rd btwn Roger Griffiths Ave & Mantra St	-	-	1	-	-	1
Hazeldean Rd btwn Mantra St & Terry Fox Dr	5	4	2	-	-	11
Hazeldean Rd btwn Terry Fox Dr & Edgewater St	-	2	1	-	-	3
Terry Fox Dr btwn Edgewater St & Tony Graham Rec Complex	-	3	1	-	-	4
Terry Fox Dr btwn Tony Graham Rec Complex & Hazeldean Rd	-	1	2	-	-	3
Terry Fox Dr btwn Hazeldean Rd & Sobey's Access	-	2	3	-	-	5
Terry Fox Dr btwn Sobey's Access & Winchester Dr	-	3	1	-	-	4

1. SMV = Single Motor Vehicle

Hazeldean Road/325m East of Iber Road

A total of three collisions were reported at this intersection over the last five years, consisting of one angle impact, one rear-end impact, and one turning movement impact. Two collisions resulted in injuries, but no collision caused fatalities. All three collisions (100%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

Hazeldean Road/Roger Griffiths Avenue

A total of eight collisions were reported at this intersection over the last five years, consisting of one angle impact, two rear-end impacts, one sideswipe impact, two turning movement impacts, and two single vehicle/other impacts. Three collisions resulted in injuries, but no collision caused fatalities. Three of the eight collisions (38%) occurred in poor driving conditions. One collision involved a pedestrian and an eastbound left turning vehicle. No collisions involved cyclists.

Hazeldean Road/Mantra Street/Tillage Street

A total of 11 collisions were reported at this intersection over the last five years, consisting of one angle impact, five rear-end impacts, one sideswipe impact, three turning movement impacts, and one single vehicle/other impact. No collisions resulted in injuries or fatalities. Three of the 11 collisions (27%) occurred in poor driving conditions. One collision involved a pedestrian and a southbound right turning vehicle. No collisions involved cyclists.

Hazeldean Road/Terry Fox Drive

A total of 128 collisions were reported at this intersection over the last five years, consisting of 11 angle impacts, 85 rear-end impacts, 13 sideswipe impacts, 13 turning movement impacts, and six single vehicle/other impacts. Twenty collisions resulted in injuries, but no collision caused fatalities. Forty-one of the 128 collisions (32%) occurred in poor driving conditions. One collision involved a pedestrian and a southbound right turning vehicle. Two collisions involved cyclists (one angle impact involving a right turning cyclist and vehicle travelling through, and one rear-end impact involving a cyclist and vehicle travelling through).

Of the 11 angle impacts, three involved a northbound vehicle and an eastbound vehicle, one involved a northbound vehicle and a westbound vehicle, three involved a southbound vehicle and an eastbound vehicle, and four involved a southbound vehicle and a westbound vehicle. No one combination meets the threshold of a collision pattern.

Of the 85 rear-end impacts, 24 involved northbound vehicles (18 through incidents, six right turn incidents), 28 involved southbound vehicles (ten through incidents, 18 right turn incidents), 19 involved eastbound vehicles (four left turn incidents, ten through incidents, five right turn incidents), and 14 involved westbound vehicles (ten through incidents, four right turn incidents). Posted speed limits of 60 or 70 km/h and high traffic volumes are likely factors for the frequency of this type of collision. There are no apparent geometric factors to make rear-end impacts at any approach more likely.

Of the 13 sideswipe impacts, four involved northbound vehicles, three involved southbound vehicles, three involved eastbound vehicles, and three involved westbound vehicles. No one approach meets the threshold of a collision pattern.

Of the 13 turning movement impacts, seven involved a northbound vehicle and southbound vehicle (one northbound left turn and southbound right turn, three northbound through and southbound left turn, and three northbound right turn and southbound left turn), four involved multiple southbound vehicles (two southbound through and southbound left turn, one southbound through and southbound right turn, and one with two southbound right turns), and two involved an eastbound vehicle and westbound vehicle (one eastbound right turn and westbound left turn, and one westbound left turn and westbound U-turn). No one combination meets the threshold of a collision pattern.

Of the six single vehicle/other impacts, four involved a vehicle reversing into another vehicle facing the same direction (one at each approach). One involved a southbound right turning vehicle colliding with a pedestrian, and one involved a southbound vehicle impacting a pole (manoeuvre unknown). No one approach meets the threshold of a collision pattern.

Hazeldean Road/Edgewater Street

A total of 18 collisions were reported at this intersection over the last five years, consisting of four angle impacts, six rear-end impacts, two sideswipe impacts, three turning movement impacts, and three single vehicle/other impacts. Four collisions resulted in injuries, but no collision caused fatalities. Eight of the 18 collisions (44%) occurred in poor driving conditions. One collision involved a pedestrian and an eastbound left turning vehicle. No collisions involved cyclists.

Terry Fox Drive/Edgewater Street/Charlie Rogers Place

A total of 40 collisions were reported at this intersection over the last five years, consisting of seven angle impacts, 13 rear-end impacts, six sideswipe impacts, 13 turning movement impacts, and one single vehicle/other impact. Fourteen collisions resulted in injuries, but no collision caused fatalities. Ten of the 40 collisions (25%) occurred in poor driving conditions. No collisions involved pedestrians. One angle impact involved a right turning cyclist and vehicle travelling through.

Of the seven angle impacts, three involved a northbound vehicle and an eastbound vehicle, one involved a northbound vehicle and a westbound vehicle, two involved a southbound vehicle and an eastbound vehicle, one involved a southbound vehicle and a westbound vehicle, and one involved a southbound vehicle and a westbound bicycle. No one combination meets the threshold of a collision pattern.

Of the 13 rear-end impacts, seven involved northbound vehicles (all through incidents) and six involved southbound vehicles (two left turn incidents, four through incidents). The posted speed limit of 70 km/h and high traffic volumes on Terry Fox Drive are likely factors for the frequency of this type of collision. There are no apparent geometric factors to make rear-end impacts on Terry Fox Drive more likely.

Of the six sideswipe impacts, three involved northbound vehicles and three involved southbound vehicles. No one approach meets the threshold of a collision pattern.

Of the 13 turning movement impacts, 12 involved a northbound vehicle and southbound vehicle (three northbound left turn and southbound through, eight northbound through and southbound left turn, and one northbound through and southbound U-turn), and one involved an eastbound vehicle and westbound vehicle (one eastbound left turn and westbound right turn). The number of collisions including southbound left turns meets the threshold of a collision pattern. A protected plus permitted left turn phase is currently provided for northbound/southbound left turns during the PM peak period, and is fully permitted at all other times. Protected plus permitted left turn phasing during other periods of the day could be considered to mitigate this type of collision.

Terry Fox Drive/Tony Graham Rec Complex

A total of three collisions were reported at this intersection over the last five years, consisting of one rear-end impact, one sideswipe impact, and one turning movement impact. No collisions resulted in injuries or fatalities. None of the three collisions (0%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

Terry Fox Drive/Sobey's Access

A total of 11 collisions were reported at this intersection over the last five years, consisting of five angle impacts, one rear-end impact, one sideswipe impact, two turning movement impacts, and two single vehicle/other impacts. Five collisions resulted in injuries, but no collision caused fatalities. Three of the 11 collisions (27%) occurred in poor driving conditions. Both single vehicle impacts involved a pedestrian and a westbound vehicle (one turning left and one turning right). No collisions involved cyclists.

Terry Fox Drive/Winchester Drive/Halkirk Avenue

A total of 21 collisions were reported at this intersection over the last five years, consisting of three angle impacts, 12 rear-end impacts, one sideswipe impact, four turning movement impacts, and one single vehicle/other impact. Five collisions resulted in injuries, but no collision caused fatalities. Eleven of the 21 collisions (52%) occurred in poor driving conditions. No collisions involved pedestrians. One angle impact involved a right turning cyclist and vehicle travelling through.

Of the 12 rear-end impacts, three involved northbound vehicles (all through incidents), seven involved southbound vehicles (all through incidents), one involved eastbound vehicles (a through incident), and one involved westbound vehicles (a through incident). The posted speed limit of 70 km/h and high traffic volumes on Terry Fox Drive are likely factors for the frequency of this type of collision. There are no apparent geometric factors to make rear-end impacts on Terry Fox Drive more likely.

Hazeldean Road between 325m of Iber Road & Roger Griffiths Avenue

One collision was reported along this segment over the last five years, which was a rear-end impact involving eastbound vehicles. The collision did not result in injuries or fatalities, and occurred in fair driving conditions. This collision did not involve pedestrians or cyclists.

Hazeldean Road between Roger Griffiths Avenue & Mantra Street/Tillage Street

One collision was reported along this segment over the last five years, which was a sideswipe impact involving eastbound vehicles. The collision did not result in injuries or fatalities, and occurred in fair driving conditions. This collision did not involve pedestrians or cyclists.

Hazeldean Road between Mantra Street/Tillage Street & Terry Fox Drive

A total of 11 collisions were reported along this segment over the last five years, consisting of five angle impacts, four rear-end impacts, and two sideswipe impacts. Of the 11 collisions, four occurred between Mantra Street/Tillage Street and Kincardine Drive, which is the section of Hazeldean Road that includes the subject site's frontage. The other seven occurred between Kincardine Drive and Terry Fox Drive.

Four collisions resulted in injuries, but no collision caused fatalities. Four of the 11 collisions (36%) occurred in poor driving conditions. No collisions involved pedestrians. One angle impact involved a right turning cyclist and vehicle travelling through.

Hazeldean Road between Terry Fox Drive & Edgewater Street

A total of three collisions were reported along this segment over the last five years, consisting of two rear-end impacts and one sideswipe impact. No collisions resulted in injuries or fatalities. None of the three collisions (0%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

Terry Fox Drive between Edgewater Street/Charlie Rogers Place & Tony Graham Rec Complex

A total of four collisions were reported along this segment over the last five years, consisting of three rear-end impacts and one sideswipe impact. No collisions resulted in injuries or fatalities. None of the four collisions (0%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

Terry Fox Drive between Tony Graham Rec Complex & Hazeldean Road

A total of three collisions were reported along this segment over the last five years, consisting of one rear-end impact and two sideswipe impacts. No collisions resulted in injuries or fatalities. One of the three collisions (33%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

Terry Fox Drive between Hazeldean Road & Sobeys Access

A total of five collisions were reported along this segment over the last five years, consisting of two rear-end impacts and three sideswipe impacts. No collisions resulted in injuries or fatalities. Four of the five collisions (80%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

Terry Fox Drive between Sobeys Access & Winchester Drive/Halkirk Avenue

A total of four collisions were reported along this segment over the last five years, consisting of three rear-end impacts and one sideswipe impact. Three collisions resulted in injuries, but no collisions caused fatalities. Two of the four collisions (50%) occurred in poor driving conditions. No collisions involved pedestrians or cyclists.

2.2 Planned Conditions

2.2.1 Planned Transportation Projects

The City's *2013 Transportation Master Plan (TMP)* identifies Hazeldean Road and Terry Fox Drive within its 2031 Rapid Transit and Transit Priority (RTTP) Network. Based on the 2031 Network Concept, the nearest corridors identified in the RTTP Network include Hazeldean Road and Terry Fox Drive north of Hazeldean Road (transit priority corridors with isolated measures), and Robert Grant Avenue (bus rapid transit with at-grade crossings south of Hazeldean Road and grade-separated crossings north of Hazeldean Road). Based on the 2031 Affordable Network, Hazeldean Road and Robert Grant Avenue are both transit priority corridors with isolated measures, while Terry Fox Drive has no transit priority designation.

The *2013 TMP* identifies the following study area projects within the 2031 Roadway Network Concept or 2031 Affordable Roadway Network. Based on the 2031 Network Concept, a widening of Terry Fox Drive from two lanes to four is identified between Winchester Road and Eagleson Road. The Environmental Assessment (EA) for this widening has been completed. The extension of Robert Grant Avenue to connect from Abbott Street East to Palladium Drive is identified in the 2031 Affordable Network. The section from Abbott Street East to Hazeldean Road is currently under construction. It is understood that the section from Hazeldean Road to Palladium Drive is scheduled for 2027-2028.

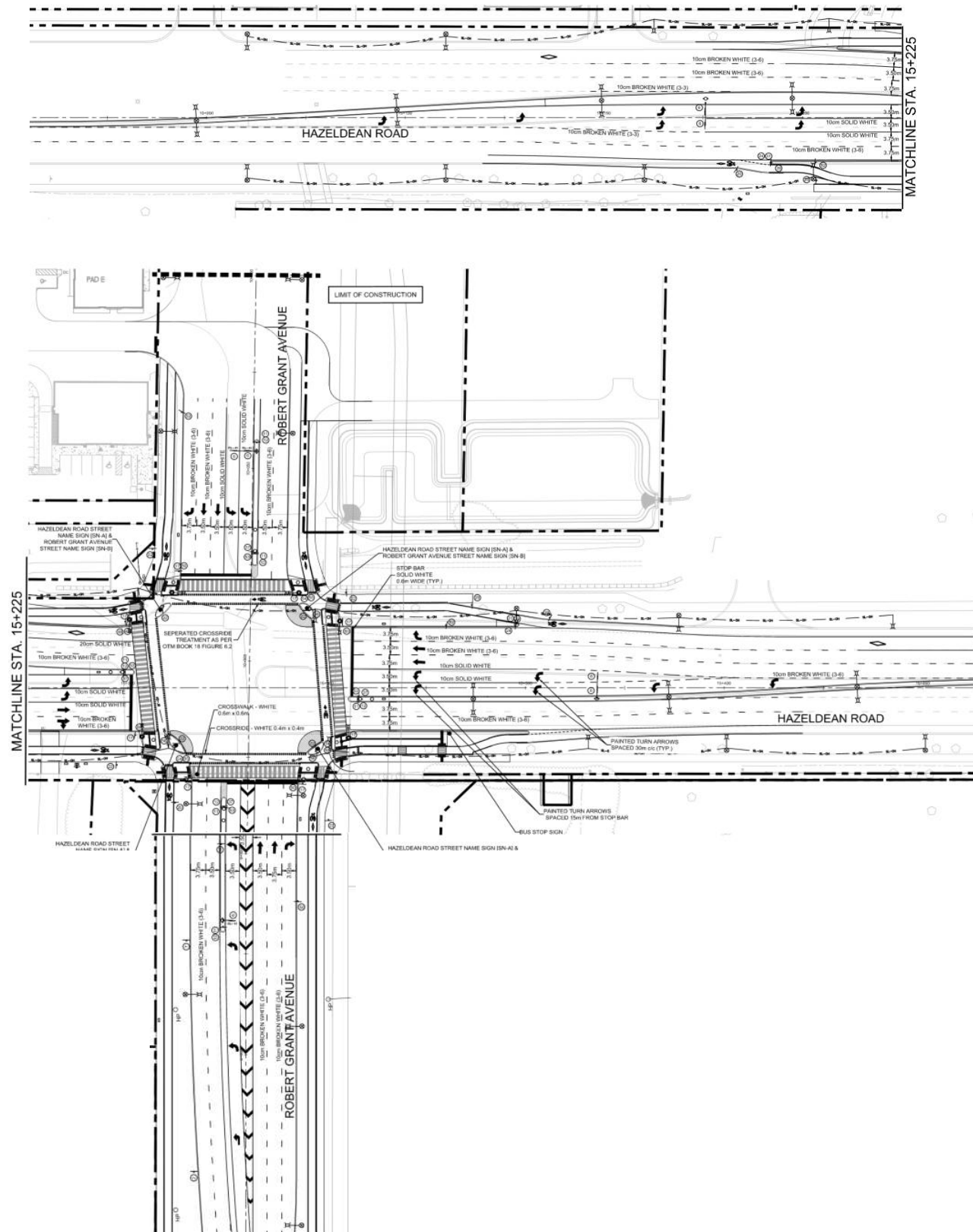
Within the study area, Robert Grant Avenue will intersect with Hazeldean Road at the existing study area intersection Hazeldean Road/325m East of Iber Road. The planned lane configuration at each approach is described below:

- North Approach (The Shoppes at Fairwinds / future Robert Grant Avenue extension): two left turn lanes, two through lanes, and one right turn lane
- South Approach (Robert Grant Avenue): one slotted left turn lane, two through lanes, and one right turn lane
- East Approach (Hazeldean Road): two left turn lanes, two through lanes, and one right turn lane
- West Approach (Hazeldean Road): two left turn lanes, one through lane, and one shared through/right turn lane
- Zebra-striped crosswalks and crossrides are planned on all approaches
- Cycle tracks are planned for all approaches
- Intersection will be fully protected

The planned Hazeldean Road/Robert Grant Avenue intersection is shown in **Figure 7**.

Approved by City Council in April 2023, the City's *TMP – Part 1* includes a list of upcoming active transportation projects, and supersedes the City's *2013 Ottawa Cycling Plan* and *2013 Ottawa Pedestrian Plan*. The *TMP – Part 1* identifies no pedestrian infrastructure projects within the vicinity of the subject site. The cycling infrastructure projects list identifies a pathway along the east side of the Carp River between Terry Fox Drive and Hazeldean Road (east of the site), and multi-use pathway (MUP) connections along Terry Fox Drive from Westphalian Avenue to Condado Crescent (south of the study area).

Figure 7: Planned Hazeldean Road/Robert Grant Avenue Intersection



2.2.2 Other Area Developments

Based on a review of the City's Development Application Search Tool, there are multiple other developments that are in proximity of the subject site, significant enough to include traffic projections that affect the study area, and are under construction, approved, or are in the approval process. These developments are summarized as follows.

16 Edgewater Street

A TIA was prepared by Novatech in July 2022, in support of a mixed-use development with 153 apartment dwellings, 23 townhomes, 458 m² of office space, and 294 m² of commercial space. The TIA estimated buildout to occur in 2022, however this application has not been approved at the time of writing.

21 Huntmar Drive

A TIA was prepared by D.J. Halpenny & Associates in June 2021, in support of a residential development with 344 apartment dwellings. The TIA estimated buildout to occur in 2024, however this application has not been approved at the time of writing.

Trail View Subdivision (950 Terry Fox Drive)

A Transportation Impact Study (TIS) was prepared by Novatech in October 2014, in support of the Trail View subdivision consisting of 108 single-detached homes, 77 condo dwellings, and 60 apartment dwellings. A separate TIA in support of the apartment block was prepared by Novatech in May 2025. Some single-detached and condo dwellings have been built, and construction is ongoing. The TIA estimated buildout of the apartment block (i.e. the final phase of the subdivision) to occur in 2027.

5000 Robert Grant Avenue

A TIA was prepared by Parsons in March 2024, in support of a development consisting of 504 mid-rise or high-rise dwellings, and 2,185 ft² of retail space. The TIA estimated buildout to occur in 2025.

Kizell Lands (5618 Hazeldean Road)

A TIA was prepared by Novatech in May 2020, in support of a subdivision consisting of 288 single-detached homes, 469 townhomes, 878 low-rise dwellings, 1,120 apartment dwellings, 351,334 ft² of retail space, a 580-student elementary school, and a 375-space park and ride. The TIA estimated buildout to occur in 2030.

5707 Hazeldean Road

A TIA was prepared by D.J. Halpenny & Associates in December 2019, in support of additional retail spaces at The Shoppes at Fairwinds. The gross floor area of the proposed additions total approximately 4,546 m². The TIA estimated buildout to occur in 2021, however these additional retail pads have not been constructed at the time of writing.

A map indicating the approximate location of each development is included in **Figure 8**.

Figure 8: Other Area Developments



2.3 Study Area and Time Periods

The study area for this report includes the boundary roadway Hazeldean Road, as well as the following signalized intersections:

- Hazeldean Road/325m East of Iber Road (future Robert Grant Avenue);
- Hazeldean Road/Roger Griffiths Avenue;
- Hazeldean Road/Mantra Street/Tillage Street;
- Hazeldean Road/Terry Fox Drive;
- Hazeldean Road/Edgewater Street;
- Terry Fox Drive/Edgewater Street/Charlie Rogers Place;
- Terry Fox Drive/Tony Graham Rec Complex;
- Terry Fox Drive/Sobey's Access;
- Terry Fox Drive/Winchester Drive/Halkirk Avenue.

The selected time periods for this report are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The Phase 1 buildout year 2029, Phase 2 buildout year 2031, and horizon year 2036 have been considered.

2.4 Access Design

Three accesses are proposed as part of the development, with one driveway each to Hazeldean Road, Energy Street, and Bliss Crescent. The driveway to Hazeldean Road will be part of Phase 2, and is proposed in approximately the same location as the existing driveway serving the golf centre.

The proposed accesses have been evaluated using the relevant provisions of the City's *Private Approach By-Law* (PABL) and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(1)(c) of the PABL identifies a maximum width requirement of 9m for any two-way private approach. The proposed accesses are each approximately 8.5m in width, meeting this requirement.

Section 25(1)(m) of the PABL identifies minimum distances between a private approach and the nearest intersecting street line, for sites that abut or are within 46m of an arterial or major collector roadway. For residential developments with more than 300 parking spaces, the minimum distance is 60m (measuring nearest edge to intersecting ROW). TAC's *Geometric Design Guide* identifies a minimum corner clearance of 70m (measuring nearest edge to nearest edge). The western edge of the proposed access to Hazeldean Road is approximately 137m from the ROW of Mantra Street, and approximately 141 from the nearest edge of Mantra Street. Therefore, these requirements are met.

Section 25(1)(p) of the PABL identifies a minimum separation requirement of 3m between a private approach and the nearest property line. The proposed access to Hazeldean Road is approximately 5m at the ROW of Hazeldean Road, meeting this requirement. The proposed accesses to Energy Street and Bliss Crescent will connect to the existing roadway blocks that have been constructed as part of the adjacent subdivision.

Section 25(1)(u) of the PABL identifies a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line. The grade of each proposed access will be confirmed as the concept plan is finalized.

A review of stopping sight distance (SSD) and intersection sight distance (ISD) requirements at the proposed accesses has been conducted, in accordance with the minimum requirements outlined in TAC's *Geometric Design Guide*. For the purposes of this review, a design speed of 70 km/h has been assumed for Hazeldean Road (i.e. 10 km/h greater than the posted speed limit of 60 km/h), and a design speed of 50 km/h has been assumed for Energy Street and Bliss Crescent. Therefore, TAC outlines the following SSD and ISD requirements:

- SSD
 - 105m required for Hazeldean Road;
 - 65m required for Energy Street/Bliss Crescent.
- ISD, looking right to turn left out of access
 - 150m desired for Hazeldean Road;
 - 105m desired for Energy Street/Bliss Crescent.
- ISD, looking left to turn right out of access
 - 130m desired for Hazeldean Road;
 - 95m desired for Energy Street/Bliss Crescent.

Hazeldean Road is a generally straight roadway that has a minor vertical crest east of the proposed development (i.e. at the bridge crossing the Carp River). There are clear sightlines to the crest of the bridge crossing the Carp River to the east (approximately 160m from the access location) and clear sightlines to the intersections with Mantra Street/Tillage Street and Roger Griffiths Avenue to the west. Therefore, the minimum required SSD and desired ISD are provided at the proposed access to Hazeldean Road.

The proposed accesses to Energy Street and Bliss Crescent will connect to the existing roadway blocks that were constructed as part of the adjacent subdivision. At Energy Street, it is anticipated that the required SSD can be provided in both directions, and the desired ISD can be provided for right turns. It is anticipated that the desired ISD for left turns is not provided, based on the 90-degree northeast corner of Bliss Crescent, however the curvature is tight enough that the operating speed is anticipated to be far slower than 50 km/h. Therefore, no concerns are identified.

At Bliss Crescent, it is anticipated that the required SSD can be provided for drivers approaching from the north, and the desired ISD can be provided for left turns. It is anticipated that the required SSD for drivers approaching from the south and the desired ISD for right turns is not provided, based on the 90-degree southeast corner of Bliss Crescent. However, the curvature is tight enough that the operating speed is anticipated to be far slower than 50 km/h. Approximately 40m of SSD is provided, which is acceptable for a design speed of approximately 36 km/h. Therefore, no concerns are identified.

TAC's *Geometric Design Guide* outlines a minimum clear throat length requirement for accesses serving apartments. For arterial accesses serving over 200 units, the *Geometric Design Guide* identifies a minimum clear throat length of 40m. This requirement can be met, as the apartment block has an approximate depth of 115m. The clear throat requirements for the apartment block can be reviewed further as part of the subsequent Site Plan Control application, when more details are known.

2.5 Development-Generated Travel Demand

2.5.1 Trip Generation

The number of peak hour person trips generated by the proposed development has been estimated using the *TRANS Trip Generation Manual*, which present peak period trip generation rates and mode shares for different types of housing for the AM and PM peak periods. The data is divided into trip generation rates and mode shares for Single-Family Detached Housing, Low-Rise Multifamily Housing (one or two storeys), and High-Rise Multifamily Housing (three or more storeys). The process of converting the trip generation estimates from peak period to peak hour is shown below. Traffic generated by the existing golf centre has not been deducted, as the golf centre is not open year-round.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the Kanata-Stittsville district, which has the following observed mode shares during the peak periods.

Table 4: Kanata-Stittsville Residential Mode Shares

Mode	Single-Family Detached		Low-Rise Multifamily		High-Rise Multifamily	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Auto Driver	52%	56%	52%	58%	43%	55%
Auto Passenger	15%	19%	14%	17%	26%	19%
Transit	20%	14%	22%	17%	28%	21%
Cyclist	1%	1%	0%	0%	0%	0%
Pedestrian	12%	9%	11%	8%	4%	5%

The mode shares for this proposed development are assumed to be equal during both peak hours, and generally follow the mode shares observed for the Kanata-Stittsville district. Therefore, the assumed mode shares of the low-density homes and apartment block is summarized as follows:

- Auto Driver: 55% for single-family/low-rise multifamily, 50% for apartments;
- Auto Passenger: 20% for single-family/low-rise multifamily, 20% for apartments;
- Transit: 15% for single-family/low-rise multifamily, 25% for apartments;
- Cyclist: 0% for single-family/low-rise multifamily, 0% for apartments;
- Pedestrian: 10% for single-family/low-rise multifamily, 5% for apartments.

The process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed development during the AM and PM peak periods are shown in **Table 5**. A breakdown of these trips by mode share is shown in **Table 6**.

Table 5: 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
Single-Family Detached Housing	AM: 2.05 PM: 2.48	50	31	72	103	77	47	124
Low-Rise Multifamily Housing	AM: 1.35 PM: 1.58	48	20	46	66	43	33	76
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	185	46	102	148	97	70	167
Total			97	220	317	217	150	367

1. ppp: Person Trips per Peak Period

Table 6: Proposed Residential – Peak Period Trips by Mode Share

Travel Mode		Mode Share	AM Peak Period			PM Peak Period		
			IN	OUT	TOT	IN	OUT	TOT
Single-Family Person Trips			31	72	103	77	47	124
Auto Driver	55%	17	40	57	42	26	68	
Auto Passenger	20%	6	15	21	15	10	25	
Transit	15%	5	10	15	12	7	19	
Cyclist	0%	-	-	0	-	-	0	
Pedestrian	10%	3	7	10	8	4	12	
Low-Rise Person Trips			20	46	66	43	33	76
Auto Driver	55%	11	25	36	24	18	42	
Auto Passenger	20%	4	9	13	9	6	15	
Transit	15%	3	7	10	6	5	11	
Cyclist	0%	-	-	0	-	-	0	
Pedestrian	10%	2	5	7	4	4	8	
High-Rise Person Trips			46	102	148	97	70	167
Auto Driver	50%	23	51	74	48	35	83	
Auto Passenger	20%	9	21	30	20	14	34	
Transit	25%	12	25	37	24	18	42	
Cyclist	0%	-	-	0	-	-	0	
Pedestrian	5%	2	5	7	5	3	8	
Total Person Trips			97	220	317	217	150	367
Auto Driver			51	116	167	114	79	193
Auto Passenger			19	45	64	44	30	74
Transit			20	42	62	42	30	72
Cyclist			-	-	0	-	-	0
Pedestrian			7	17	24	17	11	28

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

Table 7: Proposed Residential – Peak Hour Trips by Mode Share

Travel Mode	Adj. Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Auto Driver	0.48	0.44	8	19	27	19	11	30
Auto Passenger	0.48	0.44	3	7	10	7	4	11
Transit	0.55	0.47	3	6	9	5	3	8
Cyclist	0.58	0.48	-	-	0	-	-	0
Pedestrian	0.58	0.52	2	4	6	4	2	6
Single-Family Person Trips			16	36	52	35	20	55
Auto Driver	0.48	0.44	5	12	17	10	8	18
Auto Passenger	0.48	0.44	2	4	6	4	3	7
Transit	0.55	0.47	2	4	6	3	2	5
Cyclist	0.58	0.48	-	-	0	-	-	0
Pedestrian	0.58	0.52	1	3	4	2	2	4
Low-Rise Person Trips			10	23	33	19	15	34
Auto Driver	0.48	0.44	11	24	35	21	15	36
Auto Passenger	0.48	0.44	4	10	14	9	6	15
Transit	0.55	0.47	6	14	20	11	8	19
Cyclist	0.58	0.48	-	-	0	-	-	0
Pedestrian	0.58	0.52	1	3	4	3	2	5
High-Rise Person Trips			22	51	73	44	31	75
Auto Driver (Total)			24	55	79	50	34	84
Auto Passenger (Total)			9	21	30	20	13	33
Transit (Total)			11	24	35	19	13	32
Cyclist (Total)			-	-	0	-	-	0
Pedestrian (Total)			4	10	14	9	6	15
Total Person Trips			48	110	158	98	66	164

From the previous table, the proposed development is estimated to generate 158 person trips (including 79 vehicle trips) during the AM peak hour, and 164 person trips (including 84 vehicle trips) during the PM peak hour.

2.5.2 Trip Distribution

The assumed distribution of trips generated by the proposed development is based on the typical commuter patterns. For residential trips, this is considered as outbound during the AM peak hour and inbound during the PM peak hour. As the extension of Robert Grant Avenue to Palladium Drive will be completed by the time the proposed development is built out, a percentage of site-generated trips have been assigned to/from the north and south via Robert Grant Avenue. The distribution can be summarized as follows.

- 35% to/from the north via Terry Fox Drive;
- 25% to/from the north via Robert Grant Avenue;
- 10% to/from the south via Terry Fox Drive;
- 5% to/from the south via Robert Grant Avenue;
- 20% to/from the east via Hazeldean Road;
- 5% to/from the west via Hazeldean Road.

2.5.3 Trip Assignment

Single-Family/Low-Rise Multifamily Trip Assignment

For the period where only Phase 1 has been constructed, trips generated by those homes have been assigned to the proposed accesses to Energy Street or Bliss Crescent. All trips to/from the south via Robert Grant Avenue are assumed to not travel on Hazeldean Road (connecting to Energy Street directly). All other trips are assumed to use the Hazeldean Road/Mantra Street/Tillage Street intersection to enter and exit the site.

After full buildout, trips generated by the single-family/low-rise multifamily homes have been split between all proposed accesses. All trips to/from the north/south via Terry Fox Drive and east via Hazeldean Road are assumed to use the Hazeldean Road access. All trips to/from the south via Robert Grant Avenue are assumed to use the Energy Street or Bliss Crescent access, and will not travel on Hazeldean Road. All trips to/from the north via Robert Grant Avenue and west via Hazeldean Road are assumed to also use the Energy Street or Bliss Crescent accesses, but will travel on Hazeldean Road to Mantra Street.

Apartment Trip Assignment

All trips generated by the apartments have been assigned to the proposed Hazeldean Road access. Trips to/from the south via Robert Grant Avenue are assumed to travel on Hazeldean Road, and will not travel on Energy Street or Mantra Street.

Based on the above, the distribution of site-generated traffic volumes to the study area intersections are shown in the following figures:

- Trips generated by the single-family/low-rise multifamily homes during Phase 1 is shown in **Figure 9**;
- Trips generated by the single-family/low-rise multifamily homes after full buildout is shown in **Figure 10**;
- Trips generated by the apartment block after full buildout is shown in **Figure 11**.

Figure 9: Site-Generated Traffic Volumes (Low-Density Homes, Phase 1)

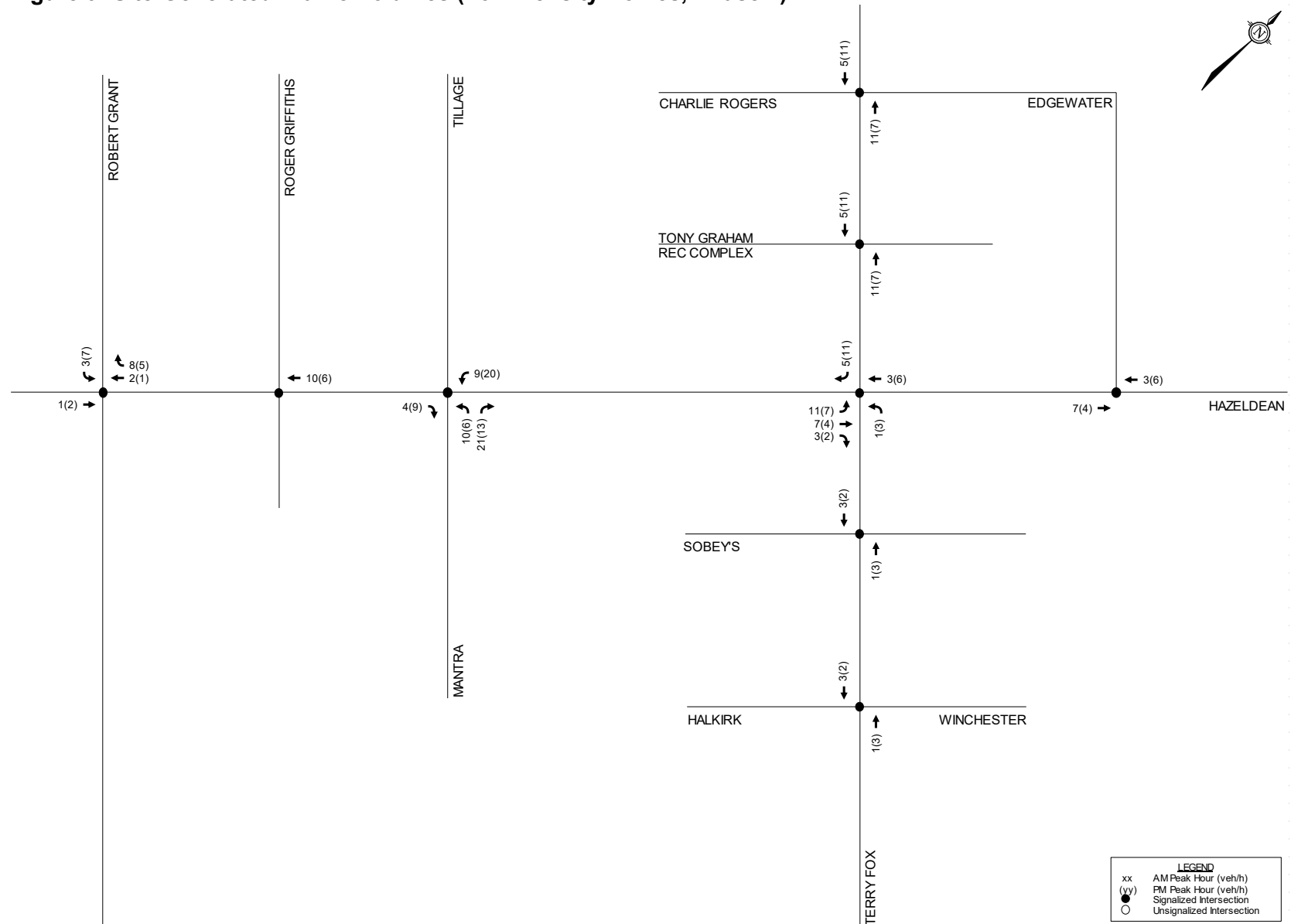


Figure 10: Site-Generated Traffic Volumes (Low-Density Homes, Full Buildout)

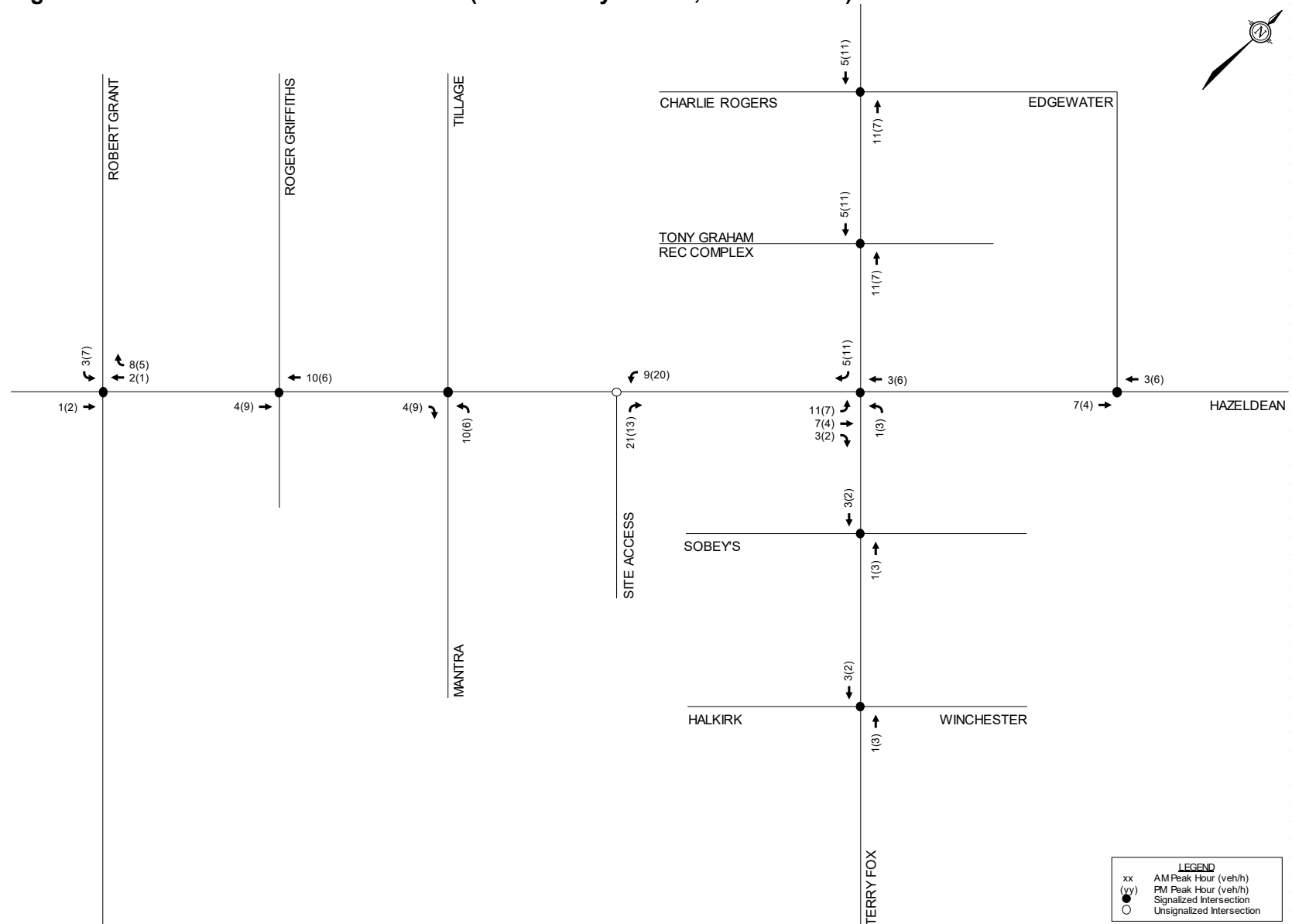
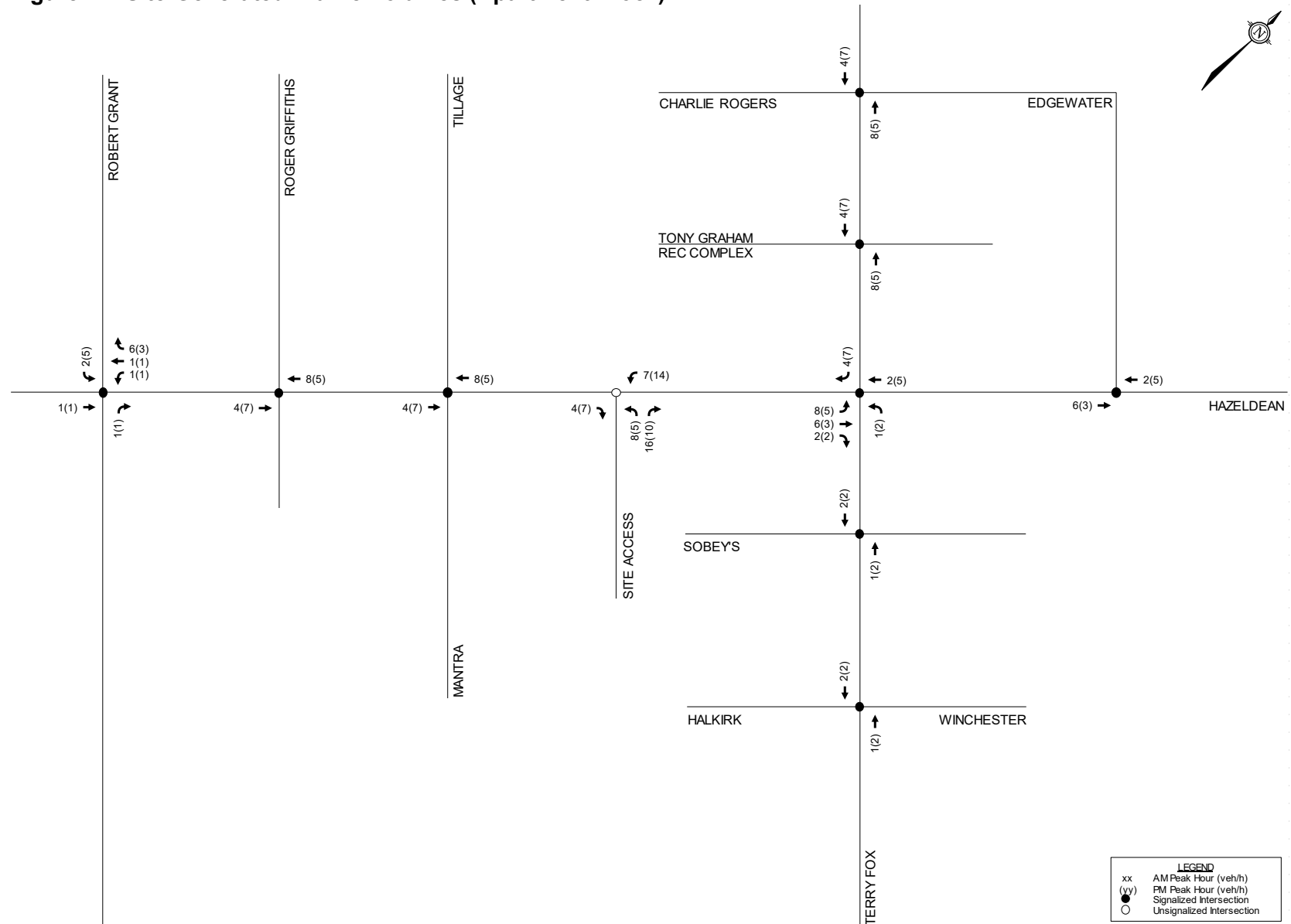


Figure 11: Site-Generated Traffic Volumes (Apartment Block)



2.6 Exemptions Review

This module reviews possible exemptions from the final TIA, as outlined in the *Revised TIA Guidelines*. The applicable exemptions for this site are shown in **Table 8**.

Table 8: TIA Exemptions

Module	Element	Exemption Criteria	Status
4.1 Development Design	4.1.2 Circulation and Access	Required for site plan control and zoning by-law amendment applications	Not Exempt
	4.1.3 New Street Networks	Required for draft plan of subdivision applications	Not Exempt
4.2 Parking	<i>All elements</i>	Required for site plan control and zoning by-law amendment applications	Not Exempt
4.6 Neighbourhood Traffic Calming	<i>All elements</i>	- If all of the following criteria are met: - Access is provided to a collector or local roadway - Application is for zoning by-law amendment or draft plan of subdivision - Development generates more than 75 vehicle trips - Site trip infiltration is expected, and site-generated traffic will increase peak volumes by 50% or more along the route between the site and an arterial - The subject street segment is adjacent to two or more of the following significant sensitive land uses: - School (within 250m walking distance) - Park - Retirement/older adult facility - Licensed child care centre - Community centre 50+% of adjacent properties along the route(s) are occupied by residential lands and at least ten dwellings are occupied	Exempt
4.7 Transit	4.7.1 Transit Route Capacity	Required when proposed development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	Required when proposed development generates more than 75 vehicle trips	Not Exempt
4.8 Network Concept	<i>All elements</i>	Required when proposed development generates more than 200 peak hour person trips in excess of the equivalent volume permitted by the established zoning	Exempt
4.9 Intersection Design	<i>All elements</i>	Required when proposed development generates more than 75 vehicle trips	Not Exempt

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

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.5: Transportation Demand Management
- Module 4.7: Transit
- Module 4.9: Intersection Design

3.0 FORECASTING

3.1 Other Area Developments

Projected traffic generated by the developments listed in Section 2.2.2 have been added to the background traffic volumes. A summary of these developments is included below, and relevant excerpts of their respective traffic studies are included in **Appendix F**.

16 Edgewater Street

The proposed development is mixed-use, consisting of 153 apartment dwellings, 23 townhomes, 458 m² of office space, and 294 m² of commercial space. A buildout year of 2022 was estimated, however this application has not been approved at the time of writing. Therefore, projected traffic volumes have been added to the 2029, 2031, and 2036 background volumes.

21 Huntmar Drive

The proposed development is residential, with a total of 344 apartment dwellings. The TIA estimated buildout to occur in 2024, however this application has not been approved at the time of writing. Therefore, projected traffic volumes have been added to the 2029, 2031, and 2036 background volumes.

Trail View Subdivision (950 Terry Fox Drive)

The Trail View subdivision consists of 108 single-detached homes, 77 condo dwellings, and 60 apartment dwellings. Some single-detached and condo dwellings have been built, and construction is ongoing. A buildout year of 2027 was estimated for the apartment block. For the purposes of this TIA, it is assumed that 50% of the traffic generated by the subdivision has been captured in the existing traffic volumes. Therefore, 50% of the projected traffic volumes have been added to the 2029, 2031, and 2036 background volumes.

5000 Robert Grant Avenue

The proposed development is mixed-use, consisting of 504 mid-rise or high-rise dwellings and 2,185 ft² of retail space. A buildout year of 2025 was estimated. Therefore, projected traffic volumes have been added to the 2029, 2031, and 2036 background volumes.

Kizell Lands (5618 Hazeldean Road)

The proposed subdivision consists of 288 single-detached homes, 469 townhomes, 878 low-rise dwellings, 1,120 apartment dwellings, 351,334 ft² of retail space, a 580-student elementary school, and a 375-space park and ride. The TIA prepared by Novatech included traffic projections for two scenarios. Scenario One projections, which assumed the subdivision would adhere to the density requirements of the Fernbank CDP, have been considered for this study. A buildout year of 2031 was estimated for this subdivision. Therefore, 80% of the projected traffic volumes have been added to the 2029 background volumes, and 100% of the projected traffic volumes have been added to the 2031 and 2036 background volumes.

5707 Hazeldean Road

The proposed development includes additional retail spaces at The Shoppes at Fairwinds. The gross floor area of the proposed additions total approximately 4,546 m². A buildout year of 2021 was estimated, however these additional retail pads have not been constructed at the time of writing. Therefore, projected traffic volumes have been added to the 2029, 2031, and 2036 background volumes.

In addition to the developments previously listed, the Bradley Commons subdivision accessed by Mantra Street is partially constructed, and traffic generated by the completed residences were captured during the April 2025 traffic count at Hazeldean Road/Mantra Street/Tillage Street. The Transportation Impact Study (TIS) prepared in support of these residences (590 Hazeldean Road, prepared by Stantec in September 2013) included a traffic generation model of the Fernbank Community. The model divided the community into a total of 11 distinct traffic zones, based on physical features (such as the Hydro corridor), planned arterial/collector roadway network, and proposed intersection locations. A figure outlining the traffic zones and table outlining the estimated traffic generation for each zone is included in **Appendix F**.

Based on this model, the partially completed residential and future commercial on both sides of Mantra Street are captured by zones N1 and N6, and the estimated traffic generation at full buildout total approximately 148 vehicle trips during the AM peak hour and 184 vehicle trips during the PM peak hour. The remaining projected trips have been added to the 2029, 2031, and 2036 background volumes, based on the existing distribution observed at Hazeldean Road/Mantra Street/Tillage Street.

3.2 General Background Growth Rate

A review of the City's *Strategic Long-Range Model* has been conducted, comparing snapshots of 2022 and 2046 AM peak hour traffic volumes. These snapshots are included in **Appendix G**. The snapshots identify annual growth rates of approximately 0.5% to 1.5% along Hazeldean Road and Terry Fox Drive. Therefore, a conservative annual background growth rate of 2% has been applied to through volumes on the study area arterial roadways (Hazeldean Road, Terry Fox Drive, and Robert Grant Avenue), which is consistent with previous traffic studies within the Fernbank Community. No annual growth rate has been applied to the other study area roadways.

3.3 Projected Volumes on Robert Grant Avenue

The Fernbank TMP (prepared in 2009 by Delcan) included screenline analysis which indicated that during the 2031 PM peak hour, Robert Grant Avenue (then referred to as the 'North-South Arterial') was expected to carry northbound 'through' traffic volumes of 110 vehicles and southbound 'through' traffic volumes of 200 vehicles from Hazeldean Road to Fernbank Road, functioning as a bypass for traffic travelling to/from Stittsville that would otherwise use Stittsville Main Street. For the purposes of this study, these PM peak hour traffic volumes are carried in the 2029, 2031, and 2036 background volumes, with the reverse assumed during the AM peak hour.

The 2013 TIS prepared in support of 590 Hazeldean Road included traffic volume projections at Hazeldean Road/Robert Grant Avenue for the horizon year of that TIS, identified as 2025. Consistent with the Fernbank TMP, an assumed development rate of 500 units per year within the Fernbank Community was identified, starting in 2015 and continuing until full buildout (estimated to occur in 2034). This assumed rate of development was carried forward in other traffic studies in support of other developments within the Fernbank Community, including at 5618 Hazeldean Road. The 2025 volume projections for the eastbound left turn and southbound right turn have been added to the background volumes, with an annual growth rate of 2% applied.

3.4 Future Traffic Volume Figures

The figures below present the following traffic conditions:

- Other area development volumes in 2029 and 2031/2036 are shown in **Figure 12** and **13**, respectively;
- Background traffic volumes in 2029, 2031, and 2036 are shown in **Figures 14, 15, and 16**, respectively;
- Total traffic volumes in 2029, 2031, and 2036 are shown in **Figure 17, 18, and 19**, respectively.

3.5 Demand Rationalization

A review of the existing and background intersection operations has been conducted to determine where traffic volumes exceed capacity within the study area. The intersection parameters used in the analysis are consistent with the *Revised TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions and 1.0 in future conditions). Per Exhibit 22 of the *Multi-Modal Level of Service (MMLOS) Guidelines*, all study area intersections are located in the General Urban Area or designated as Arterial Mainstreet. The target vehicular level of service (Auto LOS) for both is an Auto LOS D, which includes a maximum vehicle-to-capacity (v/c) ratio of 0.90 at signalized intersections, and a maximum delay of 35 seconds at unsignalized intersections. Signal timing plans have been obtained from the City, and are included in **Appendix H**.

3.5.1 Existing Traffic Conditions

Intersection capacity analysis has been conducted for the existing traffic conditions, using Synchro 11 software. The results of the analysis are summarized in **Table 9** and **Table 10** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix I**.

Table 9: Existing Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c	LOS	Mvmt	Max v/c	LOS	Mvmt
Hazeldean Road/ 325m East of Iber Road	0.32	A	EBT	0.53	A	WBT
Hazeldean Road/ Roger Griffiths Avenue	0.29	A	WBT	0.55	A	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.32	A	SBL	0.59	A	WBT
Hazeldean Road/ Terry Fox Drive	0.73	C	EBT	0.93	E	SBT
				0.95	E	EBL
Hazeldean Road/ Edgewater Street	0.34	A	SBL	0.56	A	WBT/R
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.79	C	SBL	0.65	B	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.39	A	NBT/R	0.55	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.34	A	NBT/R	0.65	B	WBL/T
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.48	A	NBT/R	0.47	A	SBT/R

Figure 12: 2029 Other Area Development-Generated Traffic Volumes

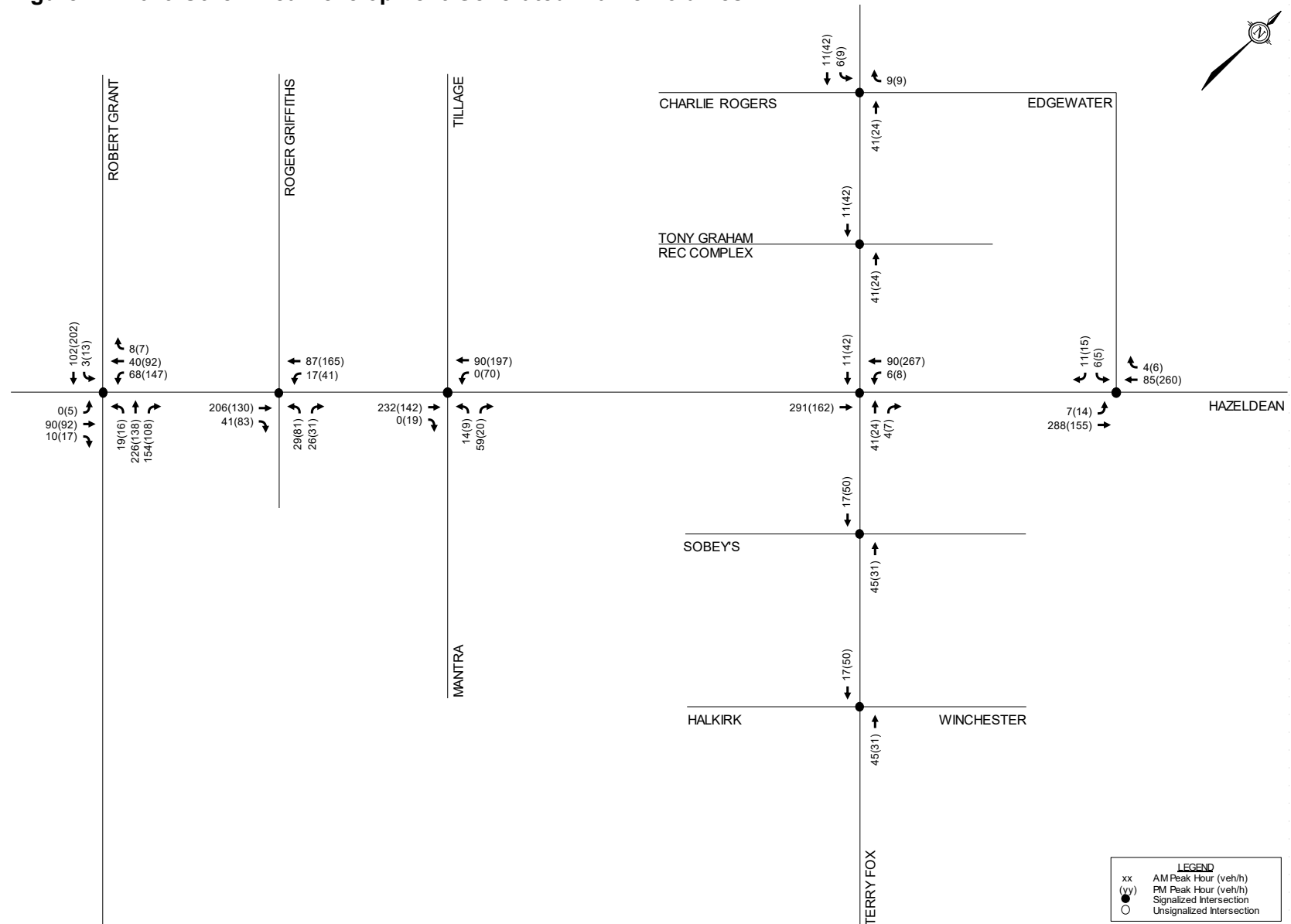


Figure 13: 2031/2036 Other Area Development-Generated Traffic Volumes

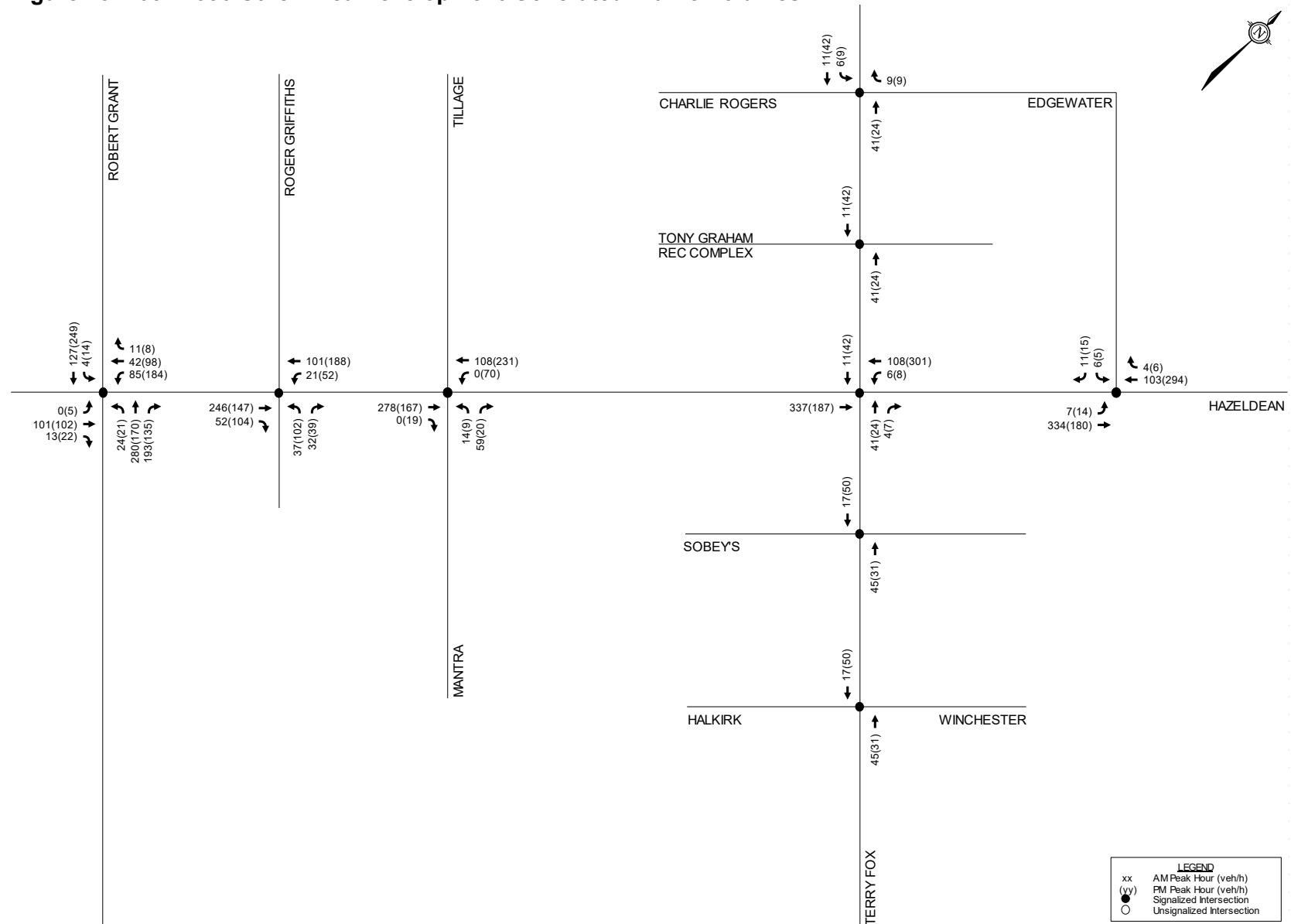


Figure 14: 2029 Background Traffic Volumes

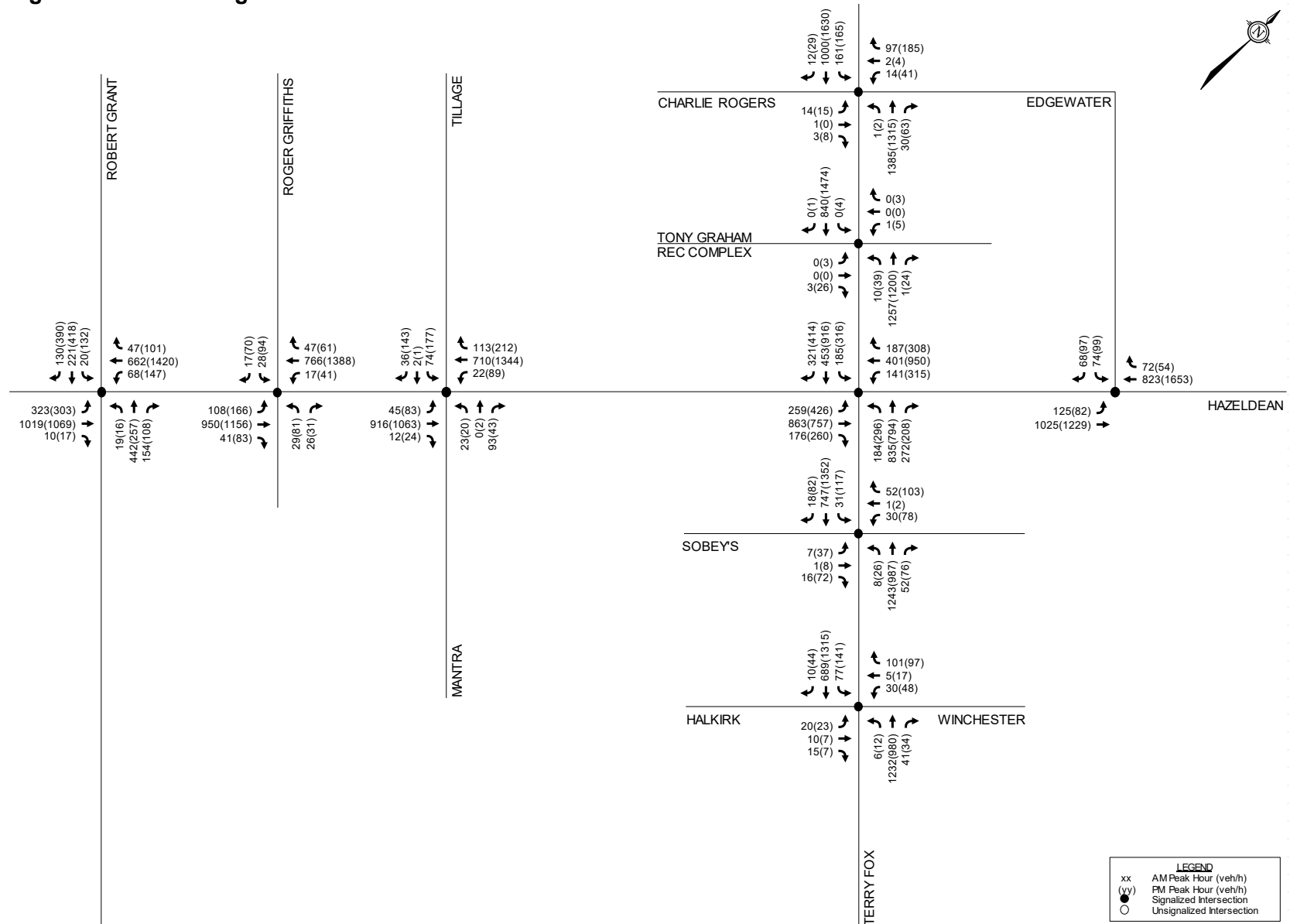


Figure 15: 2031 Background Traffic Volumes

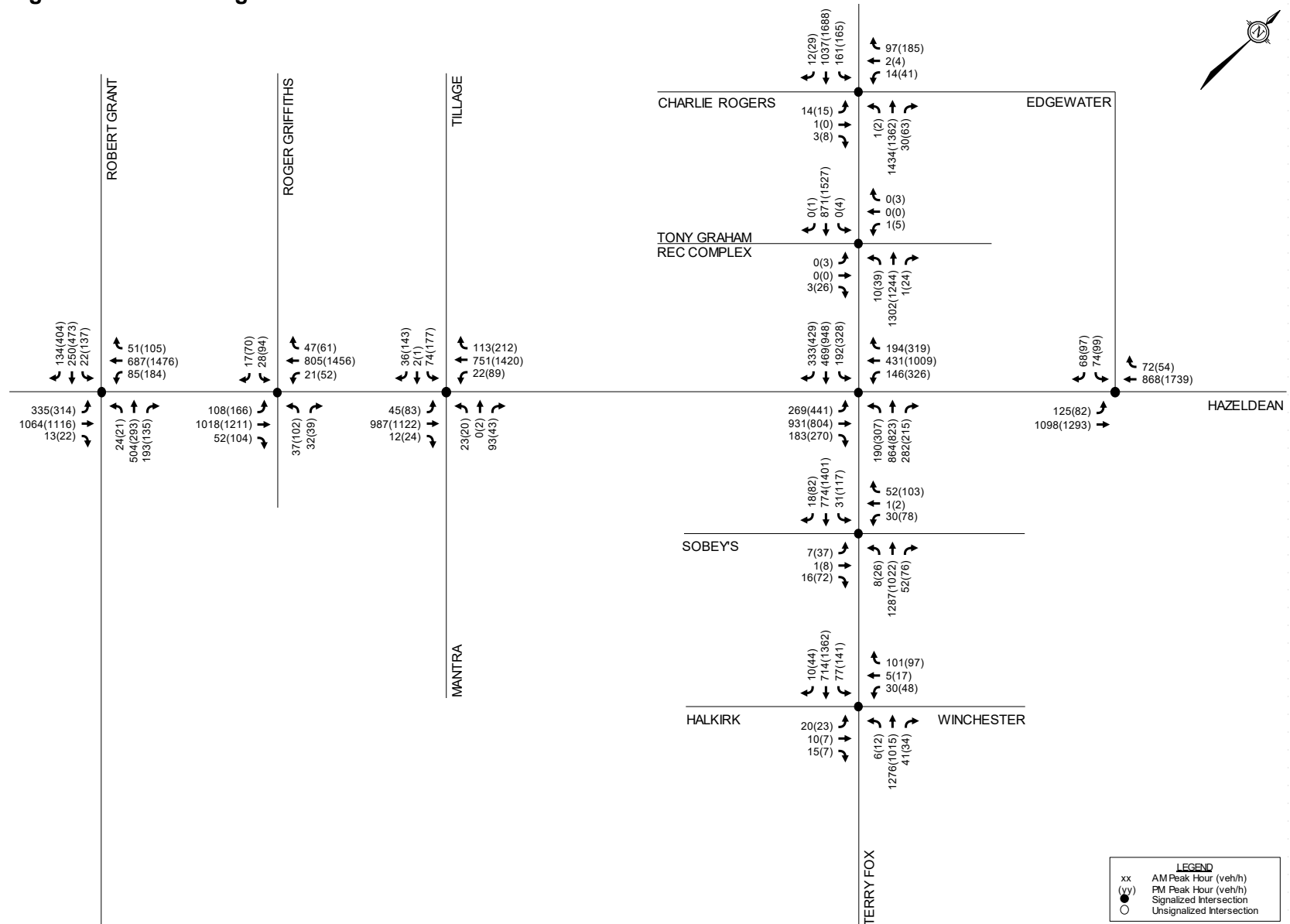


Figure 16: 2036 Background Traffic Volumes

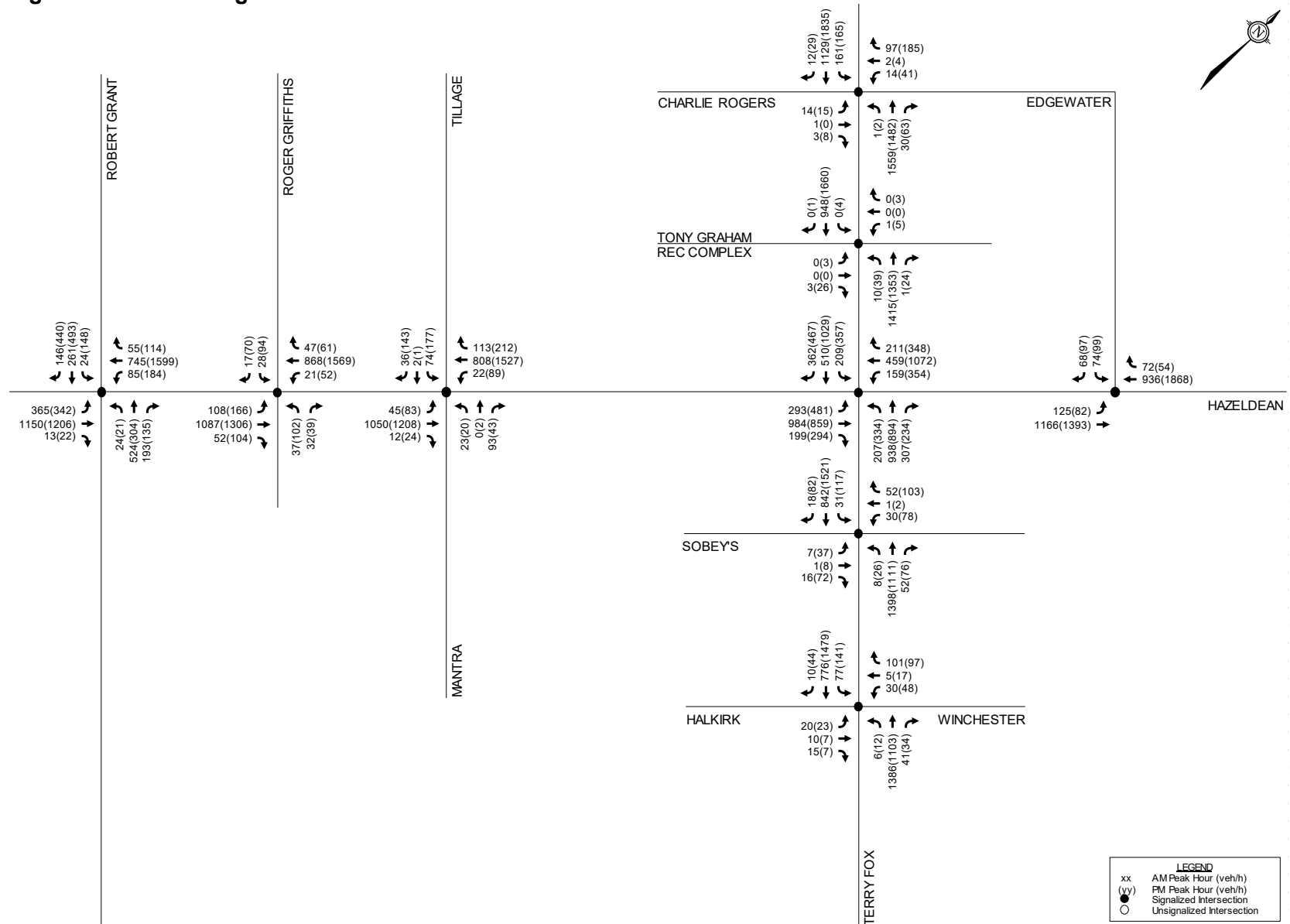


Figure 17: 2029 Total Traffic Volumes

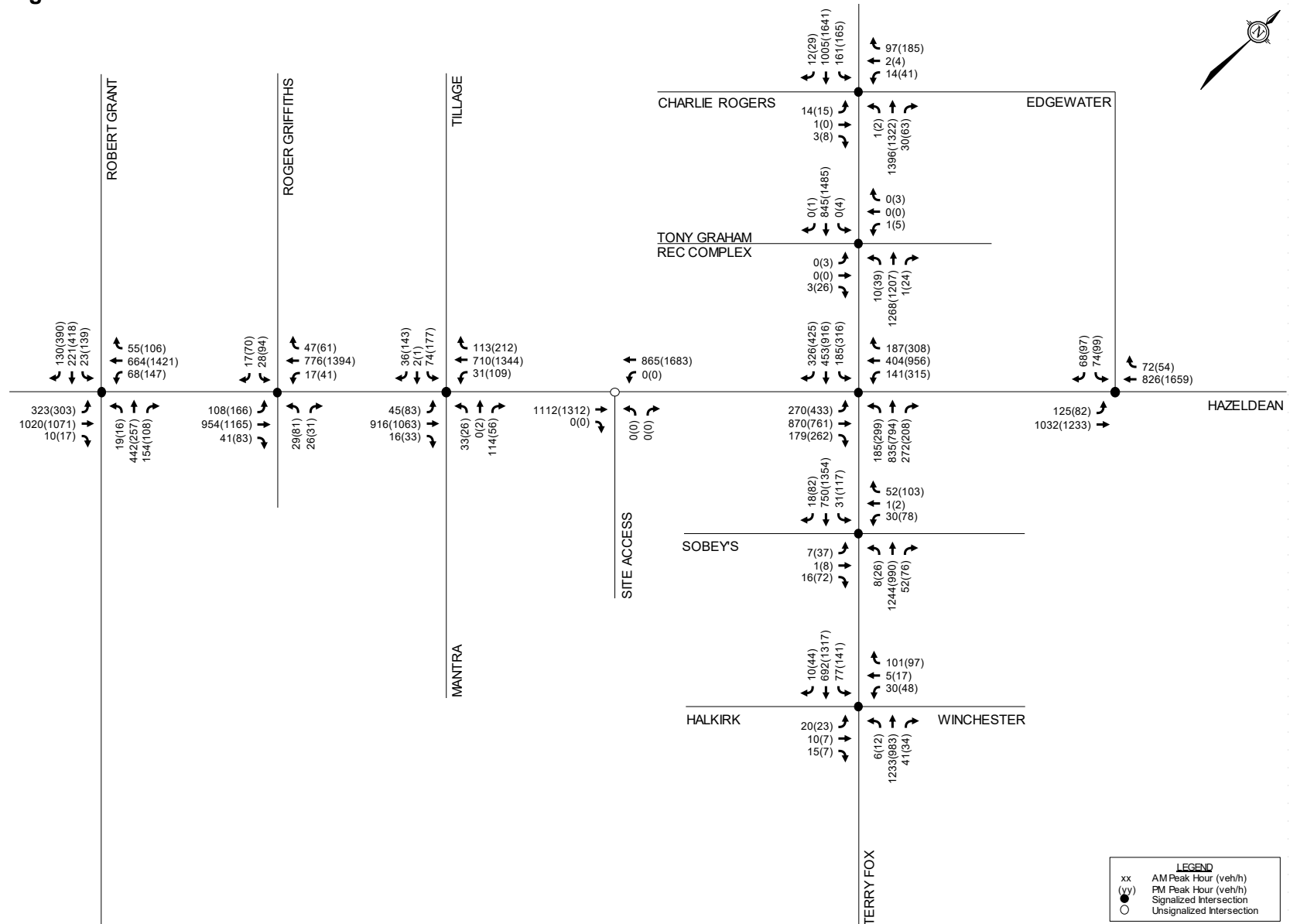


Figure 18: 2031 Total Traffic Volumes

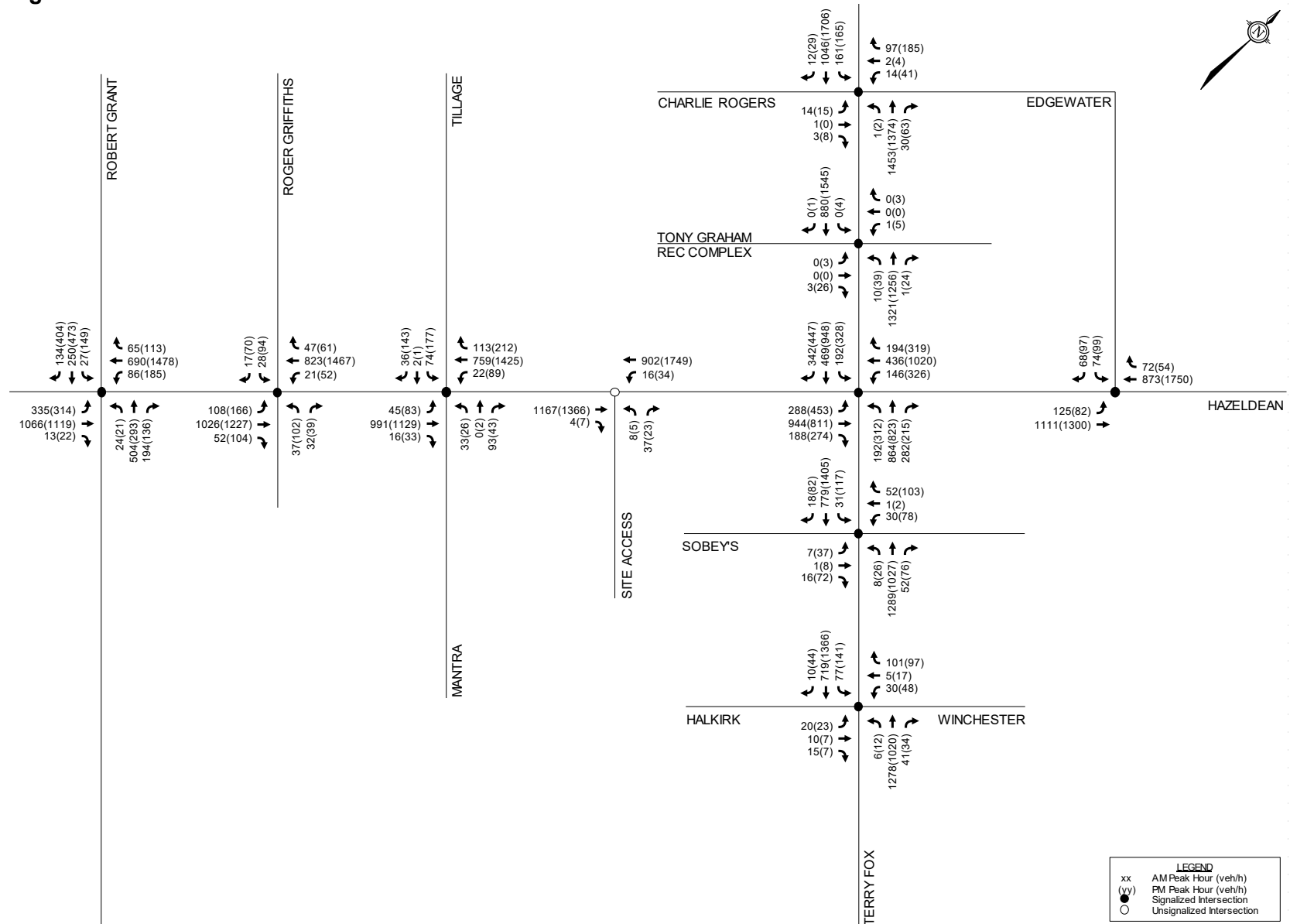


Figure 19: 2036 Total Traffic Volumes

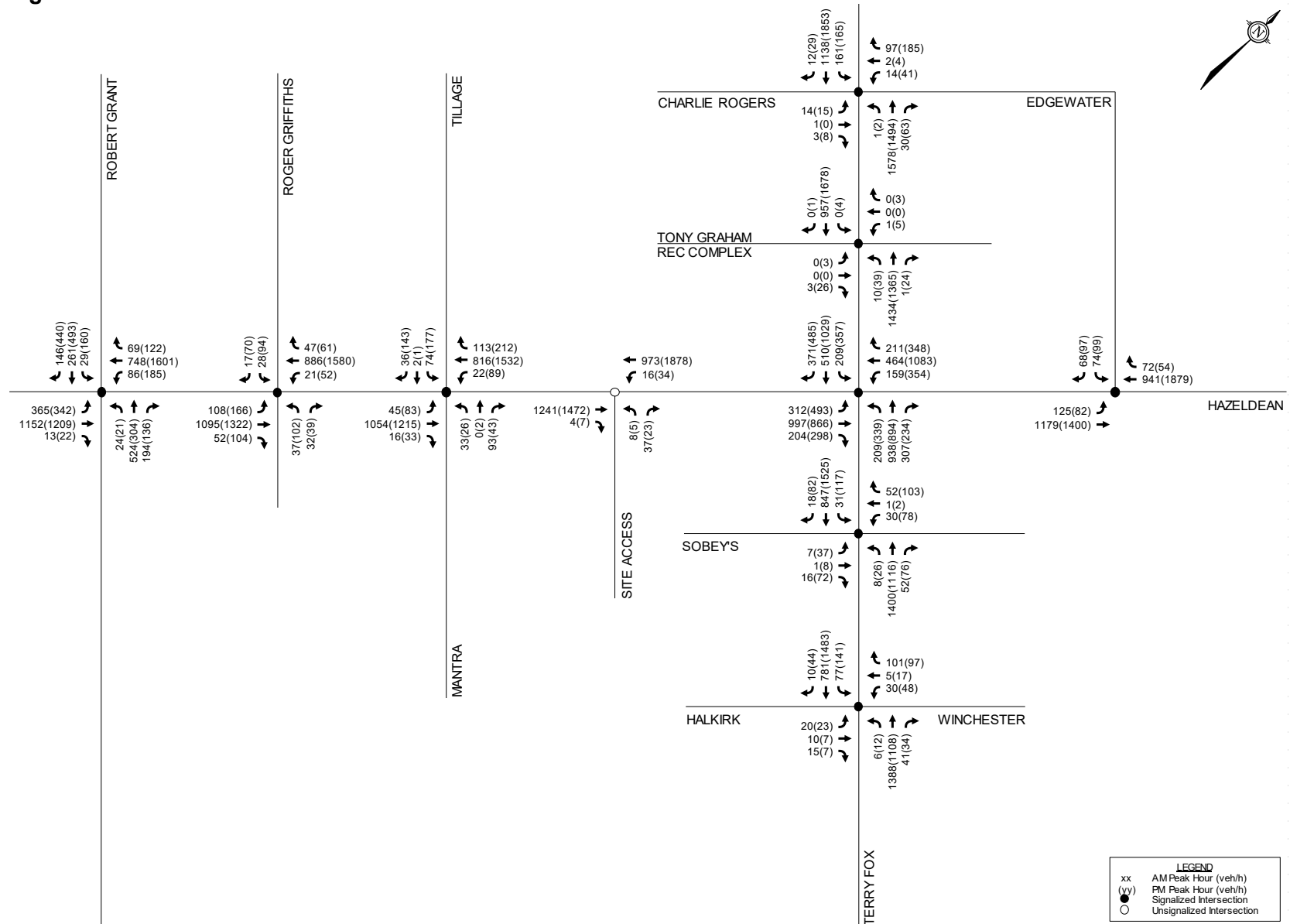


Table 10: Existing Queues

Intersection	Mvmt	Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ 325m E of Iber Rd	EBT	300m	0.32 [A]	0	60	0.38 [A]	29	63
	WBT	260m	0.22 [A]	0	10	0.53 [A]	6	12
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.26 [A]	18	8	0.38 [A]	22	49
	WBT	250m	0.29 [A]	45	76	0.55 [A]	5	9
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.31 [A]	37	71	0.42 [A]	47	130
	WBT	750m	0.28 [A]	35	65	0.59 [A]	125	#166
Hazeldean Rd/ Terry Fox Dr	NBT	105m	0.65 [B]	72	#112	0.85 [D]	88	#120
	SBT	280m	0.37 [A]	35	55	0.93 [E]	~86	#141
	EBT	170m	0.73 [C]	57	66	0.66 [B]	55	77
	WBT	125m	0.52 [A]	31	42	0.79 [C]	86	103
Hazeldean Rd/ Edgewater St	EBT	125m	0.27 [A]	34	62	0.42 [A]	70	133
	WBT	170m	0.30 [A]	18	48	0.56 [A]	49	109
Terry Fox Dr/ Edgewater St	NBT	200m	0.54 [A]	101	22	0.65 [A]	43	32
	SBT	300m	0.40 [A]	25	69	0.62 [B]	53	184
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.39 [A]	2	145	0.43 [A]	18	m26
	SBT	200m	0.27 [A]	0	2	0.55 [A]	29	54
Terry Fox Dr/ Sobey's Access	NBT	320m	0.34 [A]	37	27	0.30 [A]	34	40
	SBT	105m	0.31 [A]	5	18	0.57 [A]	11	m24
Terry Fox Dr/ Winchester Dr	NBT	710m	0.48 [A]	33	91	0.37 [A]	24	65
	SBT	320m	0.27 [A]	11	59	0.47 [A]	84	111

1: Indicates the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

From the previous tables, the southbound through and eastbound left turn movements at Hazeldean Road/Terry Fox Drive operate at an Auto LOS E during the PM peak hour. All other movements operate at the target Auto LOS D or better during both peak hours.

