NOVATECH

Engineers, Planners & Landscape Architects

Engineering

- Land/Site Development
- Municipal Infrastructure
- Environmental/ Water Resources
- Traffic/ Transportation
- Recreational

Planning

- Land/Site Development
- Planning Application Management
- Municipal Planning
- Urban Design
- Expert Witness (OLT)
- Wireless Industry

Landscape Architecture

- Streetscapes & Public Amenities
- Open Space, Parks & Recreation
- Community & Residential
- Commercial & Institutional
- Environmental Restoration

South March Urban Expansion Area

Transportation Capacity Assessment

Engineering excellence. Planning progress. Liveable landscapes.

South March Urban Expansion Area

Transportation Capacity Assessment

Prepared By:

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

Version 1 Dated: October 22, 2024
Version 2 Dated: April 4, 2025

Novatech File: 121038
Ref: R-2024-111

NOVATECH
Engineers, Planners & Landscape Architects

April 4, 2025

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Ave. W., 4th Floor,
Ottawa, Ontario K1P 1J1

Attention: Mr. Stream Shen
Planner III, Development Review West

Dear Mr. Shen:

Reference: South March Urban Expansion Area
Revised Transportation Capacity Assessment
Novatech File No. 121038

We are pleased to submit the following Revised Transportation Capacity Assessment, in relation to an Official Plan Amendment application for the South March Urban Expansion Area.

The initial Transportation Capacity Assessment, dated October 22, 2024, was submitted to the City in October 2024. After submission, the Terms of Reference (TOR) were discussed with City staff and were revised. This report addresses the Revised TOR and an Alternate Assessment, as proposed by Novatech.

If you have any questions or wish to discuss the following assessment, please contact Jennifer Luong or the undersigned.

Yours truly,

NOVATECH

Joshua Audia, P.Eng.
Project Engineer | Transportation

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

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY I

1.0 INTRODUCTION 1

1.1 SOUTH MARCH URBAN EXPANSION AREA 1
1.2 PREVIOUS SCORING OF SOUTH MARCH LANDS 2
1.3 SCOPE OF ASSESSMENT 3
1.4 STUDY AREA AND TIME PERIODS 4

2.0 EXISTING CONDITIONS 4

2.1 ROADWAY NETWORK 4
2.1.1 Key Study Area Roadways 4
2.1.2 Roadways Within 1.5 km Radius 7
2.1.3 Other Roadways Within 5 km Radius 9
2.2 STUDY AREA INTERSECTIONS 12
2.3 TRANSIT 16
2.4 ACTIVE TRANSPORTATION – PEDESTRIAN AND CYCLING FACILITIES 19
2.5 TRAFFIC VOLUMES 22
2.6 COLLISION RECORDS 22
2.7 SCREENLINE ANALYSIS 30
2.8 TRAFFIC OPERATIONS 32
2.9 OBSERVED MODE SHARES 35

3.0 PLANNED CONDITIONS 36

3.1 PLANNED TRANSPORTATION PROJECTS 36
3.2 OTHER AREA DEVELOPMENTS 37

4.0 FORECASTING 40

4.1 DEVELOPMENT-GENERATED TRAVEL DEMAND 40
4.1.1 Trip Generation 40
4.1.2 Trip Distribution 43
4.1.3 Trip Assignment 43
4.2 BACKGROUND TRAFFIC 44
4.2.1 Other Area Developments 44
4.2.2 General Background Growth Rate 44
4.2.3 March Road Corridor 45
4.3 VOLUME FIGURES 46
4.4 2046 BACKGROUND SCREENLINE ANALYSIS 46
4.4.1 Screenline Analysis Based on City's 2046 TRANS Model 46
4.4.2 Screenline Analysis Based on Projected Volumes 54
4.5 2046 BACKGROUND TRAFFIC CONDITIONS 54

5.0 NETWORK IMPACT COMPONENTS 60

5.1 TRANSPORTATION DEMAND MANAGEMENT 60
5.1.1 Context for TDM 60
5.1.2 Need and Opportunity 60
5.1.3 TDM Program 60
5.2 NEIGHBOURHOOD TRAFFIC CALMING 60
5.3 TRANSIT 61
5.4 NETWORK CONCEPT 62
5.4.1 Screenline Analysis Based on City's 2046 TRANS Model 62
5.4.2 Screenline Analysis Based on Projected Volumes 64

5.5 2046 TOTAL TRAFFIC CONDITIONS 65
6.0 ADJUSTED ALTERNATE ANALYSIS 72
6.1 ALTERNATE SCREENLINE VOLUMES 72
6.1.1 2046 Background Screenline Analysis Based on Projected Volumes 72
6.1.2 2046 Total Screenline Analysis Based on Projected Volumes 77
6.2 ALTERNATE TRAFFIC CONDITIONS 77
6.2.1 2046 Background Intersection Operations 77
6.2.2 2046 Total Intersection Operations 80
7.0 CONCLUSIONS AND RECOMMENDATIONS 85

Figures

Figure 1: Subject Lands 1
Figure 2: Location of Study Area Intersections 5
Figure 3: Roadway Network Within 1.5 km Radius 10
Figure 4: Roadway Network Within 5 km Radius 11
Figure 5: Existing Bus Stop Locations 17
Figure 6: Excerpt of OC Transpo System Map (Existing) 18
Figure 7: Excerpt of OC Transpo System Map ('New Ways to Bus') 19
Figure 8: Existing Pedestrian Facilities 20
Figure 9: Existing Cycling Facilities 21
Figure 10: Existing Traffic Volumes 23
Figure 11: Existing Cyclist/Pedestrian Volumes 24
Figure 12: Vehicular Volumes at Screenline 31
Figure 13: Network of Designated Cycling Routes 38
Figure 14: Other Area Development Locations 41
Figure 15: Projected Volumes by South March UEA 47
Figure 16: Other Area Development-Generated Traffic Volumes 48
Figure 17: Volume Reductions Reflecting Higher Transit Share 49
Figure 18: 2046 Background Traffic Volumes 50
Figure 19: 2046 Background Traffic Volumes at Screenline 51
Figure 20: 2046 Total Traffic Volumes 52
Figure 21: 2046 Total Traffic Volumes at Screenline 53
Figure 22: 2046 TRANS Model + Total Traffic Volumes at Screenline 63
Figure 23: Alternate 2046 Background Traffic Volumes 73
Figure 24: Alternate 2046 Total Traffic Volumes 74
Figure 25: Alternate 2046 Background Traffic Volumes at Screenline 75
Figure 26: Alternate 2046 Total Traffic Volumes at Screenline 76

Tables

Table 1: OC Transpo Routes 16
Table 2: Reported Collisions 25
Table 3: Existing Screenline Performance 30
Table 4: Existing Intersection Operations 32
Table 5: Observed Mode Shares 35
Table 6: Peak Period Person Trip Generation 42
Table 7: Peak Period Person Trips by Modal Share 42
Table 8: Peak Hour Person Trips by Mode Share 42
Table 9: 2046 TRANS Model – Background Screenline Performance 46
Table 10: 2046 Background Screenline Performance 54
Table 11: 2046 Background Intersection Operations 55
Table 12: 2046 TRANS Model – Total Screenline Performance 62
Table 13: 2046 Total Screenline Performance 64
Table 14: 2046 Total Intersection Operations 65
Table 15: Alternate 2046 Background Screenline Performance 72
Table 16: Alternate 2046 Total Screenline Performance 77
Table 17: Alternate 2046 Background Intersection Operations 78
Table 18: Alternate 2046 Total Intersection Operations 80

Appendices

Appendix A: City of Ottawa Scoring – South March Cluster
Appendix B: Previous Novatech Scoring Submissions
Appendix C: Urban Expansion Detailed Evaluation Criteria
Appendix D: Traffic Count Data
Appendix E: Collision Records
Appendix F: Signal Timing Plans
Appendix G: Existing Synchro Reports
Appendix H: TRANS Mode Shares
Appendix I: Other Area Developments
Appendix J: Long-Range Model Snapshots
Appendix K: March Road BRT Functional Design
Appendix L: Background Synchro Reports
Appendix M: Signalization Warrants
Appendix N: Total Synchro Reports
Appendix O: Alternate Scenario Synchro Reports

EXECUTIVE SUMMARY

This Transportation Capacity Assessment has been prepared in relation to an Official Plan Amendment application for the South March Urban Expansion Area (SMUEA), referred to as the South March lands in this report. The lands have a gross developable area of approximately 233 hectares, excluding existing rural estate subdivisions. The lands consist primarily of fields, forested areas, and rural estate subdivisions.

The lands are generally bound by March Road and Cameron Harvey Drive to the north, the Beachburg Rail Corridor to the east, Old Carp Road and the previously approved Kanata North Urban Expansion Area (KNUEA) lands to the south, and Old Second Line Road to the west.

The lands are in close proximity to existing services such as the Sobeys March Road grocery store, recreational facilities such as the Richcraft Recreation Center, schools, and employment centers such as the Kanata North Business Park. Fire Station 45 is now constructed at the March Road/ Buckbean Avenue intersection at the south limit of the subject lands.

The staff report to the Joint Agriculture and Rural Affairs Committee (ARAC) and Planning and Housing Committee (dated October 9, 2024) outlines the proposed application process to assess private applications for urban and village boundary expansions. The process requests the preparation of three new studies, including a Transportation Capacity Assessment. The required Transportation report will confirm the existing or planned capacity in the in-force *Transportation Master Plan (TMP)* to service the subject lands, including off-site network capacity and the need for any off-site works to create the required capacity.

This assessment has been prepared in relation to an Official Plan Amendment application for the South March lands. It provides a review of the existing transportation network and planned transportation projects as outlined in the City's *2013 TMP*, which is the applicable master plan. It provides a high-level estimate of the anticipated travel demand generated by the subject lands and outlines the potential need for off-site works to create the required capacity. As noted in this report, the specific road capacity requirements and phasing can be determined as part of the secondary plan process and prior to full buildout of the subject lands.

Per the City's *Urban and Village Area Boundary Expansion – Infrastructure Capacity Assessment Terms of Reference (TOR)*, a full Transportation Impact Assessment (TIA) submission is to be prepared, with 'an enhance focus on developing and analyzing structuring transportation networks.' The Design Review modules of a TIA (4.1: Development Design, 4.2: Parking, 4.3: Boundary Streets, and 4.4: Access Intersections) are not included in this assessment as these modules relate to on-site design and are premature at this stage, but will be addressed in future traffic studies that will evaluate development design aspects as part of future Draft Plan of Subdivision and/or Site Plan Control applications.

This assessment discusses the Network Impact modules (4.5: Transportation Demand Management, 4.6: Neighbourhood Traffic Management, 4.7: Transit, 4.8: Network Concept, and 4.9: Network Intersections).

The study area of this assessment has been confirmed with City staff, and includes the following intersections.

Signalized Intersections

- March Road/Old Second Line Road
- March Road/Dunrobin Road
- March Road/Terry Fox Drive
- March Road/Carling Avenue/Station Road
- Terry Fox Drive/Old Second Line Road
- Terry Fox Drive/Flamborough Way/Innovation Drive
- Herzberg Road/Carling Avenue

Unsignalized Intersections

- March Road/Donald B. Munro Road/Old Carp Road
- March Road/Huntmar Drive
- March Road/Invention Boulevard
- Huntmar Drive/Old Carp Road
- Terry Fox Drive/March Valley Road

The time periods considered in this report are the weekday AM and PM peak hours, as they represent the most critical times for existing and projected future traffic volumes. Analysis of the existing 2025 traffic conditions is included, along with the 2046 horizon year.

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

- The addition of the South March lands to the settlement area are a natural extension of the full transportation grid. The development of the lands will naturally integrate with the existing abutting suburban community. In addition to March Road, Old Second Line Road and March Valley Road can be used as alternative travel routes to diversify the flow of traffic. Spreading peak hour travel demand to alternative routes is consistent with the principles of demand rationalization, and it is common in other suburban areas of the City such as Kanata West/Fernbank, Barrhaven, and Leitrim. For the South March lands, there are no impediments to a natural connection and extension of the existing grid. There is no need to assemble a new corridor as the rights-of-way (ROWs) already exist in the area. There are no major natural features that need to be crossed with large bridges, and there are no unique constructability problems.

- Based on the projections that have been developed using the methodology from the City's *Terms of Reference* (TOR) dated October 20, 2024, it appears that additional road capacity beyond the planned March Road Widening may be required. Based on the projected vehicle trips, another 680 vehicles per hour of lane capacity may be required. This could be achieved by widening March Road (west of Old Second Line Road), Huntmar Drive, Terry Fox Drive (west of Old Second Line Road), or Carling Avenue. The analysis of key study area intersections supports the conclusions of the screenline analysis, which finds that additional roadway capacity beyond the March Road widening may be required. Additional road widening projects can be considered as part of the current TMP update, the Community Design Plan (CDP) process, and/or future TMP updates as required.

- Given the size of the study area, the TIA approach recommended by the City in the TOR (dated October 20, 2024) of applying a background growth rate to account for traffic passing through a study area and adding traffic from other development applications separately, in our opinion introduces some double-counting in this case. This incorrectly increases the traffic volumes.

- Therefore, an analysis has been conducted for an Alternate Scenario where background traffic is accounted for strictly with a 1% annual background growth rate, as this growth rate also accounts for some future development and growth in the study area. The Alternate Scenario projections identify that additional road capacity may not be required.

- In our professional opinion, we believe there are some issues with the methodology outlined in the City's TOR (dated October 20, 2024). The total future traffic is likely somewhere between the initial and Alternate Scenario projections considered in this assessment. The shared trips between the South March lands and the Kanata North Business Park are likely higher than the ITE industry standard rates, given the high congestion along the arterial corridors. ITE and TRANS residential trip rates will likely decrease slightly over time as they are updated to reflect sustained hybrid work-from-home arrangements. All of these factors will continue to fluctuate over the next few years which supports the position that the specific road capacity modification requirements and phasing of modifications should be determined as part of the CDP/secondary plan process and prior to full buildout.

- The City is currently working on an update to the *2013 TMP*. The new Capital Infrastructure Plan will be prepared for Part 2 of the TMP Update, targeted for completion in 2025. The timing of the planned March Road Widening and bus rapid transit (BRT) will be determined as part of the new Capital Infrastructure Plan. Additional road projects to accommodate the ultimate development of the South March lands can be considered as part of the current TMP Update, the CDP/secondary plan process, and/or future TMP updates as required. Buildout of the South March lands may occur over a period of 15 years and the road capacity requirements and phasing of modifications can be determined as part of the CDP/secondary plan process and prior to full buildout. Road upgrades may also be included in a future TMP update.

- The South March lands have good access to the planned park-and-ride lot and future BRT along March Road, with a planned transit station at the southern edge of the subject lands' boundary. The subject lands are well positioned with several amenities including shopping, employment centers, recreational facilities, and are very close to fire services.

- These key points are summarized in the City's previous scoring of the subject lands, when they were considered for inclusion at the time of the new *Official Plan* in 2021, Novatech's previous scoring submissions for various parcels within the South March lands, and Novatech's new scoring submission for all parcels.

- Based on our review, we recommend a Category 1 – Future Neighbourhood Overlay designation on the South March lands from a transportation perspective.

1.0 INTRODUCTION

1.1 South March Urban Expansion Area

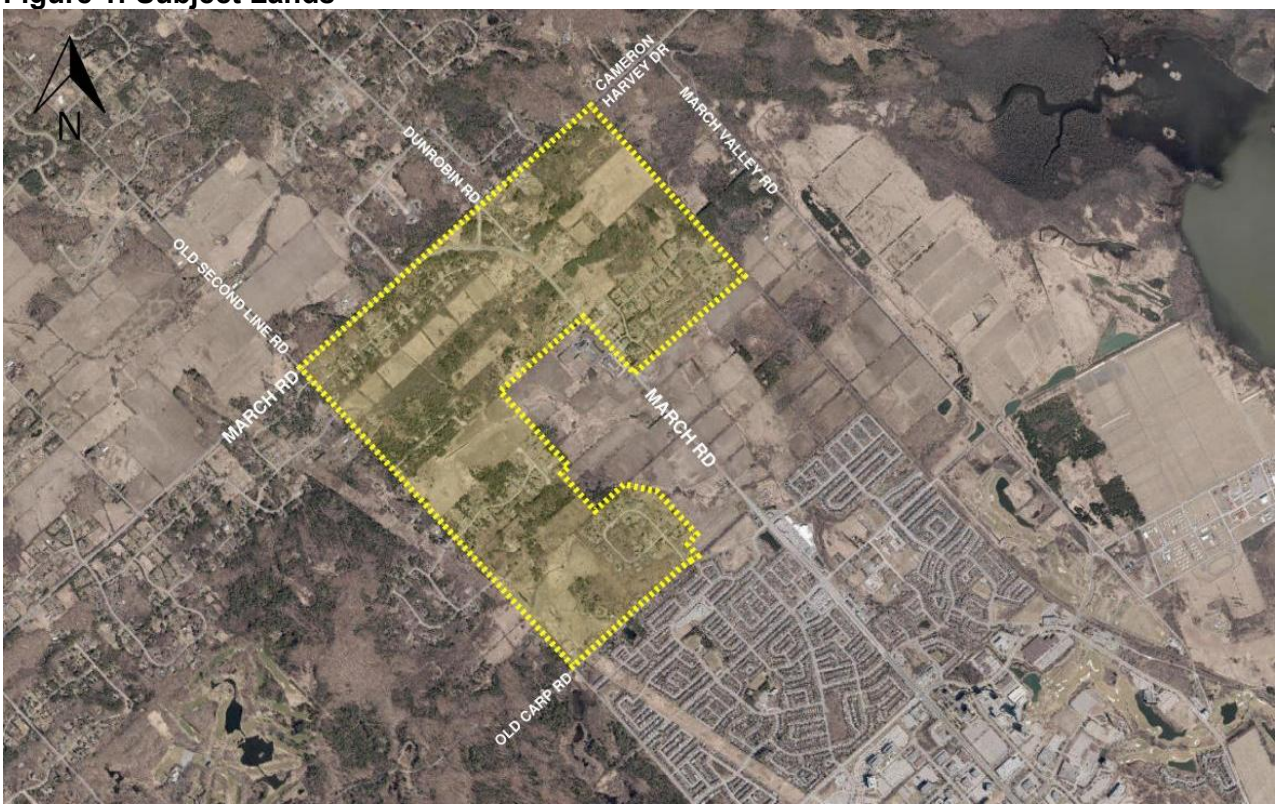
This Transportation Capacity Assessment has been prepared in relation to an Official Plan Amendment application for the South March Urban Expansion Area (SMUEA). The subject lands have a gross developable area of approximately 233 hectares, excluding existing rural estate subdivisions. The lands consist primarily of fields, forested areas, and rural estate subdivisions.

The lands are generally bound by March Road and Cameron Harvey Drive to the north, the Beachburg Rail Corridor to the east, Old Carp Road and the previously approved Kanata North Urban Expansion Area (KNUEA) lands to the south, and Old Second Line Road to the west.

The lands are in close proximity to existing services such as the Sobeys March Road grocery store, recreational facilities such as the Richcraft Recreation Center, schools, and employment centers such as the Kanata North Business Park. Fire Station 45 is now constructed at the March Road/ Buckbean Avenue intersection at the south limit of the subject lands.

The subject lands are shown in **Figure 1**.

Figure 1: Subject Lands



The following assessment includes residential dwelling projections for the South March lands. No employment projections have been developed within this assessment, as no employment uses are anticipated as part of future development of the South March lands.

1.2 Previous Scoring of South March Lands

City of Ottawa Scoring
Over 2021 and 2022, the City of Ottawa completed a Comprehensive Review of the Official Plan. As part of the Comprehensive Review, staff evaluated candidate expansion areas around the prior City urban boundary. The South March lands were recommended to be designated as Category 1 lands by City staff based on the total scoring the lands received through the evaluation criteria for urban boundary areas. In a staff report dated January 25, 2021 City staff recommended the inclusion of the South March lands as a future growth area in the Official Plan.

A copy of the City's scoring for the South March lands is included in **Appendix A**.

At that time, the City's transportation evaluation focused on lands within or near a 1.9km radial transit catchment area as well as potential arterial road upgrades. The parcels within the South March lands were noted as being within the 1.9km radial catchment area of the planned March Road Transitway transit stations. The City's evaluation considered the planned park & ride at the south limit of the subject lands, as well as the direct arterial road access to Highway 417 via March Road. The South March lands generally received a transit score of 14 to 18 points out of a possible 30 points. No points were lost for potential arterial road upgrades, out of a possible loss of 8 points.

Novatech Scoring Submissions
During the City's urban boundary review process, Novatech prepared and provided submissions to the City regarding a number of parcels within the South March lands. The submissions included a complete assessment against the latest scoring criteria for the City's consideration as they prepared their evaluation of the urban expansion lands.

Scoring submissions were prepared for six parcels, including 680 Cameron Harvey Drive, 17 Campbell Reid Court, 1221 March Road, 1480 Old Second Line Road, and 1310 & 1340 Old Second Line Road. The Novatech submissions are included in **Appendix B**.

Consistent with the City's scoring, Novatech also suggested transit scores of 14 to 18 points and no points lost for potential arterial road upgrades.

New Novatech Scoring
As part of the subject Official Plan Amendment application, Novatech has evaluated all parcels within the South March lands against the City's scoring and Novatech's previous scoring submissions. The evaluation criteria are included in **Appendix C**. The detailed scoring is included in the Planning Rationale. The criteria reviewed for this assessment include the following:

6. Availability of Rapid Transit
7. Proximity to nearest Rapid Transit Station
12. Potential Arterial Road Upgrades

Regarding the availability of rapid transit, we agree with the City's scoring that all parcels are within a 1.9km radial distance of planned rapid transit that is shown in the current Ultimate Network Plan and an Environmental Assessment. All lands should receive 10 points for this criteria.

Regarding the proximity to the nearest rapid transit station, parcels that are within a radial distance of 0.6km to 1.1km from the nearest rapid transit station (existing or planned) are awarded 8 points. Parcels that are within a radial distance of 1.1km to 1.9km are awarded 4 points. The future terminal transit station of the March Road Bus Rapid Transit (BRT) is at the south limit of the South March lands. We agree with the City's scoring for all parcels except for SM-1A 2142 and SM-2 253, as identified in the City's scoring table. Consistent with the previous Novatech submission, parcel SM-1A 2142 is within 0.6km to 1.1km from the future terminal transit station and should receive 8 points, rather than 4 points as assigned by the City. Parcel SM-2 253 wasn't scored previously by Novatech, but it is also within 0.6km to 1.1km from the future terminal transit station and should receive 8 points, rather than 4 points as assigned by the City.

Regarding potential arterial road upgrades, we agree with the City's scoring that all parcels are within 1.9km of planned rapid transit and should receive 0 points.

1.3 Scope of Assessment

The staff report to the Joint Agriculture and Rural Affairs Committee (ARAC) and Planning and Housing Committee (dated October 9, 2024) outlines the proposed application process to assess private applications for urban and village boundary expansions. The process requests the preparation of three new studies, including a Transportation Capacity Assessment. The required Transportation report will confirm the existing or planned capacity in the in-force *Transportation Master Plan (TMP)* to service the subject lands, including off-site network capacity and the need for any off-site works to create the required capacity.

This assessment has been prepared in relation to an Official Plan Amendment application for the South March lands. It provides a review of the existing transportation network and planned transportation projects as outlined in the City's *2013 TMP*, which is the applicable master plan. It provides a high-level estimate of the anticipated travel demand generated by the subject lands and outlines the potential need for off-site works to create the required capacity. As noted in this report, the specific road capacity requirements and phasing can be determined as part of the secondary plan process and prior to full buildout of the subject lands.