There are no average (i.e. 50th-percentile) queues that extend to upstream intersections. The following movements have maximum (i.e. 95th-percentile) queue lengths that extend into upstream intersections during one or both peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 112m in AM peak hour and 120m in PM peak hour (extends through signalized Sobey's Access).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 133m in PM peak hour (extends through Terry Fox Drive).

It is also noted that the maximum westbound through queue at Hazeldean Road/Mantra Street/Tillage Street is 166m, extending through the median break serving the existing golf centre on the subject site. The median break starts approximately 120m east of the westbound stop bar on Hazeldean Road at Mantra Street/Tillage Street.

3.5.2 2029 Background Traffic Conditions

Intersection capacity analysis has been conducted for the 2029 background traffic conditions. For all future conditions, the intersection of Hazeldean Road/325m East of Iber Road is referred to as Hazeldean Road/Robert Grant Avenue, and the intersection of Hazeldean Road/Roger Griffiths Avenue is assumed to include a northbound approach (to be constructed as part of the Kizell Lands development). Signal timings for both intersections have been adjusted and optimized to reflect the new intersection geometries. The PM peak hours cycle lengths at intersections with Hazeldean Road west of Terry Fox Drive have been increased to 130 seconds.

The results of the analysis are summarized in **Table 11** and **Table 12** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix J**.

Table 11: 2029 Background Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c	LOS	Mvmt	Max v/c	LOS	Mvmt
Hazeldean Road/ Robert Grant Avenue	0.66	B	NBT	0.86	D	WBT
Hazeldean Road/ Roger Griffiths Avenue	0.36	A	EBT/R	0.60	A	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.43	A	EBT/R	0.66	B	WBT
Hazeldean Road/ Terry Fox Drive	0.83	D	EBT	1.02	F	SBT
				0.93	E	WBT
				0.92	E	EBL
				0.91	E	SBL
Hazeldean Road/ Edgewater Street	0.37	A	EBT	0.65	B	WBT/R
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.74	C	SBL	0.63	B	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.39	A	NBT/R	0.52	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.34	A	NBT/R	0.58	A	WBL/T
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.48	A	NBT/R	0.48	A	SBT

Table 12: 2029 Background Queues

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Robert Grant Ave	EBT	300m	0.54 [A]	60	124	0.59 [A]	81	135
	WBT	260m	0.43 [A]	8	9	0.86 [D]	167	#219
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.36 [A]	13	38	0.45 [A]	35	106
	WBT	250m	0.33 [A]	54	92	0.60 [A]	8	9
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.43 [A]	81	92	0.54 [A]	95	148
	WBT	750m	0.35 [A]	40	73	0.66 [B]	109	#199

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Terry Fox Dr	NBL	105m	0.60 [A]	12	31	0.89 [D]	28	#58
	NBT	105m	0.79 [C]	83	#116	0.90 [D]	89	#120
	SBL	155m	0.62 [B]	18	25	0.91 [E]	38	#63
	SBT	280m	0.44 [A]	39	54	1.02 [F]	~94	#145
	EBL	210m	0.67 [B]	25	37	0.92 [E]	48	#74
	EBT	170m	0.83 [D]	82	101	0.71 [C]	77	98
	WBL	60m	0.62 [B]	14	24	0.73 [C]	34	48
	WBT	125m	0.47 [A]	39	52	0.93 [E]	109	#143
Hazeldean Rd/ Edgewater St	EBT	125m	0.37 [A]	57	102	0.46 [A]	92	m154
	WBT	170m	0.33 [A]	20	53	0.65 [B]	62	140
Terry Fox Dr/ Edgewater St	NBT	200m	0.54 [A]	5	22	0.63 [B]	42	31
	SBL	55m	0.74 [C]	12	#67	0.55 [A]	6	#26
	SBT	300m	0.39 [A]	25	67	0.62 [B]	55	184
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.39 [A]	0	145	0.42 [A]	17	m26
	SBT	200m	0.27 [A]	0	2	0.52 [A]	28	54
Terry Fox Dr/ Sobey's Access	NBT	320m	0.34 [A]	36	26	0.29 [A]	33	39
	SBT	105m	0.31 [A]	5	17	0.56 [A]	10	m20
Terry Fox Dr/ Winchester Dr	NBT	710m	0.48 [A]	33	92	0.37 [A]	24	65
	SBT	320m	0.26 [A]	27	60	0.48 [A]	88	116

1: Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

From the previous tables, the southbound left turn, southbound through, eastbound left turn, and westbound through movements at Hazeldean Road/Terry Fox Drive operate at an Auto LOS E or F during the PM peak hour. All other movements operate at the target Auto LOS D or better during both peak hours.

The following movements have maximum queue lengths that extend into upstream intersections or exceed the provided storage length during the peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 116m in AM peak hour and 120m in PM peak hour (extends through signalized Sobey's Access);
 - Westbound through: 143m in PM peak hour (extends through Edgewater Street).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 152m in PM peak hour (extends through Terry Fox Drive).
- Terry Fox Drive/Edgewater Street/Charlie Rogers Place
 - Southbound left turn: 67m in AM peak hour (exceeds 55m storage length).

Synchro does not identify signal timing adjustments at Hazeldean Road/Terry Fox Drive that allow all movements to operate at the target Auto LOS D. Traffic throughout the study area may be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate travel times for drivers to make use of off-peak capacity, or alternate routes for travel. Using this demand rationalization, the following approximate volume reductions would be required for the over-capacity movements to meet the target Auto LOS during the PM peak hour.

- Hazeldean Road/Terry Fox Drive
 - Southbound left: reduction of 10 vehicles;
 - Southbound through: reduction of 90 vehicles;
 - Eastbound left: reduction of 10 vehicles;
 - Westbound through: reduction of 40 vehicles.

3.5.3 2031 Background Traffic Conditions

Intersection capacity analysis has been conducted for the 2031 background traffic conditions. The results of the analysis are summarized in **Table 13** and **Table 14** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix J**.

Table 13: 2031 Background Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c	LOS	Mvmt	Max v/c	LOS	Mvmt
Hazeldean Road/ Robert Grant Avenue	0.68	B	NBT	0.94	E	WBT
Hazeldean Road/ Roger Griffiths Avenue	0.38	A	EBT/R	0.64	B	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.46	A	EBT/R	0.70	B	WBT
Hazeldean Road/ Terry Fox Drive	0.87	D	EBT	1.07	F	SBT
				1.00	E	SBL
				0.96	E	WBT
				0.95	E	EBL
				0.94	E	NBL
				0.93	E	NBT
Hazeldean Road/ Edgewater Street	0.39	A	EBT	0.68	B	WBT/R
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.79	C	SBL	0.66	B	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.40	A	NBT/R	0.54	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.35	A	NBT/R	0.58	A	WBL/T
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.50	A	NBT/R	0.49	A	SBT

Table 14: 2031 Background Queues

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Robert Grant Ave	EBT	300m	0.59 [A]	75	132	0.66 [B]	112	144
	WBT	260m	0.48 [A]	8	10	0.94 [E]	~197	#234
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.38 [A]	15	42	0.48 [A]	55	116
	WBT	250m	0.34 [A]	57	98	0.64 [B]	8	9
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.46 [A]	88	96	0.57 [A]	87	148
	WBT	750m	0.37 [A]	43	78	0.70 [B]	119	#219

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Terry Fox Dr	NBL	105m	0.62 [B]	12	32	0.94 [E]	29	#61
	NBT	105m	0.85 [D]	88	#123	0.93 [E]	93	#127
	SBL	155m	0.65 [B]	19	26	1.00 [E]	39	#67
	SBT	280m	0.47 [A]	42	56	1.07 [F]	~115	#153
	EBL	210m	0.69 [B]	26	39	0.95 [E]	50	#78
	EBT	170m	0.87 [D]	89	111	0.74 [C]	84	105
	WBL	60m	0.63 [B]	15	#25	0.75 [C]	35	49
	WBT	125m	0.49 [A]	42	56	0.96 [E]	116	#158
Hazeldean Rd/ Edgewater St	EBT	125m	0.39 [A]	63	112	0.49 [A]	99	m160
	WBT	170m	0.34 [A]	21	56	0.68 [B]	69	154
Terry Fox Dr/ Edgewater St	NBT	200m	0.56 [A]	5	26	0.66 [B]	45	32
	SBL	55m	0.79 [C]	13	#70	0.56 [A]	6	#39
	SBT	300m	0.41 [A]	26	71	0.64 [B]	60	196
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.40 [A]	0	151	0.44 [A]	18	m26
	SBT	200m	0.28 [A]	0	2	0.54 [A]	29	55
Terry Fox Dr/ Sobey's Access	NBT	320m	0.35 [A]	38	26	0.30 [A]	34	39
	SBT	105m	0.32 [A]	5	18	0.58 [A]	11	m21
Terry Fox Dr/ Winchester Dr	NBT	710m	0.50 [A]	35	97	0.38 [A]	25	68
	SBT	320m	0.27 [A]	34	63	0.49 [A]	92	122

1: Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

From the previous tables, the westbound through movement at Hazeldean Road/Robert Grant Avenue operates at an LOS E during the PM peak hour. The southbound through movement at Hazeldean Road/Terry Fox Drive operates at an Auto LOS F during the PM peak hour, while the northbound left turn, northbound through, southbound left turn, eastbound left turn, and westbound through movements operate at an Auto LOS E. All other movements operate at the target Auto LOS D or better during both peak hours.

The following movements have maximum queue lengths that extend into upstream intersections or exceed the provided storage length during the peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 123m in AM peak hour and 127m in PM peak hour (extends through signalized Sobey's Access);
 - Westbound through: 158m in PM peak hour (extends through Edgewater Street).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 160m in PM peak hour (extends through Terry Fox Drive).
- Terry Fox Drive/Charlie Rogers Place/Edgewater Street
 - Southbound left: 70m in AM peak hour (exceeds 55m storage length provided).

Using demand rationalization, the following approximate volume reductions would be required to meet the target Auto LOS for the over-capacity movements during the PM peak hour.

- Hazeldean Road/Robert Grant Avenue
 - Westbound through: reduction of 60 vehicles.
- Hazeldean Road/Terry Fox Drive
 - Northbound left: reduction of 10 vehicles;
 - Northbound through: reduction of 10 vehicles;
 - Southbound left: reduction of 20 vehicles;
 - Southbound through: reduction of 130 vehicles;
 - Eastbound left: reduction of 30 vehicles;
 - Westbound through: reduction of 90 vehicles.

3.5.4 2036 Background Traffic Conditions

Intersection capacity analysis has been conducted for the 2036 background traffic conditions. The results of the analysis are summarized in **Table 15** and **Table 16** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix J**.

Table 15: 2036 Background Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c	LOS	Mvmt	Max v/c	LOS	Mvmt
Hazeldean Road/ Robert Grant Avenue	0.71	C	NBT	1.05	F	WBT
				0.95	E	SBL
Hazeldean Road/ Roger Griffiths Avenue	0.41	A	EBT/R	0.70	B	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.49	A	EBT/R	0.75	C	WBT
Hazeldean Road/ Terry Fox Drive	0.96	E	NBT	1.16	F	SBT
				1.09	F	SBL
				1.04	F	EBL
				1.03	F	NBL
				1.02	F	WBT
				1.01	F	NBT
Hazeldean Road/ Edgewater Street	0.42	A	EBT	0.83	D	EBL
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.95	E	SBL	0.74	C	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.44	A	NBT/R	0.59	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.38	A	NBT/R	0.63	B	SBT/R
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.54	A	NBT/R	0.54	A	SBT

Table 16: 2036 Background Queues

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Robert Grant Ave	EBT	300m	0.66 [B]	102	#158	0.72 [C]	134	161
	WBT	260m	0.57 [A]	71	10	1.05 [F]	~229	#259
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.41 [A]	15	45	0.52 [A]	99	m128
	WBT	250m	0.37 [A]	64	108	0.70 [B]	156	22
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.49 [A]	97	102	0.61 [B]	78	153
	WBT	750m	0.39 [A]	47	85	0.75 [C]	135	#247

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Terry Fox Dr	NBL	105m	0.67 [B]	14	34	1.03 [F]	~33	#69
	NBT	105m	0.93 [E]	~100	#138	1.01 [F]	~105	#145
	SBL	155m	0.69 [B]	21	#30	1.09 [F]	~46	#75
	SBT	280m	0.51 [A]	46	62	1.16 [F]	~135	#174
	EBL	210m	0.74 [C]	29	42	1.04 [F]	~58	#88
	EBT	170m	0.86 [D]	88	110	0.80 [C]	91	114
	WBL	60m	0.69 [B]	16	#29	0.79 [C]	39	#53
	WBT	125m	0.53 [A]	46	60	1.02 [F]	~128	#173
Hazeldean Rd/ Edgewater St	EBT	125m	0.42 [A]	68	119	0.52 [A]	108	m171
	WBT	170m	0.37 [A]	23	62	0.73 [C]	80	179
Terry Fox Dr/ Edgewater St	NBT	200m	0.61 [B]	5	40	0.74 [C]	53	44
	SBL	55m	0.95 [E]	19	#48	0.58 [A]	9	#52
	SBT	300m	0.44 [A]	30	80	0.70 [B]	73	#248
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.44 [A]	0	m158	0.47 [A]	21	m28
	SBT	200m	0.30 [A]	0	2	0.59 [A]	31	59
Terry Fox Dr/ Sobey's Access	NBT	320m	0.38 [A]	44	27	0.33 [A]	38	40
	SBT	105m	0.34 [A]	5	19	0.63 [B]	16	m22
Terry Fox Dr/ Winchester Dr	NBT	710m	0.54 [A]	40	110	0.42 [A]	28	76
	SBT	320m	0.30 [A]	39	72	0.54 [A]	105	135

1: Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

From the previous tables, the northbound through movement at Hazeldean Road/Terry Fox Drive and the southbound left turn movement at Terry Fox Drive/Charlie Rogers Place/Edgewater Street operates at an Auto LOS E during the AM peak hour. All other movements operate at the target Auto LOS D or better during the AM peak hour.

The westbound through movement at Hazeldean Road/Robert Grant Avenue and the northbound left turn, northbound through, southbound left turn, southbound through, eastbound left turn, and westbound through movements at Hazeldean Road/Terry Fox Drive operate at an Auto LOS F during the PM peak hour. Additionally, the southbound left turn movement at Hazeldean Road/Robert Grant Avenue operates at an Auto LOS E during the PM peak hour. All other movements operate at the target Auto LOS D or better during the PM peak hour.

The following movements have maximum queue lengths that extend into upstream intersections or exceed the provided storage length during the peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 138m in AM peak hour and 145m in PM peak hour (extends through signalized Sobey's Access);
 - Westbound through: 173m in PM peak hour (extends through Edgewater Street).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 171m in PM peak hour (extends through Terry Fox Drive).

At Terry Fox Drive/Charlie Rogers Place/Edgewater Street, Synchro identifies that the provision of protected plus permitted southbound left turn phasing during the AM peak hour can be provided to improve the level of service for that movement, while maintaining acceptable operations for the northbound movements.

Using demand rationalization, the northbound through movement at Hazeldean Road/Terry Fox Drive requires an approximate volume reduction of 50 vehicles to meet the target Auto LOS during the AM peak hour.

The following approximate volume reductions would be required to meet the target Auto LOS for the over-capacity movements during the PM peak hour:

- Hazeldean Road/Robert Grant Avenue
 - Southbound left: reduction of 10 vehicles;
 - Westbound through: reduction of 230 vehicles.
- Hazeldean Road/Terry Fox Drive
 - Northbound left: reduction of 30 vehicles;
 - Northbound through: reduction of 80 vehicles;
 - Southbound left: reduction of 50 vehicles;
 - Southbound through: reduction of 210 vehicles;
 - Eastbound left: reduction of 70 vehicles;
 - Westbound through: reduction of 160 vehicles.

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Based on the concept plan, a 3.0m-wide MUP is proposed along the eastern side of the subject site, which will provide a connection for pedestrians and cyclists to the Carp River Pathway and the existing pathway around the perimeter of the stormwater pond immediately south of the subject site. Another pathway is proposed to run between the apartment block and low-density blocks. A future Site Plan Control application will confirm the location of on-site pedestrian walkways within the apartment block, as well as the location of bicycle parking spaces for apartment residents and visitors. A pathway connection is also proposed to Street 3 at the southeast corner of the subdivision.

OC Transpo's service design guideline for peak period service is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. Entrances to the low-density dwellings will generally be located within 400m walking distance of stop #1043. The proposed dwellings are anticipated to be located within 800m walking distance (i.e. a 10-minute walk) of stops #1042 and #1043. These stops are served by routes 61, 301, and 303. A future Site Plan Control application will confirm the walking distances between entrances to the proposed apartment dwellings and stops #1042 and #1043.

A review of the *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* will be conducted in a future Site Plan Control application for the apartment block. A review of this checklist is exempt from Draft Plan of Subdivision applications.

4.1.2 Circulation and Access

The *Revised TIA Guidelines* identify that this element of the Development Design module is required for Site Plan Control and Zoning By-Law Amendment applications. This module will be reviewed as part of a future Site Plan Control application for the apartment block.

4.1.3 New Street Networks

This section reviews the proposed on-site private roadways. A summary of each roadway is provided as follows.

Street 1

Street 1 will connect to Energy Street, and run generally on an east-west alignment from Energy Street to Street 3. Street 1 will have a width of 8.5m, which is wide enough to accommodate a travel lane in each direction and on-street parking on one side.

Street 2

Street 2 will connect to Hazeldean Road and Bliss Crescent, and run generally on a north-south alignment from Hazeldean Road to the southern intersection with Street 3, before curving 90 degrees to connect to Bliss Crescent. Street 2 will have a width of 8.5m. The connection to Hazeldean Road will not open as part of Phase 1.

Street 3

Street 3 will connect to Street 2 in two locations approximately 185m apart (measuring centre to centre), acting as a crescent loop on a curvilinear alignment. Street 3 will have a width of 8.5m.

The proposed 8.5m width of each private roadway can accommodate the movements of heavy vehicles, such as fire trucks and garbage trucks. The AADT volumes on the Phase 1 private roadways are projected to be 500 vehicles per day or less, which is consistent with public lanes per TAC's *Geometric Design Guide*. Based on the low volumes and low speed, TAC suggests that no special facilities are required for pedestrians or cyclists on these types of roadways. The design of the proposed private roadways meets the following strategic directions of the City's *Building Better and Smarter Suburbs (BBSS): Strategic Direction and Action Plan*, which was prepared in February 2015:

- Design the street network based on a modified or offset grid to maximize choices of travel routes and opportunities for utility connections;
- Design the street network in conjunction with the land use and open space system to ensure direct pedestrian and cycling connectivity to key destination in the community (schools, shops, bus stops and stations, etc.);
- Avoid reverse frontage lots (rear yards abutting public streets) within a community.

4.2 Parking

The subject site is located within Area C on Schedules 1 and 1A of the City's *Zoning By-Law* (ZBL). The required parking supply for the development based on the number of proposed dwellings are summarized in **Table 17**. The proposed parking supply for the future apartment block will be confirmed as part of a future Site Plan Control application.

Table 17: Parking Requirements

Land Use	Rate	Units	Required
Minimum Vehicle Parking (Section 101/102 of ZBL)			
Dwelling, Detached / Dwelling, Townhouse	1.0 spaces per dwelling unit (resident)	98 units	98
	No visitor parking requirement, as each dwelling has a garage and driveway		0
Dwelling, Mid-Rise Apartment	1.2 spaces per dwelling unit (resident)	185 units	222
	0.2 spaces per dwelling unit (visitor)		37
Total			357
Minimum Bicycle Parking (Section 111 of ZBL)			
Dwelling, Detached	No requirement identified	98 units	0
Dwelling, Apartment	0.5 spaces per dwelling unit	185 units	93
Total			93

4.3 Boundary Streets

This section provides a review of the boundary frontage to Hazeldean Road, using complete streets principles. The *MMLOS Guidelines* were used to evaluate the levels of service for each alternative mode of transportation, based on the targets for Arterial Mainstreets.

A detailed segment MMLOS review is included in **Appendix K**. A summary of the MMLOS review is provided in **Table 18**.

Table 18: Segment MMLOS Summary

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Hazeldean Road	D	C	E	C	D	D	A	D

From the previous table, Hazeldean Road meets the target transit level of service (TLOS) and truck level of service (TkLOS), and does not meet the target pedestrian level of service (PLOS) and bicycle level of service (BLOS).

Per Exhibit 4 of the *MMLOS Guidelines*, Hazeldean Road achieves the best-possible PLOS D by providing sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m. To achieve the target PLOS C, a reduced operating speed of 60 km/h would be required.

Per Exhibit 11 of the *MMLOS Guidelines*, Hazeldean Road cannot achieve the target BLOS C without a reduced operating speed of 60 km/h or the implementation of off-road facilities, such as cycle tracks or a multi-use pathway. This is identified for the City's consideration.

4.4 Transportation Demand Management

4.4.1 Context for TDM

Based on the concept plan, the proposed development consists of 50 single-detached homes, 48 townhomes, and 185 apartment dwellings. As part of a future Site Plan Control application, the breakdown of apartment dwellings by unit type (i.e. studio, one bedroom, two bedroom, etc.) will be known.

4.4.2 Need and Opportunity

The subject site is designated as 'Corridor – Mainstreet (Hazeldean Road)' and 'Evolving Neighbourhood' on Schedule B5 of the City of Ottawa's *Official Plan*. The implemented zoning for the property is 'Agricultural Zone' (AG[263r]), and the site is located within the Fernbank Community Design Plan (CDP) area.

As first discussed in Section 2.5.1, the assumed mode shares for the proposed development are generally consistent with the surveyed residential mode shares within the Kanata/Stittsville district (as outlined in the *TRANS Trip Generation Manual*). It is anticipated that the target mode shares can be met by the proposed development, as it is located adjacent to a developing neighbourhood and within the proximity of retail businesses, parks, the Tony Graham Rec Complex, and existing pathway network. Failure to meet the target drive share by 10% would result in an additional 15 to 16 vehicle trips during the weekday peak hours.

4.4.3 TDM Program

A review of the City's *TDM Measures Checklist* has been conducted by the proponent. The completed checklist is included in **Appendix L**. While the final list of TDM measures for the apartment block will be confirmed in a future Site Plan Control application, the proponent has agreed to consider the following measures at the sales centre for the low-density residential block:

- Provide local area maps with walking/cycling access routes and key destinations;
- Provide relevant transit schedules and route maps;
- Provide a multimodal travel option information package.

4.5 Transit

4.5.1 Transit Route Capacity

Per the Exemptions Review included in Section 2.6, this element is exempt from the TIA, as the proposed development is projected to generate fewer than 75 peak hour transit trips.

4.5.2 Transit Priority Requirements

The City's *Revised TIA Guidelines* identifies that this module shall assess the effect of development driveways and development-generated transit trips to the existing transit service within the study area. The site-generated traffic projections included in Section 2.5.1 estimate approximately 32 to 33 transit trips during the weekday peak hours. This magnitude of site-generated transit volumes is anticipated to have a negligible impact on transit operations on routes that serve the study area.

As discussed in Section 2.2.1, Hazeldean Road, Terry Fox Drive, and Robert Grant Avenue are identified within its 2031 RTTP Network. In the 2031 Network Concept, Hazeldean Road and Terry Fox Drive north of Hazeldean Road are identified as transit priority corridors with isolated measures, and Robert Grant Avenue is identified as a bus rapid transit corridor with at-grade crossings south of Hazeldean Road and grade-separated crossings north of Hazeldean Road. In the 2031 Affordable Network, Hazeldean Road and Robert Grant Avenue are both transit priority corridors with isolated measures, while Terry Fox Drive has no transit priority designation.

4.6 Intersection Design

4.6.1 Intersection MMLOS

This section provides an existing conditions review of the study area intersections, using complete streets principles. The intersections have been evaluated for PLOS, BLOS, TLOS, and TkLOS. The full intersection MMLOS analysis is included in **Appendix K**. A summary of the intersection MMLOS review is shown in **Table 19**. Intersections with Hazeldean Road have been evaluated using the 'Arterial Mainstreet' targets and intersections with Terry Fox Drive have been evaluated using the 'General Urban Area' targets. Whichever target is stricter has been considered at Hazeldean Road/Terry Fox Drive.

Table 19: Intersection MMLOS Summary

Intersection	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Hazeldean Rd/325m E of Iber Rd	F	C	F	C	B	D	C	D
Hazeldean Rd/Roger Griffiths Ave	F		F		B		C	
Hazeldean Rd/Mantra St/Tillage St	F		F		E		F	
Hazeldean Rd/Terry Fox Dr	F		F		F		A	
Hazeldean Rd/Edgewater St	F		F		C		C	
Terry Fox Dr/Charlie Rogers Pl	F		F		C		E	
Terry Fox Dr/Tony Graham Rec	F		F		B		F	
Terry Fox Dr/Sobey's Access	F		F		B		E	
Terry Fox Dr/Winchester Dr/Halkirk Ave	F		F		C	-	E	

The results of the intersection MMLOS analysis can be summarized as follows:

- No study area intersections meet the target PLOS;
- No study area intersections meet the target BLOS;
- Seven of the nine study area intersections meet the target TLOS (the intersections at Hazeldean Road/Mantra Street/Tillage Street and Hazeldean Road/Terry Fox Drive do not);
- Four of the nine study area intersections meet the target TkLOS (the intersections at Hazeldean Road/Mantra Street/Tillage Street, Terry Fox Drive/Edgewater Street/Charlie Rogers Place, Terry Fox Drive/Tony Graham Rec Complex, Terry Fox Drive/Sobey's Access, and Terry Fox Drive/Winchester Drive/Halkirk Avenue do not).

Further discussion for each intersection is included below.

Hazeldean Road/325m East of Iber Road (Future Robert Grant Avenue)

This intersection does not meet the target PLOS C or BLOS C.

All approaches have a cross-section with a width equivalent to eight lanes crossed or more (assuming a lane width equals 3.5m, per the *MMLOS Guidelines*). There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period). There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS, based on left turn or right turn characteristics. As shown in **Figure 7**, a fully protected intersection will be implemented as Robert Grant Avenue is extended, which will improve the BLOS for all approaches to a BLOS A. No other recommendations are identified.

Hazeldean Road/Roger Griffiths Avenue

This intersection does not meet the target PLOS C or BLOS C.

All approaches have a cross-section with a width equivalent to seven lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS, based on left turn or right turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Hazeldean Road. This is identified for the City's consideration. Similar to the Hazeldean Road/Mantra Street/Tillage Street intersection, it is possible that some improvements could be made to this intersection when the access to the mixed-use block of the Kizell Lands subdivision (5618 Hazeldean Road) is constructed as the fourth leg.

Hazeldean Road/Mantra Street/Tillage Street

This intersection does not meet the target PLOS C, BLOS C, TLOS D, or TkLOS D.

All approaches have a cross-section with a width equivalent to five lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

The north and south approaches do not meet the target BLOS, based on left turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Hazeldean Road. This is identified for the City's consideration.

The east approach does not meet the target TLOS. The City's 2031 RTTP Network Concept and 2031 Affordable Network identifies transit signal priority and queue jump lanes on Hazeldean Road from Stittsville Main Street to Eagleson Road. If implemented, these measures would be expected to improve delays and achieve the target TLOS.

The west approach does not meet the target TkLOS. The receiving lane on Mantra Street is wider at the intersection before tapering to the width of one lane and it is anticipated to have met the required design vehicle movements. Therefore, no modifications to the curb radii are identified.

Hazeldean Road/Terry Fox Drive

This intersection does not meet the target PLOS C, BLOS C, or TLOS D.

All approaches have a cross-section with a width equivalent to ten lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. The north, south, and west approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS, based on left turn or right turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Hazeldean Road and Terry Fox Drive. This is identified for the City's consideration.

All approaches do not meet the target TLOS. The City's 2031 RTTP Network Concept identifies transit signal priority on Terry Fox Drive from Hazeldean Road to Highway 417. If implemented with the transit priority measures on Hazeldean Road, it is anticipated that transit delays on each approach could improve to achieve the target TLOS.

Hazeldean Road/Edgewater Street

This intersection does not meet the target PLOS C or BLOS C.

All approaches have a cross-section with a width equivalent to six or seven lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

The north and west approaches do not meet the target BLOS, based on left turn or right turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Hazeldean Road. This is identified for the City's consideration.

Terry Fox Drive/Edgewater Street/Charlie Rogers Place

This intersection does not meet the target PLOS C, BLOS C, or TkLOS D.

All approaches have a cross-section with a width equivalent to seven or eight lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS, based on left turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Terry Fox Drive. This is identified for the City's consideration.

The north approach does not meet the target TkLOS. The receiving lane on Charlie Rogers Place is wider at the intersection before tapering to the width of one lane. Therefore, no modifications to the curb radii are identified.

Terry Fox Drive/Tony Graham Rec Complex

This intersection does not meet the target PLOS C, BLOS C, or TkLOS D.

All approaches have a cross-section with a width equivalent to seven lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

The north, south, and west approaches do not meet the target BLOS, based on left turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Terry Fox Drive. This is identified for the City's consideration.

The north and south approaches do not meet the target TkLOS, but represent trucks turning from Terry Fox Drive onto private approaches serving the Tony Graham Rec Complex or 41 Edgewater Street. Therefore, no modifications to the curb radii are identified.

Terry Fox Drive/Sobey's Access

This intersection does not meet the target PLOS C, BLOS C, or TkLOS D.

All approaches have a cross-section with a width equivalent to five lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

The north and south approaches do not meet the target BLOS, based on left turn characteristics. This represents cyclists turning left from Terry Fox Drive into the commercial areas on both sides of the road. As these are private approaches, no recommendations are identified.

The north and south approaches do not meet the target TkLOS, but represent trucks turning from Terry Fox Drive onto private approaches serving the Sobey's (700 Hazeldean Road) or Terry Fox Shopping Centre (500 Hazeldean Road). Therefore, no modifications to the curb radii are identified.

Terry Fox Drive/Winchester Drive/Halkirk Avenue

This intersection does not meet the target PLOS C, BLOS C, or TkLOS D.

All approaches have a cross-section with a width equivalent to six or eight lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. No approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS, based on left turn or right turn characteristics. A fully protected intersection would be required to achieve the target, given the high operating speeds and volumes on Terry Fox Drive. This is identified for the City's consideration.

The north and south approaches do not meet the target TkLOS. Winchester Drive and Halkirk Avenue are residential streets that are not truck routes and are not served by transit. During the April 2025 eight-hour traffic count, a total of six heavy vehicles were observed making a northbound right turn onto Winchester Drive and four heavy vehicles were observed making a southbound right turn onto Halkirk Avenue. A summary of the heavy vehicle counts is included in **Appendix D**. Given the low volumes of heavy traffic, no modifications to the curb radii are identified.

4.6.2 2029 Total Traffic Conditions

Intersection capacity analysis has been conducted for the 2029 total traffic conditions. The results of the analysis are summarized in **Table 20** and **Table 21** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix M**.

Table 20: 2029 Total Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c	LOS	Mvmt	Max v/c	LOS	Mvmt
Hazeldean Road/ Robert Grant Avenue	0.66	B	NBT	0.90	D	SBL
Hazeldean Road/ Roger Griffiths Avenue	0.36	A	EBT/R	0.60	A	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.45	A	EBT/R	0.66	B	WBT
Hazeldean Road/ Terry Fox Drive	0.84	D	EBT	1.02	F	SBT
				0.94	E	EBL
				0.93	E	WBT
				0.91	E	SBL
Hazeldean Road/ Edgewater Street	0.37	A	EBT	0.65	B	WBT/R
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.75	C	SBL	0.64	B	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.39	A	NBT/R	0.53	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.34	A	NBT/R	0.58	A	WBL/T
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.48	A	NBT/R	0.48	A	SBT

Table 21: 2029 Total Queues

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Robert Grant Ave	EBT	300m	0.56 [A]	78	124	0.59 [A]	81	135
	WBT	260m	0.45 [A]	58	9	0.86 [D]	167	#219
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.36 [A]	14	38	0.46 [A]	35	107
	WBT	250m	0.33 [A]	54	94	0.60 [A]	8	10
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.45 [A]	90	92	0.56 [A]	113	163
	WBT	750m	0.35 [A]	40	73	0.66 [B]	109	#200
Hazeldean Rd/ Terry Fox Dr	NBL	105m	0.61 [B]	12	31	0.89 [D]	28	#59
	NBT	105m	0.80 [C]	83	#116	0.90 [D]	88	#120
	SBL	155m	0.62 [B]	18	25	0.91 [E]	38	#64
	SBT	280m	0.44 [A]	39	54	1.02 [E]	~95	#145
	EBL	210m	0.70 [B]	26	39	0.94 [E]	49	#76
	EBT	170m	0.84 [D]	83	102	0.71 [C]	78	98
	WBL	60m	0.62 [B]	14	24	0.73 [C]	34	48
	WBT	125m	0.48 [A]	39	52	0.93 [E]	110	#144
Hazeldean Rd/ Edgewater St	EBT	125m	0.37 [A]	57	103	0.46 [A]	92	m155
	WBT	170m	0.33 [A]	20	53	0.65 [B]	63	141
Terry Fox Dr/ Edgewater St	NBT	200m	0.54 [A]	5	22	0.64 [B]	42	31
	SBL	55m	0.75 [C]	12	#68	0.55 [A]	6	#26
	SBT	300m	0.39 [A]	25	68	0.62 [B]	56	186

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.39 [A]	0	146	0.42 [A]	17	m26
	SBT	200m	0.27 [A]	0	2	0.53 [A]	28	54
Terry Fox Dr/ Sobey's Access	NBT	320m	0.34 [A]	36	26	0.29 [A]	33	39
	SBT	105m	0.31 [A]	5	17	0.57 [A]	10	m20
Terry Fox Dr/ Winchester Dr	NBT	710m	0.48 [A]	33	92	0.37 [A]	24	65
	SBT	320m	0.27 [A]	28	60	0.48 [A]	88	116

1: Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

Compared to the 2029 background traffic conditions, the addition of site-generated traffic is anticipated to have marginal impacts to traffic operations and queueing within the study area.

The following movements have maximum queue lengths that extend into upstream intersections or exceed the provided storage length during the peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 116m in AM peak hour and 120m in PM peak hour (extends through signalized Sobey's Access);
 - Westbound through: 144m in PM peak hour (extends through Edgewater Street).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 155m in PM peak hour (extends through Terry Fox Drive).
- Terry Fox Drive/Edgewater Street/Charlie Rogers Place
 - Southbound left turn: 68m in AM peak hour (exceeds 55m storage length).

Using demand rationalization, the following approximate volume reductions would be required to meet the target Auto LOS during the PM peak hour.

- Hazeldean Road/Terry Fox Drive
 - Southbound left: reduction of 10 vehicles;
 - Southbound through: reduction of 100 vehicles;
 - Eastbound left: reduction of 20 vehicles;
 - Westbound through: reduction of 40 vehicles.

4.6.3 2031 Total Traffic Conditions

Intersection capacity analysis has been conducted for the 2031 total traffic conditions. The proposed site access to Hazeldean Road is anticipated to be completed with the apartment block in 2031, and is included in the analysis below as an unsignalized intersection. The results of the analysis are summarized in **Table 22** and **Table 23** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix M**.

Table 22: 2031 Total Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c or Delay	LOS	Mvmt	Max v/c or Delay	LOS	Mvmt
Hazeldean Road/ Robert Grant Avenue	0.69	B	NBT	0.96	E	SBL
				0.94	E	WBT
Hazeldean Road/ Roger Griffiths Avenue	0.39	A	EBT/R	0.64	B	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.47	A	EBT/R	0.70	B	WBT
Hazeldean Road/ Terry Fox Drive	0.87	D	EBT	1.07	F	SBT
				1.00	E	SBL
				0.98	E	EBL
				0.98	E	WBT
				0.96	E	NBL
				0.93	E	NBT
Hazeldean Road/ Edgewater Street	0.40	A	EBT	0.68	B	WBT/R
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.81	D	SBL	0.67	B	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.41	A	NBT/R	0.55	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.35	A	NBT/R	0.58	A	SBT/R
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.50	A	NBT/R	0.50	A	SBT
Hazeldean Road/ Site Access	12 sec	B	NBL/R	14 sec	B	NBL/R

Table 23: 2031 Total Queues

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Robert Grant Ave	EBT	300m	0.60 [A]	90	133	0.66 [B]	113	144
	WBT	260m	0.50 [A]	63	9	0.94 [E]	~197	#235
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.39 [A]	15	44	0.49 [A]	56	m117
	WBT	250m	0.35 [A]	58	101	0.64 [B]	9	10
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.47 [A]	88	96	0.58 [A]	88	151
	WBT	750m	0.37 [A]	43	79	0.70 [B]	120	#220
Hazeldean Rd/ Terry Fox Dr	NBL	105m	0.63 [B]	12	32	0.96 [E]	29	#63
	NBT	105m	0.86 [D]	88	#123	0.93 [E]	93	#127
	SBL	155m	0.66 [B]	19	26	1.00 [E]	39	#67
	SBT	280m	0.47 [A]	42	56	1.07 [F]	~115	#153
	EBL	210m	0.73 [C]	28	41	0.98 [E]	51	#81
	EBT	170m	0.87 [D]	90	113	0.75 [C]	85	106
	WBL	60m	0.63 [B]	15	#25	0.75 [C]	35	49
	WBT	125m	0.49 [A]	43	57	0.98 [E]	118	#161
Hazeldean Rd/ Edgewater St	EBT	125m	0.40 [A]	65	114	0.49 [A]	100	m162
	WBT	170m	0.34 [A]	21	57	0.68 [B]	70	156
Terry Fox Dr/ Edgewater St	NBT	200m	0.57 [A]	5	28	0.67 [B]	46	32
	SBL	55m	0.81 [D]	14	#71	0.56 [A]	7	#40
	SBT	300m	0.41 [A]	26	72	0.65 [B]	61	200

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.41 [A]	0	153	0.44 [A]	18	m26
	SBT	200m	0.28 [A]	0	2	0.55 [A]	29	56
Terry Fox Dr/ Sobey's Access	NBT	320m	0.35 [A]	38	26	0.30 [A]	35	39
	SBT	105m	0.32 [A]	5	18	0.58 [A]	12	m21
Terry Fox Dr/ Winchester Dr	NBT	710m	0.50 [A]	35	97	0.39 [A]	25	68
	SBT	320m	0.28 [A]	34	63	0.50 [A]	92	122
Hazeldean Rd/ Site Access	NBL/R	-	12 s [B]	-	2	14 s [B]	-	1

1: Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

Compared to the 2031 background traffic conditions, the addition of site-generated traffic is anticipated to have marginal impacts to traffic operations and queueing within the study area. The proposed access to Hazeldean Road operates acceptably during both peak hours.

The following movements have maximum queue lengths that extend into upstream intersections or exceed the provided storage length during the peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 123m in AM peak hour and 127m in PM peak hour (extends through signalized Sobey's Access);
 - Westbound through: 161m in PM peak hour (extends through Edgewater Street).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 162m in PM peak hour (extends through Terry Fox Drive).
- Terry Fox Drive/Charlie Rogers Place/Edgewater Street
 - Southbound left: 71m in AM peak hour (exceeds 55m storage length provided).

Using demand rationalization, the following approximate volume reductions would be required to meet the target Auto LOS for the over-capacity movements during the PM peak hour:

- Hazeldean Road/Robert Grant Avenue
 - Westbound through: reduction of 60 vehicles.
- Hazeldean Road/Terry Fox Drive
 - Northbound left: reduction of 10 vehicles;
 - Northbound through: reduction of 10 vehicles;
 - Southbound left: reduction of 20 vehicles;
 - Southbound through: reduction of 130 vehicles;
 - Eastbound left: reduction of 40 vehicles;
 - Westbound through: reduction of 110 vehicles.

4.6.4 2036 Total Traffic Conditions

Intersection capacity analysis has been conducted for the 2036 total traffic conditions. The results of the analysis are summarized in **Table 24** and **Table 25** for the weekday AM and PM peak hours. Detailed Synchro reports are included in **Appendix M**.

Table 24: 2036 Total Intersection Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Max v/c	LOS	Mvmt	Max v/c	LOS	Mvmt
Hazeldean Road/ Robert Grant Avenue	0.71	C	NBT	1.05	F	WBT
				1.03	F	SBL
Hazeldean Road/ Roger Griffiths Avenue	0.41	A	EBT/R	0.70	B	WBT
Hazeldean Road/ Mantra Street/Tillage Street	0.49	A	EBT/R	0.75	C	WBT
Hazeldean Road/ Terry Fox Drive	0.96	E	NBT	1.16	F	SBT
				1.09	F	SBL
				1.07	F	EBL
				1.04	F	NBL
				1.04	F	WBT
				1.01	F	NBT
Hazeldean Road/ Edgewater Street	0.42	A	EBT	0.84	D	EBL
Terry Fox Drive/ Edgewater Street/Charlie Rogers Place	0.98	E	SBL	0.75	C	NBT/R
Terry Fox Drive/ Tony Graham Rec Complex	0.45	A	NBT/R	0.60	A	SBT/R
Terry Fox Drive/ Sobey's Access	0.38	A	NBT/R	0.63	B	SBT/R
Terry Fox Drive/ Winchester Drive/Halkirk Avenue	0.54	A	NBT/R	0.54	A	SBT
Hazeldean Road/ Site Access	12 sec	B	NBL/R	14 sec	B	NBL/R

Table 25: 2036 Total Queues

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Hazeldean Rd/ Robert Grant Ave	EBT	300m	0.66 [B]	102	#159	0.72 [C]	134	162
	WBT	260m	0.57 [A]	72	9	1.05 [F]	~230	#259
Hazeldean Rd/ Roger Griffiths Ave	EBT	260m	0.41 [A]	16	46	0.52 [A]	101	m130
	WBT	250m	0.38 [A]	65	110	0.70 [B]	159	223
Hazeldean Rd/ Mantra St/Tillage St	EBT	250m	0.49 [A]	96	102	0.62 [B]	78	154
	WBT	750m	0.40 [A]	47	86	0.75 [C]	135	#248
Hazeldean Rd/ Terry Fox Dr	NBL	105m	0.68 [B]	14	34	1.04 [F]	~34	#70
	NBT	105m	0.96 [E]	~100	#138	1.01 [F]	~106	#145
	SBL	155m	0.70 [B]	21	#30	1.09 [F]	~46	#74
	SBT	280m	0.53 [A]	46	61	1.16 [F]	~135	#174
	EBL	210m	0.77 [C]	31	#45	1.07 [F]	~61	#91
	EBT	170m	0.90 [D]	97	#124	0.81 [D]	92	115
	WBL	60m	0.69 [B]	16	#29	0.79 [C]	39	#52
	WBT	125m	0.52 [A]	46	60	1.04 [F]	~130	#176
Hazeldean Rd/ Edgewater St	EBT	125m	0.42 [A]	73	121	0.53 [A]	109	m173
	WBT	170m	0.37 [A]	24	62	0.73 [C]	80	181
Terry Fox Dr/ Edgewater St	NBT	200m	0.62 [B]	5	43	0.75 [C]	54	67
	SBL	55m	0.98 [E]	20	#50	0.58 [A]	10	#53
	SBT	300m	0.45 [A]	30	81	0.70 [B]	74	#253

Intersection	Mvmt	Storage/ Spacing ⁽¹⁾	AM Peak			PM Peak		
			v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)	v/c [LOS]	50 th % Queue (m)	95 th % Queue (m)
Terry Fox Dr/ Tony Graham Rec	NBT	280m	0.45 [A]	0	m157	0.48 [A]	21	m27
	SBT	200m	0.31 [A]	0	2	0.60 [A]	32	60
Terry Fox Dr/ Sobey's Access	NBT	320m	0.38 [A]	44	27	0.33 [A]	38	40
	SBT	105m	0.35 [A]	5	19	0.63 [B]	16	m23
Terry Fox Dr/ Winchester Dr	NBT	710m	0.54 [A]	40	111	0.42 [A]	28	76
	SBT	320m	0.30 [A]	39	72	0.54 [A]	105	135
Hazeldean Rd/ Site Access	NBL/R	-	12 s [B]	-	2	14 s [B]	-	2

1: Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection/access for through lanes

#: Volume for the 95th percentile cycle exceeds capacity

m: Queue is metered by an upstream signal

~: Approach is above capacity

Compared to the 2036 background traffic conditions, the addition of site-generated traffic is anticipated to have marginal impacts to traffic operations and queueing within the study area. The proposed access to Hazeldean Road operates acceptably during both peak hours. The following movements have maximum queue lengths that extend into upstream intersections or exceed the provided storage length during the peak hours:

- Hazeldean Road/Terry Fox Drive
 - Northbound through: 138m in AM peak hour and 145m in PM peak hour (extends through signalized Sobey's Access);
 - Westbound through: 176m in PM peak hour (extends through Edgewater Street).
- Hazeldean Road/Edgewater Street
 - Eastbound through: 173m in PM peak hour (extends through Terry Fox Drive).

At Terry Fox Drive/Charlie Rogers Place/Edgewater Street, Synchro identifies that the provision of protected plus permitted southbound left turn phasing during the AM peak hour can be provided to improve the level of service for that movement, while maintaining acceptable operations for the northbound movements.

Using demand rationalization, the northbound through movement at Hazeldean Road/Terry Fox Drive requires an approximate volume reduction of 60 vehicles to meet the target Auto LOS during the AM peak hour.

The following approximate volume reductions would be required to meet the target Auto LOS for the over-capacity movements during the PM peak hour:

- Hazeldean Road/Robert Grant Avenue
 - Southbound left: reduction of 20 vehicles;
 - Westbound through: reduction of 330 vehicles.
- Hazeldean Road/Terry Fox Drive
 - Northbound left: reduction of 30 vehicles;
 - Northbound through: reduction of 80 vehicles;
 - Southbound left: reduction of 50 vehicles;
 - Southbound through: reduction of 210 vehicles;
 - Eastbound left: reduction of 80 vehicles;
 - Westbound through: reduction of 170 vehicles.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Access Intersections

- The proposed accesses to Energy Street and Bliss Crescent will be part of Phase 1, and will connect to the existing roadway blocks that have been constructed as part of the adjacent subdivision. The driveway to Hazeldean Road will be part of Phase 2, and is proposed in approximately the same location as the existing driveway serving the golf centre.
- The proposed accesses meet the relevant provisions of the City's *Private Approach By-Law* (PABL) and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*. Parameters such as access grades and clear throat length will be confirmed in subsequent Site Plan Control applications.

Site-Generated Traffic

- The proposed development is estimated to generate 158 person trips (including 79 vehicle trips) during the AM peak hour, and 164 person trips (including 84 vehicle trips) during the PM peak hour.

Development Design

- A 3.0m-wide multi-use pathway (MUP) is proposed along the eastern side of the subject site, which will provide a connection for pedestrians and cyclists to the Carp River Pathway and the existing pathway around the perimeter of the stormwater pond immediately south of the subject site. Another pathway is proposed to run between the apartment block and low-density blocks. A pathway connection is also proposed to Street 3 at the southeast corner of the subdivision.
- Entrances to the low-density dwellings will generally be located within 400m walking distance of stop #1043. The proposed dwellings are anticipated to be located within 800m walking distance (i.e. a 10-minute walk) of stops #1042 and #1043. These stops are served by routes 61, 301, and 303. A future Site Plan Control application will confirm the walking distances between entrances to the proposed apartment dwellings and stops #1042 and #1043.
- Street 1 will connect to Energy Street, and run generally on an east-west alignment from Energy Street to Street 3. Street 1 will have a width of 8.5m, which is wide enough to accommodate a travel lane in each direction and on-street parking on one side.
- Street 2 will connect to Hazeldean Road and Bliss Crescent, and run generally on a north-south alignment from Hazeldean Road to the southern intersection with Street 3, before curving 90 degrees to connect to Bliss Crescent. Street 2 will have a width of 8.5m. The connection to Hazeldean Road will not open as part of Phase 1.
- Street 3 will connect to Street 2 in two locations approximately 185m apart (measuring centre to centre), acting as a crescent loop on a curvilinear alignment. Street 3 will have a width of 8.5m.

- The proposed 8.5m width of each private roadway can accommodate the movements of heavy vehicles, such as fire trucks and garbage trucks. The volumes on the Phase 1 private roadways are projected to be 500 vehicles per day or less, which is consistent with public lanes per TAC's *Geometric Design Guide*. TAC suggests that no special facilities are required for pedestrians or cyclists on these types of roadways.

Boundary Streets

- Hazeldean Road meets the target transit level of service (TLOS) and truck level of service (TkLOS), and does not meet the target pedestrian level of service (PLOS) and bicycle level of service (BLOS).
- Hazeldean Road achieves the best-possible PLOS D by providing sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m. To achieve the target PLOS C, a reduced operating speed of 60 km/h would be required.
- Hazeldean Road cannot achieve the target BLOS C without a reduced operating speed of 60 km/h or the implementation of off-road facilities, such as cycle tracks or a multi-use pathway. This is identified for the City's consideration.

Transportation Demand Management

- The proponent has agreed to consider the following measures at the sales centre for the low-density residential block:
 - Provide local area maps with walking/cycling access routes and key destinations;
 - Provide relevant transit schedules and route maps;
 - Provide a multimodal travel option information package.

Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
 - No study area intersections meet the target PLOS;
 - No study area intersections meet the target BLOS;
 - Seven of the nine study area intersections meet the target TLOS;
 - Four of the nine study area intersections meet the target TkLOS.
- There is limited opportunity in improving the PLOS at each intersection without reducing the number of travel lanes or restricting turning movements. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.
- In general, fully protected intersections would be required to achieve the target BLOS, given the high operating speeds and volumes on Hazeldean Road or Terry Fox Drive. This is identified for the City's consideration.
- The east approach at Hazeldean Road/Mantra Street/Tillage Street and all approaches at Hazeldean Road/Terry Fox Drive do not meet the target TLOS. The City's 2031 RTTP Network Concept and 2031 Affordable Network identifies transit signal priority and queue jump lanes on Hazeldean Road from Stittsville Main Street to Eagleson Road. The City's 2031 RTTP Network Concept identifies transit signal priority on Terry Fox Drive from Hazeldean Road to Highway 417. If implemented, it is anticipated that transit delays on these approaches could improve to achieve the target TLOS.

- Select approaches at Hazeldean Road/Mantra Street/Tillage Street, Terry Fox Drive/Edgewater Street/Charlie Rogers Place, Terry Fox Drive/Tony Graham Rec Complex, Terry Fox Drive/Sobey's Access, and Terry Fox Drive/Winchester Drive/Halkirk Avenue do not meet the target TkLOS. No recommended modifications are identified.

Existing Traffic Operations

- The southbound through and eastbound left turn movements at Hazeldean Road/Terry Fox Drive operate at an Auto LOS E during the PM peak hour. All other movements operate at the target Auto LOS D or better during both peak hours.
- There are no average (i.e. 50th-percentile) queues that extend to upstream intersections. The northbound through movement at Hazeldean Road/Terry Fox Drive and eastbound through movement at Hazeldean Road/Edgewater Street have maximum (i.e. 95th-percentile) queue lengths that extend into upstream intersections during one or both peak hours.
- The maximum westbound through queue at Hazeldean Road/Mantra Street/Tillage Street is 166m, extending through the median break serving the existing golf centre on the subject site. The median break starts approximately 120m east of the westbound stop bar on Hazeldean Road at Mantra Street/Tillage Street. Queueing through this median break is also anticipated in all future conditions.

Background Traffic Operations

- By 2036, the northbound through movement at Hazeldean Road/Terry Fox Drive and the southbound left turn movement at Terry Fox Drive/Charlie Rogers Place/Edgewater Street operate over-capacity during the AM peak hour. The southbound left turn and westbound through movements at Hazeldean Road/Robert Grant Avenue and the northbound left turn, northbound through, southbound left turn, southbound through, eastbound left turn, and westbound through movements at Hazeldean Road/Terry Fox Drive operate over-capacity during the PM peak hour.
- Synchro does not identify signal timing adjustments at Hazeldean Road/Robert Grant Avenue and Hazeldean Road/Terry Fox Drive that allow all movements to operate at the target Auto LOS D. Traffic throughout the study area may be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate travel times for drivers to make use of off-peak capacity, or alternate routes for travel.
- At Terry Fox Drive/Charlie Rogers Place/Edgewater Street, Synchro identifies that the provision of protected plus permitted southbound left turn phasing during the AM peak hour can be provided to improve the level of service for that movement, while maintaining acceptable operations for the northbound movements.

Total Traffic Operations

- Compared to the background traffic conditions, the addition of site-generated traffic is anticipated to have marginal impacts to traffic operations and queueing within the study area. The proposed access to Hazeldean Road operates acceptably during both peak hours.

Based on the foregoing, the proposed subdivision is recommended from a transportation perspective.

NOVATECH

Prepared by:



Joshua Audia, P.Eng.
Project Engineer | Transportation

Reviewed by:

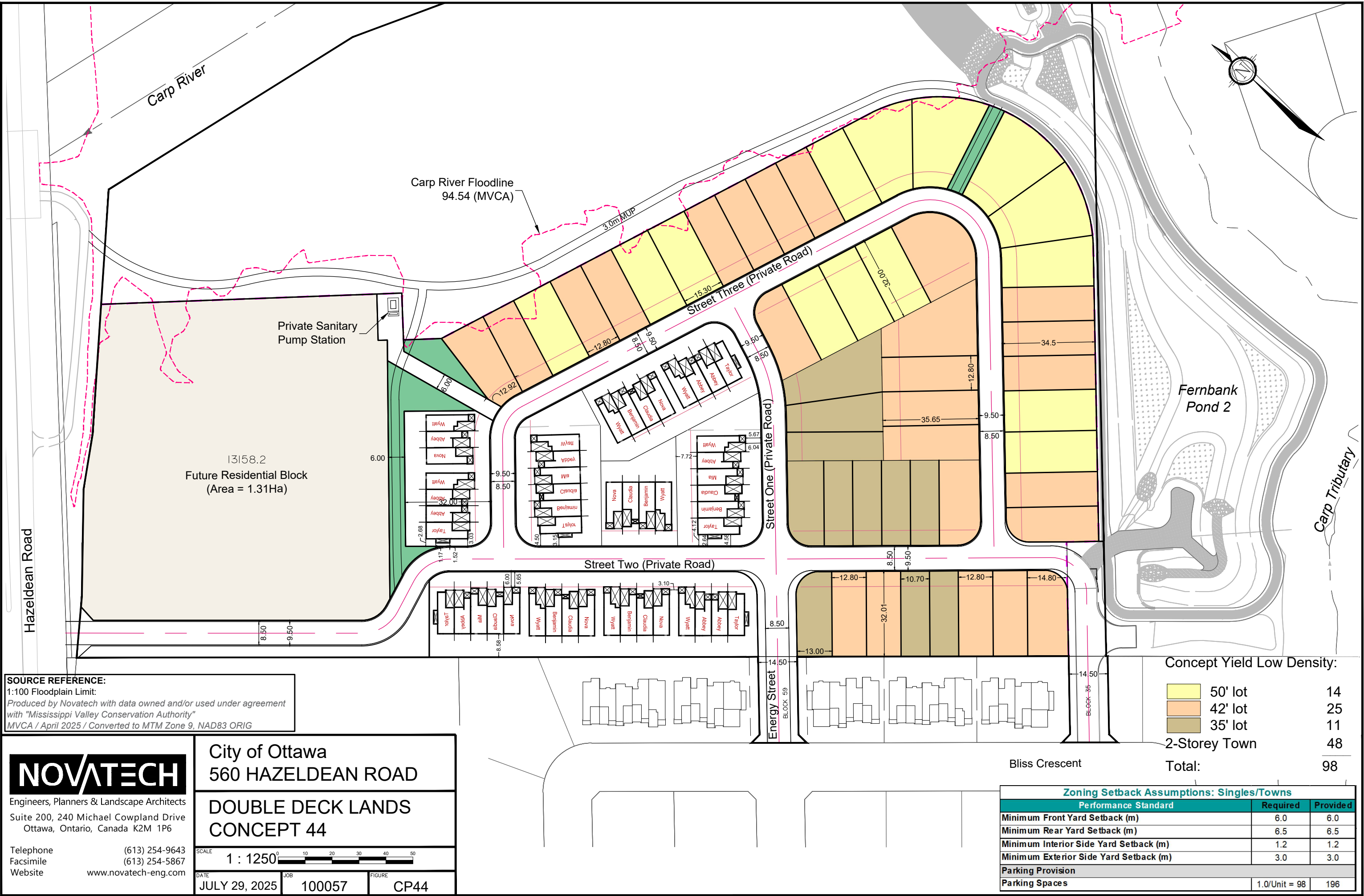


Jennifer Luong, P.Eng.
Senior Project Manager | Transportation

APPENDIX A

Concept Plan

M:\2000\100057\Subdivision\CAD\Planning\Concept Plans\100057-CP44.dwg, 11x17 landscape, Jul 29, 2025 - 2:45pm, wsl:oss



SOURCE REFERENCE:
1:100 Floodplain Limit:
Produced by Novatech with data owned and/or used under agreement with "Mississippi Valley Conservation Authority"
MVCA / April 2025 / Converted to MTM Zone 9, NAD83 ORIG



Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

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

City of Ottawa
560 HAZELDEAN ROAD

DOUBLE DECK LANDS
CONCEPT 44

SCALE 1 : 1250

DATE JULY 29, 2025 JOB 100057 FIGURE CP44

Concept Yield Low Density:

50' lot	14
42' lot	25
35' lot	11
2-Storey Town	48
Total:	98

Zoning Setback Assumptions: Singles/Towns

Performance Standard	Required	Provided
Minimum Front Yard Setback (m)	6.0	6.0
Minimum Rear Yard Setback (m)	6.5	6.5
Minimum Interior Side Yard Setback (m)	1.2	1.2
Minimum Exterior Side Yard Setback (m)	3.0	3.0
Parking Provision		
Parking Spaces	1.0/Unit = 98	196

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	560 Hazeldean Road
Description of Location	South of Hazeldean Rd, east of Mantra St/Tillage St
Land Use Classification	Residential
Development Size (units)	50 singles, 48 towns, 185 apartments
Development Size square metre (m ²)	-
Number of Accesses and Locations	3 (Hazeldean Rd, Energy St, Bliss Cres)
Phase of Development	2
Buildout Year	2029 (Phase 1), 2031 (full buildout)

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.

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	60 units
Multi-Use Family (Low-Rise) ¹	90 units
Multi-Use Family (High-Rise) ¹	150 units
Office ²	1,400 m ²
Industrial ²	7,000 m ²
Fast-food restaurant or coffee shop ²	110 m ²
Destination retail ²	1,800 m ²
Gas station or convenience market ²	90 m ²

If the proposed development size is equal to or 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 Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☒	☐
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)? ²	☐	☒

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 kilometers per hour (km/h) 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 metre [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?	☒	☐

² Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

Transportation Impact Assessment Guidelines

	Yes	No
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

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☒	☐
Does the development satisfy the Location Trigger?	☒	☐
Does the development satisfy the Safety Trigger?	☒	☐

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

APPENDIX C

OC Transpo Route Maps

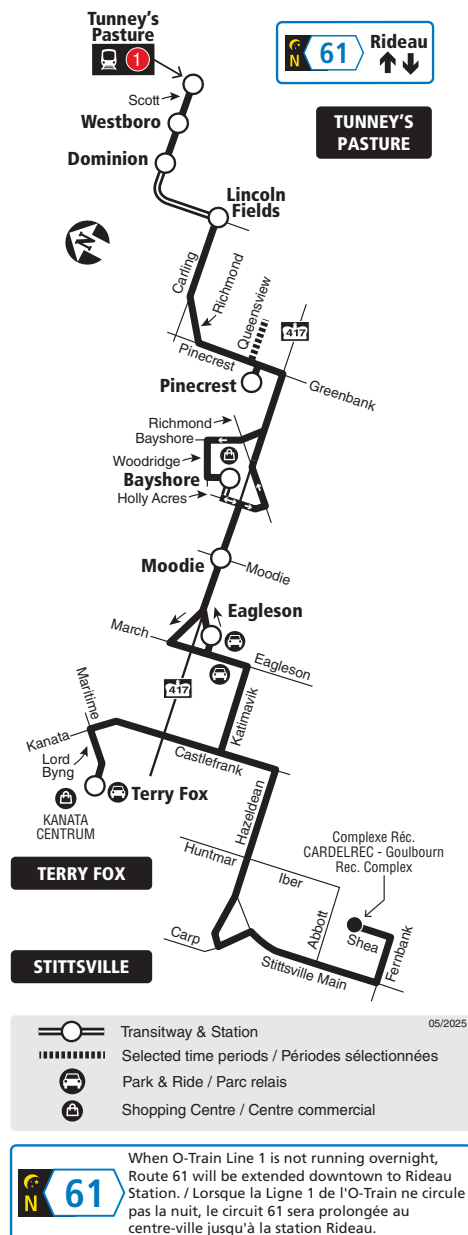
61

Fréquent

STITTSVILLE TERRY FOX TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

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



2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service
le 27 avril 2025, lorsque le réseau
L'autobus réinventé entrera en vigueur.

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

Security / Sécurité 613-741-2478



octranspo.com

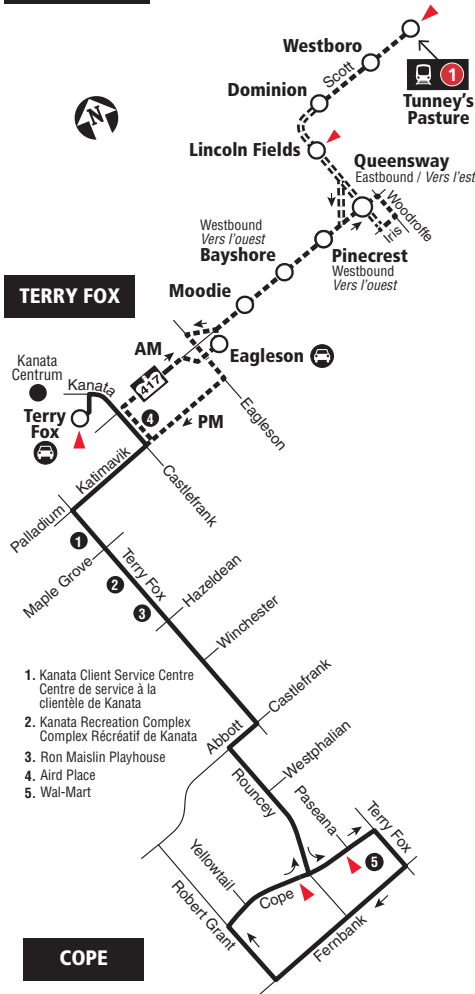
67

Local

COPE TUNNEY'S PASTURE TERRY FOX

Monday to Friday / lundi au vendredi
All day service
Service toute la journée

TUNNEY'S PASTURE



- Transitway & Station
- Peak Periods Only / Périodes de pointe seulement
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2022.05

2022.06



Schedule / Horaire 613-560-1000

Text / Texto* 560560

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

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

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

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

Security / Sécurité **613-741-2478**

Effective June 26, 2022

En vigueur 26 juin 2022



INFO 613-560-5000
octranspo.com

68

Fréquent

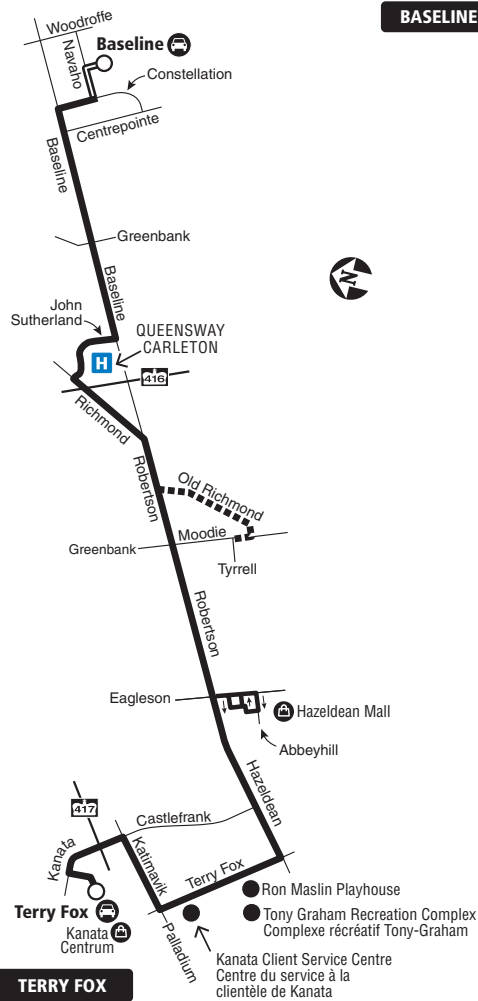
BASELINE

TERRY FOX

7 days a week / 7 jours par semaine

All day service

Service toute la journée



- Transitway & Station
- Some trips / Quelques trajets
- Park & Ride / Parc relais
- Shopping Centre / Centre commercial

04.2025

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

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

Security / Sécurité 613-741-2478

Transpo

octranspo.com

301

CARLINGWOOD RICHMOND STITTSVILLE

Local

Monday only / Lundi seulement

Peak periods only

Périodes de pointe seulement

AM
↑ **CARLINGWOOD**



PM
↓ **RICHMOND**

Transitway & Station

Park & Ride / Parc-o-bus

2022.04

2022.04



Schedule / Horaire 613-560-1000

Text / Texto* 560560

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

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

Customer Service

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

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

Security / Sécurité **613-741-2478**

Effective April 24, 2022

En vigueur 24 avril 2022



INFO 613-560-5000
octranspo.com

303

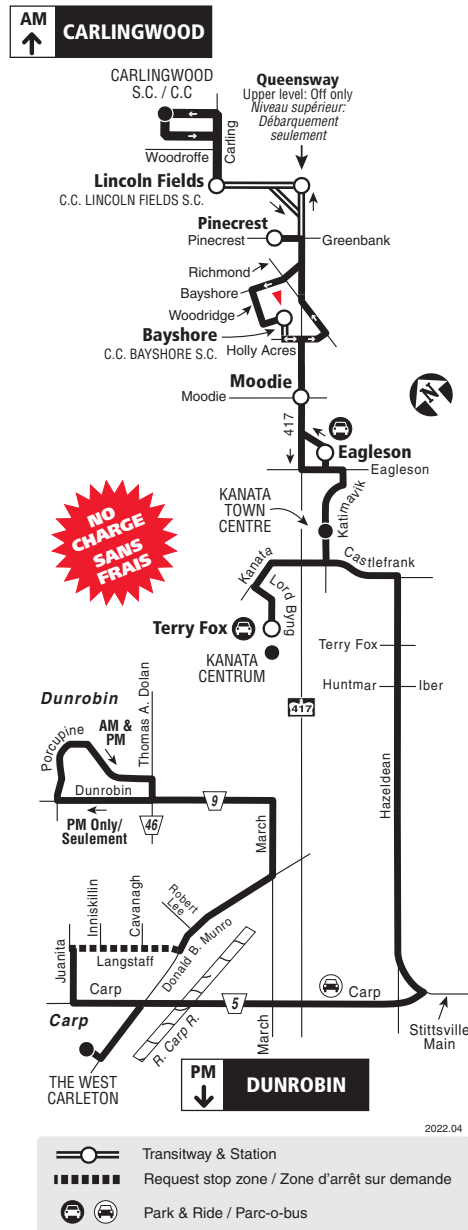
CARLINGWOOD DUNROBIN, CARP

Local

Wednesday only / Mercredi seulement

Selected time periods

Périodes sélectionnées



2022.04



Schedule / Horaire 613-560-1000

Text / Texto* 560560

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

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

Customer Service

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

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

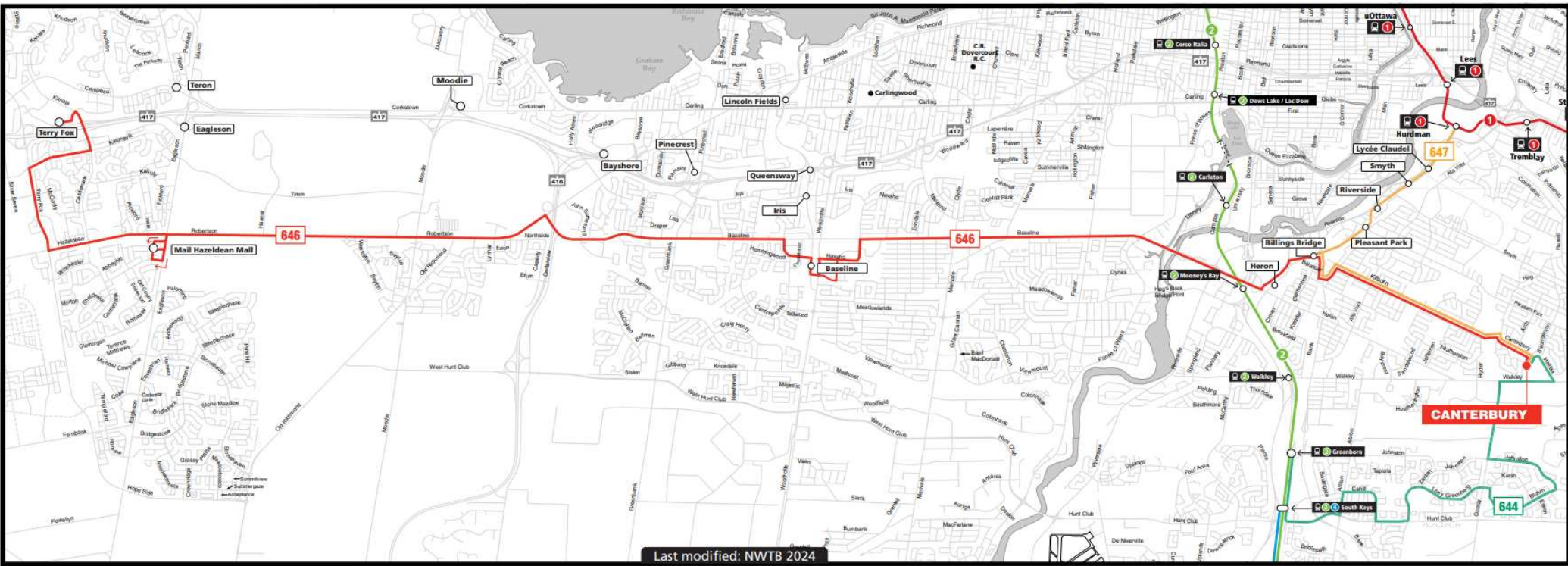
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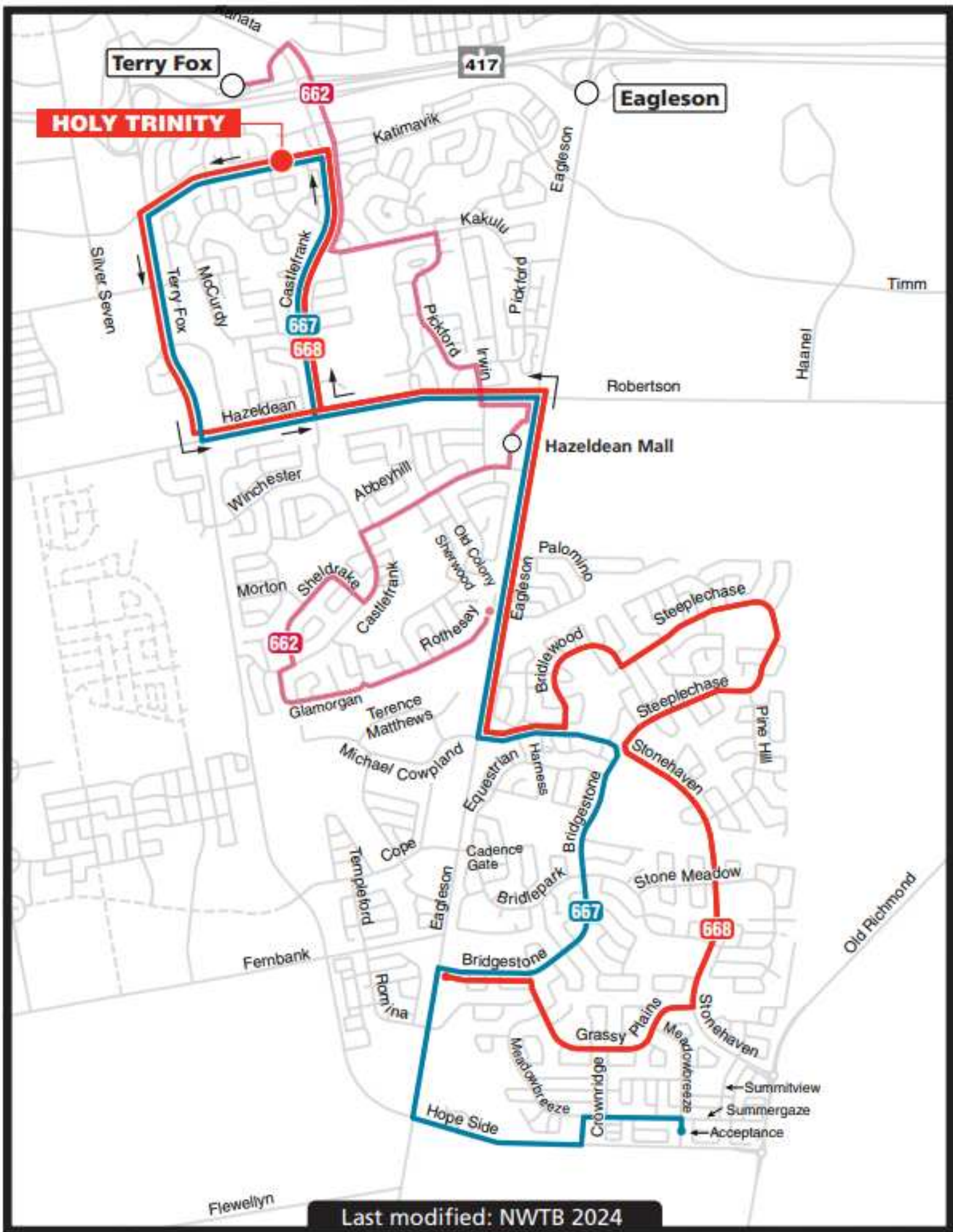
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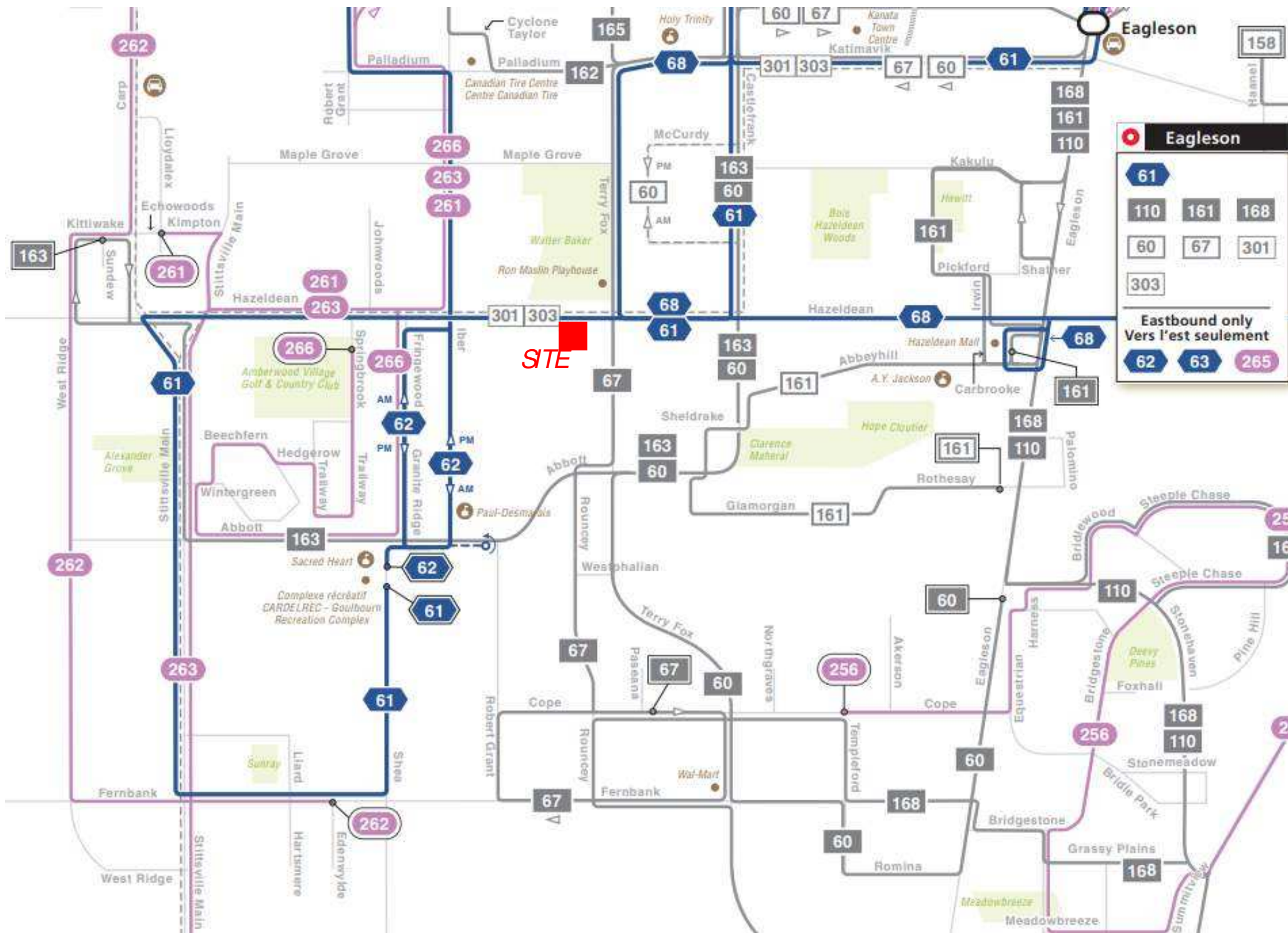
En vigueur 24 avril 2022