Per the City's *Urban and Village Area Boundary Expansion – Infrastructure Capacity Assessment Terms of Reference (TOR)*, a full Transportation Impact Assessment (TIA) submission is to be prepared, with 'an enhance focus on developing and analyzing structuring transportation networks.' The Design Review modules of a TIA (4.1: Development Design, 4.2: Parking, 4.3: Boundary Streets, and 4.4: Access Intersections) are not included in this assessment as these modules relate to on-site design and are premature at this stage, but will be addressed in future traffic studies that will evaluate development design aspects as part of future Draft Plan of Subdivision and/or Site Plan Control applications.

This assessment discusses the Network Impact modules (4.5: Transportation Demand Management, 4.6: Neighbourhood Traffic Management, 4.7: Transit, 4.8: Network Concept, and 4.9: Network Intersections).

1.4 Study Area and Time Periods

The study area of this assessment has been confirmed with City staff, and includes the following intersections:

Signalized Intersections

- March Road/Old Second Line Road
- March Road/Dunrobin Road
- March Road/Terry Fox Drive
- March Road/Carling Avenue/Station Road
- Terry Fox Drive/Old Second Line Road
- Terry Fox Drive/Flamborough Way/Innovation Drive
- Herzberg Road/Carling Avenue

Unsignalized Intersections

- March Road/Donald B. Munro Road/Old Carp Road
- March Road/Huntmar Drive
- March Road/Invention Boulevard
- Huntmar Drive/Old Carp Road
- Terry Fox Drive/March Valley Road

The time periods considered in this report are the weekday AM and PM peak hours, as they represent the most critical times for existing and projected future traffic volumes. Analysis of the existing 2025 traffic conditions is included, along with the 2046 horizon year.

2.0 EXISTING CONDITIONS

2.1 Roadway Network

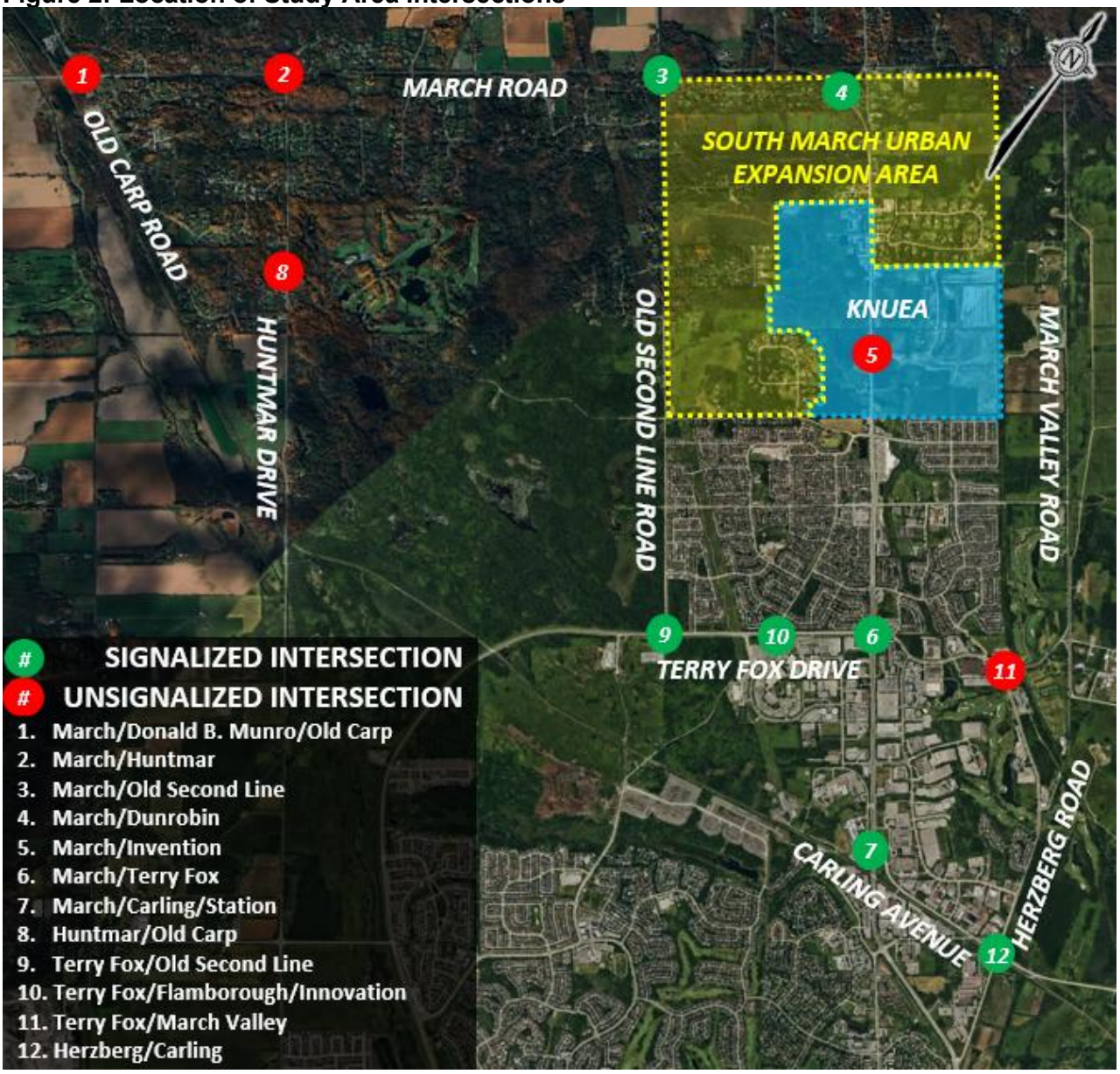
2.1.1 Key Study Area Roadways

The study area intersections (shown in **Figure 2**) include the following roadways.

March Road is an arterial road that generally runs on a north-south alignment from Highway 417 to Dunrobin Road, before transitioning to an east-west alignment from Dunrobin Road to Appleton Sideroad in Almonte. South of Halton Terrace/Maxwell Bridge Road, March Road has a four- to six-lane divided urban cross-section with bike lanes and a posted speed limit of 80 km/h. North of Halton Terrace/Maxwell Bridge Road, March Road has a two-lane undivided rural cross-section with paved shoulders south of Murphy Court. The posted speed limit on March Road is generally 80 km/h, except in the vicinity of the St. Isidore Catholic school (where the posted speed limit is 60 km/h when the lights are flashing), or from approximately 230m north of Carling Avenue to approximately 410m south of Teron Road (where the posted speed limit is 60 km/h). March Road is a designated truck route, allowing full loads.

Donald B. Munro Drive is a collector roadway that generally runs on an east-west alignment from March Road to Kinburn Side Road. Within the study area, Donald B. Munro Drive has a two-lane undivided rural cross-section, and a posted speed limit of 60 km/h. Donald B. Munro Drive is not a designated truck route.

Figure 2: Location of Study Area Intersections



Old Carp Road is a collector roadway that generally runs on an east-west alignment from Donald B. Munro Drive to Halton Terrace. Within the study area, Old Carp Road has a two-lane undivided rural cross-section. East of Old Second Line Road, Old Carp Road has a posted speed limit of 40 km/h, and a posted speed limit of 60 km/h to the west. Old Carp Road is not a designated truck route.

Huntmar Drive is a roadway that generally runs on a north-south alignment. Huntmar Drive is classified as a collector roadway from March Road to Richardson Road. Within the study area, Huntmar Drive generally has a two-lane undivided rural cross-section with paved shoulders from March Road to Old Carp Road. The posted speed limit is 60 km/h between March Road and approximately 220m south of the Renfrew Rail Corridor, 70 km/h between that point and approximately 260m north of the roundabout with Campeau Drive, and 50 km/h south of that point. Huntmar Drive is not a designated truck route.

Old Second Line Road is a major collector roadway from Old Carp Road to Terry Fox Drive, and a collector roadway from Old Carp Road to Thomas A. Dolan Parkway. The roadway generally runs on a north-south alignment. Within the study area and south of Old Carp Road, Old Second Line Road has a two-lane undivided rural cross-section, a multi-use pathway (MUP) and paved shoulders south of Klondike Road, and a posted speed limit of 60 km/h. North of Old Carp Road, Old Second Line Road maintains a two-lane undivided rural cross-section, no paved shoulders, and a posted speed limit of 70 km/h, except near March Road where the posted speed limit is 60 km/h. Old Second Line Road is not a designated truck route.

Dunrobin Road is an arterial roadway that generally runs on a north-south alignment from Galetta Side Road to March Road. Within the study area, Dunrobin Road has a two-lane undivided rural cross-section and paved shoulders. Dunrobin Road has a posted speed limit of 60 km/h between March Road and approximately 330m north of Kerwin Road, then a posted speed limit of 80 km/h within the study area. Dunrobin Road is a designated truck route, allowing full loads between March Road and Thomas A. Dolan Parkway and restricted loads north of Thomas A. Dolan Parkway.

Invention Boulevard is an urban roadway that generally runs on an east-west alignment. Invention Boulevard is classified as a collector roadway from March Road to Leone Farrell Street/Galarneau Way, and a local roadway from Leone Farrell Street/Galarneau Way to Elsie MacGill Walk. Within the study area, Invention Boulevard has a two-lane undivided urban cross-section with a pathway on the north side and a sidewalk on the south side, and an unposted regulatory speed limit of 50 km/h. Invention Boulevard is not a designated truck route.

Terry Fox Drive is an arterial roadway from March Road to Eagleson Road, and a major collector roadway from March Road to Herzberg Road. The roadway is considered to run on a north-south alignment from Eagleson Road to Huntsville Drive and from south of March Valley Road and Herzberg Road, and on an east-west alignment from north of Huntsville Drive to March Valley Road. Within the study area and west of Innovation Drive/Flamborough Way to Richardson Side Road, Terry Fox Drive has a two-lane undivided cross-section that is curbed on one side and rural on the other, includes bike lanes and a MUP. The posted speed limit is 60 km/h (from March Road to St. Isabel School) and 80 km/h (from St. Isabel School to Richardson Side Road). East of March Road, Terry Fox Drive has a two-lane urban cross-section that is primarily divided, with bike lanes, and a posted speed limit of 50 km/h. Terry Fox Drive is a designated truck route, allowing full loads west of March Road and restricted loads east of March Road.

Carling Avenue is an arterial roadway that generally runs on an east-west alignment within the urban area from March Road to Bronson Avenue. Within the study area, Carling Avenue has a two-lane undivided rural cross-section, bike lanes or paved shoulders, and a posted speed limit of 60 km/h. Carling Avenue is a designated truck route, allowing restricted loads.

Station Road is a dead-end local roadway that generally runs on an east-west alignment, starting at March Road and terminating approximately 500m west of March Road. Station Road has a two-lane undivided rural cross-section and an unposted speed limit of 50 km/h. Station Road is not a designated truck route.

Flamborough Way is an urban collector roadway that generally runs on a north-south alignment from Halton Terrace to Terry Fox Drive. Flamborough Way has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. Flamborough Way is not a designated truck route.

Innovation Drive is an urban collector roadway that runs on a curvilinear alignment from Terry Fox Drive to Hines Road. Innovation Drive has a two-lane undivided urban cross-section and an unposted speed limit of 50 km/h. Innovation Drive is not a designated truck route.

March Valley Road is an urban collector roadway within the urban boundary that generally runs on a north-south alignment from Cameron Harvey Drive to Terry Fox Drive. March Valley Road has a two-lane undivided rural cross-section and posted a speed limit of 50 km/h for the first 850m north of Terry Fox Drive. The posted speed limit to the north is 70 km/h. March Valley Road is not a designated truck route.

Herzberg Road is an urban major collector roadway that generally runs on a north-south alignment from Terry Fox Drive to March Road. Between March Road and Legget Drive, Herzberg Road has a two-lane undivided urban cross-section, cycle tracks, and a posted speed limit of 50 km/h. Between Legget Drive and Terry Fox Drive, Herzberg Road has a two-lane divided urban cross-section, bike lanes, and a posted speed limit of 50 km/h. Herzberg Road is a designated truck route, allowing restricted loads.

2.1.2 Roadways Within 1.5 km Radius

Marchurst Road is a collector roadway that generally runs on a north-south alignment from March Road to Thomas A. Dolan Parkway, continuing north of Thomas A. Dolan Parkway as Ridgetop Road. Within the study area, Marchurst Road has a two-lane undivided rural cross-section, and a posted speed limit of 70 km/h. Marchurst Road is not a designated truck route.

Landel Drive is a roadway that runs on a curvilinear alignment. Landel Drive is classified as a collector roadway from Marchvale Drive to Maley Lane, and a local roadway south of Maley Lane. Landel Drive has a two-lane undivided rural cross-section, and an unposted regulatory speed limit of 50 km/h. Landel Drive is not a designated truck route.

Maley Lane is a roadway that generally runs on an east-west alignment. Maley Lane is classified as a collector roadway from Old Second Line Road to Landel Drive, and a local roadway from Landel Drive to Marchvale Drive. Maley Lane has a two-lane undivided rural cross-section, and a posted speed limit of 50 km/h. Maley Lane is not a designated truck route.

Kerwin Road is a collector roadway that runs on a curvilinear alignment from Dunrobin Road to Fifth Line Road. The roadway continues north as Fifth Line Road. Kerwin Road has a two-lane undivided rural cross-section, and a posted speed limit of 60 km/h for 1.2 km east of Dunrobin Road. The posted speed limit is 70 km/h further east. Kerwin Road is not a designated truck route.

Cameron Harvey Drive is a collector roadway that generally runs on an east-west alignment from Dunrobin Road to Sixth Line Road. Cameron Harvey Drive has a two-lane undivided rural cross-section and a posted speed limit of 60 km/h. Cameron Harvey Drive is a designated truck route, allowing restricted loads.

Halton Terrace is an urban collector roadway that runs from March Road to Flamborough Way. The roadway is considered to run on an east-west alignment between March Road and Goward Drive, before transitioning to a north-south alignment between Goward Drive and Brady Avenue, and returning to a generally east-west alignment between Brady Avenue and Flamborough Way. Within the study area, Halton Terrace has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. Halton Terrace is not a designated truck route.

Maxwell Bridge Road is a collector roadway from March Road to Marconi Avenue, and a local roadway from Marconi Avenue to Celtic Ridge Crescent. The roadway generally runs on an east-west alignment. Maxwell Bridge Road has a two-lane undivided urban cross-section and an unposted speed limit of 50 km/h. Maxwell Bridge Road is not a designated truck route.

Marconi Avenue is a collector roadway from Maxwell Bridge Road to Shirley's Brook Drive, and a local roadway north of Maxwell Bridge Road. The roadway generally runs on a north-south alignment. Marconi Avenue has a two-lane undivided urban cross-section and an unposted speed limit of 50 km/h. Marconi Avenue is not a designated truck route.

Klondike Road is a collector roadway that generally runs on an east-west alignment from Old Second Line Road to March Valley Road. West of March Road, Klondike Road has a two-lane urban cross-section that is primarily undivided, and has a posted speed limit of 50 km/h. East of March Road and west of Sandhill Road, Klondike Road has a two-lane undivided rural cross-section, a MUP on the south side of the roadway, and a posted speed limit of 50 km/h (except for a 40 km/h school zone at South March Public School). East of Sandhill Road, Klondike Road has a two-lane undivided cross-section. The posted speed limit is 50 km/h west of The Marshes Golf Club and 70 km/h to the east. Klondike Road is not a designated truck route.

Sandhill Drive is an urban collector roadway that generally runs on a north-south alignment from Klondike Road to Shirley's Brook Drive. Sandhill Drive has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. Sandhill Drive is not a designated truck route.

Brady Avenue is an urban collector roadway that generally runs on an east-west alignment from Old Second Line Road to Halton Terrace. Brady Avenue has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. Brady Avenue is not a designated truck route.

Morgan's Grant Way is an urban collector roadway that generally runs on an east-west alignment from Flamborough Way and March Road. Morgan's Grant Way has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. Morgan's Grant Way is not a designated truck route.

Shirley's Brook Drive is an urban collector roadway that generally runs on a curvilinear alignment from March Road to Helmsdale Drive. Within the study area, Shirley's Brook Drive has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. Shirley's Brook Drive is not a designated truck route.

McKinley Drive is an urban collector roadway that generally runs on a north-south alignment from Shirley's Brook Drive to Terry Fox Drive. McKinley Drive has a two-lane undivided urban cross-section and a posted speed limit of 40 km/h. McKinley Drive is not a designated truck route.

Helmsdale Drive is an urban collector roadway that generally runs on an east-west alignment from Shirley's Brook Drive to Terry Fox Drive. Helmsdale Drive has a two-lane undivided urban cross-section and an unposted speed limit of 50 km/h. Helmsdale Drive is not a designated truck route.

2.1.3 Other Roadways Within 5 km Radius

The following roadways have not been listed in the previous two sections, but are identified as arterial, major collector, and collector roadways that are within 5 km of the South March lands.

Arterial Roadways
Other arterial roadways within 5 km of the subject lands include the urban Campeau Drive.

Major Collector Roadways
Other major collector roadways within 5 km of the subject lands are Goulbourn Forced Road, Kanata Avenue, and Teron Road.

Collector Roadways
Other collector roadways within 5 km of the subject lands are Glenncastle Drive, Robertlee Drive, John Aselford Driveway, Murphy Side Road, Fifth Line Road, Sixth Line Road, Berry Side Road, Leone Farrell Street, Hines Road, Legget Drive, Solandt Road, McGee Side Road, Oak Creek Road, Bradley Side Road, Richardson Side Road, Walden Drive, Keyrock Drive, Stikine Drive, Goldridge Drive, Weslock Way, Knudson Drive, Beaverbrook Road, Penfield Drive, Varley Drive, Leacock Drive, and The Parkway.

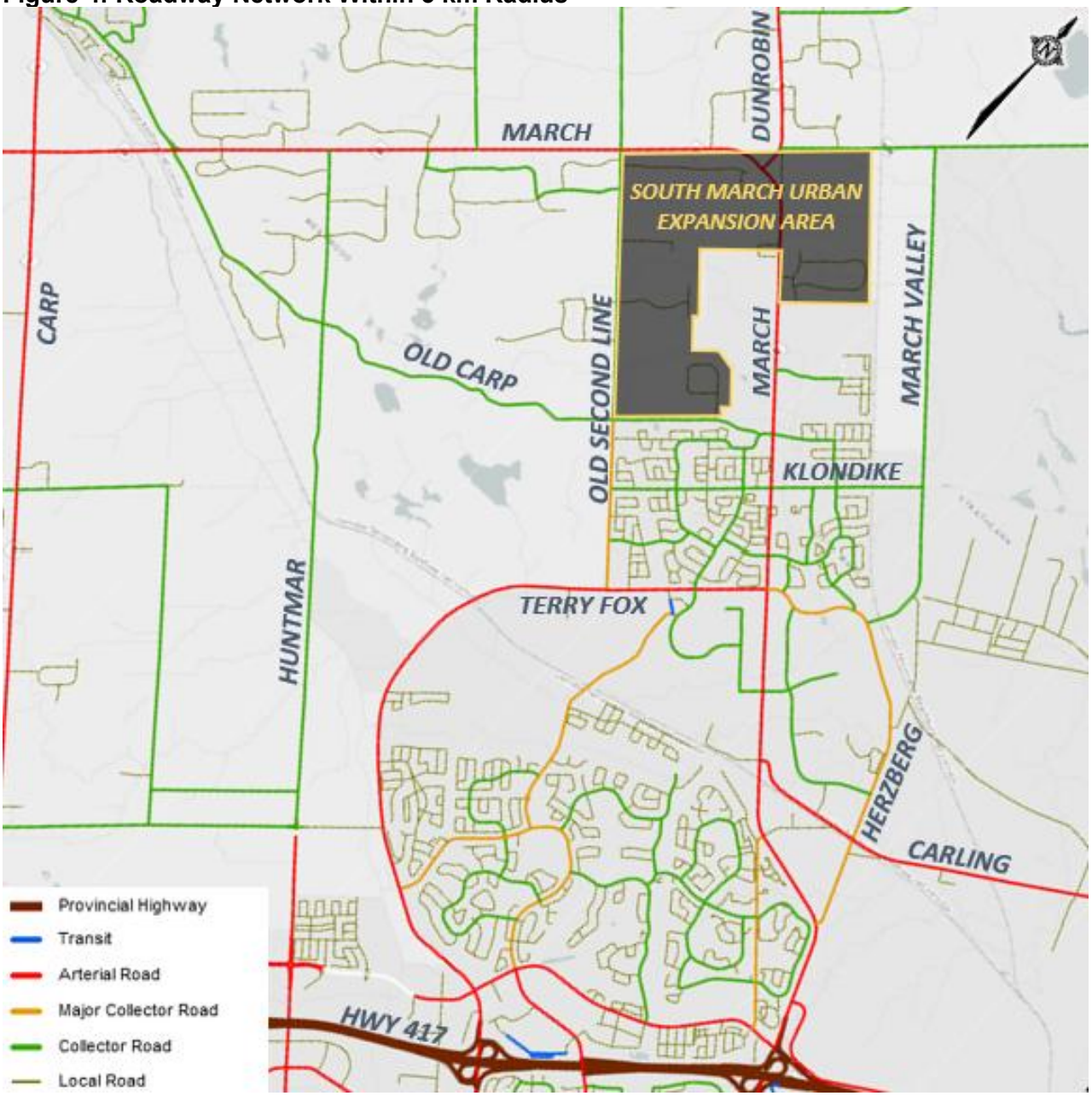
Local Roadways
A comprehensive list of local roadways within 5 km of the subject lands has not been included in this assessment, due to its length – there are many local roadways.

The local roadways that are located within the immediate vicinity of the subject lands include Monaghan Lane, Wild Acre Lane, Panandrick View Drive, Nadia Lane, Campbell Reid Court, Murphy Court, Maxwell Road, Hedge Drive, and Houston Crescent.

A map outlining the roadway network within 1.5 km of the subject site is shown in **Figure 3**. A map outlining the roadway network within 5 km of the subject site is shown in **Figure 4**.

Figure 3: Roadway Network Within 1.5 km Radius

Figure 4: Roadway Network Within 5 km Radius



2.2 Study Area Intersections

Lane configurations and aerials of the study area intersections are included in this section. It is noted that some intersections within the urban boundary include roadways with a rural cross-section including March Road/Invention Boulevard, Terry Fox Drive/Old Second Line Road, Terry Fox Drive/Flamborough Way/Innovation Drive, and Herzberg Road/Carling Avenue.