INFO 613-560-5000
octranspo.com







APPENDIX D

Traffic Count Data

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

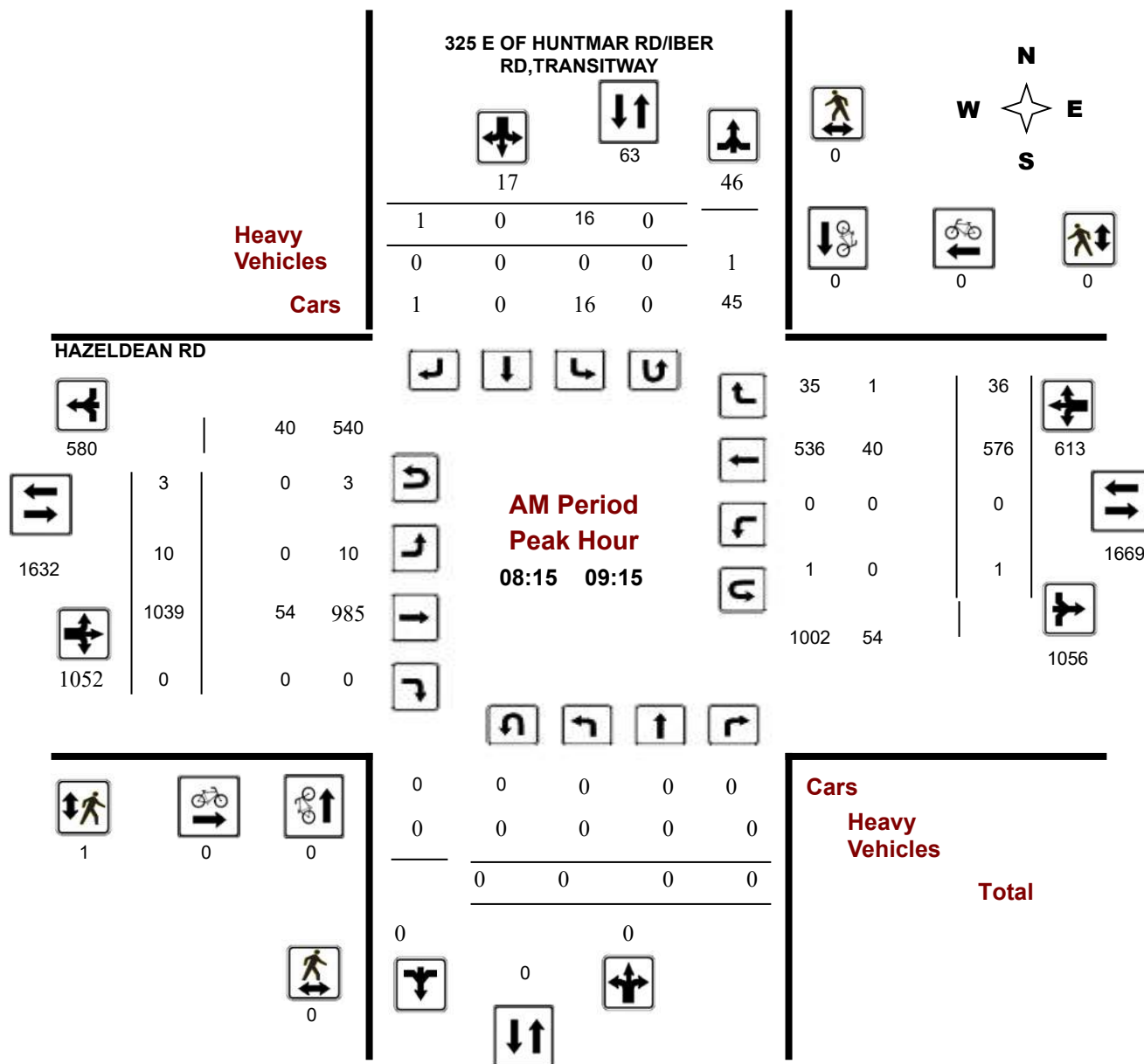
325 E OF HUNTMAR RD/IBER RD,TRANSITWAY @ HAZELDEAN RD

Survey Date: Wednesday, March 04, 2020

Start Time: 07:00

WO No: 39582

Device: Miovision



Comments 5478573 - HAZELDEAN RD @ 325 E OF IBER RD/HUNTMAR RD/TRANSITWAY - MAR 4, 2020 - 8HRS - LORETTA



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

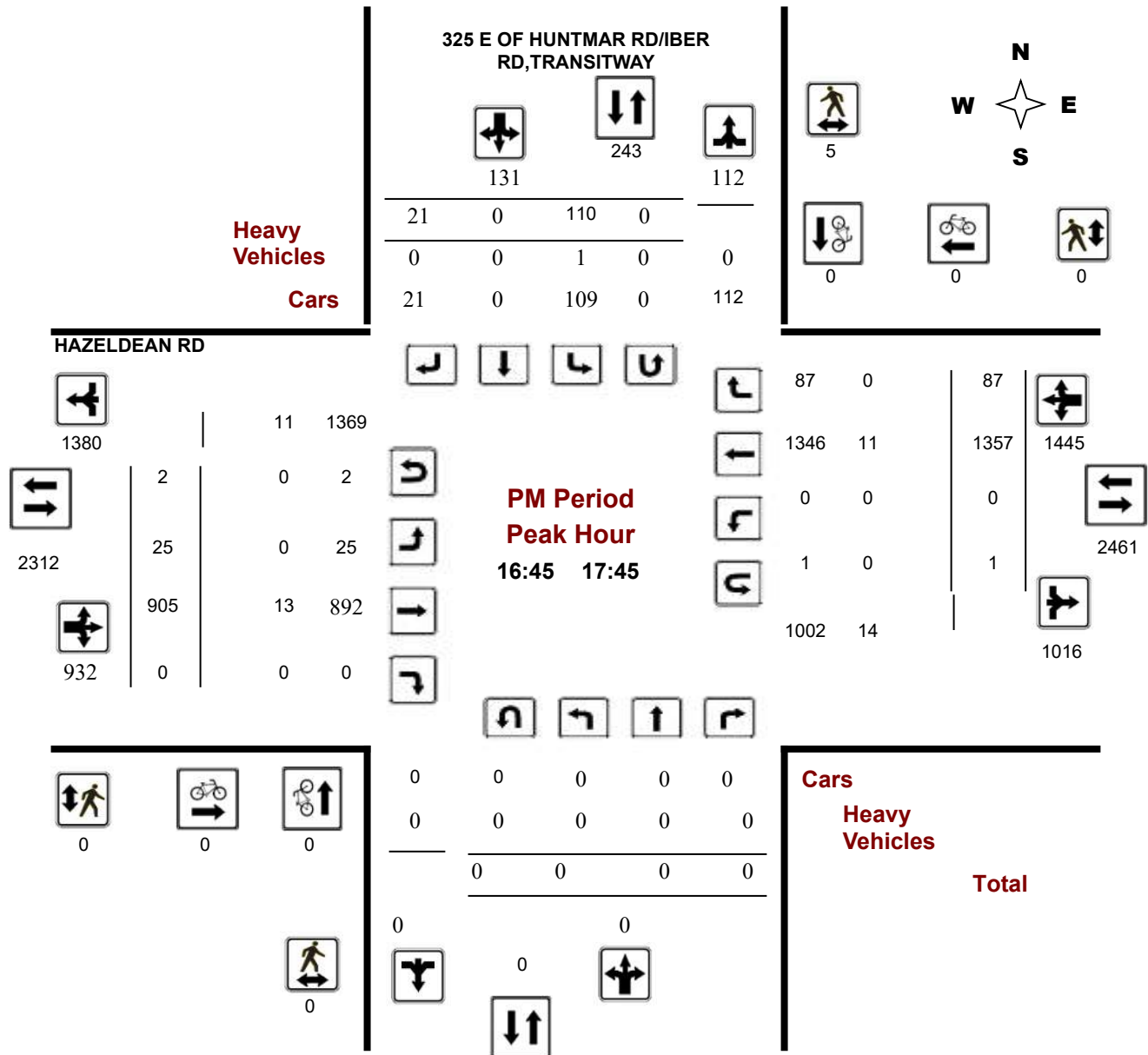
325 E OF HUNTMAR RD/IBER RD,TRANSITWAY @ HAZELDEAN RD

Survey Date: Wednesday, March 04, 2020

Start Time: 07:00

WO No: 39582

Device: Miovision



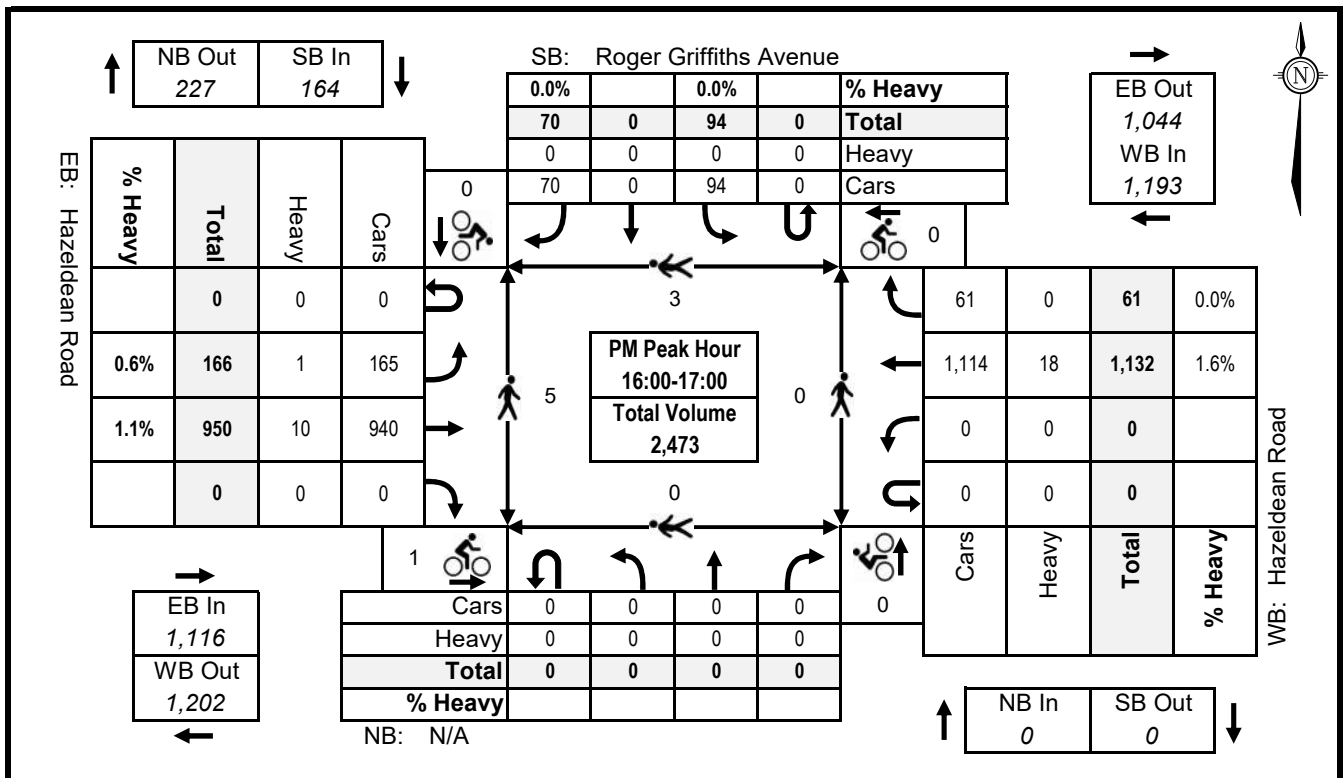
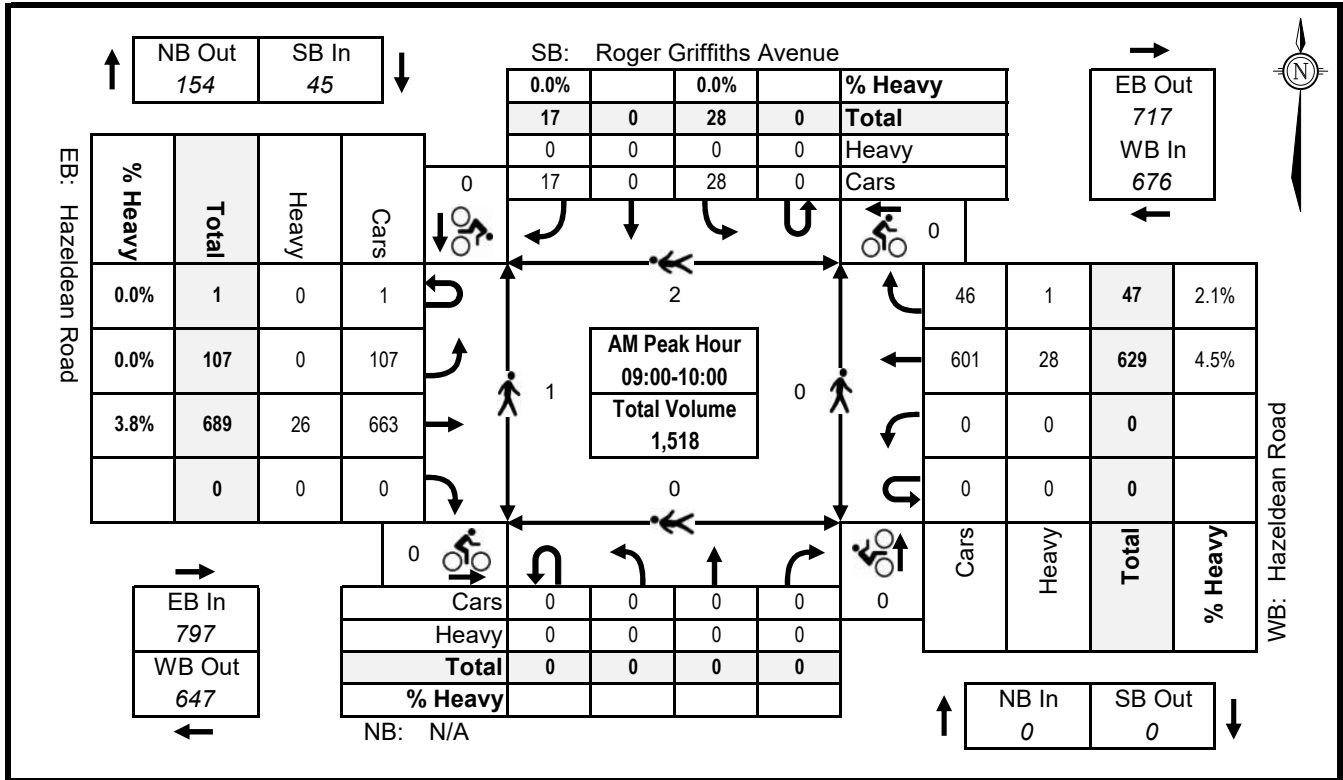
Comments 5478573 - HAZELDEAN RD @ 325 E OF IBER RD/HUNTMAR RD/TRANSITWAY - MAR 4, 2020 - 8HRS - LORETTA

HAZELDEAN ROAD @ ROGER GRIFFITHS AVENUE

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

Date:
Survey Hours:
Surveyor(s):

Wednesday, April 9, 2025
07:00-10:00, 11:30-13:30, 15:00-18:00
J.Morris, B.Cameron

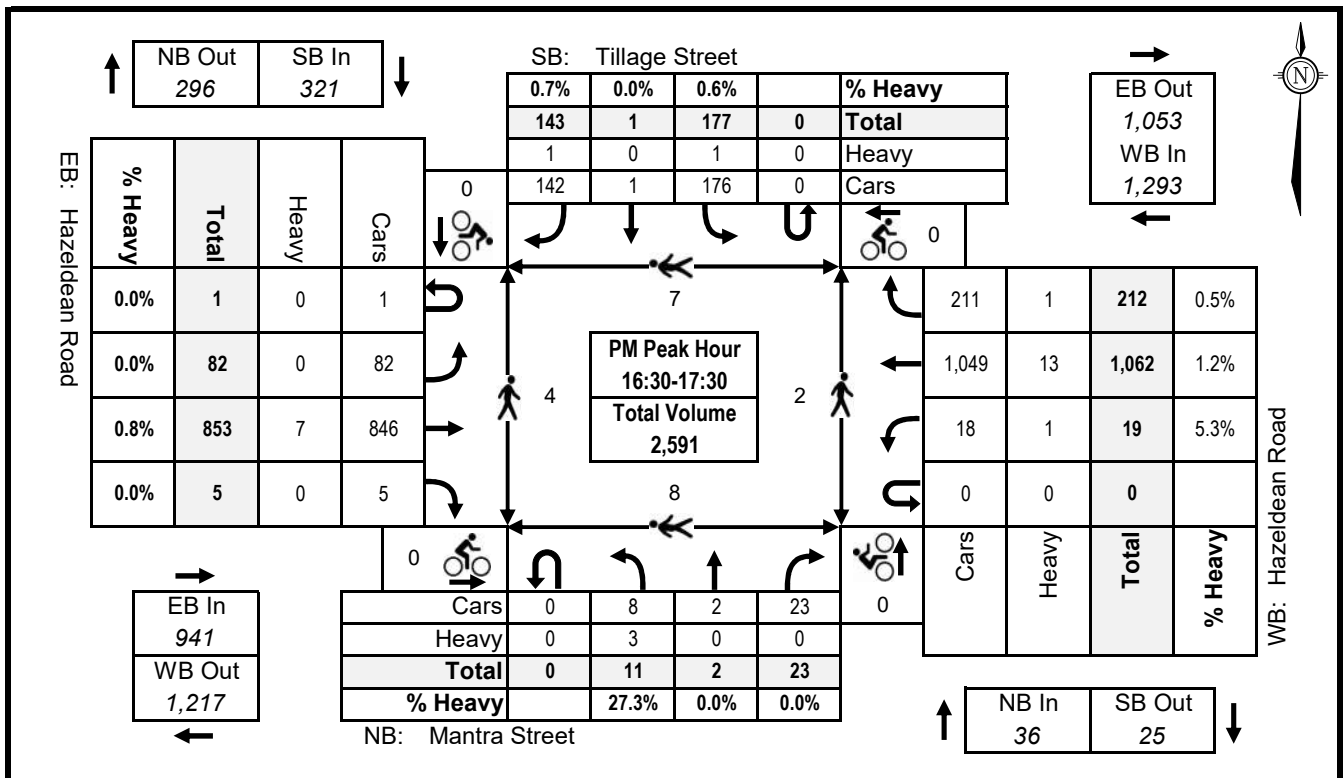
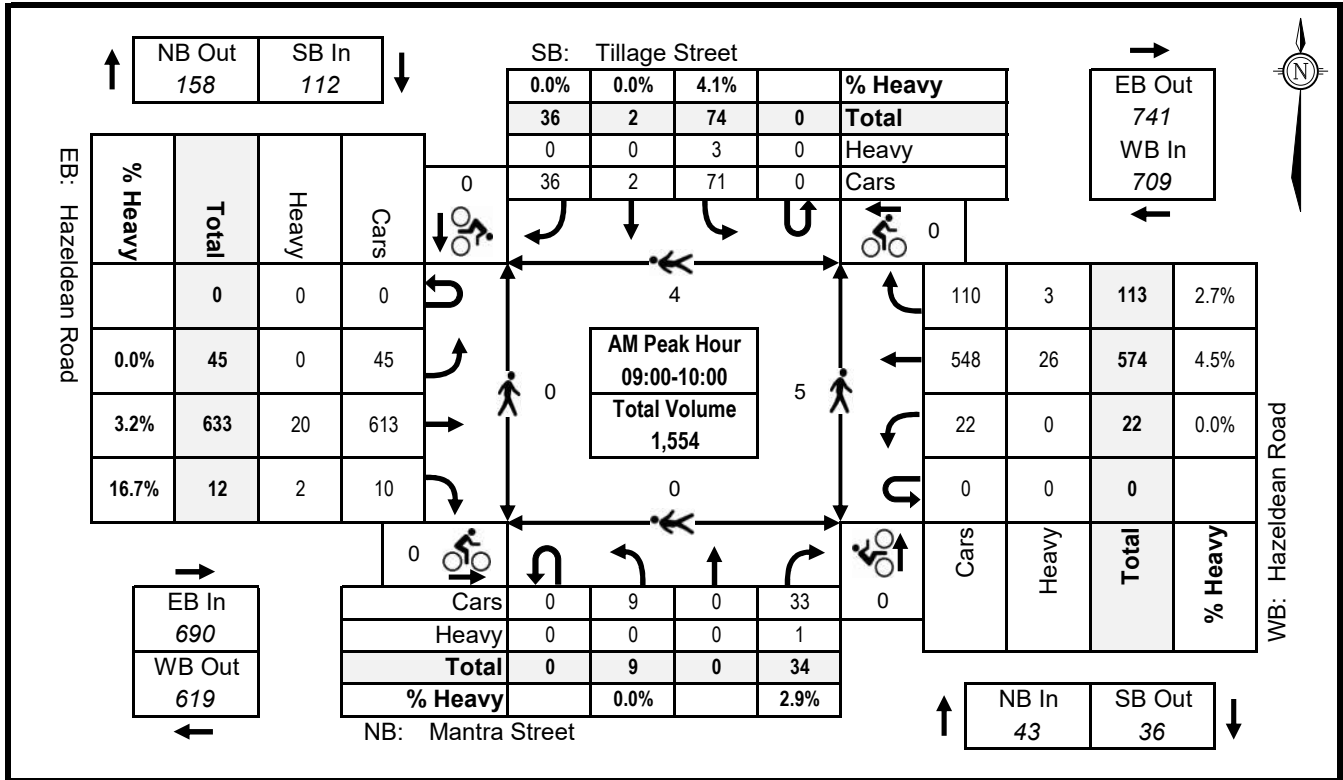


HAZELDEAN ROAD @ MANTRA STREET/TILLAGE STREET

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

Date:
Survey Hours:
Surveyor(s):

Wednesday, April 9, 2025
07:00-10:00, 11:30-13:30, 15:00-18:00
J.Morris, B.Cameron



HAZELDEAN ROAD @ MANTRA STREET/TILLAGE STREET

TURNING MOVEMENT COUNT 8-HOUR SUMMARY

Date: Wednesday, April 9, 2025
Survey Hours: 07:00-10:00, 11:30-13:30, 15:00-18:00
Surveyor(s): J.Morris, B.Cameron

Period	Mantra Street				Tillage Street					Hazeldean Road				Hazeldean Road					
	NORTHBOUND				SOUTHBOUND				N/S Tot	EASTBOUND				WESTBOUND				E/W Tot	Grand Tot
	L	T	R	Tot	L	T	R	Tot		L	T	R	Tot	L	T	R	Tot		
07:00 - 08:00	4	0	25	29	18	0	10	28	57	12	725	9	746	36	486	25	547	1,293	1,350
08:00 - 09:00	10	1	41	52	25	3	6	34	86	21	728	16	765	29	562	31	622	1,387	1,473
09:00 - 10:00	9	0	34	43	74	2	36	112	155	45	633	12	690	22	574	113	709	1,399	1,554
11:30 - 12:30	6	6	20	32	228	10	124	362	394	75	834	11	920	21	786	237	1,044	1,964	2,358
12:30 - 13:30	7	0	18	25	208	2	136	346	371	82	839	11	932	14	852	216	1,082	2,014	2,385
15:00 - 16:00	9	2	37	48	197	2	105	304	352	69	883	9	961	16	1,010	174	1,200	2,161	2,513
16:00 - 17:00	12	1	28	41	185	0	112	297	338	73	936	11	1,020	22	1,039	166	1,227	2,247	2,585
17:00 - 18:00	6	4	17	27	164	6	148	318	345	90	841	2	933	24	954	211	1,189	2,122	2,467
Subtotal	63	14	220	297	1,099	25	677	1,801	2,098	467	6,419	81	6,967	184	6,263	1,173	7,620	14,587	16,685
U-Turns				0				2					3				0		
Total	63	14	220	297	1,099	25	677	1,803	2,100	467	6,419	81	6,970	184	6,263	1,173	7,620	14,590	16,690
Equivalent 12-hr	88	19	306	413	1,528	35	941	2,506	2,919	649	8,922	113	9,687	256	8,706	1,630	10,592	20,279	23,198
Expansion Factor: Calculated by multiplying the 8-hour totals by the 8- to 12-hour expansion factor of														1.39					
Average 12-hr	79	17	275	372	1,375	32	847	2,255	2,627	584	8,030	102	8,718	230	7,835	1,467	9,533	18,251	20,878
Expansion Factor: Calculated by multiplying the equivalent 12-hour totals by the month AADT factor of														0.90					
AADT 24-hr	103	22	360	487	1,801	42	1,110	2,954	3,441	765	10,519	134	11,421	301	10,264	1,922	12,488	23,909	27,350
Expansion Factor: Calculated by multiplying the avg 12-hour totals by the 12- to 24-hour expansion factor of														1.31					

Notes

1. Volumes include passenger vehicles and heavy vehicles (cyclists and pedestrians excluded)
2. Volumes have been rounded where factors are applied (i.e. for the rows displaying equivalent 12-hr, average 12-hr, and AADT 24-hr volumes)

Project No.: 100057

Turning Movement Count - Study Results

HAZELDEAN RD @ TERRY FOX DR

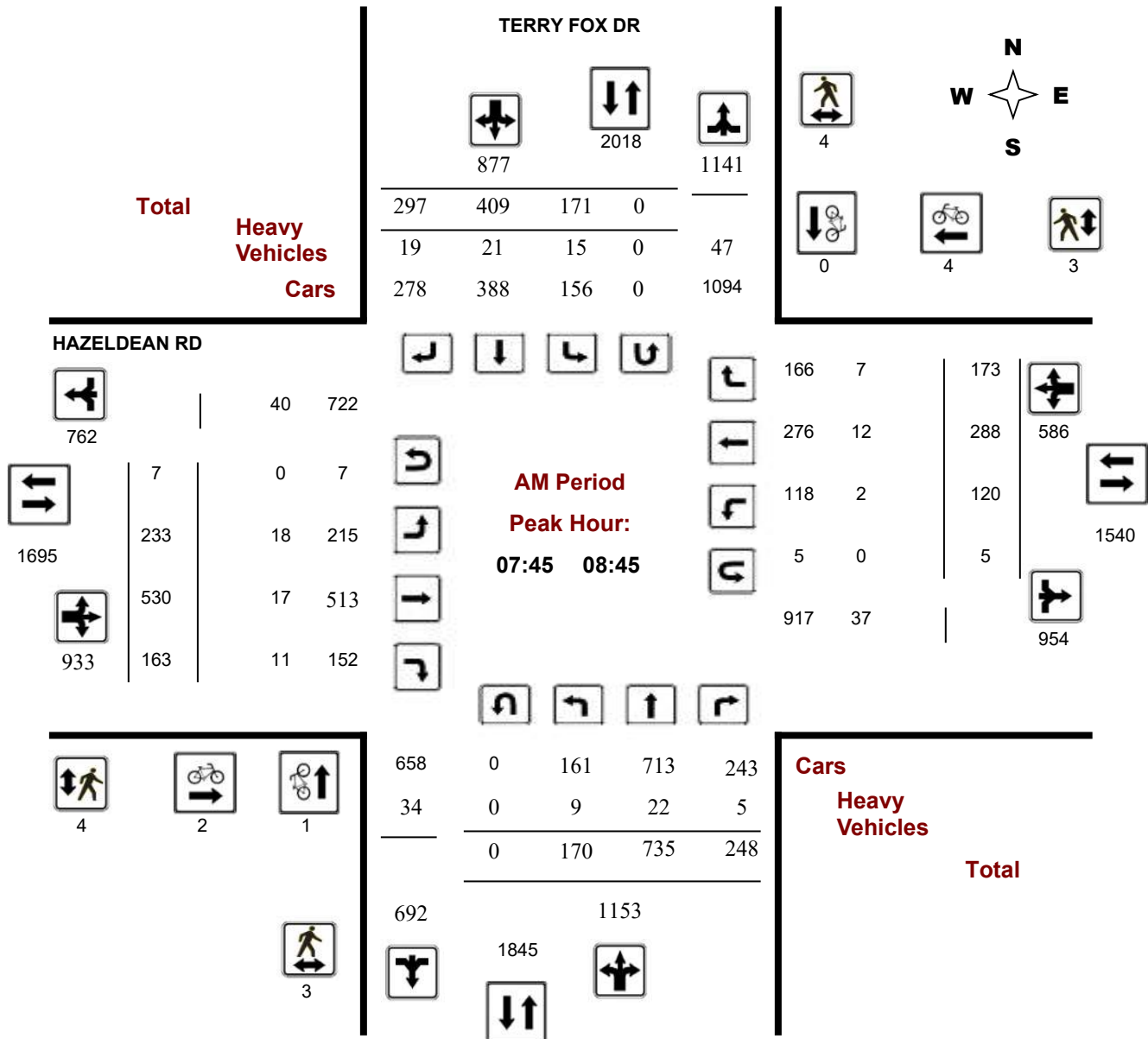
Survey Date: Tuesday, October 29, 2024

WO No: 42179

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Turning Movement Count - Study Results

HAZELDEAN RD @ TERRY FOX DR

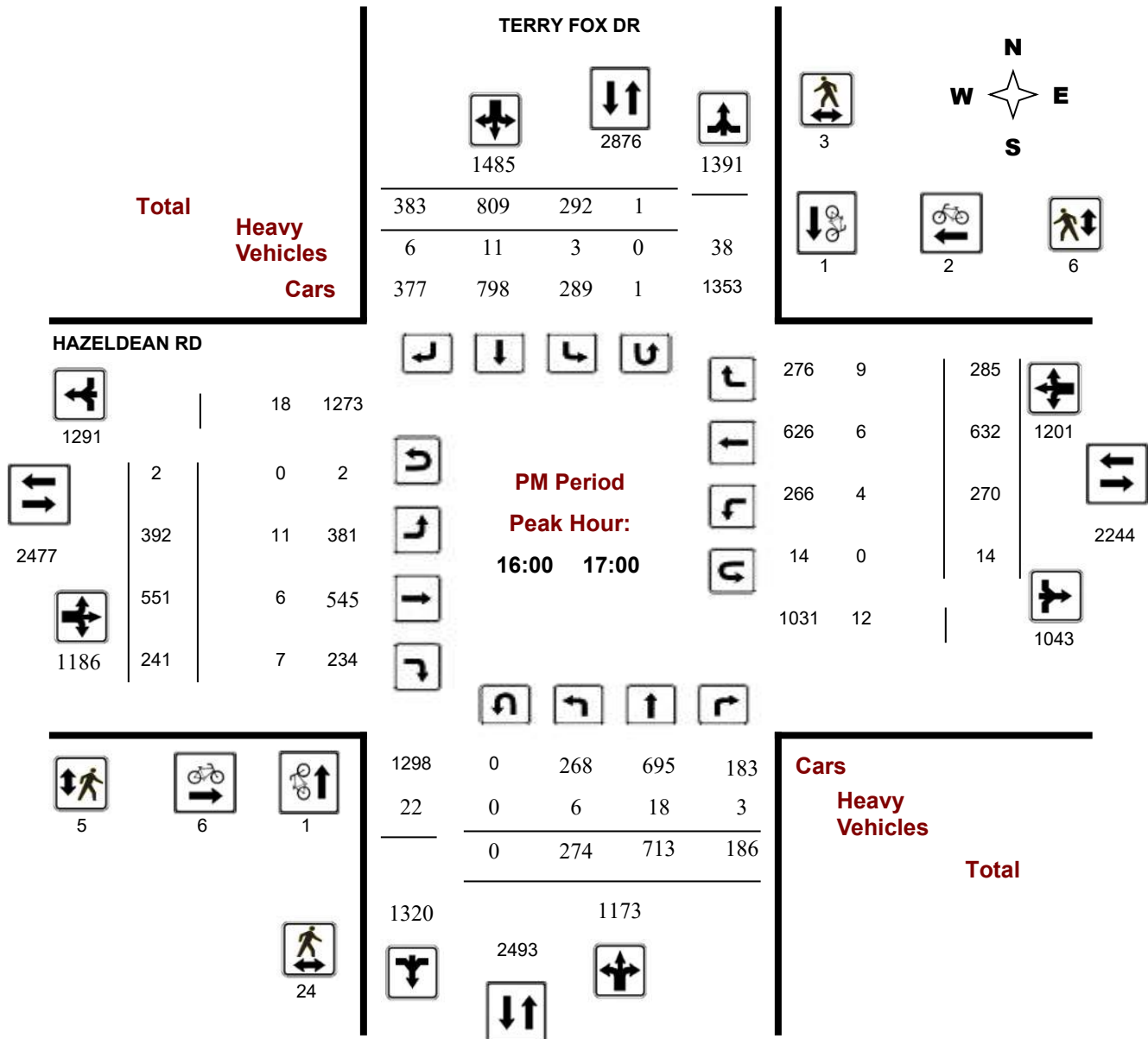
Survey Date: Tuesday, October 29, 2024

WO No: 42179

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram

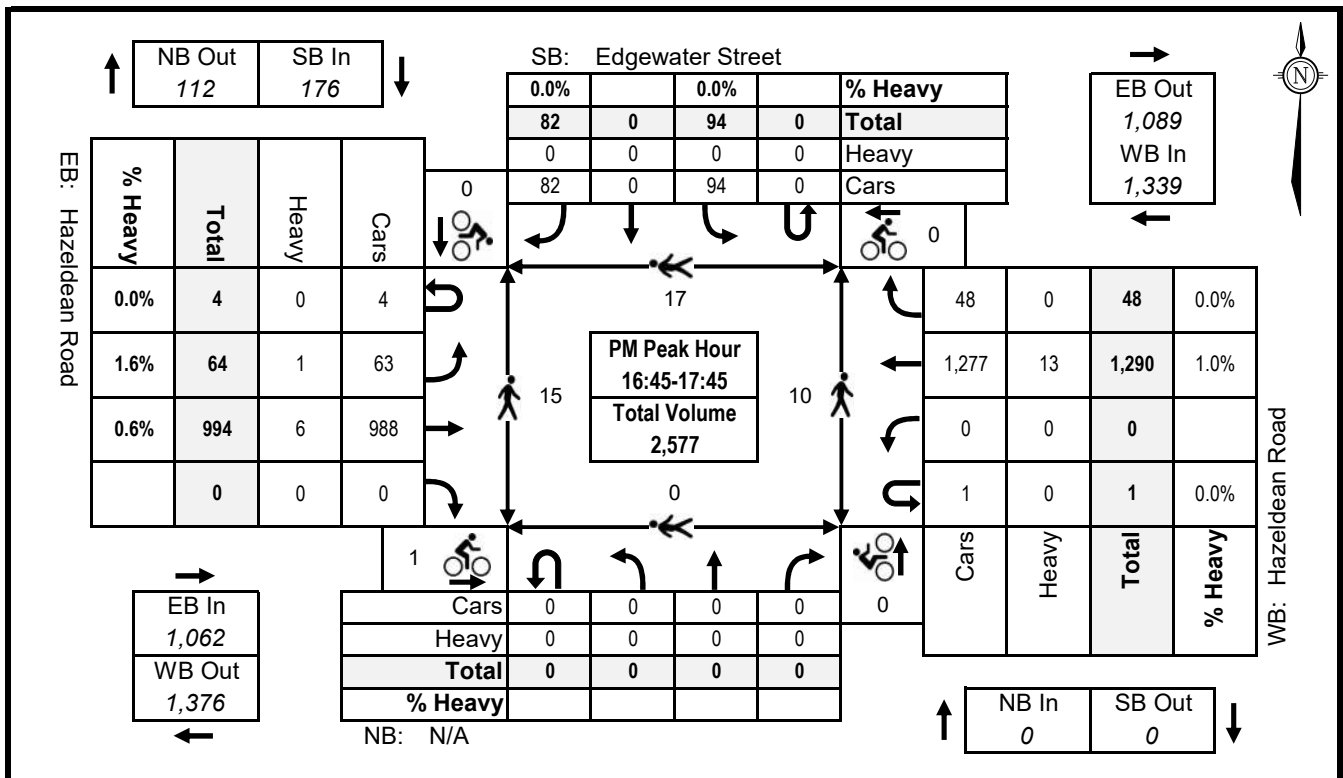
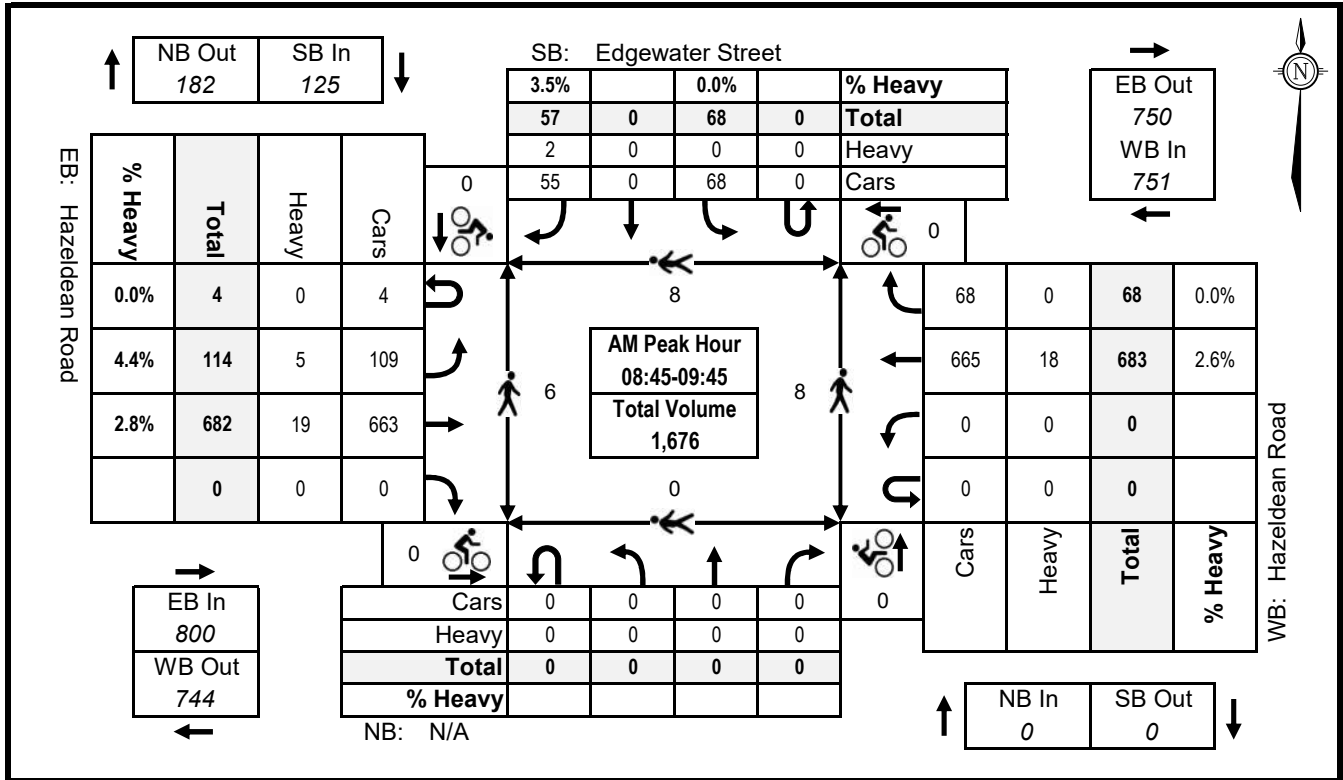


HAZELDEAN ROAD @ EDGEWATER STREET

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

Date:
Survey Hours:
Surveyor(s):

Thursday, April 10, 2025
07:00-10:00, 11:30-13:30, 15:00-18:00
J.Morris, B.Cameron

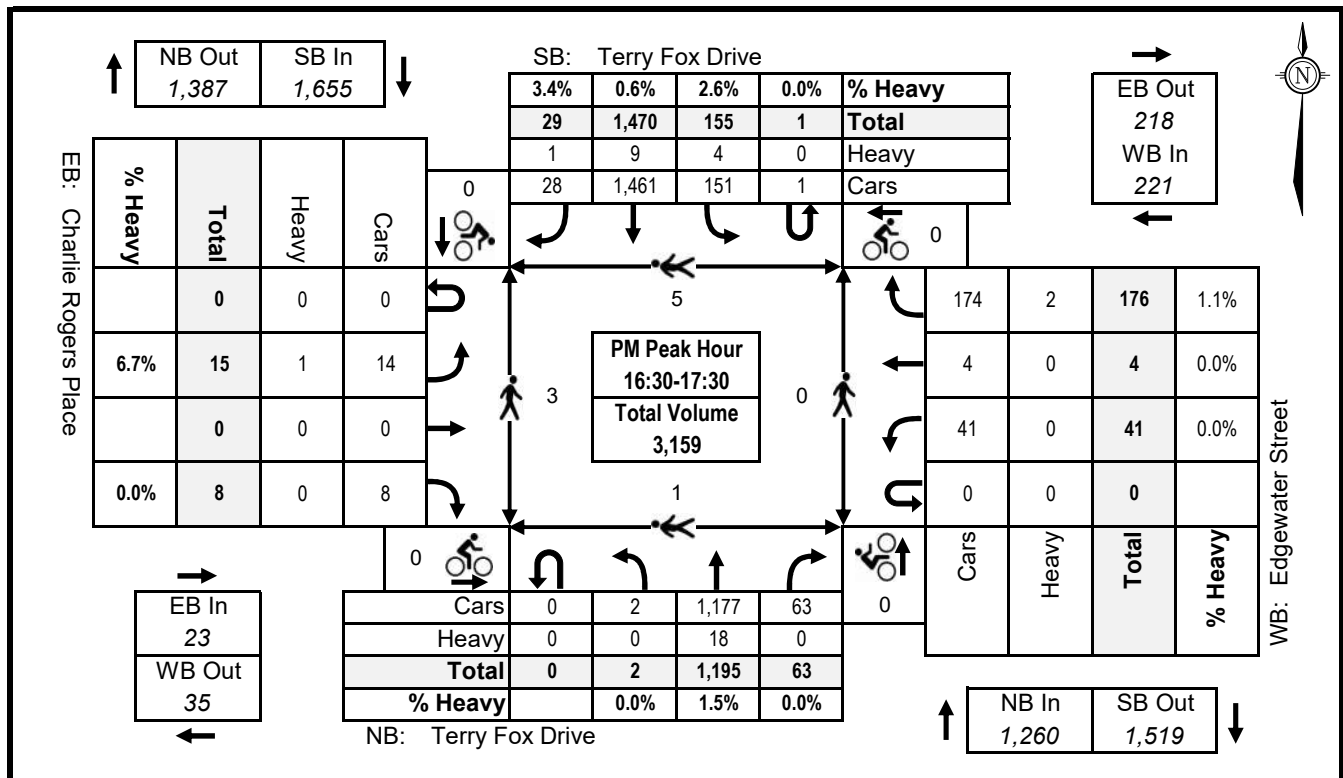
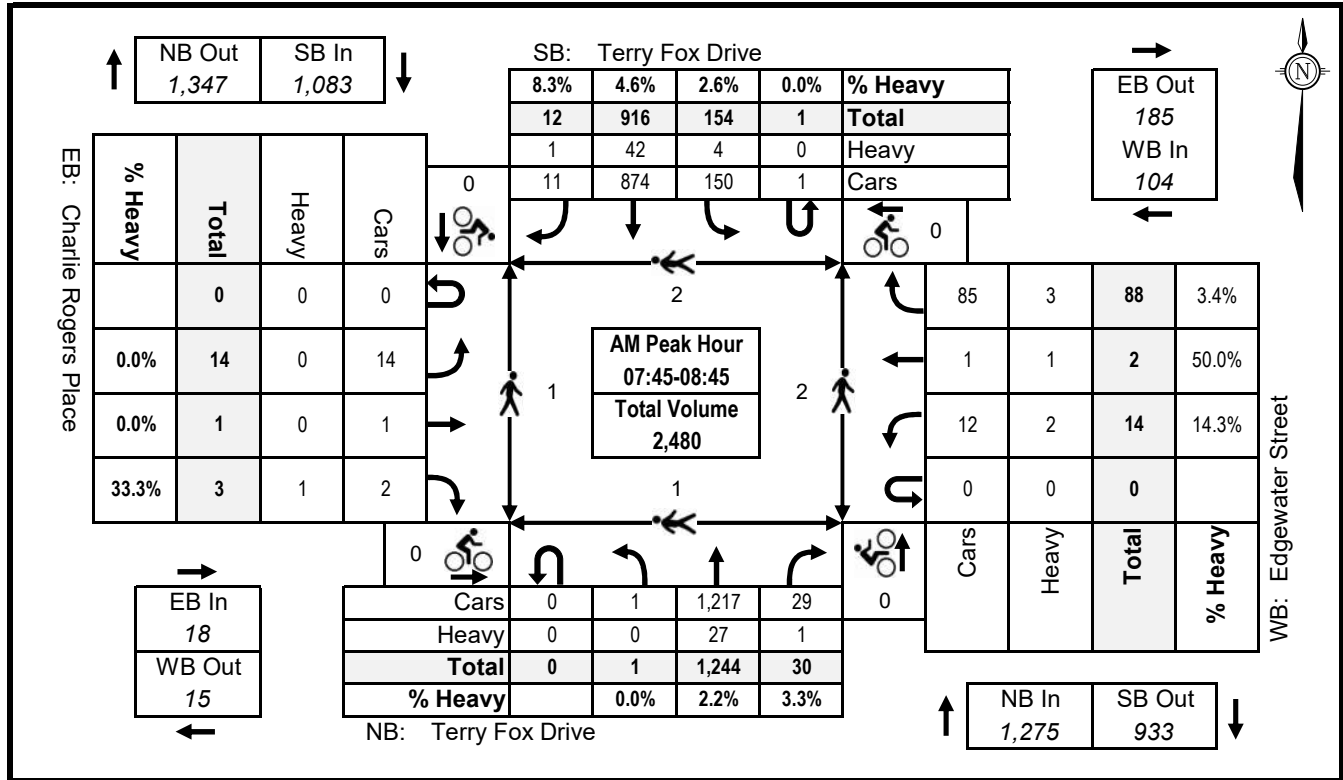


TERRY FOX DRIVE @ EDGEWATER STREET/CHARLIE ROGERS PLACE

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

Date:
Survey Hours:
Surveyor(s):

Thursday, April 10, 2025
07:00-10:00, 11:30-13:30, 15:00-18:00
J.Morris, B.Cameron



Turning Movement Count - Study Results

TERRY FOX DR @ 240 S OF EDGEWATER ST

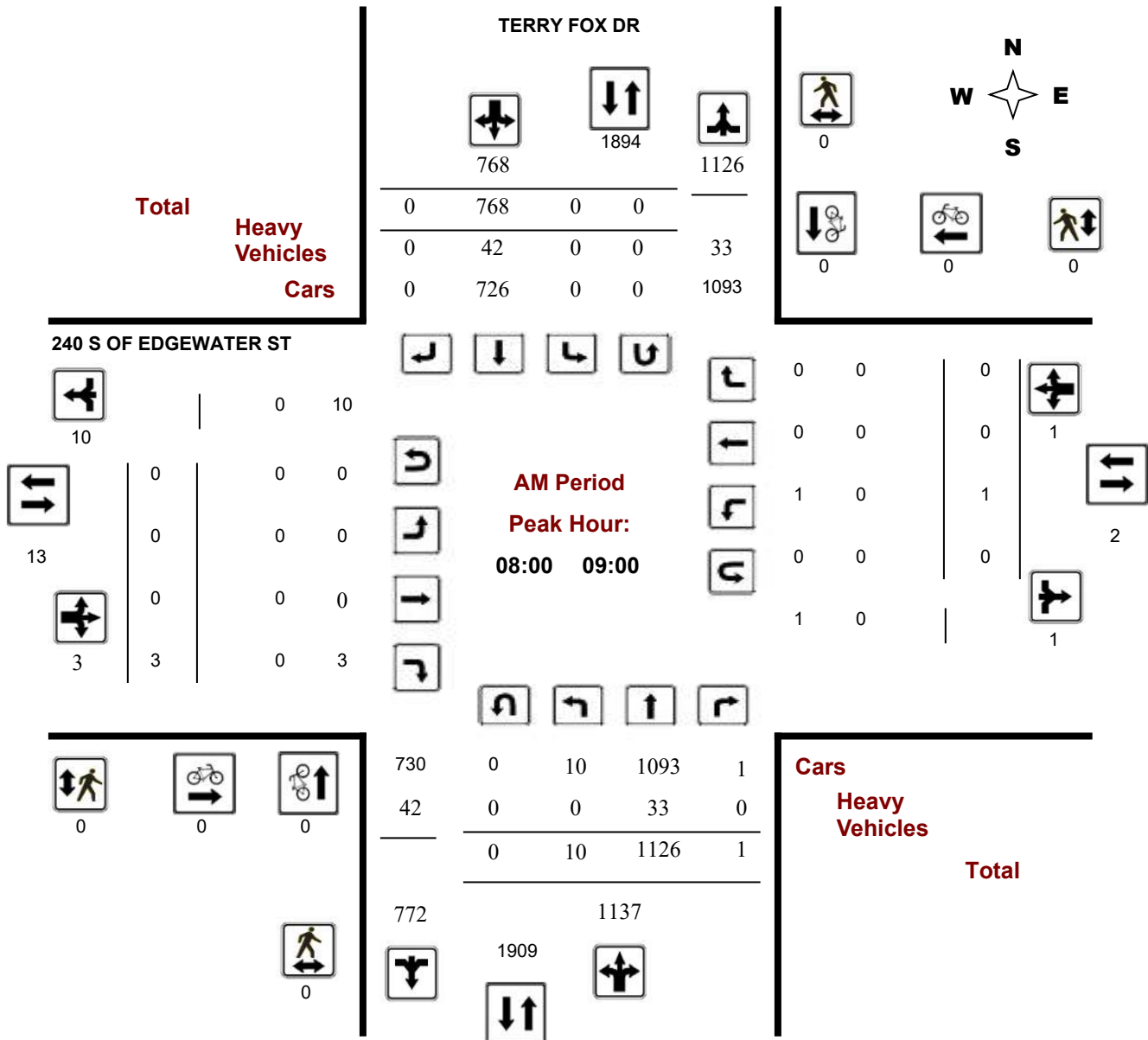
Survey Date: Tuesday, January 30, 2024

WO No: 41634

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Turning Movement Count - Study Results

TERRY FOX DR @ 240 S OF EDGEWATER ST

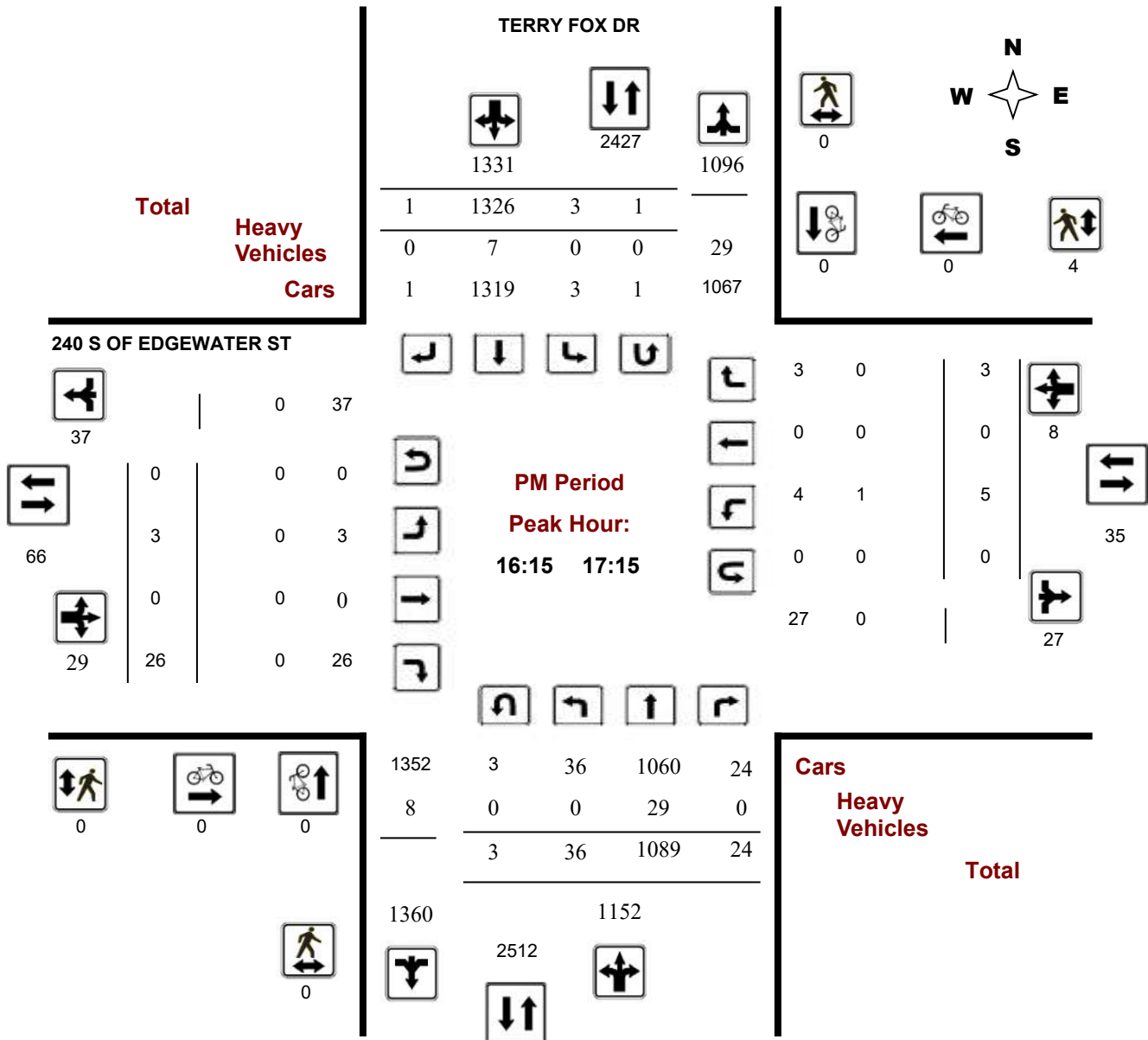
Survey Date: Tuesday, January 30, 2024

WO No: 41634

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram

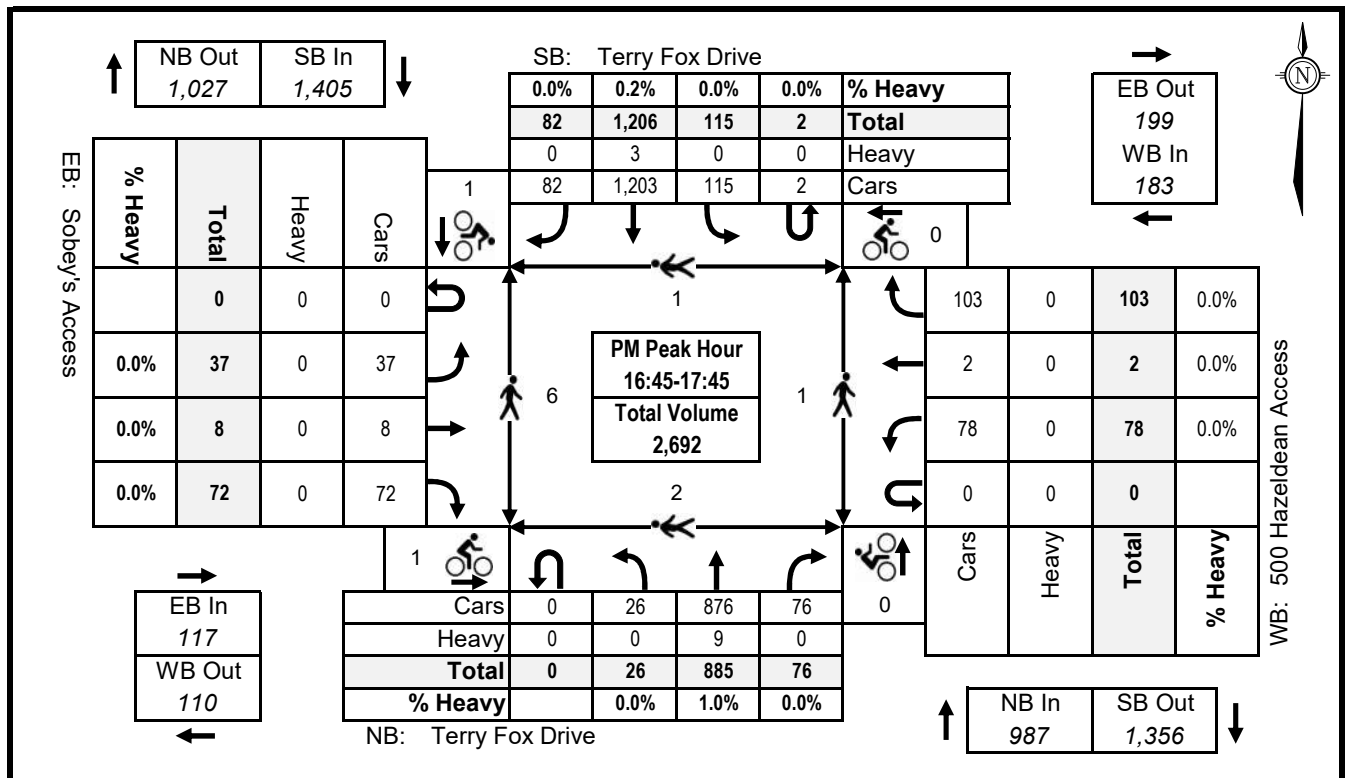
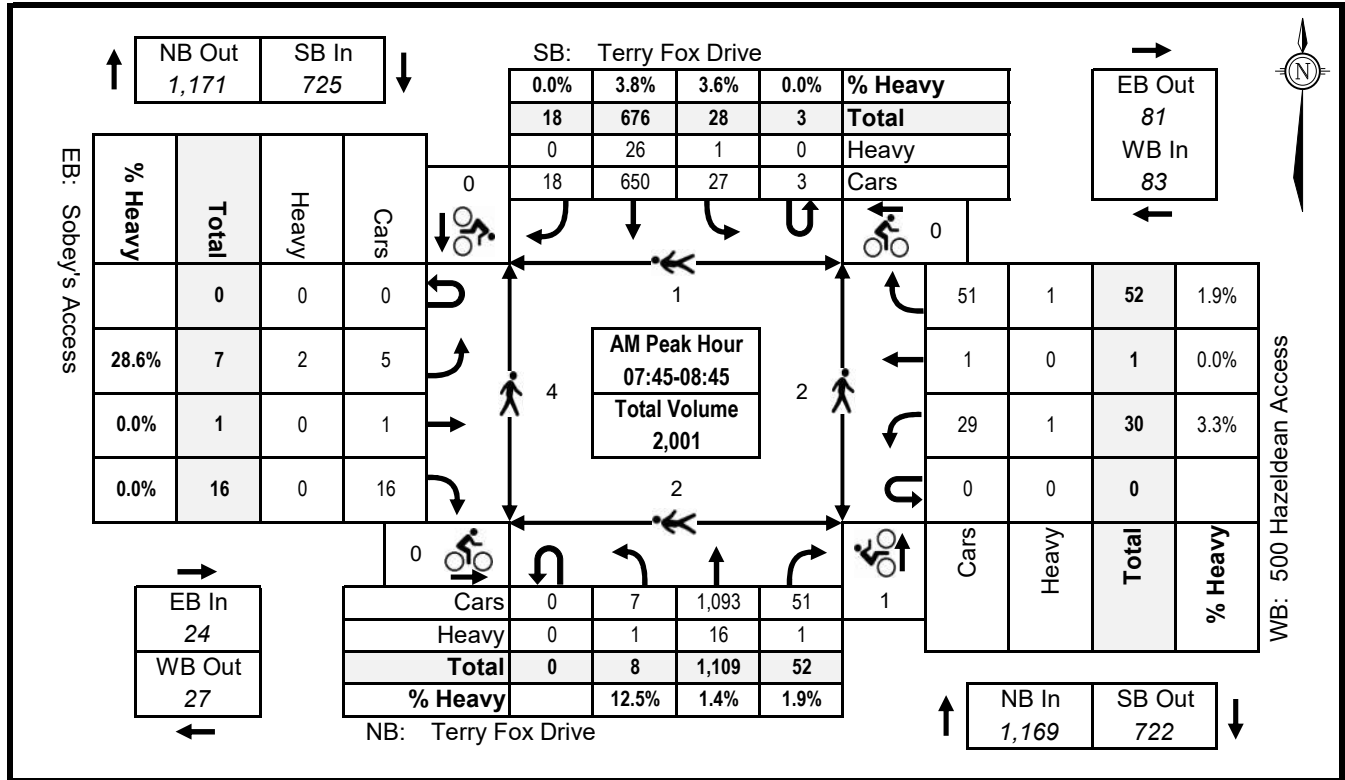


TERRY FOX DRIVE @ 130 S OF HAZELDEAN ROAD

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

Date:
Survey Hours:
Surveyor(s):

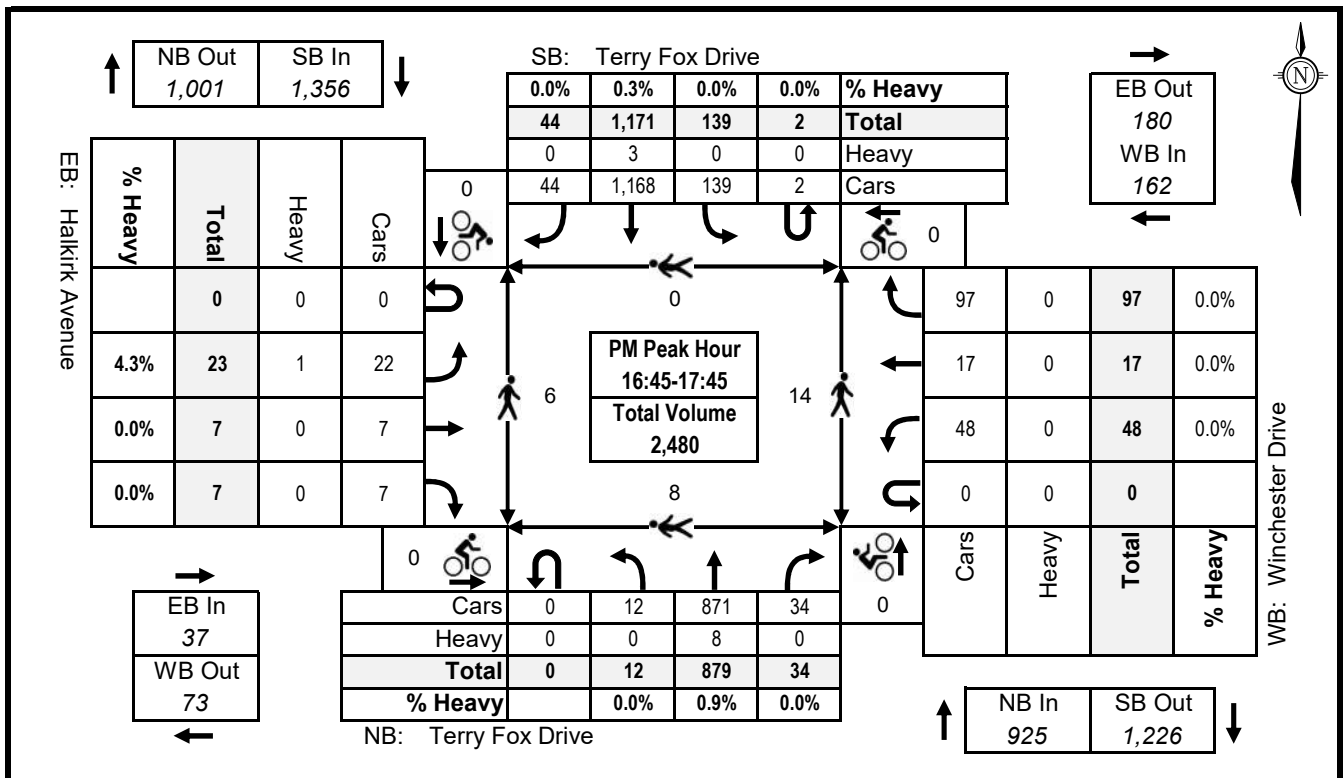
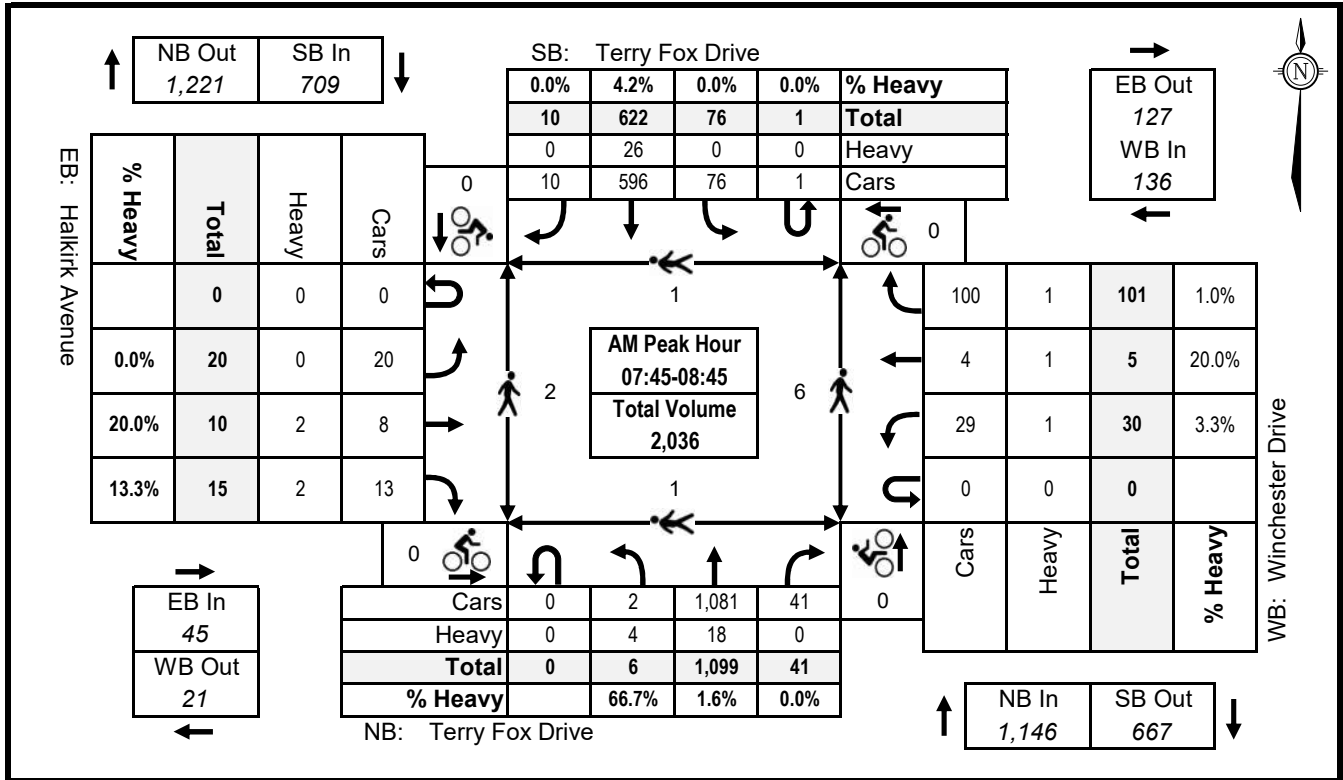
Thursday, April 10, 2025
07:00-10:00, 11:30-13:30, 15:00-18:00
J.Morris, B.Cameron



**TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES**

Date:
Survey Hours:
Surveyor(s):

Thursday, April 10, 2025
07:00-10:00, 11:30-13:30, 15:00-18:00
J.Morris, B.Cameron





Engineers, Planners & Landscape Architects

TERRY FOX DRIVE @ WINCHESTER DRIVE/HALKIRK AVENUE

TURNING MOVEMENT COUNT
8-HOUR SUMMARY (HEAVIES)

Date: Thursday, April 10, 2025
Survey Hours: 07:00-10:00, 11:30-13:30, 15:00-18:00
Surveyor(s): J.Morris, B.Cameron

Period	Terry Fox Drive				Terry Fox Drive					Halkirk Avenue				Winchester Drive					
	NORTHBOUND				SOUTHBOUND				N/S	EASTBOUND				WESTBOUND				E/W	Grand
	L	T	R	Tot	L	T	R	Tot	Tot	L	T	R	Tot	L	T	R	Tot	Tot	Tot
07:00 - 08:00	1	22	1	24	0	27	2	29	53	0	1	0	1	0	0	0	0	1	54
08:00 - 09:00	4	16	0	20	0	22	1	23	43	0	2	3	5	3	1	1	5	10	53
09:00 - 10:00	0	17	4	21	1	9	0	10	31	0	1	0	1	3	0	4	7	8	39
11:30 - 12:30	0	11	0	11	0	9	0	9	20	0	0	0	0	0	0	0	0	0	20
12:30 - 13:30	0	12	0	12	0	8	0	8	20	0	0	0	0	0	0	0	0	0	20
15:00 - 16:00	1	17	1	19	5	14	0	19	38	0	0	3	3	4	6	0	10	13	51
16:00 - 17:00	0	18	0	18	1	5	1	7	25	0	0	1	1	0	0	0	0	1	26
17:00 - 18:00	0	7	0	7	0	3	0	3	10	1	0	0	1	0	0	0	0	1	11
Subtotal	6	120	6	132	7	97	4	108	240	1	4	7	12	10	7	5	22	34	274
U-Turns				0				0					0				0		
Total	6	120	6	132	7	97	4	108	240	1	4	7	12	10	7	5	22	34	274

Project No.: 100057

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: 325 E OF HUNTMAR RD/IBER RD @ HAZELDEAN RD

Traffic Control: Traffic signal

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jan-26, Sat,17:15	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Mar-06, Fri,09:53	Snow	Turning movement	Non-fatal injury	Wet	East	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	
2020-Dec-01, Tue,17:18	Rain	Angle	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	

Location: HAZELDEAN RD @ EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 18

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
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	
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	
2020-May-09, Sat,10:25	Clear	SMV other	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Pedestrian	1
2020-Sep-13, Sun,15:30	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2021-Mar-10, Wed,16:19	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	
2021-Mar-17, Wed,03:02	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	
2021-Nov-26, Fri,12:48	Clear	Angle	P.D. only	Dry	East	Turning left	Truck and trailer	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2022-Feb-02, Wed,20:44	Rain	SMV other	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Curb	0
2022-Feb-25, Fri,09:42	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2022-Apr-08, Fri,22:20	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Curb	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-22, Thu,12:00	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ MANTRA ST/TILLAGE ST

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
2018-Feb-01, Thu,15:36	Freezing Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-14, Wed,23:20	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	
2018-Mar-19, Mon,10:30	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-21, Sun,16:04	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-06, Tue,15:50	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Delivery van	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-29, Fri,10:20	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-04, Tue,14:44	Clear	SMV other	P.D. only	Dry	South	Turning right	Automobile, station wagon	Pedestrian	1
2019-Sep-08, Sun,15:32	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Passenger van	Other motor vehicle	
2021-Dec-16, Thu,14:10	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2022-Mar-19, Sat,11:15	Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

Location: HAZELDEAN RD @ MANTRA ST/TILLAGE ST

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
2022-Aug-04, Thu,16:20	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: HAZELDEAN RD @ ROGER GRIFFITHS AVE

Traffic Control: Traffic signal

Total Collisions: 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jul-10, Tue,11:30	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-22, Sat,17:32	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-19, Tue,12:05	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-19, Tue,12:22	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Feb-27, Thu,10:40	Clear	Sideswipe	P.D. only	Loose snow	West	Changing lanes	Truck - closed	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Mar-06, Fri,14:47	Snow	Angle	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Nov-22, Sun,17:15	Snow	SMV other	P.D. only	Loose snow	West	Slowing or stopping	Pick-up truck	Skidding/sliding	0
2022-Nov-02, Wed,19:04	Clear	SMV other	Non-fatal injury	Dry	East	Turning left	Passenger van	Pedestrian	1

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
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	
2020-Jan-01, Wed,19:23	Clear	Angle	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-23, Thu,20:03	Clear	Rear end	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-10, Mon,16:05	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	
2020-Feb-15, Sat,22:03	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	
2020-Feb-20, Thu,16:35	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Mar-06, Fri,11:57	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Truck - dump	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Mar-07, Sat,16:05	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Passenger van	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Apr-04, Sat,17:50	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	
2020-Apr-26, Sun,16:16	Clear	Other	P.D. only	Dry	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2020-Jun-10, Wed,13:23	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2020-Jun-16, Tue,12:15	Clear	Turning movement	P.D. only	Dry	South	Turning left	Truck - dump	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Jun-26, Fri,15:45	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	
2020-Jul-23, Thu,14:15	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2020-Aug-14, Fri,13:30	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2020-Sep-01, Tue,14:15	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	
2020-Sep-05, Sat,13:24	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Pick-up truck	Pole (utility, power)	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Oct-17, Sat,14:22	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-29, Thu,18:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Nov-25, Wed,10:00	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Dec-04, Fri,10:50	Clear	Rear end	P.D. only	Wet	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Dec-24, Thu,12:03	Clear	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Jan-21, Thu,08:25	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2021-Feb-24, Wed,13:20	Snow	Rear end	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Unknown	Other motor vehicle	
2021-Feb-25, Thu,08:20	Snow	Rear end	P.D. only	Packed snow	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2021-Mar-24, Wed,13:38	Rain	Rear end	P.D. only	Wet	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Mar-25, Thu,10:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Apr-18, Sun,19:24	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-May-25, Tue,14:51	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-May-31, Mon,14:36	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Truck and trailer	Other motor vehicle	
2021-Jul-04, Sun,11:30	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2021-Jul-15, Thu,12:28	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2021-Aug-23, Mon,06:31	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Pick-up truck	Other motor vehicle	
2021-Sep-14, Tue,14:41	Clear	Rear end	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
					East	Turning left	Passenger van	Other motor vehicle	
2021-Sep-29, Wed,07:30	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Sep-30, Thu,20:05	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2021-Oct-03, Sun,12:46	Rain	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Skidding/sliding	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2021-Oct-19, Tue,17:46	Clear	Rear end	Non-fatal injury	Dry	East	Changing lanes	Bicycle	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Cyclist	
2021-Nov-03, Wed,14:30	Clear	Rear end	P.D. only	Dry	East	Turning left	Pick-up truck	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, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Nov-04, Thu,23:06	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Turning left	Fire vehicle	Other motor vehicle	
2021-Nov-23, Tue,15:42	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2021-Nov-23, Tue,18:45	Clear	Other	P.D. only	Dry	North	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-04, Sat,12:15	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Dec-11, Sat,14:12	Clear	Other	P.D. only	Dry	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-22, Wed,09:55	Snow	Sideswipe	P.D. only	Slush	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-Jan-06, Thu,12:00	Clear	Rear end	P.D. only	Slush	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2022-Jan-27, Thu,18:00	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Feb-05, Sat,15:10	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2022-Feb-12, Sat,10:50	Snow	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2022-Feb-18, Fri,21:48	Snow	Rear end	P.D. only	Packed snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-Mar-06, Sun,06:34	Clear	SMV other	P.D. only	Dry	South	Unknown	Automobile, station wagon	Pole (utility, power)	0
2022-Mar-31, Thu,18:15	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Apr-08, Fri,17:35	Clear	Turning movement	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2022-Apr-15, Fri,16:00	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	
2022-Apr-22, Fri,13:00	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	
2022-Apr-23, Sat,13:05	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	
2022-Apr-27, Wed,11:05	Snow	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-May-01, Sun,16:05	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2022-May-10, Tue,17:55	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Jun-27, Mon,09:13	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Aug-06, Sat,17:00	Clear	Turning movement	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2022-Sep-10, Sat,20:20	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	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-Sep-14, Wed,19:40	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Oct-28, Fri,16:00	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Nov-02, Wed,12:50	Clear	Rear end	P.D. only	Dry	South	Stopped	Passenger van	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2022-Nov-03, Thu,19:00	Clear	Rear end	P.D. only	Dry	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-05, Sat,18:30	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Nov-07, Mon,06:50	Clear	Rear end	P.D. only	Dry	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-09, Wed,08:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-09, Wed,11:10	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Unknown	Other motor vehicle	
2022-Nov-09, Wed,12:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Nov-12, Sat,09:20	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Changing lanes	Automobile, station wagon	Other motor vehicle	
2022-Nov-17, Thu,09:15	Snow	Turning movement	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2022-Nov-28, Mon,10:45	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	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, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 128

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-Dec-14, Wed,12:30	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	
2022-Dec-30, Fri,18:25	Drifting Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other	

Location: HAZELDEAN RD btwn 325 E OF HUNTMAR DR/IBER RD & ROGER GRIFFITHS AVE

Traffic Control: No control

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Apr-26, Mon,11:56	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	

Location: HAZELDEAN RD btwn 635 E OF HUNTMAR DR/IBER RD & 780 W OF TERRY FOX DR

Traffic Control: No control

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Mar-24, Tue,17:10	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	

Location: HAZELDEAN RD btwn 780 W OF TERRY FOX DR & KINCARDINE DR

Traffic Control: No control

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jun-29, Fri,12:43	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Mar-23, Sat,18:12	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Jul-26, Fri,14:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD btwn 780 W OF TERRY FOX DR & KINCARDINE DR

Traffic Control: No control

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-31, Wed,18:26	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	

Location: HAZELDEAN RD btwn KINCARDINE DR & TERRY FOX DR

Traffic Control: No control

Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-18, Sun,13:30	Clear	Angle	P.D. only	Dry	North	Turning right	Passenger van	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2018-Dec-04, Tue,12:18	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Passenger van	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2019-May-28, Tue,19:28	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jun-03, Wed,17:00	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Jun-11, Thu,12:00	Clear	Angle	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2022-Feb-12, Sat,09:02	Snow	Angle	Non-fatal injury	Loose snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2022-Dec-22, Thu,18:00	Snow	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: HAZELDEAN RD btwn TERRY FOX DR & EDGEWATER ST

Traffic Control: No control

Total Collisions: 3

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: HAZELDEAN RD btwn TERRY FOX DR & EDGEWATER ST

Traffic Control: No control

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Nov-14, Wed,12:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-28, Wed,13:37	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-Jan-26, Sat,12:30	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

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

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
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	
2020-Feb-15, Sat,11:05	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-25, Tue,16:17	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	
2020-Feb-29, Sat,16:56	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Aug-14, Fri,16:00	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

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

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
2020-Sep-11, Fri,14:42	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Bicycle	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Cyclist	
2022-Jan-01, Sat,16:01	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	
2022-May-15, Sun,20:00	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ 240 S OF EDGEWATER ST

Traffic Control: Traffic signal

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Feb-17, Wed,15:37	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	
					South	Stopped	Pick-up truck	Other motor vehicle	
2021-Aug-01, Sun,15:10	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-Jun-16, Thu,11:20	Clear	Turning movement	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ EDGEWATER ST/CHARLIE ROGERS PL

Traffic Control: Traffic signal

Total Collisions: 40

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: TERRY FOX DR @ EDGEWATER ST/CHARLIE ROGERS PL

Traffic Control: Traffic signal

Total Collisions: 40

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

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: TERRY FOX DR @ EDGEWATER ST/CHARLIE ROGERS PL

Traffic Control: Traffic signal

Total Collisions: 40

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
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	
2020-Feb-24, Mon,14:02	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Sep-15, Tue,07:31	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Oct-08, Thu,14:23	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2020-Oct-19, Mon,12:08	Rain	Turning movement	P.D. only	Wet	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Delivery van	Other motor vehicle	
2020-Dec-08, Tue,17:26	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2021-Mar-30, Tue,11:00	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Apr-29, Thu,14:49	Clear	Rear end	Non-fatal injury	Dry	North	Overtaking	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-May-21, Fri,19:06	Clear	Turning movement	Non-fatal injury	Dry	North	Going ahead	Motorcycle	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2021-Sep-24, Fri,14:00	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Oct-01, Fri,14:55	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	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, 2018 **To:** December 31, 2022

Location: TERRY FOX DR @ EDGEWATER ST/CHARLIE ROGERS PL

Traffic Control: Traffic signal

Total Collisions: 40

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Oct-08, Fri,11:33	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Nov-24, Wed,07:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Dec-01, Wed,09:50	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	
2021-Dec-13, Mon,12:18	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-18, Sat,20:35	Snow	Sideswipe	P.D. only	Loose snow	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2022-Jan-23, Sun,13:25	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2022-Mar-02, Wed,10:50	Clear	Rear end	P.D. only	Slush	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Aug-10, Wed,07:40	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	
2022-Aug-22, Mon,13:10	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Sep-13, Tue,08:45	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Oct-04, Tue,11:56	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-Oct-18, Tue,13:15	Clear	Rear end	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: TERRY FOX DR @ EDGEWATER ST/CHARLIE ROGERS PL

Traffic Control: Traffic signal

Total Collisions: 40

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-Nov-18, Fri,15:00	Clear	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2022-Dec-08, Thu,12:15	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2022-Dec-20, Tue,16:45	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ HALKIRK AVE/WINCHESTER DR

Traffic Control: Traffic signal

Total Collisions: 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Mar-13, Tue,13:38	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Apr-20, Fri,22:13	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-27, Sat,23:34	Freezing Rain	Rear end	P.D. only	Slush	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-16, Sun,11:30	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	
2018-Dec-26, Wed,08:56	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-25, Fri,11:34	Clear	Rear end	Non-fatal injury	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Mar-07, Thu,18:49	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, 2018 **To:** December 31, 2022

Location: TERRY FOX DR @ HALKIRK AVE/WINCHESTER DR

Traffic Control: Traffic signal

Total Collisions: 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Oct-22, Tue, 17:00	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-21, Thu, 16:25	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Truck-other	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-12, Sun, 13:59	Snow	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-26, Wed, 21:05	Clear	Rear end	P.D. only	Loose snow	North	Unknown	Pick-up truck	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	
2020-May-26, Tue, 17:59	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2020-Dec-11, Fri, 16:20	Clear	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-May-01, Sat, 12:01	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2021-Jul-31, Sat, 21:51	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Sep-13, Mon, 13:17	Clear	SMV other	P.D. only	Dry	North	Turning right	Automobile, station wagon	Curb	0
2021-Dec-03, Fri, 15:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2022-Jan-28, Fri, 18:30	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: TERRY FOX DR @ HALKIRK AVE/WINCHESTER DR

Traffic Control: Traffic signal

Total Collisions: 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Nov-03, Thu,06:55	Clear	Rear end	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-15, Tue,08:40	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2022-Nov-15, Tue,08:40	Clear	Angle	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR btwn 135 S OF HAZELDEAN RD & HALKIRK AVE

Traffic Control: No control

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-01, Mon,22:35	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	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	
2019-Dec-13, Fri,18:12	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2020-Jan-18, Sat,10:11	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Sep-28, Tue,15:32	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: TERRY FOX DR btwn 240 S OF EDGEWATER ST/CHARLIE ROGERS PL & EDGEWATER ST/CHARLIE ROGERS PL

Traffic Control: No control

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jun-12, Tue,16:38	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-16, Sat,17:17	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Jul-19, Mon,07:42	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Truck - dump	Other motor vehicle	0
					South	Stopped	Municipal transit bus	Other motor vehicle	
2021-Oct-06, Wed,17:01	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Municipal transit bus	Other motor vehicle	

Location: TERRY FOX DR btwn 240 S OF EDGEWATER ST/CHARLIE ROGERS PL & HAZELDEAN RD

Traffic Control: No control

Total Collisions: 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jul-03, Wed,17:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Oct-08, Thu,12:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-01, Thu,18:00	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR btwn HAZELDEAN RD & 135 S OF HAZELDEAN RD

Traffic Control: No control

Total Collisions: 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Dec-11, Tue,22:04	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2018 **To:** December 31, 2022

Location: TERRY FOX DR btwn HAZELDEAN RD & 135 S OF HAZELDEAN RD

Traffic Control: No control

Total Collisions: 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-30, Sun,11:25	Snow	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Nov-20, Fri,17:24	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2021-Jul-15, Thu,13:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-03, Thu,18:10	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	
					North	Stopped	Automobile, station wagon	Other motor vehicle	

APPENDIX F

Other Area Developments

1.0 SCREENING

1.1 Introduction

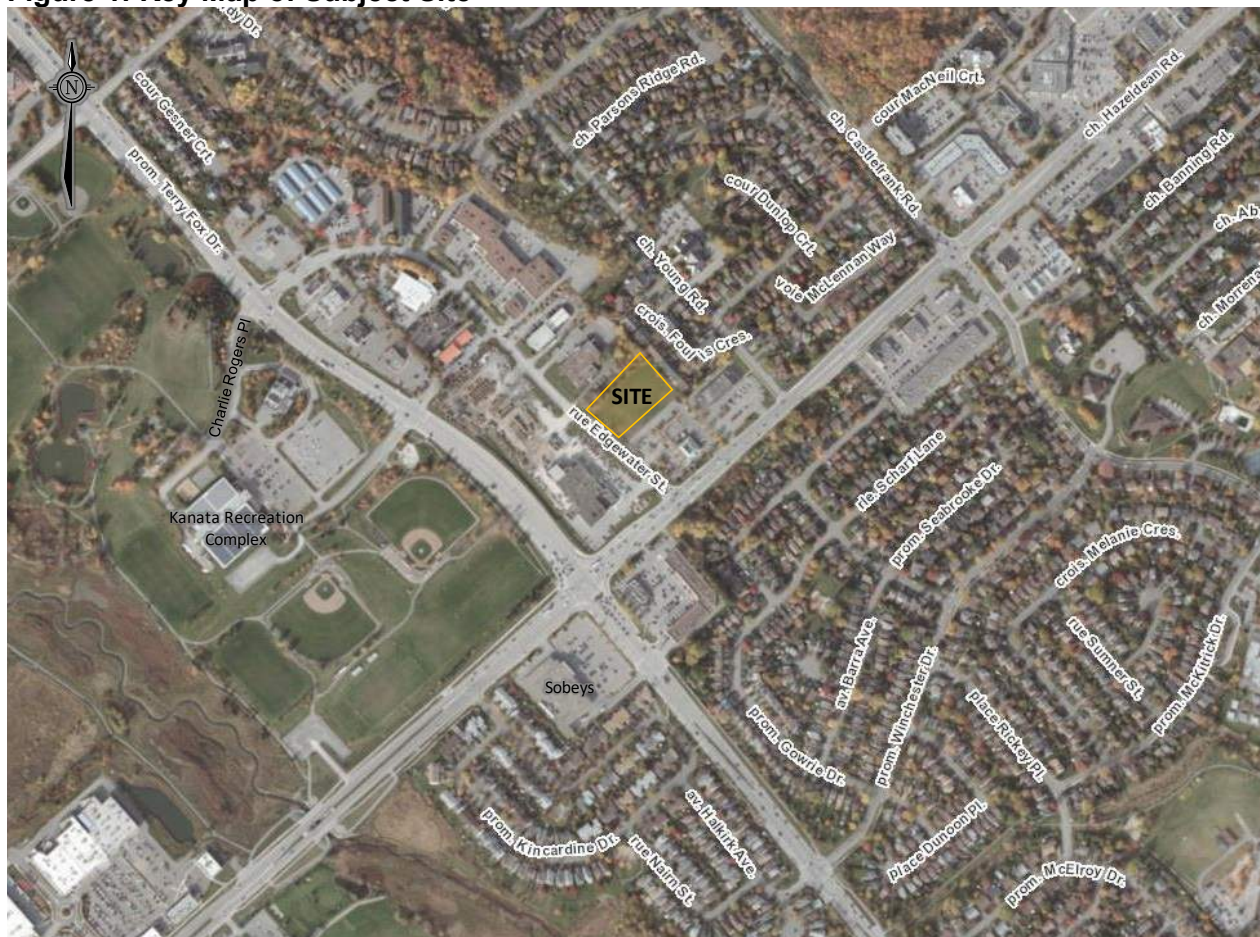
This revised Transportation Impact Assessment (TIA) report has been prepared in support of Zoning Amendment and Site Plan applications for 16 Edgewater Street.