1. March Road/Donald B. Munro Drive/Old Carp Road

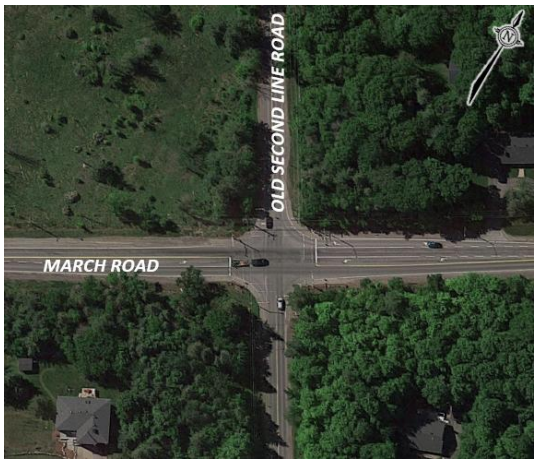
- Unsignalized four-legged intersection
- Stop-controlled on north/south approaches
- North Approach (Donald B. Munro Drive):
  one shared left turn/through/right turn lane
- South Approach (Old Carp Road):
  one shared left turn/through/right turn lane
- East Approach (March Road):
  one shared left turn/through lane and one channelized right turn lane
- West Approach (March Road):
  one shared left turn/through/right turn lane

2. March Road/Huntmar Drive

- Unsignalized three-legged intersection
- Stop-controlled on south approach
- South Approach (Huntmar Drive):
  one shared left turn/right turn lane
- East Approach (March Road):
  one shared left turn/through lane
- West Approach (March Road):
  one shared through/right turn lane

3. March Road/Old Second Line Road

- Signalized four-legged intersection
- North Approach (Old Second Line Road):
  one shared left turn/through/right turn lane
- South Approach (Old Second Line Road):
  one shared left turn/through/right turn lane
- East Approach (March Road):
  one left turn lane, one through lane, and one right turn lane
- West Approach (March Road):
  one left turn lane and one shared through/right turn lane
- Standard crosswalks on all approaches



4. March Road/Dunrobin Road

- Signalized three-legged intersection
- North Approach (Dunrobin Road):
  one left turn lane and one shared left turn/right turn lane
- East Approach (March Road):
  one through lane and one right turn lane
- West Approach (March Road):
  one left turn lane and one through lane
- No crosswalks, but pedestrian signal heads are provided to cross north and west approaches

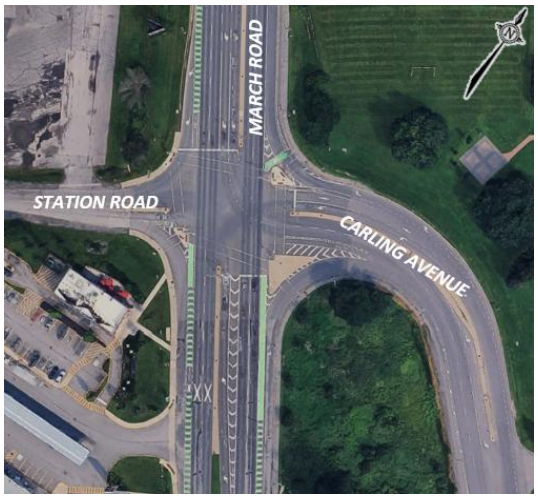
5. March Road/Invention Boulevard

- Unsignalized three-legged intersection
- Stop-controlled on east approach
- North Approach (March Road):
  one shared left turn/through lane
- South Approach (March Road):
  one shared through/right turn lane
- East Approach (Invention Boulevard):
  one shared left turn/right turn lane

6. March Road/Terry Fox Drive

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

7. March Road/Carling Avenue/Station Road



- Signalized four-legged intersection
- North Approach (March Road):
  two left turn lanes, two through lanes, one bike lane, and one right turn lane
- South Approach (March Road):
  one left turn lane, two through lanes, one bike lane, and one channelized right turn lane
- East Approach (Carling Avenue):
  one left turn lane, one through lane, one bike lane, and one channelized right turn lane
- West Approach (Station Road):
  one shared left turn/through lane, one bike lane, and one channelized right turn lane
- Standard crosswalks on all approaches

8. Huntmar Drive/Old Carp Road

- Unsignalized four-legged intersection
- All-way stop-controlled
- North Approach (Huntmar Drive):
  one shared left turn/through/right turn lane
- South Approach (Huntmar Drive):
  one shared left turn/through/right turn lane
- East Approach (Old Carp Road):
  one shared left turn/through/right turn lane
- West Approach (Old Carp Road):
  one shared left turn/through/right turn lane

9. Terry Fox Drive/Old Second Line Road

- Signalized and protected four-legged intersection
- North Approach (Old Second Line Road):
  one left turn lane and one shared through/right turn lane
- South Approach (Kanata Highlands School):
  one left turn lane and one shared through/right turn lane
- East Approach (Terry Fox Drive):
  one left turn lane, one through lane, one bike lane, and one right turn lane
- West Approach (Terry Fox Drive):
  one left turn lane, one through lane, one bike lane, and one right turn lane
- Zebra-striped crosswalks and crossrides on all approaches

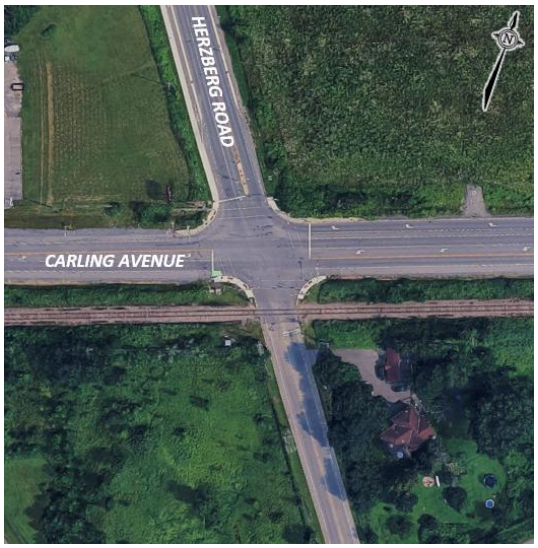
10. Terry Fox Drive/Flamborough Way/Innovation Drive

- Signalized four-legged intersection
- North Approach (Flamborough Way):
  one left turn lane and one shared through/right turn lane
- South Approach (Innovation Drive):
  one left turn lane and one shared through/right turn lane
- East Approach (Terry Fox Drive):
  one left turn lane, one through lane, one bike lane, and one right turn lane
- West Approach (Terry Fox Drive):
  one left turn lane, one through lane, one bike lane, and one right turn lane
- Standard crosswalks on all approaches

11. Terry Fox Drive/March Valley Road

- Unsignalized four-legged intersection
- Stop-controlled on north and south approaches
- North Approach (March Valley Road):
  one shared left turn/through/right turn lane
- South Approach (349 Terry Fox Drive):
  one shared left turn/through/right turn lane
- East Approach (Terry Fox Drive):
  one shared left turn/through/right turn lane and one bike lane
- West Approach (Terry Fox Drive):
  one shared left turn/through/right turn lane and one bike lane
- Standard crosswalk on north approach
- Pedestrian crossover (PXO) Type C on west approach

12. Herzberg Road/Carling Avenue



- Signalized four-legged intersection
- North Approach (Herzberg Road):
  one left turn lane, one shared through/right turn lane, and one bike lane
- South Approach (Herzberg Road):
  one shared left turn/through/right turn lane and one bike lane
- East Approach (Carling Avenue):
  one left turn lane, one through lane, one bike lane, and one right turn lane
- West Approach (Carling Avenue):
  one left turn lane, one shared through/right turn lane, and one bike lane (including two-stage bike box)
- Standard crosswalks on all approaches
- Rail crossing between crosswalk and stop bar on south approach

2.3 Transit

The Kanata North Business Park and established communities immediately south of the subject site are served by multiple existing bus routes operated by OC Transpo. These routes are shown in **Table 1**, and the stops served are shown in **Figure 5**. Routes 63 and 64 are the current bus routes that travel further north, reaching Maxwell Bridge Road and Halton Terrace. Route 303 is a rural route that operates on Wednesday and serves villages north of the study area (i.e. Dunrobin and Carp). An excerpt of the existing OC Transpo System Map is shown in **Figure 6**.

Table 1: OC Transpo Routes

Route	From ↔ To	Frequency
63	Innovation / Briarbrook ↔ Tunney's Pasture / Gatineau	15- to 30-minute headways, seven days per week; all day service (maximum of four buses per hour)
64	Innovation / Morgan's Grant ↔ Tunney's Pasture	15- to 30-minute headways, Monday to Friday; all day service (maximum of four buses per hour)
66	Kanata ↔ Tunney's Pasture / Gatineau	15- to 30-minute headways, Monday to Friday; peak period service (maximum of three buses per hour)
110	Innovation ↔ Fallowfield	30-minute headways, Monday to Friday; no late evening service (maximum of two buses per hour)
165	Innovation ↔ Terry Fox	60-minute headways, Monday to Friday; selected time periods (maximum of one bus per hour)
166	Innovation ↔ Eagleson	Single bus per peak period, Monday to Friday; limited service
303	Bayshore / Carlingwood ↔ Dunrobin / Carp / Stittsville	Single bus toward Ottawa in AM and toward villages in PM; Wednesday only

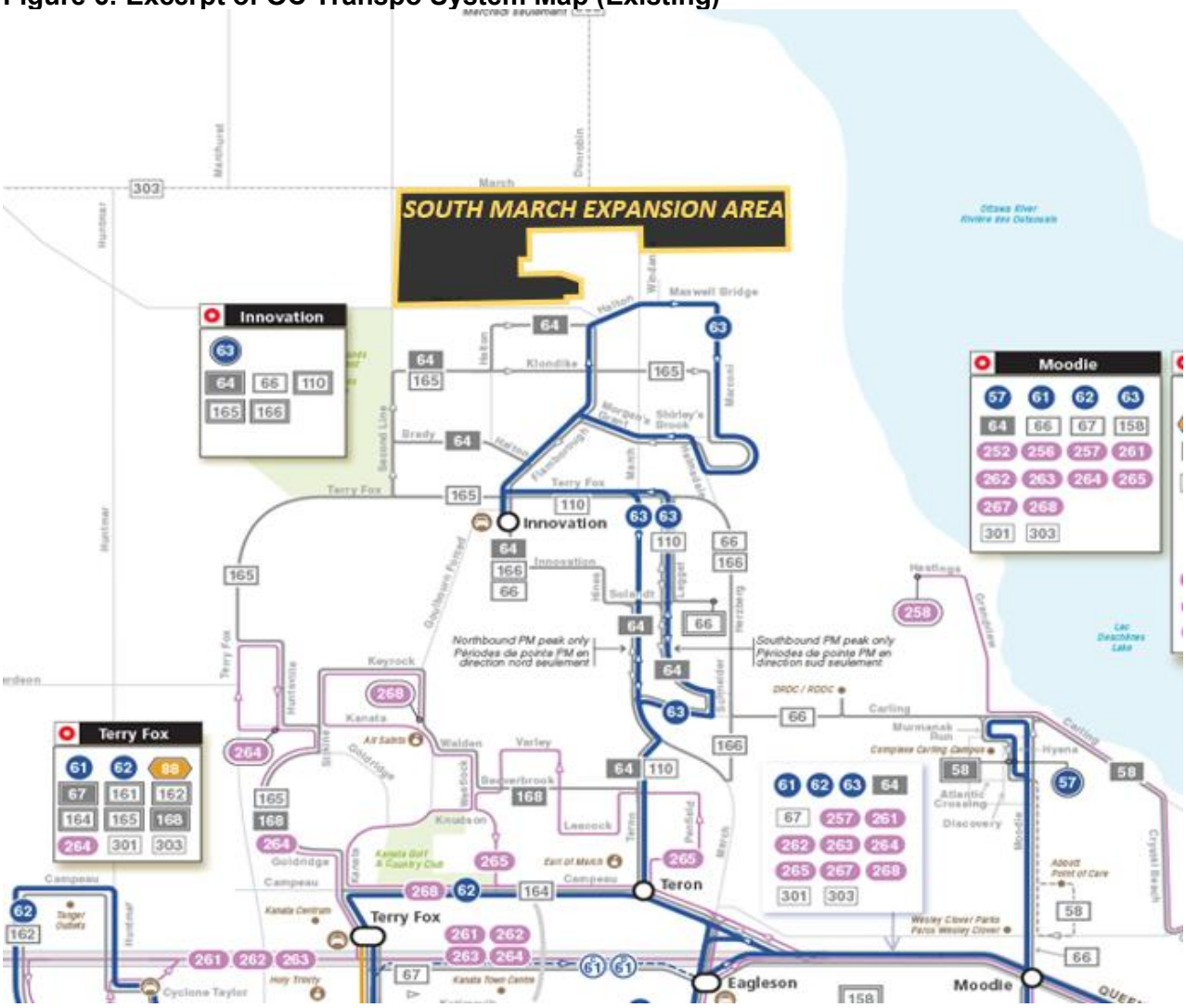
OC Transpo's future transit network (referred to as 'New Ways to Bus') will include changes to bus service within the study area. These changes are anticipated to be in effect prior to buildout of the subject lands. A summary of the changes identified in the City's 'New Ways to Bus' network (shown in **Figure 7**) is included as follows:

- Route 63
  - Service to/from Gatineau will be removed and replaced by Route 13;
  - Service along Shirley's Brook Drive, Helmsdale Drive, and Morgan's Grant Way will be replaced by Route 110, and service will instead run along Klondike Road and Halton Terrace.
- Route 64
  - Service will be removed and replaced with Routes 63 and 110.
- Route 66
  - Service will run between Innovation and Tunney's Pasture stations;
  - Service on Legget Drive and Solandt Road will be removed.
- Route 110
  - Service will run between Innovation and Limebank stations;
  - Service between Fallowfield Station and CitiGate will be replaced by Route 70;
  - Route will be adjusted to replace Routes 63 and 64 (running along Shirley's Brook Drive, Helmsdale Drive, Morgan's Grant Way, and Halton Terrace).
- Route 165
  - Service will be removed north of Terry Fox Drive.
- Route 166
  - Service will be removed and replaced with Routes 63, 66, and 110.

Bus services are reassessed regularly and are revised to reflect the transit demand at that time. Although the current and proposed transit routes are presented, it is not known what will actually exist at the time that the subject lands are built out.

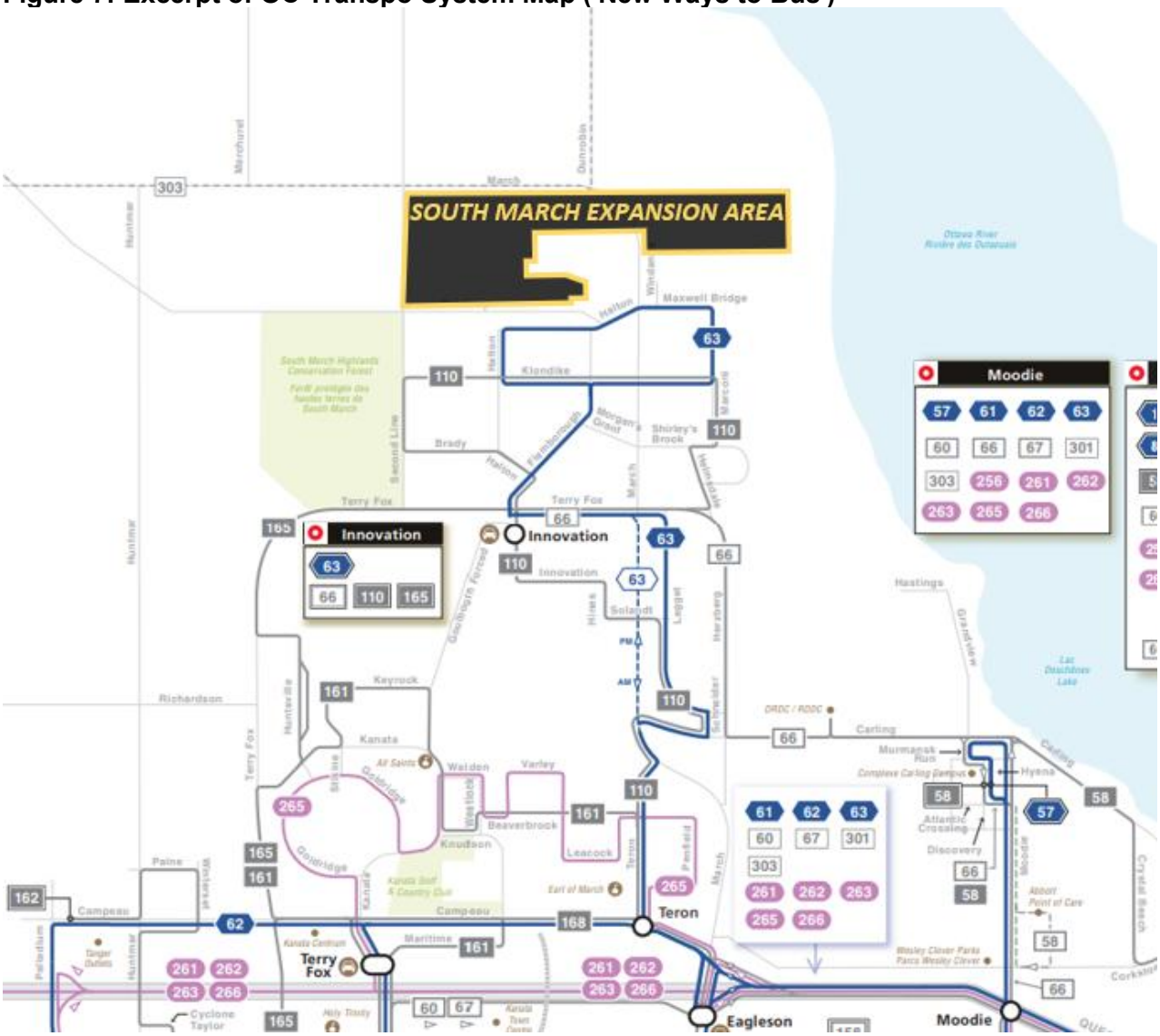
Figure 5: Existing Bus Stop Locations

Figure 6: Excerpt of OC Transpo System Map (Existing)



Source: OC Transpo Network Map (Jan 2025)

Figure 7: Excerpt of OC Transpo System Map ('New Ways to Bus')



Source: OC Transpo Network Map (Mar 2025)

2.4 Active Transportation – Pedestrian and Cycling Facilities

Sidewalks or pathways are provided on at least one side of many roadways south of Old Carp Road or Halton Terrace/Maxwell Bridge Road. Bike lanes are provided on March Road south of Halton Terrace/Maxwell Bridge Road. Paved shoulders are provided on March Road north of Halton Terrace/Maxwell Bridge Road to Murphy Court. Paved shoulders and a MUP are provided on Old Second Line Road south of Klondike Road.

An off-road Community Cycling Route is provided along the Hydro corridor east of Old Second Line Road between Old Carp Road and Terry Fox Drive. An extensive MUP network exists within the South March Highlands Conservation Forest, which is bound by Old Carp Road to the north, Terry Fox Drive to the south, Old Second Line Road to the east, and Huntmar Drive to the west.

Maps showing the existing pedestrian and cycling facilities are included in **Figure 8** and **Figure 9**.

Figure 8: Existing Pedestrian Facilities

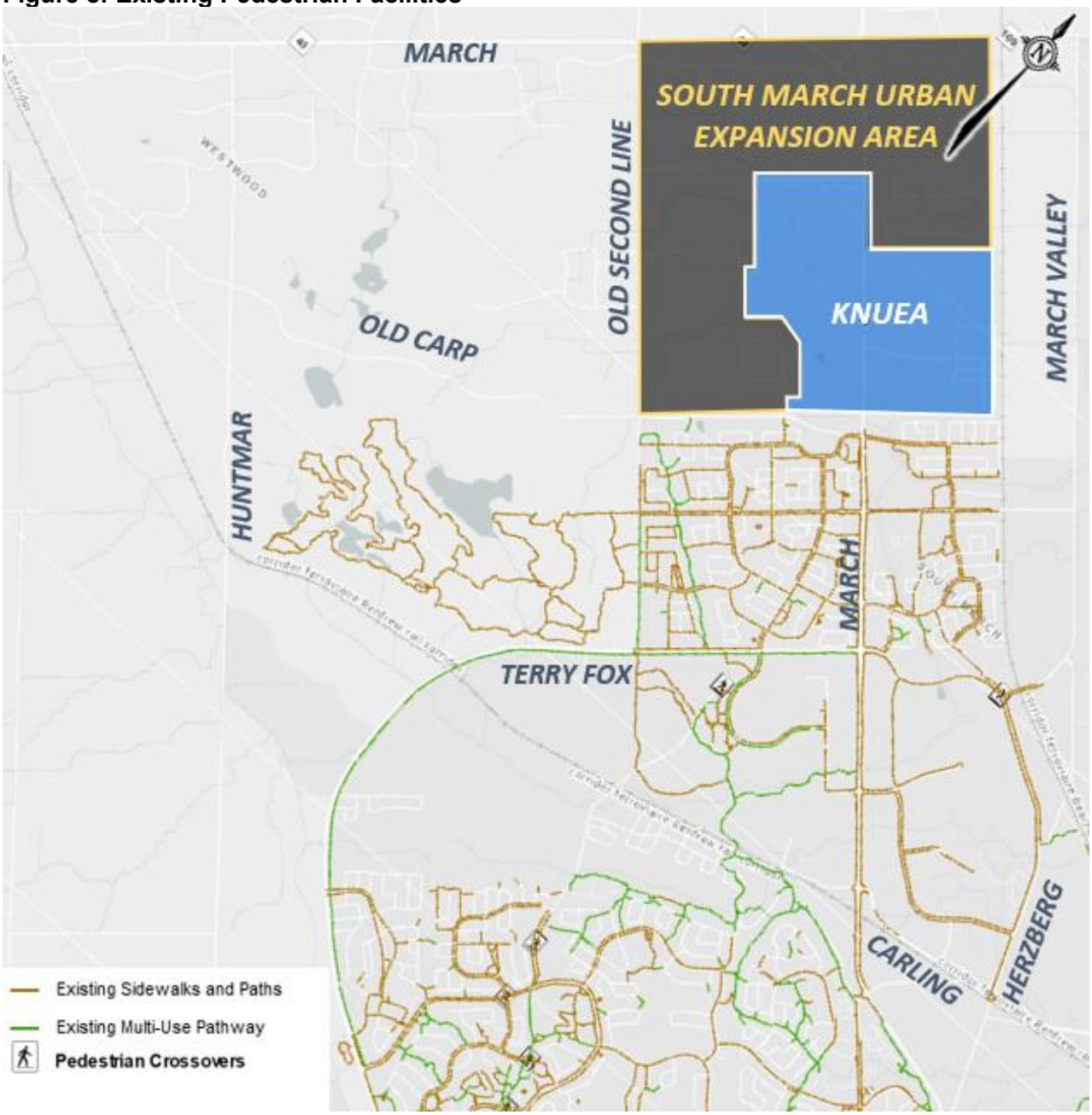
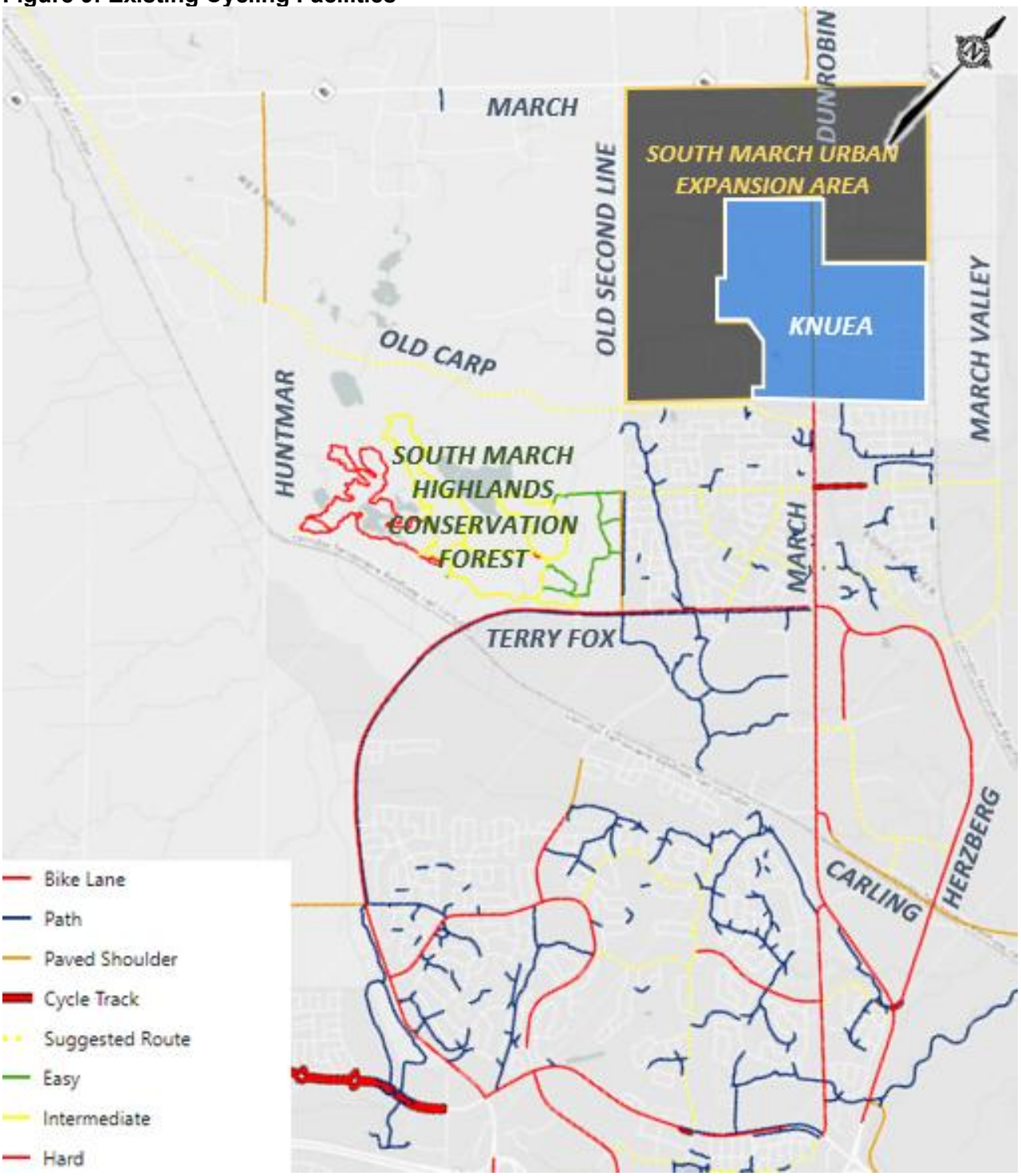


Figure 9: Existing Cycling Facilities



2.5 Traffic Volumes

Weekday traffic counts completed by the City of Ottawa or coordinated by Novatech have been used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. As the community accessed via Invention Boulevard is developing at the time of writing, north/south through traffic volumes at March Road/Invention Boulevard have been estimated using count data at March Road/Halton Terrace/Maxwell Bridge Road, and turning volumes have been estimated based on the TIA prepared in support of the residential development at 936 March Road (CGH Transportation, April 2020). For the purposes of this existing traffic volumes review, it has been assumed that approximately 20% of the residences have been constructed.