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

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

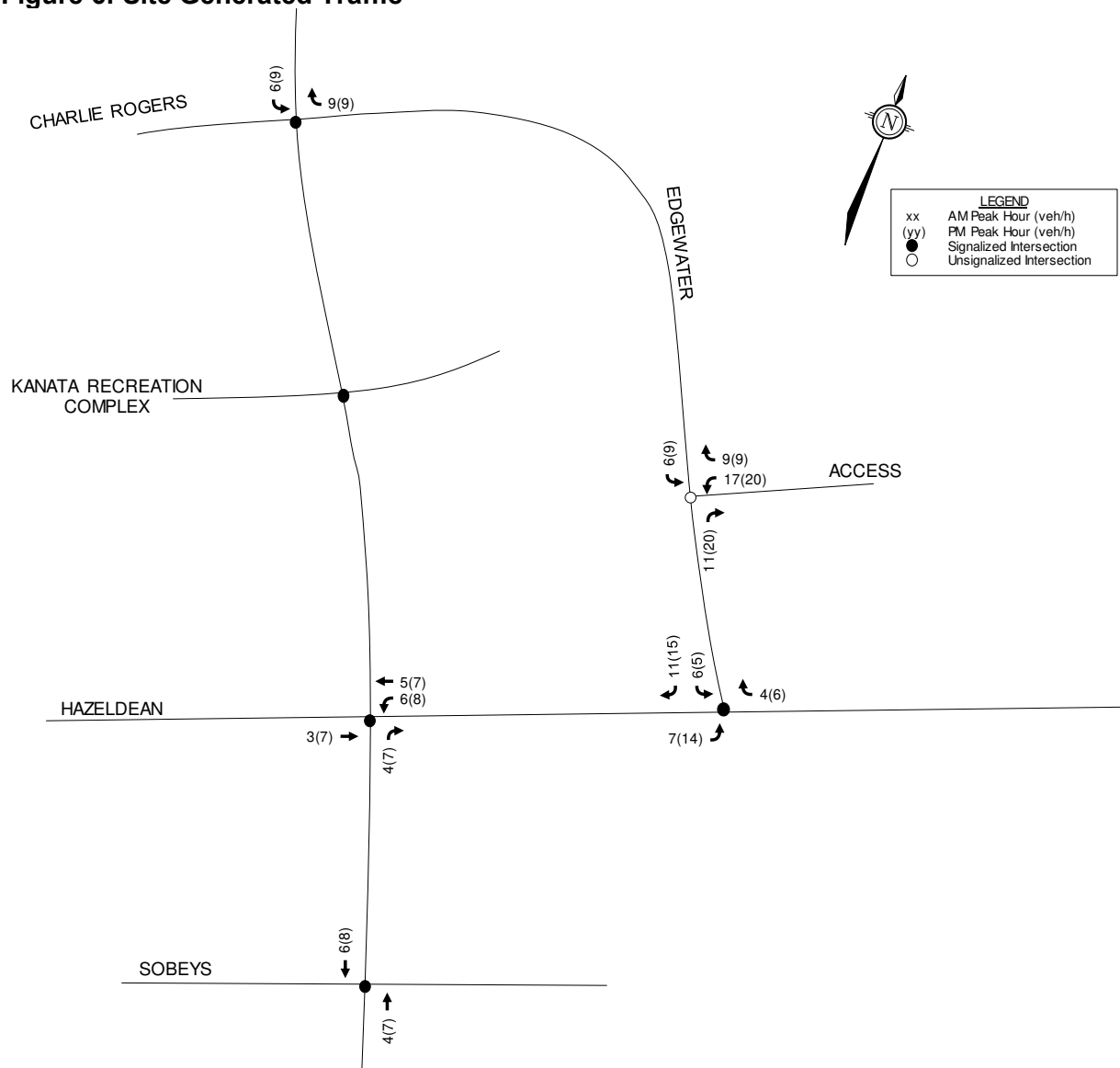
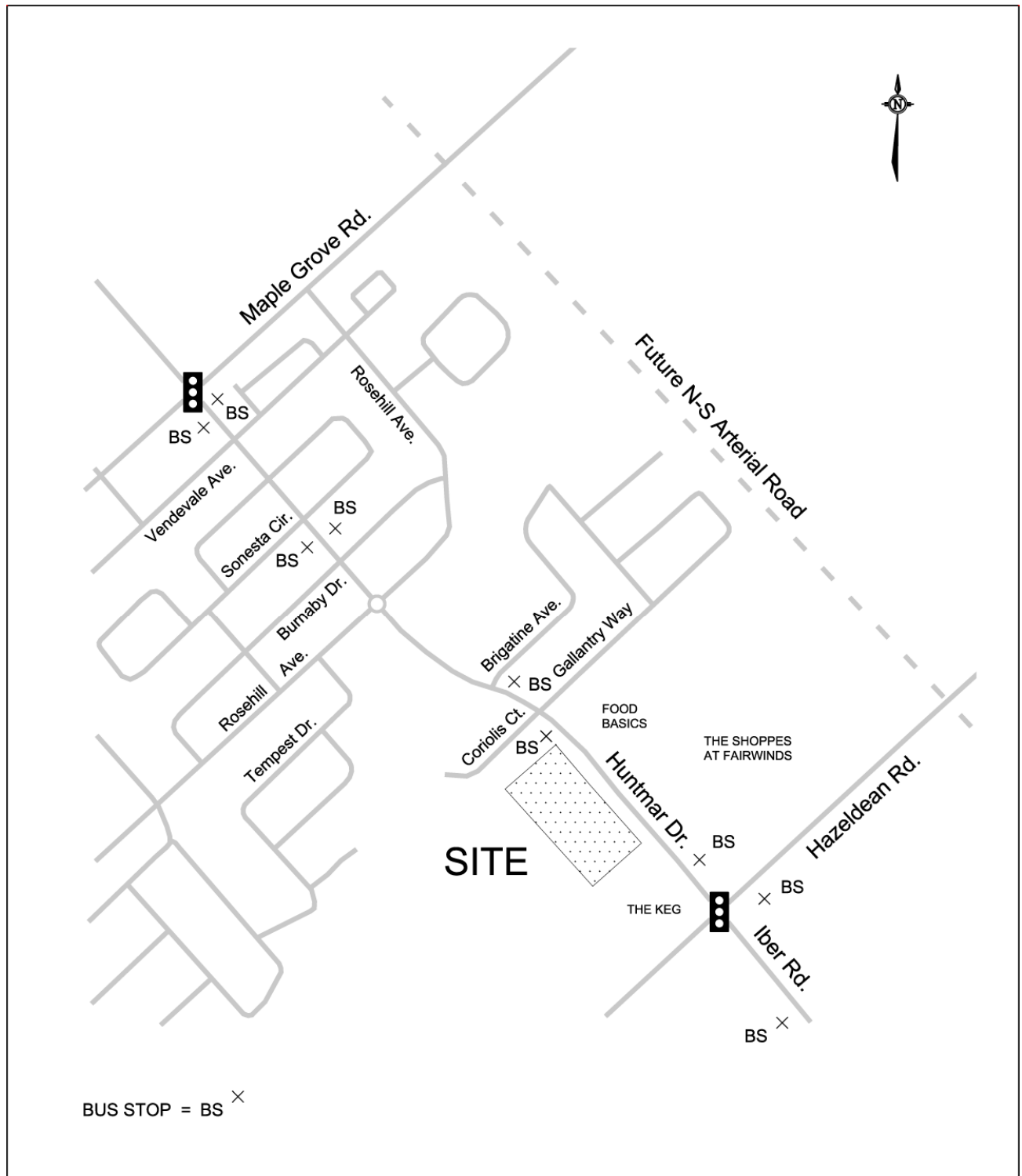
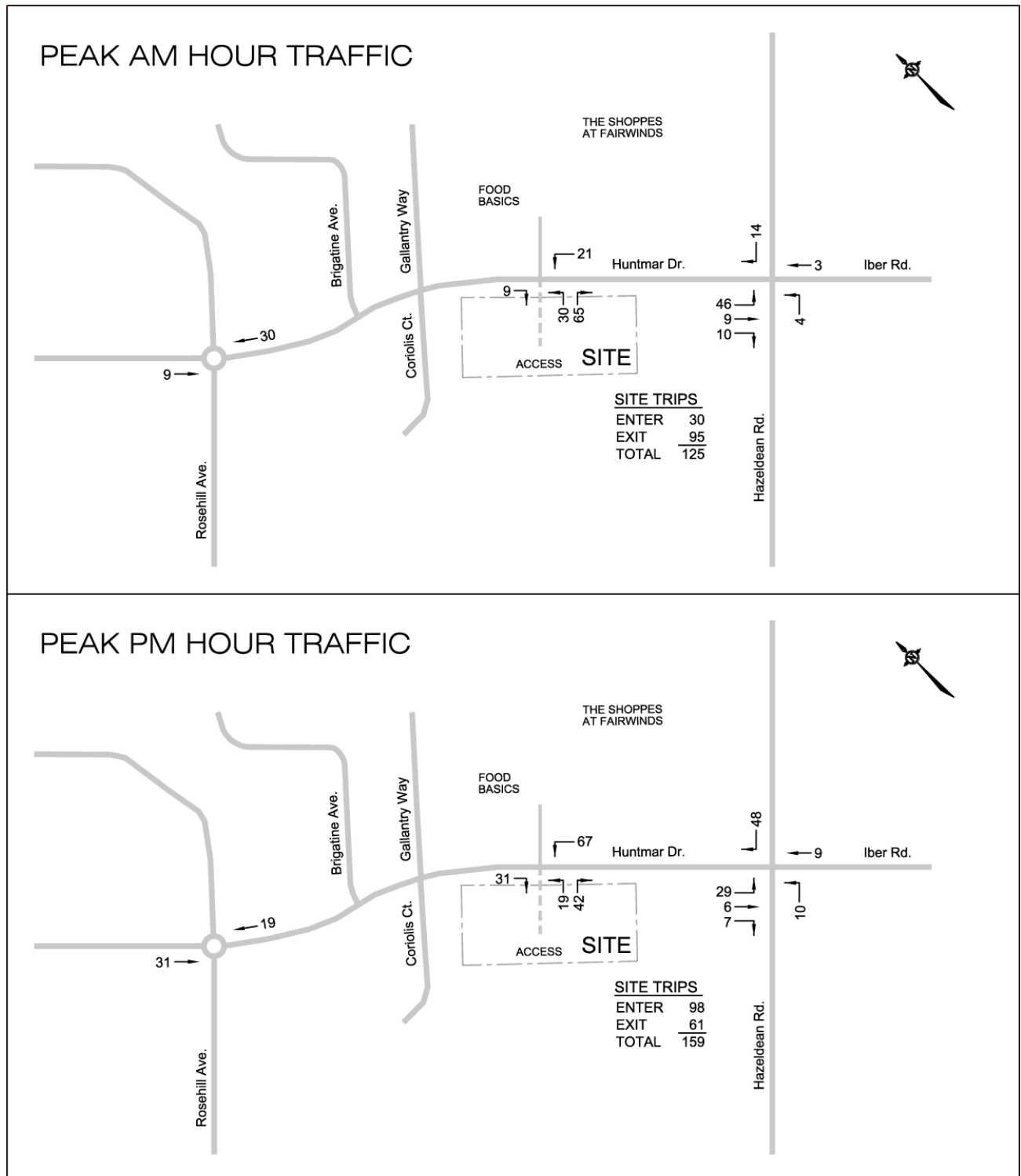


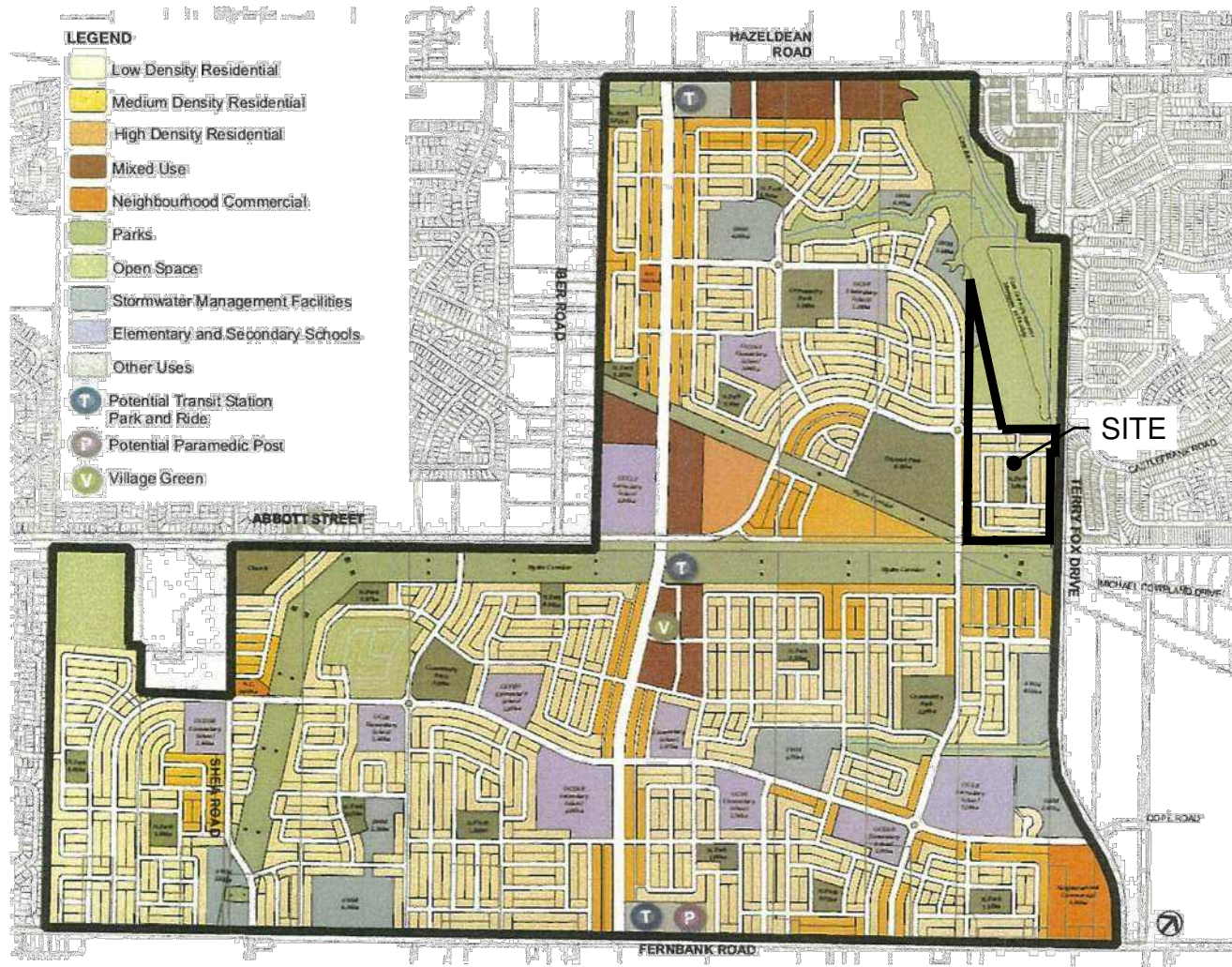
FIGURE 2.1
SITE LOCATION PLAN



NOT TO SCALE

FIGURE 3.1
PEAK AM AND PM HOUR SITE GENERATED TRIPS





NOVATECH

Engineers, Planners & Landscape Architects

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

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

3558584 CANADA INC.
(SPB DEVELOPMENTS INC.)

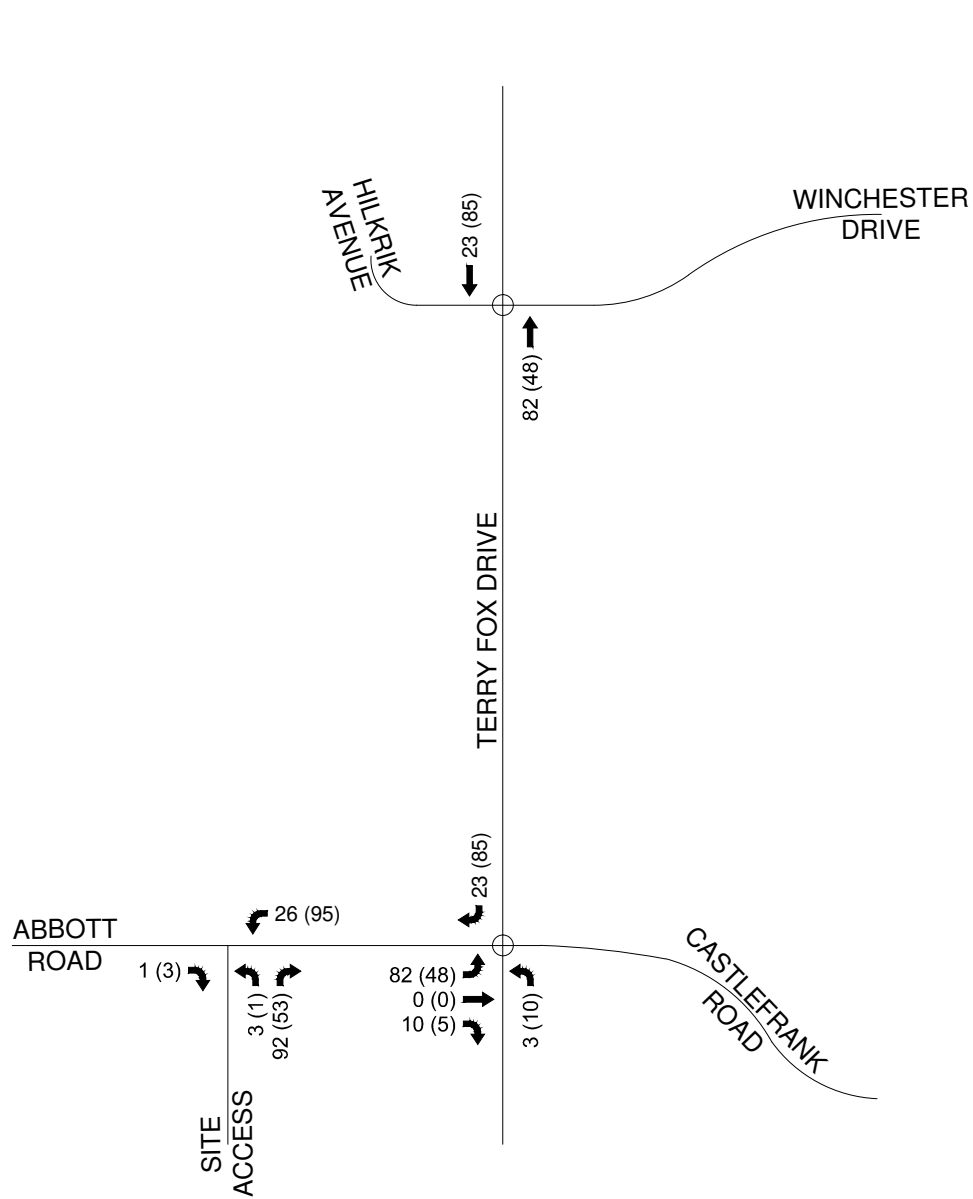
FERNBANK COMMUNITY
DESIGN PLAN

JUN 2014

110037

FIGURE 1

M:\2010\110037\CAD\Design\110037-T.dwg, FIGURE 4, Jul 24, 2014 - 11:04am, lseely



LEGEND

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



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3558584 CANADA INC.
(SPB DEVELOPMENTS INC.)

TOTAL PEAK HOUR SITE
TRAFFIC VOLUMES

JUN 2014

110037

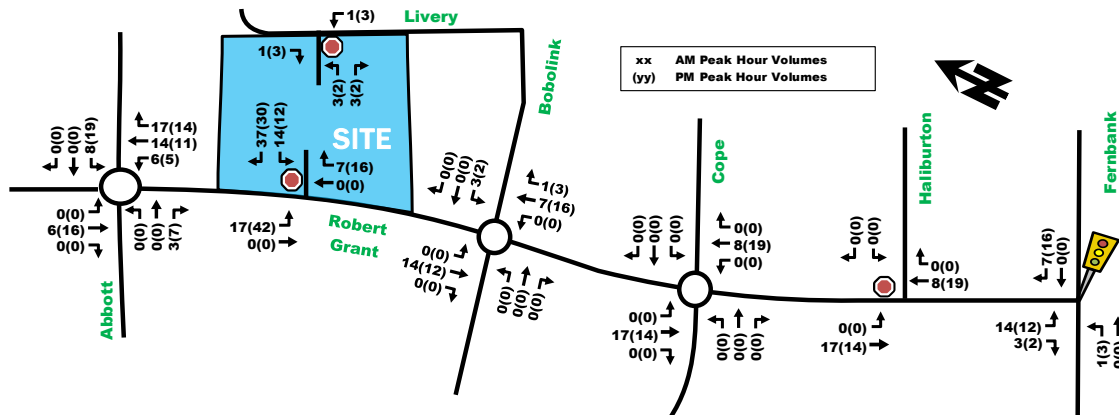
FIGURE 4

Figure 1: Local Context



The anticipated 'new' auto trips for the proposed development from **Table 8** were then assigned to the road network with the distribution shown above, as shown in **Figure 17**, for the total site-generated traffic for TRANS mode share.

Figure 17: Site-Generated Traffic Using TRANS Mode Shares



3.2. Background Network Traffic

3.2.1. Transportation Network Plans

Refer to **Section 2.1.3: Planned Conditions**.

3.2.2. Background Growth and Other Area Developments

The Stittsville district and areas south of the development are still ripe for future growth, with farm fields and empty lots destined for suburban developments. As described in **Section 2.1.3**, there are significant number of new developments proposed. A large amount of these future developments have been documented and will be layered on individually. Some parcels have a general proposed land use but have not been refined or finalized, with no future traffic volumes forecasted yet.

Overall, all the possible developable areas within a 1km radius have been captured in other area developments as shown in **Section 2.1.3**. Today, there are limited transit options available within the study area, promoting driving behaviors. Once the area matures and transit services increase, it is anticipated that less people will drive within the study area. For this reason, a 0% annual growth rate is considered adequate given that all known other area developments within the 1km radius have been accounted for in background volumes and commuting habits will likely change over time, conducive to other modes of transportation that are not driving.

3.2.3. Future Background Volumes

The total number of new other area development vehicle trips projected to use study area intersections have been illustrated in **Figure 18** and **Figure 19** for 2025 and 2030 respectively.

1.0 INTRODUCTION

This combined Community Transportation Study (CTS) and Transportation Impact Study (TIS) has been prepared in support of Zoning By-Law Amendment and Draft Plan of Subdivision applications for the lands located at 5618 Hazeldean Road. The subject lands are shown in **Figures 1** and **2** below and are henceforth referred to as the Kizell Lands.

Figure 1: Local Area Context



Figure 2: Hazeldean Road Context



Figure 6: Site Generated Traffic Volumes – Scenario One

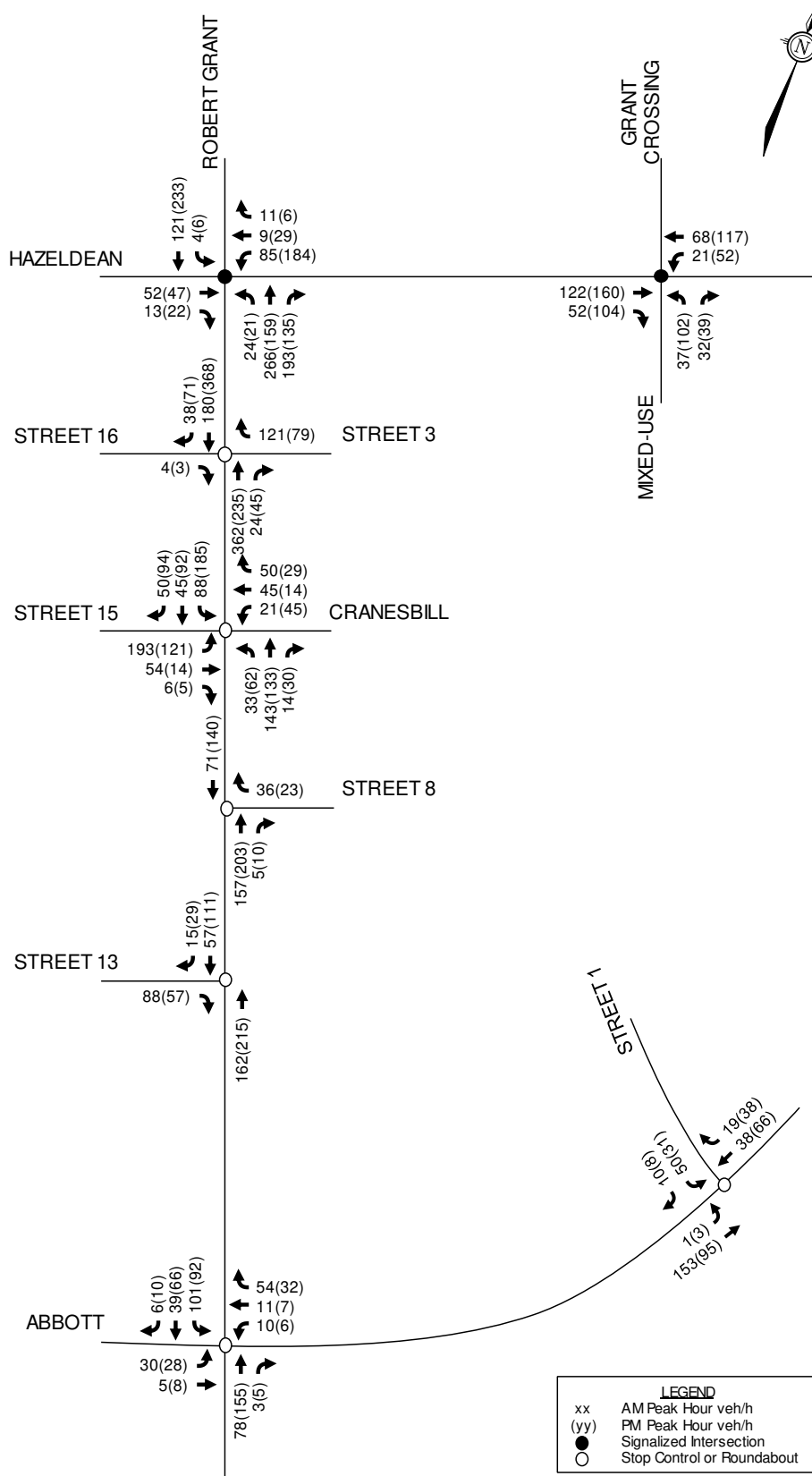
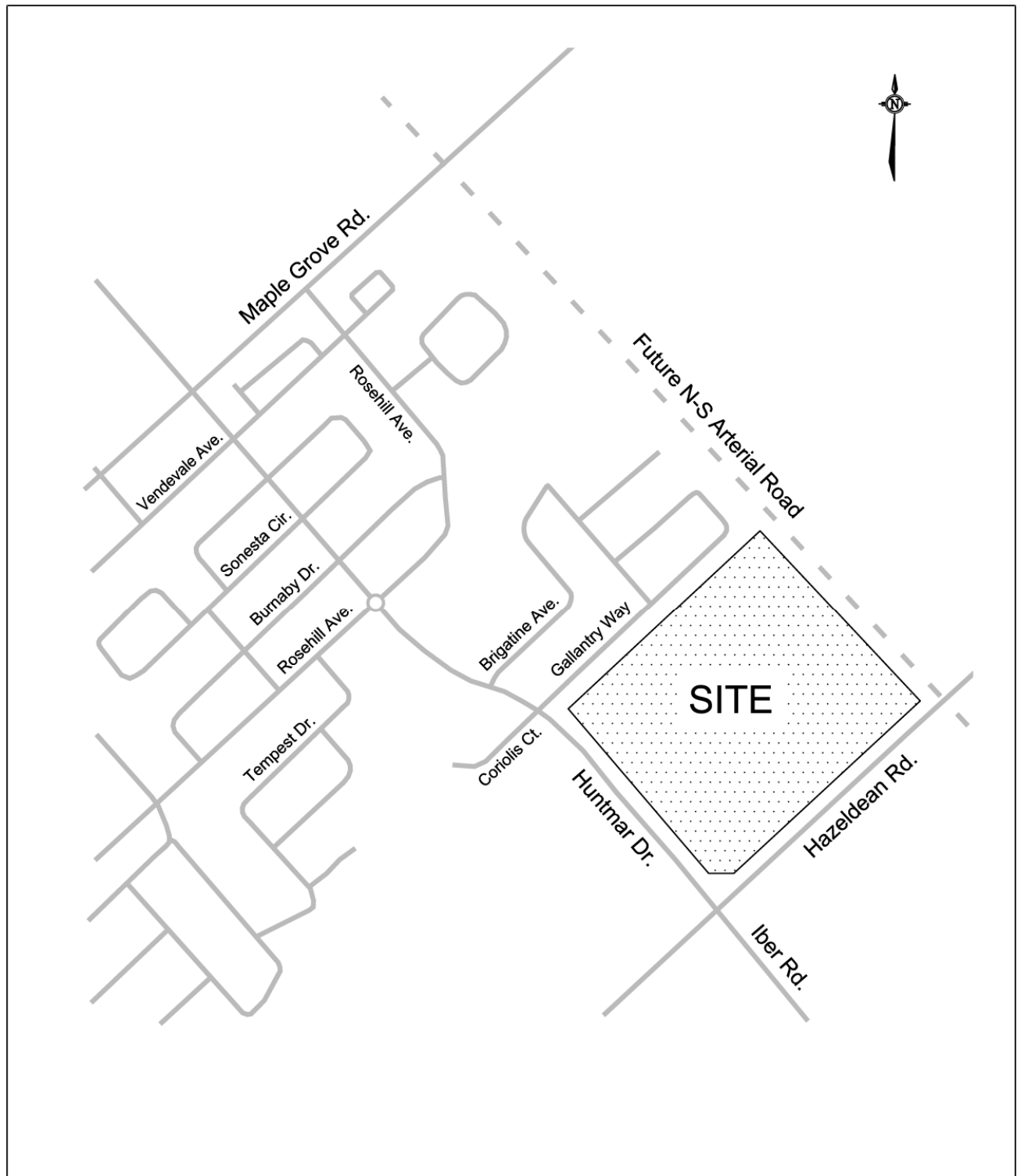
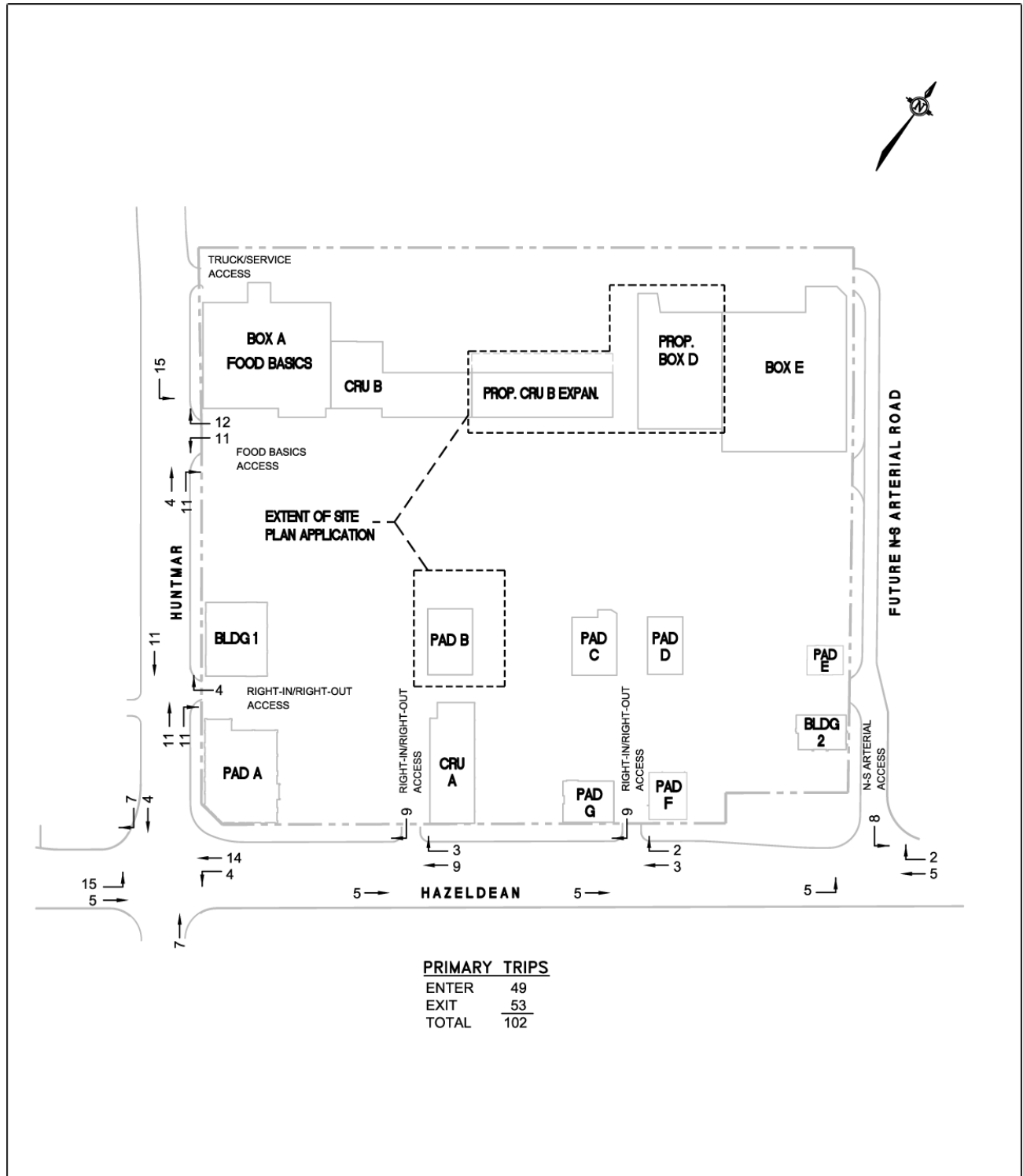


FIGURE 2.1
SITE LOCATION PLAN



NOT TO SCALE

FIGURE 3.1
PEAK PM HOUR SITE GENERATED PRIMARY TRIPS



NOT TO SCALE

FIGURE 3.2
PEAK PM HOUR SITE GENERATED PASS-BY TRIPS

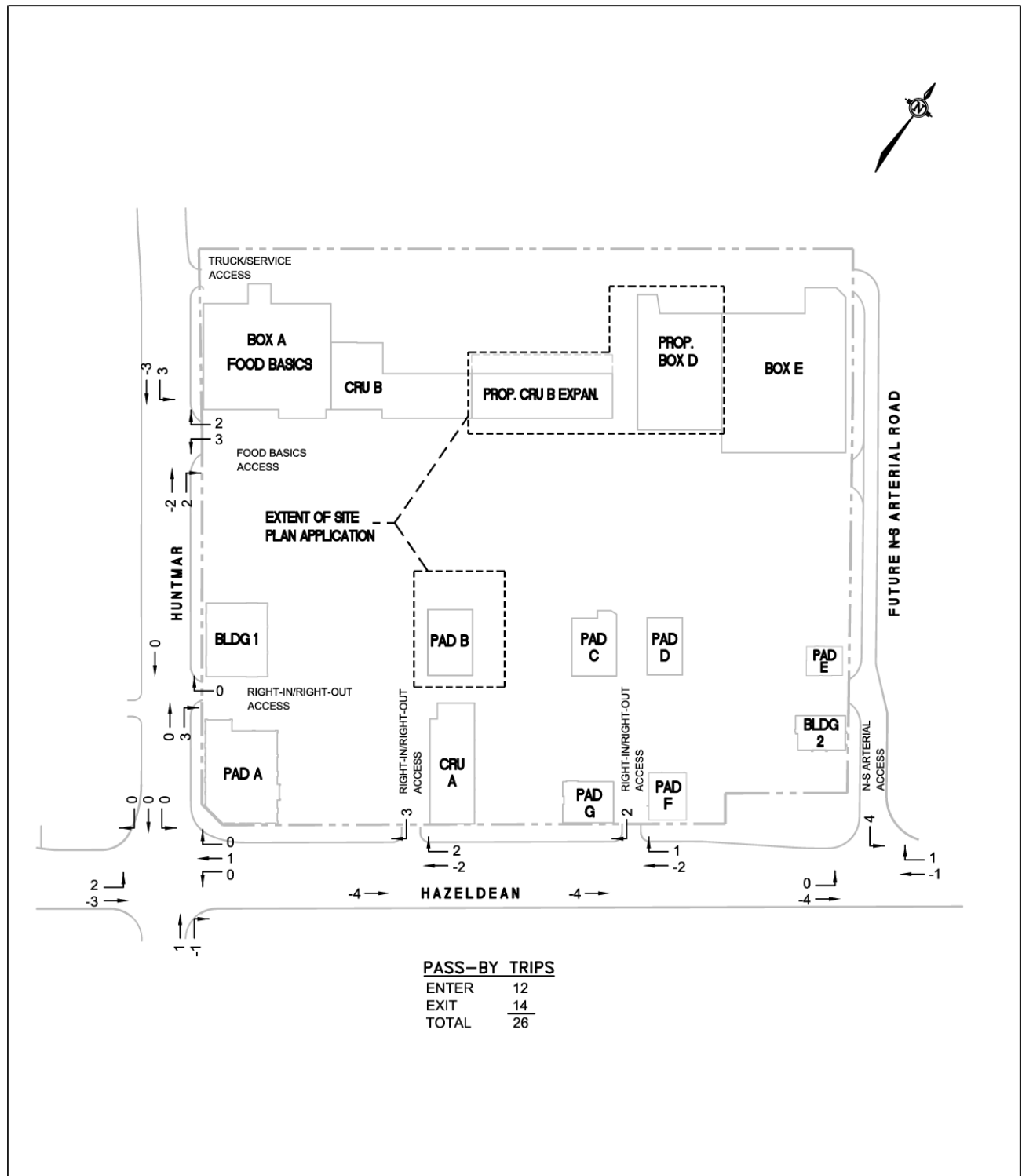
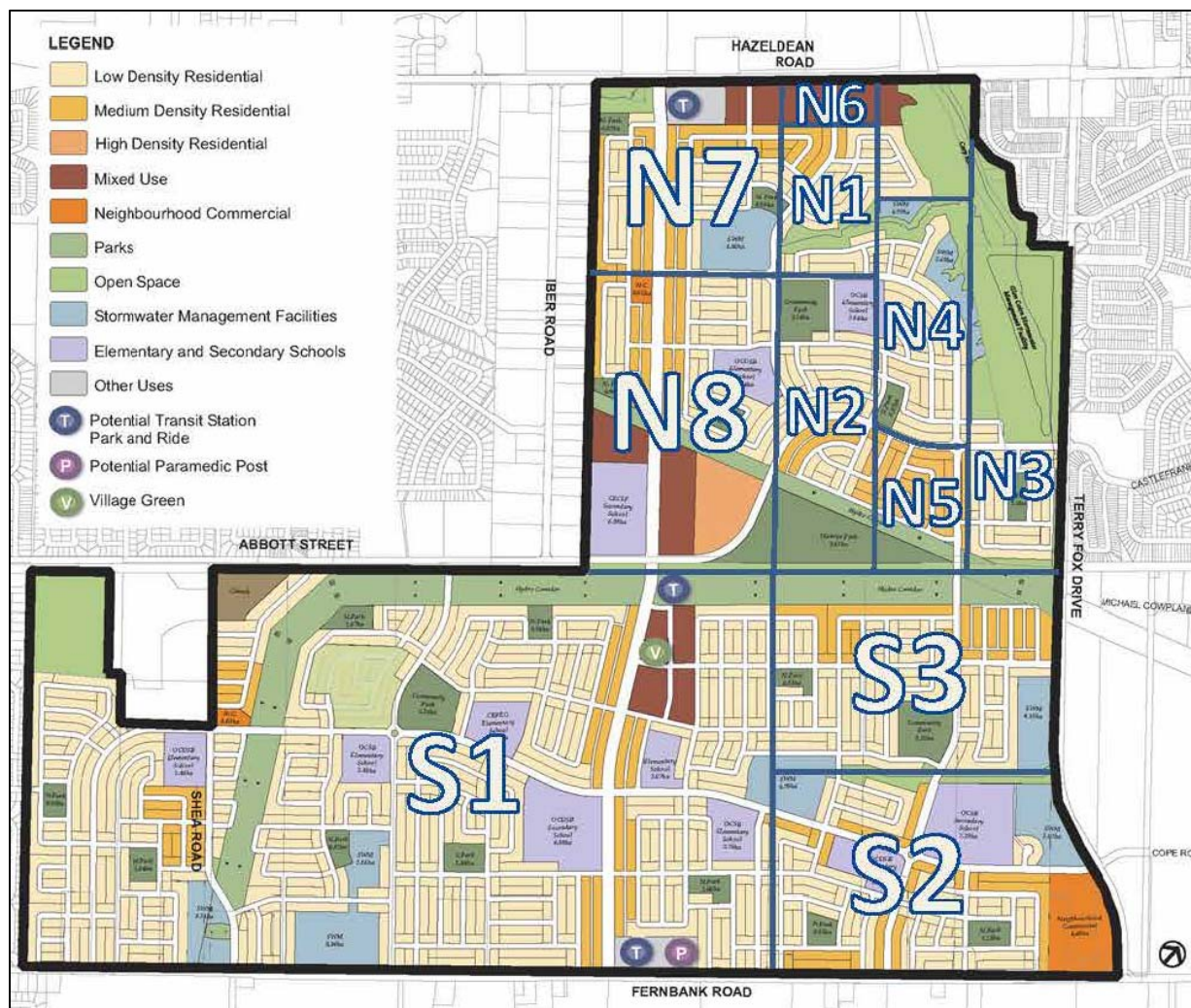


**Figure 10
Fernbank Community Traffic Zones**



3.4.2 Background Traffic Growth

Consistent with the Fernbank CDP TMP and with other recent transportation studies prepared for development parcels within the Fernbank Community, a 2% annual growth rate was deemed to be appropriate. This rate was then applied to the existing traffic volumes at the study area intersections until the 2025 horizon. In addition, the trips generated by the other areas of the Fernbank Community (i.e. all areas excluding the subject Richcraft site) were added to the boundary road network.

3.4.3 Future Background Traffic Conditions

The build-out horizons for the background developments must recognize the scale of the developments under consideration. An absorption rate of 500 units per year was applied to the background

**Table 3
Fernbank Community Traffic Generation**

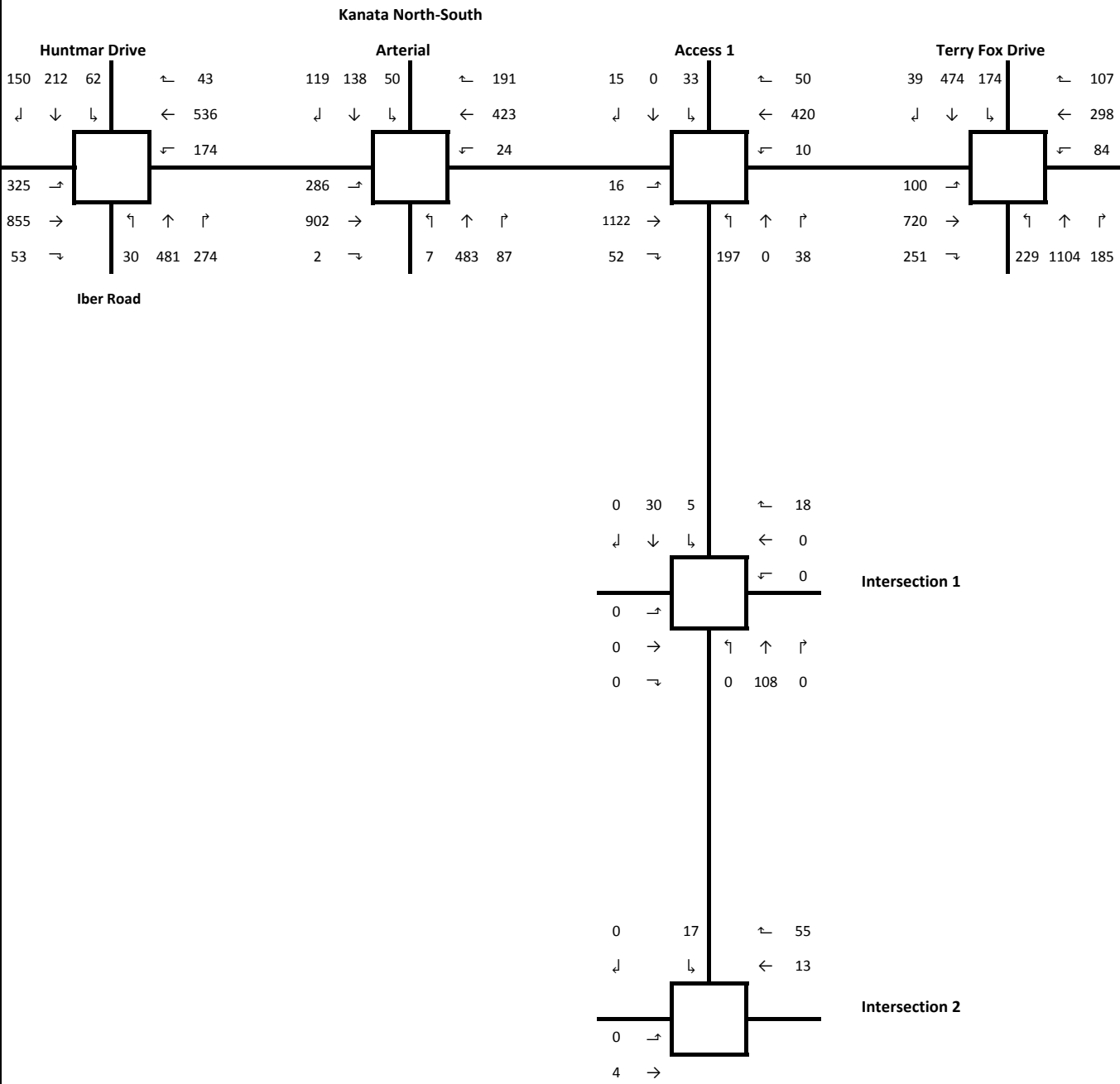
Zone	Modes	Split	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
N1 (Richcraft)	Auto	55%	29	109	138	113	62	174
	Passenger	15%	8	30	38	31	17	48
	Transit	25%	13	50	63	51	28	79
	Active Modes	5%	3	10	13	10	6	16
	N1 Subtotal (person trips)	100%	53	198	251	205	112	317
N2 (Richcraft)	Auto	55%	30	123	154	125	65	190
	Passenger	15%	8	34	42	34	18	52
	Transit	25%	14	56	70	57	30	87
	Active Modes	5%	3	11	14	11	6	17
	N2 Subtotal (person trips)	100%	55	224	280	227	119	346
N3	Auto	55%	23	69	91	76	44	121
	Passenger	15%	6	19	25	21	12	33
	Transit	25%	10	31	42	35	20	55
	Active Modes	5%	2	6	8	7	4	11
	N3 Subtotal (person trips)	100%	41	125	166	139	80	220
N4	Auto	55%	36	126	162	133	74	207
	Passenger	15%	10	34	44	36	20	57
	Transit	25%	16	57	74	61	34	94
	Active Modes	5%	3	11	15	12	7	19
	N4 Subtotal (person trips)	100%	65	229	294	242	134	377
N5	Auto	55%	24	84	108	89	50	138
	Passenger	15%	6	23	30	24	14	38
	Transit	25%	11	38	49	41	23	63
	Active Modes	5%	2	8	10	8	5	13
	N5 Subtotal (person trips)	100%	43	152	197	162	90	251
N6 (Richcraft)	Auto	55%	3	7	10	6	4	10
	Passenger	15%	1	2	3	2	1	3
	Transit	25%	2	3	5	3	2	5
	Active Modes	5%	0	1	1	1	0	1
	N6 Subtotal (person trips)	100%	6	12	18	10	8	19
N7	Auto	55%	73	281	353	285	153	439

	Passenger	15%	20	77	96	78	42	120
	Transit	25%	33	128	161	130	70	200
	Active Modes	5%	7	26	32	26	14	40
	N7 Subtotal (person trips)	100%	132	510	642	518	278	798
N8	Auto	55%	87	347	435	349	185	535
	Passenger	15%	24	95	119	95	51	146
	Transit	25%	40	158	198	159	84	243
	Active Modes	5%	8	32	40	32	17	49
	N8 Subtotal (person trips)	100%	158	631	790	635	337	972
S1	Auto	55%	503	1604	2108	1756	1009	2765
	Passenger	15%	137	438	575	479	275	754
	Transit	25%	229	729	958	798	459	1257
	Active Modes	5%	46	146	192	160	92	251
	S1 Subtotal (person trips)	100%	914	2917	3833	3193	1835	5028
S2	Auto	55%	91	314	405	334	187	521
	Passenger	15%	25	86	111	91	51	142
	Transit	25%	42	143	184	152	85	237
	Active Modes	5%	8	29	37	30	17	47
	S2 Subtotal (person trips)	100%	166	571	737	607	340	947
S3	Auto	55%	93	321	414	342	191	532
	Passenger	15%	25	87	113	93	52	145
	Transit	25%	42	146	188	156	87	242
	Active Modes	5%	8	29	38	31	17	48
	S3 Subtotal (person trips)	100%	169	583	752	622	347	968
Richcraft Totals	Auto	55%	63	239	302	243	131	375
	Passenger	15%	17	65	82	66	36	102
	Transit	25%	29	109	137	111	60	171
	Active Modes	5%	6	22	27	22	12	34
	Richcraft Subtotals (person trips)	100%	114	434	549	442	239	682
2020 Background Trips (25% Total)	Auto	55%	232	786	1019	841	473	1315
	Passenger	15%	63	214	278	229	129	359
	Transit	25%	106	357	463	382	215	598
	Active Modes	5%	21	71	93	76	43	120

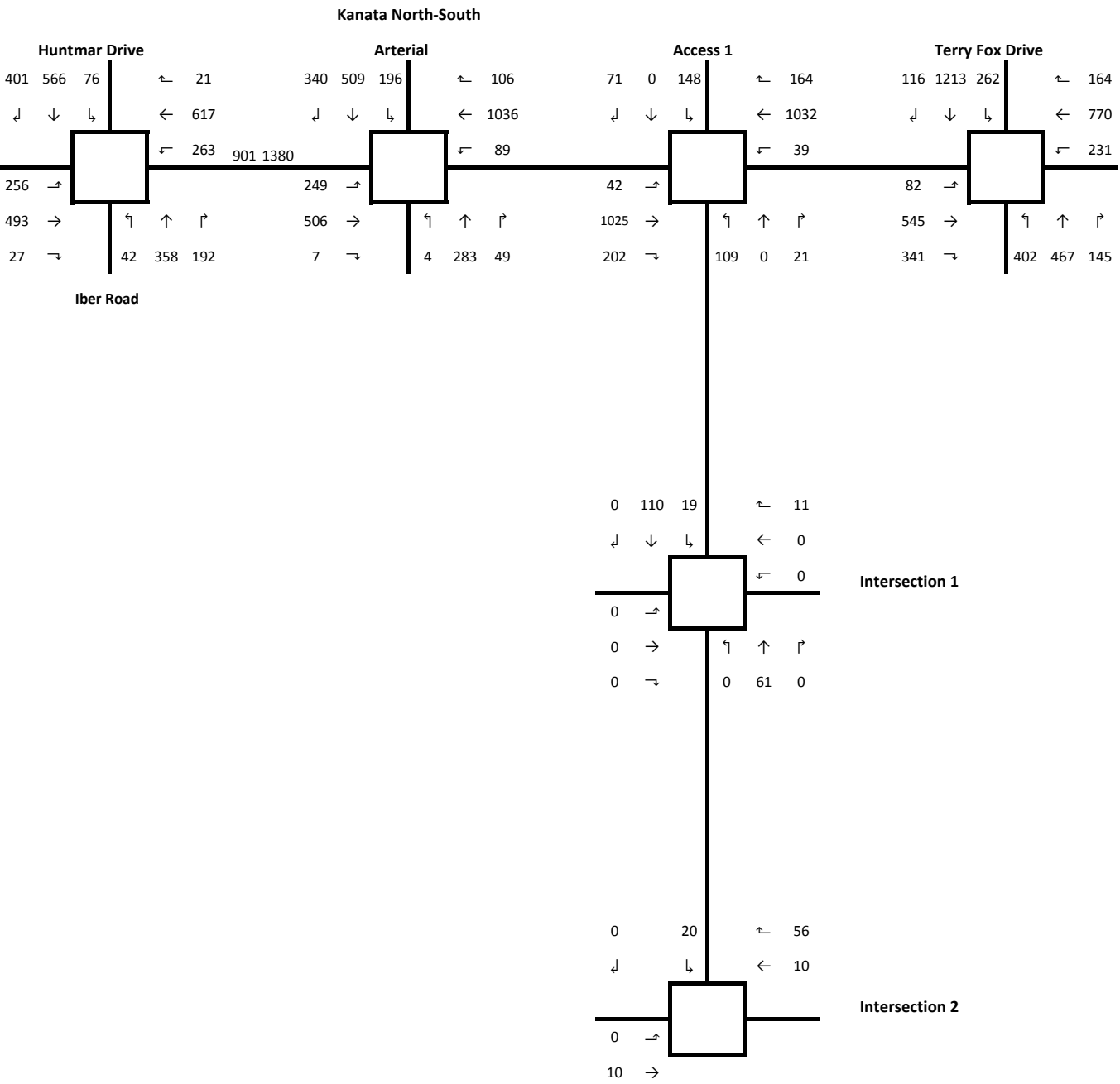
**590 HAZELDEAN ROAD, OTTAWA, ON
TRANSPORTATION IMPACT STUDY
SEPTEMBER 2013**

	Subtotal (person trips)	100%	422	1430	1853	1530	860	2390
2025 Background Trips (50% Total)	Auto	55%	464	1572	2038	1682	946	2629
	Passenger	15%	127	429	556	459	258	717
	Transit	25%	211	715	926	765	430	1195
	Active Modes	5%	42	143	185	153	86	239
	Subtotal (person trips)	100%	844	2859	3706	3059	1721	4781
Fernbank Total	Auto	55%	991	3384	4378	3608	2024	5634
	Passenger	15%	270	923	1194	984	552	1536
	Transit	25%	451	1538	1990	1640	920	2561
	Active Modes	5%	90	308	398	328	184	512
	Subtotal (person trips)	100%	1802	6152	7960	6560	3680	10243

AM PEAK



PM PEAK



Stantec Consulting Ltd.
1331 Clyde Avenue
ON, Canada K2C 3G4
Tel: (613) 722-4420
www.stantec.com



FIGURE: 14
TITLE: 2025 Ultimate Traffic Volumes
CLIENT: Richcraft Homes
PROJECT: 590 Hazeldean Road

APPENDIX G

Long-Range Model Snapshots

TRANS Regional Model

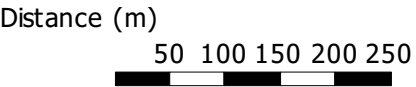
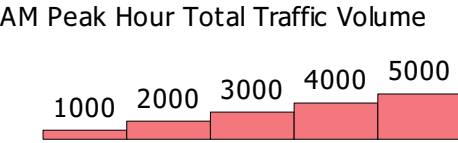
Version 1.01 - Assigned December 09, 2024

AM Peak Hour Total Traffic Volume
Hazeldean Road @ Roger Griffiths Avenue
2022 Model

User Initials: AJ
Plot Prepared: March 27, 2025
EMME Scenario: 22002



Legend



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

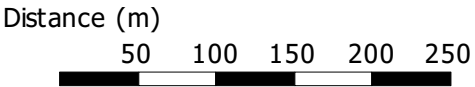
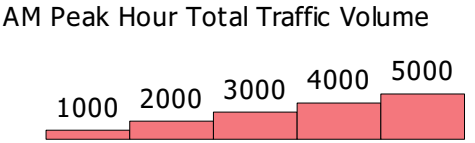
Version 1.01 - Assigned December 09, 2024

AM Peak Hour Total Traffic Volume
Hazeldean Road @ Terry Fox Drive
2022 Model

User Initials: AJ
Plot Prepared: March 27, 2025
EMME Scenario: 22002



Legend



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 1.01 - Assigned December 09, 2024

AM Peak Hour Total Traffic Volume

Hazeldean Road @ Roger Griffiths Avenue

2046 Model

User Initials: AJ

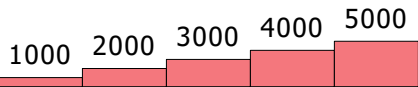
Plot Prepared: March 27, 2025

EMME Scenario: 46001

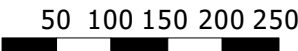


Legend

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

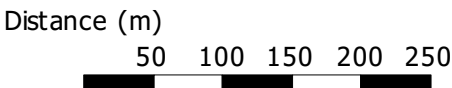
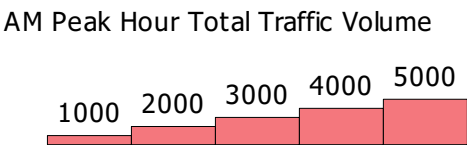
Version 1.01 - Assigned December 09, 2024

AM Peak Hour Total Traffic Volume
Hazeldean Road @ Terry Fox Drive
2046 Model

User Initials: AJ
Plot Prepared: March 27, 2025
EMME Scenario: 46001



Legend



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 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.

APPENDIX H

Signal Timing Plans

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

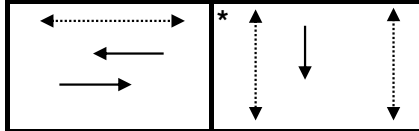
Intersection:	<i>Main:</i> Hazeldean	<i>Side:</i> Robert Grant
Controller:	MS 3200	TSD: 6762
Author:	Kymen Kwan	Date: 26-Mar-2025

Existing Timing Plans[†]

	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Walk	DW	A+R
Cycle	115	100	120	100	110			
Offset	94	49	119	X	11			
EB Thru	79	64	84	64	74	-	-	3.7+2.4
WB Thru	79	64	84	64	74	7	13	3.7+2.4
SB Thru	36	36	36	36	36	7	22	3.3+2.8

Phasing Sequence[‡]

Plan: All



Notes: 1) The WB U-Turn is prohibited

Schedule

Weekday

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

Saturday

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

Sunday

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

Notes

[†]: 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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

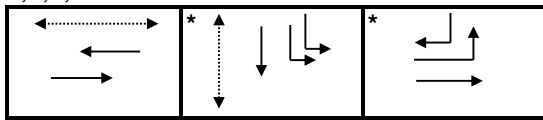
Intersection:	Main: Hazeldean	Side: 635m E of Iber
Controller:	MS 3200	TSD: 6761
Author:	Kymen Kwan	Date: 26-Mar-2025

Existing Timing Plans†

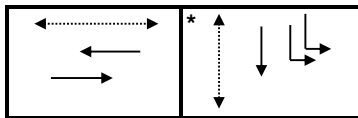
	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Walk	DW	A+R
Cycle	115	100	120	80	110			
Offset	7	66	111	X	103			
EB Thru	82	66	87	47	76	-	-	3.7+2.6
WB Thru	62	51	67	47	61	7	18	3.7+2.6
SB Thru	33	34	33	33	34	7	18	3.3+2.9
SB Left (fp)	33	34	33	33	34	-	-	3.3+2.9
EB Left	20	15	20	-	15	-	-	3.7+2.5
SB Right	20	15	20	-	15	-	-	3.7+2.5

Phasing Sequence‡

Plan: 1, 2, 3, 5



Plan: 4



Notes: 1) The WB U-Turn is prohibited

Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:10	4	0:10	4	0:10	4
6:30	1	9:00	5	8:00	5
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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

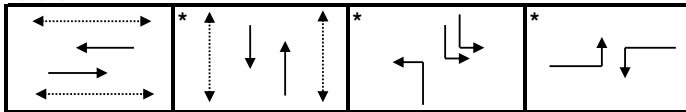
Intersection:	<i>Main:</i> Hazeldean	<i>Side:</i> Mantra / Tillage
Controller:	ATC 3	TSD: 6760
Author:	Kymen Kwan	Date: 26-Mar-2025

Existing Timing Plans†

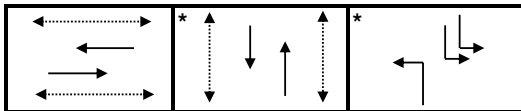
	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Walk	DW	A+R
Cycle	115	100	120	90	110			
Offset	101	53	106	X	86			
EB Thru	43	33	43	35	38	7	18	3.7+2.6
WB Thru	43	33	43	35	38	7	18	3.7+2.6
NB Thru	32	32	32	31	32	7	18	3.3+3.2
SB Thru	32	32	32	31	32	7	18	3.3+3.2
NB Left (fp)	28	23	28	24	28	-	-	3.3+3.2
SB Left (fp)	28	23	28	24	28	-	-	3.3+3.2
EB Left	12	12	17	-	12	-	-	3.7+2.4
WB Left	12	12	17	-	12	-	-	3.7+2.4

Phasing Sequence*

Plan: 1, 2, 3, 5



Plan: 4



Notes: 1) The WB U-Turn movement is prohibited

Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:10	4	0:10	4	0:10	4
6:30	1	9:00	5	8:00	5
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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

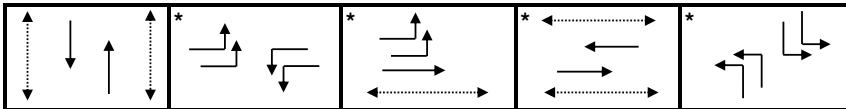
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> Hazeldean
Controller:	ATC 3	TSD: 5698
Author:	Kymen Kwan	Date: 27-Mar-2025

Existing Timing Plans†

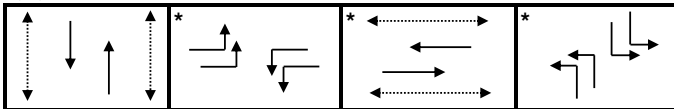
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	110	120	115			
Offset	76	0	32	1			
NB Thru	36	36	37	36	7	22	4.2+2.3
SB Thru	36	36	37	36	7	22	4.2+2.3
EB Left (fp)	21	22	23	22	-	-	3.7+2.8
WB Left (fp)	14	22	23	22	-	-	3.7+2.8
EB Thru	43	36	42	36	7	22	3.7+2.8
WB Thru	36	36	42	36	7	21	3.7+2.8
NB Left (fp)	17	16	18	21	-	-	4.2+2.3
SB Left (fp)	17	16	18	21	-	-	4.2+2.3

Phasing Sequence‡

Plan: 1



Plan: 2, 3, 4



Notes: 1) For Plan 3, there is a minimum recall of 10s green for the EW Thru movement

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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

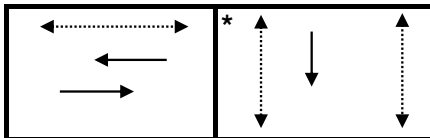
Intersection:	Main: Hazeldean	Side: Edgewater
Controller:	ATC 3	TSD: 6680
Author:	Kymen Kwan	Date: 27-Mar-2025

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	86	36	-	-	3.7+2.5
WB Thru	76	76	86	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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

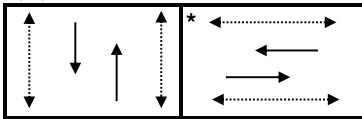
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> Charlie Rogers / Edgewater
Controller:	ATC 3	TSD: 6248
Author:	Kymen Kwan	Date: 31-Mar-2025

Existing Timing Plans†

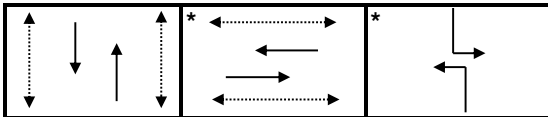
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	100	120	75			
Offset	16	25	46	X			
NB Thru	73	63	69	38	7	21	4.2+2.3
SB Thru	73	63	69	38	7	21	4.2+2.3
EB Thru	37	37	37	37	7	23	3.3+3.2
WB Thru	37	37	37	37	7	23	3.3+3.2
NB Left	-	-	14	-	-	-	4.2+2.4
SB Left	-	-	14	-	-	-	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				
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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

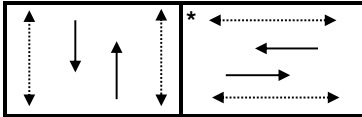
Intersection: *Main:* Terry Fox *Side:* 240m S of Edgewater / Charlie Rogers
Controller: MS 3200 **TSD:** 6341
Author: Kymen Kwan **Date:** 31-Mar-2025

Existing Timing Plans†

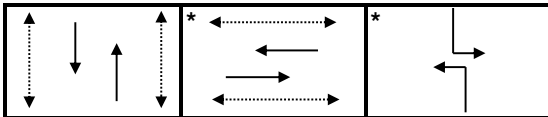
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	100	120	95			
Offset	26	60	40	X			
NB Thru	77	67	72	62	7	19	4.2+2.3
SB Thru	77	67	72	62	7	19	4.2+2.3
EB Thru	33	33	33	33	7	19	3.3+2.9
WB Thru	33	33	33	33	7	19	3.3+2.9
NB Left	-	-	15	-	-	-	4.2+2.3
SB Left	-	-	15	-	-	-	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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

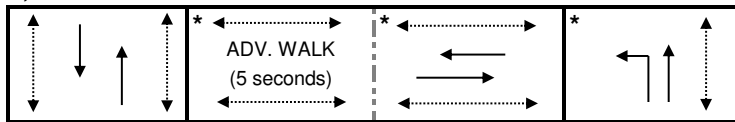
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> 130m S of Hazeldean
Controller:	ATC 3	TSD: 6590
Author:	Kymen Kwan	Date: 31-Mar-2025

Existing Timing Plans†

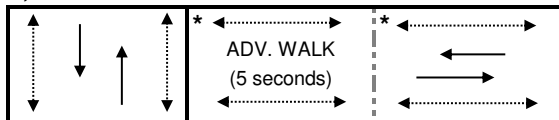
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
Cycle	110	110	120	65			
Offset	80	18	22	X			
NB Thru	72	74	84	29	7	13	4.2+1.8
SB Thru	57	62	84	29	7	13	4.2+1.8
EB Thru	38	36	36	36	7	22	3.0+4.0
WB Thru	38	36	36	36	7	22	3.0+4.0
NB Left	15	12	-	-	-	-	4.2+1.8

Phasing Sequence‡

Plan: 1, 2



Plan: 3, 4



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 \$62.38 (\$55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

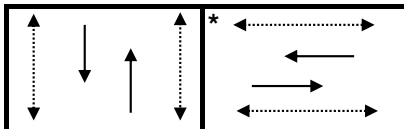
Intersection:	<i>Main:</i> Terry Fox	<i>Side:</i> Winchester / Halkirk
Controller:	ATC 3	TSD: 6554
Author:	Kymen Kwan	Date: 31-Mar-2025

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	40	92	115	X			
NB Thru	72	72	82	33	7	15	4.2+2.1
SB Thru	72	72	82	33	7	15	4.2+2.1
EB Thru	38	38	38	37	7	23	3.3+2.7
WB Thru	38	38	38	37	7	23	3.3+2.7

Phasing Sequence‡

Plan: All



Notes: 1) If the WB Pedestrian phase is not actuated, the WB Thru movement will force off after 15s

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 \$62.38 (\$55.20 + HST)

APPENDIX I

Existing Synchro Analysis



Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰		↰↰	↰	↰	↰
Traffic Volume (vph)	3	10	860	1	576	36	16	1
Future Volume (vph)	3	10	860	1	576	36	16	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		50.0		0.0		175.0	30.0	0.0
Storage Lanes		1		0		1	1	1
Taper Length (m)		65.0		10.0			20.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor								0.99
Frt						0.850		0.850
Flt Protected		0.950					0.950	
Satd. Flow (prot)	0	1768	3402	0	3370	1551	1768	1582
Flt Permitted		0.408			0.954		0.950	
Satd. Flow (perm)	0	759	3402	0	3215	1551	1768	1561
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)						40		1
Link Speed (k/h)			60		60		50	
Link Distance (m)			568.4		297.5		251.2	
Travel Time (s)			34.1		17.9		18.1	
Confl. Peds. (#/hr)								1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	5%	1%	6%	3%	1%	1%
Adj. Flow (vph)	3	11	956	1	640	40	18	1
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	14	956	0	641	40	18	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)			6.0		4.0		6.0	
Link Offset(m)			0.0		0.0		0.0	
Crosswalk Width(m)			5.0		5.0		5.0	
Two way Left Turn Lane								
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14		14	24	14
Number of Detectors	1	1	2	1	2	1	1	1
Detector Template	Left	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	2.0	2.0	10.0	2.0	10.0	2.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	0.6	2.0	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4		9.4			
Detector 2 Size(m)			0.6		0.6			
Detector 2 Type			CI+Ex		CI+Ex			
Detector 2 Channel								
Detector 2 Extend (s)			0.0		0.0			
Turn Type	Perm	Perm	NA	Perm	NA	Perm	Perm	Perm
Protected Phases			2		6			
Permitted Phases	2	2		6		6	4	4
Detector Phase	2	2	2	6	6	6	4	4
Switch Phase								



Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.1	16.1	16.1	26.1	26.1	26.1	35.1	35.1
Total Split (s)	79.0	79.0	79.0	79.0	79.0	79.0	36.0	36.0
Total Split (%)	68.7%	68.7%	68.7%	68.7%	68.7%	68.7%	31.3%	31.3%
Maximum Green (s)	72.9	72.9	72.9	72.9	72.9	72.9	29.9	29.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	2.8	2.8
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)		6.1	6.1		6.1	6.1	6.1	6.1
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)				7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)				13.0	13.0	13.0	22.0	22.0
Pedestrian Calls (#/hr)				1	1	1	1	1
Act Effct Green (s)		102.3	102.3		102.3	102.3	13.8	13.8
Actuated g/C Ratio		0.89	0.89		0.89	0.89	0.12	0.12
v/c Ratio		0.02	0.32		0.22	0.03	0.09	0.01
Control Delay		4.5	3.7		1.3	0.2	42.1	29.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0
Total Delay		4.5	3.7		1.3	0.2	42.1	29.0
LOS		A	A		A	A	D	C
Approach Delay			3.7		1.3		41.4	
Approach LOS			A		A		D	
Queue Length 50th (m)		0.0	0.0		0.0	0.0	3.5	0.0
Queue Length 95th (m)		3.1	59.9		10.2	0.0	8.2	1.3
Internal Link Dist (m)			544.4		273.5		227.2	
Turn Bay Length (m)		50.0				175.0	30.0	
Base Capacity (vph)		675	3027		2860	1384	459	406
Starvation Cap Reductn		0	0		0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0
Reduced v/c Ratio		0.02	0.32		0.22	0.03	0.04	0.00

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 94 (82%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.32

Intersection Signal Delay: 3.2

Intersection LOS: A

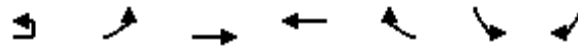
Intersection Capacity Utilization 44.1%

ICU Level of Service A

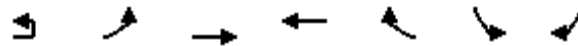
Analysis Period (min) 15

Splits and Phases: 1: Hazeldean & 325 E of Iber





Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰	↰↰	↰	↰↰	↰
Traffic Volume (vph)	1	107	689	629	47	28	17
Future Volume (vph)	1	107	689	629	47	28	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0			180.0	40.0	40.0
Storage Lanes		1			1	2	0
Taper Length (m)		75.0				30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor		1.00			0.98		0.99
Frt					0.850		0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1768	3435	3402	1567	3431	1582
Flt Permitted		0.346				0.950	
Satd. Flow (perm)	0	643	3435	3402	1528	3431	1561
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					52		19
Link Speed (k/h)			60	60		50	
Link Distance (m)			297.5	287.2		237.4	
Travel Time (s)			17.9	17.2		17.1	
Confl. Peds. (#/hr)		2			2		1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	4%	5%	2%	1%	1%
Adj. Flow (vph)	1	119	766	699	52	31	19
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	120	766	699	52	31	19
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	R NA
Median Width(m)			6.0	4.0		10.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2	1	1	1
Detector Template	Left	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0	2.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6	2.0	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	pm+pt	pm+pt	NA	NA	Perm	Prot	pm+ov
Protected Phases	5!	5	2	6		4	5!
Permitted Phases	2!	2			6		4
Detector Phase	5	5	2	6	6	4	5
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	11.2	11.2	16.3	31.3	31.3	31.2	11.2
Total Split (s)	20.0	20.0	82.0	62.0	62.0	33.0	20.0
Total Split (%)	17.4%	17.4%	71.3%	53.9%	53.9%	28.7%	17.4%
Maximum Green (s)	13.8	13.8	75.7	55.7	55.7	26.8	13.8
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.7
All-Red Time (s)	2.5	2.5	2.6	2.6	2.6	2.9	2.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.2	6.3	6.3	6.3	6.2	6.2
Lead/Lag	Lead	Lead		Lag	Lag		Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)				7.0	7.0	7.0	
Flash Dont Walk (s)				18.0	18.0	18.0	
Pedestrian Calls (#/hr)				2	2	1	
Act Effct Green (s)		96.1	98.5	82.6	82.6	13.0	16.2
Actuated g/C Ratio		0.84	0.86	0.72	0.72	0.11	0.14
v/c Ratio		0.20	0.26	0.29	0.05	0.08	0.08
Control Delay		2.4	1.8	5.7	1.1	43.4	12.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		2.4	1.8	5.7	1.1	43.4	12.1
LOS		A	A	A	A	D	B
Approach Delay			1.8	5.3		31.5	
Approach LOS			A	A		C	
Queue Length 50th (m)		4.6	18.4	45.2	1.2	3.0	0.0
Queue Length 95th (m)		3.4	8.4	76.3	1.0	6.3	4.6
Internal Link Dist (m)			273.5	263.2		213.4	
Turn Bay Length (m)		75.0			180.0	40.0	40.0
Base Capacity (vph)		672	2942	2443	1112	799	327
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0
Reduced v/c Ratio		0.18	0.26	0.29	0.05	0.04	0.06

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 7 (6%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 51.5%

ICU Level of Service A

Analysis Period (min) 15

! Phase conflict between lane groups.