The traffic counts were completed on the following dates.

• March Road/Donald B. Munro Drive/Old Carp Road	July 30, 2024	(City)
• March Road/Huntmar Drive	January 30, 2025	(Nova)
• March Road/Old Second Line Road	January 30, 2025	(Nova)
• March Road/Dunrobin Road	April 3, 2024	(City)
• March Road/Halton Terrace/Maxwell Bridge Road	March 4, 2020	(City)
• March Road/Terry Fox Drive	February 29, 2024	(City)
• March Road/Carling Avenue/Station Road	August 28, 2024	(City)
• Huntmar Drive/Old Carp Road	January 30, 2025	(Nova)
• Terry Fox Drive/Old Second Line Road	January 30, 2025	(Nova)
	April 11, 2018	(City)
• Terry Fox Drive/Flamborough Way/Innovation Drive	February 14, 2024	(City)
• Terry Fox Drive/March Valley Road	March 9, 2023	(City)
• Herzberg Road/Carling Avenue	March 10, 2020	(City)

Peak hour traffic count data for the above intersections is included in **Appendix D**. Vehicular traffic volumes within the study area are shown in **Figure 10**, and cyclist/pedestrian volumes within the study area are shown in **Figure 11**.

2.6 Collision Records

Historical collision data was obtained from the City's Public Works and Service Department for the study area intersections, plus midblock segments of March Road, Old Carp Road, Huntmar Drive, Old Second Line Road, Terry Fox Drive, and Herzberg Road. 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 2**.

Figure 10: Existing Traffic Volumes

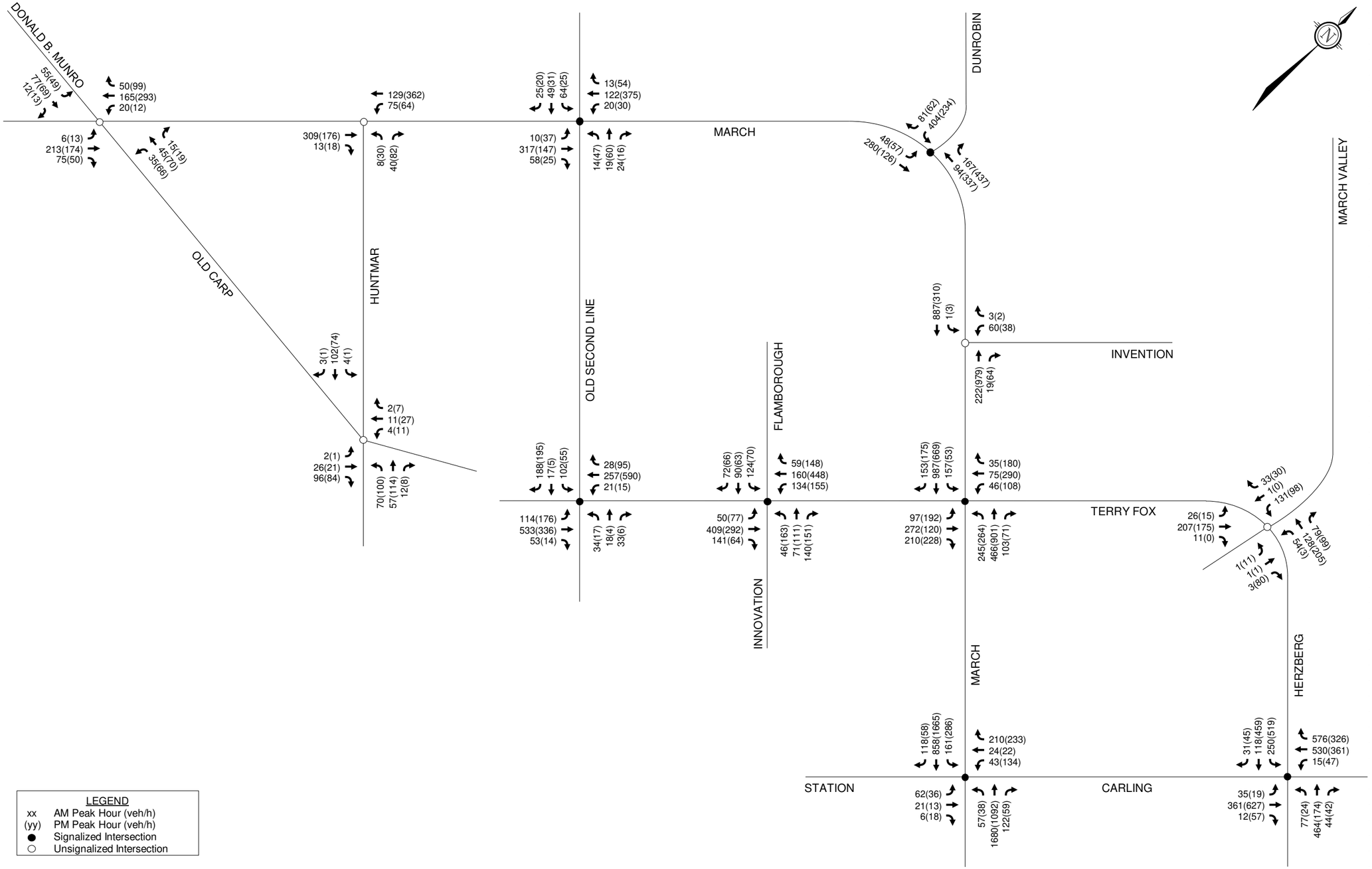


Figure 11: Existing Cyclist/Pedestrian Volumes

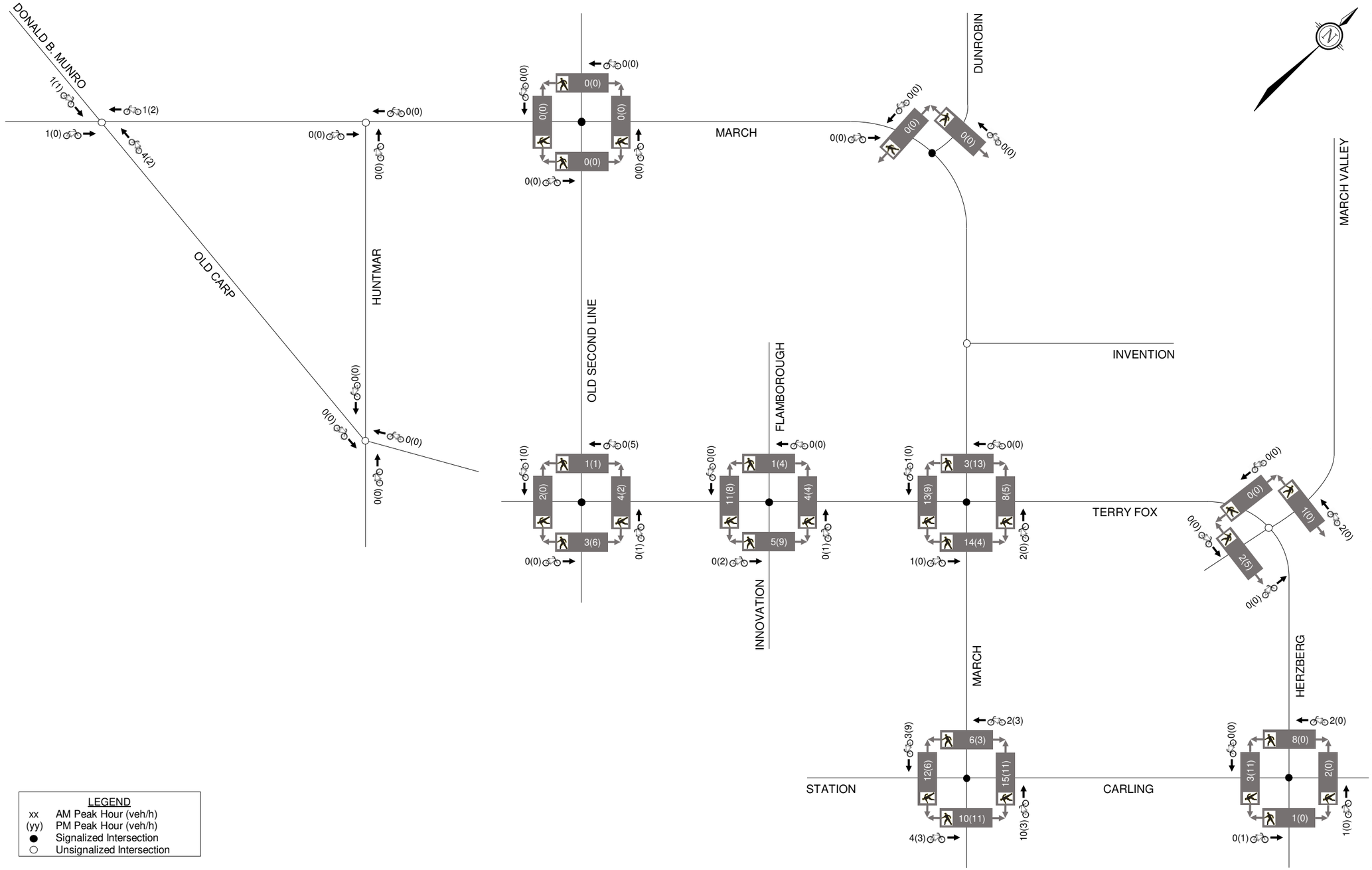


Table 2: Reported Collisions

Location	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning	SMV[1]/ Other	
Intersections							
March Rd/ Donald B. Munro Dr/Old Carp Rd	-	10	-	-	-	-	**10**
March Rd/ Huntmar Dr	-	2	1	-	1	-	**4**
March Rd/ Old Second Line Rd	-	3	2	-	2	2	**9**
March Rd/ Dunrobin Rd	-	3	6	3	4	1	**17**
March Rd/ Terry Fox Dr	1	2	18	5	2	5	**33**
March Rd/ Carling Ave/Station Rd	1	2	18	4	4	3	**32**
Huntmar Dr/ Old Carp Rd	-	-	-	-	-	-	**0**
Terry Fox Dr/ Old Second Line Rd	-	-	14	-	-	2	**16**
Terry Fox Dr/ Flamborough Way/Innovation Dr	-	4	6	-	2	2	**14**
Terry Fox Dr/ March Valley Rd	1	-	1	-	-	1	**3**
Herzberg Rd/ Carling Ave	-	2	8	1	6	1	**18**
Street Segments							
March Rd between Old Carp Rd & Huntmar Dr	-	-	-	-	-	19	**19**
March Rd between Huntmar Dr & Old Second Line Rd	2	-	-	-	-	10	**12**
March Rd between Old Second Line Rd & Dunrobin Rd	-	-	-	-	-	8	**8**
March Rd between Dunrobin Rd & Terry Fox Dr	1	1	12	7	1	35	**57**
March Rd between Terry Fox Dr & Carling Ave	-	-	13	5	2	10	**30**
Old Carp Rd between March Rd & Huntmar Dr	1	-	2	-	-	3	**6**
Huntmar Dr between March Rd & Old Carp Rd	-	-	-	-	-	5	**5**
Old Second Line Rd between March Rd & Terry Fox Dr	-	-	1	-	-	12	**13**
Terry Fox Dr between Old Second Line Rd & March Valley Rd	-	2	6	1	2	8	**19**
Terry Fox Dr between March Valley Rd and Herzberg Rd	-	-	-	-	1	1	**2**
Herzberg Rd between Terry Fox Dr & Carling Ave	-	-	3	-	3	4	**10**

1. SMV = Single Motor Vehicle

March Road/Donald B. Munro Drive/Old Carp Road
A total of ten collisions were reported at this intersection over the last five years, all of which were angle impacts. Three collisions resulted in non-fatal injuries. Four of the ten collisions (40%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the ten angle impacts, one involved a northbound vehicle and an eastbound vehicle, four involved a northbound vehicle and a westbound vehicle, three involved a southbound vehicle and an eastbound vehicle, and two involved a southbound vehicle and a westbound vehicle. No collision patterns are identified.

March Road/Huntmar Drive
A total of four collisions were reported at this intersection over the last five years, consisting of two angle impacts, one rear-end impact, and one turning movement impact. One collision resulted in non-fatal injuries. One of the four collisions (25%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

March Road/Old Second Line Road
A total of nine collisions were reported at this intersection over the last five years, consisting of three angle impacts, two rear-end impacts, two turning movement impacts, and two single vehicle/other impacts. Two collisions resulted in non-fatal injuries. Two of the nine collisions (22%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

March Road/Dunrobin Road
A total of 17 collisions were reported at this intersection over the last five years, consisting of three angle impacts, six rear-end impacts, three sideswipe impacts, four turning movement impacts, and one single vehicle/other impact. Three collisions resulted in non-fatal injuries. Seven of the 17 collisions (41%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

March Road/Terry Fox Drive
A total of 33 collisions were reported at this intersection over the last five years, consisting of one approaching impact, two angle impacts, 18 rear-end impacts, five sideswipe impacts, two turning movement impacts, and five single vehicle/other impacts. Eight collisions resulted in non-fatal injuries. Seventeen of the 33 collisions (52%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the 18 rear-end impacts, ten involved northbound vehicles, six involved southbound vehicles, one involved eastbound vehicles, and one involved westbound vehicles. The number of rear-end impacts at the northbound approach meets the threshold to be considered a collision pattern. High traffic volumes and a posted speed limit of 80 km/h are possible factors for this type of collision. U-turns for northbound vehicles accessing properties southwest of the intersection may be a factor.

March Road/Carling Avenue/Station Road
A total of 32 collisions were reported at this intersection over the last five years, consisting of one approaching impact, two angle impacts, 18 rear-end impacts, four sideswipe impacts, four turning movement impacts, and three single vehicle/other impacts. Four collisions resulted in non-fatal injuries. Fourteen of the 32 collisions (44%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the 18 rear-end impacts, three involved northbound vehicles, seven involved southbound vehicles, and eight involved westbound vehicles. The number of rear-end impacts at the southbound and westbound approaches meet the threshold to be considered a collision pattern. High traffic volumes on March Road and Carling Avenue, and posted speed limits of 80 km/h on March Road and 60 km/h on Carling Avenue, are possible factors for this type of collision. The curvature and eastbound receiving lane drop on Carling Avenue in proximity of the intersection, as well as westbound right turning vehicles merging onto March Road may be other possible factors.

Huntmar Drive/Old Carp Road
There were no collisions reported at this intersection in the last five years.

Terry Fox Drive/Old Second Line Road
A total of 16 collisions were reported at this intersection over the last five years, consisting of 14 rear-end impacts and two single vehicle/other impacts. Two collisions resulted in non-fatal injuries. Seven of the 16 collisions (44%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the 14 rear-end impacts, one involved northbound vehicles, two involved southbound vehicles, four involved eastbound vehicles, and seven involved westbound vehicles. The number of rear-end impacts at the westbound approach meets the threshold to be considered a collision pattern. High traffic volumes on Terry Fox Drive are possible factors for this type of collision. There are no apparent geometric factors to make westbound rear-end impacts more likely at this intersection.

Terry Fox Drive/Flamborough Way/Innovation Drive
A total of 14 collisions were reported at this intersection over the last five years, consisting of four angle impacts, six rear-end impacts, two turning movement impacts, and two single vehicle/other impacts. Four collisions resulted in non-fatal injuries. Six of the 14 collisions (43%) occurred in poor driving conditions. One angle collision involved a cyclist, resulting in non-fatal injuries. One single vehicle collision involved a pedestrian, but did not result in injuries.

Terry Fox Drive/March Valley Road
A total of three collisions were reported at this intersection over the last five years, consisting of one approaching impact, one rear-end impact, and one single vehicle/other impact. No collisions resulted in injuries. Two of the three collisions (67%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Herzberg Road/Carling Avenue
A total of 18 collisions were reported at this intersection over the last five years, consisting of two angle impacts, eight rear-end impacts, one sideswipe impact, six turning movement impacts, and one single vehicle/other impact. Six collisions resulted in non-fatal injuries. Ten of the 18 collisions (55%) occurred in poor driving conditions. Three turning movement collisions involved cyclists. No collisions involved pedestrians.

Of the eight rear-end impacts, two involved northbound vehicles, one involved southbound vehicles, and five involved eastbound vehicles.

Of the six turning movement impacts, one involved a southbound vehicle turning left into an oncoming northbound vehicle, two involved a westbound vehicle turning left into an oncoming eastbound vehicle, two involved an eastbound vehicle turning right into an eastbound cyclist travelling through, and one involved a westbound vehicle turning left into an eastbound cyclist travelling through. Carling Avenue has a posted speed limit of 60 km/h.

Midblock segments of March Road between Old Carp Road and Huntmar Drive
A total of 19 collisions were reported along these midblock segments over the last five years, all of which were single vehicle/other impacts. Two collisions resulted in non-fatal injuries. Sixteen of the 19 collisions (84%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians. A majority of these collisions (13 of 19, or 68%) involved animal strikes.

Midblock segments of March Road between Huntmar Drive and Old Second Line Road
A total of 12 collisions were reported along these midblock segments over the last five years, consisting of two approaching impacts and ten single vehicle/other impacts. One collision resulted in non-fatal injuries. Eleven of the 12 collisions (92%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians. A majority of the single vehicle collisions (9 of 10, or 90%) involved animal strikes.

Midblock segments of March Road between Old Second Line Road and Dunrobin Road
A total of eight collisions were reported along these midblock segments over the last five years, all of which were single vehicle/other impacts. No collisions resulted in injuries. Six of the eight collisions (75%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians. A majority of these collisions (7 of 8, or 88%) involved animal strikes.

Midblock segments of March Road between Dunrobin Road and Terry Fox Drive
A total of 57 collisions were reported along these midblock segments over the last five years, consisting of one approaching impact, one angle impact, 12 rear-end impacts, seven sideswipe impacts, one turning movement impact, and 35 single vehicle/other impacts. Three collisions resulted in non-fatal injuries. Forty-one of the 57 collisions (72%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the 12 rear-end impacts, six involved northbound vehicles and six involved southbound vehicles. Of the seven sideswipe impacts, four involved northbound vehicles and three involved southbound vehicles.

Of the 35 single vehicle/other impacts, a majority (25 of 35, or 71%) involved animal strikes. The remaining impacts include seven instances of skidding, sliding, or running off the road/striking a curb, one involved an unattended vehicle, one involved a rollover, and one was not classified.

Midblock segments of March Road between Terry Fox Drive and Carling Avenue/Station Road
A total of 30 collisions were reported along these midblock segments over the last five years, consisting of 13 rear-end impacts, five sideswipe impacts, two turning movement impacts, and ten single vehicle/other impacts. Six collisions resulted in non-fatal injuries. Seventeen of the 30 collisions (57%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Of the 13 rear-end impacts, eight involved northbound vehicles and five involved southbound vehicles. The number of rear-end impacts in the northbound direction meets the threshold to be considered a collision pattern. High traffic volumes and speeds on March Road are possible factors in the frequency of rear-end collisions on March Road.

Of the ten single vehicle/other impacts, five (50%) involved animal strikes. The remaining impacts include three instances of skidding, sliding, or striking a curb, one involved impacting a pole, and one involved debris on the road.

Midblock segments of Old Carp Road between March Road and Huntmar Drive
A total of six collisions were reported along these segments over the last five years, consisting of one approaching impact, two rear-end impacts, and three single vehicle/other impacts. One collision resulted in non-fatal injuries. All six collisions (100%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Midblock segments of Huntmar Drive between March Road and Old Carp Road
A total of five collisions were reported along these segments over the last five years, all of which were single vehicle/other impacts. No collisions resulted in injuries. Three of the five collisions (60%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Midblock segments of Old Second Line Road between March Road and Terry Fox Drive
A total of 13 collisions were reported along these segments over the last five years, consisting of one rear-end impact and 12 single vehicle/other impacts. One collision resulted in non-fatal injuries. Twelve of the 13 collisions (92%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians. A majority of the single vehicle collisions (10 of 12, or 83%) involved animal strikes.

Midblock segments of Terry Fox Drive between Old Second Line Road and March Valley Road
A total of 19 collisions were reported along these segments over the last five years, consisting of two angle impacts, six rear-end impacts, one sideswipe impact, two turning movement impacts, and eight single vehicle/other impacts. Seven collisions resulted in non-fatal injuries. Nine of the 19 collisions (47%) occurred in poor driving conditions. One collision involved a cyclist. No collisions involved pedestrians.

Of the eight single vehicle/other impacts, three (38%) involved animal strikes. The remaining five impacts include instances of skidding, sliding, or running off the road or into a curb.