Splits and Phases: 2: Hazeldean & Roger Griffiths



3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	633	12	22	574	113	9	0	34	74	2	36
Future Volume (vph)	45	633	12	22	574	113	9	0	34	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00					0.97		0.98		0.99		
Frt		0.997				0.850		0.850			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3450	0	1768	3537	1551	1768	1522	0	3332	1595	0
Flt Permitted	0.367			0.351			0.950			0.950		
Satd. Flow (perm)	681	3450	0	653	3537	1506	1768	1522	0	3295	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				153		342			40	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			795.2			289.2			233.8	
Travel Time (s)		17.2			47.7			20.8			16.8	
Confl. Peds. (#/hr)	4					4			5	5		
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	50	703	13	24	638	126	10	0	38	82	2	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	716	0	24	638	126	10	38	0	82	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		1			4	4		5			1	
Act Effct Green (s)	80.1	76.7		77.8	73.8	73.8	6.8	13.0		8.7	19.1	
Actuated g/C Ratio	0.70	0.67		0.68	0.64	0.64	0.06	0.11		0.08	0.17	
v/c Ratio	0.09	0.31		0.05	0.28	0.12	0.10	0.08		0.32	0.14	
Control Delay	12.9	15.8		9.6	14.3	2.2	51.8	0.3		53.5	12.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.9	15.8		9.6	14.3	2.2	51.8	0.3		53.5	12.9	
LOS	B	B		A	B	A	D	A		D	B	
Approach Delay		15.7			12.2			11.0			39.7	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	3.0	37.3		1.5	35.1	0.0	2.0	0.0		8.5	0.3	
Queue Length 95th (m)	14.4	70.6		6.1	65.4	6.8	6.9	0.0		15.4	8.8	
Internal Link Dist (m)		263.2			771.2			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	538	2302		502	2270	1021	330	603		622	384	
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	0.09	0.31		0.05	0.28	0.12	0.03	0.06		0.13	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 101 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.32

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 51.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean

12 s	43 s	32 s	28 s
12 s	43 s	32 s	28 s

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	233	530	163	5	120	288	173	170	735	248	171
Future Volume (vph)	7	233	530	163	5	120	288	173	170	735	248	171
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3214	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3205	3468	1482	0	3393	3435	1506	3287	3468	1541	3173
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				181				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		4		3		3		4	4		3	3
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	8	259	589	181	6	133	320	192	189	817	276	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	589	181	0	139	320	192	189	817	276	190
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	409	297
Future Volume (vph)	409	297
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1483
Right Turn on Red		Yes
Satd. Flow (RTOR)		310
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	454	330
Shared Lane Traffic (%)		
Lane Group Flow (vph)	454	330
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			3	3			4	4		3	3	
Act Effct Green (s)		13.3	25.5	25.5		7.4	19.6	19.6	11.0	39.9	39.9	11.2
Actuated g/C Ratio		0.12	0.23	0.23		0.07	0.18	0.18	0.10	0.36	0.36	0.10
v/c Ratio		0.69	0.73	0.38		0.61	0.52	0.42	0.57	0.65	0.39	0.59
Control Delay		56.0	44.3	6.7		56.8	41.4	13.5	73.3	25.9	4.6	49.2
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		56.0	44.3	6.7		56.8	41.4	13.5	73.3	25.9	4.6	49.2
LOS		E	D	A		E	D	B	E	C	A	D
Approach Delay			40.7				36.5			28.3		
Approach LOS			D				D			C		
Queue Length 50th (m)		26.1	57.3	0.0		14.0	31.0	1.5	18.7	71.7	11.5	18.7
Queue Length 95th (m)		38.5	65.8	13.8		23.3	42.3	27.0	31.3	#111.7	5.4	24.4
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	612		231	921	570	345	1258	704	335
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.63	0.51	0.30		0.60	0.35	0.34	0.55	0.65	0.39	0.57

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 31.9

Intersection LOS: C

Intersection Capacity Utilization 71.4%

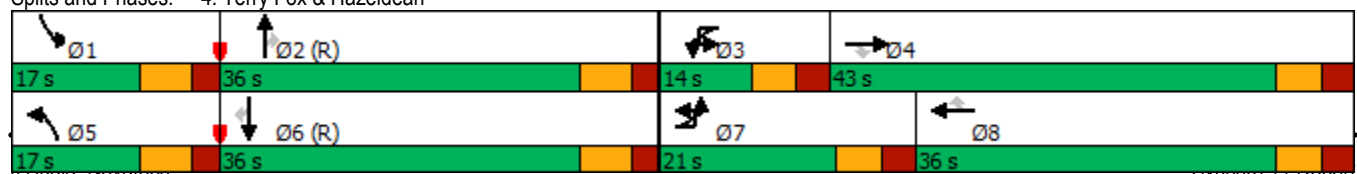
ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

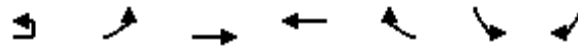


03/10/2024, 11:04:00 AM

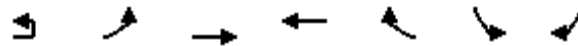
Dynamic 11 Report



Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	4	4
Act Effct Green (s)	40.1	40.1
Actuated g/C Ratio	0.36	0.36
v/c Ratio	0.37	0.45
Control Delay	23.4	10.3
Queue Delay	0.0	0.0
Total Delay	23.4	10.3
LOS	C	B
Approach Delay	24.0	
Approach LOS	C	
Queue Length 50th (m)	34.6	13.9
Queue Length 95th (m)	54.6	50.9
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	1238	737
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.37	0.45
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	114	682	683	68	68	57
Future Volume (vph)	4	114	682	683	68	68	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00		1.00		0.99	0.98
Frt				0.986			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3414	0	1768	1537
Flt Permitted		0.331				0.950	
Satd. Flow (perm)	0	596	3468	3414	0	1752	1507
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				19			63
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		8			8	8	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	127	758	759	76	76	63
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	131	758	835	0	76	63
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				8		8	8
Act Effct Green (s)		88.2	88.2	88.2		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.27	0.27	0.30		0.34	0.26
Control Delay		13.6	10.1	4.7		61.0	25.0
Queue Delay		0.0	0.0	0.0		0.0	0.0
Total Delay		13.6	10.1	4.7		61.0	25.0
LOS		B	B	A		E	C
Approach Delay			10.6	4.7		44.7	
Approach LOS			B	A		D	
Queue Length 50th (m)		11.5	34.3	18.0		15.1	2.4
Queue Length 95th (m)		31.6	62.3	48.1		m21.8	m9.6
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		478	2781	2741		444	429
Starvation Cap Reductn		0	0	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.27	0.27	0.30		0.17	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: 0.34

Intersection Signal Delay: 10.5

Intersection LOS: B

Intersection Capacity Utilization 57.1%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	88	1	1244	30	1	154	916
Future Volume (vph)	14	1	3	14	2	88	1	1244	30	1	154	916
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00	1.00			1.00	
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1321	0	1567	1521	0	1768	3489	0	0	1734	3402
Flt Permitted	0.692			0.755			0.264				0.160	
Satd. Flow (perm)	1286	1321	0	1244	1521	0	491	3489	0	0	292	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			50			4				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	2		1	1		2	1		2		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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	16	1	3	16	2	98	1	1382	33	1	171	1018
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	4	0	16	100	0	1	1415	0	0	172	1018
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1447
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	1
Peak Hour Factor	0.90
Heavy Vehicles (%)	8%
Adj. Flow (vph)	13
Shared Lane Traffic (%)	
Lane Group Flow (vph)	13
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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
Total Lost Time (s)	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		2	2		2	2		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	0.02		0.10	0.42		0.00	0.54			0.79	0.40
Control Delay	39.2	25.2		60.4	47.2		2.0	8.3			39.4	6.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.2	25.2		60.4	47.2		2.0	8.3			39.4	6.4
LOS	D	C		E	D		A	A			D	A
Approach Delay		36.4			49.0			8.3				11.0
Approach LOS		D			D			A				B
Queue Length 50th (m)	3.0	0.2		3.4	12.2		0.0	100.5			13.8	25.3
Queue Length 95th (m)	7.3	2.6		10.4	30.7		m0.0	22.3			#73.0	69.0
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	368		344	457		369	2625			219	2558
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	0.01		0.05	0.22		0.00	0.54			0.79	0.40

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 11.4

Intersection LOS: B

Intersection Capacity Utilization 72.0%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	1
Act Effct Green (s)	82.7
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.4
Queue Delay	0.0
Total Delay	0.4
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1097
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1126	1	0	768	0
Future Volume (vph)	0	0	3	1	0	0	10	1126	1	0	768	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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
Frt	0.850											
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1582	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.332					
Satd. Flow (perm)	1861	1582	0	1431	1861	0	618	3468	0	1861	3370	0
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)				191								
Link Speed (k/h)				50			30			70		
Link Distance (m)				207.5			88.7			316.2		
Travel Time (s)				14.9			10.6			16.3		
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	11	1251	1	0	853	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	11	1252	0	0	853	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)				4.0			12.0			12.0		
Link Offset(m)				0.0			0.0			0.0		
Crosswalk Width(m)				5.0			5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4			9.4			9.4		
Detector 2 Size(m)				0.6			0.6			0.6		
Detector 2 Type	CI+Ex			CI+Ex			CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA		Perm			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	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	1	1		1	1		1	1		1	1	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.39			0.27	
Control Delay		0.0		37.0			9.3	8.5			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.3	8.5			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			8.5			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	1.6			0.0	
Queue Length 95th (m)		0.0		1.4			m2.7	144.6			1.8	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		529		348			574	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.39			0.27	

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: 5.2

Intersection LOS: A

Intersection Capacity Utilization 51.8%

ICU Level of Service A

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec

			
Ø2 (R)			Ø4
77 s			33 s
			
Ø5 (R)			Ø8
77 s			33 s

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1109	52	3	28	676
Future Volume (vph)	7	1	16	30	1	52	8	1109	52	3	28	676
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			1.00	0.99	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.993				0.996
Flt Protected		0.985			0.954		0.950				0.950	
Satd. Flow (prot)	0	1527	0	0	1742	1567	1581	5038	0	0	1722	3421
Flt Permitted		0.894			0.713		0.312				0.202	
Satd. Flow (perm)	0	1385	0	0	1299	1546	518	5038	0	0	366	3421
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		18				109		11				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	1		2	2		1	4		2		2	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	8	1	18	33	1	58	9	1232	58	3	31	751
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	34	58	9	1290	0	0	34	771
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	4	
Confl. Bikes (#/hr)		
Peak Hour Factor	0.90	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	20	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	2	2		1	1	1		2		4	4	4
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.1	80.1
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.15			0.23	0.21	0.02	0.34			0.13	0.31
Control Delay		23.8			45.5	2.3	3.0	4.2			4.5	2.8
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		23.8			45.5	2.3	3.0	4.2			4.5	2.8
LOS		C			D	A	A	A			A	A
Approach Delay		23.8			18.3			4.2				2.9
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.7			6.4	0.0	0.4	36.9			0.4	4.8
Queue Length 95th (m)		8.1			13.3	1.3	m0.4	27.3			m2.7	17.8
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		341			307	448	476	3785			266	2492
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			0.11	0.13	0.02	0.34			0.13	0.31

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 4.5

Intersection LOS: A

Intersection Capacity Utilization 61.7%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's





Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)	3.0	
Minimum Split (s)	5.0	
Total Split (s)	5.0	
Total Split (%)	5%	
Maximum Green (s)	3.0	
Yellow Time (s)	2.0	
All-Red Time (s)	0.0	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Max	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1099	41	1	76	622
Future Volume (vph)	20	10	15	30	5	101	6	1099	41	1	76	622
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00	1.00			1.00	
Frt		0.909			0.858			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1465	0	1734	1562	0	1069	3481	0	0	1768	3435
Flt Permitted	0.647			0.739			0.387				0.195	
Satd. Flow (perm)	1203	1465	0	1347	1562	0	435	3481	0	0	362	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		17			67			6				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	1		1	1		1	2		6		6	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	22	11	17	33	6	112	7	1221	46	1	84	691
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	28	0	33	118	0	7	1267	0	0	85	691
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1543
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	2
Peak Hour Factor	0.90
Heavy Vehicles (%)	1%
Adj. Flow (vph)	11
Shared Lane Traffic (%)	
Lane Group Flow (vph)	11
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	1	1		1	1		6	6		2	2	2
Act Effct Green (s)	14.3	14.3		14.3	14.3		83.4	83.4			83.4	83.4
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76			0.76	0.76
v/c Ratio	0.14	0.14		0.19	0.45		0.02	0.48			0.31	0.27
Control Delay	40.6	22.7		41.9	24.8		6.0	6.8			15.9	7.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	40.6	22.7		41.9	24.8		6.0	6.8			15.9	7.7
LOS	D	C		D	C		A	A			B	A
Approach Delay		30.6			28.5			6.8				8.6
Approach LOS		C			C			A				A
Queue Length 50th (m)	4.1	2.0		6.2	9.7		0.2	33.1			2.6	10.9
Queue Length 95th (m)	8.9	7.9		11.9	20.7		2.2	91.0			23.7	59.3
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	349	438		391	501		329	2640			274	2604
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.06	0.06		0.08	0.24		0.02	0.48			0.31	0.27

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 9.4

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: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	2
Act Effct Green (s)	83.4
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	5.0
Queue Delay	0.0
Total Delay	5.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	m1.1
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1177
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	



Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰		↰↰	↰	↰	↰
Traffic Volume (vph)	2	25	905	1	1230	87	110	21
Future Volume (vph)	2	25	905	1	1230	87	110	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		50.0		0.0		175.0	30.0	0.0
Storage Lanes		1		0		1	1	1
Taper Length (m)		65.0		10.0			20.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor						0.97		
Frt						0.850		0.850
Flt Protected		0.950					0.950	
Satd. Flow (prot)	0	1768	3502	0	3537	1582	1768	1582
Flt Permitted		0.171			0.955		0.950	
Satd. Flow (perm)	0	318	3502	0	3377	1527	1768	1582
Right Turn on Red						Yes		Yes
Satd. Flow (RTOR)						97		23
Link Speed (k/h)			60		60		50	
Link Distance (m)			568.4		297.5		251.2	
Travel Time (s)			34.1		17.9		18.1	
Confl. Peds. (#/hr)		5				5		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	2	28	1006	1	1367	97	122	23
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	30	1006	0	1368	97	122	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	R NA	Left	Right	L NA	R NA
Median Width(m)			6.0		4.0		6.0	
Link Offset(m)			0.0		0.0		0.0	
Crosswalk Width(m)			5.0		5.0		5.0	
Two way Left Turn Lane								
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14		14	24	14
Number of Detectors	1	1	2	1	2	1	1	1
Detector Template	Left	Left	Thru	Left	Thru	Right	Left	Right
Leading Detector (m)	2.0	2.0	10.0	2.0	10.0	2.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	0.6	2.0	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4		9.4			
Detector 2 Size(m)			0.6		0.6			
Detector 2 Type			CI+Ex		CI+Ex			
Detector 2 Channel								
Detector 2 Extend (s)			0.0		0.0			
Turn Type	Perm	Perm	NA	Perm	NA	Perm	Perm	Perm
Protected Phases			2		6			
Permitted Phases	2	2		6		6	4	4
Detector Phase	2	2	2	6	6	6	4	4
Switch Phase								



Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.1	16.1	16.1	26.1	26.1	26.1	35.1	35.1
Total Split (s)	84.0	84.0	84.0	84.0	84.0	84.0	36.0	36.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%
Maximum Green (s)	77.9	77.9	77.9	77.9	77.9	77.9	29.9	29.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	2.8	2.8
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)		6.1	6.1		6.1	6.1	6.1	6.1
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None
Walk Time (s)				7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)				13.0	13.0	13.0	22.0	22.0
Pedestrian Calls (#/hr)				5	5	5	1	1
Act Effct Green (s)		91.8	91.8		91.8	91.8	16.0	16.0
Actuated g/C Ratio		0.76	0.76		0.76	0.76	0.13	0.13
v/c Ratio		0.12	0.38		0.53	0.08	0.52	0.10
Control Delay		6.8	5.9		1.8	0.1	54.7	15.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0
Total Delay		6.8	5.9		1.8	0.1	54.7	15.5
LOS		A	A		A	A	D	B
Approach Delay			5.9		1.7		48.5	
Approach LOS			A		A		D	
Queue Length 50th (m)		1.3	28.5		6.4	0.1	25.6	0.0
Queue Length 95th (m)		6.3	62.6		12.2	0.1	37.3	6.1
Internal Link Dist (m)			544.4		273.5		227.2	
Turn Bay Length (m)		50.0				175.0	30.0	
Base Capacity (vph)		243	2679		2584	1191	440	411
Starvation Cap Reductn		0	0		0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0
Reduced v/c Ratio		0.12	0.38		0.53	0.08	0.28	0.06

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTU, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 5.9

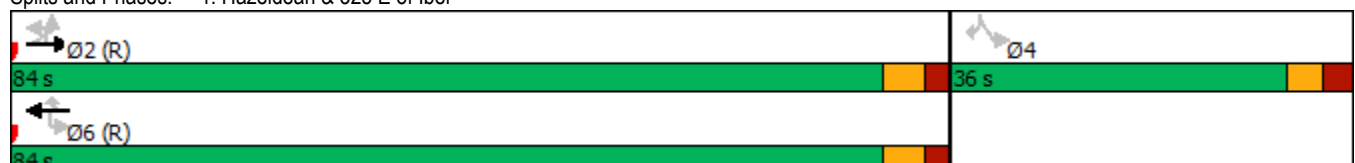
Intersection LOS: A

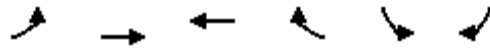
Intersection Capacity Utilization 55.1%

ICU Level of Service B

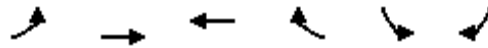
Analysis Period (min) 15

Splits and Phases: 1: Hazeldean & 325 E of Iber





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	166	950	1132	61	94	70
Future Volume (vph)	166	950	1132	61	94	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0			180.0	40.0	40.0
Storage Lanes	1			1	2	0
Taper Length (m)	75.0				30.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Ped Bike Factor				0.97		0.98
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1768	3537	3502	1582	3431	1582
Flt Permitted	0.159				0.950	
Satd. Flow (perm)	296	3537	3502	1539	3431	1552
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				68		38
Link Speed (k/h)		60	60		50	
Link Distance (m)		297.5	287.2		237.4	
Travel Time (s)		17.9	17.2		17.1	
Confl. Peds. (#/hr)	3			3		5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	2%	1%	1%	1%
Adj. Flow (vph)	184	1056	1258	68	104	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	1056	1258	68	104	78
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	R NA
Median Width(m)		6.0	4.0		10.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		5.0	5.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	5
Switch Phase						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	11.2	16.3	31.3	31.3	31.2	11.2
Total Split (s)	20.0	87.0	67.0	67.0	33.0	20.0
Total Split (%)	16.7%	72.5%	55.8%	55.8%	27.5%	16.7%
Maximum Green (s)	13.8	80.7	60.7	60.7	26.8	13.8
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	3.7
All-Red Time (s)	2.5	2.6	2.6	2.6	2.9	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3	6.3	6.3	6.2	6.2
Lead/Lag	Lead		Lag	Lag		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			18.0	18.0	18.0	
Pedestrian Calls (#/hr)			3	3	5	
Act Effct Green (s)	94.6	94.5	78.7	78.7	13.0	22.6
Actuated g/C Ratio	0.79	0.79	0.66	0.66	0.11	0.19
v/c Ratio	0.53	0.38	0.55	0.07	0.28	0.24
Control Delay	15.1	4.2	5.3	0.2	49.7	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	4.2	5.3	0.2	49.7	20.0
LOS	B	A	A	A	D	B
Approach Delay		5.8	5.1		36.9	
Approach LOS		A	A		D	
Queue Length 50th (m)	5.9	22.1	5.3	0.0	11.1	7.2
Queue Length 95th (m)	33.8	48.5	9.0	m0.0	16.5	14.6
Internal Link Dist (m)		273.5	263.2		213.4	
Turn Bay Length (m)	75.0			180.0	40.0	40.0
Base Capacity (vph)	407	2785	2297	1033	766	384
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.38	0.55	0.07	0.14	0.20

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 111 (93%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 7.5

Intersection LOS: A

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	853	5	19	1062	212	11	2	23	177	1
Future Volume (vph)	1	82	853	5	19	1062	212	11	2	23	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.96	1.00	0.99		1.00	0.98
Frt			0.999				0.850		0.861			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3532	0	1701	3537	1582	1406	1581	0	3431	1556
Flt Permitted		0.141			0.262			0.950			0.950	
Satd. Flow (perm)	0	262	3532	0	469	3537	1524	1400	1581	0	3415	1556
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			1				236		26			159
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			795.2			289.2			233.8
Travel Time (s)			17.2			47.7			20.8			16.8
Confl. Peds. (#/hr)		7		8	8		7	4		2	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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	91	948	6	21	1180	236	12	2	26	197	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	954	0	21	1180	236	12	28	0	197	160
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	4
Peak Hour Factor	0.90
Heavy Vehicles (%)	1%
Adj. Flow (vph)	159
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	43.0		17.0	43.0	43.0	28.0	32.0		28.0	32.0
Total Split (%)	14.2%	14.2%	35.8%		14.2%	35.8%	35.8%	23.3%	26.7%		23.3%	26.7%
Maximum Green (s)	10.9	10.9	36.7		10.9	36.7	36.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			8			7	7		2			4
Act Effct Green (s)		80.9	76.7		74.2	67.8	67.8	9.4	13.0		12.4	16.9
Actuated g/C Ratio		0.67	0.64		0.62	0.56	0.56	0.08	0.11		0.10	0.14
v/c Ratio		0.33	0.42		0.06	0.59	0.25	0.11	0.14		0.55	0.45
Control Delay		16.4	18.2		21.2	38.9	15.7	50.5	18.2		57.0	11.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		16.4	18.2		21.2	38.9	15.7	50.5	18.2		57.0	11.0
LOS		B	B		C	D	B	D	B		E	B
Approach Delay			18.0			34.8			27.8			36.4
Approach LOS			B			C			C			D
Queue Length 50th (m)		7.2	46.7		2.6	125.1	17.2	2.5	0.4		21.3	0.2
Queue Length 95th (m)		21.8	129.9		m5.1	#166.2	m33.4	7.7	7.5		31.3	16.2
Internal Link Dist (m)			263.2			771.2			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		315	2257		420	1999	963	251	356		614	463
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		0.29	0.42		0.05	0.59	0.25	0.05	0.08		0.32	0.35

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 106 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 28.8

Intersection LOS: C

Intersection Capacity Utilization 64.7%

ICU Level of Service C

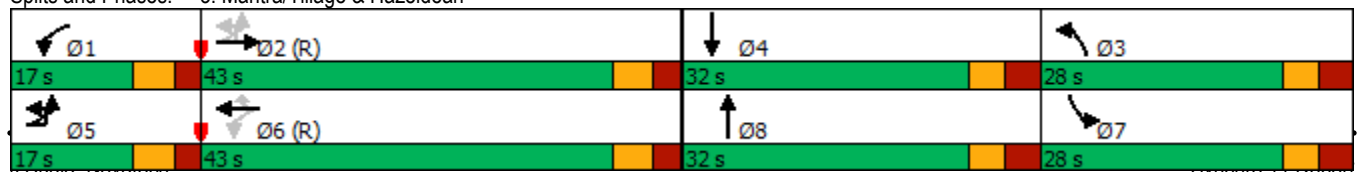
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	392	551	241	14	270	632	285	274	713	186	1
Future Volume (vph)	2	392	551	241	14	270	632	285	274	713	186	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.98	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3399	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3359	3537	1481	0	3355	3537	1525	3387	3468	1535	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				235				192			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		3		24		24		3	5		6	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	436	612	268	16	300	702	317	304	792	207	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	438	612	268	0	316	702	317	304	792	207	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	292	809	383
Future Volume (vph)	292	809	383
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	1.00		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3416	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			290
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	6		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	324	899	426
Shared Lane Traffic (%)			
Lane Group Flow (vph)	325	899	426
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			3	3		6	6	
Act Effct Green (s)		16.5	31.4	31.4		15.2	30.0	30.0	14.3	32.3	32.3	
Actuated g/C Ratio		0.14	0.26	0.26		0.13	0.25	0.25	0.12	0.27	0.27	
v/c Ratio		0.95	0.66	0.48		0.74	0.79	0.60	0.75	0.85	0.40	
Control Delay		82.1	49.0	19.6		52.7	61.2	34.3	77.0	44.6	7.9	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.1	
Total Delay		82.1	49.0	19.6		52.7	61.2	34.3	77.0	44.6	8.0	
LOS		F	D	B		D	E	C	E	D	A	
Approach Delay			54.0				52.8			46.4		
Approach LOS			D				D			D		
Queue Length 50th (m)		52.2	55.2	2.7		34.3	85.8	38.5	29.4	88.2	12.8	
Queue Length 95th (m)		#79.9	76.6	49.2		48.0	103.0	70.3	#60.6	#119.6	6.9	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1046	603		467	1046	586	405	933	522	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	33	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.95	0.59	0.44		0.68	0.67	0.54	0.75	0.85	0.42	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 50.8

Intersection LOS: D

Intersection Capacity Utilization 86.3%

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.

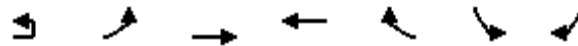
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

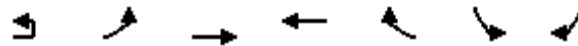
			
Ø1	Ø2 (R)	Ø3	Ø4
18 s	37 s	23 s	42 s
			
Ø5	Ø6 (R)	Ø7	Ø8
18 s	37 s	23 s	42 s



Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		5	5
Act Effct Green (s)	15.2	33.1	33.1
Actuated g/C Ratio	0.13	0.28	0.28
v/c Ratio	0.75	0.93	0.67
Control Delay	67.8	57.9	20.5
Queue Delay	0.1	0.0	0.0
Total Delay	67.9	57.9	20.5
LOS	E	E	C
Approach Delay		50.2	
Approach LOS		D	
Queue Length 50th (m)	38.7	~85.9	15.0
Queue Length 95th (m)	#65.7	#141.1	74.9
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	433	967	634
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	2	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.75	0.93	0.67
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	64	994	1290	48	94	82
Future Volume (vph)	4	64	994	1290	48	94	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00		1.00		0.99	0.97
Frt				0.995			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3511	0	1768	1582
Flt Permitted		0.143				0.950	
Satd. Flow (perm)	0	263	3537	3511	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				7			52
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	71	1104	1433	53	104	91
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	75	1104	1486	0	104	91
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		89.9	89.9	89.9		17.8	17.8
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.38	0.42	0.56		0.40	0.34
Control Delay		22.8	13.7	8.7		46.2	20.7
Queue Delay		0.0	0.9	0.0		0.0	0.0
Total Delay		22.8	14.6	8.7		46.2	20.7
LOS		C	B	A		D	C
Approach Delay			15.1	8.7		34.3	
Approach LOS			B	A		C	
Queue Length 50th (m)		8.3	69.7	49.4		22.3	8.5
Queue Length 95th (m)		m27.1	133.2	108.5		m29.2	m15.8
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		197	2651	2633		405	396
Starvation Cap Reductn		0	1175	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.38	0.75	0.56		0.26	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: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 13.1

Intersection LOS: B

Intersection Capacity Utilization 77.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	176	2	1195	63	1	155	1470
Future Volume (vph)	15	0	8	41	4	176	2	1195	63	1	155	1470
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		1.00	0.98							
Frt		0.850			0.853			0.992				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1561	0	1768	1560	0	1768	3476	0	0	1734	3537
Flt Permitted	0.346			0.752			0.120				0.117	
Satd. Flow (perm)	605	1561	0	1398	1560	0	223	3476	0	0	214	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		129			146			7				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		1	1		5	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 (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	17	0	9	46	4	196	2	1328	70	1	172	1633
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	9	0	46	200	0	2	1398	0	0	173	1633
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1511
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	3
Peak Hour Factor	0.90
Heavy Vehicles (%)	3%
Adj. Flow (vph)	32
Shared Lane Traffic (%)	
Lane Group Flow (vph)	32
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	1	1		5	5			1				3
Act Effct Green (s)	14.7	14.7		14.7	14.7		79.8	74.4			91.3	89.8
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.66	0.62			0.76	0.75
v/c Ratio	0.23	0.03		0.27	0.63		0.01	0.65			0.57	0.62
Control Delay	51.0	0.1		45.5	23.0		5.0	8.9			16.1	11.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	51.0	0.1		45.5	23.0		5.0	8.9			16.1	11.0
LOS	D	A		D	C		A	A			B	B
Approach Delay		33.4			27.2			8.9				11.3
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.5	0.0		10.0	14.4		0.0	43.1			6.4	52.8
Queue Length 95th (m)	8.7	0.0		m17.8	32.5		m0.2	32.0			#30.4	184.3
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	153	492		355	505		247	2157			306	2648
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.11	0.02		0.13	0.40		0.01	0.65			0.57	0.62

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 77.6%

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	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	3
Act Effct Green (s)	89.8
Actuated g/C Ratio	0.75
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1154
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1089	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1089	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor									1.00			1.00
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1582	0	1488	1582	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.738				0.133				0.209
Satd. Flow (perm)	1407	1582	0	1156	1582	0	0	248	3457	0	0	389
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		147			157				3			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)										4		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	29	6	0	3	3	40	1210	27	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	29	0	6	3	0	0	43	1237	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												



Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1326	1
Future Volume (vph)	1326	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1473	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1474	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	1	1		1	1				4			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			94.8
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.79
v/c Ratio	0.02	0.10		0.05	0.01			0.15	0.43			0.01
Control Delay	43.0	0.6		44.2	0.0			2.9	2.5			5.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.6		44.2	0.0			2.9	2.5			5.5
LOS	D	A		D	A			A	A			A
Approach Delay		4.6			29.5				2.5			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.2	0.0			1.1	17.5			0.1
Queue Length 95th (m)	2.9	0.0		4.4	0.0			m2.0	m26.0			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	314	467		258	475			313	2902			412
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	0.06		0.02	0.01			0.14	0.43			0.01

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: 0.55

Intersection Signal Delay: 4.6

Intersection LOS: A

Intersection Capacity Utilization 57.6%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	1	
Act Effct Green (s)	91.6	
Actuated g/C Ratio	0.76	
v/c Ratio	0.55	
Control Delay	6.3	
Queue Delay	0.0	
Total Delay	6.3	
LOS	A	
Approach Delay	6.3	
Approach LOS	A	
Queue Length 50th (m)	28.7	
Queue Length 95th (m)	54.1	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2700	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.55	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	885	76	2	115	1206
Future Volume (vph)	37	8	72	78	2	103	26	885	76	2	115	1206
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			1.00	0.99		1.00			1.00	1.00
Frt		0.917				0.850		0.988				0.990
Flt Protected		0.984			0.953		0.950				0.950	
Satd. Flow (prot)	0	1663	0	0	1774	1582	1768	5012	0	0	1768	3493
Flt Permitted		0.861			0.573		0.147				0.246	
Satd. Flow (perm)	0	1455	0	0	1064	1561	274	5012	0	0	458	3493
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				114		23				12
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	1		2	2		1	6		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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	41	9	80	87	2	114	29	983	84	2	128	1340
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	89	114	29	1067	0	0	130	1431
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	6	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	0.90	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	91	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	2	2		1	1	1	1	1		6	6	6
Act Effct Green (s)		15.6			15.6	15.6	86.4	86.4			86.4	86.4
Actuated g/C Ratio		0.13			0.13	0.13	0.72	0.72			0.72	0.72
v/c Ratio		0.54			0.65	0.38	0.15	0.30			0.40	0.57
Control Delay		34.0			69.7	11.4	7.3	6.3			5.3	3.6
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.3
Total Delay		34.0			69.7	11.4	7.3	6.3			5.3	3.9
LOS		C			E	B	A	A			A	A
Approach Delay		34.0			36.9			6.3				4.0
Approach LOS		C			D			A				A
Queue Length 50th (m)		14.2			18.8	0.0	2.2	33.8			2.6	15.2
Queue Length 95th (m)		29.9			32.3	13.8	7.1	39.7			m5.0	m24.1
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		339			212	403	197	3616			329	2519
Starvation Cap Reductn		0			0	0	0	0			0	424
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.38			0.42	0.28	0.15	0.30			0.40	0.68

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 8.4

Intersection LOS: A

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's





Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)	3.0	
Minimum Split (s)	5.0	
Total Split (s)	5.0	
Total Split (%)	4%	
Maximum Green (s)	3.0	
Yellow Time (s)	2.0	
All-Red Time (s)	0.0	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Max	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
PM Peak Hour

560 Hazeldean Road
2025 Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	879	34	2	139	1171
Future Volume (vph)	23	7	7	48	17	97	12	879	34	2	139	1171
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor		0.99		0.99			1.00	1.00			0.99	
Frt		0.925			0.872			0.994				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1703	0	1768	1623	0	1768	3508	0	0	1768	3537
Flt Permitted	0.581			0.747			0.189				0.267	
Satd. Flow (perm)	1040	1703	0	1377	1623	0	351	3508	0	0	494	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		8			108			6				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)			8	8			6		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	26	8	8	53	19	108	13	977	38	2	154	1301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	16	0	53	127	0	13	1015	0	0	156	1301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1525
Right Turn on Red	Yes
Satd. Flow (RTOR)	49
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Peak Hour Factor	0.90
Heavy Vehicles (%)	1%
Adj. Flow (vph)	49
Shared Lane Traffic (%)	
Lane Group Flow (vph)	49
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	8	8		1	1		14	14		6	6	6
Act Effct Green (s)	14.4	14.4		14.4	14.4		93.3	93.3			93.3	93.3
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.21	0.08		0.32	0.44		0.05	0.37			0.41	0.47
Control Delay	48.2	29.3		50.9	15.9		5.7	5.4			15.3	11.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	48.2	29.3		50.9	15.9		5.7	5.4			15.3	11.6
LOS	D	C		D	B		A	A			B	B
Approach Delay		41.0			26.3			5.4				11.8
Approach LOS		D			C			A				B
Queue Length 50th (m)	5.4	1.6		11.2	3.9		0.4	23.6			18.7	83.4
Queue Length 95th (m)	11.3	6.5		18.9	17.0		3.3	65.0			36.8	110.5
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	277	460		367	512		272	2730			384	2751
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.25		0.05	0.37			0.41	0.47

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 10.8

Intersection LOS: B

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	93.3
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.5
Queue Delay	0.0
Total Delay	5.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.3
Queue Length 95th (m)	m5.4
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1196
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

APPENDIX J

Background Synchro Analysis

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	320	1019	10	1	68	662	47	19	442	154	20
Future Volume (vph)	3	320	1019	10	1	68	662	47	19	442	154	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	1.00
Frt			0.999					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3399	0	0	3397	3370	1551	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3419	3399	0	0	3391	3370	1525	1745	3502	1540	3415
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					145			154	
Link Speed (k/h)		60				60			50			
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	5%	2%	1%	2%	6%	3%	2%	2%	2%	1%
Adj. Flow (vph)	3	320	1019	10	1	68	662	47	19	442	154	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	323	1029	0	0	69	662	47	19	442	154	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	221	130
Future Volume (vph)	221	130
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1556
Right Turn on Red		Yes
Satd. Flow (RTOR)		145
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	221	130
Shared Lane Traffic (%)		
Lane Group Flow (vph)	221	130
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	49.0		12.0	12.0	45.0	45.0	12.0	42.0	42.0	12.0
Total Split (%)	13.9%	13.9%	42.6%		10.4%	10.4%	39.1%	39.1%	10.4%	36.5%	36.5%	10.4%
Maximum Green (s)	9.9	9.9	42.9		5.9	5.9	38.9	38.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.4	65.0			7.1	52.4	52.4		5.8	22.1	5.8
Actuated g/C Ratio		0.15	0.57			0.06	0.46	0.46		0.05	0.19	0.05
v/c Ratio		0.62	0.54			0.33	0.43	0.06		0.22	0.66	0.12
Control Delay		52.6	20.5			77.4	8.1	0.4		58.4	47.0	53.7
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		52.6	20.5			77.4	8.1	0.4		58.4	47.0	53.7
LOS		D	C			E	A	A		E	D	D
Approach Delay			28.2				13.8			37.5		
Approach LOS			C				B			D		
Queue Length 50th (m)		32.3	60.2			7.5	7.7	0.0		3.9	46.1	2.1
Queue Length 95th (m)		#61.8	124.1			15.1	8.7	0.0		11.0	51.7	5.7
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		517	1922			211	1536	774		89	1093	176
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		0.62	0.54			0.33	0.43	0.06		0.21	0.40	0.11

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 19 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 75.5%

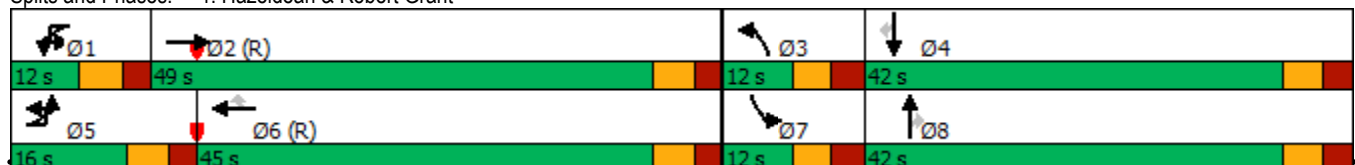
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	36.5%	36.5%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	22.1	22.1
Actuated g/C Ratio	0.19	0.19
v/c Ratio	0.33	0.31
Control Delay	39.9	6.0
Queue Delay	0.0	0.0
Total Delay	39.9	6.0
LOS	D	A
Approach Delay	28.8	
Approach LOS	C	
Queue Length 50th (m)	21.5	0.0
Queue Length 95th (m)	26.8	10.1
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	1093	585
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.20	0.22
Intersection Summary		

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	107	950	41	17	766	47	29	0	26	28	0
Future Volume (vph)	1	107	950	41	17	766	47	29	0	26	28	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0		0.0	70.0		180.0	0.0		0.0	40.0	
Storage Lanes		1		0	1		1	1		0	1	
Taper Length (m)		75.0			45.0			10.0			30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		1.00		0.97	0.99	0.98		0.99	
Frt			0.994				0.850		0.850			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3412	0	1751	3402	1567	1751	1537	0	1768	1843
Flt Permitted		0.316			0.289			0.757			0.740	
Satd. Flow (perm)	0	587	3412	0	531	3402	1518	1386	1537	0	1368	1843
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			8				89		160			
Link Speed (k/h)			60			60			50			50
Link Distance (m)			297.5			287.2			259.5			237.4
Travel Time (s)			17.9			17.2			18.7			17.1
Confl. Peds. (#/hr)		5		5	5		5	5		5	5	
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 (%)	1%	1%	4%	2%	2%	5%	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	1	107	950	41	17	766	47	29	0	26	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	991	0	17	766	47	29	26	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			4.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	
Protected Phases	5	5	2			6			8			4
Permitted Phases	2	2			6		6	8			4	
Detector Phase	5	5	2		6	6	6	8	8		4	4
Switch Phase												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1800
Storage Length (m)	40.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1552
Right Turn on Red	Yes
Satd. Flow (RTOR)	300
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	11.2	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2
Total Split (s)	20.0	20.0	82.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0
Total Split (%)	17.4%	17.4%	71.3%		53.9%	53.9%	53.9%	28.7%	28.7%		28.7%	28.7%
Maximum Green (s)	13.8	13.8	75.7		55.7	55.7	55.7	26.8	26.8		26.8	26.8
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.5	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9
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)		6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2
Lead/Lag	Lead	Lead			Lag	Lag	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	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)			18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)			5		5	5	5	5	5		5	5
Act Effct Green (s)		92.8	94.0		79.3	79.3	79.3	13.0	13.0		13.0	
Actuated g/C Ratio		0.81	0.82		0.69	0.69	0.69	0.11	0.11		0.11	
v/c Ratio		0.20	0.36		0.05	0.33	0.04	0.19	0.08		0.18	
Control Delay		4.4	3.7		5.9	9.6	2.4	46.4	0.5		46.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay		4.4	3.7		5.9	9.6	2.4	46.4	0.5		46.4	
LOS		A	A		A	A	A	D	A		D	
Approach Delay			3.7			9.1			24.7			28.9
Approach LOS			A			A			C			C
Queue Length 50th (m)		2.7	13.3		1.6	53.5	1.6	5.7	0.0		5.5	
Queue Length 95th (m)		11.1	37.8		m4.6	92.4	4.4	12.2	0.0		11.9	
Internal Link Dist (m)			273.5			263.2			235.5			213.4
Turn Bay Length (m)		75.0			70.0		180.0				40.0	
Base Capacity (vph)		615	2790		366	2346	1074	322	480		318	
Starvation Cap Reductn		0	0		0	0	0	0	0		0	
Spillback Cap Reductn		0	0		0	0	0	0	0		0	
Storage Cap Reductn		0	0		0	0	0	0	0		0	
Reduced v/c Ratio		0.18	0.36		0.05	0.33	0.04	0.09	0.05		0.09	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 7.0

Intersection LOS: A

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	31.2
Total Split (s)	33.0
Total Split (%)	28.7%
Maximum Green (s)	26.8
Yellow Time (s)	3.3
All-Red Time (s)	2.9
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.2
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	13.0
Actuated g/C Ratio	0.11
v/c Ratio	0.04
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	40.0
Base Capacity (vph)	591
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	916	12	22	710	113	23	0	93	74	2	36
Future Volume (vph)	45	916	12	22	710	113	23	0	93	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.97	0.99	0.98		0.99	0.98	
Frt		0.998				0.850		0.850			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3454	0	1768	3537	1551	1768	1522	0	3332	1569	0
Flt Permitted	0.322			0.263			0.950			0.950		
Satd. Flow (perm)	598	3454	0	489	3537	1503	1757	1522	0	3298	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				153		333			36	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			795.2			289.2			233.8	
Travel Time (s)		17.2			47.7			20.8			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	45	916	12	22	710	113	23	0	93	74	2	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	928	0	22	710	113	23	93	0	74	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	75.4	72.1		72.0	66.8	66.8	7.6	13.0		7.9	15.7	
Actuated g/C Ratio	0.66	0.63		0.63	0.58	0.58	0.07	0.11		0.07	0.14	
v/c Ratio	0.10	0.43		0.06	0.35	0.12	0.20	0.20		0.32	0.16	
Control Delay	9.2	19.5		9.9	16.0	1.6	53.7	1.0		54.3	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	9.2	19.5		9.9	16.0	1.6	53.7	1.0		54.3	15.3	
LOS	A	B		A	B	A	D	A		D	B	
Approach Delay		19.0			13.9			11.4			41.0	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	5.7	81.1		1.3	39.7	0.0	4.6	0.0		7.6	0.4	
Queue Length 95th (m)	9.5	91.8		5.7	73.1	4.6	12.0	0.0		14.2	8.4	
Internal Link Dist (m)		263.2			771.2			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	460	2166		375	2054	937	330	596		622	375	
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	0.10	0.43		0.06	0.35	0.12	0.07	0.16		0.12	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 98 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 17.7

Intersection LOS: B

Intersection Capacity Utilization 57.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean

	Ø1		Ø2 (R)		Ø4		Ø3
12 s		43 s		32 s		28 s	
	Ø5		Ø6 (R)		Ø8		Ø7
12 s		43 s		32 s		28 s	

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	252	863	176	5	136	401	187	184	835	272	185
Future Volume (vph)	7	252	863	176	5	136	401	187	184	835	272	185
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	0.99		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3214	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3392	3435	1504	3283	3468	1538	3169
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				176				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	252	863	176	5	136	401	187	184	835	272	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	259	863	176	0	141	401	187	184	835	272	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	453	321
Future Volume (vph)	453	321
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		263
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	453	321
Shared Lane Traffic (%)		
Lane Group Flow (vph)	453	321
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.2	32.8	32.8		7.4	27.1	27.1	10.2	33.4	33.4	10.3
Actuated g/C Ratio		0.12	0.30	0.30		0.07	0.25	0.25	0.09	0.30	0.30	0.09
v/c Ratio		0.67	0.83	0.31		0.62	0.47	0.35	0.60	0.79	0.44	0.62
Control Delay		55.4	43.7	5.5		57.0	38.4	12.0	63.3	34.6	6.7	51.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		55.4	43.7	5.5		57.0	38.4	12.0	63.3	34.6	6.7	51.9
LOS		E	D	A		E	D	B	E	C	A	D
Approach Delay			40.9				35.2			32.8		
Approach LOS			D				D			C		
Queue Length 50th (m)		25.4	82.4	0.0		14.2	38.9	2.1	12.2	82.8	19.2	18.1
Queue Length 95th (m)		37.3	100.5	13.3		23.7	51.8	26.1	30.8	#116.2	5.4	25.2
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	608		231	921	570	322	1053	625	311
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.61	0.75	0.29		0.61	0.44	0.33	0.57	0.79	0.44	0.59

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 34.6

Intersection LOS: C

Intersection Capacity Utilization 81.0%

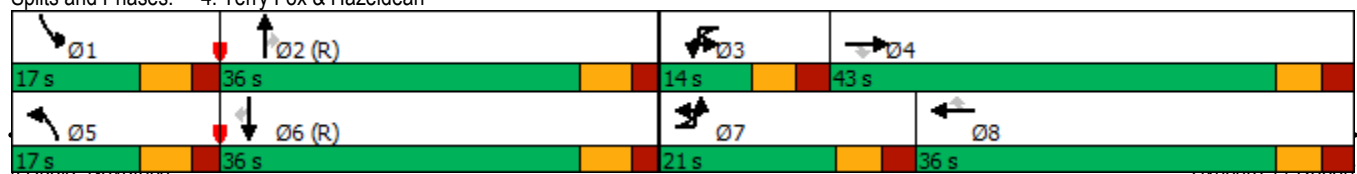
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

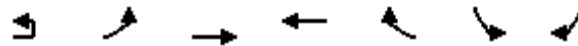


03/10/2024, 11:00 AM

Dynamic 11 Report



Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	33.5	33.5
Actuated g/C Ratio	0.30	0.30
v/c Ratio	0.44	0.51
Control Delay	28.4	13.7
Queue Delay	0.0	0.0
Total Delay	28.4	13.7
LOS	C	B
Approach Delay	28.0	
Approach LOS	C	
Queue Length 50th (m)	39.1	17.7
Queue Length 95th (m)	54.3	52.8
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	1037	634
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.44	0.51
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	121	1025	823	72	74	68
Future Volume (vph)	4	121	1025	823	72	74	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.99		1.00		0.99	0.98
Frt				0.988			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3420	0	1768	1537
Flt Permitted		0.309				0.950	
Satd. Flow (perm)	0	556	3468	3420	0	1747	1500
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				16			68
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		10			10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	121	1025	823	72	74	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	125	1025	895	0	74	68
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			Cl+Ex	Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				10		10	10
Act Effct Green (s)		88.3	88.3	88.3		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.28	0.37	0.33		0.34	0.27
Control Delay		15.2	12.8	4.9		61.1	25.2
Queue Delay		0.0	0.3	0.0		0.0	0.0
Total Delay		15.2	13.1	4.9		61.1	25.2
LOS		B	B	A		E	C
Approach Delay			13.4	4.9		43.9	
Approach LOS			B	A		D	
Queue Length 50th (m)		13.1	56.5	19.7		14.6	2.6
Queue Length 95th (m)		m28.8	101.7	52.7		m22.4	m11.6
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		446	2782	2747		443	431
Starvation Cap Reductn		0	974	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.28	0.57	0.33		0.17	0.16

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: 0.37

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 62.9%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1385	30	1	160	1000
Future Volume (vph)	14	1	3	14	2	97	1	1385	30	1	160	1000
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.270				0.160	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	502	3489	0	0	292	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			48			3				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1385	30	1	160	1000
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1415	0	0	161	1000
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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
Total Lost Time (s)	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)	5	5		5	5		5	5		5	5	5
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	0.08	0.02		0.09	0.42		0.00	0.54			0.74	0.39
Control Delay	38.8	25.2		62.3	49.0		2.0	5.4			34.2	6.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.8	25.2		62.3	49.0		2.0	5.4			34.2	6.3
LOS	D	C		E	D		A	A			C	A
Approach Delay		35.8			50.7			5.4				10.1
Approach LOS		D			D			A				B
Queue Length 50th (m)	2.6	0.2		3.0	12.4		0.0	4.7			11.9	24.6
Queue Length 95th (m)	6.6	2.6		m9.3	30.6		m0.0	22.1			#67.3	67.3
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	455		377	2624			219	2558
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	0.01		0.04	0.22		0.00	0.54			0.74	0.39

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 9.5

Intersection LOS: A

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	82.7
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1088
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1257	1	0	840	0
Future Volume (vph)	0	0	3	1	0	0	10	1257	1	0	840	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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		0.98		0.99			1.00	1.00				
Frt		0.850										
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1553	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.336					
Satd. Flow (perm)	1861	1553	0	1422	1861	0	624	3468	0	1861	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192										
Link Speed (k/h)		50			30			70			70	
Link Distance (m)		207.5			88.7			316.2			253.3	
Travel Time (s)		14.9			10.6			16.3			13.0	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	10	1257	1	0	840	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	10	1258	0	0	840	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		4.0			4.0			12.0			12.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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			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												

7: Terry Fox & Tony Graham Rec
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.39			0.27	
Control Delay		0.0		37.0			9.4	8.7			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.4	8.7			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			8.7			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	0.0			0.0	
Queue Length 95th (m)		0.0		1.4			m2.1	145.2			1.6	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		523		346			580	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.39			0.27	

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: 5.4

Intersection LOS: A

Intersection Capacity Utilization 57.7%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec



8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1243	52	3	28	747
Future Volume (vph)	7	1	16	30	1	52	8	1243	52	3	28	747
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.994				0.996
Flt Protected		0.986			0.954		0.950				0.950	
Satd. Flow (prot)	0	1526	0	0	1742	1567	1581	5042	0	0	1722	3421
Flt Permitted		0.899			0.715		0.315				0.201	
Satd. Flow (perm)	0	1389	0	0	1297	1537	523	5042	0	0	364	3421
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		16				109		10				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	7	1	16	30	1	52	8	1243	52	3	28	747
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	31	52	8	1295	0	0	31	765
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	5	
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	18	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5		5		5	5	5
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.2	80.2
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.14			0.21	0.19	0.02	0.34			0.12	0.31
Control Delay		24.0			45.0	1.5	2.8	4.1			4.3	2.7
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		24.0			45.0	1.5	2.8	4.1			4.3	2.7
LOS		C			D	A	A	A			A	A
Approach Delay		24.0			17.8			4.1				2.8
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.5			5.8	0.0	0.3	36.3			0.4	4.6
Queue Length 95th (m)		7.6			12.4	0.0	m0.3	25.5			m2.5	17.1
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		340			306	446	479	3788			265	2493
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		0.07			0.10	0.12	0.02	0.34			0.12	0.31

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's





Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		5%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1232	41	1	76	689
Future Volume (vph)	20	10	15	30	5	101	6	1232	41	1	76	689
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.910			0.857			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1462	0	1734	1555	0	1069	3481	0	0	1768	3435
Flt Permitted	0.689			0.741			0.388				0.194	
Satd. Flow (perm)	1276	1462	0	1345	1555	0	435	3481	0	0	360	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		15			63			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		5	5		5	5		10		10	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	20	10	15	30	5	101	6	1232	41	1	76	689
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	25	0	30	106	0	6	1273	0	0	77	689
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1531
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	10
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

9: Terry Fox & Halkirk/Winchester
AM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	5	5		5	5		10	10		5	5	5
Act Effct Green (s)	14.2	14.2		14.2	14.2		83.5	83.5			83.5	83.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76			0.76	0.76
v/c Ratio	0.12	0.12		0.17	0.42		0.02	0.48			0.28	0.26
Control Delay	40.1	23.2		41.6	23.5		6.0	6.8			17.5	10.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	40.1	23.2		41.6	23.5		6.0	6.8			17.5	10.0
LOS	D	C		D	C		A	A			B	B
Approach Delay		30.7			27.5			6.8				10.7
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.7	1.9		5.6	8.1		0.2	33.4			5.9	27.2
Queue Length 95th (m)	8.4	7.5		11.3	18.7		2.0	91.8			22.0	60.1
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	371	435		391	497		330	2645			273	2608
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	0.06		0.08	0.21		0.02	0.48			0.28	0.26

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.5
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	6.0
Queue Delay	0.0
Total Delay	6.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.1
Queue Length 95th (m)	m1.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1169
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	301	1069	17	1	147	1420	101	16	257	108	132
Future Volume (vph)	2	301	1069	17	1	147	1420	101	16	257	108	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.998					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3494	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3494	0	0	3390	3537	1555	1746	3502	1539	3408
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					128			128	
Link Speed (k/h)		60				60			50			
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	301	1069	17	1	147	1420	101	16	257	108	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	1086	0	0	148	1420	101	16	257	108	132
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	418	390
Future Volume (vph)	418	390
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		183
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	418	390
Shared Lane Traffic (%)		
Lane Group Flow (vph)	418	390
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.6	68.6			9.9	60.9	60.9		5.8	21.2	5.9
Actuated g/C Ratio		0.14	0.53			0.08	0.47	0.47		0.04	0.16	0.05
v/c Ratio		0.65	0.59			0.57	0.86	0.13		0.21	0.45	0.85
Control Delay		61.1	24.8			84.6	28.7	1.9		66.2	49.9	102.6
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		61.1	24.8			84.6	28.7	1.9		66.2	49.9	102.6
LOS		E	C			F	C	A		E	D	F
Approach Delay			32.7				32.0				38.2	
Approach LOS			C				C				D	
Queue Length 50th (m)		34.7	80.8			17.4	166.6	2.8		3.7	31.0	16.2
Queue Length 95th (m)		#70.3	134.7			27.3	#218.6	m3.0		10.8	35.7	#32.8
Internal Link Dist (m)			544.4				273.5				239.2	
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		464	1844			264	1658	796		79	967	155
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		0.65	0.59			0.56	0.86	0.13		0.20	0.27	0.85

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 36.9

Intersection LOS: D

Intersection Capacity Utilization 101.6%

ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	28.4	28.4
Actuated g/C Ratio	0.22	0.22
v/c Ratio	0.55	0.81
Control Delay	47.3	38.4
Queue Delay	0.0	0.0
Total Delay	47.3	38.4
LOS	D	D
Approach Delay	51.4	
Approach LOS	D	
Queue Length 50th (m)	47.1	49.3
Queue Length 95th (m)	57.1	78.5
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	561
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.43	0.70
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1156	83	41	1388	61	81	0	31	94	0	70
Future Volume (vph)	166	1156	83	41	1388	61	81	0	31	94	0	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	70.0		180.0	0.0		0.0	40.0		40.0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (m)	75.0			45.0			10.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.97	0.99	0.98		0.99		0.98
Frt		0.990				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3491	0	1751	3502	1582	1751	1536	0	1768	1843	1582
Flt Permitted	0.131			0.226			0.757			0.737		
Satd. Flow (perm)	244	3491	0	416	3502	1530	1384	1536	0	1362	1843	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				79		120				207
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		297.5			287.2			259.5			237.4	
Travel Time (s)		17.9			17.2			18.7			17.1	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	166	1156	83	41	1388	61	81	0	31	94	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1239	0	41	1388	61	81	31	0	94	0	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			4.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		97	97		14	97		97	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												

2: Hazeldean & Roger Griffiths
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2	31.2
Total Split (s)	20.0	97.0		77.0	77.0	77.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	15.4%	74.6%		59.2%	59.2%	59.2%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	13.8	90.7		70.7	70.7	70.7	26.8	26.8		26.8	26.8	26.8
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag			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	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
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)		18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)		5		5	5	5	5	5		5	5	5
Act Effct Green (s)	102.0	101.9		86.0	86.0	86.0	15.6	15.6		15.6		15.6
Actuated g/C Ratio	0.78	0.78		0.66	0.66	0.66	0.12	0.12		0.12		0.12
v/c Ratio	0.54	0.45		0.15	0.60	0.06	0.49	0.11		0.58		0.19
Control Delay	21.8	8.8		2.3	4.8	0.1	62.0	0.7		66.9		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	21.8	8.8		2.3	4.8	0.1	62.0	0.7		66.9		1.2
LOS	C	A		A	A	A	E	A		E		A
Approach Delay		10.3			4.6			45.1			38.9	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	11.9	34.8		0.4	7.5	0.1	18.3	0.0		21.6		0.0
Queue Length 95th (m)	m46.0	105.7		m0.7	9.0	m0.0	30.7	0.0		34.9		0.0
Internal Link Dist (m)		273.5			263.2			235.5			213.4	
Turn Bay Length (m)	75.0			70.0		180.0				40.0		40.0
Base Capacity (vph)	357	2740		275	2316	1039	285	411		280		484
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	0.46	0.45		0.15	0.60	0.06	0.28	0.08		0.34		0.14

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 114 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 10.3

Intersection LOS: B

Intersection Capacity Utilization 79.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	1063	24	89	1344	212	20	2	43	177	1
Future Volume (vph)	1	82	1063	24	89	1344	212	20	2	43	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.95	0.99	0.98		0.99	0.98
Frt			0.997				0.850		0.857			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3522	0	1701	3537	1582	1406	1565	0	3431	1553
Flt Permitted		0.112			0.180			0.950			0.950	
Satd. Flow (perm)	0	208	3522	0	322	3537	1510	1397	1565	0	3389	1553
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			2				207		43			143
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			795.2			289.2			233.8
Travel Time (s)			17.2			47.7			20.8			16.8
Confl. Peds. (#/hr)		10		10	10		10	5		5	5	
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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	82	1063	24	89	1344	212	20	2	43	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	1087	0	89	1344	212	20	45	0	177	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	143
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	53.0		17.0	53.0	53.0	28.0	32.0		28.0	32.0
Total Split (%)	13.1%	13.1%	40.8%		13.1%	40.8%	40.8%	21.5%	24.6%		21.5%	24.6%
Maximum Green (s)	10.9	10.9	46.7		10.9	46.7	46.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			10			10	10		5			5
Act Effct Green (s)		82.0	74.0		83.6	74.7	74.7	9.6	13.0		12.3	20.1
Actuated g/C Ratio		0.63	0.57		0.64	0.57	0.57	0.07	0.10		0.09	0.15
v/c Ratio		0.37	0.54		0.30	0.66	0.22	0.19	0.23		0.55	0.40
Control Delay		16.0	24.0		12.1	23.7	3.5	58.5	17.6		62.4	11.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		16.0	24.0		12.1	23.7	3.5	58.5	17.6		62.4	11.1
LOS		B	C		B	C	A	E	B		E	B
Approach Delay			23.4			20.5			30.2			39.4
Approach LOS			C			C			C			D
Queue Length 50th (m)		10.6	94.6		6.4	108.5	0.5	4.6	0.5		20.9	0.2
Queue Length 95th (m)		17.3	148.4		17.6	#199.3	14.3	11.6	9.9		31.0	16.3
Internal Link Dist (m)			263.2			771.2			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		267	2005		332	2033	956	232	341		567	429
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		0.31	0.54		0.27	0.66	0.22	0.09	0.13		0.31	0.34

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 106 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 23.6

Intersection LOS: C

Intersection Capacity Utilization 77.9%

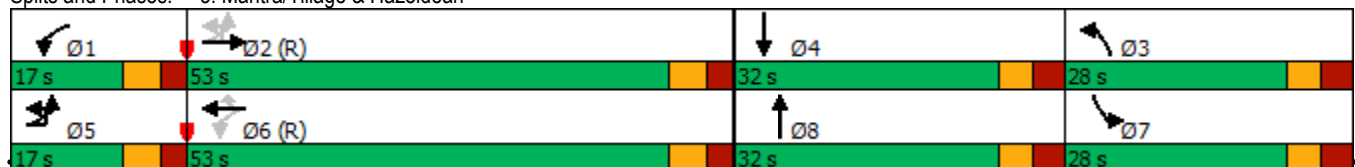
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	424	757	260	14	301	950	308	296	794	208	1
Future Volume (vph)	2	424	757	260	14	301	950	308	296	794	208	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3363	3537	1521	3387	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				235				174			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	424	757	260	14	301	950	308	296	794	208	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	426	757	260	0	315	950	308	296	794	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	315	916	414
Future Volume (vph)	315	916	414
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3407	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			264
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	315	916	414
Shared Lane Traffic (%)			
Lane Group Flow (vph)	316	916	414
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	36.1	36.1		15.2	34.8	34.8	11.8	30.5	30.5	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29	0.10	0.25	0.25	
v/c Ratio		0.92	0.71	0.43		0.73	0.93	0.55	0.89	0.90	0.42	
Control Delay		77.8	41.8	8.0		51.1	65.6	30.6	87.8	50.5	8.7	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		77.8	41.8	8.0		51.1	65.6	30.6	87.8	50.5	8.9	
LOS		E	D	A		D	E	C	F	D	A	
Approach Delay			46.3				55.8			52.3		
Approach LOS			D				E			D		
Queue Length 50th (m)		47.6	77.2	3.9		34.1	109.2	35.2	27.7	88.5	13.5	
Queue Length 95th (m)		#74.3	97.7	22.7		48.1	#142.6	70.4	#58.1	#120.0	7.1	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1065	610		467	1046	572	333	882	500	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.92	0.71	0.43		0.67	0.91	0.54	0.89	0.90	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 56.9

Intersection LOS: E

Intersection Capacity Utilization 98.7%

ICU Level of Service F

Analysis Period (min) 15

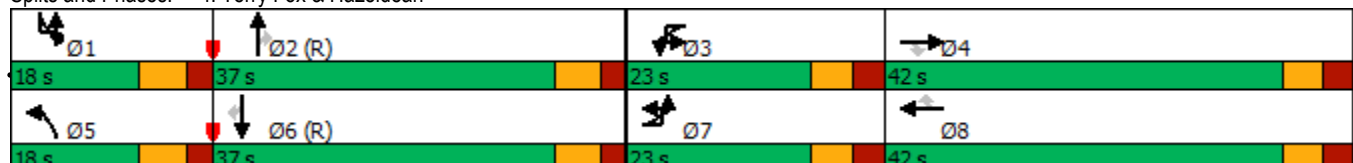
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

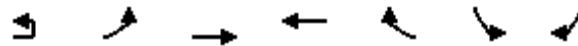
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

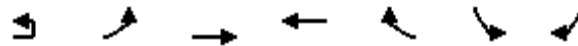




Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.1	30.9	30.9
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.91	1.02	0.70
Control Delay	88.0	76.8	23.5
Queue Delay	27.7	0.0	0.0
Total Delay	115.7	76.8	23.5
LOS	F	E	C
Approach Delay		70.9	
Approach LOS		E	
Queue Length 50th (m)	37.8	~94.1	16.9
Queue Length 95th (m)	#63.3	#145.2	74.9
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	346	902	591
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	43	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.04	1.02	0.70
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	78	1229	1653	54	99	97
Future Volume (vph)	4	78	1229	1653	54	99	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				1.00		0.99	0.97
Frt				0.995			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3512	0	1768	1582
Flt Permitted		0.104				0.950	
Satd. Flow (perm)	0	192	3537	3512	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				6			33
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	78	1229	1653	54	99	97
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	82	1229	1707	0	99	97
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		90.1	90.1	90.1		17.6	17.6
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.57	0.46	0.65		0.39	0.38
Control Delay		37.1	15.0	10.1		45.9	30.2
Queue Delay		0.0	1.6	0.0		0.0	0.0
Total Delay		37.1	16.6	10.1		45.9	30.2
LOS		D	B	B		D	C
Approach Delay			17.9	10.1		38.2	
Approach LOS			B	B		D	
Queue Length 50th (m)		8.2	91.6	62.3		21.4	13.9
Queue Length 95th (m)		m25.3	m154.1	139.6		m28.1	m21.5
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		144	2655	2638		405	381
Starvation Cap Reductn		0	1178	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.57	0.83	0.65		0.24	0.25

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: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	185	2	1315	63	1	164	1630
Future Volume (vph)	15	0	8	41	4	185	2	1315	63	1	164	1630
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.98		0.99	0.98			1.00				
Frt		0.850			0.853			0.993				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1554	0	1768	1560	0	1768	3474	0	0	1734	3537
Flt Permitted	0.391			0.752			0.118				0.123	
Satd. Flow (perm)	684	1554	0	1391	1560	0	220	3474	0	0	225	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		129			124			6				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	15	0	8	41	4	185	2	1315	63	1	164	1630
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	8	0	41	189	0	2	1378	0	0	165	1630
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1504
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	5	5		5	5			5				5
Act Effct Green (s)	15.0	15.0		15.0	15.0		80.7	75.2			91.0	89.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.67	0.63			0.76	0.75
v/c Ratio	0.18	0.03		0.24	0.62		0.01	0.63			0.55	0.62
Control Delay	47.4	0.1		41.1	23.4		5.0	8.4			14.9	11.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	47.4	0.1		41.1	23.4		5.0	8.4			14.9	11.1
LOS	D	A		D	C		A	A			B	B
Approach Delay		31.0			26.5			8.4				11.2
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.1	0.0		8.7	16.6		0.0	41.5			6.4	55.1
Queue Length 95th (m)	7.9	0.0		m13.2	30.3		m0.2	30.7			#25.6	183.7
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	173	491		353	488		246	2179			298	2640
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.02		0.12	0.39		0.01	0.63			0.55	0.62

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 11.3

Intersection LOS: B

Intersection Capacity Utilization 83.0%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	89.6
Actuated g/C Ratio	0.75
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1145
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1200	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1200	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor	0.99	0.98		0.99	0.98				1.00			1.00
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1552	0	1488	1552	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.740				0.137				0.210
Satd. Flow (perm)	1398	1552	0	1152	1552	0	0	255	3457	0	0	390
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		126			153				3			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)	5		5	5		5		5		5		5
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 (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	26	5	0	3	3	36	1200	24	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	26	0	5	3	0	0	39	1224	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												



Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1474	1
Future Volume (vph)	1474	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1474	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1475	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	CI+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	5	5		5	5				5			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			96.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.80
v/c Ratio	0.02	0.09		0.04	0.01			0.14	0.42			0.01
Control Delay	43.0	0.7		43.8	0.0			2.8	2.5			5.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.7		43.8	0.0			2.8	2.5			5.5
LOS	D	A		D	A			A	A			A
Approach Delay		5.0			27.4				2.5			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.0	0.0			1.0	16.6			0.1
Queue Length 95th (m)	2.9	0.0		4.0	0.0			m1.8	m25.8			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	312	444		257	465			319	2902			415
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	0.06		0.02	0.01			0.12	0.42			0.01

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: 0.52

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 64.0%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	5	
Act Effct Green (s)	95.4	
Actuated g/C Ratio	0.80	
v/c Ratio	0.52	
Control Delay	5.7	
Queue Delay	0.0	
Total Delay	5.7	
LOS	A	
Approach Delay	5.7	
Approach LOS	A	
Queue Length 50th (m)	28.1	
Queue Length 95th (m)	53.6	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2810	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.52	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	987	76	2	115	1352
Future Volume (vph)	37	8	72	78	2	103	26	987	76	2	115	1352
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98		1.00			1.00	1.00
Frt		0.917				0.850		0.989				0.991
Flt Protected		0.984			0.954		0.950				0.950	
Satd. Flow (prot)	0	1658	0	0	1776	1582	1768	5013	0	0	1768	3495
Flt Permitted		0.864			0.602		0.148				0.248	
Satd. Flow (perm)	0	1453	0	0	1114	1552	275	5013	0	0	460	3495
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				103		21				10
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	10		5		5	
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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	37	8	72	78	2	103	26	987	76	2	115	1352
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	80	103	26	1063	0	0	117	1434
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	10	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	82	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		10	10	10
Act Effct Green (s)		14.8			14.8	14.8	87.2	87.2			87.2	87.2
Actuated g/C Ratio		0.12			0.12	0.12	0.73	0.73			0.73	0.73
v/c Ratio		0.50			0.58	0.37	0.13	0.29			0.35	0.56
Control Delay		31.6			65.2	11.8	6.5	6.0			3.8	3.1
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.3
Total Delay		31.6			65.2	11.8	6.5	6.0			3.8	3.4
LOS		C			E	B	A	A			A	A
Approach Delay		31.6			35.1			6.0				3.4
Approach LOS		C			D			A				A
Queue Length 50th (m)		11.6			16.9	0.0	1.9	32.8			1.5	9.5
Queue Length 95th (m)		26.0			29.2	13.2	5.6	39.0			m3.7	m20.0
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		338			222	392	199	3646			334	2541
Starvation Cap Reductn		0			0	0	0	0			0	427
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.35			0.36	0.26	0.13	0.29			0.35	0.68

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 7.5

Intersection LOS: A

Intersection Capacity Utilization 81.6%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)	3.0	
Minimum Split (s)	5.0	
Total Split (s)	5.0	
Total Split (%)	4%	
Maximum Green (s)	3.0	
Yellow Time (s)	2.0	
All-Red Time (s)	0.0	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Max	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	980	34	2	139	1315
Future Volume (vph)	23	7	7	48	17	97	12	980	34	2	139	1315
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00	1.00			0.99	
Frt		0.925			0.872			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1701	0	1768	1598	0	1768	3512	0	0	1768	3537
Flt Permitted	0.629			0.748			0.186				0.268	
Satd. Flow (perm)	1120	1701	0	1376	1598	0	345	3512	0	0	496	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			97			6				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		10	10		5	10		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	23	7	7	48	17	97	12	980	34	2	139	1315
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	14	0	48	114	0	12	1014	0	0	141	1315
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.95
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1508
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	10
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	44
Shared Lane Traffic (%)	
Lane Group Flow (vph)	44
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	10	10		5	5		14	14		10	10	10
Act Effct Green (s)	14.3	14.3		14.3	14.3		93.4	93.4			93.4	93.4
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.17	0.07		0.29	0.41		0.04	0.37			0.37	0.48
Control Delay	46.9	29.7		50.1	16.1		5.7	5.4			15.1	12.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.9	29.7		50.1	16.1		5.7	5.4			15.1	12.9
LOS	D	C		D	B		A	A			B	B
Approach Delay		40.4			26.2			5.4				12.9
Approach LOS		D			C			A				B
Queue Length 50th (m)	4.8	1.4		10.1	3.5		0.4	23.5			17.2	87.6
Queue Length 95th (m)	10.2	6.0		17.4	16.0		3.1	64.8			34.1	116.3
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	298	458		366	497		268	2736			386	2754
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.03		0.13	0.23		0.04	0.37			0.37	0.48

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 11.3

Intersection LOS: B

Intersection Capacity Utilization 75.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	93.4
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.8
Queue Delay	0.0
Total Delay	5.8
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.3
Queue Length 95th (m)	m6.5
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1183
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	414	757	260	14	301	910	308	296	794	208	1
Future Volume (vph)	2	414	757	260	14	301	910	308	296	794	208	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3363	3537	1521	3386	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				237				175			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	414	757	260	14	301	910	308	296	794	208	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	416	757	260	0	315	910	308	296	794	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic (demand rationalized)

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	305	826	414
Future Volume (vph)	305	826	414
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3407	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			265
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	305	826	414
Shared Lane Traffic (%)			
Lane Group Flow (vph)	306	826	414
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	35.6	35.6		15.2	34.3	34.3	11.9	31.2	31.2	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29	0.10	0.26	0.26	
v/c Ratio		0.90	0.72	0.43		0.73	0.90	0.55	0.88	0.88	0.41	
Control Delay		74.9	42.4	7.9		51.1	63.6	31.0	86.8	48.3	8.6	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		74.9	42.4	7.9		51.1	63.6	31.0	86.8	48.3	8.7	
LOS		E	D	A		D	E	C	F	D	A	
Approach Delay			45.6				54.5			50.7		
Approach LOS			D				D			D		
Queue Length 50th (m)		46.4	77.2	3.6		34.1	104.6	35.0	27.7	88.5	13.5	
Queue Length 95th (m)		#71.8	97.7	22.3		48.1	#132.4	70.2	#58.1	#120.0	7.1	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1055	608		467	1046	573	336	900	507	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	34	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.90	0.72	0.43		0.67	0.87	0.54	0.88	0.88	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), 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: 52.2

Intersection LOS: D

Intersection Capacity Utilization 97.3%

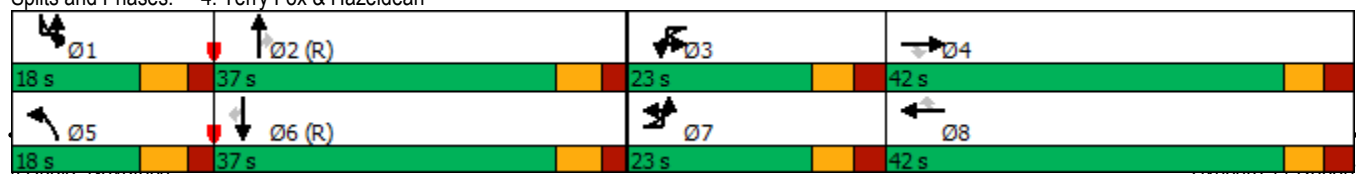
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.0	31.3	31.3
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.89	0.90	0.69
Control Delay	84.7	56.6	23.3
Queue Delay	21.0	0.0	0.0
Total Delay	105.7	56.6	23.3
LOS	F	E	C
Approach Delay		57.4	
Approach LOS		E	
Queue Length 50th (m)	36.7	65.8	16.7
Queue Length 95th (m)	#60.8	#122.5	76.4
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	343	913	596
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	41	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.01	0.90	0.69
Intersection Summary			

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	332	1064	13	1	85	687	51	24	504	193	22
Future Volume (vph)	3	332	1064	13	1	85	687	51	24	504	193	22
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	1.00
Frt			0.998					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3396	0	0	3397	3370	1551	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3420	3396	0	0	3391	3370	1525	1745	3502	1540	3417
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					145			187	
Link Speed (k/h)		60					60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	5%	2%	1%	2%	6%	3%	2%	2%	2%	1%
Adj. Flow (vph)	3	332	1064	13	1	85	687	51	24	504	193	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	1077	0	0	86	687	51	24	504	193	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	250	134
Future Volume (vph)	250	134
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1556
Right Turn on Red		Yes
Satd. Flow (RTOR)		145
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	250	134
Shared Lane Traffic (%)		
Lane Group Flow (vph)	250	134
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	49.0		12.0	12.0	45.0	45.0	12.0	42.0	42.0	12.0
Total Split (%)	13.9%	13.9%	42.6%		10.4%	10.4%	39.1%	39.1%	10.4%	36.5%	36.5%	10.4%
Maximum Green (s)	9.9	9.9	42.9		5.9	5.9	38.9	38.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		18.2	62.4			7.6	49.3	49.3		5.8	24.4	5.8
Actuated g/C Ratio		0.16	0.54			0.07	0.43	0.43		0.05	0.21	0.05
v/c Ratio		0.62	0.59			0.39	0.48	0.07		0.27	0.68	0.13
Control Delay		51.7	22.9			79.5	9.7	0.5		60.6	45.8	7.9
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		51.7	22.9			79.5	9.7	0.5		60.6	45.8	7.9
LOS		D	C			E	A	A		E	D	A
Approach Delay			29.7				16.4			36.1		
Approach LOS			C				B			D		
Queue Length 50th (m)		33.4	74.5			9.8	8.4	0.2		4.9	50.2	1.0
Queue Length 95th (m)		#65.0	132.2			17.7	9.5	0.0		12.9	59.3	15.7
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		542	1841			223	1444	736		89	1093	609
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		0.62	0.59			0.39	0.48	0.07		0.27	0.46	0.13

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 19 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 27.9

Intersection LOS: C

Intersection Capacity Utilization 76.8%

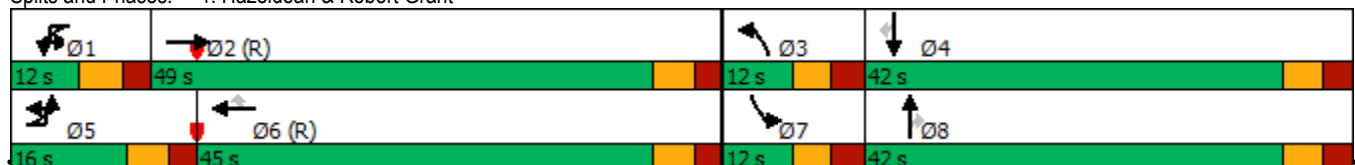
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	36.5%	36.5%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	22.0	22.0
Actuated g/C Ratio	0.19	0.19
v/c Ratio	0.37	0.32
Control Delay	40.9	6.4
Queue Delay	0.0	0.0
Total Delay	40.9	6.4
LOS	D	A
Approach Delay	30.3	
Approach LOS	C	
Queue Length 50th (m)	26.2	0.0
Queue Length 95th (m)	30.0	10.9
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	1093	585
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.23	0.23
Intersection Summary		

2: Hazeldean & Roger Griffiths
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	107	1018	52	21	805	47	37	0	32	28	0
Future Volume (vph)	1	107	1018	52	21	805	47	37	0	32	28	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0		0.0	70.0		180.0	0.0		0.0	40.0	
Storage Lanes		1		0	1		1	1		0	1	
Taper Length (m)		75.0			45.0			10.0			30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		1.00		0.97	0.99	0.98		0.99	
Frt			0.993				0.850		0.850			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3409	0	1751	3402	1567	1751	1537	0	1768	1843
Flt Permitted		0.301			0.267			0.757			0.736	
Satd. Flow (perm)	0	559	3409	0	491	3402	1518	1386	1537	0	1361	1843
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			9				89		139			
Link Speed (k/h)			60			60			50			50
Link Distance (m)			297.5			287.2			259.5			237.4
Travel Time (s)			17.9			17.2			18.7			17.1
Confl. Peds. (#/hr)		5		5	5		5	5		5	5	
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 (%)	1%	1%	4%	2%	2%	5%	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	1	107	1018	52	21	805	47	37	0	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	1070	0	21	805	47	37	32	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			4.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	
Protected Phases	5	5	2			6			8			4
Permitted Phases	2	2			6		6	8			4	
Detector Phase	5	5	2		6	6	6	8	8		4	4
Switch Phase												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1800
Storage Length (m)	40.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1552
Right Turn on Red	Yes
Satd. Flow (RTOR)	288
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	11.2	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2
Total Split (s)	20.0	20.0	82.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0
Total Split (%)	17.4%	17.4%	71.3%		53.9%	53.9%	53.9%	28.7%	28.7%		28.7%	28.7%
Maximum Green (s)	13.8	13.8	75.7		55.7	55.7	55.7	26.8	26.8		26.8	26.8
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.5	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9
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)		6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2
Lead/Lag	Lead	Lead			Lag	Lag	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	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)			18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)			5		5	5	5	5	5		5	5
Act Effct Green (s)		92.8	94.0		79.3	79.3	79.3	13.0	13.0		13.0	
Actuated g/C Ratio		0.81	0.82		0.69	0.69	0.69	0.11	0.11		0.11	
v/c Ratio		0.20	0.38		0.06	0.34	0.04	0.24	0.11		0.18	
Control Delay		4.5	3.8		6.2	9.7	2.2	47.9	0.7		46.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay		4.5	3.8		6.2	9.7	2.2	47.9	0.7		46.4	
LOS		A	A		A	A	A	D	A		D	
Approach Delay			3.8			9.2			26.0			28.9
Approach LOS			A			A			C			C
Queue Length 50th (m)		2.8	15.0		2.0	57.2	1.6	7.3	0.0		5.5	
Queue Length 95th (m)		11.5	42.4		5.5	98.0	4.1	14.6	0.0		11.9	
Internal Link Dist (m)			273.5			263.2			235.5			213.4
Turn Bay Length (m)		75.0			70.0		180.0				40.0	
Base Capacity (vph)		596	2788		338	2346	1074	322	464		317	
Starvation Cap Reductn		0	0		0	0	0	0	0		0	
Spillback Cap Reductn		0	0		0	0	0	0	0		0	
Storage Cap Reductn		0	0		0	0	0	0	0		0	
Reduced v/c Ratio		0.18	0.38		0.06	0.34	0.04	0.11	0.07		0.09	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 7.2

Intersection LOS: A

Intersection Capacity Utilization 69.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Hazeldean & Roger Griffiths



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	31.2
Total Split (s)	33.0
Total Split (%)	28.7%
Maximum Green (s)	26.8
Yellow Time (s)	3.3
All-Red Time (s)	2.9
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.2
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	13.0
Actuated g/C Ratio	0.11
v/c Ratio	0.04
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	40.0
Base Capacity (vph)	582
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	987	12	22	751	113	23	0	93	74	2	36
Future Volume (vph)	45	987	12	22	751	113	23	0	93	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00				0.97	0.99	0.98		0.99	0.98	
Frt		0.998				0.850		0.850			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3454	0	1768	3537	1551	1768	1522	0	3332	1569	0
Flt Permitted	0.304			0.237			0.950			0.950		
Satd. Flow (perm)	564	3454	0	441	3537	1503	1757	1522	0	3298	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				153		330			36	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			795.2			289.2			233.8	
Travel Time (s)		17.2			47.7			20.8			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	45	987	12	22	751	113	23	0	93	74	2	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	999	0	22	751	113	23	93	0	74	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	75.4	72.1		72.0	66.8	66.8	7.6	13.0		7.9	15.7	
Actuated g/C Ratio	0.66	0.63		0.63	0.58	0.58	0.07	0.11		0.07	0.14	
v/c Ratio	0.10	0.46		0.06	0.37	0.12	0.20	0.20		0.32	0.16	
Control Delay	8.0	18.4		10.0	16.3	1.6	53.7	1.0		54.3	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.0	18.4		10.0	16.3	1.6	53.7	1.0		54.3	15.3	
LOS	A	B		A	B	A	D	A		D	B	
Approach Delay		18.0			14.2			11.4			41.0	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	5.3	88.3		1.3	42.6	0.0	4.6	0.0		7.6	0.4	
Queue Length 95th (m)	9.4	96.4		5.7	78.1	4.6	12.0	0.0		14.2	8.4	
Internal Link Dist (m)		263.2			771.2			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	440	2166		348	2054	937	330	594		622	375	
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	0.10	0.46		0.06	0.37	0.12	0.07	0.16		0.12	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 98 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 17.3

Intersection LOS: B

Intersection Capacity Utilization 59.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean

Ø1	Ø2 (R)	Ø3
12 s	43 s	28 s
Ø5	Ø6 (R)	Ø7
12 s	43 s	28 s

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	262	931	183	5	141	431	194	190	864	282	192
Future Volume (vph)	7	262	931	183	5	141	431	194	190	864	282	192
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3214	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3393	3435	1504	3284	3468	1538	3170
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				183				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	262	931	183	5	141	431	194	190	864	282	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	269	931	183	0	146	431	194	190	864	282	192
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	469	333
Future Volume (vph)	469	333
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		249
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	469	333
Shared Lane Traffic (%)		
Lane Group Flow (vph)	469	333
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.3	34.1	34.1		7.5	28.3	28.3	10.2	32.2	32.2	10.2
Actuated g/C Ratio		0.12	0.31	0.31		0.07	0.26	0.26	0.09	0.29	0.29	0.09
v/c Ratio		0.69	0.87	0.31		0.63	0.49	0.35	0.62	0.85	0.46	0.65
Control Delay		56.1	45.1	5.4		57.8	38.7	12.5	62.8	38.8	7.4	53.5
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		56.1	45.1	5.4		57.8	38.7	12.5	62.8	38.8	7.4	53.5
LOS		E	D	A		E	D	B	E	D	A	D
Approach Delay			42.0				35.7			35.6		
Approach LOS			D				D			D		
Queue Length 50th (m)		26.3	88.8	0.0		14.8	42.3	2.8	12.0	88.3	20.8	19.0
Queue Length 95th (m)		38.7	110.7	13.5		#24.6	56.0	28.3	31.6	#123.0	5.9	26.1
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	613		231	921	570	319	1014	611	307
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.64	0.81	0.30		0.63	0.47	0.34	0.60	0.85	0.46	0.63

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 36.2

Intersection LOS: D

Intersection Capacity Utilization 84.2%

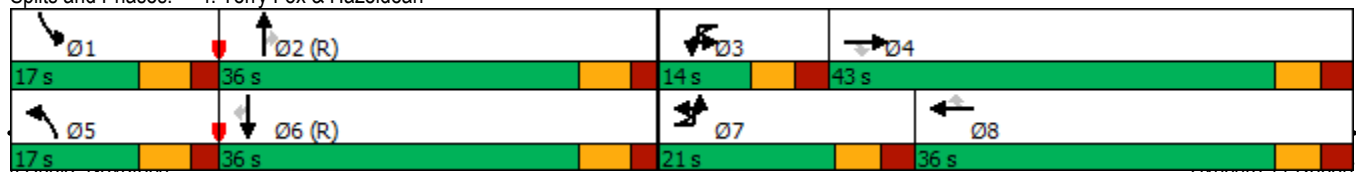
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

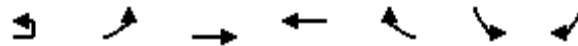


03/10/2014, 11:00 AM

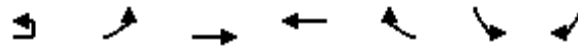
Dynamic 11 Report



Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	32.2	32.2
Actuated g/C Ratio	0.29	0.29
v/c Ratio	0.47	0.55
Control Delay	29.5	15.4
Queue Delay	0.0	0.0
Total Delay	29.5	15.4
LOS	C	B
Approach Delay	29.4	
Approach LOS	C	
Queue Length 50th (m)	41.6	21.7
Queue Length 95th (m)	56.3	57.1
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	997	610
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.47	0.55
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	121	1098	868	72	74	68
Future Volume (vph)	4	121	1098	868	72	74	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00		1.00		0.99	0.98
Frt				0.989			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3424	0	1768	1537
Flt Permitted		0.294				0.950	
Satd. Flow (perm)	0	529	3468	3424	0	1747	1500
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				15			68
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		10			10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	121	1098	868	72	74	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	125	1098	940	0	74	68
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			Cl+Ex	Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				10		10	10
Act Effct Green (s)		88.3	88.3	88.3		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.29	0.39	0.34		0.34	0.27
Control Delay		15.7	13.3	5.0		61.0	24.8
Queue Delay		0.0	0.3	0.0		0.0	0.0
Total Delay		15.7	13.6	5.0		61.0	24.8
LOS		B	B	A		E	C
Approach Delay			13.9	5.0		43.7	
Approach LOS			B	A		D	
Queue Length 50th (m)		13.6	63.2	21.2		14.7	2.6
Queue Length 95th (m)		m27.6	112.2	56.3		m20.7	m10.0
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		424	2782	2750		443	431
Starvation Cap Reductn		0	960	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	0.60	0.34		0.17	0.16

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: 0.39

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1434	30	1	160	1037
Future Volume (vph)	14	1	3	14	2	97	1	1434	30	1	160	1037
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.258				0.149	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	479	3489	0	0	272	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			43			3				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1434	30	1	160	1037
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1464	0	0	161	1037
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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
Total Lost Time (s)	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)	5	5		5	5		5	5		5	5	5
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	0.08	0.02		0.09	0.42		0.00	0.56			0.79	0.41
Control Delay	38.6	25.2		61.5	51.0		3.0	5.3			41.6	6.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.6	25.2		61.5	51.0		3.0	5.3			41.6	6.5
LOS	D	C		E	D		A	A			D	A
Approach Delay		35.7			52.3			5.3				11.1
Approach LOS		D			D			A				B
Queue Length 50th (m)	2.6	0.2		3.0	13.5		0.0	4.7			13.1	25.9
Queue Length 95th (m)	6.6	2.6		m9.2	31.4		m0.1	26.2			#69.8	70.8
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	451		359	2622			204	2555
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	0.01		0.04	0.22		0.00	0.56			0.79	0.41

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 79.4%

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.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	82.6
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1087
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1302	1	0	871	0
Future Volume (vph)	0	0	3	1	0	0	10	1302	1	0	871	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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		0.98		0.99			1.00	1.00				
Frt		0.850										
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1553	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.326					
Satd. Flow (perm)	1861	1553	0	1422	1861	0	605	3468	0	1861	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		180										
Link Speed (k/h)		50			30			70			70	
Link Distance (m)		207.5			88.7			316.2			253.3	
Travel Time (s)		14.9			10.6			16.3			13.0	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	10	1302	1	0	871	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	10	1303	0	0	871	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		4.0			4.0			12.0			12.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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			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												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.40			0.28	
Control Delay		0.0		37.0			9.4	9.0			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.4	9.0			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			9.0			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	0.0			0.0	
Queue Length 95th (m)		0.0		1.4			m2.1	150.5			1.6	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		514		346			562	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.40			0.28	

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: 5.5

Intersection LOS: A

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec



8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1287	52	3	28	774
Future Volume (vph)	7	1	16	30	1	52	8	1287	52	3	28	774
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.994				0.997
Flt Protected		0.986			0.954		0.950				0.950	
Satd. Flow (prot)	0	1526	0	0	1742	1567	1581	5042	0	0	1722	3424
Flt Permitted		0.899			0.715		0.304				0.192	
Satd. Flow (perm)	0	1389	0	0	1297	1537	504	5042	0	0	347	3424
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		16				109		10				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	7	1	16	30	1	52	8	1287	52	3	28	774
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	31	52	8	1339	0	0	31	792
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	5	
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	18	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5		5		5	5	5
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.2	80.2
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.14			0.21	0.19	0.02	0.35			0.12	0.32
Control Delay		24.0			45.0	1.5	2.6	4.1			4.4	2.7
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		24.0			45.0	1.5	2.6	4.1			4.4	2.8
LOS		C			D	A	A	A			A	A
Approach Delay		24.0			17.8			4.1				2.8
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.5			5.8	0.0	0.3	38.4			0.4	4.8
Queue Length 95th (m)		7.6			12.4	0.0	m0.3	26.1			m2.3	17.5
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		340			306	446	466	3788			252	2496
Starvation Cap Reductn		0			0	0	0	0			0	364
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.07			0.10	0.12	0.02	0.35			0.12	0.37

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		5%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
AM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1276	41	1	76	714
Future Volume (vph)	20	10	15	30	5	101	6	1276	41	1	76	714
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.910			0.857			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1462	0	1734	1555	0	1069	3481	0	0	1768	3435
Flt Permitted	0.689			0.741			0.377				0.183	
Satd. Flow (perm)	1276	1462	0	1345	1555	0	423	3481	0	0	340	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		15			57			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		5	5		5	5		10		10	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	20	10	15	30	5	101	6	1276	41	1	76	714
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	25	0	30	106	0	6	1317	0	0	77	714
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	Perm	NA
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												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1531
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	10
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	5	5		5	5		10	10		5	5	5
Act Effct Green (s)	14.2	14.2		14.2	14.2		83.5	83.5			83.5	83.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76			0.76	0.76
v/c Ratio	0.12	0.12		0.17	0.42		0.02	0.50			0.30	0.27
Control Delay	40.0	23.1		41.5	25.6		6.0	7.0			19.3	11.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	40.0	23.1		41.5	25.6		6.0	7.0			19.3	11.0
LOS	D	C		D	C		A	A			B	B
Approach Delay		30.6			29.1			7.0				11.8
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.7	1.9		5.6	9.3		0.2	35.2			7.1	34.4
Queue Length 95th (m)	8.4	7.5		11.3	19.8		2.0	96.7			22.3	63.2
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	371	435		391	492		321	2642			258	2606
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	0.06		0.08	0.22		0.02	0.50			0.30	0.27

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 10.4

Intersection LOS: B

Intersection Capacity Utilization 73.4%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.5
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	6.1
Queue Delay	0.0
Total Delay	6.1
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.2
Queue Length 95th (m)	m1.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1168
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	312	1116	22	1	184	1476	105	21	293	135	137
Future Volume (vph)	2	312	1116	22	1	184	1476	105	21	293	135	137
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3490	0	0	3391	3537	1555	1746	3502	1539	3409
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			135	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	312	1116	22	1	184	1476	105	21	293	135	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	1138	0	0	185	1476	105	21	293	135	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	473	404
Future Volume (vph)	473	404
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		173
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	473	404
Shared Lane Traffic (%)		
Lane Group Flow (vph)	473	404
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.3	64.2			10.7	57.6	57.6	5.8	24.8	24.8	5.9
Actuated g/C Ratio		0.13	0.49			0.08	0.44	0.44	0.04	0.19	0.19	0.05
v/c Ratio		0.69	0.66			0.66	0.94	0.14	0.27	0.44	0.34	0.88
Control Delay		62.9	28.9			82.0	38.0	2.0	68.8	46.9	8.1	108.1
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		62.9	28.9			82.0	38.0	2.0	68.8	46.9	8.1	108.1
LOS		E	C			F	D	A	E	D	A	F
Approach Delay			36.2				40.5			36.3		
Approach LOS			D				D			D		
Queue Length 50th (m)		36.7	112.0			18.8	~196.5	4.5	4.9	31.4	0.0	16.9
Queue Length 95th (m)		#73.1	144.0			#38.8	#233.7	m2.7	13.1	40.3	13.9	#34.3
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		457	1724			280	1567	760	79	967	522	155
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		0.69	0.66			0.66	0.94	0.14	0.27	0.30	0.26	0.88

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 41.5

Intersection LOS: D

Intersection Capacity Utilization 104.3%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

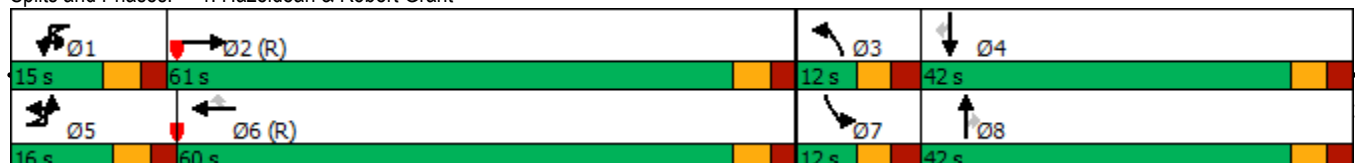
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	29.6	29.6
Actuated g/C Ratio	0.23	0.23
v/c Ratio	0.59	0.83
Control Delay	47.6	41.6
Queue Delay	0.0	0.0
Total Delay	47.6	41.6
LOS	D	D
Approach Delay	53.4	
Approach LOS	D	
Queue Length 50th (m)	53.7	55.6
Queue Length 95th (m)	64.6	86.3
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	554
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.73
Intersection Summary		

2: Hazeldean & Roger Griffiths
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1211	104	52	1456	61	102	0	39	94	0	70
Future Volume (vph)	166	1211	104	52	1456	61	102	0	39	94	0	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	70.0		180.0	0.0		0.0	40.0		40.0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (m)	75.0			45.0			10.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.97	0.99	0.98		0.99		0.98
Frt		0.988				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3482	0	1751	3502	1582	1751	1536	0	1768	1843	1582
Flt Permitted	0.115			0.209			0.757			0.732		
Satd. Flow (perm)	214	3482	0	384	3502	1530	1384	1536	0	1352	1843	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				79		108				202
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		297.5			287.2			259.5			237.4	
Travel Time (s)		17.9			17.2			18.7			17.1	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	166	1211	104	52	1456	61	102	0	39	94	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1315	0	52	1456	61	102	39	0	94	0	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			4.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		97	97		14	97		97	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												

2: Hazeldean & Roger Griffiths
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2	31.2
Total Split (s)	20.0	97.0		77.0	77.0	77.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	15.4%	74.6%		59.2%	59.2%	59.2%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	13.8	90.7		70.7	70.7	70.7	26.8	26.8		26.8	26.8	26.8
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag			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	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
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)		18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)		5		5	5	5	5	5		5	5	5
Act Effct Green (s)	101.7	101.6		85.0	85.0	85.0	15.9	15.9		15.9		15.9
Actuated g/C Ratio	0.78	0.78		0.65	0.65	0.65	0.12	0.12		0.12		0.12
v/c Ratio	0.57	0.48		0.21	0.64	0.06	0.60	0.14		0.57		0.19
Control Delay	24.0	10.4		2.9	6.0	0.1	67.6	1.0		65.8		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	24.0	10.4		2.9	6.0	0.1	67.6	1.0		65.8		1.2
LOS	C	B		A	A	A	E	A		E		A
Approach Delay		11.9			5.7			49.2			38.2	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	21.9	55.1		0.5	7.7	0.0	23.4	0.0		21.5		0.0
Queue Length 95th (m)	m46.7	115.6		m0.8	9.0	m0.0	37.4	0.0		34.9		0.0
Internal Link Dist (m)		273.5			263.2			235.5			213.4	
Turn Bay Length (m)	75.0			70.0		180.0				40.0		40.0
Base Capacity (vph)	336	2723		251	2290	1028	285	402		278		480
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	0.49	0.48		0.21	0.64	0.06	0.36	0.10		0.34		0.15

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 114 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 81.7%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	1122	24	89	1420	212	20	2	43	177	1
Future Volume (vph)	1	82	1122	24	89	1420	212	20	2	43	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.95	0.99	0.98		0.99	0.98
Frt			0.997				0.850		0.857			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3523	0	1701	3537	1582	1406	1565	0	3431	1553
Flt Permitted		0.094			0.162			0.950			0.950	
Satd. Flow (perm)	0	175	3523	0	290	3537	1510	1397	1565	0	3389	1553
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			2				196		43			143
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			795.2			289.2			233.8
Travel Time (s)			17.2			47.7			20.8			16.8
Confl. Peds. (#/hr)		10		10	10		10	5		5	5	
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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	82	1122	24	89	1420	212	20	2	43	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	1146	0	89	1420	212	20	45	0	177	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	143
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	53.0		17.0	53.0	53.0	28.0	32.0		28.0	32.0
Total Split (%)	13.1%	13.1%	40.8%		13.1%	40.8%	40.8%	21.5%	24.6%		21.5%	24.6%
Maximum Green (s)	10.9	10.9	46.7		10.9	46.7	46.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			10			10	10		5			5
Act Effct Green (s)		82.0	74.0		83.6	74.7	74.7	9.6	13.0		12.3	20.1
Actuated g/C Ratio		0.63	0.57		0.64	0.57	0.57	0.07	0.10		0.09	0.15
v/c Ratio		0.40	0.57		0.32	0.70	0.22	0.19	0.23		0.55	0.40
Control Delay		18.3	21.0		12.6	24.7	4.1	58.5	17.6		62.4	11.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		18.3	21.0		12.6	24.7	4.1	58.5	17.6		62.4	11.1
LOS		B	C		B	C	A	E	B		E	B
Approach Delay			20.8			21.5			30.2			39.4
Approach LOS			C			C			C			D
Queue Length 50th (m)		6.0	87.4		6.4	118.7	1.5	4.6	0.5		20.9	0.2
Queue Length 95th (m)		19.8	147.9		17.6	#218.9	16.0	11.6	9.9		31.0	16.3
Internal Link Dist (m)			263.2			771.2			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		248	2005		314	2033	951	232	341		567	429
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		0.33	0.57		0.28	0.70	0.22	0.09	0.13		0.31	0.34

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 106 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 23.1

Intersection LOS: C

Intersection Capacity Utilization 80.1%

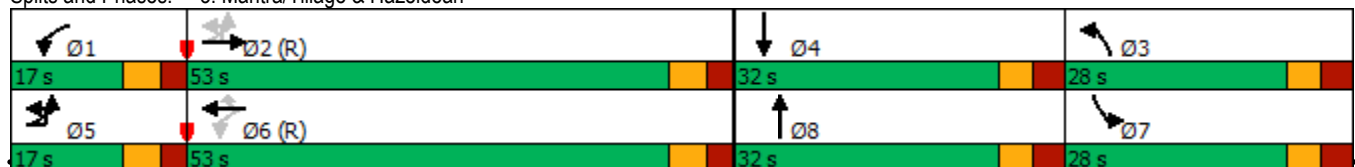
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	439	804	270	14	312	1009	319	307	823	215	1
Future Volume (vph)	2	439	804	270	14	312	1009	319	307	823	215	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3359	3537	1481	0	3365	3537	1521	3387	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				232				172			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	439	804	270	14	312	1009	319	307	823	215	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	441	804	270	0	326	1009	319	307	823	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	327	948	429
Future Volume (vph)	327	948	429
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3408	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			262
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	327	948	429
Shared Lane Traffic (%)			
Lane Group Flow (vph)	328	948	429
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	36.7	36.7		15.3	35.5	35.5	11.5	30.5	30.5	
Actuated g/C Ratio		0.14	0.31	0.31		0.13	0.30	0.30	0.10	0.25	0.25	
v/c Ratio		0.95	0.74	0.44		0.75	0.96	0.56	0.94	0.93	0.43	
Control Delay		83.6	42.8	9.0		50.9	69.3	31.0	97.7	54.9	9.2	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		83.6	42.8	9.0		50.9	69.3	31.0	97.7	54.9	9.4	
LOS		F	D	A		D	E	C	F	D	A	
Approach Delay			48.6				58.3			57.4		
Approach LOS			D				E			E		
Queue Length 50th (m)		49.6	83.6	6.0		35.4	116.4	38.7	29.0	92.6	14.1	
Queue Length 95th (m)		#78.0	104.7	25.9		49.3	#157.8	74.2	#61.4	#127.0	7.6	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1080	613		467	1046	571	325	881	499	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.95	0.74	0.44		0.70	0.96	0.56	0.94	0.93	0.46	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 62.9

Intersection LOS: E

Intersection Capacity Utilization 102.2%

ICU Level of Service G

Analysis Period (min) 15

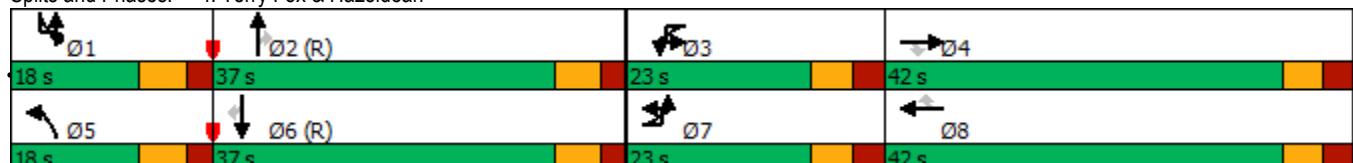
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

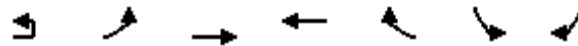
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

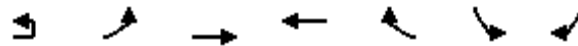




Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	11.5	30.5	30.5
Actuated g/C Ratio	0.10	0.25	0.25
v/c Ratio	1.00	1.07	0.73
Control Delay	106.9	91.0	26.1
Queue Delay	34.1	0.0	0.0
Total Delay	141.0	91.0	26.1
LOS	F	F	C
Approach Delay		84.3	
Approach LOS		F	
Queue Length 50th (m)	39.2	~115.3	20.6
Queue Length 95th (m)	#66.5	#153.3	78.9
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	328	890	586
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	60	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.22	1.07	0.73
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	78	1293	1739	54	99	97
Future Volume (vph)	4	78	1293	1739	54	99	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				1.00		0.99	0.97
Frt				0.995			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3513	0	1768	1582
Flt Permitted		0.090				0.950	
Satd. Flow (perm)	0	166	3537	3513	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				5			27
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	78	1293	1739	54	99	97
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	82	1293	1793	0	99	97
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		90.1	90.1	90.1		17.6	17.6
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.66	0.49	0.68		0.39	0.39
Control Delay		45.4	15.3	10.8		45.6	32.7
Queue Delay		0.0	2.1	0.0		0.0	0.0
Total Delay		45.4	17.5	10.8		45.6	32.7
LOS		D	B	B		D	C
Approach Delay			19.1	10.8		39.2	
Approach LOS			B	B		D	
Queue Length 50th (m)		13.1	99.0	68.7		21.4	15.2
Queue Length 95th (m)		m23.8	m160.1	154.3		m28.4	m21.8
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		124	2655	2638		405	377
Starvation Cap Reductn		0	1168	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.66	0.87	0.68		0.24	0.26

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: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 90.6%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	185	2	1362	63	1	164	1688
Future Volume (vph)	15	0	8	41	4	185	2	1362	63	1	164	1688
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.98		0.99	0.98			1.00				
Frt		0.850			0.853			0.993				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1554	0	1768	1560	0	1768	3474	0	0	1734	3537
Flt Permitted	0.393			0.752			0.108				0.111	
Satd. Flow (perm)	688	1554	0	1391	1560	0	201	3474	0	0	203	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		127			121			6				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	15	0	8	41	4	185	2	1362	63	1	164	1688
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	8	0	41	189	0	2	1425	0	0	165	1688
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1504
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	5	5		5	5			5				5
Act Effct Green (s)	15.1	15.1		15.1	15.1		79.7	74.3			91.0	89.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.66	0.62			0.76	0.75
v/c Ratio	0.17	0.03		0.24	0.63		0.01	0.66			0.56	0.64
Control Delay	47.2	0.1		41.1	24.0		5.0	9.1			16.5	11.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	47.2	0.1		41.1	24.0		5.0	9.1			16.5	11.6
LOS	D	A		D	C		A	A			B	B
Approach Delay		30.8			27.0			9.1				11.8
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.1	0.0		8.7	17.0		0.0	45.0			6.4	59.6
Queue Length 95th (m)	7.9	0.0		m12.3	m30.4		m0.2	31.5			#38.5	196.0
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	174	489		353	486		233	2153			294	2637
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.02		0.12	0.39		0.01	0.66			0.56	0.64

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 11.8

Intersection LOS: B

Intersection Capacity Utilization 84.7%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	89.5
Actuated g/C Ratio	0.75
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1144
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1244	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1244	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor	0.99	0.98		0.99	0.98				1.00			1.00
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1552	0	1488	1552	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.740				0.127				0.199
Satd. Flow (perm)	1398	1552	0	1152	1552	0	0	236	3457	0	0	370
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		123			148				2			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)	5		5	5		5		5		5		5
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 (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	26	5	0	3	3	36	1244	24	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	26	0	5	3	0	0	39	1268	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												



Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1527	1
Future Volume (vph)	1527	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1527	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1528	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	CI+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	5	5		5	5				5			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			96.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.80
v/c Ratio	0.02	0.09		0.04	0.01			0.14	0.44			0.01
Control Delay	43.0	0.7		43.8	0.0			2.7	2.5			5.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.7		43.8	0.0			2.7	2.5			5.2
LOS	D	A		D	A			A	A			A
Approach Delay		5.0			27.4				2.5			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.0	0.0			1.0	17.8			0.1
Queue Length 95th (m)	2.9	0.0		4.0	0.0			m1.7	m26.4			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	312	442		257	461			304	2902			400
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	0.06		0.02	0.01			0.13	0.44			0.01

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: 4.3

Intersection LOS: A

Intersection Capacity Utilization 65.6%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	5	
Act Effct Green (s)	95.4	
Actuated g/C Ratio	0.80	
v/c Ratio	0.54	
Control Delay	5.8	
Queue Delay	0.0	
Total Delay	5.8	
LOS	A	
Approach Delay	5.8	
Approach LOS	A	
Queue Length 50th (m)	29.0	
Queue Length 95th (m)	55.2	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2810	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.54	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	1022	76	2	115	1401
Future Volume (vph)	37	8	72	78	2	103	26	1022	76	2	115	1401
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98		1.00			1.00	1.00
Frt		0.917				0.850		0.990				0.992
Flt Protected		0.984			0.954		0.950				0.950	
Satd. Flow (prot)	0	1658	0	0	1776	1582	1768	5019	0	0	1768	3499
Flt Permitted		0.864			0.602		0.138				0.238	
Satd. Flow (perm)	0	1453	0	0	1114	1552	257	5019	0	0	442	3499
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				103		20				10
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	10		5		5	
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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	37	8	72	78	2	103	26	1022	76	2	115	1401
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	80	103	26	1098	0	0	117	1483
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	10	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	82	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		10	10	10
Act Effct Green (s)		14.8			14.8	14.8	87.2	87.2			87.2	87.2
Actuated g/C Ratio		0.12			0.12	0.12	0.73	0.73			0.73	0.73
v/c Ratio		0.50			0.58	0.37	0.14	0.30			0.37	0.58
Control Delay		31.6			65.2	11.8	6.8	6.0			4.0	3.5
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.3
Total Delay		31.6			65.2	11.8	6.8	6.0			4.0	3.8
LOS		C			E	B	A	A			A	A
Approach Delay		31.6			35.1			6.0				3.8
Approach LOS		C			D			A				A
Queue Length 50th (m)		11.6			16.9	0.0	2.0	34.3			1.7	11.1
Queue Length 95th (m)		26.0			29.2	13.2	5.9	39.3			m3.7	m20.5
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		338			222	392	186	3650			320	2544
Starvation Cap Reductn		0			0	0	0	0			0	423
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.35			0.36	0.26	0.14	0.30			0.37	0.70

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 7.6

Intersection LOS: A

Intersection Capacity Utilization 83.0%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		4%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	1015	34	2	139	1362
Future Volume (vph)	23	7	7	48	17	97	12	1015	34	2	139	1362
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.99		0.99	0.98			1.00			0.99	
Frt		0.925			0.872			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1701	0	1768	1598	0	1768	3512	0	0	1768	3537
Flt Permitted	0.629			0.748			0.175				0.257	
Satd. Flow (perm)	1120	1701	0	1376	1598	0	326	3512	0	0	475	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			97			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		10	10		5	10		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	23	7	7	48	17	97	12	1015	34	2	139	1362
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	14	0	48	114	0	12	1049	0	0	141	1362
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.95
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1508
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	10
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	44
Shared Lane Traffic (%)	
Lane Group Flow (vph)	44
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	10	10		5	5		14	14		10	10	10
Act Effct Green (s)	14.3	14.3		14.3	14.3		93.4	93.4			93.4	93.4
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.17	0.07		0.29	0.41		0.05	0.38			0.38	0.49
Control Delay	46.9	29.7		50.1	16.1		5.8	5.5			15.8	13.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.9	29.7		50.1	16.1		5.8	5.5			15.8	13.6
LOS	D	C		D	B		A	A			B	B
Approach Delay		40.4			26.2			5.5				13.6
Approach LOS		D			C			A				B
Queue Length 50th (m)	4.8	1.4		10.1	3.5		0.4	24.8			17.6	92.4
Queue Length 95th (m)	10.2	6.0		17.4	16.0		3.1	68.0			34.1	121.8
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	298	458		366	497		253	2735			369	2754
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.03		0.13	0.23		0.05	0.38			0.38	0.49

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	93.4
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.7
Queue Delay	0.0
Total Delay	5.7
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.3
Queue Length 95th (m)	m6.3
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1183
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	312	1116	22	1	184	1416	105	21	293	135	137
Future Volume (vph)	2	312	1116	22	1	184	1416	105	21	293	135	137
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3490	0	0	3391	3537	1555	1746	3502	1539	3409
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			135	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	312	1116	22	1	184	1416	105	21	293	135	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	1138	0	0	185	1416	105	21	293	135	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	473	404
Future Volume (vph)	473	404
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		175
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	473	404
Shared Lane Traffic (%)		
Lane Group Flow (vph)	473	404
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

1: Hazeldean & Robert Grant
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.4	64.2			10.8	57.6	57.6	5.8	24.7	24.7	5.9
Actuated g/C Ratio		0.13	0.49			0.08	0.44	0.44	0.04	0.19	0.19	0.05
v/c Ratio		0.69	0.66			0.66	0.90	0.14	0.27	0.44	0.34	0.88
Control Delay		62.7	28.9			82.2	33.1	2.1	68.8	46.9	8.2	108.1
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		62.7	28.9			82.2	33.1	2.1	68.8	46.9	8.2	108.1
LOS		E	C			F	C	A	E	D	A	F
Approach Delay			36.2				36.5			36.3		
Approach LOS			D				D			D		
Queue Length 50th (m)		36.7	111.7			18.8	186.5	4.7	4.9	31.5	0.0	16.9
Queue Length 95th (m)		#73.1	144.0			#38.5	#218.5	m2.8	13.1	40.3	13.9	#34.3
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		458	1725			281	1567	760	79	967	522	155
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		0.69	0.66			0.66	0.90	0.14	0.27	0.30	0.26	0.88

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 40.1

Intersection LOS: D

Intersection Capacity Utilization 102.6%

ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	29.5	29.5
Actuated g/C Ratio	0.23	0.23
v/c Ratio	0.59	0.83
Control Delay	47.7	41.2
Queue Delay	0.0	0.0
Total Delay	47.7	41.2
LOS	D	D
Approach Delay	53.3	
Approach LOS	D	
Queue Length 50th (m)	53.8	55.2
Queue Length 95th (m)	64.6	85.7
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	556
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.73
Intersection Summary		

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	409	804	270	14	312	919	319	297	813	215	1
Future Volume (vph)	2	409	804	270	14	312	919	319	297	813	215	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3365	3537	1521	3386	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				236				174			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	409	804	270	14	312	919	319	297	813	215	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	411	804	270	0	326	919	319	297	813	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic (demand rationalized)

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	307	818	429
Future Volume (vph)	307	818	429
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3408	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			265
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	307	818	429
Shared Lane Traffic (%)			
Lane Group Flow (vph)	308	818	429
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.4	35.6	35.6		15.3	34.5	34.5	11.8	31.1	31.1	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29	0.10	0.26	0.26	
v/c Ratio		0.90	0.77	0.45		0.75	0.90	0.57	0.89	0.90	0.42	
Control Delay		73.9	44.2	8.8		50.9	63.1	31.6	88.3	50.4	9.1	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		73.9	44.2	8.8		50.9	63.1	31.6	88.3	50.4	9.2	
LOS		E	D	A		D	E	C	F	D	A	
Approach Delay			46.0				54.2			52.2		
Approach LOS			D				D			D		
Queue Length 50th (m)		45.7	83.6	5.3		35.4	106.0	38.3	28.0	91.2	14.3	
Queue Length 95th (m)		#70.6	104.7	25.0		49.3	#134.6	73.9	#58.5	#124.7	7.6	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1054	607		467	1046	572	335	899	506	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.89	0.76	0.44		0.70	0.88	0.56	0.89	0.90	0.46	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), 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: 54.0

Intersection LOS: D

Intersection Capacity Utilization 98.4%

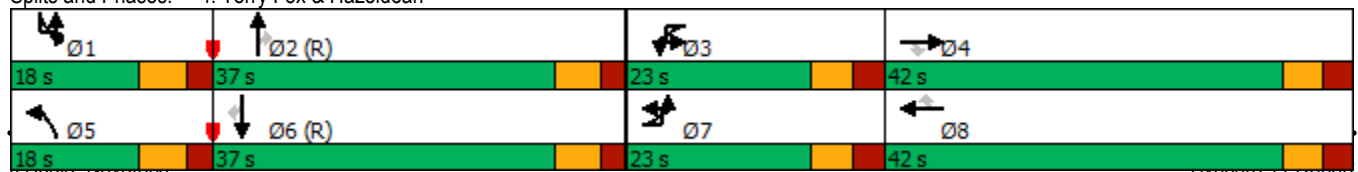
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.0	31.3	31.3
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.90	0.90	0.72
Control Delay	85.8	56.4	25.5
Queue Delay	46.4	0.0	0.0
Total Delay	132.1	56.4	25.5
LOS	F	E	C
Approach Delay		62.9	
Approach LOS		E	
Queue Length 50th (m)	37.0	66.0	20.3
Queue Length 95th (m)	#61.1	#120.8	81.0
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	342	912	596
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	60	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.09	0.90	0.72
Intersection Summary			

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	362	1150	13	1	85	745	55	24	524	193	24
Future Volume (vph)	3	362	1150	13	1	85	745	55	24	524	193	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	1.00
Frt			0.998					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3396	0	0	3397	3370	1551	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3421	3396	0	0	3392	3370	1525	1745	3502	1540	3417
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					145			178	
Link Speed (k/h)		60					60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	5%	2%	1%	2%	6%	3%	2%	2%	2%	1%
Adj. Flow (vph)	3	362	1150	13	1	85	745	55	24	524	193	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	365	1163	0	0	86	745	55	24	524	193	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	261	146
Future Volume (vph)	261	146
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1556
Right Turn on Red		Yes
Satd. Flow (RTOR)		146
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	261	146
Shared Lane Traffic (%)		
Lane Group Flow (vph)	261	146
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	49.0		12.0	12.0	45.0	45.0	12.0	42.0	42.0	12.0
Total Split (%)	13.9%	13.9%	42.6%		10.4%	10.4%	39.1%	39.1%	10.4%	36.5%	36.5%	10.4%
Maximum Green (s)	9.9	9.9	42.9		5.9	5.9	38.9	38.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		20.2	60.0			7.6	45.0	45.0		5.8	24.3	5.8
Actuated g/C Ratio		0.18	0.52			0.07	0.39	0.39		0.05	0.21	0.05
v/c Ratio		0.61	0.66			0.39	0.57	0.08		0.27	0.41	0.14
Control Delay		50.0	25.9			81.4	13.1	0.8		60.6	46.9	54.1
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		50.0	25.9			81.4	13.1	0.8		60.6	46.9	54.1
LOS		D	C			F	B	A		E	D	D
Approach Delay			31.7				18.9			37.5		
Approach LOS			C				B			D		
Queue Length 50th (m)		36.0	101.5			9.9	71.4	0.9		4.9	54.0	2.4
Queue Length 95th (m)		#72.5	#158.2			17.7	9.6	0.0		12.9	61.8	6.5
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		602	1773			223	1317	684		89	1093	176
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		0.61	0.66			0.39	0.57	0.08		0.27	0.48	0.14

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 19 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 29.4

Intersection LOS: C

Intersection Capacity Utilization 78.3%

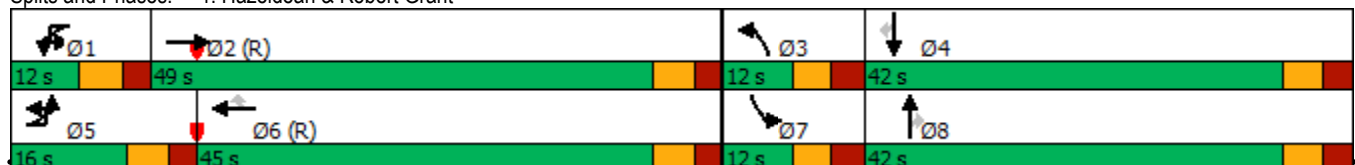
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	36.5%	36.5%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	24.3	24.3
Actuated g/C Ratio	0.21	0.21
v/c Ratio	0.35	0.33
Control Delay	38.8	7.2
Queue Delay	0.0	0.0
Total Delay	38.8	7.2
LOS	D	A
Approach Delay	28.9	
Approach LOS	C	
Queue Length 50th (m)	24.6	0.0
Queue Length 95th (m)	31.2	13.0
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	1093	586
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.24	0.25
Intersection Summary		

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	107	1087	52	21	868	47	37	0	32	28	0
Future Volume (vph)	1	107	1087	52	21	868	47	37	0	32	28	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0		0.0	70.0		180.0	0.0		0.0	40.0	
Storage Lanes		1		0	1		1	1		0	1	
Taper Length (m)		75.0			45.0			10.0			30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		1.00		0.97	0.99	0.98		0.99	
Frt			0.993				0.850		0.850			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3409	0	1751	3402	1567	1751	1537	0	1768	1843
Flt Permitted		0.278			0.249			0.757			0.736	
Satd. Flow (perm)	0	516	3409	0	458	3402	1518	1386	1537	0	1361	1843
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			9				89		121			
Link Speed (k/h)			60			60			50			50
Link Distance (m)			297.5			287.2			259.5			237.4
Travel Time (s)			17.9			17.2			18.7			17.1
Confl. Peds. (#/hr)		5		5	5		5	5		5	5	
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 (%)	1%	1%	4%	2%	2%	5%	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	1	107	1087	52	21	868	47	37	0	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	1139	0	21	868	47	37	32	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			4.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	
Protected Phases	5	5	2			6			8			4
Permitted Phases	2	2			6		6	8			4	
Detector Phase	5	5	2		6	6	6	8	8		4	4
Switch Phase												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1800
Storage Length (m)	40.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1552
Right Turn on Red	Yes
Satd. Flow (RTOR)	273
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	11.2	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2
Total Split (s)	20.0	20.0	82.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0
Total Split (%)	17.4%	17.4%	71.3%		53.9%	53.9%	53.9%	28.7%	28.7%		28.7%	28.7%
Maximum Green (s)	13.8	13.8	75.7		55.7	55.7	55.7	26.8	26.8		26.8	26.8
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.5	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9
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)		6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2
Lead/Lag	Lead	Lead			Lag	Lag	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	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)			18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)			5		5	5	5	5	5		5	5
Act Effct Green (s)		92.8	94.0		79.3	79.3	79.3	13.0	13.0		13.0	
Actuated g/C Ratio		0.81	0.82		0.69	0.69	0.69	0.11	0.11		0.11	
v/c Ratio		0.22	0.41		0.07	0.37	0.04	0.24	0.11		0.18	
Control Delay		4.5	3.8		6.0	10.0	2.0	47.9	0.8		46.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay		4.5	3.8		6.0	10.0	2.0	47.9	0.8		46.4	
LOS		A	A		A	B	A	D	A		D	
Approach Delay			3.9			9.5			26.1			28.9
Approach LOS			A			A			C			C
Queue Length 50th (m)		2.7	15.3		1.9	63.5	1.7	7.3	0.0		5.5	
Queue Length 95th (m)		m10.3	44.8		m4.8	107.8	3.6	14.6	0.0		11.9	
Internal Link Dist (m)			273.5			263.2			235.5			213.4
Turn Bay Length (m)		75.0			70.0		180.0				40.0	
Base Capacity (vph)		566	2788		315	2346	1074	322	450		317	
Starvation Cap Reductn		0	0		0	0	0	0	0		0	
Spillback Cap Reductn		0	0		0	0	0	0	0		0	
Storage Cap Reductn		0	0		0	0	0	0	0		0	
Reduced v/c Ratio		0.19	0.41		0.07	0.37	0.04	0.11	0.07		0.09	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 7.3

Intersection LOS: A

Intersection Capacity Utilization 71.0%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	31.2
Total Split (s)	33.0
Total Split (%)	28.7%
Maximum Green (s)	26.8
Yellow Time (s)	3.3
All-Red Time (s)	2.9
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.2
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	13.0
Actuated g/C Ratio	0.11
v/c Ratio	0.04
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	40.0
Base Capacity (vph)	571
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1050	12	22	808	113	23	0	93	74	2	36
Future Volume (vph)	45	1050	12	22	808	113	23	0	93	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00				0.97	0.99	0.98		0.99	0.98	
Frt		0.998				0.850		0.850			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3455	0	1768	3537	1551	1768	1522	0	3332	1569	0
Flt Permitted	0.280			0.214			0.950			0.950		
Satd. Flow (perm)	520	3455	0	398	3537	1503	1757	1522	0	3298	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				153		328			36	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			795.2			289.2			233.8	
Travel Time (s)		17.2			47.7			20.8			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	45	1050	12	22	808	113	23	0	93	74	2	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1062	0	22	808	113	23	93	0	74	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	75.4	72.1		72.0	66.8	66.8	7.6	13.0		7.9	15.7	
Actuated g/C Ratio	0.66	0.63		0.63	0.58	0.58	0.07	0.11		0.07	0.14	
v/c Ratio	0.11	0.49		0.07	0.39	0.12	0.20	0.20		0.32	0.16	
Control Delay	6.8	17.4		10.0	16.7	1.6	53.7	1.0		54.3	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.8	17.4		10.0	16.7	1.6	53.7	1.0		54.3	15.3	
LOS	A	B		A	B	A	D	A		D	B	
Approach Delay		17.0			14.7			11.4			41.0	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	2.8	96.6		1.3	46.8	0.0	4.6	0.0		7.6	0.4	
Queue Length 95th (m)	9.4	102.0		5.7	85.2	4.6	12.0	0.0		14.2	8.4	
Internal Link Dist (m)		263.2			771.2			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	414	2167		323	2054	937	330	592		622	375	
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	0.11	0.49		0.07	0.39	0.12	0.07	0.16		0.12	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 98 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 16.9

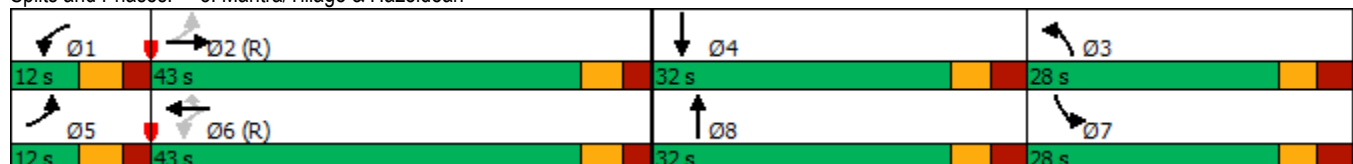
Intersection LOS: B

Intersection Capacity Utilization 60.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean



4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	286	984	199	5	154	459	211	207	938	307	209
Future Volume (vph)	7	286	984	199	5	154	459	211	207	938	307	209
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3213	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3393	3435	1504	3284	3468	1538	3171
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				199				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	286	984	199	5	154	459	211	207	938	307	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	293	984	199	0	159	459	211	207	938	307	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	510	362
Future Volume (vph)	510	362
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		235
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	510	362
Shared Lane Traffic (%)		
Lane Group Flow (vph)	510	362
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.6	35.0	35.0		7.5	28.9	28.9	10.2	31.2	31.2	10.3
Actuated g/C Ratio		0.12	0.32	0.32		0.07	0.26	0.26	0.09	0.28	0.28	0.09
v/c Ratio		0.74	0.89	0.33		0.69	0.51	0.37	0.68	0.96	0.51	0.70
Control Delay		58.2	46.8	5.3		60.8	39.0	14.0	65.4	50.9	8.6	57.2
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		58.2	46.8	5.3		60.8	39.0	14.0	65.4	50.9	8.6	57.2
LOS		E	D	A		E	D	B	E	D	A	E
Approach Delay			43.5				36.8			44.0		
Approach LOS			D				D			D		
Queue Length 50th (m)		28.9	94.8	0.0		16.1	45.5	4.0	14.2	~99.6	24.5	20.9
Queue Length 95th (m)		42.0	#119.1	14.1		#28.7	59.9	32.9	33.8	#137.9	7.2	#30.2
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	623		231	921	570	317	982	599	306
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.69	0.86	0.32		0.69	0.50	0.37	0.65	0.96	0.51	0.68

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 39.8

Intersection LOS: D

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

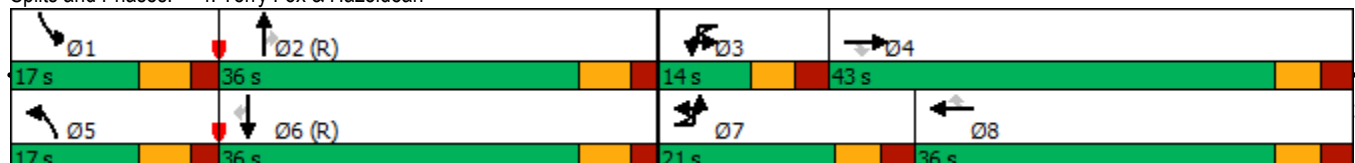
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

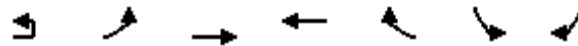
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.3	31.3
Actuated g/C Ratio	0.28	0.28
v/c Ratio	0.53	0.61
Control Delay	30.6	18.3
Queue Delay	0.0	0.0
Total Delay	30.6	18.3
LOS	C	B
Approach Delay	31.6	
Approach LOS	C	
Queue Length 50th (m)	46.0	29.3
Queue Length 95th (m)	61.5	66.1
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	967	589
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.53	0.61
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	121	1166	936	72	74	68
Future Volume (vph)	4	121	1166	936	72	74	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00		1.00		0.99	0.98
Frt				0.989			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3424	0	1768	1537
Flt Permitted		0.271				0.950	
Satd. Flow (perm)	0	488	3468	3424	0	1747	1500
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				14			68
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		10			10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	121	1166	936	72	74	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	125	1166	1008	0	74	68
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			Cl+Ex	Cl+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				10		10	10
Act Effct Green (s)		88.3	88.3	88.3		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.32	0.42	0.37		0.34	0.27
Control Delay		16.3	13.5	5.2		59.9	24.0
Queue Delay		0.0	0.4	0.0		0.0	0.0
Total Delay		16.3	13.9	5.2		59.9	24.0
LOS		B	B	A		E	C
Approach Delay			14.1	5.2		42.7	
Approach LOS			B	A		D	
Queue Length 50th (m)		13.8	68.2	23.3		14.9	3.1
Queue Length 95th (m)		m26.8	119.4	61.8		m17.8	m7.5
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		391	2782	2750		443	431
Starvation Cap Reductn		0	957	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.32	0.64	0.37		0.17	0.16

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: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 66.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1559	30	1	160	1129
Future Volume (vph)	14	1	3	14	2	97	1	1559	30	1	160	1129
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00				
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.230				0.125	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	427	3489	0	0	228	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			32			3				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1559	30	1	160	1129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1589	0	0	161	1129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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
Total Lost Time (s)	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)	5	5		5	5		5	5		5	5	5
Act Effct Green (s)	14.6	14.6		14.6	14.6		82.4	82.4			82.4	82.4
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.75	0.75			0.75	0.75
v/c Ratio	0.08	0.02		0.09	0.43		0.00	0.61			0.95	0.44
Control Delay	38.4	25.0		61.2	54.6		4.0	6.2			75.4	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.4	25.0		61.2	54.6		4.0	6.2			75.4	6.9
LOS	D	C		E	D		A	A			E	A
Approach Delay		35.4			55.4			6.2				15.3
Approach LOS		D			E			A				B
Queue Length 50th (m)	2.6	0.2		3.0	15.5		0.0	5.2			18.5	30.0
Queue Length 95th (m)	6.6	2.6		m9.0	32.8		m0.1	40.2			#48.2	79.8
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	443		320	2615			170	2549
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	0.01		0.04	0.22		0.00	0.61			0.95	0.44

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: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 83.1%

ICU Level of Service E

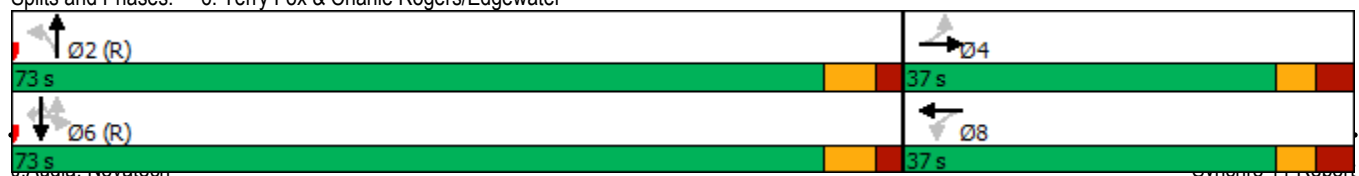
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	82.4
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1085
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1415	1	0	948	0
Future Volume (vph)	0	0	3	1	0	0	10	1415	1	0	948	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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		0.98		0.99			1.00	1.00				
Frt		0.850										
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1553	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.301					
Satd. Flow (perm)	1861	1553	0	1422	1861	0	559	3468	0	1861	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		152										
Link Speed (k/h)		50			30			70			70	
Link Distance (m)		207.5			88.7			316.2			253.3	
Travel Time (s)		14.9			10.6			16.3			13.0	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	10	1415	1	0	948	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	10	1416	0	0	948	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		4.0			4.0			12.0			12.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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			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												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.44			0.30	
Control Delay		0.0		37.0			9.3	9.6			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.3	9.6			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			9.6			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	0.0			0.0	
Queue Length 95th (m)		0.0		1.4			m1.8	m155.1			1.6	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		493		346			520	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.44			0.30	

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: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 5.9

Intersection LOS: A

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec



8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1398	52	3	28	842
Future Volume (vph)	7	1	16	30	1	52	8	1398	52	3	28	842
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.995				0.997
Flt Protected		0.986			0.954		0.950				0.950	
Satd. Flow (prot)	0	1526	0	0	1742	1567	1581	5048	0	0	1722	3424
Flt Permitted		0.899			0.715		0.279				0.171	
Satd. Flow (perm)	0	1389	0	0	1297	1537	463	5048	0	0	309	3424
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		16				109		9				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	7	1	16	30	1	52	8	1398	52	3	28	842
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	31	52	8	1450	0	0	31	860
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	5	
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	18	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5		5		5	5	5
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.2	80.2
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.14			0.21	0.19	0.02	0.38			0.14	0.34
Control Delay		24.0			45.0	1.5	2.6	4.1			4.5	2.7
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.1
Total Delay		24.0			45.0	1.5	2.6	4.1			4.5	2.8
LOS		C			D	A	A	A			A	A
Approach Delay		24.0			17.8			4.1				2.8
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.5			5.8	0.0	0.3	43.8			0.4	5.2
Queue Length 95th (m)		7.6			12.4	0.0	m0.3	27.2			m2.1	18.6
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		340			306	446	439	3793			225	2496
Starvation Cap Reductn		0			0	0	0	0			0	357
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.07			0.10	0.12	0.02	0.38			0.14	0.40

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.38

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's





Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)	3.0	
Minimum Split (s)	5.0	
Total Split (s)	5.0	
Total Split (%)	5%	
Maximum Green (s)	3.0	
Yellow Time (s)	2.0	
All-Red Time (s)	0.0	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Max	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1386	41	1	76	776
Future Volume (vph)	20	10	15	30	5	101	6	1386	41	1	76	776
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00				
Frt		0.910			0.857			0.996				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1462	0	1734	1555	0	1069	3484	0	0	1768	3435
Flt Permitted	0.689			0.741			0.351				0.158	
Satd. Flow (perm)	1276	1462	0	1345	1555	0	394	3484	0	0	294	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		15			44			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		5	5		5	5		10		10	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	20	10	15	30	5	101	6	1386	41	1	76	776
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	25	0	30	106	0	6	1427	0	0	77	776
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1531
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	10
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

9: Terry Fox & Halkirk/Winchester
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	5	5		5	5		10	10		5	5	5
Act Effct Green (s)	14.4	14.4		14.4	14.4		83.3	83.3			83.3	83.3
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76			0.76	0.76
v/c Ratio	0.12	0.12		0.17	0.44		0.02	0.54			0.35	0.30
Control Delay	39.7	23.0		41.2	30.4		6.2	7.6			23.3	12.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.7	23.0		41.2	30.4		6.2	7.6			23.3	12.2
LOS	D	C		D	C		A	A			C	B
Approach Delay		30.4			32.8			7.6				13.2
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.7	1.9		5.6	11.8		0.2	40.2			7.5	39.3
Queue Length 95th (m)	8.4	7.5		11.3	22.1		2.0	110.1			23.6	71.7
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	371	435		391	483		298	2638			222	2600
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	0.06		0.08	0.22		0.02	0.54			0.35	0.30

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), 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: 11.3

Intersection LOS: B

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.3
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	6.3
Queue Delay	0.0
Total Delay	6.3
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.1
Queue Length 95th (m)	m1.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1166
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	340	1206	22	1	184	1599	114	21	304	135	148
Future Volume (vph)	2	340	1206	22	1	184	1599	114	21	304	135	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3427	3490	0	0	3391	3537	1555	1746	3502	1539	3410
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			2					128			133	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	340	1206	22	1	184	1599	114	21	304	135	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	1228	0	0	185	1599	114	21	304	135	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	493	440
Future Volume (vph)	493	440
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		171
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	493	440
Shared Lane Traffic (%)		
Lane Group Flow (vph)	493	440
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.5	63.2			10.2	55.9	55.9	5.8	26.3	26.3	5.9
Actuated g/C Ratio		0.13	0.49			0.08	0.43	0.43	0.04	0.20	0.20	0.05
v/c Ratio		0.74	0.72			0.70	1.05	0.15	0.27	0.43	0.32	0.95
Control Delay		65.3	31.5			85.5	63.1	1.8	68.8	45.5	8.2	122.6
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		65.3	31.5			85.5	63.1	1.8	68.8	45.5	8.2	122.6
LOS		E	C			F	E	A	E	D	A	F
Approach Delay			38.9				61.6			35.6		
Approach LOS			D				E			D		
Queue Length 50th (m)		42.1	133.8			19.5	~229.2	4.1	4.9	31.1	0.4	18.2
Queue Length 95th (m)		#81.1	160.8			m#37.7	#259.4	m2.4	13.1	41.8	14.3	#37.9
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		461	1698			265	1520	741	79	967	521	155
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		0.74	0.72			0.70	1.05	0.15	0.27	0.31	0.26	0.95

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 51.1

Intersection LOS: D

Intersection Capacity Utilization 110.7%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

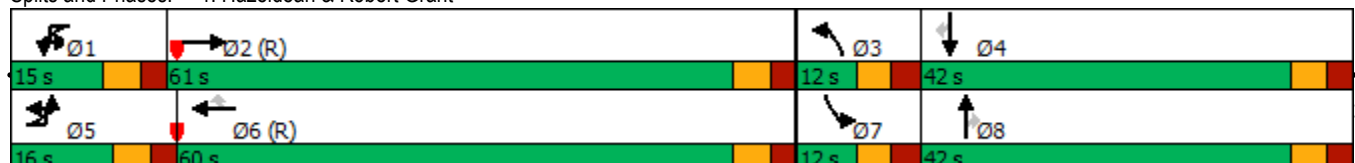
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.1	31.1
Actuated g/C Ratio	0.24	0.24
v/c Ratio	0.59	0.88
Control Delay	46.3	47.4
Queue Delay	0.0	0.0
Total Delay	46.3	47.4
LOS	D	D
Approach Delay	57.2	
Approach LOS	E	
Queue Length 50th (m)	53.6	63.9
Queue Length 95th (m)	67.5	#103.8
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	553
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.51	0.80
Intersection Summary		

2: Hazeldean & Roger Griffiths
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1306	104	52	1569	61	102	0	39	94	0	70
Future Volume (vph)	166	1306	104	52	1569	61	102	0	39	94	0	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	70.0		180.0	0.0		0.0	40.0		40.0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (m)	75.0			45.0			10.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.97	0.99	0.98		0.99		0.98
Frt		0.989				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3487	0	1751	3502	1582	1751	1536	0	1768	1843	1582
Flt Permitted	0.091			0.190			0.757			0.732		
Satd. Flow (perm)	169	3487	0	350	3502	1530	1384	1536	0	1352	1843	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				79		89				196
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		297.5			287.2			259.5			237.4	
Travel Time (s)		17.9			17.2			18.7			17.1	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	166	1306	104	52	1569	61	102	0	39	94	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1410	0	52	1569	61	102	39	0	94	0	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			4.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		97	97		14	97		97	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												

2: Hazeldean & Roger Griffiths
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2	31.2
Total Split (s)	20.0	97.0		77.0	77.0	77.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	15.4%	74.6%		59.2%	59.2%	59.2%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	13.8	90.7		70.7	70.7	70.7	26.8	26.8		26.8	26.8	26.8
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag			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	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
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)		18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)		5		5	5	5	5	5		5	5	5
Act Effct Green (s)	101.7	101.6		83.7	83.7	83.7	15.9	15.9		15.9		15.9
Actuated g/C Ratio	0.78	0.78		0.64	0.64	0.64	0.12	0.12		0.12		0.12
v/c Ratio	0.60	0.52		0.23	0.70	0.06	0.60	0.15		0.57		0.19
Control Delay	26.4	12.0		3.4	8.0	0.2	67.6	1.2		65.8		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	26.4	12.0		3.4	8.0	0.2	67.6	1.2		65.8		1.2
LOS	C	B		A	A	A	E	A		E		A
Approach Delay		13.5			7.6			49.3			38.2	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	26.1	99.2		0.6	156.0	0.0	23.4	0.0		21.5		0.0
Queue Length 95th (m)	m45.1	m128.3		m0.7	21.6	m0.0	37.4	0.0		34.9		0.0
Internal Link Dist (m)		273.5			263.2			235.5			213.4	
Turn Bay Length (m)	75.0			70.0		180.0				40.0		40.0
Base Capacity (vph)	309	2727		225	2255	1013	285	387		278		475
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	0.54	0.52		0.23	0.70	0.06	0.36	0.10		0.34		0.15

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 114 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 13.3

Intersection LOS: B

Intersection Capacity Utilization 85.0%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	1208	24	89	1527	212	20	2	43	177	1
Future Volume (vph)	1	82	1208	24	89	1527	212	20	2	43	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.95	0.99	0.98		0.99	0.98
Frt			0.997				0.850		0.857			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3523	0	1701	3537	1582	1406	1565	0	3431	1553
Flt Permitted		0.071			0.137			0.950			0.950	
Satd. Flow (perm)	0	132	3523	0	245	3537	1510	1397	1565	0	3389	1553
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			2				182		43			143
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			795.2			289.2			233.8
Travel Time (s)			17.2			47.7			20.8			16.8
Confl. Peds. (#/hr)		10		10	10		10	5		5	5	
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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	82	1208	24	89	1527	212	20	2	43	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	1232	0	89	1527	212	20	45	0	177	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	143
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	53.0		17.0	53.0	53.0	28.0	32.0		28.0	32.0
Total Split (%)	13.1%	13.1%	40.8%		13.1%	40.8%	40.8%	21.5%	24.6%		21.5%	24.6%
Maximum Green (s)	10.9	10.9	46.7		10.9	46.7	46.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			10			10	10		5			5
Act Effct Green (s)		82.0	74.0		83.6	74.7	74.7	9.6	13.0		12.3	20.1
Actuated g/C Ratio		0.63	0.57		0.64	0.57	0.57	0.07	0.10		0.09	0.15
v/c Ratio		0.46	0.61		0.35	0.75	0.22	0.19	0.23		0.55	0.40
Control Delay		25.3	20.2		13.4	26.2	4.8	58.5	17.6		62.4	11.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		25.3	20.2		13.4	26.2	4.8	58.5	17.6		62.4	11.1
LOS		C	C		B	C	A	E	B		E	B
Approach Delay			20.6			23.1			30.2			39.4
Approach LOS			C			C			C			D
Queue Length 50th (m)		4.1	78.0		6.4	134.6	2.9	4.6	0.5		20.9	0.2
Queue Length 95th (m)		24.1	153.0		17.6	#246.7	18.4	11.6	9.9		31.0	16.3
Internal Link Dist (m)			263.2			771.2			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		224	2005		288	2033	945	232	341		567	429
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		0.37	0.61		0.31	0.75	0.22	0.09	0.13		0.31	0.34

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 106 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 83.2%

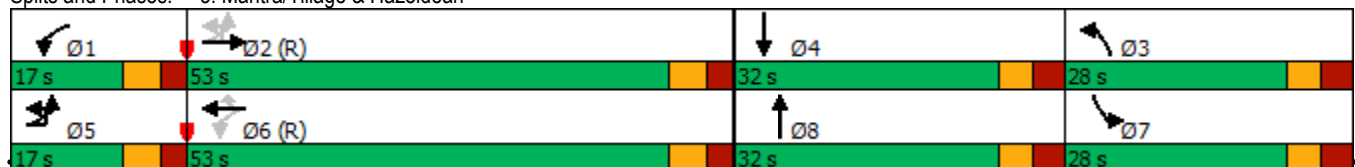
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	479	859	294	14	340	1072	348	334	894	234	1
Future Volume (vph)	2	479	859	294	14	340	1072	348	334	894	234	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3359	3537	1481	0	3368	3537	1521	3388	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				227				169			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	479	859	294	14	340	1072	348	334	894	234	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	481	859	294	0	354	1072	348	334	894	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	356	1029	467
Future Volume (vph)	356	1029	467
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3410	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			259
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	356	1029	467
Shared Lane Traffic (%)			
Lane Group Flow (vph)	357	1029	467
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	36.2	36.2		15.8	35.5	35.5	11.5	30.5	30.5	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.30	0.30	0.10	0.25	0.25	
v/c Ratio		1.04	0.80	0.49		0.79	1.02	0.61	1.03	1.01	0.47	
Control Delay		103.1	45.7	11.6		52.0	81.0	33.2	116.3	71.4	10.7	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		103.1	45.7	11.6		52.0	81.0	33.2	116.3	71.4	10.9	
LOS		F	D	B		D	F	C	F	E	B	
Approach Delay			56.5				65.9			72.0		
Approach LOS			E				E			E		
Queue Length 50th (m)		~58.0	91.2	10.7		38.8	~127.7	45.7	~33.2	~105.4	15.8	
Queue Length 95th (m)		#88.3	113.7	33.3		#52.4	#173.4	83.1	#68.6	#145.1	9.1	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1068	605		467	1046	568	325	881	499	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	37	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		1.04	0.80	0.49		0.76	1.02	0.61	1.03	1.01	0.51	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 75.1

Intersection LOS: E

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

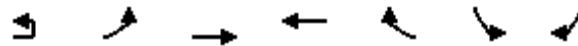
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

			
Ø1	Ø2 (R)	Ø3	Ø4
18 s	37 s	23 s	42 s
			
Ø5	Ø6 (R)	Ø7	Ø8
18 s	37 s	23 s	42 s



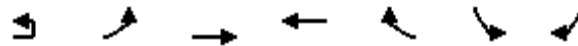
Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	11.5	30.5	30.5
Actuated g/C Ratio	0.10	0.25	0.25
v/c Ratio	1.09	1.16	0.80
Control Delay	126.7	123.3	32.3
Queue Delay	9.0	0.0	0.0
Total Delay	135.7	123.3	32.3
LOS	F	F	C
Approach Delay		102.7	
Approach LOS		F	
Queue Length 50th (m)	~46.1	~135.1	29.7
Queue Length 95th (m)	#74.6	#174.0	#92.5
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	328	890	583
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	101	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.57	1.16	0.80
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	78	1393	1868	54	99	97
Future Volume (vph)	4	78	1393	1868	54	99	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				1.00		0.99	0.97
Frt				0.996			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3517	0	1768	1582
Flt Permitted		0.072				0.950	
Satd. Flow (perm)	0	133	3537	3517	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				5			21
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	78	1393	1868	54	99	97
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	82	1393	1922	0	99	97
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							

5: Hazeldean & Edgewater
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		90.1	90.1	90.1		17.6	17.6
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.83	0.52	0.73		0.39	0.40
Control Delay		66.7	15.8	12.0		44.4	34.6
Queue Delay		0.0	3.7	0.0		0.0	0.0
Total Delay		66.7	19.5	12.0		44.4	34.6
LOS		E	B	B		D	C
Approach Delay			22.1	12.0		39.6	
Approach LOS			C	B		D	
Queue Length 50th (m)		14.6	108.0	79.6		21.0	16.1
Queue Length 95th (m)		m#25.6	m171.4	178.9		m28.8	m23.4
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		99	2655	2641		405	372
Starvation Cap Reductn		0	1147	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.83	0.92	0.73		0.24	0.26

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: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 17.7

Intersection LOS: B

Intersection Capacity Utilization 94.4%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 5: Hazeldean & Edgewater



Signal Timing Diagram

Signal Timing Diagram

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	185	2	1482	63	1	164	1835
Future Volume (vph)	15	0	8	41	4	185	2	1482	63	1	164	1835
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.98		0.99	0.98			1.00				
Frt		0.850			0.853			0.994				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1554	0	1768	1560	0	1768	3478	0	0	1734	3537
Flt Permitted	0.397			0.752			0.083				0.082	
Satd. Flow (perm)	695	1554	0	1391	1560	0	154	3478	0	0	150	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		123			113			5				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	15	0	8	41	4	185	2	1482	63	1	164	1835
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	8	0	41	189	0	2	1545	0	0	165	1835
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1504
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	5	5		5	5			5				5
Act Effct Green (s)	15.3	15.3		15.3	15.3		77.4	72.0			90.7	89.2
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.64	0.60			0.76	0.74
v/c Ratio	0.17	0.03		0.23	0.64		0.01	0.74			0.58	0.70
Control Delay	46.7	0.1		39.9	24.7		5.5	11.4			23.8	12.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.7	0.1		39.9	24.7		5.5	11.4			23.8	12.9
LOS	D	A		D	C		A	B			C	B
Approach Delay		30.5			27.4			11.4				13.6
Approach LOS		C			C			B				B
Queue Length 50th (m)	3.0	0.0		8.7	18.4		0.0	53.1			9.2	73.1
Queue Length 95th (m)	7.9	0.0		m11.3	m26.3		m0.2	44.0			#51.8	#248.3
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	176	486		353	480		201	2087			286	2629
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.02		0.12	0.39		0.01	0.74			0.58	0.70

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 89.0%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	89.2
Actuated g/C Ratio	0.74
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1141
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1353	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1353	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor	0.99	0.98		0.99	0.98				1.00			
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1552	0	1488	1552	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.740				0.104				0.172
Satd. Flow (perm)	1398	1552	0	1152	1552	0	0	194	3457	0	0	320
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		116			137				2			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)	5		5	5		5		5		5		5
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 (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	26	5	0	3	3	36	1353	24	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	26	0	5	3	0	0	39	1377	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1660	1
Future Volume (vph)	1660	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1660	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1661	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	CI+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	5	5		5	5				5			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			96.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.80
v/c Ratio	0.02	0.10		0.04	0.01			0.16	0.47			0.01
Control Delay	43.0	0.7		43.8	0.0			2.6	2.4			5.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.7		43.8	0.0			2.6	2.4			5.2
LOS	D	A		D	A			A	A			A
Approach Delay		5.1			27.4				2.4			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.0	0.0			1.0	20.8			0.1
Queue Length 95th (m)	2.9	0.0		4.0	0.0			m1.6	m27.5			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	312	436		257	453			272	2902			363
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	0.06		0.02	0.01			0.14	0.47			0.01

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 69.4%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	5	
Act Effct Green (s)	95.4	
Actuated g/C Ratio	0.80	
v/c Ratio	0.59	
Control Delay	5.9	
Queue Delay	0.0	
Total Delay	5.9	
LOS	A	
Approach Delay	5.9	
Approach LOS	A	
Queue Length 50th (m)	31.2	
Queue Length 95th (m)	59.3	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2810	
Starvation Cap Reductn	47	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.60	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	1111	76	2	115	1521
Future Volume (vph)	37	8	72	78	2	103	26	1111	76	2	115	1521
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98		1.00			1.00	1.00
Frt		0.917				0.850		0.990				0.992
Flt Protected		0.984			0.954		0.950				0.950	
Satd. Flow (prot)	0	1658	0	0	1776	1582	1768	5020	0	0	1768	3499
Flt Permitted		0.864			0.602		0.115				0.214	
Satd. Flow (perm)	0	1453	0	0	1114	1552	214	5020	0	0	397	3499
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				103		18				9
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	10		5		5	
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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	37	8	72	78	2	103	26	1111	76	2	115	1521
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	80	103	26	1187	0	0	117	1603
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	10	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	82	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		10	10	10
Act Effct Green (s)		14.8			14.8	14.8	87.2	87.2			87.2	87.2
Actuated g/C Ratio		0.12			0.12	0.12	0.73	0.73			0.73	0.73
v/c Ratio		0.50			0.58	0.37	0.17	0.33			0.41	0.63
Control Delay		31.6			65.2	11.8	7.8	6.1			4.5	4.4
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.4
Total Delay		31.6			65.2	11.8	7.8	6.1			4.5	4.8
LOS		C			E	B	A	A			A	A
Approach Delay		31.6			35.1			6.2				4.8
Approach LOS		C			D			A				A
Queue Length 50th (m)		11.6			16.9	0.0	2.0	38.2			1.9	16.0
Queue Length 95th (m)		26.0			29.2	13.2	m5.9	40.3			m3.5	m22.1
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		338			222	392	155	3651			288	2543
Starvation Cap Reductn		0			0	0	0	0			0	417
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.35			0.36	0.26	0.17	0.33			0.41	0.75

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 8.0

Intersection LOS: A

Intersection Capacity Utilization 86.5%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's





Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)	3.0	
Minimum Split (s)	5.0	
Total Split (s)	5.0	
Total Split (%)	4%	
Maximum Green (s)	3.0	
Yellow Time (s)	2.0	
All-Red Time (s)	0.0	
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Max	
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

9: Terry Fox & Halkirk/Winchester
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	1103	34	2	139	1479
Future Volume (vph)	23	7	7	48	17	97	12	1103	34	2	139	1479
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.99		0.99	0.98			1.00			0.99	
Frt		0.925			0.872			0.996				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1701	0	1768	1598	0	1768	3516	0	0	1768	3537
Flt Permitted	0.629			0.748			0.151				0.231	
Satd. Flow (perm)	1120	1701	0	1376	1598	0	281	3516	0	0	428	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			95			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		10	10		5	10		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	23	7	7	48	17	97	12	1103	34	2	139	1479
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	14	0	48	114	0	12	1137	0	0	141	1479
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.95
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1508
Right Turn on Red	Yes
Satd. Flow (RTOR)	41
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	10
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	44
Shared Lane Traffic (%)	
Lane Group Flow (vph)	44
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	10	10		5	5		14	14		10	10	10
Act Effct Green (s)	14.3	14.3		14.3	14.3		93.4	93.4			93.4	93.4
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.17	0.07		0.29	0.42		0.06	0.42			0.42	0.54
Control Delay	46.9	29.7		50.1	16.7		5.9	5.8			17.4	14.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.9	29.7		50.1	16.7		5.9	5.8			17.4	14.6
LOS	D	C		D	B		A	A			B	B
Approach Delay		40.4			26.6			5.8				14.6
Approach LOS		D			C			A				B
Queue Length 50th (m)	4.8	1.4		10.1	3.9		0.4	28.0			18.6	104.7
Queue Length 95th (m)	10.2	6.0		17.4	16.3		3.2	76.0			35.1	135.3
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	298	458		366	495		218	2738			333	2754
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.03		0.13	0.23		0.06	0.42			0.42	0.54

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), 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: 12.2

Intersection LOS: B

Intersection Capacity Utilization 80.0%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	93.4
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.6
Queue Delay	0.0
Total Delay	5.6
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.5
Queue Length 95th (m)	m6.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1183
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic (optimized timing)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	286	984	199	5	154	459	211	207	888	307	209
Future Volume (vph)	7	286	984	199	5	154	459	211	207	888	307	209
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3213	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3393	3435	1504	3284	3468	1538	3170
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				199				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	286	984	199	5	154	459	211	207	888	307	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	293	984	199	0	159	459	211	207	888	307	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic (optimized timing)

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	510	362
Future Volume (vph)	510	362
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		235
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	510	362
Shared Lane Traffic (%)		
Lane Group Flow (vph)	510	362
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic (optimized timing)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.6	35.0	35.0		7.5	28.9	28.9	10.2	31.2	31.2	10.3
Actuated g/C Ratio		0.12	0.32	0.32		0.07	0.26	0.26	0.09	0.28	0.28	0.09
v/c Ratio		0.74	0.89	0.33		0.69	0.51	0.37	0.68	0.90	0.51	0.70
Control Delay		58.2	46.8	5.3		60.6	39.3	13.9	65.4	43.5	8.6	55.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		58.2	46.8	5.3		60.6	39.3	13.9	65.4	43.5	8.6	55.9
LOS		E	D	A		E	D	B	E	D	A	E
Approach Delay			43.5				36.9			39.1		
Approach LOS			D				D			D		
Queue Length 50th (m)		28.9	94.8	0.0		16.2	44.8	4.0	14.2	91.6	24.5	21.0
Queue Length 95th (m)		42.0	#119.1	14.1		#28.7	61.9	32.9	33.8	#126.1	7.2	#33.9
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	623		231	921	570	317	982	599	306
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.69	0.86	0.32		0.69	0.50	0.37	0.65	0.90	0.51	0.68

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 39.4

Intersection LOS: D

Intersection Capacity Utilization 87.4%

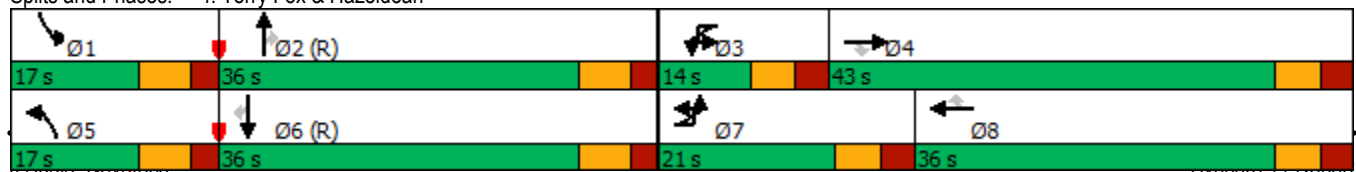
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean



03/10/2014, 11:00 AM

Dynamic 11 Report



Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.3	31.3
Actuated g/C Ratio	0.28	0.28
v/c Ratio	0.53	0.61
Control Delay	36.5	24.3
Queue Delay	0.0	0.0
Total Delay	36.5	24.3
LOS	D	C
Approach Delay	36.2	
Approach LOS	D	
Queue Length 50th (m)	49.4	33.7
Queue Length 95th (m)	67.0	76.0
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	967	589
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.53	0.61
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1559	30	1	160	1129
Future Volume (vph)	14	1	3	14	2	97	1	1559	30	1	160	1129
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00				
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.252				0.069	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	468	3489	0	0	126	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			89			2				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1559	30	1	160	1129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1589	0	0	161	1129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8			2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		2	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak Hour

560 Hazeldean Road
2036 Background Traffic (optimized timing)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		34.5	34.5		11.5	11.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		61.0	61.0		12.0	12.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		55.5%	55.5%		10.9%	10.9%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		54.5	54.5		5.5	5.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
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
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5			6.5	6.5
Lead/Lag							Lag	Lag		Lead	Lead	
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		None	None	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)	5	5		5	5		5	5				5
Act Effct Green (s)	14.0	14.0		14.0	14.0		64.0	64.0			83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.58	0.58			0.75	0.75
v/c Ratio	0.09	0.02		0.09	0.37		0.00	0.78			0.58	0.44
Control Delay	39.2	25.5		47.0	28.5		7.0	14.6			26.7	6.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.2	25.5		47.0	28.5		7.0	14.6			26.7	6.7
LOS	D	C		D	C		A	B			C	A
Approach Delay		36.2			30.8			14.6				9.1
Approach LOS		D			C			B				A
Queue Length 50th (m)	2.6	0.2		2.5	7.8		0.0	162.6			11.4	29.5
Queue Length 95th (m)	6.6	2.6		m7.9	23.4		m0.1	#44.2			#55.8	79.8
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	484		272	2032			277	2566
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	0.01		0.04	0.20		0.00	0.78			0.58	0.44

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 83.1%

ICU Level of Service E

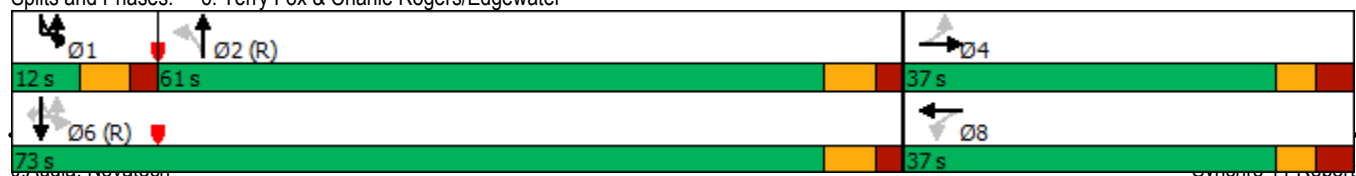
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



0.0000, Nov 2000

Dynamic 1.1 Report

Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.0
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1092
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	340	1206	22	1	184	1369	114	21	304	135	138
Future Volume (vph)	2	340	1206	22	1	184	1369	114	21	304	135	138
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3490	0	0	3391	3537	1555	1746	3502	1539	3410
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			134	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	340	1206	22	1	184	1369	114	21	304	135	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	1228	0	0	185	1369	114	21	304	135	138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	493	440
Future Volume (vph)	493	440
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		176
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	493	440
Shared Lane Traffic (%)		
Lane Group Flow (vph)	493	440
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

1: Hazeldean & Robert Grant
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.6	63.2			10.2	55.9	55.9		5.8	26.2	5.9
Actuated g/C Ratio		0.14	0.49			0.08	0.43	0.43		0.04	0.20	0.05
v/c Ratio		0.74	0.72			0.69	0.90	0.15		0.27	0.43	0.89
Control Delay		65.1	31.5			85.8	30.1	1.9		68.8	45.6	109.3
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		65.1	31.5			85.8	30.1	1.9		68.8	45.6	109.3
LOS		E	C			F	C	A		E	D	F
Approach Delay			38.8				34.3			35.6		
Approach LOS			D				C			D		
Queue Length 50th (m)		42.0	133.8			19.1	180.5	4.6		4.9	31.2	17.0
Queue Length 95th (m)		#81.1	160.8			m#37.5	#198.7	m2.6		13.1	41.8	#34.8
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		463	1698			267	1520	741		79	967	155
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		0.74	0.72			0.69	0.90	0.15		0.27	0.31	0.89

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 40.4

Intersection LOS: D

Intersection Capacity Utilization 104.0%

ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant



Dynamic T-Report

	↓	↙
Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.0	31.0
Actuated g/C Ratio	0.24	0.24
v/c Ratio	0.59	0.87
Control Delay	46.4	46.3
Queue Delay	0.0	0.0
Total Delay	46.4	46.3
LOS	D	D
Approach Delay	54.4	
Approach LOS	D	
Queue Length 50th (m)	53.8	62.9
Queue Length 95th (m)	67.5	#101.0
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	556
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.51	0.79
Intersection Summary		

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	409	859	294	14	340	912	348	304	814	234	1
Future Volume (vph)	2	409	859	294	14	340	912	348	304	814	234	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3368	3537	1521	3386	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				232				174			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			795.2				157.6			142.7		
Travel Time (s)			47.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	409	859	294	14	340	912	348	304	814	234	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	411	859	294	0	354	912	348	304	814	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic (demand rationalized)

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	306	819	467
Future Volume (vph)	306	819	467
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3408	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			265
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	306	819	467
Shared Lane Traffic (%)			
Lane Group Flow (vph)	307	819	467
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.4	35.0	35.0		15.8	34.4	34.4	12.0	31.2	31.2	
Actuated g/C Ratio		0.14	0.29	0.29		0.13	0.29	0.29	0.10	0.26	0.26	
v/c Ratio		0.90	0.83	0.49		0.79	0.90	0.62	0.89	0.90	0.46	
Control Delay		73.9	47.9	11.3		52.0	61.8	33.6	90.7	49.4	10.1	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		73.9	47.9	11.3		52.0	61.8	33.6	90.7	49.4	10.4	
LOS		E	D	B		D	E	C	F	D	B	
Approach Delay			47.8				53.6			51.9		
Approach LOS			D				D			D		
Queue Length 50th (m)		45.7	91.2	9.9		38.8	105.7	44.8	28.8	91.5	17.0	
Queue Length 95th (m)		#70.6	113.7	32.2		#52.4	#133.1	82.3	#60.6	#125.0	9.0	
Internal Link Dist (m)			771.2				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1046	601		467	1046	572	340	901	507	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	37	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.89	0.82	0.49		0.76	0.87	0.61	0.89	0.90	0.50	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), 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: 54.7

Intersection LOS: D

Intersection Capacity Utilization 100.9%

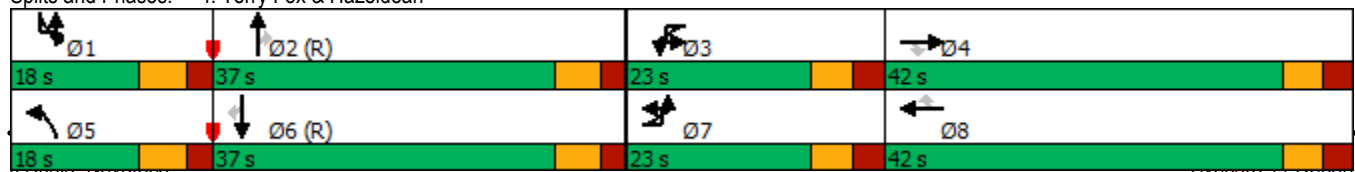
ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.0	31.2	31.2
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.90	0.90	0.78
Control Delay	83.5	57.8	30.9
Queue Delay	51.8	0.0	0.0
Total Delay	135.3	57.8	30.9
LOS	F	E	C
Approach Delay		64.9	
Approach LOS		E	
Queue Length 50th (m)	36.8	71.4	29.1
Queue Length 95th (m)	#61.1	#122.0	#92.8
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	343	910	595
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	102	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.27	0.90	0.78
Intersection Summary			

APPENDIX K

MMLOS Analysis

Segment MMLOS Analysis

This section provides an existing conditions review of the boundary street Hazeldean Road, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on Hazeldean Road, based on the targets for Arterial Mainstreets.

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment pedestrian level of service (PLOS) of Hazeldean Road. Exhibit 22 of the *MMLOS Guidelines* identifies a target PLOS C for all Arterial Mainstreets. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment bicycle level of service (BLOS) of Hazeldean Road. Exhibit 22 of the *MMLOS Guidelines* identifies a target BLOS C for Arterial Mainstreets with a Spine Route designation. The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment transit level of service (TLOS) of Hazeldean Road. Exhibit 22 of the *MMLOS Guidelines* identifies a target TLOS D for Arterial Mainstreets that is a designated Transit Priority Corridor with Isolated Measures. The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment truck level of service (TkLOS) of Hazeldean Road. Exhibit 22 of the *MMLOS Guidelines* identifies a target TkLOS D for Arterial Mainstreets with a truck route designation. The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed ⁽¹⁾	PLOS
Hazeldean Road (south side, Mantra Street to Carp River)					
≥ 2.0m	> 2.0m	> 3,000 vpd	No	70 km/h	D

1. Operating speed taken as the speed limit plus 10 km/h.

Table 2: BLOS Segment Analysis

Road Class	Route Type	Bikeway Type	Travel Lanes	Operating Speed	Bike Lane Width	Bike Lane Blockage	BLOS
Hazeldean Road (Mantra Street to Carp River)							
Arterial	Spine Route	Curbside Bike Lane	2 per direction	70 km/h	≥ 1.8m	Rare	E

Table 3: TLOS Segment Analysis

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
Hazeldean Road (Mantra Street to Carp River)				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
Hazeldean Road (Mantra Street to Carp River)		
≤ 3.5m	2	A

Intersection MMLOS Analysis

The following is an existing conditions review of the MMLOS of the signalized intersections within the study area, using complete streets principles. The MMLOS targets associated with Arterial Mainstreets have been considered for all intersections with Hazeldean Road, and the targets associated with the 'General Urban Area' designation have been considered for all intersections with Terry Fox Drive. Whichever target is stricter has been considered for the intersection at Hazeldean Road/Terry Fox Drive.

Exhibit 5 of the *Addendum to the MMLOS Guidelines* has been used to evaluate the existing PLOS at the study area intersections. Exhibit 22 of the *MMLOS Guidelines* suggests a target PLOS C for Arterial Mainstreets or all roadways within the General Urban Area. The results of the intersection PLOS analysis are summarized in **Table 5** through **Table 13**.

Exhibit 12 of the *MMLOS Guidelines* has been used to evaluate the existing BLOS at the study area intersections. Exhibit 22 of the *MMLOS Guidelines* suggests a target BLOS C for Arterial Mainstreets or roadways within the General Urban Area with a Spine Route designation (Hazeldean Road, Terry Fox Drive), and a target BLOS D for all roadways with no cycling route designation (all roadways crossing Hazeldean Road or Terry Fox Drive). The results of the intersection BLOS analysis are summarized in **Table 14**.

Exhibit 16 of the *MMLOS Guidelines* has been used to evaluate the existing TLOS at the study area intersections. Exhibit 22 of the *MMLOS Guidelines* identifies a target TLOS D for Transit Priority Corridors with Isolated Measures (Hazeldean Road and Terry Fox Drive north of Hazeldean Road), and does not identify a target TLOS for roadways without a Rapid Transit or Transit Priority designation (Terry Fox Drive south of Hazeldean Road). No target TLOS is identified for the roadways crossing Hazeldean Road or Terry Fox Drive. The TLOS has been evaluated for every approach that is currently used by transit. The results of the intersection TLOS analysis are summarized in **Table 15**.

Exhibit 21 of the *MMLOS Guidelines* has been used to evaluate the existing TkLOS at the study area intersections. Exhibit 22 of the *MMLOS Guidelines* identifies a target TkLOS D for Arterial Mainstreets and roadways within the General Urban Area with a truck route designation. No target TkLOS is identified for the roadways crossing Hazeldean Road or Terry Fox Drive. The results of the intersection TkLOS analysis are summarized in **Table 16**.