Midblock segment of Terry Fox Drive between March Valley Road and Herzberg Road
A total of two collisions were reported along this segment over the last five years, consisting of one turning movement impact and one single vehicle/other impact. One collision resulted in non-fatal injuries. Neither collision occurred in poor driving conditions. One collision involved a cyclist. No collisions involved pedestrians.

Midblock segments of Herzberg Road between Terry Fox Drive and Carling Avenue
A total of ten collisions were reported along these segments over the last five years, consisting of three rear-end impacts, three turning movement impacts, and four single vehicle/other impacts. One collision resulted in non-fatal injuries. Five of the ten collisions (50%) occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

2.7 Screenline Analysis

A screenline is defined as an imaginary finite line that is crossed by a given number of traffic corridors, which is used to determine network capacity deficiencies at a macroscopic level. A strategic custom screenline has been developed for the study area, to analyze the existing directional peak hour traffic volumes entering and exiting the study area. The screenline established in this Revised Assessment per the Proposed TOR (dated December 15, 2024) generally follows the Renfrew Rail Corridor (crossing March Road, Huntmar Drive, and Terry Fox Drive), south of Carling Avenue (crossing March Road and Herzberg Road), and east of Herzberg Road (crossing Carling Avenue).

Traffic count information as shown in Section 2.5 has been used to estimate the existing peak hour LOS over the length of the screenline. Commercial vehicle volumes at the screenline have been accounted for by applying a factor of 1.16 (representing 5% heavy goods, 6% light goods) to the existing traffic volumes. The factored volumes are shown in Passenger Car Units (PCUs). The screenline operational standard is an LOS E, equating to a maximum v/c ratio of 1.00.

The assumed lane capacities of each roadway crossing the custom screenline correspond to the City's *TRANS Regional Model* (plots prepared in December 2024). In vehicles per hour per lane (vphpl), the following lane capacities have been considered in this analysis:

- March Road: 1,200 vphpl (west of Old Carp Road);
  1,000 vphpl (south of Carling Avenue);
- Huntmar Drive: 800 vphpl (south of Old Carp Road);
- Terry Fox Drive: 1,200 vphpl (west of Old Second Line Road);
- Herzberg Road: 800 vphpl (south of Carling Avenue);
- Carling Avenue: 1,200 vphpl (east of Herzberg Road).

The location of the screenline and the vehicular volumes crossing the screenline on the above roadways are shown in **Figure 12**. The existing volumes and LOS at the screenline during the AM and PM peak hours is included in **Table 3**.

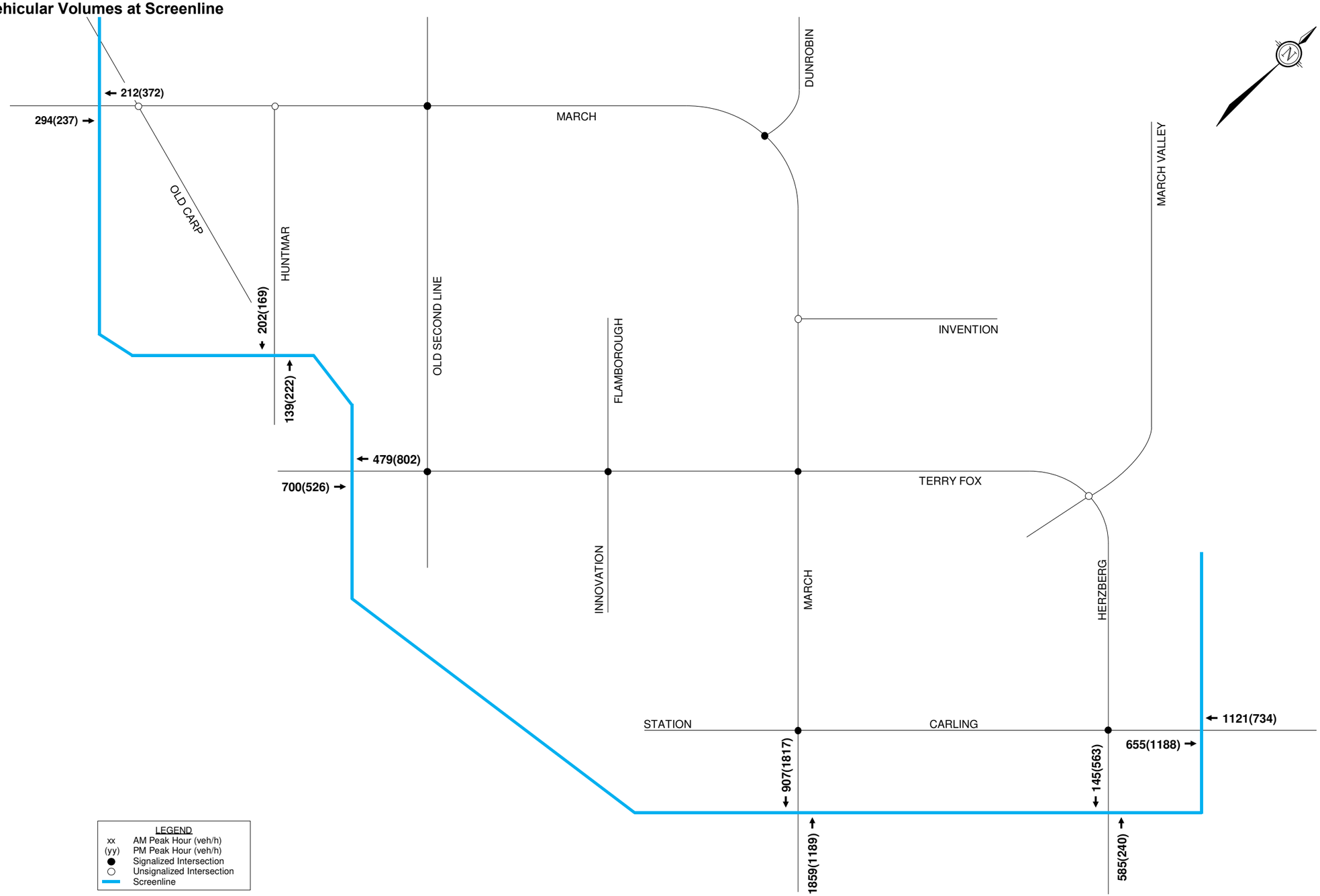
Table 3: Existing Screenline Performance

Roadway	Capacity (vph)(1)	Directional Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		AM	PM	AM	PM	AM	PM	AM	PM
March Road (W)	1,200	294	372	341	432	0.28 [A]	0.36 [A]	-	-
Huntmar Drive	800	202	222	234	258	0.29 [A]	0.32 [A]	-	-
Terry Fox Drive	1,200	700	802	812	930	0.68 [B]	0.78 [C]	-	-
March Road (S)	2,000	1,859	1,817	2,156	2,108	**1.08 [F]**	**1.05 [F]**	156	108
Herzberg Road	800	585	563	679	653	0.85 [D]	0.82 [D]	-	-
Carling Avenue	1,200	1,121	1,188	1,300	1,378	**1.08 [F]**	**1.15 [F]**	100	178
Overall	**7,200**	**4,761**	**4,964**	**5,522**	**5,759**	**0.77 [C]**	**0.80 [C]**	**-**	**-**

1. vph: vehicle trips per hour

As shown in the previous table, the screenline is operating overall at an acceptable LOS C during the AM and PM peak hours. Considering the screenline as a whole, there is residual capacity in the order of approximately 1,570 vph during the AM peak hour and 1,360 vph during the PM peak hour. It is noted that a majority of the residual capacity is along the March Road corridor (west of Old Carp Road) and Huntmar Road corridor (south of Old Carp Road). March Road (south of Carling Avenue) and Carling Avenue (east of Herzberg Road) are above capacity.

Figure 12: Vehicular Volumes at Screenline



2.8 Traffic Operations

The intersection parameters used in the analysis are consistent with the *Transportation Impact Assessment (TIA) Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions). Per Exhibit 22 of the *Multi-Modal Level of Service (MMLOS) Guidelines*, all study area intersections are located in the General Rural Area or General Urban Area and therefore have a target vehicular level of service (LOS) D, except for Terry Fox Drive/Old Second Line Road, which has a target LOS E due to its proximity to a school. In future conditions, March Road/Terry Fox Drive and March Road/Carling Avenue/Station Road also have a target LOS E due to their proximity to future rapid transit stations (per the Network Concept discussed in Section 3.1).

An LOS D has a maximum vehicle-to-capacity (v/c) ratio of 0.90 at signalized intersections, and a maximum delay of 35 seconds at unsignalized intersections. An LOS E has a maximum v/c ratio of 1.00 at signalized intersections. Signal timing plans have been obtained from the City, and are included in **Appendix F**.

The results of the analysis of existing traffic conditions are summarized in **Table 4** for the weekday AM and PM peak hours. Detailed Synchro reports for existing conditions are included in **Appendix G**.

Table 4: Existing Intersection Operations

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Donald B. Munro Drive/ Old Carp Road	NBL/T/R	610m	-	16 s [C]	7	-	22 s [C]	16
	SBL/T/R	750m		18 s [C]	12		21 s [C]	13
	EBL/T/R	150m		0 s [A]	0		1 s [A]	0
	WBL/T	420m		1 s [A]	0		0 s [A]	0
	WBR	100m		0 s [A]	0		0 s [A]	0
March Road/ Huntmar Drive	NBL/R	160m	-	12 s [B]	2	-	12 s [B]	5
	EBT/R	400m		0 s [A]	0		0 s [A]	0
	WBL/T	880m		3 s [A]	2		2 s [A]	1
March Road/ Old Second Line Road	NBL/T/R	70m	0.45 [A]	0.17 [A]	8	0.25 [A]	0.38 [A]	19
	SBL/T/R	> 1km		0.44 [A]	20		0.23 [A]	11
	EBL	35m		0.02 [A]	3		0.08 [A]	6
	EBT/R	> 1km		0.51 [A]	46		0.20 [A]	19
	WBL	45m		0.05 [A]	4		0.06 [A]	5
	WBT	800m		0.17 [A]	15		0.43 [A]	47
	WBR	35m		0.02 [A]	1		0.07 [A]	5
March Road/ Dunrobin Road	SBL/R	70m	0.48 [A]	0.58 [A]	26	0.38 [A]	0.42 [A]	23
	EBL	110m		0.10 [A]	8		0.15 [A]	8
	EBT	500m		0.42 [A]	37		0.16 [A]	16
	WBT	730m		0.15 [A]	13		0.53 [A]	59
	WBR	110m		0.13 [A]	0		0.38 [A]	5
March Road/ Invention Boulevard	NBT/R	570m	-	0 s [A]	0	-	0 s [A]	0
	SBL/T	500m		0 s [A]	0		0 s [A]	0
	WBL/R	600m		33 s [D]	11		**42 s [E]**	**9**

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Terry Fox Drive	NBL	130m	0.53 [A]	0.70 [B]	m40	0.52 [A]	0.74 [C]	45
	NBT	890m		0.25 [A]	m39		0.46 [A]	104
	NBR	85m		0.16 [A]	m8		0.11 [A]	m9
	SBL	110m		0.77 [C]	#69		0.46 [A]	26
	SBT	280m		0.50 [A]	101		0.40 [A]	69
	SBR	100m		0.23 [A]	15		0.29 [A]	17
	EBL	95m		0.52 [A]	m20		0.62 [B]	36
	EBT	620m		0.54 [A]	39		0.20 [A]	20
	EBR	60m		0.53 [A]	m14		0.50 [A]	18
	WBL	75m		0.29 [A]	12		0.47 [A]	23
	WBT	110m		0.19 [A]	14		0.54 [A]	45
	WBR	75m		0.12 [A]	0		0.47 [A]	17
March Road/ Carling Avenue/ Station Road	NBL	95m	0.85 [D]	0.48 [A]	27	0.83 [D]	0.38 [A]	21
	NBT	150m		**0.91 [E]**	**#319**		0.66 [B]	150
	NBR	80m		0.15 [A]	17		0.08 [A]	5
	SBL	175m		0.58 [A]	35		0.75 [C]	52
	SBT	600m		0.45 [A]	131		0.87 [D]	#303
	SBR	15m		0.14 [A]	0		0.07 [A]	m9
	EBL/T	-		0.53 [A]	32		0.23 [A]	20
	EBR	30m		0.03 [A]	0		0.06 [A]	0
	WBL	730m		0.32 [A]	19		0.74 [C]	51
	WBT	40m		0.12 [A]	12		0.08 [A]	11
	WBR	40m		0.68 [B]	33		0.56 [A]	20
Huntmar Drive/ Old Carp Road	NBL/T/R	> 1km	-	9 s [A]	-	-	10 s [A]	-
	SBL/T/R	780m		8 s [A]	-		8 s [A]	-
	EBL/T/R	480m		8 s [A]	-		8 s [A]	-
	WBL/T/R			8 s [A]	-		8 s [A]	-
Terry Fox Drive/ Old Second Line Road	NBL	25m	0.51 [A]	0.44 [A]	17	0.76 [C]	0.30 [A]	10
	NBT/R	-		0.22 [A]	14		0.05 [A]	5
	SBL	35m		0.57 [A]	37		0.37 [A]	23
	SBT/R	400m		0.57 [A]	22		0.59 [A]	20
	EBL	55m		0.39 [A]	22		0.51 [A]	35
	EBT	> 1km		0.50 [A]	134		0.30 [A]	65
	EBR	45m		0.06 [A]	3		0.01 [A]	0
	WBL	40m		0.22 [A]	13		0.16 [A]	10
	WBT	180m		0.41 [A]	77		0.90 [D]	#233
	WBR	120m		0.05 [A]	0		0.15 [A]	6

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
Terry Fox Drive/ Flamborough Way/ Innovation Drive	NBL	150m	0.55 [A]	0.27 [A]	20	0.57 [A]	0.79 [C]	58
	NBT/R	150m		0.65 [B]	56		0.79 [C]	74
	SBL	30m		**0.93 [E]**	**#57**		0.67 [B]	30
	SBT/R	30m		0.54 [A]	49		0.41 [A]	34
	EBL	75m		0.09 [A]	10		0.18 [A]	14
	EBT	210m		0.47 [A]	100		0.34 [A]	67
	EBR	120m		0.18 [A]	10		0.09 [A]	7
	WBL	110m		0.28 [A]	22		0.28 [A]	25
	WBT	620m		0.17 [A]	35		0.49 [A]	110
	WBR	130m		0.07 [A]	5		0.18 [A]	10
Terry Fox Drive/ March Valley Road	NBL/T/R	-	-	12 s [B]	0	-	11 s [B]	3
	SBL/T/R	470m		20 s [C]	15		18 s [C]	11
	EBL/T/R	160m		1 s [A]	1		1 s [A]	0
	WBL/T/R	970m		2 s [A]	1		0 s [A]	0
Herzberg Road/ Carling Avenue	NBL/T/R	90m	**0.94 [E]**	**1.04 [F]**	**#217**	**1.08 [F]**	**0.93 [E]**	**#98**
	SBL	220m		0.83 [D]	#64		**1.15 [F]**	**#175**
	SBT/R	400m		0.19 [A]	28		0.67 [B]	121
	EBL	35m		0.46 [A]	#19		0.08 [A]	8
	EBT/R	190m		0.64 [B]	105		**1.08 [F]**	**245**
	WBL	160m		0.09 [A]	7		**0.95 [E]**	**#34**
	WBT	290m		**0.91 [E]**	**#183**		0.57 [A]	92
	WBR	125m		0.88 [D]	#139		0.45 [A]	16

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

From the previous table, the Herzberg Road/Carling Avenue intersection overall operates at an LOS E during the AM peak hour and LOS F during the PM peak hour. Additionally, the following individual movements do not achieve the target LOS D or E during the peak hours:

AM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through (LOS E).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn (LOS E).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS F);
  - Westbound through (LOS E).

PM Peak Hour

- March Road/Invention Boulevard
  - Westbound left turn/right turn (LOS E).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS E);
  - Southbound left turn (LOS F);
  - Eastbound through/right turn (LOS F);
  - Westbound left turn (LOS E).

The following movements have 95th-percentile (i.e. maximum) queue lengths that exceed the storage length provided or extends upstream into an upstream intersection or adjacent rail corridor.

AM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through: 319m (extends through Renfrew Rail corridor and signalized access to Gateway Plaza).
- Terry Fox Drive/Old Second Line Road
  - Southbound left turn: 37m (exceeds 35m storage length).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn: 57m (exceeds 30m storage length);
  - Southbound through/right turn: 49m (extends through McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 217m (extends through Bayfield Avenue);
  - Westbound right turn: 139m (exceeds 125m storage length).

PM Peak Hour

- Terry Fox Drive/Old Second Line Road
  - Westbound through: 233m (extends through Statewood Drive).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound through/right turn: 34m (extends to McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 98m (extends to Bayfield Avenue);
  - Eastbound through/right turn: 245m (extends through Teron Road).

2.9 Observed Mode Shares

The *TRANS O-D Survey Report* (prepared in 2011 by R.A. Malatest & Associates) and *TRANS Trip Generation Manual Summary Report* (prepared in 2020 by WSP) have been consulted to estimate the existing residential mode shares within the study area. The Kanata-Stittsville and Rural West districts have been considered in this review, as the study area is bisected by the districts at Halton Terrace/Maxwell Bridge Road. It is noted that the *TRANS Trip Generation Manual* groups all rural districts into one set of modal shares. Excerpts of the *TRANS O-D Survey Report and TRANS Trip Generation Manual* are included in **Appendix H**, and the results are summarized in **Table 5**.

Table 5: Observed Mode Shares

Mode	Kanata-Stittsville				Rural West			
	O-D Survey (2011)		*Trip Gen Manual* (2020)		*O-D Survey* (2011)		*Trip Gen Manual* (2020)	
	AM	PM	AM	PM	AM	PM	AM	PM
Auto Driver	58%	62%	52%	56%	77%	75%	60%	66%
Auto Passenger	15%	19%	15%	19%	13%	18%	14%	18%
Transit	15%	11%	21%	15%	8%	5%	24%	14%
Cyclist	0%	1%	1%	1%	0%	0%	0%	0%
Pedestrian	12%	7%	12%	9%	2%	2%	2%	2%

Based on the results shown in **Table 5**, the observed peak hour mode shares in Kanata-Stittsville are generally similar between 2011 and 2020. In both peak hours, the driver share has decreased by 6%, with increases to the transit and pedestrian shares. In the AM peak hour, the transit share increased by the full 6%. In the PM peak hour, the transit share increased by 4% and the pedestrian share increased by 2%.

The observed peak hour mode shares in Rural West are less similar between 2011 and 2020, but this may be due to all rural districts being considered as one in the 2020 data. Comparing the 2011 and 2020 shares directly, the driver share decreased by 17% in the AM peak hour and 9% in the PM peak hour. In the AM peak hour, the transit share increased by 16% and the passenger share increased by 1%. In the PM peak hour, the transit share increased by the full 9%.

3.0 PLANNED CONDITIONS

3.1 Planned Transportation Projects

The City's *2013 Transportation Master Plan (TMP)*, the applicable master plan, identifies the widening of March Road from two to four lanes between Halton Terrace/Maxwell Bridge Road and Dunrobin Road as part of the 2031 Network Concept.

The *2013 TMP* identifies the implementation of the Kanata North Transitway, at-grade Bus Rapid Transit (BRT) within the centre median of March Road between Highway 417 and Halton Terrace/Maxwell Bridge Road. A future conceptual transit corridor is identified on March Road north of Halton Terrace/Maxwell Bridge Road toward the urban boundary. The 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network includes the March Road BRT from Highway 417 to Solandt Road. It includes isolated transit priority measures north of Solandt Road, such as transit priority signals and queue jump lanes. The 2031 RTTP Network Concept includes the extension of the March Road BRT from Solandt Road to Halton Terrace/Maxwell Bridge Road.

These projects will all provide additional service to the South March lands.

An Environmental Project Report (EPR) was prepared by Delcan in October 2013 for the Kanata North Transitway. In 2016, Council approved the Kanata North Urban Expansion Area (KNUEA) Community Design Plan and the accompanying Environmental Assessment (EA) for the lands to the south and east of the South March lands. This EA included an extension of the March Road BRT from Halton Terrace/Maxwell Bridge Road north to what is now Buckbean Avenue in the Copperwood Subdivision (formerly KNUEA Streets 'C' and 'E') and a Park and Ride lot. The terminal transit station is at the south limit of the South March lands, which is the north end of the KNUEA, the existing urban boundary. In December 2023, the City issued a Request for Proposals for an EA Review and Addendum related to the Kanata North Transitway (Highway 417 to Urban Boundary). Since the project has not been constructed within ten years of the original EA, the addendum will review the need and will undertake an updated analysis. The EA update has not yet been completed, so it is an appropriate time to add additional urban lands that can also be included in the EA analysis.

On March 28, 2024, the Government of Ontario committed to provide up to $80 Million (1/3 of eligible capital costs) for the Kanata North Transitway, as financial support to assist the City in implementing the project. The City will need to engage with the Federal government for the other 1/3 portion (an additional $80 Million) and confirm the City's 1/3 share to advance to implementation.

The City is currently working on an update to the *2013 TMP*. Part 1 was completed in Spring of 2023 and consists of the updated TMP Policies and Active Transportation Projects. Part 2 is targeted for completion in 2025 and will include the TMP Capital Infrastructure Plan. The *2023 TMP – Part 1* identifies March Road as a Crosstown Bikeway south of Halton Terrace/Maxwell Bridge Road. The Beachburg Rail Corridor is also identified as a Crosstown Bikeway south of Celtric Ridge Crescent. The Rural Active Transportation Network includes proposed paved shoulders on March Road (north of the urban boundary), Old Second Line Road (north of March Road), Dunrobin Road (between March Road and Cameron Harvey Drive), and Cameron Harvey Drive (west of March Valley Road). Old Second Line Road between March Road and Old Carp Road is identified as a Suggested Route. The Beachburg Rail Corridor is identified as a Major Pathway north of the current urban boundary. An excerpt of the designated cycling routes is included in **Figure 13**.

The 2023 *TMP – Part 1* does not yet identify any pedestrian projects within the study area.

3.2 Other Area Developments

In the *2016 KNUEA TMP*, it was estimated that the development of the Kanata North lands has the potential to consist of 960 single-detached homes, 950 street townhomes, 1,040 multi-unit residential dwellings, 400,000 ft^2 GFA of commercial space, three elementary schools, one high school, and a 500-space park and ride. The *KNUEA TMP* identified a buildout year of 2026, when in fact it will be later. Development applications have now been submitted for all the KNUEA lands, including the following:

927 March Road
A TIA was prepared by Stantec in December 2023, in support of a subdivision with 19 single-detached homes, 32 townhomes, 1,857 apartment units, and 45,000 ft^2 of commercial space. The associated TIA identified a buildout year of 2034.

936 March Road
A TIA was prepared by CGH in April 2020, in support of a subdivision with 353 single-detached homes and 575 townhomes. The associated TIA identified a buildout year of 2023, however buildout of the subdivision has not yet been achieved.

1020 & 1070 March Road
A TIA was prepared by Stantec in May 2020, in support of a subdivision with 297 single-detached homes, 315 townhomes, 116 apartment dwellings, 80,000 ft^2 GFA of commercial space, and an elementary school block. The associated TIA identified a buildout year of 2031.

1053, 1075 & 1145 March Road
A TIA was prepared by Novatech in October 2018, in support of a subdivision with 295 single-detached homes, 314 townhomes, and 216 multi-unit dwellings. The associated TIA identified a buildout year of 2026.

To the south of the KNUEA, several other developments are under construction, approved, or are in the approval process. The following development applications are significant enough to include site-generated traffic projections to the roadway network.

Figure 13: Network of Designated Cycling Routes

100 Steacie Drive
A TIA was prepared by Parsons in March 2024, in support of a residential development with 214 apartment dwellings. The associated TIA identified a buildout year of 2025.

232 Donald B. Munro Drive
A TIA was prepared by IBI Group in October 2021, in support of a subdivision with 57 single-detached homes and 60 townhomes. The associated TIA identified a buildout year of 2024, however buildout of the subdivision has not yet been achieved.

359 Terry Fox Drive and 525 Legget Drive
A TIA was prepared by Novatech in January 2022, in support of a development with 253 apartment dwellings and 3,877 ft^2 GFA of restaurant space. The associated TIA identified a buildout year of 2024, however buildout of the development has not yet been achieved.

457 Terry Fox Drive
A TIA was prepared by Parsons in January 2017, in support of a subdivision with 159 single-detached homes and 276 townhomes. The associated TIA identified a buildout year of 2021, however buildout of the subdivision has not yet been achieved.

555-603 March Road
A TIA was prepared by Novatech in December 2023, in support of a subdivision with 2,100 apartment dwellings, 154,178 ft^2 of office space, and 31,482 ft^2 of retail space. The associated TIA identified a buildout year of 2037.

570-600 March Road
A TIA was prepared by Stantec in July 2022, in support of a mixed-use development including 1,900 residential dwellings, approximately 46,000 m^2 of office space, and 11,350 m^2 of retail space. The associated TIA identified a buildout year of 2032. A subsequent TIA was prepared by Stantec in February 2025 in support of updates to the commercial portion (570 March Road), which includes approximately 31,948 m^2 of general light industrial space, 20,665 m^2 of office space, and 1,339 m^2 of retail space. The associated TIA identified a buildout year of 2027, and did not account for any residential development at 600 March Road.

706-714 March Road
A TIA was prepared by CGH Transportation in December 2020, in support of a commercial development with a 4,165 m^2 GFA supermarket, 350 m^2 GFA fast-food restaurant with drive-through, and 1,500 m^2 GFA of multi-unit commercial space. The associated TIA identified a buildout year of 2023, however buildout of the development has not yet been achieved.

788 March Road
A TIA addendum was prepared by Parsons in March 2020, in support of a residential development with 92 apartment dwellings. The associated TIA identified a buildout year of 2023. Buildout of the development has not yet been achieved, however it is under construction.

910 March Road
A TIA was prepared by CGH Transportation in July 2023, in support of a commercial development with a 1,835 m^2 hardware store, a 234 m^2 restaurant with drive-through, a 191 m^2 coffee shop with drive-through, a 416 m^2 retail store, and a 249 m^2 gas bar. The associated TIA identified a buildout year of 2022, however buildout of the development has not yet been achieved.

1055 Klondike Road
A TIA and technical memorandum were prepared by Novatech in April and June 2021, respectively. These were prepared in support of a residential development with 58 townhomes and 56 apartment dwellings. The associated TIA identified a buildout year of 2024. Buildout of the development has not yet been achieved, however it is under construction.

1158 Old Second Line Road
A technical memorandum was prepared by CGH Transportation in May 2023, in support of a residential development with 100 townhomes. The associated memo identified a buildout year of 2025.

2700 Solandt Road and 415 Legget Drive
A TIA was prepared by WSP in March 2022, in support of a development with approximately 32,930 m^2 of new warehouse space. The associated TIA identified a buildout year of 2022, however buildout of the development has not yet been achieved.

2707 Solandt Road
A TIA was prepared by Novatech in January 2020, in support of an office development with approximately 18,452 m^2 of office space. The associated TIA identified a buildout year of 2021, however buildout of the development has not yet been achieved.

3026 Solandt Road
A TIA was prepared by CIMA+ in March 2020, in support of an office development with approximately 9,290 m^2 of office space. The associated TIA identified a buildout year of 2021, however buildout of the development has not yet been achieved.

Relevant excerpts of the traffic studies cited above are included in **Appendix I**. A map indicating the location of each proposed development is included in **Figure 14**. All developments are assumed to be built out by the 2046 horizon of this assessment.

4.0 FORECASTING

4.1 Development-Generated Travel Demand

4.1.1 Trip Generation

The South March lands have a gross developable area of approximately 233 hectares, excluding existing rural estate subdivisions. Assuming 50% of land is developable with 35 residential units per developable hectare, the site could be developed with about 4,080 residential units. No employment uses are anticipated as part of future development of the South March lands. For this assessment, a similar mix to the KNUEA is assumed, which is 65% single detached homes/townhomes and 35% multi-unit residential. Applying this mix to 4,080 units results in 1,325 single detached homes, 1,325 townhomes, and 1,430 multi-unit residential.

Trips generated by the conceptual development during the weekday AM and PM peak period have been estimated based on relevant rates presented in the City's 2020 TRANS *Trip Generation Manual Summary Report*. In this manual, Multi-Unit (High-Rise) refers to any building that houses multiple families that is three or more storeys. Peak period person trips, based on the Single-Detached, Multi-Unit (Low-Rise), and Multi-Unit (High-Rise) rates in Table 3 of the TRANS report, are summarized in **Table 6**.

Figure 14: Other Area Development Locations

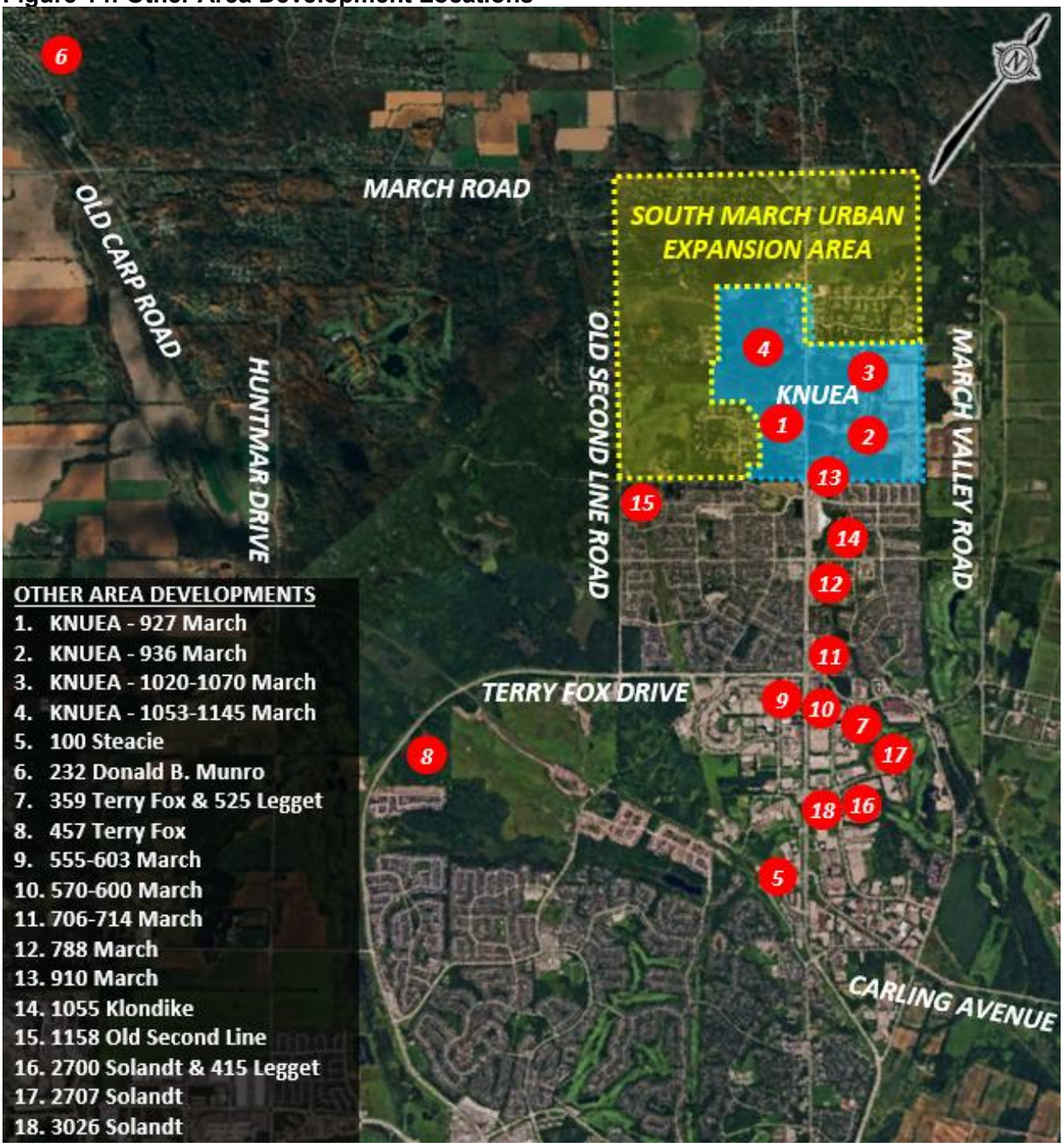


Table 6: Peak Period Person Trip Generation

Land Use	TRANS Rate	Units	AM Peak Period (ppp[1])			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
Single-Detached	AM: 2.05 PM: 2.48	1,325	815	1,901	*2,716*	2,037	1,249	*3,286*
Multi-Unit (Low-Rise)	AM: 1.35 PM: 1.58	1,325	537	1,252	*1,789*	1,172	922	*2,094*
Multi-Unit (High-Rise)	AM: 0.80 PM: 0.90	1,430	354	790	*1,144*	747	540	*1,287*
		Total	**1,706**	**3,943**	***5,649***	**3,956**	**2,711**	***6,667***

1. ppp: Person Trips per Peak Period

As discussed in Section 2.9, the observed residential peak period mode shares in rural districts can be summarized as 60% to 66% driver, 14% to 18% passenger, 14% to 24% transit, 0% cyclist, and 2% pedestrian. For the purposes of this report, the assumed peak period mode shares for the South March lands are assumed to be 65% driver, 15% passenger, 18% transit, 0% cyclist, and 2% pedestrian. A breakdown of the peak period person trips by modal share is shown in **Table 7**.

Table 7: Peak Period Person Trips by Modal Share

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		IN	OUT	TOT	IN	OUT	TOT
Peak Period Person Trips		**1,706**	**3,943**	***5,649***	**3,956**	**2,711**	***6,667***
Auto Driver	65%	1,109	2,563	*3,672*	2,572	1,762	*4,334*
Auto Passenger	15%	256	591	*847*	593	407	*1,000*
Transit	18%	307	710	*1,017*	712	488	*1,200*
Cyclist	0%	0	0	*0*	0	0	*0*
Pedestrian	2%	34	79	*113*	79	54	*133*

Table 4 of the TRANS report 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 8**.

Table 8: Peak Hour Person 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	532	1,230	*1,762*	1,132	775	*1,907*
Auto Passenger	0.48	0.44	123	284	*407*	261	179	*440*
Transit	0.55	0.47	168	391	*559*	335	229	*564*
Cyclist	0.58	0.48	0	0	*0*	0	0	*0*
Pedestrian	0.58	0.52	20	46	*66*	41	28	*69*
Peak Hour Person Trips			**843**	**1,951**	***2,794***	**1,769**	**1,211**	***2,980***

From the previous table, the conceptual development is estimated to generate about 2,800 to 3,000 person trips in the AM and PM peak hours (including 1,800 to 1,900 vehicle trips).

4.1.2 Trip Distribution

The distribution of traffic generated by the South March lands is assumed to generally follow the residential commuter patterns (i.e. outbound during the AM peak hour and inbound during the PM peak hour). Based on the existing traffic counts shown previously in **Figure 10**, this can be summarized as follows.

- 5% to/from the north via Donald B. Munro Drive;
- 5% to/from the north via Dunrobin Road;
- 5% to/from the north via March Valley Road;
- 5% to/from the south via Huntmar Drive;
- 10% to/from the south via Innovation Drive;
- 25% to/from the south via March Road;
- 5% to/from the south via Herzberg Road;
- 20% to/from the east via Carling Avenue;
- 5% to/from the west via March Road;
- 15% to/from the west via Terry Fox Drive.

4.1.3 Trip Assignment

As the March Road corridor passes through the South March lands, it is assumed that half of all trips arriving from/departing to the western boundary of the subject lands will enter/exit the subject lands via future connections to March Road after the March Road/Old Second Line Road intersection but prior to the March Road/Dunrobin Road intersection. The other half of all trips arriving from/departing to the western boundary of the subject lands are assumed to enter/exit the subject lands via Old Second Line Road.

Similarly, it is assumed that half of all trips arriving from/departing to the southern boundary of the subject lands will enter/exit the subject lands via future connections to March Road after the March Road/Invention Boulevard intersection but prior to the March Road/Dunrobin Road intersection. The other half of these trips are assumed to enter/exit the subject lands via future connections to March Road after the March Road/Dunrobin Road intersection but prior to the March Road/Old Second Line Road intersection.

An assumption has also been made to account for site-generated residential trips that originate from or are destined to the Kanata North Economic District. The *2017 ITE Trip Generation Handbook, 3rd Edition* includes tables (6.1 and 6.2) for the estimated internal trip capture rates for a variety of land uses within a mixed-use development. Based on these rates, and treating the assumed number of South March residences as the limiting factor compared to the amount of employment area within the Kanata North Economic District, the *Trip Generation Handbook* identifies internal capture rates between residential and office of approximately 5%. It is reasonable to assume that the 10% of trips distributed to Innovation Drive will be split evenly between trips entering/exiting the Kanata North Economic District and trips travelling to/from Goulbourn Forced Road, a major collector that links to Kanata Avenue south of the study area. It is acknowledged that there are other intersections that are 'internal' to the study area and connects to the economic district, such as March Road/Solandt Road and Terry Fox Drive/Legget Drive. No trips have been assigned to these intersections for the purposes of this high-level assessment.

4.2 Background Traffic

4.2.1 Other Area Developments

Traffic generated by the developments listed in Section 3.2 have been added to the 2046 background conditions. The study area of this Revised Assessment is larger than the study areas considered in the other transportation studies. Volumes are generally carried as through traffic until the limits of the study area of this assessment. For example, the 359 Terry Fox Drive TIA prepared by Novatech includes site-generated northbound and southbound through volumes at March Road/ Morgan's Grant Way/Shirley's Brook Drive. These volumes have been carried as through volumes on March Road at Invention Boulevard, Dunrobin Road, Old Second Line Road, Huntmar Drive, and Donald B. Munro Drive/Old Carp Road.

Traffic projections from the *2016 KNUEA TMP* have been considered, as the TMP accounted for all lands within the KNUEA, considered a larger study area, and are generally more conservative than the subsequent traffic studies prepared for 927 March Road, 936 March Road, 1020-1070 March Road, and 1053-1145 March Road.

Multiple TIAs have been submitted in support of the redevelopment(s) at 570 and 600 March Road. Traffic generated by the proposed light industrial, commercial, and office uses at 570 March Road has been added to the 2046 background volumes directly, based on the 2025 TIA prepared by Stantec. Traffic generated by the proposed residential uses at 600 March Road has been added to the 2046 background volumes directly, based on the 2022 TIA prepared by Stantec. While the 2025 TIA did not account for any residential traffic at 600 March Road, the site has been rezoned and therefore, it is assumed that the residential portion of the development will be built out by 2046. A reduction has been applied to account for the removal of the existing offices at 600 March Road.

To reflect the prevalence of 'work from home' or 'hybrid work' arrangements, the estimated vehicular volumes currently generated by the existing offices at 600 March Road has been reduced by 40% (based on a comparison of pre-pandemic and post-pandemic traffic counts at March Road/Terry Fox Drive and March Road/Solandt Road).

4.2.2 General Background Growth Rate

A review of the City's *Strategic Long-Range Model* was completed (comparing snapshots of the 2011, 2031, and 2046 peak hour traffic volumes). These snapshots are included in **Appendix J**.

Within the study area, the snapshots generally identify growth rates between 0.0% and +2.0% on March Road, Carling Avenue, and Herzberg Road, and between +1.0% and +5.0% on Old Second Line Road and Old Carp Road. Extremely high growth rates were identified for Huntmar Drive and Terry Fox Drive, as volumes in the earlier models are relatively small compared to the 2046 model.

Based on the above, an annual background growth rate of 1% has been carried for a period of 10 years (as identified in the *TOR*) for March Road, Donald B. Munro Drive, Old Carp Road, Huntmar Drive, Old Second Line Road, Dunrobin Road, Terry Fox Drive, Carling Avenue, and Herzberg Road. It is anticipated that this growth rate is conservative, as traffic projections of known development applications are also considered in the 2046 background volumes.

4.2.3 March Road Corridor

March Road Widening
The widening of March Road from two to four lanes between Halton Terrace/Maxwell Bridge Road and Dunrobin Road is part of the 2031 Network Concept in the *2013 TMP*. While this improvement is not identified in the 2031 Affordable Network, it has been assumed that the widening of March Road will be implemented by the 2046 horizon year, in accordance with the *2013 TMP*.

The 2031 Network Concept identified in the *2013 TMP* supports the long-range 2031 traffic projections. Similar to the 2031 projections, the new 2046 long-range projections also show insufficient capacity based on the 2031 Affordable Network, instead of the 2031 Network Concept, with or without the South March lands.

Median BRT
The 2031 Affordable Rapid Transit and Transit Priority (RTTP) Network includes the March Road BRT from Highway 417 to Solandt Road (with isolated measures north to Halton Terrace/Maxwell Bridge Road). The 2031 RTTP Network Concept includes the extension of the March Road BRT from Solandt Road to Halton Terrace/Maxwell Bridge Road. In 2016, a future conceptual transit corridor was approved by Council on March Road north of Halton Terrace/Maxwell Bridge Road toward the north end of the KNUEA and urban boundary, which is the southern limit of the South March UEA.

The assumed existing transit modal shares within the study area follow the modal shares outlined in the Existing Conditions report of the *2016 KNUEA TMP*. The TMP included a Transportation Area of Interest (TAI) screenline located immediately south of Terry Fox Drive between Second Line Road and March Valley Road, where person trips for vehicle and non-auto modes were estimated using observed traffic, transit rider, cyclist, and pedestrian volumes. Passenger volumes were estimated using a private vehicle occupancy of 1.2. This analysis was performed because the KNUEA is located at the boundary between the Kanata/Stittsville and Rural West regions.

The results of the exercise indicated that, at the TAI screenline, the existing transit share was 7% and 5% in the weekday AM and PM peak hours, respectively. Existing mode shares at the TAI screenline were not found to be reflective of the mode shares presented for the Kanata/Stittsville district, since the rapid transit stations within Kanata/Stittsville are centralized along Highway 417, which is approximately 4.5km south of the screenline. As the TAI screenline was located immediately south of Terry Fox Drive, and therefore located within the study area, the existing transit shares of 7% in the AM peak hour and 5% in the PM peak hour have been assumed.

Exhibit 2.13 of the City's *2013 TMP* identifies a transit share target of 21% within the Kanata/ Stittsville district by 2031. Within the study area, it is anticipated that the 21% transit share target will be achieved through the implementation of the planned RTTP projects on March Road. A reduction in the background vehicular volumes has been applied to reflect the 21% transit share target and the planned implementation of transit priority measures on March Road.

A functional design of median BRT lanes on March Road was included as part of the *West Transitway Connection* EPR, prepared by Delcan in October 2013. The functional design is included in **Appendix K**.

Similar to the future roadway network, the TRANS analysis of the 2046 long-range projections including the South March lands has not been considered based on the Affordable Transit Network, as it does not include BRT to the subject lands. Since previous studies (including the KNUEA CDP) have shown the extension of BRT based on the 2031 Network Concept, it is assumed as the base for the 2046 projections, with or without the South March lands.

4.3 Volume Figures

The figures below present the following traffic conditions:

- Projected traffic volumes generated by the South March UEA are included in **Figure 15**;
- Traffic volumes generated by other area developments are included in **Figure 16**;
- Reduction in traffic volumes to reflect future transit service are included in **Figure 17**;
- Background traffic volumes in 2046 are included in **Figure 18**;
- Background screenline volumes in 2046 are included in **Figure 19**;
- Total traffic volumes in 2046 are included in **Figure 20**;
- Total screenline volumes in 2046 are included in **Figure 21**.

4.4 2046 Background Screenline Analysis

4.4.1 Screenline Analysis Based on City's 2046 TRANS Model

The City's 2046 TRANS model snapshot (included in **Appendix J**) has been considered in this screenline analysis for the purposes of comparing the model's volumes with the projected volumes shown in **Figure 19**. It is understood that the TRANS model accounts for approximately 640 dwellings within the South March lands (i.e. approximately 15.7% of the 4,080 dwellings projected in Section 4.1). These dwellings have not been deducted for the purposes of this review. The TRANS model volumes and LOS at the screenline during the AM peak hour (entering the study area and exiting the study area) is included in **Table 9**.

Table 9: 2046 TRANS Model – Background Screenline Performance

Roadway	Capacity (vph)(1)	Directional AM Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit
March Road (W)	1,200	220	254	255	295	0.21 [A]	0.25 [A]	-	-
Huntmar Drive	800	51	131	59	152	0.06 [A]	0.19 [A]	-	-
Terry Fox Drive	1,200	981	787	1,138	913	0.95 [E]	0.76 [C]	-	-
March Road (S)	2,000	2,507	1,575	2,908	1,827	**1.45 [F]**	0.91 [E]	908	-
Herzberg Road	800	774	101	898	117	**1.12 [F]**	0.15 [A]	98	-
Carling Avenue	1,200	801	1,006	929	1,167	0.77 [C]	0.97 [E]	-	-
Overall	**7,200**	**5,334**	**3,854**	**6,187**	**4,471**	**0.86 [D]**	**0.62 [B]**	**-**	**-**

1. vph: vehicle trips per hour

As shown in the previous table, the 2046 TRANS model shows the screenline to operate in the AM peak hour at an acceptable LOS B in the off-peak direction and LOS D in the peak direction. Considering the screenline as a whole, there is residual capacity in the peak direction, in the order of approximately 1,000 vph during the AM peak hour. A majority of the residual capacity is along the March Road corridor (west of Old Carp Road) and Huntmar Road corridor (south of Old Carp Road). The model shows March Road (south of Carling Avenue) and Carling Avenue (east of Herzberg Road) as above-capacity.