Table 5: PLOS Intersection Analysis – Hazeldean Road/325m East of Iber Road

CRITERIA	North Approach		East Approach		West Approach	
PETSI SCORE						
CROSSING DISTANCE CONDITIONS						
Median > 2.4m in Width	No	6	No	-10	No	23
Lanes Crossed (3.5m Lane Width)	9		10 +		8	
SIGNAL PHASING AND TIMING						
Left Turn Conflict	Permissive	-8	Permissive	-8	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2
CORNER RADIUS						
Parallel Radius	> 15m to 25m	-8	No Right Turn	0	> 10m to 15m	-6
Parallel Right Turn Channel	Smart Channel	2	No Right Turn	0	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	> 15m to 25m	-8	N/A	0
Perpendicular Right Turn Channel	N/A	0	Smart Channel	2	N/A	0
CROSSING TREATMENT						
Treatment	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		-25			-38	-1
LOS		F			F	F
DELAY SCORE						
Cycle Length	115		120		120	
Pedestrian Walk Time	59.9		7.9		7.9	
DELAY SCORE		13.2	52.4		52.4	
LOS		B	E		E	
OVERALL		F	F		F	

Table 6: PLOS Intersection Analysis – Hazeldean Road/Roger Griffiths Avenue

CRITERIA		North Approach		West Approach	
PETSI SCORE					
CROSSING DISTANCE CONDITIONS					
Median > 2.4m in Width	No	-10	No	39	
Lanes Crossed (3.5m Lane Width)	10 +		7		
SIGNAL PHASING AND TIMING					
Left Turn Conflict	Perm + Prot	-8	No Left Turn/Prohibited	0	
Right Turn Conflict	Permissive or Yield	-5	Perm + Prot	-5	
Right Turn on Red	RTOR Allowed	-3	N/A	0	
Leading Pedestrian Interval	No	-2	No	-2	
CORNER RADIUS					
Parallel Radius	> 15m to 25m	-8	> 10m to 15m	-6	
Parallel Right Turn Channel	Smart Channel	2	No Right Turn Channel	-4	
Perpendicular Radius	N/A	0	N/A	0	
Perpendicular Right Turn Channel	N/A	0	N/A	0	
CROSSING TREATMENT					
Treatment	Standard	-7	Standard	-7	
PETSI SCORE		-41	15		
LOS		F	F		
DELAY SCORE					
Cycle Length		115		120	
Pedestrian Walk Time		37.7		8.8	
DELAY SCORE		26.0	51.5		
LOS		C	E		
OVERALL		F	F		

Table 7: PLOS Intersection Analysis – Hazeldean Road/Mantra Street/Tillage Street

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSİ SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	72	No	6	No	55
Lanes Crossed (3.5m Lane Width)	10 +		5		9		6	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Perm + Prot	-8	Perm + Prot	-8	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	RTOR Allowed	-3	RTOR Allowed	-3	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 5m to 10m	-5	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	Smart Channel	2	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	> 15m to 25m	-8	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	Smart Channel	2	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Zebra Stripe	-4	Standard	-7	Standard	-7
PETSİ SCORE		-41			41			28
LOS		F			E			F
DELAY SCORE								
Cycle Length	120				120			120
Pedestrian Walk Time	18.7				18.7			7.5
DELAY SCORE		42.8			42.8			52.7
LOS		E			E			E
OVERALL		F			E			F

Table 8: PLOS Intersection Analysis – Hazeldean Road/Terry Fox Drive

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSİ SCORE								
CROSSİNG DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +		10 +	
SİGNAL PHASİNG AND TİMİNG								
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
CORNİER RADİUS								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 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	> 15m to 25m	-8	> 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
CROSSİNG TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSİ SCORE		-44	PETSİ SCORE		-40	PETSİ SCORE		-41
LOS		F	LOS		F	LOS		F
DELAY SCORE								
Cycle Length		110		120		120		120
Pedestrian Walk Time		8.5		13.5		8.5		8.5
DELAY SCORE		46.8	DELAY SCORE		47.3	DELAY SCORE		51.8
LOS		E	LOS		E	LOS		E
OVERALL		F	OVERALL		F	OVERALL		F

Table 9: PLOS Intersection Analysis – Hazeldean Road/Edgewater Street

CRITERIA	North Approach		East Approach		West Approach	
PETSI SCORE						
CROSSING DISTANCE CONDITIONS						
Median > 2.4m in Width	No	39	No	55	No	39
Lanes Crossed (3.5m Lane Width)	7		6		7	
SIGNAL PHASING AND TIMING						
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
CORNER RADIUS						
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
CROSSING TREATMENT						
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	

Table 10: PLOS Intersection Analysis – Terry Fox Drive/Edgewater Street/Charlie Rogers Place

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETS I SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	23	No	39	No	23	No	39
Lanes Crossed (3.5m Lane Width)	8		7		8		7	
SIGNAL PHASING AND TIMING								
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
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 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
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETS I SCORE		-14			4			4
LOS		F			F			F
DELAY SCORE								
Cycle Length		120			120		120	
Pedestrian Walk Time		7.5			7.5		41.5	
DELAY SCORE		52.7			52.7			25.7
LOS		E			E			C
OVERALL		F			F			F

Table 11: PLOS Intersection Analysis – Terry Fox Drive/Tony Graham Rec Complex

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSİ SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	39	No	39	No	39	No	39
Lanes Crossed (3.5m Lane Width)	7		7		7		7	
SIGNAL PHASING AND TIMING								
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
CORNER RADIUS								
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
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSİ SCORE		4			4			4
LOS		F			F			F
DELAY SCORE								
Cycle Length		120			120			120
Pedestrian Walk Time		7.8			7.8			46.5
DELAY SCORE		52.5			52.5			22.5
LOS		E			E			C
OVERALL		F			F			F

Table 12: PLOS Intersection Analysis – Terry Fox Drive/Sobey's Access

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSİ SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	23	No	23	No	72
Lanes Crossed (3.5m Lane Width)	10 +		8		8		5	
SIGNAL PHASING AND TIMING								
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	Yes	0	Yes	0	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 5m to 10m	-5	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	Smart Channel	2	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	Smart Channel	2	N/A	0
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSİ SCORE		-37			-9			37
LOS		F			F			E
DELAY SCORE								
Cycle Length		120		120		110		110
Pedestrian Walk Time		7.0		7.0		53.0		38.0
DELAY SCORE		53.2			53.2			23.6
LOS		E			E			C
OVERALL		F			F			E

Table 13: PLOS Intersection Analysis – Terry Fox Drive/Winchester Drive/Halkirk Avenue

CRITERIA	North Approach		South Approach		East Approach		West Approach	
PETSİ SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	23	No	23	No	55	No	55
Lanes Crossed (3.5m Lane Width)	8		8		6		6	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 10m to 15m	-6	> 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
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSİ SCORE		-12			-12			20
LOS		F			F			F
DELAY SCORE								
Cycle Length		120		120		110		110
Pedestrian Walk Time		9.0		9.0		50.7		50.7
DELAY SCORE		51.3	51.3		16.0		16.0	
LOS		E	E		B		B	
OVERALL		F	F		F		F	

Table 14: BLOS Intersection Analysis

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Hazeldean Road/325m East of Iber Road				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed ≤ 25 km/h	D
		Left Turn Accommodation	One lane crossed, 50 km/h	D
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Bike lane shifts to the left of the right turn lane, turning speed ≤ 25 km/h	D
		Left Turn Accommodation	No left turn	-
West Approach	Curbside Bike Lane	Right Turn Lane Characteristics	No right turn	-
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
Hazeldean Road/Roger Griffiths Avenue				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed ≤ 25 km/h	D
		Left Turn Accommodation	Dual left turn lanes	F
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Bike lane shifts to the left of the right turn lane, turning speed ≤ 25 km/h	D
		Left Turn Accommodation	No left turn	-
West Approach	Curbside Bike Lane	Right Turn Lane Characteristics	No right turn	-
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
Hazeldean Road/Mantra Street/Tillage Street				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Dual left turn lanes	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, ≥ 60 km/h	F
East Approach	Cycle Track	Right Turn Lane Characteristics	Cycling facility remains to the right	A
		Left Turn Accommodation	Two-stage left turn bike box	A
West Approach	Cycle Track	Right Turn Lane Characteristics	Cycling facility remains to the right	A
		Left Turn Accommodation	Two-stage left turn bike box	A

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Hazeldean Road/Terry Fox Drive				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane is > 50m and introduced to the right	D
		Left Turn Accommodation	Dual left turn lanes	F
South Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane is ≤ 50m and introduced to the right	B
		Left Turn Accommodation	Dual left turn lanes	F
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane is > 50m and introduced to the right	D
		Left Turn Accommodation	Dual left turn lanes	F
West Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane is > 50m and introduced to the right	D
		Left Turn Accommodation	Dual left turn lanes	F
Hazeldean Road/Edgewater Street				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane > 50m	F
		Left Turn Accommodation	One lane crossed, ≥ 60 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	No left turn	-
West Approach	Curbside Bike Lane	Right Turn Lane Characteristics	No right turn	-
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
Terry Fox Drive/Edgewater Street/Charlie Rogers Place				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane is ≤ 50m and introduced to the right	B
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
South Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, ≥ 60 km/h	F
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, 50 km/h	D

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Terry Fox Drive/Tony Graham Rec Complex				
North Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
South Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, ≤ 40 km/h	B
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, 50 km/h	D
Terry Fox Drive/Sobey's Access				
North Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
South Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m; turning speed ≤ 25 km/h	D
		Left Turn Accommodation	One lane crossed, ≤ 40 km/h	B
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared left turn/through/right turn lane	A
		Left Turn Accommodation	No lanes crossed, ≤ 50 km/h	B
Terry Fox Drive/Winchester Drive/Halkirk Avenue				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane is > 50m and introduced to the right	D
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
South Approach	Curbside Bike Lane	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, ≥ 50 km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, 50 km/h	D
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, 50 km/h	D

Table 15: TLOS Intersection Analysis

Approach	Delay (sec) ⁽¹⁾		TLOS
	AM Peak	PM Peak	
Hazeldean Road/325m East of Iber Road			
East Approach	1.3	1.7	B
West Approach	3.7	5.9	B
Hazeldean Road/Roger Griffiths Avenue			
East Approach	5.3	5.1	B
West Approach	1.8	5.8	B
Hazeldean Road/Mantra Street/Tillage Street			
East Approach	12.2	34.8	E
West Approach	15.7	18.0	C
Hazeldean Road/Terry Fox Drive			
North Approach	24.0	50.2	F
South Approach	28.3	46.4	F
East Approach	36.5	52.8	F
West Approach	40.7	54.0	F
Hazeldean Road/Edgewater Street			
East Approach	4.7	8.7	B
West Approach	10.6	15.1	C
Terry Fox Drive/Edgewater Street/Charlie Rogers Place			
North Approach	11.0	11.3	C
South Approach	8.3	8.9	B
Terry Fox Drive/Tony Graham Rec Complex			
North Approach	0.3	6.3	B
South Approach	8.5	2.5	B
Terry Fox Drive/Sobey's Access			
North Approach	2.9	4.0	B
South Approach	4.2	6.3	B
Terry Fox Drive/Winchester Drive/Halkirk Avenue			
North Approach	8.6	11.8	C
South Approach	6.8	5.4	B

1. Delay based on outputs from Synchro analysis of existing conditions

Table 16: TkLOS Intersection Analysis

Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
Hazeldean Road/325m East of Iber Road			
North Approach	> 15m	2	A
East Approach	> 15m	1	C
Hazeldean Road/Roger Griffiths Avenue			
North Approach	10m to 15m	2	B
East Approach	> 15m	1	C
Hazeldean Road/Mantra Street/Tillage Street			
North Approach	10m to 15m	2	B
South Approach	10m to 15m	2	B
East Approach	> 15m	1	C
West Approach	< 10m	1	F
Hazeldean Road/Terry Fox Drive			
North Approach	> 15m	2	A
South Approach	> 15m	2	A
East Approach	> 15m	3	A
West Approach	> 15m	2	A
Hazeldean Road/Edgewater Street			
North Approach	10m to 15m	2	B
East Approach	> 15m	1	C
Terry Fox Drive/Edgewater Street/Charlie Rogers Place			
North Approach	10m to 15m	1	E
South Approach	10m to 15m	2	B
East Approach	10m to 15m	2	B
West Approach	10m to 15m	2	B
Terry Fox Drive/Tony Graham Rec Complex			
North Approach	10m to 15m	1	E
South Approach	< 10m	1	F
East Approach	10m to 15m	2	B
West Approach	10m to 15m	2	B
Terry Fox Drive/Sobey's Access			
North Approach	10m to 15m	1	E
South Approach	10m to 15m	1	E
East Approach	10m to 15m	3	B
West Approach	< 10m	2	D
Terry Fox Drive/Winchester Drive/Halkirk Avenue			
North Approach	10m to 15m	1	E
South Approach	10m to 15m	1	E
East Approach	10m to 15m	2	B
West Approach	10m to 15m	2	B

APPENDIX L

Transportation Demand Management

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

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

TDM measures: Residential developments		Check if proposed & add descriptions
1. TDM PROGRAM MANAGEMENT		
1.1 Program coordinator		
BASIC ★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☐
1.2 Travel surveys		
BETTER	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
2. WALKING AND CYCLING		
2.1 Information on walking/cycling routes & destinations		
BASIC	2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances (<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	☐

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

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	☒
6.2 Personalized trip planning		
BETTER	★ 6.2.1 Offer personalized trip planning to new residents	☐

APPENDIX M

Total Synchro Analysis

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	320	1020	10	1	68	664	55	19	442	154	23
Future Volume (vph)	3	320	1020	10	1	68	664	55	19	442	154	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	1.00
Frt			0.999					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3399	0	0	3397	3370	1551	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3419	3399	0	0	3391	3370	1525	1745	3502	1540	3415
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					145			154	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	5%	2%	1%	2%	6%	3%	2%	2%	2%	1%
Adj. Flow (vph)	3	320	1020	10	1	68	664	55	19	442	154	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	323	1030	0	0	69	664	55	19	442	154	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			CI+Ex				CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	221	130
Future Volume (vph)	221	130
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1556
Right Turn on Red		Yes
Satd. Flow (RTOR)		145
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	221	130
Shared Lane Traffic (%)		
Lane Group Flow (vph)	221	130
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	10.0	10.0

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	49.0		12.0	12.0	45.0	45.0	12.0	42.0	42.0	12.0
Total Split (%)	13.9%	13.9%	42.6%		10.4%	10.4%	39.1%	39.1%	10.4%	36.5%	36.5%	10.4%
Maximum Green (s)	9.9	9.9	42.9		5.9	5.9	38.9	38.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.4	62.6			7.1	50.0	50.0	5.8	22.1	22.1	5.8
Actuated g/C Ratio		0.15	0.54			0.06	0.43	0.43	0.05	0.19	0.19	0.05
v/c Ratio		0.62	0.56			0.33	0.45	0.07	0.22	0.66	0.37	0.13
Control Delay		52.6	22.2			79.6	9.9	0.5	58.4	47.0	7.7	54.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		52.6	22.2			79.6	9.9	0.5	58.4	47.0	7.7	54.0
LOS		D	C			E	A	A	E	D	A	D
Approach Delay			29.4				15.3			37.5		
Approach LOS			C				B			D		
Queue Length 50th (m)		32.3	78.4			7.8	57.5	0.3	3.9	46.1	0.0	2.4
Queue Length 95th (m)		#61.8	124.2			15.2	8.6	0.0	11.0	51.7	13.3	6.2
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		517	1851			211	1466	745	89	1093	586	176
Starvation Cap Reductn		0	0			0	0	0	0	0	0	0
Spillback Cap Reductn		0	0			0	0	0	0	0	0	0
Storage Cap Reductn		0	0			0	0	0	0	0	0	0
Reduced v/c Ratio		0.62	0.56			0.33	0.45	0.07	0.21	0.40	0.26	0.13

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 19 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 27.2

Intersection LOS: C

Intersection Capacity Utilization 75.5%

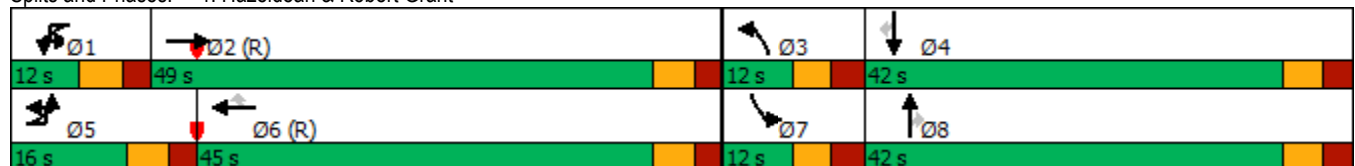
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	36.5%	36.5%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	24.5	24.5
Actuated g/C Ratio	0.21	0.21
v/c Ratio	0.30	0.29
Control Delay	37.7	5.7
Queue Delay	0.0	0.0
Total Delay	37.7	5.7
LOS	D	A
Approach Delay	27.6	
Approach LOS	C	
Queue Length 50th (m)	18.6	0.0
Queue Length 95th (m)	26.8	10.1
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	1093	585
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.20	0.22
Intersection Summary		

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	107	954	41	17	776	47	29	0	26	28	0
Future Volume (vph)	1	107	954	41	17	776	47	29	0	26	28	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0		0.0	70.0		180.0	0.0		0.0	40.0	
Storage Lanes		1		0	1		1	1		0	1	
Taper Length (m)		75.0			45.0			10.0			30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		1.00		0.97	0.99	0.98		0.99	
Frt			0.994				0.850		0.850			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3412	0	1751	3402	1567	1751	1537	0	1768	1843
Flt Permitted		0.312			0.288			0.757			0.740	
Satd. Flow (perm)	0	579	3412	0	529	3402	1518	1386	1537	0	1368	1843
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			8				89		159			
Link Speed (k/h)			60			60			50			50
Link Distance (m)			297.5			287.2			259.5			237.4
Travel Time (s)			17.9			17.2			18.7			17.1
Confl. Peds. (#/hr)		5		5	5		5	5		5	5	
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 (%)	1%	1%	4%	2%	2%	5%	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	1	107	954	41	17	776	47	29	0	26	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	995	0	17	776	47	29	26	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			4.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
Detector 2 Type			CI+Ex			CI+Ex			CI+Ex			CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)			0.0			0.0			0.0			0.0
Turn Type	pm+pt	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	
Protected Phases	5	5	2			6			8			4
Permitted Phases	2	2			6		6	8			4	
Detector Phase	5	5	2		6	6	6	8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1800
Storage Length (m)	40.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1552
Right Turn on Red	Yes
Satd. Flow (RTOR)	297
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	10.0

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Split (s)	11.2	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2
Total Split (s)	20.0	20.0	82.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0
Total Split (%)	17.4%	17.4%	71.3%		53.9%	53.9%	53.9%	28.7%	28.7%		28.7%	28.7%
Maximum Green (s)	13.8	13.8	75.7		55.7	55.7	55.7	26.8	26.8		26.8	26.8
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.5	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9
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)		6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2
Lead/Lag	Lead	Lead			Lag	Lag	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	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)			18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)			5		5	5	5	5	5		5	5
Act Effct Green (s)		92.8	94.0		79.3	79.3	79.3	13.0	13.0		13.0	
Actuated g/C Ratio		0.81	0.82		0.69	0.69	0.69	0.11	0.11		0.11	
v/c Ratio		0.20	0.36		0.05	0.33	0.04	0.19	0.08		0.18	
Control Delay		4.4	3.7		6.2	9.6	2.3	46.4	0.5		46.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay		4.4	3.7		6.2	9.6	2.3	46.4	0.5		46.4	
LOS		A	A		A	A	A	D	A		D	
Approach Delay			3.8			9.2			24.7			28.9
Approach LOS			A			A			C			C
Queue Length 50th (m)		2.7	13.6		1.6	53.6	1.6	5.7	0.0		5.5	
Queue Length 95th (m)		11.3	38.4		m4.8	93.8	4.2	12.2	0.0		11.9	
Internal Link Dist (m)			273.5			263.2			235.5			213.4
Turn Bay Length (m)		75.0			70.0		180.0				40.0	
Base Capacity (vph)		609	2790		364	2346	1074	322	480		318	
Starvation Cap Reductn		0	0		0	0	0	0	0		0	
Spillback Cap Reductn		0	0		0	0	0	0	0		0	
Storage Cap Reductn		0	0		0	0	0	0	0		0	
Reduced v/c Ratio		0.18	0.36		0.05	0.33	0.04	0.09	0.05		0.09	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 7.1

Intersection LOS: A

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



Lane Group	SBR
Minimum Split (s)	31.2
Total Split (s)	33.0
Total Split (%)	28.7%
Maximum Green (s)	26.8
Yellow Time (s)	3.3
All-Red Time (s)	2.9
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.2
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	13.0
Actuated g/C Ratio	0.11
v/c Ratio	0.04
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	40.0
Base Capacity (vph)	589
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	916	16	31	710	113	33	0	114	74	2	36
Future Volume (vph)	45	916	16	31	710	113	33	0	114	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.97	0.99	0.98		0.99	0.98	
Frt		0.997				0.850		0.850			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3448	0	1768	3537	1551	1768	1522	0	3332	1569	0
Flt Permitted	0.329			0.252			0.950			0.950		
Satd. Flow (perm)	611	3448	0	468	3537	1503	1757	1522	0	3299	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				153		333			36	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			150.7			289.2			233.8	
Travel Time (s)		17.2			9.0			20.8			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	45	916	16	31	710	113	33	0	114	74	2	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	932	0	31	710	113	33	114	0	74	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		4.0			4.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	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	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	74.0	69.5		72.2	66.8	66.8	7.8	13.0		8.0	15.7	
Actuated g/C Ratio	0.64	0.60		0.63	0.58	0.58	0.07	0.11		0.07	0.14	
v/c Ratio	0.10	0.45		0.08	0.35	0.12	0.28	0.24		0.32	0.16	
Control Delay	8.0	20.4		10.0	16.1	1.6	56.0	1.2		54.1	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.0	20.4		10.0	16.1	1.6	56.0	1.2		54.1	15.3	
LOS	A	C		A	B	A	E	A		D	B	
Approach Delay		19.9			13.9			13.5			41.0	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	4.2	89.6		1.9	39.7	0.0	6.6	0.0		7.6	0.4	
Queue Length 95th (m)	9.6	91.7		7.2	73.3	4.7	15.5	0.0		14.2	8.4	
Internal Link Dist (m)		263.2			126.7			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	461	2083		366	2053	936	330	596		622	375	
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	0.10	0.45		0.08	0.35	0.12	0.10	0.19		0.12	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 98 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 18.1

Intersection LOS: B

Intersection Capacity Utilization 57.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean

 Ø1	 Ø2 (R)	 Ø4	 Ø3
12 s	43 s	32 s	28 s
 Ø5	 Ø6 (R)	 Ø8	 Ø7
12 s	43 s	32 s	28 s

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	263	870	179	5	136	404	187	185	835	272	185
Future Volume (vph)	7	263	870	179	5	136	404	187	185	835	272	185
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	0.99		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3214	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3392	3435	1504	3283	3468	1538	3169
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				179				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	263	870	179	5	136	404	187	185	835	272	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	270	870	179	0	141	404	187	185	835	272	185
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1
Switch Phase												

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	453	326
Future Volume (vph)	453	326
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		261
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	453	326
Shared Lane Traffic (%)		
Lane Group Flow (vph)	453	326
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.3	33.0	33.0		7.4	27.1	27.1	10.1	33.3	33.3	10.3
Actuated g/C Ratio		0.12	0.30	0.30		0.07	0.25	0.25	0.09	0.30	0.30	0.09
v/c Ratio		0.70	0.84	0.31		0.62	0.48	0.35	0.61	0.80	0.44	0.62
Control Delay		56.2	43.8	5.5		57.0	38.5	12.0	63.4	34.8	6.8	52.0
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		56.2	43.8	5.5		57.0	38.5	12.0	63.4	34.8	6.8	52.0
LOS		E	D	A		E	D	B	E	C	A	D
Approach Delay			41.1				35.3			33.0		
Approach LOS			D				D			C		
Queue Length 50th (m)		26.4	83.1	0.0		14.2	39.4	2.1	12.1	83.1	19.2	18.1
Queue Length 95th (m)		39.0	101.6	13.5		23.7	52.3	26.0	30.9	#116.1	5.4	25.1
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	610		231	921	570	320	1049	624	310
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.64	0.76	0.29		0.61	0.44	0.33	0.58	0.80	0.44	0.60

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 34.8

Intersection LOS: C

Intersection Capacity Utilization 81.2%

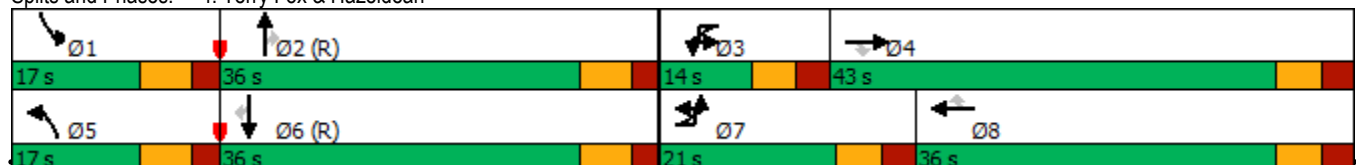
ICU Level of Service D

Analysis Period (min) 15

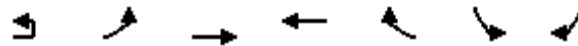
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

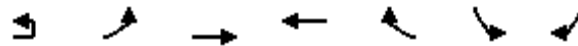
Splits and Phases: 4: Terry Fox & Hazeldean



	↓	↙
Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	33.4	33.4
Actuated g/C Ratio	0.30	0.30
v/c Ratio	0.44	0.52
Control Delay	28.4	14.1
Queue Delay	0.0	0.0
Total Delay	28.4	14.1
LOS	C	B
Approach Delay	28.1	
Approach LOS	C	
Queue Length 50th (m)	39.2	18.8
Queue Length 95th (m)	54.4	54.1
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	1033	631
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.44	0.52
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	121	1032	826	72	74	68
Future Volume (vph)	4	121	1032	826	72	74	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.99		1.00		0.99	0.98
Frt				0.988			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3420	0	1768	1537
Flt Permitted		0.308				0.950	
Satd. Flow (perm)	0	554	3468	3420	0	1747	1500
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				16			68
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		10			10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	121	1032	826	72	74	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	125	1032	898	0	74	68
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				10		10	10
Act Effct Green (s)		88.3	88.3	88.3		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.28	0.37	0.33		0.34	0.27
Control Delay		15.3	12.9	4.9		61.0	25.2
Queue Delay		0.0	0.3	0.0		0.0	0.0
Total Delay		15.3	13.2	4.9		61.0	25.2
LOS		B	B	A		E	C
Approach Delay			13.4	4.9		43.8	
Approach LOS			B	A		D	
Queue Length 50th (m)		13.1	57.2	19.7		14.6	2.6
Queue Length 95th (m)		m28.7	102.7	53.0		m21.8	m11.1
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		444	2782	2747		443	431
Starvation Cap Reductn		0	973	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.28	0.57	0.33		0.17	0.16

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: 0.37

Intersection Signal Delay: 11.9

Intersection LOS: B

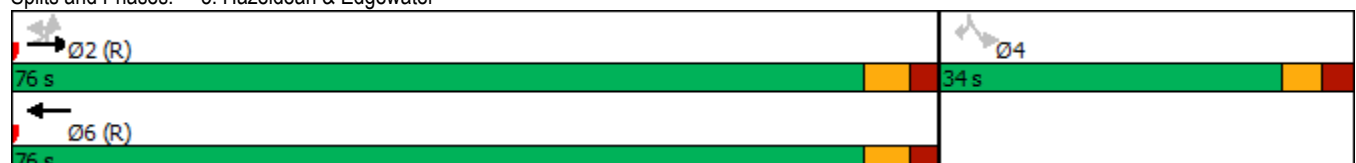
Intersection Capacity Utilization 62.9%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1396	30	1	160	1005
Future Volume (vph)	14	1	3	14	2	97	1	1396	30	1	160	1005
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.268				0.157	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	498	3489	0	0	286	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			47			3				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1396	30	1	160	1005
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1426	0	0	161	1005
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	Perm	NA
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

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	10.0

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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)	5	5		5	5		5	5		5	5	5
Act Effct Green (s)	14.3	14.3		14.3	14.3		82.7	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	0.75
v/c Ratio	0.08	0.02		0.09	0.42		0.00	0.54		0.75	0.39	0.39
Control Delay	38.8	25.2		62.4	49.5		2.0	5.4		35.9	6.3	6.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.8	25.2		62.4	49.5		2.0	5.4		35.9	6.3	6.3
LOS	D	C		E	D		A	A		D	A	A
Approach Delay		35.8			51.1			5.4				10.3
Approach LOS		D			D			A				B
Queue Length 50th (m)	2.6	0.2		3.0	12.7		0.0	4.7		12.2	24.8	24.8
Queue Length 95th (m)	6.6	2.6		m9.3	30.8		m0.0	22.0		#68.0	67.8	67.8
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0						55.0		
Base Capacity (vph)	356	367		343	454		374	2624		215	2557	2557
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	0.04	0.01		0.04	0.22		0.00	0.54		0.75	0.39	0.39

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: 0.75

Intersection Signal Delay: 9.6

Intersection LOS: A

Intersection Capacity Utilization 78.3%

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	SBR
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	82.7
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1088
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1268	1	0	845	0
Future Volume (vph)	0	0	3	1	0	0	10	1268	1	0	845	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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		0.98		0.99			1.00	1.00				
Frt		0.850										
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1553	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.334					
Satd. Flow (perm)	1861	1553	0	1422	1861	0	620	3468	0	1861	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		190										
Link Speed (k/h)		50			30			70			70	
Link Distance (m)		207.5			88.7			316.2			253.3	
Travel Time (s)		14.9			10.6			16.3			13.0	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	10	1268	1	0	845	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	10	1269	0	0	845	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		4.0			4.0			12.0			12.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm			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	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.39			0.27	
Control Delay		0.0		37.0			9.2	8.7			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.2	8.7			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			8.7			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	0.0			0.0	
Queue Length 95th (m)		0.0		1.4			m2.0	146.4			1.6	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		522		346			576	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.39			0.27	
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: 5.4					Intersection LOS: A							
Intersection Capacity Utilization 58.0%					ICU Level of Service B							
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Splits and Phases: 7: Terry Fox & Tony Graham Rec



8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1244	52	3	28	750
Future Volume (vph)	7	1	16	30	1	52	8	1244	52	3	28	750
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.994				0.996
Flt Protected		0.986			0.954		0.950				0.950	
Satd. Flow (prot)	0	1526	0	0	1742	1567	1581	5042	0	0	1722	3421
Flt Permitted		0.899			0.715		0.314				0.201	
Satd. Flow (perm)	0	1389	0	0	1297	1537	521	5042	0	0	364	3421
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		16				109		10				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	7	1	16	30	1	52	8	1244	52	3	28	750
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	31	52	8	1296	0	0	31	768
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6
Switch Phase												

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	5	
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	18	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		
Switch Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5		5		5	5	5
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.2	80.2
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.14			0.21	0.19	0.02	0.34			0.12	0.31
Control Delay		24.0			45.0	1.5	2.8	4.1			4.3	2.7
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		24.0			45.0	1.5	2.8	4.1			4.3	2.7
LOS		C			D	A	A	A			A	A
Approach Delay		24.0			17.8			4.1				2.8
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.5			5.8	0.0	0.3	36.3			0.4	4.7
Queue Length 95th (m)		7.6			12.4	0.0	m0.3	25.5			m2.5	17.3
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		340			306	446	478	3788			265	2493
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		0.07			0.10	0.12	0.02	0.34			0.12	0.31

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		5%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1233	41	1	76	692
Future Volume (vph)	20	10	15	30	5	101	6	1233	41	1	76	692
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.910			0.857			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1462	0	1734	1555	0	1069	3481	0	0	1768	3435
Flt Permitted	0.689			0.741			0.387				0.193	
Satd. Flow (perm)	1276	1462	0	1345	1555	0	434	3481	0	0	358	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		15			63			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		5	5		5	5		10		10	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	20	10	15	30	5	101	6	1233	41	1	76	692
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	25	0	30	106	0	6	1274	0	0	77	692
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	Perm	NA
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

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1531
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	10
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	10.0

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
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)	6.0	6.0		6.0	6.0		6.3	6.3		6.3	6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	5	5		5	5		10	10		5	5	5
Act Effct Green (s)	14.2	14.2		14.2	14.2		83.5	83.5		83.5	83.5	83.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76		0.76	0.76	0.76
v/c Ratio	0.12	0.12		0.17	0.42		0.02	0.48		0.28	0.27	0.27
Control Delay	40.1	23.2		41.6	23.5		6.0	6.8		17.6	10.0	10.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	40.1	23.2		41.6	23.5		6.0	6.8		17.6	10.0	10.0
LOS	D	C		D	C		A	A		B	B	B
Approach Delay		30.7			27.5			6.8				10.7
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.7	1.9		5.6	8.1		0.2	33.4		6.0	28.0	28.0
Queue Length 95th (m)	8.4	7.5		11.3	18.7		2.0	91.9		22.0	60.3	60.3
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0			120.0		
Base Capacity (vph)	371	435		391	497		329	2645		271	2608	2608
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	0.05	0.06		0.08	0.21		0.02	0.48		0.28	0.27	0.27

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.5
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	6.0
Queue Delay	0.0
Total Delay	6.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.1
Queue Length 95th (m)	m1.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1169
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1112	0	0	865	0	0
Future Volume (vph)	1112	0	0	865	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	85.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			40.0		10.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Flt Protected						
Satd. Flow (prot)	3502	0	1843	3502	1843	0
Flt Permitted						
Satd. Flow (perm)	3502	0	1843	3502	1843	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	150.7			644.5	279.6	
Travel Time (s)	10.9			46.4	20.1	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1112	0	0	865	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1112	0	0	865	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			8.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 35.8%	ICU Level of Service A					
Analysis Period (min) 15						

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	301	1071	17	1	147	1421	106	16	257	108	139
Future Volume (vph)	2	301	1071	17	1	147	1421	106	16	257	108	139
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.998					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3494	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3494	0	0	3390	3537	1555	1746	3502	1539	3408
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					128			128	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	301	1071	17	1	147	1421	106	16	257	108	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	1088	0	0	148	1421	106	16	257	108	139
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	418	390
Future Volume (vph)	418	390
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		183
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	418	390
Shared Lane Traffic (%)		
Lane Group Flow (vph)	418	390
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.6	68.6			9.9	60.9	60.9	5.8	21.2	21.2	5.9
Actuated g/C Ratio		0.14	0.53			0.08	0.47	0.47	0.04	0.16	0.16	0.05
v/c Ratio		0.65	0.59			0.57	0.86	0.13	0.21	0.45	0.30	0.90
Control Delay		61.1	24.8			84.7	28.7	1.9	66.2	49.9	6.1	110.5
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		61.1	24.8			84.7	28.7	1.9	66.2	49.9	6.1	110.5
LOS		E	C			F	C	A	E	D	A	F
Approach Delay			32.7				31.9			38.2		
Approach LOS			C				C			D		
Queue Length 50th (m)		34.7	81.0			17.3	167.0	3.1	3.7	31.0	0.0	17.1
Queue Length 95th (m)		#70.3	135.3			27.3	#219.4	3.3	10.8	35.7	8.9	#35.1
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		464	1844			264	1658	796	79	967	517	155
Starvation Cap Reductn		0	0			0	0	0	0	0	0	0
Spillback Cap Reductn		0	0			0	0	0	0	0	0	0
Storage Cap Reductn		0	0			0	0	0	0	0	0	0
Reduced v/c Ratio		0.65	0.59			0.56	0.86	0.13	0.20	0.27	0.21	0.90

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 37.2

Intersection LOS: D

Intersection Capacity Utilization 101.6%

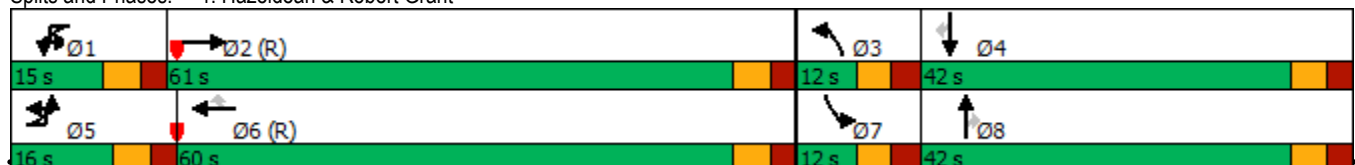
ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant



	↓	↙
Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	28.4	28.4
Actuated g/C Ratio	0.22	0.22
v/c Ratio	0.55	0.81
Control Delay	47.3	38.4
Queue Delay	0.0	0.0
Total Delay	47.3	38.4
LOS	D	D
Approach Delay	52.9	
Approach LOS	D	
Queue Length 50th (m)	47.1	49.3
Queue Length 95th (m)	57.1	78.5
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	561
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.43	0.70
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1165	83	41	1394	61	81	0	31	94	0	70
Future Volume (vph)	166	1165	83	41	1394	61	81	0	31	94	0	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	70.0		180.0	0.0		0.0	40.0		40.0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (m)	75.0			45.0			10.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.97	0.99	0.98		0.99		0.98
Frt		0.990				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3491	0	1751	3502	1582	1751	1536	0	1768	1843	1582
Flt Permitted	0.130			0.224			0.757			0.737		
Satd. Flow (perm)	242	3491	0	412	3502	1530	1384	1536	0	1362	1843	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				79		118				206
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		297.5			287.2			259.5			237.4	
Travel Time (s)		17.9			17.2			18.7			17.1	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	166	1165	83	41	1394	61	81	0	31	94	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1248	0	41	1394	61	81	31	0	94	0	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			4.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		97	97		14	97		97	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2	31.2
Total Split (s)	20.0	97.0		77.0	77.0	77.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	15.4%	74.6%		59.2%	59.2%	59.2%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	13.8	90.7		70.7	70.7	70.7	26.8	26.8		26.8	26.8	26.8
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag			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	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
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)		18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)		5		5	5	5	5	5		5	5	5
Act Effct Green (s)	102.0	101.9		86.0	86.0	86.0	15.6	15.6		15.6		15.6
Actuated g/C Ratio	0.78	0.78		0.66	0.66	0.66	0.12	0.12		0.12		0.12
v/c Ratio	0.55	0.46		0.15	0.60	0.06	0.49	0.11		0.58		0.19
Control Delay	21.8	8.8		2.4	5.1	0.1	62.0	0.7		66.9		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	21.8	8.8		2.4	5.1	0.1	62.0	0.7		66.9		1.2
LOS	C	A		A	A	A	E	A		E		A
Approach Delay		10.3			4.8			45.1			38.9	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	11.9	35.0		0.5	8.4	0.1	18.3	0.0		21.6		0.0
Queue Length 95th (m)	m45.6	107.0		m0.8	9.8	m0.0	30.7	0.0		34.9		0.0
Internal Link Dist (m)		273.5			263.2			235.5			213.4	
Turn Bay Length (m)	75.0			70.0		180.0				40.0		40.0
Base Capacity (vph)	356	2740		272	2315	1038	285	410		280		483
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	0.47	0.46		0.15	0.60	0.06	0.28	0.08		0.34		0.14

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 114 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 10.4

Intersection LOS: B

Intersection Capacity Utilization 79.5%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	1063	33	109	1344	212	26	2	56	177	1
Future Volume (vph)	1	82	1063	33	109	1344	212	26	2	56	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.95	0.99	0.98		0.99	0.98
Frt			0.995				0.850		0.855			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3514	0	1701	3537	1582	1406	1561	0	3431	1553
Flt Permitted		0.118			0.174			0.950			0.950	
Satd. Flow (perm)	0	220	3514	0	312	3537	1510	1397	1561	0	3389	1553
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			3				207		56			143
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			150.7			289.2			233.8
Travel Time (s)			17.2			9.0			20.8			16.8
Confl. Peds. (#/hr)		10		10	10		10	5		5	5	
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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	82	1063	33	109	1344	212	26	2	56	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	1096	0	109	1344	212	26	58	0	177	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			4.0			4.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	143
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	53.0		17.0	53.0	53.0	28.0	32.0		28.0	32.0
Total Split (%)	13.1%	13.1%	40.8%		13.1%	40.8%	40.8%	21.5%	24.6%		21.5%	24.6%
Maximum Green (s)	10.9	10.9	46.7		10.9	46.7	46.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			10			10	10		5			5
Act Effct Green (s)		80.9	72.8		84.7	74.7	74.7	10.6	13.0		12.3	16.4
Actuated g/C Ratio		0.62	0.56		0.65	0.57	0.57	0.08	0.10		0.09	0.13
v/c Ratio		0.36	0.56		0.36	0.66	0.22	0.23	0.28		0.55	0.45
Control Delay		14.9	25.1		12.7	23.8	3.6	58.6	16.3		62.4	12.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		14.9	25.1		12.7	23.8	3.6	58.6	16.3		62.4	12.4
LOS		B	C		B	C	A	E	B		E	B
Approach Delay			24.4			20.5			29.4			39.9
Approach LOS			C			C			C			D
Queue Length 50th (m)		10.5	112.8		8.0	108.5	0.5	5.8	0.5		20.9	0.2
Queue Length 95th (m)		16.2	163.4		20.8	#200.0	14.4	13.9	11.2		31.0	16.3
Internal Link Dist (m)			263.2			126.7			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		273	1970		333	2032	955	232	351		567	423
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		0.30	0.56		0.33	0.66	0.22	0.11	0.17		0.31	0.34

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 106 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 24.0

Intersection LOS: C

Intersection Capacity Utilization 81.0%

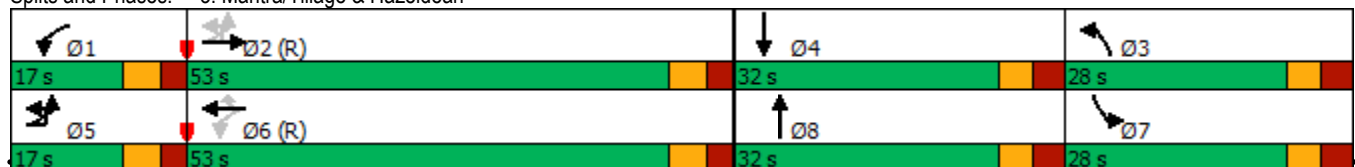
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	431	761	262	14	301	956	308	299	794	208	1
Future Volume (vph)	2	431	761	262	14	301	956	308	299	794	208	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3363	3537	1521	3387	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				235				174			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	431	761	262	14	301	956	308	299	794	208	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	433	761	262	0	315	956	308	299	794	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Total Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	315	916	425
Future Volume (vph)	315	916	425
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3407	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			264
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	315	916	425
Shared Lane Traffic (%)			
Lane Group Flow (vph)	316	916	425
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		CI+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	36.2	36.2		15.2	34.9	34.9	11.8	30.5	30.5	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29	0.10	0.25	0.25	
v/c Ratio		0.94	0.71	0.43		0.73	0.93	0.55	0.89	0.90	0.42	
Control Delay		80.3	41.9	8.2		51.1	65.9	30.6	88.3	50.6	8.7	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		80.3	41.9	8.2		51.1	65.9	30.6	88.3	50.6	8.9	
LOS		F	D	A		D	E	C	F	D	A	
Approach Delay			47.3				56.1			52.6		
Approach LOS			D				E			D		
Queue Length 50th (m)		48.5	77.7	4.2		34.2	109.9	35.1	27.9	88.4	13.5	
Queue Length 95th (m)		#76.0	98.3	23.2		48.0	#144.4	70.1	#59.2	#120.3	7.1	
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1067	610		467	1046	572	335	881	499	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.94	0.71	0.43		0.67	0.91	0.54	0.89	0.90	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 57.6

Intersection LOS: E

Intersection Capacity Utilization 99.9%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

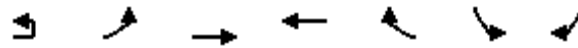
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

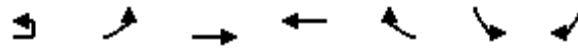
			
Ø1	Ø2 (R)	Ø3	Ø4
18 s	37 s	23 s	42 s
			
Ø5	Ø6 (R)	Ø7	Ø8
18 s	37 s	23 s	42 s



Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.1	30.8	30.8
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.91	1.02	0.72
Control Delay	88.2	78.0	24.9
Queue Delay	29.9	0.0	0.0
Total Delay	118.2	78.0	24.9
LOS	F	E	C
Approach Delay		72.0	
Approach LOS		E	
Queue Length 50th (m)	37.8	~94.8	18.6
Queue Length 95th (m)	#63.6	#145.2	77.8
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	346	898	590
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	45	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.05	1.02	0.72
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	78	1233	1659	54	99	97
Future Volume (vph)	4	78	1233	1659	54	99	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				1.00		0.99	0.97
Frt				0.995			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3512	0	1768	1582
Flt Permitted		0.103				0.950	
Satd. Flow (perm)	0	190	3537	3512	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				6			32
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	78	1233	1659	54	99	97
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	82	1233	1713	0	99	97
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		90.1	90.1	90.1		17.6	17.6
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.58	0.46	0.65		0.39	0.38
Control Delay		37.7	15.1	10.1		45.8	30.6
Queue Delay		0.0	1.6	0.0		0.0	0.0
Total Delay		37.7	16.7	10.1		45.8	30.6
LOS		D	B	B		D	C
Approach Delay			18.0	10.1		38.3	
Approach LOS			B	B		D	
Queue Length 50th (m)		8.2	92.2	62.8		21.4	14.2
Queue Length 95th (m)		m25.3	m155.1	140.8		m28.2	m21.6
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		142	2655	2638		405	380
Starvation Cap Reductn		0	1178	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.58	0.83	0.65		0.24	0.26

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: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.1

Intersection LOS: B

Intersection Capacity Utilization 88.3%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	185	2	1322	63	1	164	1641
Future Volume (vph)	15	0	8	41	4	185	2	1322	63	1	164	1641
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.98		0.99	0.98			1.00				
Frt		0.850			0.853			0.993				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1554	0	1768	1560	0	1768	3474	0	0	1734	3537
Flt Permitted	0.391			0.752			0.116				0.122	
Satd. Flow (perm)	684	1554	0	1391	1560	0	216	3474	0	0	223	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		128			124			6				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	15	0	8	41	4	185	2	1322	63	1	164	1641
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	8	0	41	189	0	2	1385	0	0	165	1641
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1504
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	5	5		5	5			5				5
Act Effct Green (s)	15.0	15.0		15.0	15.0		80.6	75.1			91.0	89.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.67	0.63			0.76	0.75
v/c Ratio	0.18	0.03		0.24	0.62		0.01	0.64			0.55	0.62
Control Delay	47.4	0.1		41.0	23.3		5.0	8.5			15.1	11.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	47.4	0.1		41.0	23.3		5.0	8.5			15.1	11.2
LOS	D	A		D	C		A	A			B	B
Approach Delay		31.0			26.5			8.5				11.3
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.1	0.0		8.8	16.6		0.0	42.3			6.4	55.8
Queue Length 95th (m)	7.9	0.0		m13.2	30.1		m0.2	31.1			#25.9	186.1
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	173	490		353	488		244	2177			298	2640
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.02		0.12	0.39		0.01	0.64			0.55	0.62

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 11.3

Intersection LOS: B

Intersection Capacity Utilization 83.4%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	89.6
Actuated g/C Ratio	0.75
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1145
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1207	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1207	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor	0.99	0.98		0.99	0.98				1.00			1.00
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1552	0	1488	1552	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.740				0.135				0.208
Satd. Flow (perm)	1398	1552	0	1152	1552	0	0	251	3457	0	0	387
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		126			153				3			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)	5		5	5		5		5		5		5
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 (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	26	5	0	3	3	36	1207	24	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	26	0	5	3	0	0	39	1231	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1485	1
Future Volume (vph)	1485	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1485	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1486	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	CI+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	5	5		5	5				5			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			96.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.80
v/c Ratio	0.02	0.09		0.04	0.01			0.14	0.42			0.01
Control Delay	43.0	0.7		43.8	0.0			2.8	2.4			5.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.7		43.8	0.0			2.8	2.4			5.5
LOS	D	A		D	A			A	A			A
Approach Delay		5.0			27.4				2.5			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.0	0.0			1.0	16.5			0.1
Queue Length 95th (m)	2.9	0.0		4.0	0.0			m1.8	m25.7			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	312	444		257	465			315	2902			413
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	0.06		0.02	0.01			0.12	0.42			0.01

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: 0.53

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 64.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	5	
Act Effct Green (s)	95.4	
Actuated g/C Ratio	0.80	
v/c Ratio	0.53	
Control Delay	5.8	
Queue Delay	0.0	
Total Delay	5.8	
LOS	A	
Approach Delay	5.8	
Approach LOS	A	
Queue Length 50th (m)	28.3	
Queue Length 95th (m)	54.0	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2810	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.53	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	990	76	2	115	1354
Future Volume (vph)	37	8	72	78	2	103	26	990	76	2	115	1354
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98		1.00			1.00	1.00
Frt		0.917				0.850		0.989				0.991
Flt Protected		0.984			0.954		0.950				0.950	
Satd. Flow (prot)	0	1658	0	0	1776	1582	1768	5013	0	0	1768	3495
Flt Permitted		0.864			0.602		0.147				0.247	
Satd. Flow (perm)	0	1453	0	0	1114	1552	274	5013	0	0	458	3495
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				103		21				10
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	10		5		5	
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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	37	8	72	78	2	103	26	990	76	2	115	1354
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	80	103	26	1066	0	0	117	1436
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	10	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	82	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2029 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		10	10	10
Act Effct Green (s)		14.8			14.8	14.8	87.2	87.2			87.2	87.2
Actuated g/C Ratio		0.12			0.12	0.12	0.73	0.73			0.73	0.73
v/c Ratio		0.50			0.58	0.37	0.13	0.29			0.35	0.57
Control Delay		31.6			65.2	11.8	6.5	6.0			3.8	3.2
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.3
Total Delay		31.6			65.2	11.8	6.5	6.0			3.8	3.4
LOS		C			E	B	A	A			A	A
Approach Delay		31.6			35.1			6.0				3.5
Approach LOS		C			D			A				A
Queue Length 50th (m)		11.6			16.9	0.0	2.0	32.9			1.5	9.6
Queue Length 95th (m)		26.0			29.2	13.2	5.6	39.2			m3.7	m20.2
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		338			222	392	199	3646			332	2541
Starvation Cap Reductn		0			0	0	0	0			0	427
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.35			0.36	0.26	0.13	0.29			0.35	0.68

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 7.5

Intersection LOS: A

Intersection Capacity Utilization 81.6%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		4%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	983	34	2	139	1317
Future Volume (vph)	23	7	7	48	17	97	12	983	34	2	139	1317
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.99		0.99	0.98		1.00	1.00			0.99	
Frt		0.925			0.872			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1701	0	1768	1598	0	1768	3512	0	0	1768	3537
Flt Permitted	0.629			0.748			0.186				0.267	
Satd. Flow (perm)	1120	1701	0	1376	1598	0	345	3512	0	0	494	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			97			6				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		10	10		5	10		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	23	7	7	48	17	97	12	983	34	2	139	1317
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	14	0	48	114	0	12	1017	0	0	141	1317
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.95
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1508
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	10
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	44
Shared Lane Traffic (%)	
Lane Group Flow (vph)	44
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	10	10		5	5		14	14		10	10	10
Act Effct Green (s)	14.3	14.3		14.3	14.3		93.4	93.4			93.4	93.4
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.17	0.07		0.29	0.41		0.04	0.37			0.37	0.48
Control Delay	46.9	29.7		50.1	16.1		5.7	5.4			15.2	13.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.9	29.7		50.1	16.1		5.7	5.4			15.2	13.0
LOS	D	C		D	B		A	A			B	B
Approach Delay		40.4			26.2			5.4				13.0
Approach LOS		D			C			A				B
Queue Length 50th (m)	4.8	1.4		10.1	3.5		0.4	23.7			17.2	87.8
Queue Length 95th (m)	10.2	6.0		17.4	16.0		3.1	65.1			34.0	116.3
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	298	458		366	497		268	2736			384	2754
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.03		0.13	0.23		0.04	0.37			0.37	0.48

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 11.3

Intersection LOS: B

Intersection Capacity Utilization 75.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	93.4
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.8
Queue Delay	0.0
Total Delay	5.8
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.3
Queue Length 95th (m)	m6.5
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1183
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1312	0	0	1683	0	0
Future Volume (vph)	1312	0	0	1683	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	85.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			40.0		10.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	3502	0	1843	3502	1843	0
Flt Permitted						
Satd. Flow (perm)	3502	0	1843	3502	1843	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	150.7			644.5	279.6	
Travel Time (s)	9.0			38.7	20.1	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1312	0	0	1683	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1312	0	0	1683	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			8.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.4%			ICU Level of Service A		
Analysis Period (min)	15					

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	411	761	262	14	301	916	308	299	794	208	1
Future Volume (vph)	2	411	761	262	14	301	916	308	299	794	208	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3363	3537	1521	3386	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				237				175			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	411	761	262	14	301	916	308	299	794	208	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	413	761	262	0	315	916	308	299	794	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic (demand rationalized)

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	305	816	425
Future Volume (vph)	305	816	425
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3407	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			265
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	305	816	425
Shared Lane Traffic (%)			
Lane Group Flow (vph)	306	816	425
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2029 Background Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.4	35.7	35.7		15.2	34.4	34.4	11.9	31.2	31.2	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29	0.10	0.26	0.26	
v/c Ratio		0.90	0.72	0.43		0.73	0.90	0.55	0.89	0.88	0.41	
Control Delay		74.3	42.5	8.1		51.1	63.7	30.9	87.9	48.2	8.6	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		74.3	42.5	8.1		51.1	63.7	30.9	87.9	48.2	8.7	
LOS		E	D	A		D	E	C	F	D	A	
Approach Delay			45.3				54.6			51.0		
Approach LOS			D				D			D		
Queue Length 50th (m)		46.0	77.7	3.9		34.2	105.3	34.9	27.9	88.4	13.5	
Queue Length 95th (m)		#70.8	98.3	22.8		48.0	#133.7	69.9	#59.2	#120.3	7.1	
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1057	609		467	1046	573	336	900	507	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.89	0.72	0.43		0.67	0.88	0.54	0.89	0.88	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), 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: 52.5

Intersection LOS: D

Intersection Capacity Utilization 98.1%

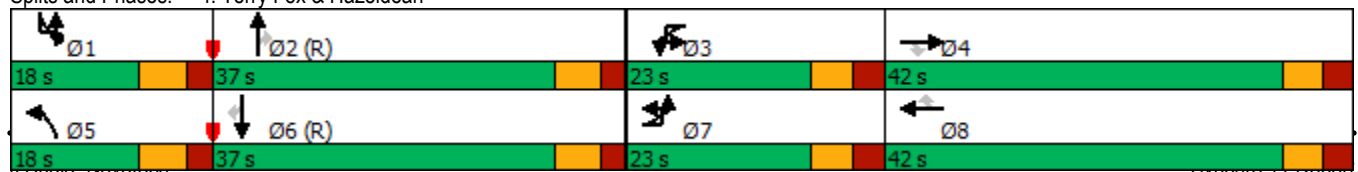
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.0	31.2	31.2
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.89	0.89	0.71
Control Delay	85.3	55.8	24.6
Queue Delay	25.7	0.0	0.0
Total Delay	111.0	55.8	24.6
LOS	F	E	C
Approach Delay		58.2	
Approach LOS		E	
Queue Length 50th (m)	36.7	64.2	18.5
Queue Length 95th (m)	#61.0	#119.8	79.3
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	342	912	596
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	45	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.03	0.89	0.71
Intersection Summary			

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	332	1066	13	1	85	690	65	24	504	194	27
Future Volume (vph)	3	332	1066	13	1	85	690	65	24	504	194	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	1.00
Frt			0.998					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3396	0	0	3397	3370	1551	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3420	3396	0	0	3391	3370	1525	1745	3502	1540	3417
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					145			178	
Link Speed (k/h)		60					60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	5%	2%	1%	2%	6%	3%	2%	2%	2%	1%
Adj. Flow (vph)	3	332	1066	13	1	85	690	65	24	504	194	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	1079	0	0	86	690	65	24	504	194	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	250	134
Future Volume (vph)	250	134
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1556
Right Turn on Red		Yes
Satd. Flow (RTOR)		145
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	250	134
Shared Lane Traffic (%)		
Lane Group Flow (vph)	250	134
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	49.0		12.0	12.0	45.0	45.0	12.0	42.0	42.0	12.0
Total Split (%)	13.9%	13.9%	42.6%		10.4%	10.4%	39.1%	39.1%	10.4%	36.5%	36.5%	10.4%
Maximum Green (s)	9.9	9.9	42.9		5.9	5.9	38.9	38.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		18.2	60.5			7.6	47.5	47.5		5.8	23.9	5.8
Actuated g/C Ratio		0.16	0.53			0.07	0.41	0.41		0.05	0.21	0.05
v/c Ratio		0.62	0.60			0.39	0.50	0.09		0.27	0.69	0.16
Control Delay		51.7	24.4			80.8	11.6	0.9		60.6	46.8	54.4
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		51.7	24.4			80.8	11.6	0.9		60.6	46.8	54.4
LOS		D	C			F	B	A		E	D	D
Approach Delay			30.9				17.8			37.1		
Approach LOS			C				B			D		
Queue Length 50th (m)		33.4	89.5			9.9	63.2	1.2		4.9	51.8	2.7
Queue Length 95th (m)		#65.0	132.5			17.6	9.3	0.0		12.9	59.3	17.4
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		542	1787			223	1390	714		89	1093	603
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		0.62	0.60			0.39	0.50	0.09		0.27	0.46	0.15

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 19 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 28.8

Intersection LOS: C

Intersection Capacity Utilization 76.8%

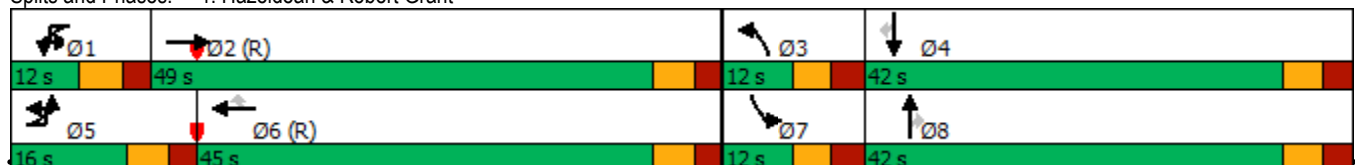
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	36.5%	36.5%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	23.9	23.9
Actuated g/C Ratio	0.21	0.21
v/c Ratio	0.34	0.31
Control Delay	39.0	6.2
Queue Delay	0.0	0.0
Total Delay	39.0	6.2
LOS	D	A
Approach Delay	29.3	
Approach LOS	C	
Queue Length 50th (m)	23.7	0.0
Queue Length 95th (m)	30.0	10.9
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	1093	585
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.23	0.23
Intersection Summary		

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	107	1026	52	21	823	47	37	0	32	28	0
Future Volume (vph)	1	107	1026	52	21	823	47	37	0	32	28	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0		0.0	70.0		180.0	0.0		0.0	40.0	
Storage Lanes		1		0	1		1	1		0	1	
Taper Length (m)		75.0			45.0			10.0			30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		1.00		0.97	0.99	0.98		0.99	
Frt			0.993				0.850		0.850			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3409	0	1751	3402	1567	1751	1537	0	1768	1843
Flt Permitted		0.295			0.265			0.757			0.736	
Satd. Flow (perm)	0	548	3409	0	487	3402	1518	1386	1537	0	1361	1843
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			9				89		137			
Link Speed (k/h)			60			60			50			50
Link Distance (m)			297.5			287.2			259.5			237.4
Travel Time (s)			17.9			17.2			18.7			17.1
Confl. Peds. (#/hr)		5		5	5		5	5		5	5	
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 (%)	1%	1%	4%	2%	2%	5%	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	1	107	1026	52	21	823	47	37	0	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	1078	0	21	823	47	37	32	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			4.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	
Protected Phases	5	5	2			6			8			4
Permitted Phases	2	2			6		6	8			4	
Detector Phase	5	5	2		6	6	6	8	8		4	4
Switch Phase												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1800
Storage Length (m)	40.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1552
Right Turn on Red	Yes
Satd. Flow (RTOR)	284
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	

2: Hazeldean & Roger Griffiths
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	11.2	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2
Total Split (s)	20.0	20.0	82.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0
Total Split (%)	17.4%	17.4%	71.3%		53.9%	53.9%	53.9%	28.7%	28.7%		28.7%	28.7%
Maximum Green (s)	13.8	13.8	75.7		55.7	55.7	55.7	26.8	26.8		26.8	26.8
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.5	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9
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)		6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2
Lead/Lag	Lead	Lead			Lag	Lag	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	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)			18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)			5		5	5	5	5	5		5	5
Act Effct Green (s)		92.8	94.0		79.3	79.3	79.3	13.0	13.0		13.0	
Actuated g/C Ratio		0.81	0.82		0.69	0.69	0.69	0.11	0.11		0.11	
v/c Ratio		0.21	0.39		0.06	0.35	0.04	0.24	0.11		0.18	
Control Delay		4.5	3.8		6.3	9.8	2.1	47.9	0.8		46.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay		4.5	3.8		6.3	9.8	2.1	47.9	0.8		46.4	
LOS		A	A		A	A	A	D	A		D	
Approach Delay			3.9			9.3			26.0			28.9
Approach LOS			A			A			C			C
Queue Length 50th (m)		2.8	14.9		1.9	58.2	1.6	7.3	0.0		5.5	
Queue Length 95th (m)		m11.3	43.5		m5.5	101.0	3.9	14.6	0.0		11.9	
Internal Link Dist (m)			273.5			263.2			235.5			213.4
Turn Bay Length (m)		75.0			70.0		180.0				40.0	
Base Capacity (vph)		588	2788		335	2346	1074	322	463		317	
Starvation Cap Reductn		0	0		0	0	0	0	0		0	
Spillback Cap Reductn		0	0		0	0	0	0	0		0	
Storage Cap Reductn		0	0		0	0	0	0	0		0	
Reduced v/c Ratio		0.18	0.39		0.06	0.35	0.04	0.11	0.07		0.09	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 7.3

Intersection LOS: A

Intersection Capacity Utilization 69.7%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	31.2
Total Split (s)	33.0
Total Split (%)	28.7%
Maximum Green (s)	26.8
Yellow Time (s)	3.3
All-Red Time (s)	2.9
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.2
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	13.0
Actuated g/C Ratio	0.11
v/c Ratio	0.04
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	40.0
Base Capacity (vph)	579
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	991	16	22	759	113	33	0	93	74	2	36
Future Volume (vph)	45	991	16	22	759	113	33	0	93	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00				0.97	0.99	0.98		0.99	0.98	
Frt		0.998				0.850		0.850			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3452	0	1768	3537	1551	1768	1522	0	3332	1569	0
Flt Permitted	0.300			0.233			0.950			0.950		
Satd. Flow (perm)	557	3452	0	434	3537	1503	1757	1522	0	3298	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				153		330			36	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			150.7			289.2			233.8	
Travel Time (s)		17.2			9.0			20.8			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	45	991	16	22	759	113	33	0	93	74	2	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1007	0	22	759	113	33	93	0	74	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		4.0			4.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	75.4	72.1		71.9	66.8	66.8	7.8	13.0		8.0	15.7	
Actuated g/C Ratio	0.66	0.63		0.63	0.58	0.58	0.07	0.11		0.07	0.14	
v/c Ratio	0.10	0.47		0.06	0.37	0.12	0.28	0.20		0.32	0.16	
Control Delay	7.1	17.3		10.0	16.4	1.6	56.0	1.0		54.1	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.1	17.3		10.0	16.4	1.6	56.0	1.0		54.1	15.3	
LOS	A	B		A	B	A	E	A		D	B	
Approach Delay		16.9			14.3			15.4			41.0	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	3.1	88.3		1.3	43.2	0.0	6.6	0.0		7.6	0.4	
Queue Length 95th (m)	9.4	96.2		5.7	79.3	4.7	15.5	0.0		14.2	8.4	
Internal Link Dist (m)		263.2			126.7			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	435	2163		343	2053	936	330	594		622	375	
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	0.10	0.47		0.06	0.37	0.12	0.10	0.16		0.12	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 98 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean

 Ø1		 Ø2 (R)		 Ø4		 Ø3	
12 s	43 s	32 s	28 s	12 s	43 s	32 s	28 s
 Ø5		 Ø6 (R)		 Ø8		 Ø7	
12 s	43 s	32 s	28 s	12 s	43 s	32 s	28 s

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	281	944	188	5	141	436	194	192	864	282	192
Future Volume (vph)	7	281	944	188	5	141	436	194	192	864	282	192
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3213	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3393	3435	1504	3284	3468	1538	3170
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				188				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	281	944	188	5	141	436	194	192	864	282	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	944	188	0	146	436	194	192	864	282	192
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	469	342
Future Volume (vph)	469	342
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		246
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	469	342
Shared Lane Traffic (%)		
Lane Group Flow (vph)	469	342
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.6	34.4	34.4		7.5	28.3	28.3	10.1	32.0	32.0	10.2
Actuated g/C Ratio		0.12	0.31	0.31		0.07	0.26	0.26	0.09	0.29	0.29	0.09
v/c Ratio		0.73	0.87	0.32		0.63	0.49	0.35	0.63	0.86	0.46	0.66
Control Delay		57.7	45.3	5.4		57.8	38.9	12.5	63.1	39.2	7.5	54.0
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		57.7	45.3	5.4		57.8	38.9	12.5	63.1	39.2	7.5	54.0
LOS		E	D	A		E	D	B	E	D	A	D
Approach Delay			42.5				35.9			36.0		
Approach LOS			D				D			D		
Queue Length 50th (m)		28.4	90.1	0.0		14.8	43.0	2.8	12.1	88.2	20.7	19.1
Queue Length 95th (m)		41.2	112.7	13.6		#24.7	56.8	28.3	31.8	#123.1	5.9	26.2
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	616		231	921	570	317	1008	608	305
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.68	0.82	0.31		0.63	0.47	0.34	0.61	0.86	0.46	0.63

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 36.6

Intersection LOS: D

Intersection Capacity Utilization 84.6%

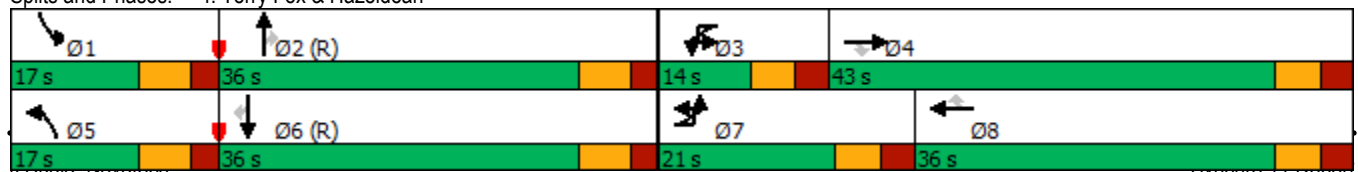
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

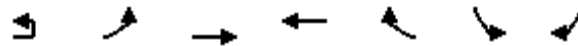


03/10/2024, 11:00 AM

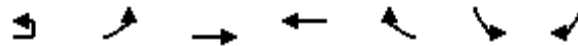
Dynamic 11 Report



Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	32.0	32.0
Actuated g/C Ratio	0.29	0.29
v/c Ratio	0.47	0.57
Control Delay	29.6	16.2
Queue Delay	0.0	0.0
Total Delay	29.6	16.2
LOS	C	B
Approach Delay	29.7	
Approach LOS	C	
Queue Length 50th (m)	41.5	23.9
Queue Length 95th (m)	56.3	59.5
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	991	605
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.47	0.57
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰	↰↰		↰	↰
Traffic Volume (vph)	4	121	1111	873	72	74	68
Future Volume (vph)	4	121	1111	873	72	74	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00		1.00		0.99	0.98
Frt				0.989			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3424	0	1768	1537
Flt Permitted		0.292				0.950	
Satd. Flow (perm)	0	526	3468	3424	0	1747	1500
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				15			68
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		10			10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	121	1111	873	72	74	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	125	1111	945	0	74	68
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				10		10	10
Act Effct Green (s)		88.3	88.3	88.3		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.30	0.40	0.34		0.34	0.27
Control Delay		15.8	13.4	5.0		60.7	24.7
Queue Delay		0.0	0.3	0.0		0.0	0.0
Total Delay		15.8	13.8	5.0		60.7	24.7
LOS		B	B	A		E	C
Approach Delay			14.0	5.0		43.4	
Approach LOS			B	A		D	
Queue Length 50th (m)		13.7	64.7	21.2		14.7	2.6
Queue Length 95th (m)		m27.4	113.8	56.6		m20.6	m9.7
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		422	2782	2750		443	431
Starvation Cap Reductn		0	959	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.30	0.61	0.34		0.17	0.16

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: 0.40

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 64.3%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1453	30	1	160	1046
Future Volume (vph)	14	1	3	14	2	97	1	1453	30	1	160	1046
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.255				0.145	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	474	3489	0	0	265	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			41			3				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1453	30	1	160	1046
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1483	0	0	161	1046
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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
Total Lost Time (s)	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)	5	5		5	5		5	5		5	5	5
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	0.08	0.02		0.09	0.42		0.00	0.57			0.81	0.41
Control Delay	38.6	25.2		61.0	51.7		3.0	5.4			45.2	6.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.6	25.2		61.0	51.7		3.0	5.4			45.2	6.5
LOS	D	C		E	D		A	A			D	A
Approach Delay		35.7			52.9			5.4				11.5
Approach LOS		D			D			A				B
Queue Length 50th (m)	2.6	0.2		3.0	13.9		0.0	4.7			13.6	26.3
Queue Length 95th (m)	6.6	2.6		m9.2	31.7		m0.1	28.3			#70.7	71.5
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	449		355	2621			199	2555
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	0.01		0.04	0.22		0.00	0.57			0.81	0.41

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 10.1

Intersection LOS: B

Intersection Capacity Utilization 80.0%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	82.6
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1087
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1321	1	0	880	0
Future Volume (vph)	0	0	3	1	0	0	10	1321	1	0	880	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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		0.98		0.99			1.00	1.00				
Frt		0.850										
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1553	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.323					
Satd. Flow (perm)	1861	1553	0	1422	1861	0	600	3468	0	1861	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		176										
Link Speed (k/h)		50			30			70			70	
Link Distance (m)		207.5			88.7			316.2			253.3	
Travel Time (s)		14.9			10.6			16.3			13.0	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	10	1321	1	0	880	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	10	1322	0	0	880	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		4.0			4.0			12.0			12.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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			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												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.41			0.28	
Control Delay		0.0		37.0			9.3	9.0			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.3	9.0			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			9.0			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	0.0			0.0	
Queue Length 95th (m)		0.0		1.4			m2.0	152.6			1.6	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		511		346			558	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.41			0.28	

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: 0.41

Intersection Signal Delay: 5.5

Intersection LOS: A

Intersection Capacity Utilization 59.5%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec



8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1289	52	3	28	779
Future Volume (vph)	7	1	16	30	1	52	8	1289	52	3	28	779
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.994				0.997
Flt Protected		0.986			0.954		0.950				0.950	
Satd. Flow (prot)	0	1526	0	0	1742	1567	1581	5042	0	0	1722	3424
Flt Permitted		0.899			0.715		0.302				0.192	
Satd. Flow (perm)	0	1389	0	0	1297	1537	501	5042	0	0	347	3424
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		16				109		10				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	7	1	16	30	1	52	8	1289	52	3	28	779
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	31	52	8	1341	0	0	31	797
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	5	
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	18	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5		5		5	5	5
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.2	80.2
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.14			0.21	0.19	0.02	0.35			0.12	0.32
Control Delay		24.0			45.0	1.5	2.8	4.1			4.5	2.8
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay		24.0			45.0	1.5	2.8	4.1			4.5	2.8
LOS		C			D	A	A	A			A	A
Approach Delay		24.0			17.8			4.1				2.9
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.5			5.8	0.0	0.3	38.4			0.4	5.0
Queue Length 95th (m)		7.6			12.4	0.0	m0.3	25.9			m2.3	18.0
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		340			306	446	464	3788			252	2496
Starvation Cap Reductn		0			0	0	0	0			0	362
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.07			0.10	0.12	0.02	0.35			0.12	0.37

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		5%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1278	41	1	76	719
Future Volume (vph)	20	10	15	30	5	101	6	1278	41	1	76	719
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00			1.00	
Frt		0.910			0.857			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1462	0	1734	1555	0	1069	3481	0	0	1768	3435
Flt Permitted	0.689			0.741			0.375				0.182	
Satd. Flow (perm)	1276	1462	0	1345	1555	0	420	3481	0	0	338	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		15			57			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		5	5		5	5		10		10	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	20	10	15	30	5	101	6	1278	41	1	76	719
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	25	0	30	106	0	6	1319	0	0	77	719
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1531
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	10
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	5	5		5	5		10	10		5	5	5
Act Effct Green (s)	14.2	14.2		14.2	14.2		83.5	83.5			83.5	83.5
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76			0.76	0.76
v/c Ratio	0.12	0.12		0.17	0.42		0.02	0.50			0.30	0.28
Control Delay	40.0	23.1		41.5	25.6		6.0	7.0			19.4	11.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	40.0	23.1		41.5	25.6		6.0	7.0			19.4	11.1
LOS	D	C		D	C		A	A			B	B
Approach Delay		30.6			29.1			7.0				11.8
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.7	1.9		5.6	9.3		0.2	35.3			7.1	34.4
Queue Length 95th (m)	8.4	7.5		11.3	19.8		2.0	97.0			22.2	63.2
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	371	435		391	492		318	2642			256	2606
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	0.06		0.08	0.22		0.02	0.50			0.30	0.28

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 10.5

Intersection LOS: B

Intersection Capacity Utilization 73.5%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.5
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	6.1
Queue Delay	0.0
Total Delay	6.1
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.2
Queue Length 95th (m)	m1.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1168
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1167	4	16	902	8	37
Future Volume (vph)	1167	4	16	902	8	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	85.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			40.0		10.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.889	
Flt Protected			0.950		0.991	
Satd. Flow (prot)	3498	0	1751	3502	1624	0
Flt Permitted			0.950		0.991	
Satd. Flow (perm)	3498	0	1751	3502	1624	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	150.7			644.5	279.6	
Travel Time (s)	10.9			46.4	20.1	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1167	4	16	902	8	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1171	0	16	902	45	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			8.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.2%			ICU Level of Service A		
Analysis Period (min)	15					

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	312	1119	22	1	184	1478	113	21	293	136	149
Future Volume (vph)	2	312	1119	22	1	184	1478	113	21	293	136	149
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3490	0	0	3391	3537	1555	1746	3502	1539	3409
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			136	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	312	1119	22	1	184	1478	113	21	293	136	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	1141	0	0	185	1478	113	21	293	136	149
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			CI+Ex				CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	473	404
Future Volume (vph)	473	404
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		173
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	473	404
Shared Lane Traffic (%)		
Lane Group Flow (vph)	473	404
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.3	64.2			10.7	57.6	57.6	5.8	24.8	24.8	5.9
Actuated g/C Ratio		0.13	0.49			0.08	0.44	0.44	0.04	0.19	0.19	0.05
v/c Ratio		0.69	0.66			0.66	0.94	0.15	0.27	0.44	0.34	0.96
Control Delay		62.9	29.0			82.2	37.9	2.2	68.8	46.9	8.2	124.1
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		62.9	29.0			82.2	37.9	2.2	68.8	46.9	8.2	124.1
LOS		E	C			F	D	A	E	D	A	F
Approach Delay			36.3				40.2			36.2		
Approach LOS			D				D			D		
Queue Length 50th (m)		36.7	112.5			18.9	~197.1	5.2	4.9	31.4	0.0	18.4
Queue Length 95th (m)		#73.1	144.4			#39.0	#234.6	m3.0	13.1	40.3	13.9	#38.4
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		457	1724			280	1567	760	79	967	523	155
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		0.69	0.66			0.66	0.94	0.15	0.27	0.30	0.26	0.96

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 42.1

Intersection LOS: D

Intersection Capacity Utilization 104.4%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

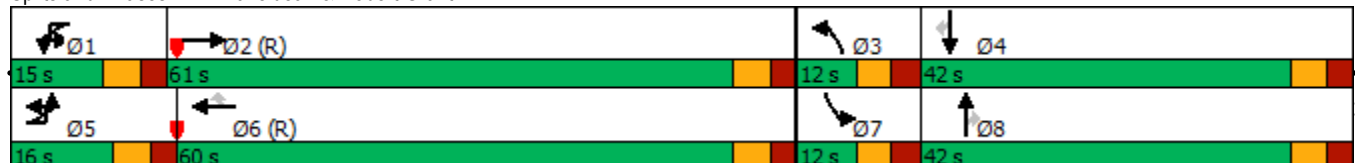
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	29.6	29.6
Actuated g/C Ratio	0.23	0.23
v/c Ratio	0.59	0.83
Control Delay	47.6	41.6
Queue Delay	0.0	0.0
Total Delay	47.6	41.6
LOS	D	D
Approach Delay	56.4	
Approach LOS	E	
Queue Length 50th (m)	53.7	55.6
Queue Length 95th (m)	64.6	86.3
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	554
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.73
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1227	104	52	1467	61	102	0	39	94	0	70
Future Volume (vph)	166	1227	104	52	1467	61	102	0	39	94	0	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	70.0		180.0	0.0		0.0	40.0		40.0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (m)	75.0			45.0			10.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.97	0.99	0.98		0.99		0.98
Frt		0.988				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3483	0	1751	3502	1582	1751	1536	0	1768	1843	1582
Flt Permitted	0.113			0.206			0.757			0.732		
Satd. Flow (perm)	210	3483	0	379	3502	1530	1384	1536	0	1352	1843	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				79		104				201
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		297.5			287.2			259.5			237.4	
Travel Time (s)		17.9			17.2			18.7			17.1	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	166	1227	104	52	1467	61	102	0	39	94	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1331	0	52	1467	61	102	39	0	94	0	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			4.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		97	97		14	97		97	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												

2: Hazeldean & Roger Griffiths
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2	31.2
Total Split (s)	20.0	97.0		77.0	77.0	77.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	15.4%	74.6%		59.2%	59.2%	59.2%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	13.8	90.7		70.7	70.7	70.7	26.8	26.8		26.8	26.8	26.8
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag			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	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
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)		18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)		5		5	5	5	5	5		5	5	5
Act Effct Green (s)	101.7	101.6		84.9	84.9	84.9	15.9	15.9		15.9		15.9
Actuated g/C Ratio	0.78	0.78		0.65	0.65	0.65	0.12	0.12		0.12		0.12
v/c Ratio	0.57	0.49		0.21	0.64	0.06	0.60	0.14		0.57		0.19
Control Delay	24.0	10.4		3.1	6.4	0.1	67.6	1.1		65.8		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	24.0	10.4		3.1	6.4	0.1	67.6	1.1		65.8		1.2
LOS	C	B		A	A	A	E	A		E		A
Approach Delay		11.9			6.0			49.2			38.2	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	21.9	55.7		0.6	8.6	0.0	23.4	0.0		21.5		0.0
Queue Length 95th (m)	m46.5	m117.1		m0.8	9.8	m0.0	37.4	0.0		34.9		0.0
Internal Link Dist (m)		273.5			263.2			235.5			213.4	
Turn Bay Length (m)	75.0			70.0		180.0				40.0		40.0
Base Capacity (vph)	334	2724		247	2288	1027	285	399		278		479
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	0.50	0.49		0.21	0.64	0.06	0.36	0.10		0.34		0.15

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 114 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.0

Intersection LOS: B

Intersection Capacity Utilization 82.0%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	1129	33	89	1425	212	26	2	43	177	1
Future Volume (vph)	1	82	1129	33	89	1425	212	26	2	43	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.95	0.99	0.98		0.99	0.98
Frt			0.996				0.850		0.857			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3518	0	1701	3537	1582	1406	1565	0	3431	1553
Flt Permitted		0.097			0.161			0.950			0.950	
Satd. Flow (perm)	0	181	3518	0	288	3537	1510	1397	1565	0	3389	1553
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			2				195		43			143
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			150.7			289.2			233.8
Travel Time (s)			17.2			9.0			20.8			16.8
Confl. Peds. (#/hr)		10		10	10		10	5		5	5	
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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	82	1129	33	89	1425	212	26	2	43	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	1162	0	89	1425	212	26	45	0	177	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			4.0			4.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	143
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	53.0		17.0	53.0	53.0	28.0	32.0		28.0	32.0
Total Split (%)	13.1%	13.1%	40.8%		13.1%	40.8%	40.8%	21.5%	24.6%		21.5%	24.6%
Maximum Green (s)	10.9	10.9	46.7		10.9	46.7	46.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			10			10	10		5			5
Act Effct Green (s)		82.0	74.0		83.6	74.7	74.7	10.6	13.0		12.3	16.4
Actuated g/C Ratio		0.63	0.57		0.64	0.57	0.57	0.08	0.10		0.09	0.13
v/c Ratio		0.40	0.58		0.32	0.70	0.22	0.23	0.23		0.55	0.45
Control Delay		17.5	21.0		12.6	24.7	4.1	58.6	17.6		62.4	12.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		17.5	21.0		12.6	24.7	4.1	58.6	17.6		62.4	12.4
LOS		B	C		B	C	A	E	B		E	B
Approach Delay			20.8			21.6			32.6			39.9
Approach LOS			C			C			C			D
Queue Length 50th (m)		5.9	87.7		6.4	119.5	1.6	5.8	0.5		20.9	0.2
Queue Length 95th (m)		19.4	150.6		17.6	#220.4	16.2	13.9	9.9		31.0	16.3
Internal Link Dist (m)			263.2			126.7			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		252	2002		312	2033	951	232	341		567	423
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		0.33	0.58		0.29	0.70	0.22	0.11	0.13		0.31	0.34

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 106 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 23.3

Intersection LOS: C

Intersection Capacity Utilization 83.4%

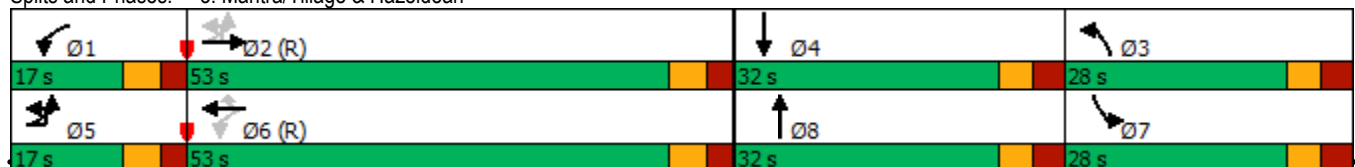
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	451	811	274	14	312	1020	319	312	823	215	1
Future Volume (vph)	2	451	811	274	14	312	1020	319	312	823	215	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3359	3537	1481	0	3366	3537	1521	3387	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				232				172			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	451	811	274	14	312	1020	319	312	823	215	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	453	811	274	0	326	1020	319	312	823	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	327	948	447
Future Volume (vph)	327	948	447
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3408	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			261
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	327	948	447
Shared Lane Traffic (%)			
Lane Group Flow (vph)	328	948	447
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	36.7	36.7		15.3	35.5	35.5	11.5	30.5	30.5	
Actuated g/C Ratio		0.14	0.31	0.31		0.13	0.30	0.30	0.10	0.25	0.25	
v/c Ratio		0.98	0.75	0.45		0.75	0.98	0.56	0.96	0.93	0.43	
Control Delay		89.1	43.1	9.3		50.8	71.2	30.9	100.9	54.9	9.2	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		89.1	43.1	9.3		50.8	71.2	30.9	100.9	54.9	9.4	
LOS		F	D	A		D	E	C	F	D	A	
Approach Delay			50.6				59.5			58.3		
Approach LOS			D				E			E		
Queue Length 50th (m)		51.1	84.5	6.6		35.4	117.7	38.7	29.4	92.7	14.1	
Queue Length 95th (m)		#81.3	106.0	27.0		49.0	#160.7	74.1	#62.5	#127.2	7.6	
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1080	613		467	1046	571	325	881	499	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.98	0.75	0.45		0.70	0.98	0.56	0.96	0.93	0.46	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 63.9

Intersection LOS: E

Intersection Capacity Utilization 104.2%

ICU Level of Service G

Analysis Period (min) 15

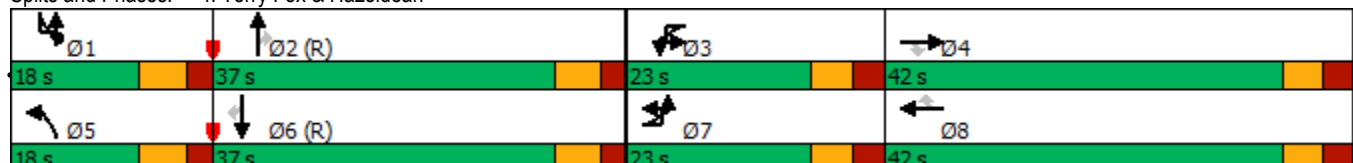
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

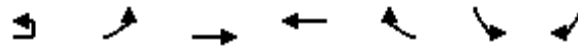
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

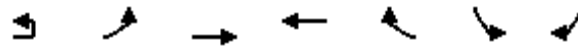




Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	11.5	30.5	30.5
Actuated g/C Ratio	0.10	0.25	0.25
v/c Ratio	1.00	1.07	0.76
Control Delay	106.8	91.1	28.5
Queue Delay	34.1	0.0	0.0
Total Delay	140.9	91.1	28.5
LOS	F	F	C
Approach Delay		84.3	
Approach LOS		F	
Queue Length 50th (m)	39.2	~115.3	23.4
Queue Length 95th (m)	#66.7	#153.4	83.8
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	328	890	585
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	61	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.23	1.07	0.76
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	4	78	1300	1750	54	99	97
Future Volume (vph)	4	78	1300	1750	54	99	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				1.00		0.99	0.97
Frt				0.996			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3516	0	1768	1582
Flt Permitted		0.089				0.950	
Satd. Flow (perm)	0	164	3537	3516	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				5			27
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	78	1300	1750	54	99	97
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	82	1300	1804	0	99	97
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		90.1	90.1	90.1		17.6	17.6
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.67	0.49	0.68		0.39	0.39
Control Delay		46.4	15.4	10.9		45.5	32.6
Queue Delay		0.0	2.2	0.0		0.0	0.0
Total Delay		46.4	17.6	10.9		45.5	32.6
LOS		D	B	B		D	C
Approach Delay			19.4	10.9		39.1	
Approach LOS			B	B		D	
Queue Length 50th (m)		13.1	100.1	69.5		21.3	15.1
Queue Length 95th (m)		m23.5	m161.6	156.0		m28.4	m21.8
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		123	2655	2641		405	377
Starvation Cap Reductn		0	1168	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.67	0.87	0.68		0.24	0.26

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: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 90.9%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 5: Hazeldean & Edgewater



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	185	2	1374	63	1	164	1706
Future Volume (vph)	15	0	8	41	4	185	2	1374	63	1	164	1706
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.98		0.99	0.98			1.00				
Frt		0.850			0.853			0.993				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1554	0	1768	1560	0	1768	3474	0	0	1734	3537
Flt Permitted	0.393			0.752			0.105				0.108	
Satd. Flow (perm)	688	1554	0	1391	1560	0	195	3474	0	0	197	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		126			120			6				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	15	0	8	41	4	185	2	1374	63	1	164	1706
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	8	0	41	189	0	2	1437	0	0	165	1706
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1504
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	5	5		5	5			5				5
Act Effct Green (s)	15.1	15.1		15.1	15.1		79.4	74.0			90.9	89.4
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.66	0.62			0.76	0.74
v/c Ratio	0.17	0.03		0.24	0.63		0.01	0.67			0.56	0.65
Control Delay	47.1	0.1		41.0	24.1		5.0	9.4			17.1	11.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	47.1	0.1		41.0	24.1		5.0	9.4			17.1	11.7
LOS	D	A		D	C		A	A			B	B
Approach Delay		30.8			27.1			9.4				12.0
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.1	0.0		8.7	17.3		0.0	46.4			6.5	61.2
Queue Length 95th (m)	7.9	0.0		m12.3	m30.4		m0.2	32.1			#40.0	200.2
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	174	488		353	486		229	2144			293	2636
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.02		0.12	0.39		0.01	0.67			0.56	0.65

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 85.3%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	89.4
Actuated g/C Ratio	0.74
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1144
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1256	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1256	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor	0.99	0.98		0.99	0.98				1.00			
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1552	0	1488	1552	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.740				0.124				0.196
Satd. Flow (perm)	1398	1552	0	1152	1552	0	0	231	3457	0	0	365
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		122			147				2			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)	5		5	5		5		5		5		5
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 (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	26	5	0	3	3	36	1256	24	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	26	0	5	3	0	0	39	1280	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												



Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1545	1
Future Volume (vph)	1545	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1545	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1546	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	CI+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	5	5		5	5				5			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			96.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.80
v/c Ratio	0.02	0.09		0.04	0.01			0.14	0.44			0.01
Control Delay	43.0	0.7		43.8	0.0			2.7	2.4			5.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.7		43.8	0.0			2.7	2.4			5.2
LOS	D	A		D	A			A	A			A
Approach Delay		5.0			27.4				2.4			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.0	0.0			1.0	17.8			0.1
Queue Length 95th (m)	2.9	0.0		4.0	0.0			m1.7	m26.3			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	312	441		257	460			301	2902			397
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	0.06		0.02	0.01			0.13	0.44			0.01

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: 0.55

Intersection Signal Delay: 4.3

Intersection LOS: A

Intersection Capacity Utilization 66.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	5	
Act Effct Green (s)	95.4	
Actuated g/C Ratio	0.80	
v/c Ratio	0.55	
Control Delay	5.8	
Queue Delay	0.0	
Total Delay	5.8	
LOS	A	
Approach Delay	5.8	
Approach LOS	A	
Queue Length 50th (m)	29.3	
Queue Length 95th (m)	55.8	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2810	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.55	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	1027	76	2	115	1405
Future Volume (vph)	37	8	72	78	2	103	26	1027	76	2	115	1405
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98		1.00			1.00	1.00
Frt		0.917				0.850		0.990				0.992
Flt Protected		0.984			0.954		0.950				0.950	
Satd. Flow (prot)	0	1658	0	0	1776	1582	1768	5019	0	0	1768	3499
Flt Permitted		0.864			0.602		0.137				0.237	
Satd. Flow (perm)	0	1453	0	0	1114	1552	255	5019	0	0	440	3499
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				103		20				10
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	10		5		5	
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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	37	8	72	78	2	103	26	1027	76	2	115	1405
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	80	103	26	1103	0	0	117	1487
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	10	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	82	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		10	10	10
Act Effct Green (s)		14.8			14.8	14.8	87.2	87.2			87.2	87.2
Actuated g/C Ratio		0.12			0.12	0.12	0.73	0.73			0.73	0.73
v/c Ratio		0.50			0.58	0.37	0.14	0.30			0.37	0.58
Control Delay		31.6			65.2	11.8	6.8	6.0			4.1	3.5
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.3
Total Delay		31.6			65.2	11.8	6.8	6.0			4.1	3.8
LOS		C			E	B	A	A			A	A
Approach Delay		31.6			35.1			6.0				3.8
Approach LOS		C			D			A				A
Queue Length 50th (m)		11.6			16.9	0.0	2.0	34.5			1.7	11.6
Queue Length 95th (m)		26.0			29.2	13.2	5.9	39.3			m3.7	m21.0
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		338			222	392	185	3650			319	2544
Starvation Cap Reductn		0			0	0	0	0			0	422
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.35			0.36	0.26	0.14	0.30			0.37	0.70

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 7.6

Intersection LOS: A

Intersection Capacity Utilization 83.1%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		4%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	1020	34	2	139	1366
Future Volume (vph)	23	7	7	48	17	97	12	1020	34	2	139	1366
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.99		0.99	0.98			1.00			0.99	
Frt		0.925			0.872			0.995				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1701	0	1768	1598	0	1768	3512	0	0	1768	3537
Flt Permitted	0.629			0.748			0.174				0.255	
Satd. Flow (perm)	1120	1701	0	1376	1598	0	324	3512	0	0	472	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			97			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		10	10		5	10		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	23	7	7	48	17	97	12	1020	34	2	139	1366
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	14	0	48	114	0	12	1054	0	0	141	1366
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.95
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1508
Right Turn on Red	Yes
Satd. Flow (RTOR)	44
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	10
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	44
Shared Lane Traffic (%)	
Lane Group Flow (vph)	44
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	10	10		5	5		14	14		10	10	10
Act Effct Green (s)	14.3	14.3		14.3	14.3		93.4	93.4			93.4	93.4
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.17	0.07		0.29	0.41		0.05	0.39			0.38	0.50
Control Delay	46.9	29.7		50.1	16.1		5.8	5.5			15.9	13.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.9	29.7		50.1	16.1		5.8	5.5			15.9	13.6
LOS	D	C		D	B		A	A			B	B
Approach Delay		40.4			26.2			5.5				13.6
Approach LOS		D			C			A				B
Queue Length 50th (m)	4.8	1.4		10.1	3.5		0.4	24.9			17.6	92.4
Queue Length 95th (m)	10.2	6.0		17.4	16.0		3.1	68.4			34.1	122.0
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	298	458		366	497		252	2735			367	2754
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.03		0.13	0.23		0.05	0.39			0.38	0.50

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 76.7%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	93.4
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.7
Queue Delay	0.0
Total Delay	5.7
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.3
Queue Length 95th (m)	m6.3
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1183
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1366	7	34	1749	5	23
Future Volume (vph)	1366	7	34	1749	5	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	85.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			40.0		10.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.889	
Flt Protected			0.950		0.991	
Satd. Flow (prot)	3498	0	1751	3502	1624	0
Flt Permitted			0.950		0.991	
Satd. Flow (perm)	3498	0	1751	3502	1624	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	150.7			644.5	279.6	
Travel Time (s)	10.9			46.4	20.1	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1366	7	34	1749	5	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1373	0	34	1749	28	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			8.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	61.0%			ICU Level of Service B		
Analysis Period (min)	15					

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	312	1119	22	1	184	1418	113	21	293	136	149
Future Volume (vph)	2	312	1119	22	1	184	1418	113	21	293	136	149
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3490	0	0	3391	3537	1555	1746	3502	1539	3409
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			136	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	312	1119	22	1	184	1418	113	21	293	136	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	1141	0	0	185	1418	113	21	293	136	149
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	473	404
Future Volume (vph)	473	404
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		175
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	473	404
Shared Lane Traffic (%)		
Lane Group Flow (vph)	473	404
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.4	64.2			10.8	57.6	57.6	5.8	24.7	24.7	5.9
Actuated g/C Ratio		0.13	0.49			0.08	0.44	0.44	0.04	0.19	0.19	0.05
v/c Ratio		0.69	0.66			0.66	0.90	0.15	0.27	0.44	0.34	0.96
Control Delay		62.7	28.9			82.5	32.9	2.2	68.8	46.9	8.2	124.1
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		62.7	28.9			82.5	32.9	2.2	68.8	46.9	8.2	124.1
LOS		E	C			F	C	A	E	D	A	F
Approach Delay			36.2				36.3			36.3		
Approach LOS			D				D			D		
Queue Length 50th (m)		36.7	112.2			18.9	186.8	5.4	4.9	31.5	0.0	18.4
Queue Length 95th (m)		#73.1	144.4			#38.5	#218.6	m3.1	13.1	40.3	13.9	#38.4
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		458	1725			281	1567	760	79	967	523	155
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		0.69	0.66			0.66	0.90	0.15	0.27	0.30	0.26	0.96