Figure 15: Projected Volumes by South March UEA

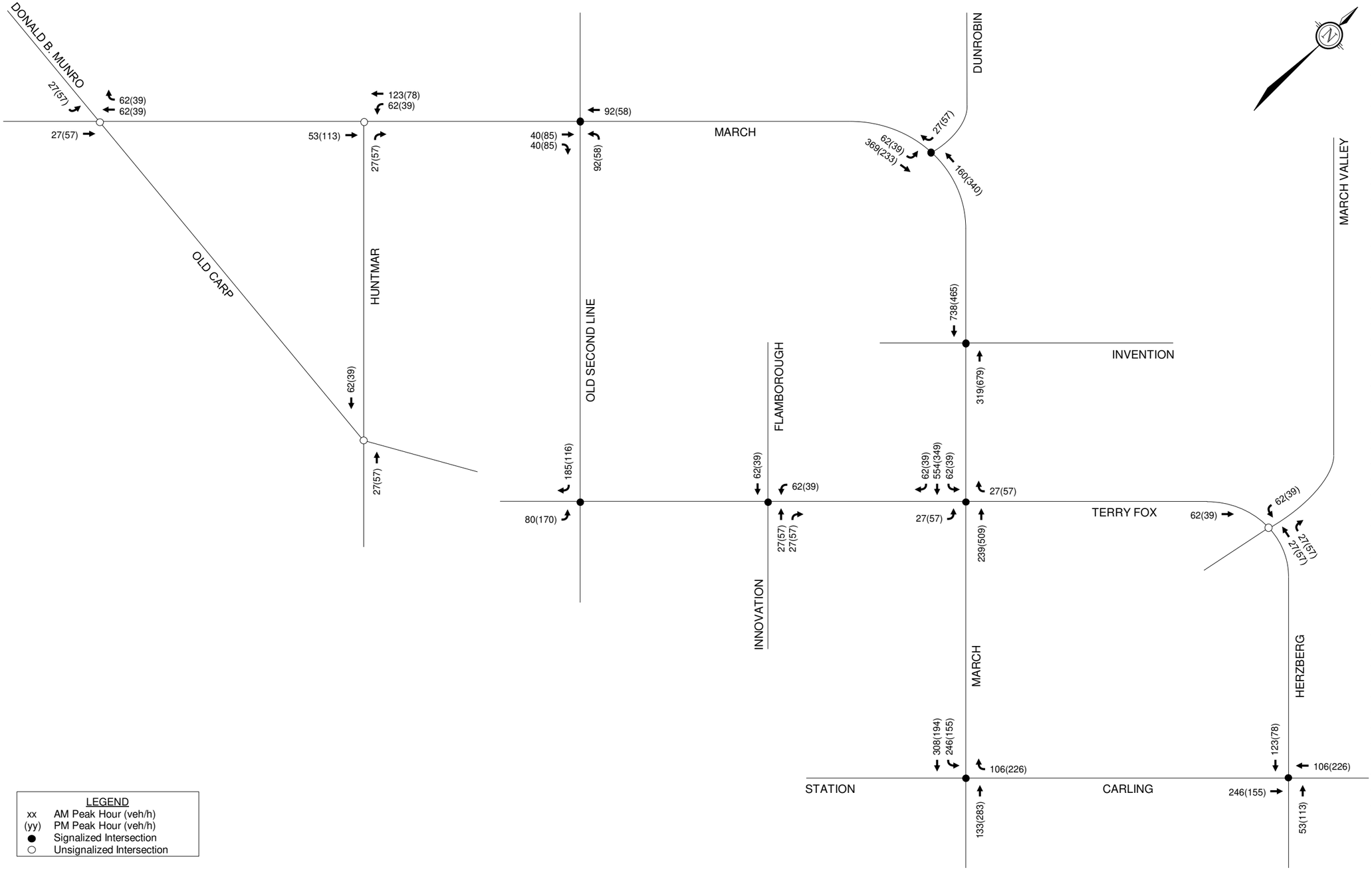


Figure 16: Other Area Development-Generated Traffic Volumes

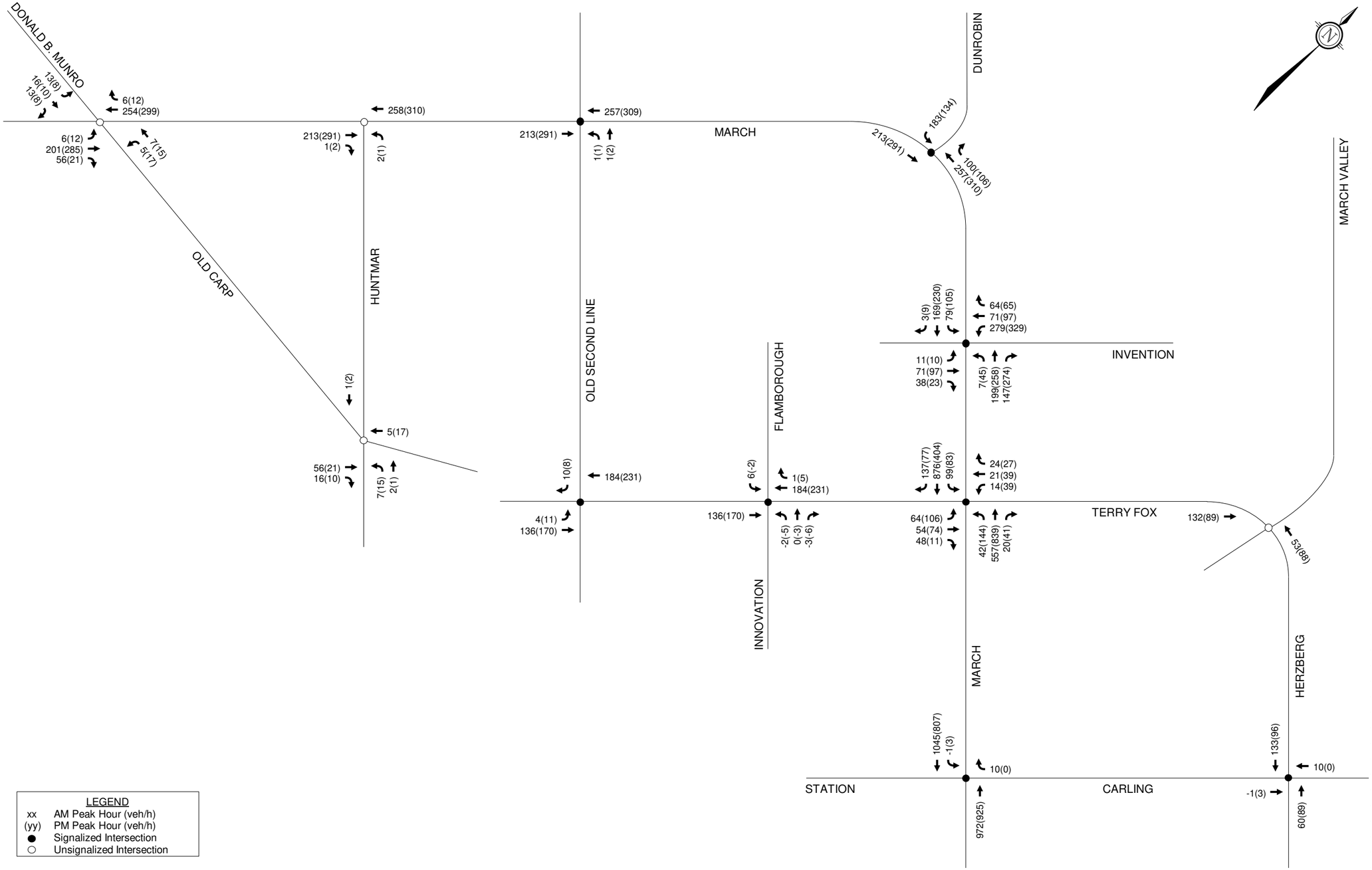


Figure 17: Volume Reductions Reflecting Higher Transit Share

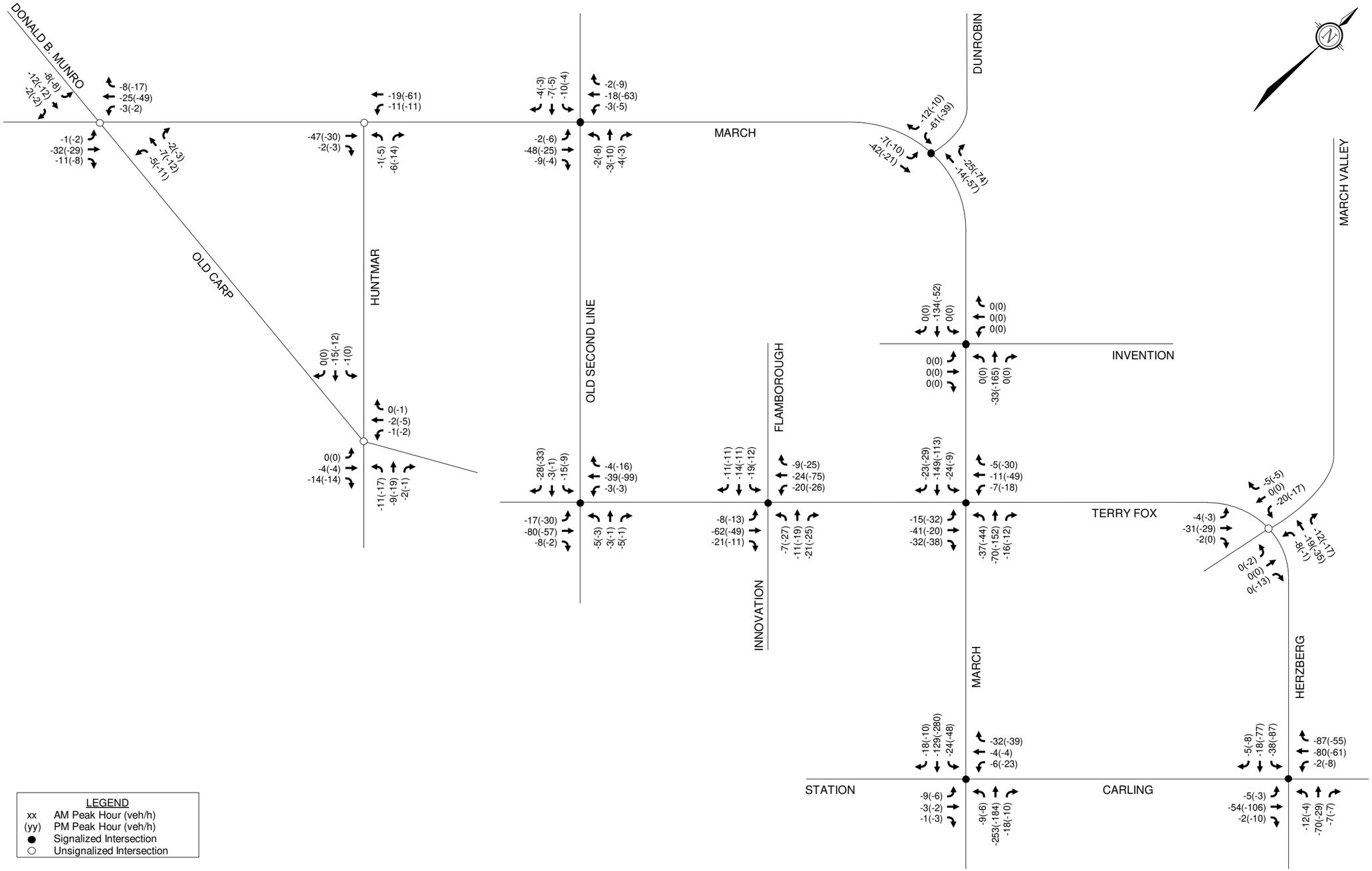


Figure 18: 2046 Background Traffic Volumes

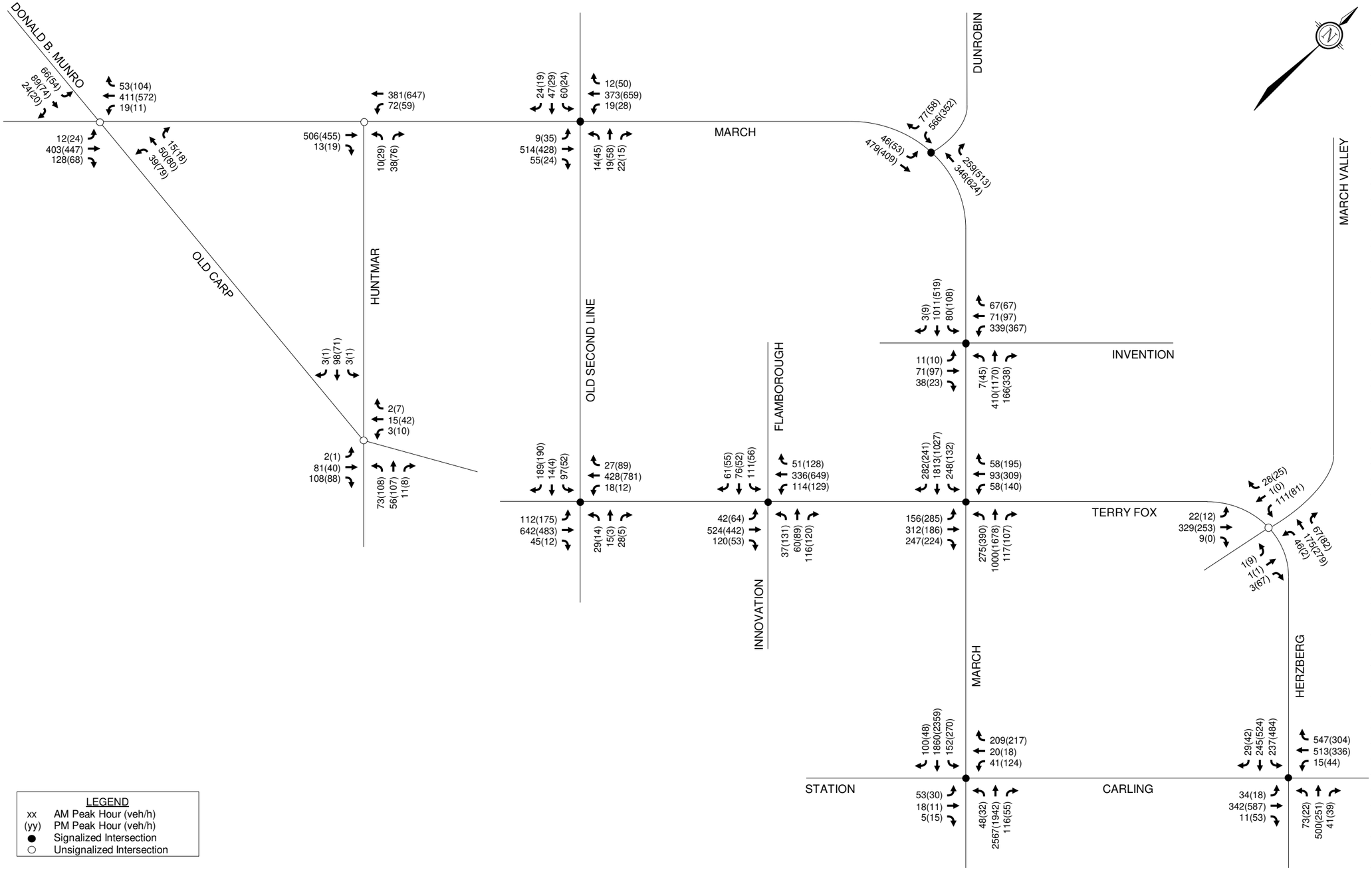


Figure 19: 2046 Background Traffic Volumes at Screenline

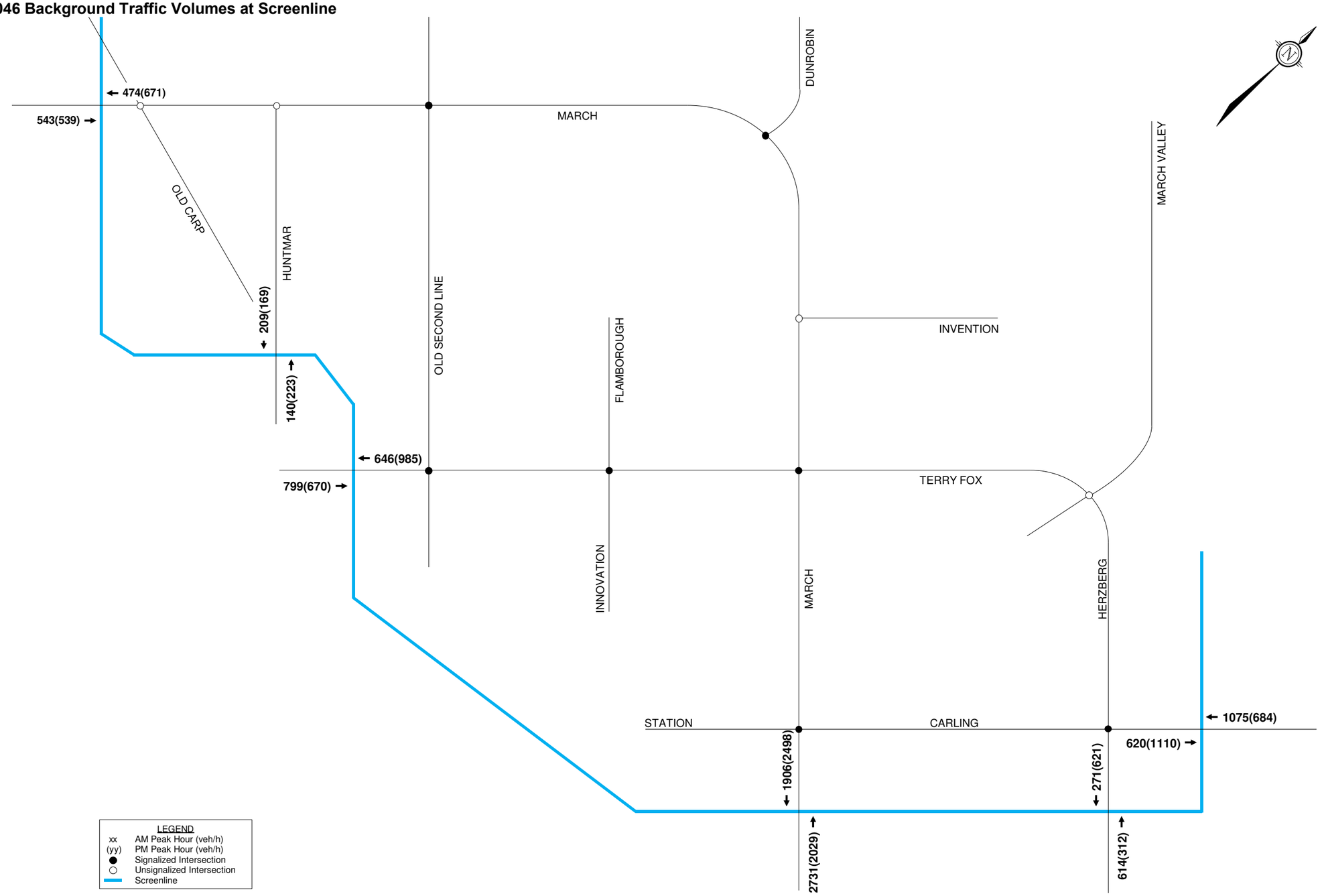


Figure 20: 2046 Total Traffic Volumes

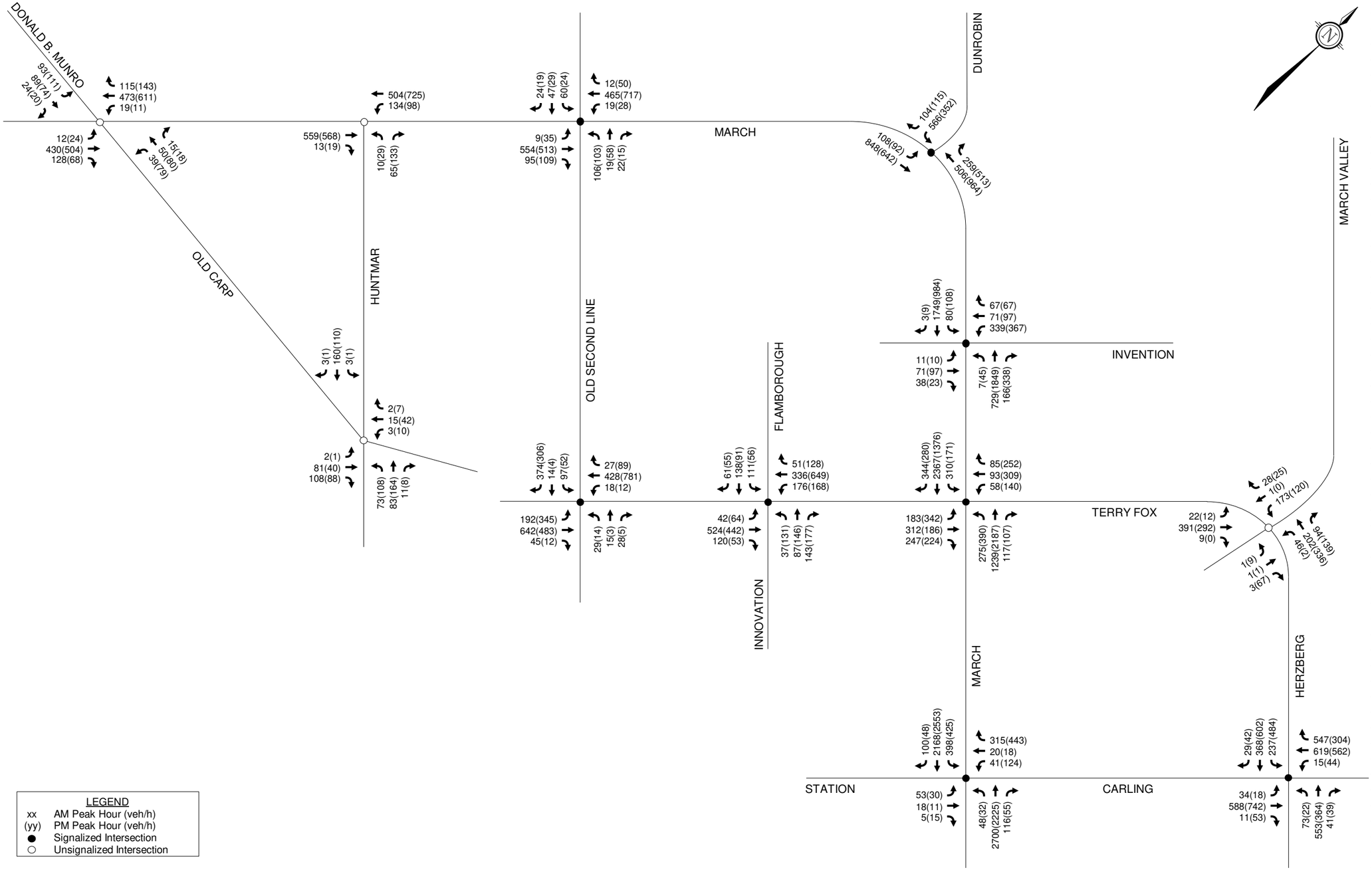
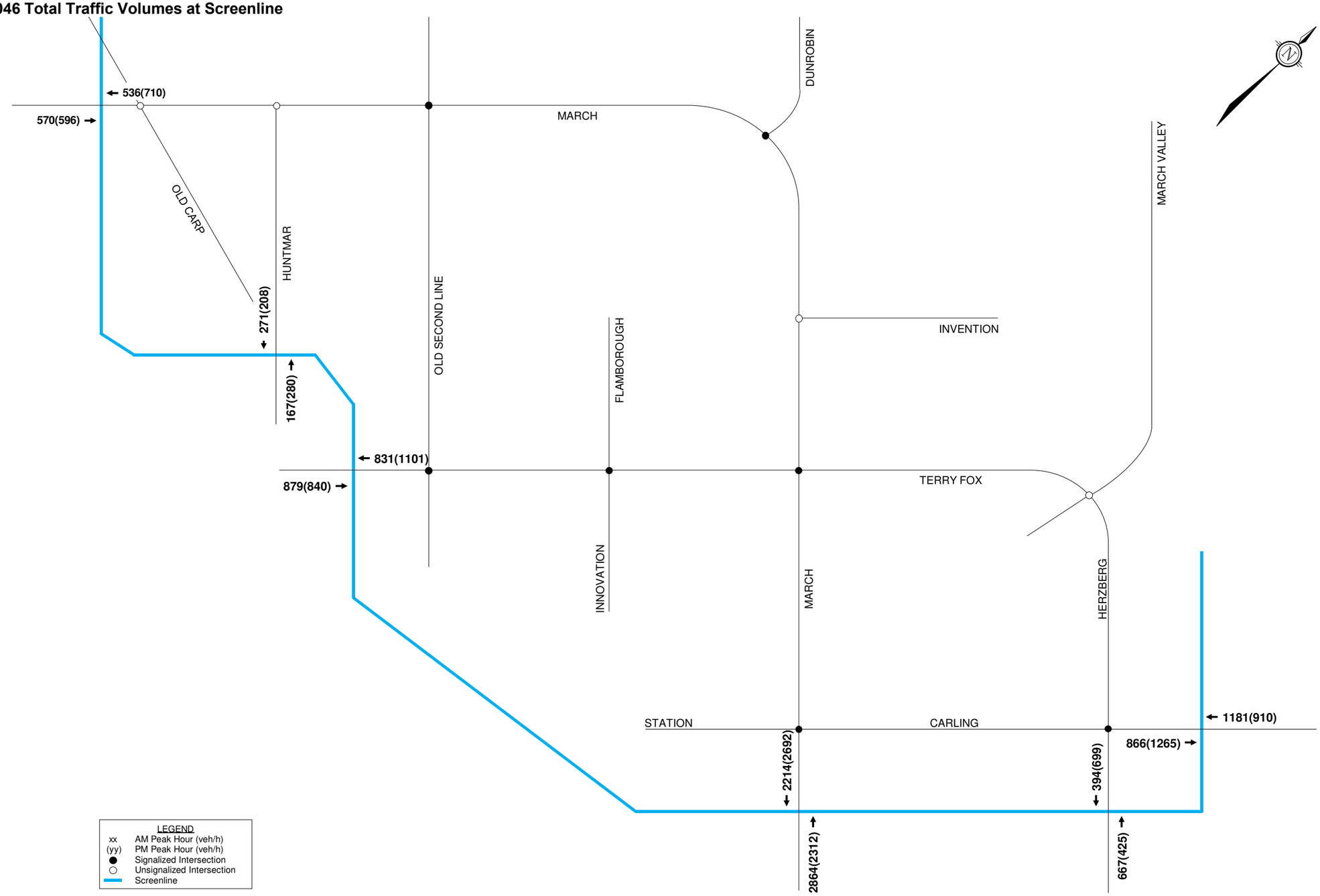


Figure 21: 2046 Total Traffic Volumes at Screenline



4.4.2 Screenline Analysis Based on Projected Volumes

The 2046 background volumes crossing the screenline are shown in the previous **Figure 19**. There is no planned increased capacity identified on the study area roadways that cross the screenline. The projected 2046 background volumes and LOS at the screenline during the AM and PM peak hours is included in **Table 10**.