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 40.7

Intersection LOS: D

Intersection Capacity Utilization 102.6%

ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	29.5	29.5
Actuated g/C Ratio	0.23	0.23
v/c Ratio	0.59	0.83
Control Delay	47.7	41.2
Queue Delay	0.0	0.0
Total Delay	47.7	41.2
LOS	D	D
Approach Delay	56.2	
Approach LOS	E	
Queue Length 50th (m)	53.8	55.2
Queue Length 95th (m)	64.6	85.7
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	556
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.49	0.73
Intersection Summary		

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	411	811	274	14	312	910	319	302	813	215	1
Future Volume (vph)	2	411	811	274	14	312	910	319	302	813	215	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3366	3537	1521	3386	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				236				174			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	411	811	274	14	312	910	319	302	813	215	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	413	811	274	0	326	910	319	302	813	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic (demand rationalized)

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	307	818	447
Future Volume (vph)	307	818	447
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3408	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			265
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	307	818	447
Shared Lane Traffic (%)			
Lane Group Flow (vph)	308	818	447
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2031 Total Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.4	35.4	35.4		15.3	34.3	34.3	12.0	31.2	31.2	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.29	0.29	0.10	0.26	0.26	
v/c Ratio		0.90	0.78	0.45		0.75	0.90	0.57	0.89	0.90	0.42	
Control Delay		74.3	44.7	9.1		50.8	62.9	31.7	88.1	50.2	9.0	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		74.3	44.7	9.1		50.8	62.9	31.7	88.1	50.2	9.2	
LOS		E	D	A		D	E	C	F	D	A	
Approach Delay			46.4				53.9			52.2		
Approach LOS			D				D			D		
Queue Length 50th (m)		46.0	84.5	6.0		35.4	104.9	38.3	28.4	91.3	14.3	
Queue Length 95th (m)		#70.8	106.0	26.1		49.0	#132.4	73.8	#60.1	#124.8	7.5	
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1052	606		467	1046	572	340	901	507	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	35	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.89	0.77	0.45		0.70	0.87	0.56	0.89	0.90	0.46	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), 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: 54.0

Intersection LOS: D

Intersection Capacity Utilization 99.5%

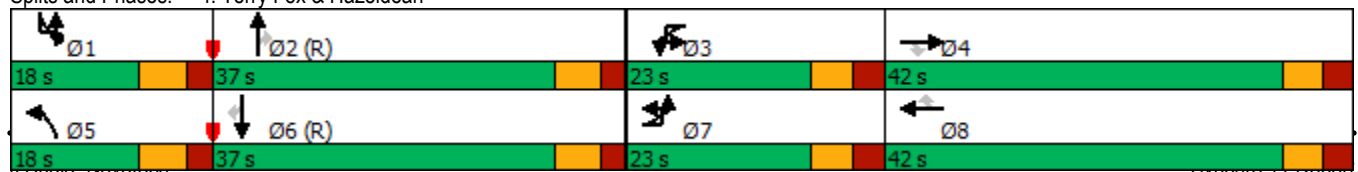
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.1	31.2	31.2
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.90	0.90	0.75
Control Delay	84.6	56.7	27.6
Queue Delay	45.4	0.0	0.0
Total Delay	130.0	56.7	27.6
LOS	F	E	C
Approach Delay		62.8	
Approach LOS		E	
Queue Length 50th (m)	37.0	66.6	23.0
Queue Length 95th (m)	#61.1	#121.0	85.1
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	344	911	596
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	61	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.09	0.90	0.75
Intersection Summary			

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	362	1152	13	1	85	748	69	24	524	194	29
Future Volume (vph)	3	362	1152	13	1	85	748	69	24	524	194	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	1.00
Frt			0.998					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3396	0	0	3397	3370	1551	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3421	3396	0	0	3392	3370	1525	1745	3502	1540	3417
Right Turn on Red			Yes					Yes			Yes	
Satd. Flow (RTOR)			1					145			170	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	5%	2%	1%	2%	6%	3%	2%	2%	2%	1%
Adj. Flow (vph)	3	362	1152	13	1	85	748	69	24	524	194	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	365	1165	0	0	86	748	69	24	524	194	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	261	146
Future Volume (vph)	261	146
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1556
Right Turn on Red		Yes
Satd. Flow (RTOR)		146
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	261	146
Shared Lane Traffic (%)		
Lane Group Flow (vph)	261	146
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	49.0		12.0	12.0	45.0	45.0	12.0	42.0	42.0	12.0
Total Split (%)	13.9%	13.9%	42.6%		10.4%	10.4%	39.1%	39.1%	10.4%	36.5%	36.5%	10.4%
Maximum Green (s)	9.9	9.9	42.9		5.9	5.9	38.9	38.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		20.2	60.0			7.6	45.0	45.0		5.8	24.3	5.8
Actuated g/C Ratio		0.18	0.52			0.07	0.39	0.39		0.05	0.21	0.05
v/c Ratio		0.61	0.66			0.39	0.57	0.10		0.27	0.42	0.17
Control Delay		50.0	26.0			80.6	13.4	1.0		60.6	46.9	54.6
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		50.0	26.0			80.6	13.4	1.0		60.6	46.9	54.6
LOS		D	C			F	B	A		E	D	D
Approach Delay			31.7				18.8			37.7		
Approach LOS			C				B			D		
Queue Length 50th (m)		36.0	101.6			9.9	72.0	1.7		4.9	54.0	3.0
Queue Length 95th (m)		#72.5	#158.6			17.7	9.4	0.0		12.9	61.8	7.5
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		602	1773			223	1317	684		89	1093	176
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		0.61	0.66			0.39	0.57	0.10		0.27	0.48	0.16

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 19 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 29.4

Intersection LOS: C

Intersection Capacity Utilization 78.4%

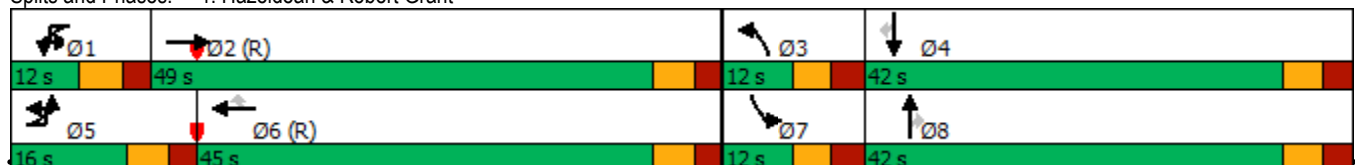
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	36.5%	36.5%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	24.3	24.3
Actuated g/C Ratio	0.21	0.21
v/c Ratio	0.35	0.33
Control Delay	38.8	7.2
Queue Delay	0.0	0.0
Total Delay	38.8	7.2
LOS	D	A
Approach Delay	29.3	
Approach LOS	C	
Queue Length 50th (m)	24.6	0.0
Queue Length 95th (m)	31.2	13.0
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	1093	586
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.24	0.25
Intersection Summary		

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	107	1095	52	21	886	47	37	0	32	28	0
Future Volume (vph)	1	107	1095	52	21	886	47	37	0	32	28	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		75.0		0.0	70.0		180.0	0.0		0.0	40.0	
Storage Lanes		1		0	1		1	1		0	1	
Taper Length (m)		75.0			45.0			10.0			30.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	1.00		1.00		0.97	0.99	0.98		0.99	
Frt			0.993				0.850		0.850			
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3409	0	1751	3402	1567	1751	1537	0	1768	1843
Flt Permitted		0.272			0.248			0.757			0.736	
Satd. Flow (perm)	0	505	3409	0	456	3402	1518	1386	1537	0	1361	1843
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			9				89		119			
Link Speed (k/h)			60			60			50			50
Link Distance (m)			297.5			287.2			259.5			237.4
Travel Time (s)			17.9			17.2			18.7			17.1
Confl. Peds. (#/hr)		5		5	5		5	5		5	5	
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 (%)	1%	1%	4%	2%	2%	5%	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	1	107	1095	52	21	886	47	37	0	32	28	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	1147	0	21	886	47	37	32	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			8.0			8.0			4.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	
Protected Phases	5	5	2			6			8			4
Permitted Phases	2	2			6		6	8			4	
Detector Phase	5	5	2		6	6	6	8	8		4	4
Switch Phase												

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1800
Storage Length (m)	40.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1552
Right Turn on Red	Yes
Satd. Flow (RTOR)	269
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	

2: Hazeldean & Roger Griffiths
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	11.2	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2
Total Split (s)	20.0	20.0	82.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0
Total Split (%)	17.4%	17.4%	71.3%		53.9%	53.9%	53.9%	28.7%	28.7%		28.7%	28.7%
Maximum Green (s)	13.8	13.8	75.7		55.7	55.7	55.7	26.8	26.8		26.8	26.8
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.5	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9
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)		6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2
Lead/Lag	Lead	Lead			Lag	Lag	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	3.0
Recall Mode	None	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0
Flash Dont Walk (s)			18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)			5		5	5	5	5	5		5	5
Act Effct Green (s)		92.8	94.0		79.3	79.3	79.3	13.0	13.0		13.0	
Actuated g/C Ratio		0.81	0.82		0.69	0.69	0.69	0.11	0.11		0.11	
v/c Ratio		0.22	0.41		0.07	0.38	0.04	0.24	0.11		0.18	
Control Delay		4.6	3.8		6.1	10.1	1.9	47.9	0.8		46.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay		4.6	3.8		6.1	10.1	1.9	47.9	0.8		46.4	
LOS		A	A		A	B	A	D	A		D	
Approach Delay			3.9			9.6			26.1			28.9
Approach LOS			A			A			C			C
Queue Length 50th (m)		2.7	15.6		1.8	64.5	1.6	7.3	0.0		5.5	
Queue Length 95th (m)		m10.4	45.9		m4.8	110.4	3.5	14.6	0.0		11.9	
Internal Link Dist (m)			273.5			263.2			235.5			213.4
Turn Bay Length (m)		75.0			70.0		180.0				40.0	
Base Capacity (vph)		559	2788		314	2346	1074	322	449		317	
Starvation Cap Reductn		0	0		0	0	0	0	0		0	
Spillback Cap Reductn		0	0		0	0	0	0	0		0	
Storage Cap Reductn		0	0		0	0	0	0	0		0	
Reduced v/c Ratio		0.19	0.41		0.07	0.38	0.04	0.11	0.07		0.09	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 10 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 7.4

Intersection LOS: A

Intersection Capacity Utilization 71.5%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths





Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	31.2
Total Split (s)	33.0
Total Split (%)	28.7%
Maximum Green (s)	26.8
Yellow Time (s)	3.3
All-Red Time (s)	2.9
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.2
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	13.0
Actuated g/C Ratio	0.11
v/c Ratio	0.04
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	40.0
Base Capacity (vph)	567
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

3: Mantra/Tillage & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1054	16	22	816	113	33	0	93	74	2	36
Future Volume (vph)	45	1054	16	22	816	113	33	0	93	74	2	36
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	70.0		105.0	55.0		0.0	35.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	60.0			45.0			35.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00				0.97	0.99	0.98		0.99	0.98	
Frt		0.998				0.850		0.850			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3453	0	1768	3537	1551	1768	1522	0	3332	1569	0
Flt Permitted	0.276			0.211			0.950			0.950		
Satd. Flow (perm)	513	3453	0	393	3537	1503	1757	1522	0	3298	1569	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				153		327			36	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		287.2			150.7			289.2			233.8	
Travel Time (s)		17.2			9.0			20.8			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	3%	16%	1%	1%	3%	1%	1%	3%	4%	1%	1%
Adj. Flow (vph)	45	1054	16	22	816	113	33	0	93	74	2	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1070	0	22	816	113	33	93	0	74	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		4.0			4.0			8.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6						
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5	
Total Split (s)	12.0	43.0		12.0	43.0	43.0	28.0	32.0		28.0	32.0	
Total Split (%)	10.4%	37.4%		10.4%	37.4%	37.4%	24.3%	27.8%		24.3%	27.8%	
Maximum Green (s)	5.9	36.7		5.9	36.7	36.7	21.5	25.5		21.5	25.5	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead	
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	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		18.0			18.0	18.0		18.0			18.0	
Pedestrian Calls (#/hr)		5			5	5		5			5	
Act Effct Green (s)	75.4	72.1		71.9	66.8	66.8	7.8	13.0		8.0	15.7	
Actuated g/C Ratio	0.66	0.63		0.63	0.58	0.58	0.07	0.11		0.07	0.14	
v/c Ratio	0.11	0.49		0.07	0.40	0.12	0.28	0.20		0.32	0.16	
Control Delay	6.8	17.3		10.0	16.7	1.6	56.0	1.0		54.1	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.8	17.3		10.0	16.7	1.6	56.0	1.0		54.1	15.3	
LOS	A	B		B	B	A	E	A		D	B	
Approach Delay		16.9			14.8			15.4			41.0	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	2.7	96.4		1.3	47.4	0.0	6.6	0.0		7.6	0.4	
Queue Length 95th (m)	9.5	102.1		5.7	86.4	4.7	15.5	0.0		14.2	8.4	
Internal Link Dist (m)		263.2			126.7			265.2			209.8	
Turn Bay Length (m)	80.0			70.0		105.0	55.0			35.0		
Base Capacity (vph)	409	2164		320	2053	936	330	591		622	375	
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	0.11	0.49		0.07	0.40	0.12	0.10	0.16		0.12	0.10	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 98 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 17.1

Intersection LOS: B

Intersection Capacity Utilization 60.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Mantra/Tillage & Hazeldean

	Ø1		Ø2 (R)		Ø4		Ø3
12 s		43 s		32 s		28 s	
	Ø5		Ø6 (R)		Ø8		Ø7
12 s		43 s		32 s		28 s	

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	305	997	204	5	154	464	211	209	938	307	209
Future Volume (vph)	7	305	997	204	5	154	464	211	209	938	307	209
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3213	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3393	3435	1504	3284	3468	1538	3171
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				204				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	305	997	204	5	154	464	211	209	938	307	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	312	997	204	0	159	464	211	209	938	307	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	510	371
Future Volume (vph)	510	371
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		232
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	510	371
Shared Lane Traffic (%)		
Lane Group Flow (vph)	510	371
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.9	35.2	35.2		7.5	28.8	28.8	10.2	31.0	31.0	10.3
Actuated g/C Ratio		0.13	0.32	0.32		0.07	0.26	0.26	0.09	0.28	0.28	0.09
v/c Ratio		0.77	0.90	0.33		0.69	0.52	0.38	0.68	0.96	0.51	0.70
Control Delay		60.0	47.5	5.3		60.8	39.3	14.0	65.6	51.9	8.6	57.3
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.0	47.5	5.3		60.8	39.3	14.0	65.6	51.9	8.6	57.3
LOS		E	D	A		E	D	B	E	D	A	E
Approach Delay			44.4				37.0			44.7		
Approach LOS			D				D			D		
Queue Length 50th (m)		31.0	96.6	0.0		16.2	46.0	4.1	14.3	~99.7	24.5	20.9
Queue Length 95th (m)		#45.3	#123.5	14.1		#28.6	60.4	32.9	34.2	#137.7	7.2	#30.2
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	627		231	921	570	317	977	597	306
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.74	0.87	0.33		0.69	0.50	0.37	0.66	0.96	0.51	0.68

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 40.4

Intersection LOS: D

Intersection Capacity Utilization 89.2%

ICU Level of Service E

Analysis Period (min) 15

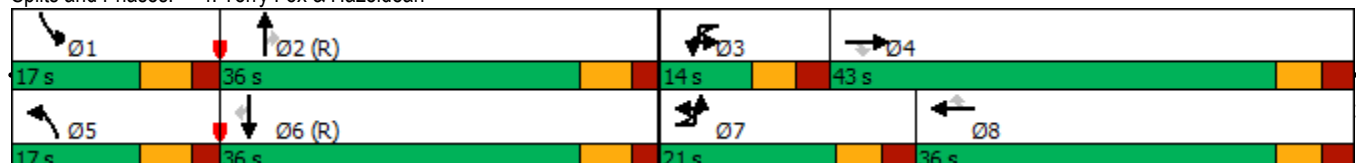
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

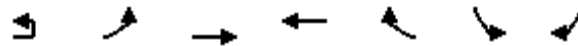
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

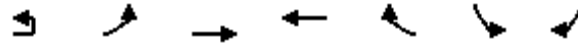




Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.1	31.1
Actuated g/C Ratio	0.28	0.28
v/c Ratio	0.53	0.64
Control Delay	30.7	19.2
Queue Delay	0.0	0.0
Total Delay	30.7	19.2
LOS	C	B
Approach Delay	31.9	
Approach LOS	C	
Queue Length 50th (m)	45.9	31.4
Queue Length 95th (m)	61.4	69.0
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	962	584
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.53	0.64
Intersection Summary		



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		←	↑↑	↑↑		←	↑
Traffic Volume (vph)	4	121	1179	941	72	74	68
Future Volume (vph)	4	121	1179	941	72	74	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		1.00		1.00		0.99	0.98
Frt				0.989			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1719	3468	3424	0	1768	1537
Flt Permitted		0.270				0.950	
Satd. Flow (perm)	0	486	3468	3424	0	1747	1500
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				14			68
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		10			10	10	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	3%	3%	1%	1%	4%
Adj. Flow (vph)	4	121	1179	941	72	74	68
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	125	1179	1013	0	74	68
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	76.0	76.0	76.0	76.0		34.0	34.0
Total Split (%)	69.1%	69.1%	69.1%	69.1%		30.9%	30.9%
Maximum Green (s)	69.8	69.8	69.8	69.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				10		10	10
Act Effct Green (s)		88.3	88.3	88.3		13.9	13.9
Actuated g/C Ratio		0.80	0.80	0.80		0.13	0.13
v/c Ratio		0.32	0.42	0.37		0.34	0.27
Control Delay		16.3	13.7	5.2		59.7	23.8
Queue Delay		0.0	0.4	0.0		0.0	0.0
Total Delay		16.3	14.0	5.2		59.7	23.8
LOS		B	B	A		E	C
Approach Delay			14.3	5.2		42.5	
Approach LOS			B	A		D	
Queue Length 50th (m)		13.9	73.0	23.5		15.0	3.1
Queue Length 95th (m)		m26.5	121.1	62.2		m17.3	m6.8
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		390	2782	2750		443	431
Starvation Cap Reductn		0	956	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.32	0.65	0.37		0.17	0.16

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: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 12.2	Intersection LOS: B
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: 5: Hazeldean & Edgewater

Ø2 (R) 76 s	Ø4 34 s
Ø6 (R) 76 s	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1578	30	1	160	1138
Future Volume (vph)	14	1	3	14	2	97	1	1578	30	1	160	1138
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00				
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.228				0.121	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	424	3489	0	0	221	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			31			3				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1578	30	1	160	1138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1608	0	0	161	1138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		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
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
Total Lost Time (s)	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)	5	5		5	5		5	5		5	5	5
Act Effct Green (s)	14.6	14.6		14.6	14.6		82.4	82.4			82.4	82.4
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.75	0.75			0.75	0.75
v/c Ratio	0.08	0.02		0.09	0.43		0.00	0.62			0.98	0.45
Control Delay	38.4	25.0		61.0	55.0		5.0	6.3			84.6	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.4	25.0		61.0	55.0		5.0	6.3			84.6	6.9
LOS	D	C		E	D		A	A			F	A
Approach Delay		35.4			55.7			6.3				16.4
Approach LOS		D			E			A				B
Queue Length 50th (m)	2.6	0.2		3.0	15.8		0.0	5.2			20.1	30.4
Queue Length 95th (m)	6.6	2.6		m8.7	33.0		m0.1	42.6			#50.0	80.7
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	442		317	2614			165	2548
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	0.01		0.04	0.22		0.00	0.62			0.98	0.45

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: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	82.4
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1084
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	1	0	0	10	1434	1	0	957	0
Future Volume (vph)	0	0	3	1	0	0	10	1434	1	0	957	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	55.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	25.0			5.0			10.0			50.0		
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		0.98		0.99			1.00	1.00				
Frt		0.850										
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1861	1553	0	1768	1861	0	1768	3468	0	1861	3370	0
Flt Permitted				0.769			0.298					
Satd. Flow (perm)	1861	1553	0	1422	1861	0	553	3468	0	1861	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		150										
Link Speed (k/h)		50			30			70			70	
Link Distance (m)		207.5			88.7			316.2			253.3	
Travel Time (s)		14.9			10.6			16.3			13.0	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	1%	6%	1%
Adj. Flow (vph)	0	0	3	1	0	0	10	1434	1	0	957	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	1	0	0	10	1435	0	0	957	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	L NA	Left	R NA
Median Width(m)		4.0			4.0			12.0			12.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
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)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
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)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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			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												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	
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)	5	5		5	5		5	5		5	5	
Act Effct Green (s)		13.2		13.2			102.3	102.3			102.3	
Actuated g/C Ratio		0.12		0.12			0.93	0.93			0.93	
v/c Ratio		0.01		0.01			0.02	0.45			0.31	
Control Delay		0.0		37.0			9.3	9.6			0.3	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		0.0		37.0			9.3	9.6			0.3	
LOS		A		D			A	A			A	
Approach Delay					37.0			9.6			0.3	
Approach LOS					D			A			A	
Queue Length 50th (m)		0.0		0.2			0.0	0.0			0.0	
Queue Length 95th (m)		0.0		1.4			m1.8	m157.0			1.6	
Internal Link Dist (m)		183.5			64.7			292.2			229.3	
Turn Bay Length (m)				25.0								
Base Capacity (vph)		491		346			514	3224			3133	
Starvation Cap Reductn		0		0			0	0			0	
Spillback Cap Reductn		0		0			0	0			0	
Storage Cap Reductn		0		0			0	0			0	
Reduced v/c Ratio		0.01		0.00			0.02	0.45			0.31	

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: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 5.9

Intersection LOS: A

Intersection Capacity Utilization 62.8%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec



8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	1	16	30	1	52	8	1400	52	3	28	847
Future Volume (vph)	7	1	16	30	1	52	8	1400	52	3	28	847
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98	1.00	1.00			1.00	1.00
Frt		0.910				0.850		0.995				0.997
Flt Protected		0.986			0.954		0.950				0.950	
Satd. Flow (prot)	0	1526	0	0	1742	1567	1581	5048	0	0	1722	3424
Flt Permitted		0.899			0.715		0.278				0.171	
Satd. Flow (perm)	0	1389	0	0	1297	1537	462	5048	0	0	309	3424
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		16				109		9				3
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	29%	1%	1%	3%	1%	2%	13%	1%	2%	1%	4%	4%
Adj. Flow (vph)	7	1	16	30	1	52	8	1400	52	3	28	847
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	31	52	8	1452	0	0	31	865
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8		5	2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	5	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	18	
Future Volume (vph)	18	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	5	
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	18	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	11.2	26.0		26.0	26.0	26.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	15.0	72.0		57.0	57.0	57.0
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	13.6%	65.5%		51.8%	51.8%	51.8%
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	9.0	66.0		51.0	51.0	51.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	6.0	6.0			6.0	6.0
Lead/Lag							Lead			Lag	Lag	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	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0		13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5		5		5	5	5
Act Effct Green (s)		12.8			12.8	12.8	82.6	82.6			80.2	80.2
Actuated g/C Ratio		0.12			0.12	0.12	0.75	0.75			0.73	0.73
v/c Ratio		0.14			0.21	0.19	0.02	0.38			0.14	0.35
Control Delay		24.0			45.0	1.5	2.6	4.1			4.6	2.8
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.1
Total Delay		24.0			45.0	1.5	2.6	4.1			4.6	2.8
LOS		C			D	A	A	A			A	A
Approach Delay		24.0			17.8			4.1				2.9
Approach LOS		C			B			A				A
Queue Length 50th (m)		1.5			5.8	0.0	0.3	43.8			0.4	5.3
Queue Length 95th (m)		7.6			12.4	0.0	m0.3	27.3			m2.1	19.1
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		340			306	446	438	3793			225	2496
Starvation Cap Reductn		0			0	0	0	0			0	356
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.07			0.10	0.12	0.02	0.38			0.14	0.40

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 80 (73%), 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: 4.3

Intersection LOS: A

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		5%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	10	15	30	5	101	6	1388	41	1	76	781
Future Volume (vph)	20	10	15	30	5	101	6	1388	41	1	76	781
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00				
Frt		0.910			0.857			0.996				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1462	0	1734	1555	0	1069	3484	0	0	1768	3435
Flt Permitted	0.689			0.741			0.349				0.158	
Satd. Flow (perm)	1276	1462	0	1345	1555	0	391	3484	0	0	294	3435
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		15			44			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		5	5		5	5		10		10	
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 (%)	1%	20%	13%	3%	20%	1%	67%	2%	1%	1%	1%	4%
Adj. Flow (vph)	20	10	15	30	5	101	6	1388	41	1	76	781
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	25	0	30	106	0	6	1429	0	0	77	781
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	10
Future Volume (vph)	10
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1531
Right Turn on Red	Yes
Satd. Flow (RTOR)	30
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	10
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		72.0	72.0		72.0	72.0	72.0
Total Split (%)	34.5%	34.5%		34.5%	34.5%		65.5%	65.5%		65.5%	65.5%	65.5%
Maximum Green (s)	32.0	32.0		32.0	32.0		65.7	65.7		65.7	65.7	65.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	5	5		5	5		10	10		5	5	5
Act Effct Green (s)	14.4	14.4		14.4	14.4		83.3	83.3			83.3	83.3
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.76	0.76			0.76	0.76
v/c Ratio	0.12	0.12		0.17	0.44		0.02	0.54			0.35	0.30
Control Delay	39.7	23.0		41.2	30.4		6.2	7.6			23.4	12.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.7	23.0		41.2	30.4		6.2	7.6			23.4	12.3
LOS	D	C		D	C		A	A			C	B
Approach Delay		30.4			32.8			7.6				13.2
Approach LOS		C			C			A				B
Queue Length 50th (m)	3.7	1.9		5.6	11.8		0.2	40.3			7.4	39.4
Queue Length 95th (m)	8.4	7.5		11.3	22.1		2.0	110.5			23.6	71.9
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	371	435		391	483		295	2638			222	2600
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	0.06		0.08	0.22		0.02	0.54			0.35	0.30

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 40 (36%), 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: 11.3

Intersection LOS: B

Intersection Capacity Utilization 76.7%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	72.0
Total Split (%)	65.5%
Maximum Green (s)	65.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.3
Actuated g/C Ratio	0.76
v/c Ratio	0.01
Control Delay	6.3
Queue Delay	0.0
Total Delay	6.3
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.1
Queue Length 95th (m)	m1.0
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1166
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1241	4	16	973	8	37
Future Volume (vph)	1241	4	16	973	8	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	85.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			40.0		10.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt					0.889	
Flt Protected			0.950		0.991	
Satd. Flow (prot)	3502	0	1751	3502	1624	0
Flt Permitted			0.950		0.991	
Satd. Flow (perm)	3502	0	1751	3502	1624	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	150.7			644.5	279.6	
Travel Time (s)	10.9			46.4	20.1	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1241	4	16	973	8	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1245	0	16	973	45	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			8.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.3%			ICU Level of Service A		
Analysis Period (min)	15					

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	340	1209	22	1	184	1601	122	21	304	136	160
Future Volume (vph)	2	340	1209	22	1	184	1601	122	21	304	136	160
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3427	3490	0	0	3391	3537	1555	1746	3502	1539	3410
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			133	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	340	1209	22	1	184	1601	122	21	304	136	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	1231	0	0	185	1601	122	21	304	136	160
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	493	440
Future Volume (vph)	493	440
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		171
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	493	440
Shared Lane Traffic (%)		
Lane Group Flow (vph)	493	440
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.5	63.2			10.2	55.9	55.9	5.8	26.3	26.3	5.9
Actuated g/C Ratio		0.13	0.49			0.08	0.43	0.43	0.04	0.20	0.20	0.05
v/c Ratio		0.74	0.72			0.70	1.05	0.16	0.27	0.43	0.33	1.03
Control Delay		65.3	31.6			85.6	63.4	1.9	68.8	45.5	8.4	140.6
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		65.3	31.6			85.6	63.4	1.9	68.8	45.5	8.4	140.6
LOS		E	C			F	E	A	E	D	A	F
Approach Delay			38.9				61.6			35.6		
Approach LOS			D				E			D		
Queue Length 50th (m)		42.1	134.3			19.5	~229.9	4.8	4.9	31.1	0.5	~20.7
Queue Length 95th (m)		#81.1	161.5			m#37.2	#259.2	m2.6	13.1	41.8	14.5	#41.4
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0	100.0		105.0	60.0
Base Capacity (vph)		461	1698			265	1520	741	79	967	521	155
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		0.74	0.72			0.70	1.05	0.16	0.27	0.31	0.26	1.03

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 51.9

Intersection LOS: D

Intersection Capacity Utilization 110.8%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

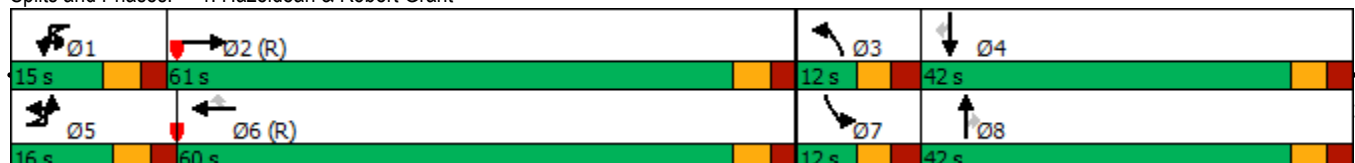
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.1	31.1
Actuated g/C Ratio	0.24	0.24
v/c Ratio	0.59	0.88
Control Delay	46.3	47.4
Queue Delay	0.0	0.0
Total Delay	46.3	47.4
LOS	D	D
Approach Delay	60.5	
Approach LOS	E	
Queue Length 50th (m)	53.6	63.9
Queue Length 95th (m)	67.5	#103.8
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	553
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.51	0.80
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1322	104	52	1580	61	102	0	39	94	0	70
Future Volume (vph)	166	1322	104	52	1580	61	102	0	39	94	0	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		0.0	70.0		180.0	0.0		0.0	40.0		40.0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (m)	75.0			45.0			10.0			30.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.97	0.99	0.98		0.99		0.98
Frt		0.989				0.850		0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3487	0	1751	3502	1582	1751	1536	0	1768	1843	1582
Flt Permitted	0.089			0.187			0.757			0.732		
Satd. Flow (perm)	166	3487	0	344	3502	1530	1384	1536	0	1352	1843	1551
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				79		86				195
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		297.5			287.2			259.5			237.4	
Travel Time (s)		17.9			17.2			18.7			17.1	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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 (%)	1%	1%	2%	2%	2%	1%	2%	2%	2%	1%	2%	1%
Adj. Flow (vph)	166	1322	104	52	1580	61	102	0	39	94	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1426	0	52	1580	61	102	39	0	94	0	70
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		8.0			8.0			4.0			10.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		97	97		14	97		97	24		14
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	2.0
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm		Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	11.2	31.3		31.3	31.3	31.3	31.2	31.2		31.2	31.2	31.2
Total Split (s)	20.0	97.0		77.0	77.0	77.0	33.0	33.0		33.0	33.0	33.0
Total Split (%)	15.4%	74.6%		59.2%	59.2%	59.2%	25.4%	25.4%		25.4%	25.4%	25.4%
Maximum Green (s)	13.8	90.7		70.7	70.7	70.7	26.8	26.8		26.8	26.8	26.8
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.5	2.6		2.6	2.6	2.6	2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.3		6.3	6.3	6.3	6.2	6.2		6.2	6.2	6.2
Lead/Lag	Lead			Lag			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	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
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)		18.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)		5		5	5	5	5	5		5	5	5
Act Effct Green (s)	101.7	101.6		83.6	83.6	83.6	15.9	15.9		15.9		15.9
Actuated g/C Ratio	0.78	0.78		0.64	0.64	0.64	0.12	0.12		0.12		0.12
v/c Ratio	0.61	0.52		0.24	0.70	0.06	0.60	0.15		0.57		0.19
Control Delay	26.3	12.1		3.6	8.5	0.2	67.6	1.2		65.8		1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	26.3	12.1		3.6	8.5	0.2	67.6	1.2		65.8		1.2
LOS	C	B		A	A	A	E	A		E		A
Approach Delay		13.6			8.0			49.3			38.3	
Approach LOS		B			A			D			D	
Queue Length 50th (m)	26.0	101.1		0.7	159.0	0.0	23.4	0.0		21.5		0.0
Queue Length 95th (m)	m44.6	m129.6		m0.8	222.9	m0.0	37.4	0.0		34.9		0.0
Internal Link Dist (m)		273.5			263.2			235.5			213.4	
Turn Bay Length (m)	75.0			70.0		180.0				40.0		40.0
Base Capacity (vph)	307	2727		221	2252	1012	285	384		278		474
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	0.54	0.52		0.24	0.70	0.06	0.36	0.10		0.34		0.15

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 114 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 13.5

Intersection LOS: B

Intersection Capacity Utilization 85.3%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 2: Hazeldean & Roger Griffiths



												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	82	1215	33	89	1532	212	26	2	43	177	1
Future Volume (vph)	1	82	1215	33	89	1532	212	26	2	43	177	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		80.0		0.0	70.0		105.0	55.0		0.0	35.0	
Storage Lanes		1		0	1		1	1		0	2	
Taper Length (m)		60.0			45.0			35.0			40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor			1.00				0.95	0.99	0.98		0.99	0.98
Frt			0.996				0.850		0.857			0.851
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1768	3518	0	1701	3537	1582	1406	1565	0	3431	1553
Flt Permitted		0.074			0.137			0.950			0.950	
Satd. Flow (perm)	0	138	3518	0	245	3537	1510	1397	1565	0	3389	1553
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			2				182		43			143
Link Speed (k/h)			60			60			50			50
Link Distance (m)			287.2			150.7			289.2			233.8
Travel Time (s)			17.2			9.0			20.8			16.8
Confl. Peds. (#/hr)		10		10	10		10	5		5	5	
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 (%)	1%	1%	1%	1%	5%	1%	1%	27%	1%	1%	1%	1%
Adj. Flow (vph)	1	82	1215	33	89	1532	212	26	2	43	177	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	1248	0	89	1532	212	26	45	0	177	144
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	R NA	Right	L NA	Left	R NA	L NA	Left	R NA	L NA	Left
Median Width(m)			4.0			4.0			8.0			10.0
Link Offset(m)			0.0			0.0			0.0			0.0
Crosswalk Width(m)			5.0			5.0			5.0			5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Number of Detectors	1	1	2		1	2	1	1	2		1	2
Detector Template	Left	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4			9.4			9.4
Detector 2 Size(m)			0.6			0.6			0.6			0.6
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	pm+pt	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		Prot	NA
Protected Phases	5	5	2		1	6		3	8		7	4
Permitted Phases	2	2			6		6					
Detector Phase	5	5	2		1	6	6	3	8		7	4
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	143
Future Volume (vph)	143
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	143
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	
Detector Template	
Leading Detector (m)	
Trailing Detector (m)	
Detector 1 Position(m)	
Detector 1 Size(m)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

3: Mantra/Tillage & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0
Minimum Split (s)	11.1	11.1	31.3		11.1	31.3	31.3	11.5	31.5		11.5	31.5
Total Split (s)	17.0	17.0	53.0		17.0	53.0	53.0	28.0	32.0		28.0	32.0
Total Split (%)	13.1%	13.1%	40.8%		13.1%	40.8%	40.8%	21.5%	24.6%		21.5%	24.6%
Maximum Green (s)	10.9	10.9	46.7		10.9	46.7	46.7	21.5	25.5		21.5	25.5
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.3	3.3		3.3	3.3
All-Red Time (s)	2.4	2.4	2.6		2.4	2.6	2.6	3.2	3.2		3.2	3.2
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.1	6.3		6.1	6.3	6.3	6.5	6.5		6.5	6.5
Lead/Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max	C-Max	None	None		None	None
Walk Time (s)			7.0			7.0	7.0		7.0			7.0
Flash Dont Walk (s)			18.0			18.0	18.0		18.0			18.0
Pedestrian Calls (#/hr)			10			10	10		5			5
Act Effct Green (s)		82.0	74.0		83.6	74.7	74.7	10.6	13.0		12.3	16.4
Actuated g/C Ratio		0.63	0.57		0.64	0.57	0.57	0.08	0.10		0.09	0.13
v/c Ratio		0.45	0.62		0.35	0.75	0.22	0.23	0.23		0.55	0.45
Control Delay		24.0	20.2		13.4	26.3	4.8	58.6	17.6		62.4	12.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		24.0	20.2		13.4	26.3	4.8	58.6	17.6		62.4	12.4
LOS		C	C		B	C	A	E	B		E	B
Approach Delay			20.5			23.1			32.6			39.9
Approach LOS			C			C			C			D
Queue Length 50th (m)		4.1	78.4		6.4	135.3	2.9	5.8	0.5		20.9	0.2
Queue Length 95th (m)		23.4	154.2		17.6	#248.1	18.4	13.9	9.9		31.0	16.3
Internal Link Dist (m)			263.2			126.7			265.2			209.8
Turn Bay Length (m)		80.0			70.0		105.0	55.0			35.0	
Base Capacity (vph)		227	2002		288	2033	945	232	341		567	423
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		0.37	0.62		0.31	0.75	0.22	0.11	0.13		0.31	0.34

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 106 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 86.5%

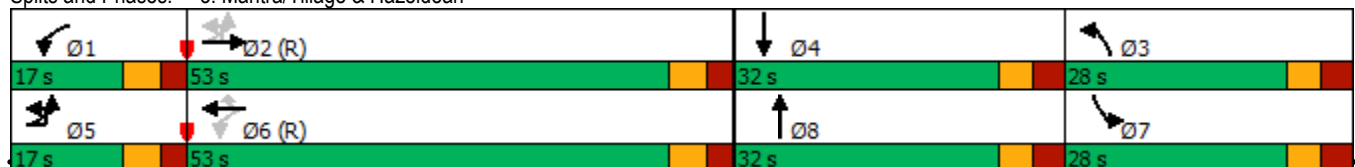
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Mantra/Tillage & Hazeldean





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	491	866	298	14	340	1083	348	339	894	234	1
Future Volume (vph)	2	491	866	298	14	340	1083	348	339	894	234	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3359	3537	1481	0	3368	3537	1521	3388	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				227				169			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	491	866	298	14	340	1083	348	339	894	234	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	493	866	298	0	354	1083	348	339	894	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	356	1029	485
Future Volume (vph)	356	1029	485
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3410	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			259
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	356	1029	485
Shared Lane Traffic (%)			
Lane Group Flow (vph)	357	1029	485
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.5	36.2	36.2		15.8	35.5	35.5	11.5	30.5	30.5	
Actuated g/C Ratio		0.14	0.30	0.30		0.13	0.30	0.30	0.10	0.25	0.25	
v/c Ratio		1.07	0.81	0.49		0.79	1.04	0.61	1.04	1.01	0.47	
Control Delay		110.0	46.0	12.0		52.1	83.6	33.1	119.8	71.4	10.7	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		110.0	46.0	12.0		52.1	83.6	33.1	119.8	71.4	10.9	
LOS		F	D	B		D	F	C	F	E	B	
Approach Delay			58.9				67.5			72.9		
Approach LOS			E				E			E		
Queue Length 50th (m)		~60.8	92.1	11.4		38.8	~130.3	45.8	~34.4	~105.8	15.9	
Queue Length 95th (m)		#91.3	114.8	34.7		#52.4	#176.2	83.1	#69.7	#145.0	9.1	
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1068	605		467	1046	568	325	881	499	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	37	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		1.07	0.81	0.49		0.76	1.04	0.61	1.04	1.01	0.51	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 76.3

Intersection LOS: E

Intersection Capacity Utilization 110.6%

ICU Level of Service H

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.

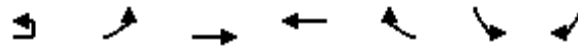
Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean

			
Ø1	Ø2 (R)	Ø3	Ø4
18 s	37 s	23 s	42 s
			
Ø5	Ø6 (R)	Ø7	Ø8
18 s	37 s	23 s	42 s



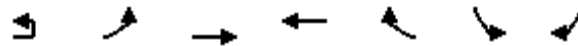
Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	11.5	30.5	30.5
Actuated g/C Ratio	0.10	0.25	0.25
v/c Ratio	1.09	1.16	0.83
Control Delay	126.6	123.4	35.1
Queue Delay	9.2	0.0	0.0
Total Delay	135.9	123.4	35.1
LOS	F	F	D
Approach Delay		102.9	
Approach LOS		F	
Queue Length 50th (m)	~46.1	~135.1	32.5
Queue Length 95th (m)	#74.3	#173.7	#101.9
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	328	890	583
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	105	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.60	1.16	0.83
Intersection Summary			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰↰	↰↰		↰	↰
Traffic Volume (vph)	4	78	1400	1879	54	99	97
Future Volume (vph)	4	78	1400	1879	54	99	97
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		35.0			0.0	30.0	0.0
Storage Lanes		1			0	1	1
Taper Length (m)		40.0				40.0	
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				1.00		0.99	0.97
Frt				0.996			0.850
Flt Protected		0.950				0.950	
Satd. Flow (prot)	0	1752	3537	3517	0	1768	1582
Flt Permitted		0.071				0.950	
Satd. Flow (perm)	0	131	3537	3517	0	1746	1533
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)				5			20
Link Speed (k/h)			60	60		50	
Link Distance (m)			157.6	314.8		401.6	
Travel Time (s)			9.5	18.9		28.9	
Confl. Peds. (#/hr)		17			17	10	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%
Adj. Flow (vph)	4	78	1400	1879	54	99	97
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	82	1400	1933	0	99	97
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	Left	Right	L NA	R NA
Median Width(m)			8.0	4.0		4.0	
Link Offset(m)			0.0	0.0		0.0	
Crosswalk Width(m)			5.0	5.0		5.0	
Two way Left Turn Lane							
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24			14	24	14
Number of Detectors	1	1	2	2		1	1
Detector Template	Left	Left	Thru	Thru		Left	Right
Leading Detector (m)	2.0	2.0	10.0	10.0		2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6	0.6		2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(m)			9.4	9.4			
Detector 2 Size(m)			0.6	0.6			
Detector 2 Type			CI+Ex	CI+Ex			
Detector 2 Channel							
Detector 2 Extend (s)			0.0	0.0			
Turn Type	Perm	Perm	NA	NA		Perm	Perm
Protected Phases			2	6			
Permitted Phases	2	2				4	4
Detector Phase	2	2	2	6		4	4
Switch Phase							

5: Hazeldean & Edgewater
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)	16.2	16.2	16.2	31.2		34.1	34.1
Total Split (s)	86.0	86.0	86.0	86.0		34.0	34.0
Total Split (%)	71.7%	71.7%	71.7%	71.7%		28.3%	28.3%
Maximum Green (s)	79.8	79.8	79.8	79.8		27.9	27.9
Yellow Time (s)	3.7	3.7	3.7	3.7		3.3	3.3
All-Red Time (s)	2.5	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	3.0
Recall Mode	C-Max	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)				17		15	15
Act Effct Green (s)		90.1	90.1	90.1		17.6	17.6
Actuated g/C Ratio		0.75	0.75	0.75		0.15	0.15
v/c Ratio		0.84	0.53	0.73		0.39	0.40
Control Delay		68.8	15.9	12.1		44.3	34.9
Queue Delay		0.0	3.9	0.0		0.0	0.0
Total Delay		68.8	19.8	12.1		44.3	34.9
LOS		E	B	B		D	C
Approach Delay			22.5	12.1		39.7	
Approach LOS			C	B		D	
Queue Length 50th (m)		14.7	108.8	80.4		21.2	16.5
Queue Length 95th (m)		m#26.0	m172.6	181.1		m28.9	m23.6
Internal Link Dist (m)			133.6	290.8		377.6	
Turn Bay Length (m)		35.0				30.0	
Base Capacity (vph)		98	2655	2641		405	371
Starvation Cap Reductn		0	1147	0		0	0
Spillback Cap Reductn		0	0	0		0	0
Storage Cap Reductn		0	0	0		0	0
Reduced v/c Ratio		0.84	0.93	0.73		0.24	0.26

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: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 17.9

Intersection LOS: B

Intersection Capacity Utilization 94.7%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 5: Hazeldean & Edgewater



0.00000, 11/04/2018

Dynamic Traffic Report

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	0	8	41	4	185	2	1494	63	1	164	1853
Future Volume (vph)	15	0	8	41	4	185	2	1494	63	1	164	1853
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.98		0.99	0.98			1.00				
Frt		0.850			0.853			0.994				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1669	1554	0	1768	1560	0	1768	3478	0	0	1734	3537
Flt Permitted	0.397			0.752			0.080				0.080	
Satd. Flow (perm)	695	1554	0	1391	1560	0	149	3478	0	0	146	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		122			112			5				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	1%	1%	1%	1%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	15	0	8	41	4	185	2	1494	63	1	164	1853
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	8	0	41	189	0	2	1557	0	0	165	1853
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8		5	2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		5	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1551
Flt Permitted	
Satd. Flow (perm)	1504
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		11.6	34.5		11.6	11.6	34.5
Total Split (s)	37.0	37.0		37.0	37.0		14.0	69.0		14.0	14.0	69.0
Total Split (%)	30.8%	30.8%		30.8%	30.8%		11.7%	57.5%		11.7%	11.7%	57.5%
Maximum Green (s)	30.5	30.5		30.5	30.5		7.4	62.5		7.4	7.4	62.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.2	3.2		3.2	3.2		2.4	2.3		2.4	2.4	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)	6.5	6.5		6.5	6.5		6.6	6.5			6.6	6.5
Lead/Lag							Lead	Lag		Lead	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		None	None	C-Max
Walk Time (s)	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
Pedestrian Calls (#/hr)	5	5		5	5			5				5
Act Effct Green (s)	15.3	15.3		15.3	15.3		77.4	71.9			90.7	89.2
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.64	0.60			0.76	0.74
v/c Ratio	0.17	0.03		0.23	0.64		0.01	0.75			0.58	0.70
Control Delay	46.7	0.1		40.0	24.9		5.5	11.7			24.7	13.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.7	0.1		40.0	24.9		5.5	11.7			24.7	13.0
LOS	D	A		D	C		A	B			C	B
Approach Delay		30.5			27.6			11.7				13.8
Approach LOS		C			C			B				B
Queue Length 50th (m)	3.0	0.0		8.5	18.5		0.0	53.7			9.9	74.4
Queue Length 95th (m)	7.9	0.0		m11.3	m26.2		m0.2	67.3			#52.8	#252.6
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	176	485		353	480		198	2087			283	2629
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.09	0.02		0.12	0.39		0.01	0.75			0.58	0.70

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 13.9

Intersection LOS: B

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.

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

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



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	69.0
Total Split (%)	57.5%
Maximum Green (s)	62.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	89.2
Actuated g/C Ratio	0.74
v/c Ratio	0.03
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.0
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1141
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.03
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	3	0	26	5	0	3	3	36	1365	24	1	3
Future Volume (vph)	3	0	26	5	0	3	3	36	1365	24	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	25.0		0.0		0.0		0.0		55.0
Storage Lanes	1		0	1		0		1		0		1
Taper Length (m)	25.0			5.0				10.0				50.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00
Ped Bike Factor	0.99	0.98		0.99	0.98				1.00			
Frt		0.850			0.850				0.997			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	1768	1552	0	1488	1552	0	0	1768	3457	0	0	1768
Flt Permitted	0.756			0.740				0.101				0.170
Satd. Flow (perm)	1398	1552	0	1152	1552	0	0	188	3457	0	0	316
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		116			136				2			
Link Speed (k/h)		50			30				70			
Link Distance (m)		207.5			88.7				316.2			
Travel Time (s)		14.9			10.6				16.3			
Confl. Peds. (#/hr)	5		5	5		5		5		5		5
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 (%)	1%	1%	1%	20%	1%	1%	1%	1%	3%	1%	1%	1%
Adj. Flow (vph)	3	0	26	5	0	3	3	36	1365	24	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	26	0	5	3	0	0	39	1389	0	0	4
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	Left	Left	Right	R NA	L NA
Median Width(m)		4.0			4.0				12.0			
Link Offset(m)		0.0			0.0				0.0			
Crosswalk Width(m)		5.0			5.0				5.0			
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2		1	2		1	1	2		1	1
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	2.0	10.0		2.0	2.0
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)	2.0	0.6		2.0	0.6		2.0	2.0	0.6		2.0	2.0
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)		9.4			9.4				9.4			
Detector 2 Size(m)		0.6			0.6				0.6			
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			
Turn Type	Perm	NA		Perm	NA		pm+pt	pm+pt	NA		pm+pt	pm+pt
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4			8			2	2			6	6
Detector Phase	4	4		8	8		5	5	2		1	1
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	1678	1
Future Volume (vph)	1678	1
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	1.00	
Frt		
Flt Protected		
Satd. Flow (prot)	3537	0
Flt Permitted		
Satd. Flow (perm)	3537	0
Right Turn on Red		Yes
Satd. Flow (RTOR)		
Link Speed (k/h)	70	
Link Distance (m)	253.3	
Travel Time (s)	13.0	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1678	1
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1679	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	12.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	
Detector Template	Thru	
Leading Detector (m)	10.0	
Trailing Detector (m)	0.0	
Detector 1 Position(m)	0.0	
Detector 1 Size(m)	0.6	
Detector 1 Type	CI+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	0.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	0.0	
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	32.2	32.2		32.2	32.2		11.5	11.5	32.5		11.5	11.5
Total Split (s)	33.0	33.0		33.0	33.0		15.0	15.0	72.0		15.0	15.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	12.5%	60.0%		12.5%	12.5%
Maximum Green (s)	26.8	26.8		26.8	26.8		8.5	8.5	65.5		8.5	8.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2	4.2		4.2	4.2
All-Red Time (s)	2.9	2.9		2.9	2.9		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
Total Lost Time (s)	6.2	6.2		6.2	6.2			6.5	6.5			6.5
Lead/Lag							Lead	Lead	Lag		Lead	Lead
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	None	C-Max		None	None
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			
Flash Dont Walk (s)	19.0	19.0		19.0	19.0				19.0			
Pedestrian Calls (#/hr)	5	5		5	5				5			
Act Effct Green (s)	13.2	13.2		13.2	13.2			99.6	100.7			96.1
Actuated g/C Ratio	0.11	0.11		0.11	0.11			0.83	0.84			0.80
v/c Ratio	0.02	0.10		0.04	0.01			0.17	0.48			0.01
Control Delay	43.0	0.7		43.8	0.0			2.6	2.4			5.8
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0			0.0
Total Delay	43.0	0.7		43.8	0.0			2.6	2.4			5.8
LOS	D	A		D	A			A	A			A
Approach Delay		5.1			27.4				2.4			
Approach LOS		A			C				A			
Queue Length 50th (m)	0.6	0.0		1.0	0.0			1.0	20.9			0.1
Queue Length 95th (m)	2.9	0.0		4.0	0.0			m1.6	m27.4			m0.4
Internal Link Dist (m)		183.5			64.7				292.2			
Turn Bay Length (m)	35.0			25.0								55.0
Base Capacity (vph)	312	436		257	452			268	2902			360
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	0.06		0.02	0.01			0.15	0.48			0.01

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: 4.4

Intersection LOS: A

Intersection Capacity Utilization 70.0%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 7: Terry Fox & Tony Graham Rec





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	
Minimum Split (s)	32.5	
Total Split (s)	72.0	
Total Split (%)	60.0%	
Maximum Green (s)	65.5	
Yellow Time (s)	4.2	
All-Red Time (s)	2.3	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.5	
Lead/Lag	Lag	
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	C-Max	
Walk Time (s)	7.0	
Flash Dont Walk (s)	19.0	
Pedestrian Calls (#/hr)	5	
Act Effct Green (s)	95.4	
Actuated g/C Ratio	0.80	
v/c Ratio	0.60	
Control Delay	6.0	
Queue Delay	0.0	
Total Delay	6.0	
LOS	A	
Approach Delay	6.0	
Approach LOS	A	
Queue Length 50th (m)	31.5	
Queue Length 95th (m)	59.8	
Internal Link Dist (m)	229.3	
Turn Bay Length (m)		
Base Capacity (vph)	2810	
Starvation Cap Reductn	47	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.61	
Intersection Summary		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	8	72	78	2	103	26	1116	76	2	115	1525
Future Volume (vph)	37	8	72	78	2	103	26	1116	76	2	115	1525
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	10.0		0.0	70.0		0.0		0.0	
Storage Lanes	0		0	1		1	1		0		1	
Taper Length (m)	10.0			30.0			40.0				10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.95	1.00	0.95
Ped Bike Factor		0.99			0.99	0.98		1.00			1.00	1.00
Frt		0.917				0.850		0.990				0.992
Flt Protected		0.984			0.954		0.950				0.950	
Satd. Flow (prot)	0	1658	0	0	1776	1582	1768	5020	0	0	1768	3499
Flt Permitted		0.864			0.602		0.114				0.213	
Satd. Flow (perm)	0	1453	0	0	1114	1552	212	5020	0	0	396	3499
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		60				103		18				9
Link Speed (k/h)		30			30			70				70
Link Distance (m)		132.0			152.6			140.3				142.7
Travel Time (s)		15.8			18.3			7.2				7.3
Confl. Peds. (#/hr)	5		5	5		5	10		5		5	
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 (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	37	8	72	78	2	103	26	1116	76	2	115	1525
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	80	103	26	1192	0	0	117	1607
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	Right	R NA	L NA	Left
Median Width(m)		0.0			0.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2	1	1	2		1	1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	2.0	10.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	2.0	0.6
Detector 1 Type	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
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2			6	6	
Detector Phase	4	4		8	8	8	2	2		6	6	6

Lane Group	SBR	Ø9
Lane Configurations		
Traffic Volume (vph)	82	
Future Volume (vph)	82	
Ideal Flow (vphpl)	1800	
Storage Length (m)	0.0	
Storage Lanes	0	
Taper Length (m)		
Lane Util. Factor	0.95	
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)	0	
Flt Permitted		
Satd. Flow (perm)	0	
Right Turn on Red	Yes	
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)	10	
Confl. Bikes (#/hr)	1	
Peak Hour Factor	1.00	
Heavy Vehicles (%)	1%	
Adj. Flow (vph)	82	
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	
Enter Blocked Intersection	No	
Lane Alignment	R NA	
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor	1.01	
Turning Speed (k/h)	14	
Number of Detectors		
Detector Template		
Leading Detector (m)		
Trailing Detector (m)		
Detector 1 Position(m)		
Detector 1 Size(m)		
Detector 1 Type		
Detector 1 Channel		
Detector 1 Extend (s)		
Detector 1 Queue (s)		
Detector 1 Delay (s)		
Detector 2 Position(m)		
Detector 2 Size(m)		
Detector 2 Type		
Detector 2 Channel		
Detector 2 Extend (s)		
Turn Type		
Protected Phases	9	
Permitted Phases		
Detector Phase		

8: Terry Fox & Sobey's
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0	31.0	26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0		31.0	31.0	31.0	84.0	84.0		84.0	84.0	84.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%	25.8%	70.0%	70.0%		70.0%	70.0%	70.0%
Maximum Green (s)	24.0	24.0		24.0	24.0	24.0	78.0	78.0		78.0	78.0	78.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	4.0	4.0		4.0	4.0	4.0	1.8	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)		7.0			7.0	7.0	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	3.0
Recall Mode	None	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	7.0
Flash Dont Walk (s)	17.0	17.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		10	10	10
Act Effct Green (s)		14.8			14.8	14.8	87.2	87.2			87.2	87.2
Actuated g/C Ratio		0.12			0.12	0.12	0.73	0.73			0.73	0.73
v/c Ratio		0.50			0.58	0.37	0.17	0.33			0.41	0.63
Control Delay		31.6			65.2	11.8	7.9	6.1			4.6	4.5
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.0	0.4
Total Delay		31.6			65.2	11.8	7.9	6.1			4.6	4.9
LOS		C			E	B	A	A			A	A
Approach Delay		31.6			35.1			6.2				4.9
Approach LOS		C			D			A				A
Queue Length 50th (m)		11.6			16.9	0.0	2.0	38.3			2.0	16.0
Queue Length 95th (m)		26.0			29.2	13.2	m6.0	40.4			m3.6	m22.5
Internal Link Dist (m)		108.0			128.6			116.3				118.7
Turn Bay Length (m)							70.0					
Base Capacity (vph)		338			222	392	153	3651			287	2543
Starvation Cap Reductn		0			0	0	0	0			0	416
Spillback Cap Reductn		0			0	0	0	0			0	0
Storage Cap Reductn		0			0	0	0	0			0	0
Reduced v/c Ratio		0.35			0.36	0.26	0.17	0.33			0.41	0.76

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 8.0

Intersection LOS: A

Intersection Capacity Utilization 86.6%

ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 8: Terry Fox & Sobey's



Lane Group	SBR	Ø9
Switch Phase		
Minimum Initial (s)		3.0
Minimum Split (s)		5.0
Total Split (s)		5.0
Total Split (%)		4%
Maximum Green (s)		3.0
Yellow Time (s)		2.0
All-Red Time (s)		0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)		3.0
Recall Mode		Max
Walk Time (s)		
Flash Dont Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (m)		
Queue Length 95th (m)		
Internal Link Dist (m)		
Turn Bay Length (m)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	23	7	7	48	17	97	12	1108	34	2	139	1483
Future Volume (vph)	23	7	7	48	17	97	12	1108	34	2	139	1483
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	15.0		0.0	25.0		0.0	65.0		0.0		120.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	20.0			25.0			35.0				30.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	0.99	0.99		0.99	0.98			1.00			1.00	
Frt		0.925			0.872			0.996				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1701	1701	0	1768	1598	0	1768	3516	0	0	1768	3537
Flt Permitted	0.629			0.748			0.150				0.230	
Satd. Flow (perm)	1120	1701	0	1376	1598	0	279	3516	0	0	426	3537
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		7			94			5				
Link Speed (k/h)		50			40			70				70
Link Distance (m)		65.4			381.2			479.4				200.7
Travel Time (s)		4.7			34.3			24.7				10.3
Confl. Peds. (#/hr)	5		10	10		5	10		14		14	
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 (%)	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	23	7	7	48	17	97	12	1108	34	2	139	1483
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	14	0	48	114	0	12	1142	0	0	141	1483
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	Right	L NA	Left	R NA	Left	Left	Right	R NA	L NA	Left
Median Width(m)		4.0			4.0			8.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	Perm	NA
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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	44
Future Volume (vph)	44
Ideal Flow (vphpl)	1800
Storage Length (m)	55.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.95
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1582
Flt Permitted	
Satd. Flow (perm)	1508
Right Turn on Red	Yes
Satd. Flow (RTOR)	41
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	10
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	44
Shared Lane Traffic (%)	
Lane Group Flow (vph)	44
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	36.0	36.0		36.0	36.0		28.3	28.3		28.3	28.3	28.3
Total Split (s)	38.0	38.0		38.0	38.0		82.0	82.0		82.0	82.0	82.0
Total Split (%)	31.7%	31.7%		31.7%	31.7%		68.3%	68.3%		68.3%	68.3%	68.3%
Maximum Green (s)	32.0	32.0		32.0	32.0		75.7	75.7		75.7	75.7	75.7
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.3	6.3			6.3	6.3
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		15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)	10	10		5	5		14	14		10	10	10
Act Effct Green (s)	14.3	14.3		14.3	14.3		93.4	93.4			93.4	93.4
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78			0.78	0.78
v/c Ratio	0.17	0.07		0.29	0.42		0.06	0.42			0.43	0.54
Control Delay	46.9	29.7		50.1	17.0		5.9	5.8			17.5	14.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.9	29.7		50.1	17.0		5.9	5.8			17.5	14.6
LOS	D	C		D	B		A	A			B	B
Approach Delay		40.4			26.8			5.8				14.6
Approach LOS		D			C			A				B
Queue Length 50th (m)	4.8	1.4		10.1	4.1		0.4	28.1			18.6	104.9
Queue Length 95th (m)	10.2	6.0		17.4	16.5		3.2	76.4			35.1	135.5
Internal Link Dist (m)		41.4			357.2			455.4				176.7
Turn Bay Length (m)	15.0			25.0			65.0				120.0	
Base Capacity (vph)	298	458		366	495		217	2738			331	2754
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.03		0.13	0.23		0.06	0.42			0.43	0.54

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 115 (96%), 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: 12.2

Intersection LOS: B

Intersection Capacity Utilization 80.2%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 9: Terry Fox & Halkirk/Winchester



Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	28.3
Total Split (s)	82.0
Total Split (%)	68.3%
Maximum Green (s)	75.7
Yellow Time (s)	4.2
All-Red Time (s)	2.1
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	15.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	93.4
Actuated g/C Ratio	0.78
v/c Ratio	0.04
Control Delay	5.6
Queue Delay	0.0
Total Delay	5.6
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	1.5
Queue Length 95th (m)	m5.8
Internal Link Dist (m)	
Turn Bay Length (m)	55.0
Base Capacity (vph)	1183
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.04
Intersection Summary	

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1472	7	34	1878	5	23
Future Volume (vph)	1472	7	34	1878	5	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	85.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			40.0		10.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.999				0.889	
Flt Protected			0.950		0.991	
Satd. Flow (prot)	3498	0	1751	3502	1624	0
Flt Permitted			0.950		0.991	
Satd. Flow (perm)	3498	0	1751	3502	1624	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	150.7			644.5	279.6	
Travel Time (s)	10.9			46.4	20.1	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1472	7	34	1878	5	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1479	0	34	1878	28	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	8.0			8.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 64.8%	ICU Level of Service C					
Analysis Period (min) 15						

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic (optimized timing)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	305	997	204	5	154	464	211	209	878	307	209
Future Volume (vph)	7	305	997	204	5	154	464	211	209	878	307	209
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Storage Lanes		2		1		2		1	1		1	2
Taper Length (m)		100.0				45.0			40.0			75.0
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.97
Ped Bike Factor		1.00		0.98		1.00		0.98	1.00		0.98	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3213	3468	1508	0	3398	3435	1537	3300	3468	1567	3179
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3203	3468	1479	0	3393	3435	1504	3284	3468	1538	3170
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				204				228			228	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
Confl. Bikes (#/hr)				2				4			1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	8%	3%	6%	1%	2%	4%	4%	5%	3%	2%	9%
Adj. Flow (vph)	7	305	997	204	5	154	464	211	209	878	307	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	312	997	204	0	159	464	211	209	878	307	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	Left
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	24
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic (optimized timing)

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	510	371
Future Volume (vph)	510	371
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		200.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3402	1508
Flt Permitted		
Satd. Flow (perm)	3402	1481
Right Turn on Red		Yes
Satd. Flow (RTOR)		232
Link Speed (k/h)	70	
Link Distance (m)	316.2	
Travel Time (s)	16.3	
Confl. Peds. (#/hr)		5
Confl. Bikes (#/hr)		
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	5%	6%
Adj. Flow (vph)	510	371
Shared Lane Traffic (%)		
Lane Group Flow (vph)	510	371
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6

4: Terry Fox & Hazeldean
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic (optimized timing)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	21.0	21.0	43.0	43.0	14.0	14.0	36.0	36.0	17.0	36.0	36.0	17.0
Total Split (%)	19.1%	19.1%	39.1%	39.1%	12.7%	12.7%	32.7%	32.7%	15.5%	32.7%	32.7%	15.5%
Maximum Green (s)	14.5	14.5	36.5	36.5	7.5	7.5	29.5	29.5	10.5	29.5	29.5	10.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	0.0
Total Lost Time (s)		6.5	6.5	6.5		6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			5	5			5	5		5	5	
Act Effct Green (s)		13.9	35.2	35.2		7.5	28.8	28.8	10.2	31.0	31.0	10.3
Actuated g/C Ratio		0.13	0.32	0.32		0.07	0.26	0.26	0.09	0.28	0.28	0.09
v/c Ratio		0.77	0.90	0.33		0.69	0.52	0.38	0.68	0.90	0.51	0.70
Control Delay		60.0	47.5	5.3		60.5	39.5	13.9	65.6	43.0	8.6	55.8
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.0	47.5	5.3		60.5	39.5	13.9	65.6	43.0	8.6	55.8
LOS		E	D	A		E	D	B	E	D	A	E
Approach Delay			44.4				37.0			38.8		
Approach LOS			D				D			D		
Queue Length 50th (m)		31.0	96.6	0.0		16.2	45.1	4.1	14.3	90.2	24.5	20.9
Queue Length 95th (m)		#45.3	#123.5	14.1		#28.6	62.4	32.9	34.2	#124.1	7.2	#33.9
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	155.0
Base Capacity (vph)		423	1150	627		231	921	570	317	977	597	306
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.74	0.87	0.33		0.69	0.50	0.37	0.66	0.90	0.51	0.68

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 39.7

Intersection LOS: D

Intersection Capacity Utilization 87.5%

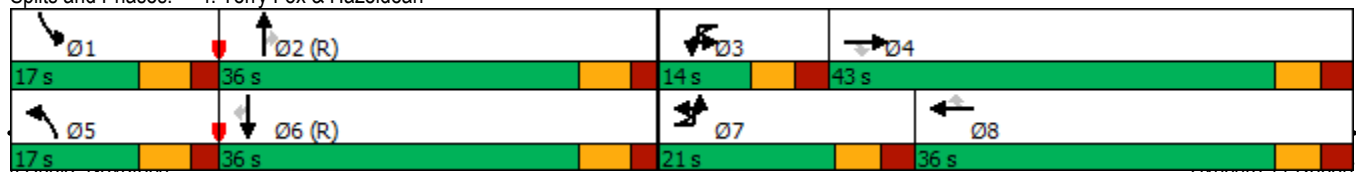
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	35.5	35.5
Total Split (s)	36.0	36.0
Total Split (%)	32.7%	32.7%
Maximum Green (s)	29.5	29.5
Yellow Time (s)	4.2	4.2
All-Red Time (s)	2.3	2.3
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.5	6.5
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	22.0	22.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.1	31.1
Actuated g/C Ratio	0.28	0.28
v/c Ratio	0.53	0.64
Control Delay	36.6	25.4
Queue Delay	0.0	0.0
Total Delay	36.6	25.4
LOS	D	C
Approach Delay	36.5	
Approach LOS	D	
Queue Length 50th (m)	49.3	36.1
Queue Length 95th (m)	67.0	79.5
Internal Link Dist (m)	292.2	
Turn Bay Length (m)		200.0
Base Capacity (vph)	962	584
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.53	0.64
Intersection Summary		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	1	3	14	2	97	1	1578	30	1	160	1138
Future Volume (vph)	14	1	3	14	2	97	1	1578	30	1	160	1138
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	65.0		0.0	0.0		0.0		55.0	
Storage Lanes	1		0	1		0	1		0		1	
Taper Length (m)	10.0			40.0			10.0				40.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Ped Bike Factor	1.00	0.99		0.99	0.98		1.00	1.00				
Frt		0.887			0.853			0.997				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1768	1317	0	1567	1516	0	1768	3489	0	0	1734	3402
Flt Permitted	0.693			0.755			0.250				0.065	
Satd. Flow (perm)	1284	1317	0	1238	1516	0	464	3489	0	0	119	3402
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3			89			2				
Link Speed (k/h)		50			50			70				70
Link Distance (m)		217.1			282.1			253.3				360.0
Travel Time (s)		15.6			20.3			13.0				18.5
Confl. Peds. (#/hr)	5		5	5		5	5		5		5	
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 (%)	1%	1%	33%	14%	50%	3%	1%	2%	3%	1%	3%	5%
Adj. Flow (vph)	14	1	3	14	2	97	1	1578	30	1	160	1138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	4	0	14	99	0	1	1608	0	0	161	1138
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left
Median Width(m)		4.0			6.0			14.0				8.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	14	24	
Number of Detectors	1	2		1	2		1	2		1	1	2
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	2.0	10.0
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)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	2.0	0.6
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)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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	pm+pt	NA
Protected Phases		4			8			2		1	1	6
Permitted Phases	4			8			2			6	6	
Detector Phase	4	4		8	8		2	2		1	1	6
Switch Phase												

Lane Group	SBR
Lane Configurations	RT
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1800
Storage Length (m)	45.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.97
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1480
Flt Permitted	
Satd. Flow (perm)	1436
Right Turn on Red	Yes
Satd. Flow (RTOR)	35
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	8%
Adj. Flow (vph)	12
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.01
Turning Speed (k/h)	14
Number of Detectors	1
Detector Template	Right
Leading Detector (m)	2.0
Trailing Detector (m)	0.0
Detector 1 Position(m)	0.0
Detector 1 Size(m)	2.0
Detector 1 Type	CI+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(m)	
Detector 2 Size(m)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	

6: Terry Fox & Charlie Rogers/Edgewater
AM Peak Hour

560 Hazeldean Road
2036 Total Traffic (optimized timing)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		5.0	5.0	10.0
Minimum Split (s)	36.5	36.5		36.5	36.5		34.5	34.5		11.5	11.5	34.5
Total Split (s)	37.0	37.0		37.0	37.0		61.0	61.0		12.0	12.0	73.0
Total Split (%)	33.6%	33.6%		33.6%	33.6%		55.5%	55.5%		10.9%	10.9%	66.4%
Maximum Green (s)	30.5	30.5		30.5	30.5		54.5	54.5		5.5	5.5	66.5
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
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
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5			6.5	6.5
Lead/Lag							Lag	Lag		Lead	Lead	
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		None	None	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)	5	5		5	5		5	5				5
Act Effct Green (s)	14.0	14.0		14.0	14.0		64.0	64.0			83.0	83.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.58	0.58			0.75	0.75
v/c Ratio	0.09	0.02		0.09	0.37		0.00	0.79			0.59	0.44
Control Delay	39.2	25.5		46.9	28.6		8.0	14.9			28.6	6.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	39.2	25.5		46.9	28.6		8.0	14.9			28.6	6.7
LOS	D	C		D	C		A	B			C	A
Approach Delay		36.2			30.8			14.9				9.3
Approach LOS		D			C			B				A
Queue Length 50th (m)	2.6	0.2		2.5	7.8		0.0	165.1			12.5	29.7
Queue Length 95th (m)	6.6	2.6		m7.7	23.5		m0.1	#48.8			#57.4	80.7
Internal Link Dist (m)		193.1			258.1			229.3				336.0
Turn Bay Length (m)				65.0							55.0	
Base Capacity (vph)	356	367		343	484		269	2032			272	2566
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	0.01		0.04	0.20		0.00	0.79			0.59	0.44

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 13.2

Intersection LOS: B

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

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



0.0000, 11/01/2020

Dynamic 1.1 Report

Lane Group	SBR
Minimum Initial (s)	10.0
Minimum Split (s)	34.5
Total Split (s)	73.0
Total Split (%)	66.4%
Maximum Green (s)	66.5
Yellow Time (s)	4.2
All-Red Time (s)	2.3
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.5
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	21.0
Pedestrian Calls (#/hr)	5
Act Effct Green (s)	83.0
Actuated g/C Ratio	0.75
v/c Ratio	0.01
Control Delay	0.2
Queue Delay	0.0
Total Delay	0.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	0.5
Internal Link Dist (m)	
Turn Bay Length (m)	45.0
Base Capacity (vph)	1092
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.01
Intersection Summary	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	340	1209	22	1	184	1371	122	21	304	136	140
Future Volume (vph)	2	340	1209	22	1	184	1371	122	21	304	136	140
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		100.0		0.0		50.0		175.0	100.0		105.0	60.0
Storage Lanes		2		0		2		1	1		1	2
Taper Length (m)		100.0				100.0			75.0			50.0
Lane Util. Factor	0.95	0.97	0.95	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00	0.97
Ped Bike Factor		1.00	1.00			1.00		0.98	1.00		0.98	0.99
Frt			0.997					0.850			0.850	
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	3431	3490	0	0	3397	3537	1582	1751	3502	1567	3431
Flt Permitted		0.950				0.950			0.950			0.950
Satd. Flow (perm)	0	3426	3490	0	0	3391	3537	1555	1746	3502	1539	3410
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)			2					128			133	
Link Speed (k/h)			60				60			50		
Link Distance (m)			568.4				297.5			263.2		
Travel Time (s)			34.1				17.9			19.0		
Confl. Peds. (#/hr)		5		5		5		5	5		5	5
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 (%)	1%	1%	2%	2%	1%	2%	1%	1%	2%	2%	2%	1%
Adj. Flow (vph)	2	340	1209	22	1	184	1371	122	21	304	136	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	1231	0	0	185	1371	122	21	304	136	140
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA
Median Width(m)			10.0				10.0			8.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		97	14	97		14	97		97	24
Number of Detectors	1	1	2		1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru		Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0		2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	2.0	0.6		2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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
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
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	5	5	2		1	1	6		3	8		7
Permitted Phases								6			8	
Detector Phase	5	5	2		1	1	6	6	3	8	8	7
Switch Phase												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↗
Traffic Volume (vph)	493	440
Future Volume (vph)	493	440
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		60.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3502	1582
Flt Permitted		
Satd. Flow (perm)	3502	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		176
Link Speed (k/h)	50	
Link Distance (m)	251.2	
Travel Time (s)	18.1	
Confl. Peds. (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	1%
Adj. Flow (vph)	493	440
Shared Lane Traffic (%)		
Lane Group Flow (vph)	493	440
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	10.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.01	1.01
Turning Speed (k/h)		14
Number of Detectors	2	1
Detector Template	Thru	Right
Leading Detector (m)	10.0	2.0
Trailing Detector (m)	0.0	0.0
Detector 1 Position(m)	0.0	0.0
Detector 1 Size(m)	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex
Detector 1 Channel		
Detector 1 Extend (s)	0.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	0.0	0.0
Detector 2 Position(m)	9.4	
Detector 2 Size(m)	0.6	
Detector 2 Type	CI+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Minimum Initial (s)	5.0	5.0	10.0		5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.1	11.1	41.1		11.1	11.1	41.1	41.1	11.1	41.1	41.1	11.1
Total Split (s)	16.0	16.0	61.0		15.0	15.0	60.0	60.0	12.0	42.0	42.0	12.0
Total Split (%)	12.3%	12.3%	46.9%		11.5%	11.5%	46.2%	46.2%	9.2%	32.3%	32.3%	9.2%
Maximum Green (s)	9.9	9.9	54.9		8.9	8.9	53.9	53.9	5.9	35.9	35.9	5.9
Yellow Time (s)	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.4	2.4	2.4		2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
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)		6.1	6.1			6.1	6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max		None	None	C-Max	C-Max	None	None	None	None
Walk Time (s)			7.0				7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			28.0				28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)			5				5	5		5	5	
Act Effct Green (s)		17.6	63.2			10.2	55.9	55.9		5.8	26.2	5.9
Actuated g/C Ratio		0.14	0.49			0.08	0.43	0.43		0.04	0.20	0.05
v/c Ratio		0.74	0.72			0.69	0.90	0.16		0.27	0.43	0.90
Control Delay		65.1	31.6			85.9	30.1	2.1		68.8	45.6	111.7
Queue Delay		0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		65.1	31.6			85.9	30.1	2.1		68.8	45.6	111.7
LOS		E	C			F	C	A		E	D	F
Approach Delay			38.8				34.2			35.7		
Approach LOS			D				C			D		
Queue Length 50th (m)		42.0	134.3			19.1	180.8	5.3		4.9	31.2	17.2
Queue Length 95th (m)		#81.1	161.5			m#37.0	#199.6	m2.8		13.1	41.8	#35.4
Internal Link Dist (m)			544.4				273.5			239.2		
Turn Bay Length (m)		100.0				50.0		175.0		100.0		60.0
Base Capacity (vph)		463	1698			267	1520	741		79	967	155
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		0.74	0.72			0.69	0.90	0.16		0.27	0.31	0.90

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 40.5

Intersection LOS: D

Intersection Capacity Utilization 104.1%

ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Hazeldean & Robert Grant





Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	41.1	41.1
Total Split (s)	42.0	42.0
Total Split (%)	32.3%	32.3%
Maximum Green (s)	35.9	35.9
Yellow Time (s)	3.3	3.3
All-Red Time (s)	2.8	2.8
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.1	6.1
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	28.0	28.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)	31.0	31.0
Actuated g/C Ratio	0.24	0.24
v/c Ratio	0.59	0.87
Control Delay	46.4	46.3
Queue Delay	0.0	0.0
Total Delay	46.4	46.3
LOS	D	D
Approach Delay	54.9	
Approach LOS	D	
Queue Length 50th (m)	53.8	62.9
Queue Length 95th (m)	67.5	#101.0
Internal Link Dist (m)	227.2	
Turn Bay Length (m)		60.0
Base Capacity (vph)	967	556
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.51	0.79
Intersection Summary		

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	411	866	298	14	340	913	348	309	814	234	1
Future Volume (vph)	2	411	866	298	14	340	913	348	309	814	234	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Storage Lanes		2		1		2		1	1		1	
Taper Length (m)		100.0				45.0			40.0			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95
Ped Bike Factor		1.00		0.95		0.99		0.98	1.00		0.97	
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	3364	3537	1551	0	3398	3537	1551	3397	3468	1567	0
Flt Permitted		0.950				0.950			0.950			
Satd. Flow (perm)	0	3358	3537	1481	0	3368	3537	1521	3386	3468	1527	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				232				174			150	
Link Speed (k/h)			60				60			70		
Link Distance (m)			644.5				157.6			142.7		
Travel Time (s)			38.7				9.5			7.3		
Confl. Peds. (#/hr)		5		24		24		5	5		10	
Confl. Bikes (#/hr)				6				2			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 (%)	1%	3%	1%	3%	1%	2%	1%	3%	2%	3%	2%	1%
Adj. Flow (vph)	2	411	866	298	14	340	913	348	309	814	234	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	413	866	298	0	354	913	348	309	814	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	L NA	Left	R NA	R NA
Median Width(m)			10.0				12.0			10.0		
Link Offset(m)			0.0				0.0			0.0		
Crosswalk Width(m)			5.0				5.0			5.0		
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	14	24		14	14	24		14	24		14	14
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (m)	2.0	2.0	10.0	2.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0
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)	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0
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)			9.4				9.4			9.4		
Detector 2 Size(m)			0.6				0.6			0.6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot
Protected Phases	7	7	4		3	3	8		5	2		1
Permitted Phases				4				8			2	
Detector Phase	7	7	4	4	3	3	8	8	5	2	2	1

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic (demand rationalized)

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	306	819	485
Future Volume (vph)	306	819	485
Ideal Flow (vphpl)	1800	1800	1800
Storage Length (m)	155.0		200.0
Storage Lanes	2		1
Taper Length (m)	75.0		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor	0.99		0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3431	3502	1567
Flt Permitted	0.950		
Satd. Flow (perm)	3408	3502	1537
Right Turn on Red			Yes
Satd. Flow (RTOR)			265
Link Speed (k/h)		70	
Link Distance (m)		316.2	
Travel Time (s)		16.3	
Confl. Peds. (#/hr)	10		5
Confl. Bikes (#/hr)			1
Peak Hour Factor	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	2%
Adj. Flow (vph)	306	819	485
Shared Lane Traffic (%)			
Lane Group Flow (vph)	307	819	485
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(m)		10.0	
Link Offset(m)		0.0	
Crosswalk Width(m)		5.0	
Two way Left Turn Lane			
Headway Factor	1.01	1.01	1.01
Turning Speed (k/h)	24		14
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(m)		9.4	
Detector 2 Size(m)		0.6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Prot	NA	Perm
Protected Phases	1	6	
Permitted Phases			6
Detector Phase	1	6	6

4: Terry Fox & Hazeldean
PM Peak Hour

560 Hazeldean Road
2036 Total Traffic (demand rationalized)

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	11.5	11.5	35.5	35.5	11.5	11.5	34.5	34.5	11.5	35.5	35.5	11.5
Total Split (s)	23.0	23.0	42.0	42.0	23.0	23.0	42.0	42.0	18.0	37.0	37.0	18.0
Total Split (%)	19.2%	19.2%	35.0%	35.0%	19.2%	19.2%	35.0%	35.0%	15.0%	30.8%	30.8%	15.0%
Maximum Green (s)	16.5	16.5	35.5	35.5	16.5	16.5	35.5	35.5	11.5	30.5	30.5	11.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.2
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?												
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	None	None	C-Max	C-Max	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0	
Flash Dont Walk (s)			22.0	22.0			21.0	21.0		22.0	22.0	
Pedestrian Calls (#/hr)			24	24			5	5		10	10	
Act Effct Green (s)		16.4	35.0	35.0		15.8	34.4	34.4	12.1	31.2	31.2	
Actuated g/C Ratio		0.14	0.29	0.29		0.13	0.29	0.29	0.10	0.26	0.26	
v/c Ratio		0.90	0.84	0.50		0.79	0.90	0.62	0.90	0.90	0.46	
Control Delay		74.3	48.3	11.6		52.0	61.7	33.5	91.1	49.5	10.1	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay		74.3	48.3	11.6		52.0	61.7	33.5	91.1	49.5	10.4	
LOS		E	D	B		D	E	C	F	D	B	
Approach Delay			48.2				53.5			52.2		
Approach LOS			D				D			D		
Queue Length 50th (m)		46.0	92.1	10.6		38.8	105.8	45.0	29.3	91.5	17.1	
Queue Length 95th (m)		#70.8	114.8	33.6		#52.4	#133.3	82.3	#61.3	#125.2	9.0	
Internal Link Dist (m)			620.5				133.6			118.7		
Turn Bay Length (m)		210.0		95.0		60.0		70.0	30.0		40.0	
Base Capacity (vph)		462	1046	601		467	1046	572	343	901	507	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	37	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.89	0.83	0.50		0.76	0.87	0.61	0.90	0.90	0.50	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 32 (27%), 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: 55.0

Intersection LOS: E

Intersection Capacity Utilization 102.3%

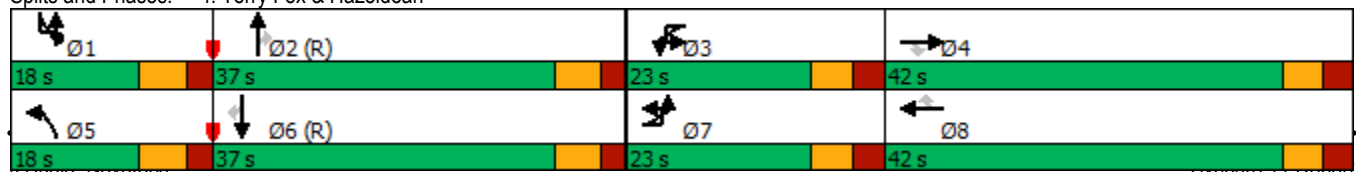
ICU Level of Service G

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Terry Fox & Hazeldean





Lane Group	SBL	SBT	SBR
Switch Phase			
Minimum Initial (s)	5.0	10.0	10.0
Minimum Split (s)	11.5	35.5	35.5
Total Split (s)	18.0	37.0	37.0
Total Split (%)	15.0%	30.8%	30.8%
Maximum Green (s)	11.5	30.5	30.5
Yellow Time (s)	4.2	4.2	4.2
All-Red Time (s)	2.3	2.3	2.3
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max
Walk Time (s)		7.0	7.0
Flash Dont Walk (s)		22.0	22.0
Pedestrian Calls (#/hr)		10	10
Act Effct Green (s)	12.0	31.1	31.1
Actuated g/C Ratio	0.10	0.26	0.26
v/c Ratio	0.90	0.90	0.82
Control Delay	83.3	58.4	33.5
Queue Delay	52.3	0.0	0.0
Total Delay	135.6	58.4	33.5
LOS	F	E	C
Approach Delay		65.6	
Approach LOS		E	
Queue Length 50th (m)	36.9	71.8	31.8
Queue Length 95th (m)	#61.1	#122.0	#101.1
Internal Link Dist (m)		292.2	
Turn Bay Length (m)	155.0		200.0
Base Capacity (vph)	343	907	594
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	110	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.32	0.90	0.82
Intersection Summary			