Table 10: 2046 Background Screenline Performance

Roadway	Capacity (vph)(1)	Directional Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		AM	PM	AM	PM	AM	PM	AM	PM
March Road (W)	1,200	543	671	630	778	0.53 [A]	0.65 [B]	-	-
Huntmar Drive	800	209	223	242	259	0.30 [A]	0.32 [A]	-	-
Terry Fox Drive	1,200	799	985	927	1,143	0.77 [C]	0.95 [E]	-	-
March Road (S)	2,000	2,731	2,498	3,168	2,898	**1.58 [F]**	**1.45 [F]**	1,168	898
Herzberg Road	800	614	621	712	720	0.89 [D]	0.90 [D]	-	-
Carling Avenue	1,200	1,075	1,110	1,247	1,288	**1.04 [F]**	**1.07 [F]**	47	88
Overall	**7,200**	**5,971**	**6,108**	**6,926**	**7,086**	**0.96 [E]**	**0.98 [E]**	**-**	**-**

1. vph: vehicle trips per hour

As shown in the previous table, the screenline is operating overall at an acceptable LOS E during the AM and PM peak hours. Considering the screenline as a whole, there is residual capacity in the order of approximately 270 vph during the AM peak hour and approximately 110 vph during the PM peak hour. It is noted that a majority of the residual capacity is along the March Road corridor (west of Old Carp Road) and Huntmar Road corridor (south of Old Carp Road).

The March Road corridor south of Carling Avenue is projected to exceed capacity by a significant margin during both peak hours. The Carling Avenue corridor east of Herzberg Road is projected to exceed capacity by a lesser margin during both peak hours.

4.5 2046 Background Traffic Conditions

Intersection capacity analysis has been conducted for the 2046 background traffic conditions. A reduction in the background volumes has been applied to reflect a higher transit modal share as a result of rapid transit and transit priority measures that will be implemented on March Road. Within the study area and the City's 2031 Network Concept, median bus lanes are anticipated on March Road to Halton Terrace/Maxwell Bridge Road. The Council-approved limit of the median bus lanes is up to the southern limit of the South March UEA. Intersection geometry and parameters have been adjusted in Synchro to reflect the functional design included in **Appendix K**.

Based on the projected volumes at March Road/Invention Boulevard, a traffic signal was identified in the *2016 KNUEA TMP*. The TMP also identified auxiliary left turn lanes in all directions (including dual westbound left turn lanes), and an auxiliary northbound right turn lane. Therefore, a signal with this lane configuration and the March Road widening has been assumed to be implemented in the 2046 conditions.

The results of the analysis of the 2046 background traffic conditions are summarized in **Table 11** for the weekday AM and PM peak hours. Detailed Synchro reports for the 2046 background conditions are included in **Appendix L**.

Table 11: 2046 Background Intersection Operations

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Donald B. Munro Drive/ Old Carp Road	NBL/T/R	610m	-	**37 s [E]**	**17**	-	**178 s [F]**	**68**
	SBL/T/R	750m		**59 s [F]**	**39**		**108 s [F]**	**47**
	EBL/T/R	150m		0 s [A]	0		1 s [A]	1
	WBL/T	420m		0 s [A]	0		0 s [A]	0
	WBR	100m		0 s [A]	0		0 s [A]	0
March Road/ Huntmar Drive	NBL/R	160m	-	14 s [B]	2	-	17 s [C]	7
	EBT/R	400m		0 s [A]	0		0 s [A]	0
	WBL/T	880m		2 s [A]	2		1 s [A]	1
March Road/ Old Second Line Road	NBL/T/R	70m	0.50 [A]	0.15 [A]	9	0.53 [A]	0.36 [A]	24
	SBL/T/R	> 1km		0.38 [A]	22		0.21 [A]	14
	EBL	35m		0.02 [A]	2		0.10 [A]	5
	EBT/R	> 1km		0.57 [A]	69		0.42 [A]	47
	WBL	45m		0.05 [A]	4		0.06 [A]	4
	WBT	800m		0.37 [A]	39		0.62 [B]	84
	WBR	35m		0.01 [A]	1		0.06 [A]	4
March Road/ Dunrobin Road	SBL/R	70m	0.56 [A]	0.65 [B]	46	0.65 [B]	0.54 [A]	44
	EBL	110m		0.11 [A]	8		0.18 [A]	7
	EBT	500m		0.63 [B]	68		0.43 [A]	47
	WBT	730m		0.46 [A]	46		0.76 [C]	115
	WBR	110m		0.24 [A]	0		0.44 [A]	4
March Road/ Invention Boulevard	NBL	-	0.59 [A]	0.10 [A]	6	0.87 [D]	0.64 [B]	#30
	NBT	570m		0.26 [A]	46		0.69 [B]	154
	NBR	-		0.21 [A]	5		0.41 [A]	26
	SBL	-		0.54 [A]	33		0.85 [D]	#59
	SBT/R	500m		0.53 [A]	116		0.25 [A]	54
	EBL	-		0.14 [A]	9		0.13 [A]	8
	EBT/R	-		0.50 [A]	34		0.54 [A]	39
	WBL	-		0.82 [D]	#68		0.87 [D]	#72
	WBT/R	600m		0.29 [A]	35		0.34 [A]	44
March Road/ Terry Fox Drive	NBL	130m	**1.10 [F]**	0.53 [A]	m#41	0.98 [E]	0.83 [D]	m43
	NBT	280m		0.66 [B]	m94		**1.05 [F]**	**m#245**
	NBR	20m		0.15 [A]	m5		0.14 [A]	m2
	SBL	90m		0.59 [A]	#60		0.61 [B]	#35
	SBT	280m		**1.25 [F]**	**#324**		0.76 [C]	#161
	SBR	100m		0.38 [A]	27		0.33 [A]	17
	EBL	95m		0.94 [E]	#39		**1.27 [F]**	**#70**
	EBT	620m		0.53 [A]	43		0.32 [A]	27
	EBR	60m		0.67 [B]	43		0.53 [A]	25
	WBL	60m		0.50 [A]	14		0.64 [B]	27
	WBT	110m		0.21 [A]	15		0.52 [A]	43
	WBR	75m		0.18 [A]	0		0.47 [A]	16

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Carling Avenue/ Station Road	NBL	80m	**1.19 [F]**	0.42 [A]	22	0.98 [E]	0.31 [A]	17
	NBT/R	150m		**1.29 [F]**	**#530**		**1.05 [F]**	**#332**
	SBL	200m		0.53 [A]	m18		0.71 [C]	44
	SBT	600m		0.85 [D]	m26		**1.05 [F]**	**#409**
	SBR	180m		0.10 [A]	m0		0.05 [A]	m5
	EBL/T	-		0.44 [A]	26		0.19 [A]	16
	EBR	30m		0.02 [A]	0		0.05 [A]	0
	WBL	730m		0.29 [A]	16		0.67 [B]	42
	WBT	40m		0.09 [A]	10		0.07 [A]	9
	WBR	40m		0.65 [B]	28		0.53 [A]	18
Huntmar Drive/ Old Carp Road	NBL/T/R	> 1km	-	9 s [A]	-	-	9 s [A]	-
	SBL/T/R	780m		8 s [A]	-		8 s [A]	-
	EBL/T/R	480m		9 s [A]	-		8 s [A]	-
	WBL/T/R			8 s [A]	-		8 s [A]	-
Terry Fox Drive/ Old Second Line Road	NBL	25m	0.54 [A]	0.30 [A]	13	0.88 [D]	0.17 [A]	8
	NBT/R	-		0.18 [A]	11		0.04 [A]	5
	SBL	35m		0.52 [A]	32		0.33 [A]	21
	SBT/R	400m		0.55 [A]	20		0.57 [A]	19
	EBL	55m		0.35 [A]	20		0.47 [A]	31
	EBT	> 1km		0.54 [A]	150		0.39 [A]	89
	EBR	45m		0.05 [A]	1		0.01 [A]	0
	WBL	40m		0.19 [A]	11		0.15 [A]	10
	WBT	180m		0.61 [B]	121		**1.06 [F]**	**#293**
	WBR	120m		0.04 [A]	0		0.13 [A]	3
Terry Fox Drive/ Flamborough Way/ Innovation Drive	NBL	150m	0.52 [A]	0.21 [A]	15	0.58 [A]	0.66 [B]	42
	NBT/R	150m		0.58 [A]	38		0.68 [B]	50
	SBL	30m		0.76 [C]	40		0.42 [A]	21
	SBT/R	30m		0.51 [A]	37		0.37 [A]	25
	EBL	75m		0.07 [A]	7		0.16 [A]	9
	EBT	210m		0.51 [A]	107		0.44 [A]	86
	EBR	120m		0.13 [A]	8		0.06 [A]	3
	WBL	110m		0.22 [A]	15		0.23 [A]	17
	WBT	620m		0.30 [A]	59		0.60 [A]	141
	WBR	130m		0.05 [A]	2		0.14 [A]	8
Terry Fox Drive/ March Valley Road	NBL/T/R	-	-	13 s [B]	0	-	11 s [B]	3
	SBL/T/R	470m		20 s [C]	12		18 s [C]	8
	EBL/T/R	160m		1 s [A]	0		1 s [A]	0
	WBL/T/R	970m		2 s [A]	1		0 s [A]	0
Herzberg Road/ Carling Avenue	NBL/T/R	90m	0.85 [D]	**0.99 [E]**	**#200**	**0.96 [E]**	**1.03 [F]**	**#119**
	SBL	220m		0.70 [B]	42		**1.01 [F]**	**#143**
	SBT/R	400m		0.28 [A]	48		0.67 [B]	122
	EBL	35m		0.24 [A]	13		0.06 [A]	7
	EBT/R	190m		0.55 [B]	87		**0.92 [E]**	**#189**
	WBL	160m		0.07 [A]	7		0.54 [A]	#24
	WBT	290m		0.79 [C]	#139		0.48 [A]	75
	WBR	125m		0.75 [C]	83		0.40 [A]	15

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

From the previous table, the March Road/Terry Fox Drive and March Road/Carling Avenue/Station Road intersections overall operate over-capacity during the AM peak hour, and the Herzberg Road/Carling Avenue intersection overall operates beyond the target LOS D during the PM peak hour. The stop-controlled approaches of the March Road/Donald B. Munro Drive/Old Carp Road intersection operate at an LOS E or F during the peak hours, due to increased east-west through traffic on March Road.

Some movements within the study area appear to improve as a result of the reduction to reflect improved transit and/or differences in the peak hour factor parameter (0.9 in existing conditions versus 1.0 in future conditions). The following individual movements are identified as operating at an unacceptable level of service during the peak hours.

AM Peak Hour

- March Road/Donald B. Munro Drive/Old Carp Road
  - Northbound left turn/through/right turn (LOS E);
  - Southbound left turn/through/right turn (LOS F).
- March Road/Terry Fox Drive
  - Southbound through (LOS F).
- March Road/Carling Avenue/Station Road
  - Northbound through/right turn (LOS F).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS E).

PM Peak Hour

- March Road/Donald B. Munro Drive/Old Carp Road
  - Northbound left turn/through/right turn (LOS F);
  - Southbound left turn/through/right turn (LOS F).
- March Road/Terry Fox Drive
  - Northbound through (LOS F);
  - Eastbound left turn (LOS F).
- March Road/Carling Avenue/Station Road
  - Northbound through/right turn (LOS F);
  - Southbound through (LOS F).
- Terry Fox Drive/Old Second Line Road
  - Westbound through (LOS F).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS F);
  - Southbound left turn (LOS F);
  - Eastbound through/right turn (LOS E).

The following movements have 95th-percentile (i.e. maximum) queue lengths that exceed the storage length provided or extends upstream into an upstream intersection or adjacent rail corridor.

AM Peak Hour

- March Road/Terry Fox Drive
  - Southbound through: 324m (extends through Morgan's Grant Way/Shirley's Brook Drive).
- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 530m (extends through Renfrew Rail corridor and signalized access to Gateway Plaza).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn: 40m (exceeds 30m storage length);
  - Southbound through/right turn: 37m (extends through McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 200m (extends through Bayfield Avenue).

PM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 332m (extends through Renfrew Rail corridor and signalized access to Gateway Plaza).
- Terry Fox Drive/Old Second Line Road
  - Westbound through: 293m (extends through Statewood Drive).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 119m (extends to Bayfield Avenue).

Mitigations for the over-capacity movements within the study area are discussed below, and have been analyzed in Synchro. Detailed Synchro reports with mitigations implemented is included in **Appendix L**.

March Road/Donald B. Munro Drive/Old Carp Road

During the AM peak hour, the southbound approach (Donald B. Munro Drive) operates at an LOS E. During the PM peak hour, the northbound approach (Old Carp Road) and southbound approach (Donald B. Munro Drive) both operate at an LOS F. Based on the signalization warrants included in the *Ontario Traffic Manual (OTM) – Book 12*, the intersection is projected to be 127% to 132% warranted for signalization, based on 2046 background and total traffic volumes. The completed warrant worksheets are included in **Appendix M**.

For the purposes of this assessment, a mitigated scenario with signalization of the intersection has been completed. In the mitigated scenario, all approaches operate at an LOS B or better. The maximum eastbound queue lengths do not extend back to the Renfrew rail corridor during the peak hours.

March Road/Terry Fox Drive

The southbound through movement operates at an LOS F during the AM peak hour, and the northbound through and eastbound left turn movements operate at an LOS F during the PM peak hour. Synchro does not identify timing adjustments that can improve the LOS for all movements, and the 130-second cycle length modelled is already at the City's prescribed maximum. If two seconds are added to the eastbound/westbound left turn phase and 18 seconds are added to the northbound/southbound through phase, increasing the cycle length to 150 seconds, the northbound through movement can improve to the target LOS E during the PM peak hour.

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 to meet the target LOS E:

- Northbound through: reduction of 70 vehicles during PM peak hour;
- Southbound through: reduction of 370 vehicles during AM peak hour;
- Eastbound left turn: reduction of 60 vehicles during PM peak hour.

March Road/Carling Avenue/Station Road
The northbound through/right turn movement operates at an LOS F during both peak hours, and the southbound through movement operates at an LOS F during the PM peak hour. Synchro does not identify timing adjustments that can improve the LOS for all movements.

Using demand rationalization, the following approximate volume reductions would be required to meet the target LOS E:

- Northbound through: reduction of 610 vehicles during AM peak hour;
  reduction of 90 vehicles during PM peak hour;
- Southbound through: reduction of 100 vehicles during PM peak hour.

Terry Fox Drive/Old Second Line Road
The westbound through movement operates at an LOS F during the PM peak hour. Synchro does not identify timing adjustments that can improve the LOS for this movement without exceeding the City's prescribed maximum cycle length of 130 seconds. If ten seconds are added to the east-west through phase, increasing the cycle length to 140 seconds, all movements can operate at the target LOS E or better. With no signal timing adjustments, the westbound through movement can meet the target LOS E with a reduction of approximately 50 vehicles during the PM peak hour.

Herzberg Road/Carling Avenue
The northbound approach operates at an LOS E during the AM peak hour. During the PM peak hour, the northbound approach and southbound left turn operate at an LOS F, and the eastbound through/right turn movement operates at an LOS E. Synchro does not identify timing adjustments that can simultaneously improve all movements to the target LOS D. With the provision of an auxiliary northbound left turn lane, dual southbound left turn lanes, and additional eastbound receiving lane, the Synchro analysis suggests that all movements can operate at the target LOS D during the peak hours.

Applying only signal timing adjustments, the following volume reductions would be required to meet the target LOS D during the peak hours:

- Northbound left/through/right: reduction of 50 vehicles during AM peak hour;
  reduction of 30 vehicles during PM peak hour;
- Southbound left: reduction of 10 vehicles during PM peak hour;
- Eastbound through: reduction of 30 vehicles during PM peak hour.

All of the mitigations described above are identified for the City's consideration.

5.0 NETWORK IMPACT COMPONENTS

5.1 Transportation Demand Management

5.1.1 Context for TDM

The exact number of proposed residential dwellings within the South March UEA will be determined as part of the future Community Design Plan (CDP) and subsequent Draft Plan of Subdivision and Site Plan Control processes. For the purposes of this assessment, an approximate total of 4,080 dwellings has been assumed, consisting of 1,325 single-detached homes, 1,325 townhomes, and 1,430 multi-unit residential dwellings. This distribution of dwelling types is consistent with the approved KNUEA mix.

5.1.2 Need and Opportunity

The current zoning of the South March lands is generally RC (Rural Commercial), RR (Rural Residential), and RU (Rural Countryside). Schedule B9 of the City's *Official Plan* identifies the South March lands as being located within the Rural Countryside designation. Schedule B5 of the *Official Plan* suggests that the lands would be designated as 'Neighbourhood' if added to the urban boundary and 'Evolving Neighbourhood' along March Road, consistent with the KNUEA and lands immediately south. This schedule also shows a Mainstreet Corridor designation on March Road extending to the urban boundary, abutting the South March lands, and therefore, it is anticipated that this corridor designation would extend to the new urban boundary. The terminus of future rapid transit on March Road is shown on Schedule B5, located at the southern limit of the South March lands.

As discussed in Section 4.1, the assumed peak period mode shares for the South March lands are assumed to be 65% driver, 15% passenger, 18% transit, 0% cyclist, and 2% pedestrian.

5.1.3 TDM Program

A review of the City's *TDM Residential Measures Checklist* will be conducted by the proponent(s) of future TIAs that will be prepared in support of future Draft Plan of Subdivision or Site Plan Control applications.

5.2 Neighbourhood Traffic Calming

The *Revised TIA Guidelines* identify that the Neighbourhood Traffic Calming module will be reviewed in detail as part of the next comprehensive update of the TIA Guidelines. This module shall be completed if all of the following criteria are met.

1. A proposed access is provided to a collector roadway or local roadway;
2. The development application is for Zoning By-Law Amendment or Draft Plan of Subdivision;
3. The proposed development is projected to generate more than 75 vehicle trips;
4. Site trip infiltration is expected, and site-generated traffic will increase peak hour volumes by 50% or more, along the route between the site and an arterial roadway;
5. 'Significant sensitive land use presence' exists, where there is at least two of the following land uses adjacent to the subject street segment:
    - School (within 250m walking distance);
    - Park;
    - Retirement or older adult facility (i.e. long-term care and retirement homes);
    - Licensed child care centre;
    - Community centre; or
    - 50% or greater of adjacent property along the route(s) are occupied by residential lands, and a minimum of ten occupied residential dwellings are present on the route.

The proposed South March UEA is anticipated to meet all criteria above, as a future CDP is anticipated to include school and parkland blocks. This module will be considered as part of the future CDP/secondary plan process and/or Draft Plan of Subdivision applications, when more specific development details are known.

5.3 Transit

The City's TOR (dated October 20, 2024) suggest entering into a Transit Infrastructure and Service Agreement for the provision of bus transit infrastructure and service to accommodate the forecasted demand, for any contiguous expansion areas with a centroid beyond 600m from any existing or planned higher-order transit station (as identified in the in-force Affordable Network). The centroid of the South March UEA is located beyond 600m from the nearest planned transit station on March Road at the current urban boundary (i.e. between Maxwell Road and Buckbean Avenue).

A Transit Infrastructure and Service Agreement is typically a condition of Draft Plan Approval, and can be entered into prior to registration of a Plan of Subdivision, as required. The Transit Infrastructure Agreement would be subject to the City's in-force *Transportation Master Plan* at that time. Since all housing construction within the South March UEA is anticipated to occur at least five to ten years from writing of this assessment, it is not necessary or appropriate to enter into a Transit Infrastructure Agreement at this stage.

Considering the 18% transit modal share target shown in **Table 8**, the South March UEA is forecasted to generate 559 transit trips (391 boarding, 168 alighting) during the AM peak hour and 564 transit trips (229 boarding, 335 alighting) during the PM peak hour.

The *Revised TIA Guidelines* identify that the Transit Route Capacity component of the Transit module is required when a development is projected to generate more than 75 transit trips, and identifies that the Transit Priority Requirements component of the Transit module is when a development is projected to generate more than 75 auto trips. The South March UEA will meet both requirements.

As part of the CDP process, a concept plan will be developed, and the Transit Route Capacity and Transit Priority Requirements components will be completed at that stage. It is currently premature to complete any transit analysis (including evaluating downstream capacity deficiencies), as the City's *Transportation Master Plan* and *Development Charges By-Law* are currently undergoing updates, and more details about planned/required infrastructure upgrades will be known at the South March lands CDP stage.

5.4 Network Concept

With Morgan's Grant and the KNUEA lands to the south, the South March lands are a natural extension of the full transportation grid. The development of this area will naturally integrate with the existing suburban community. In addition to March Road, Old Second Line Road and March Valley Road can be used as alternative travel routes to diversify the flow of traffic. Spreading peak hour travel demand to alternative routes is consistent with the principles of demand rationalization, and it is common in other suburban areas of the City such as Kanata West/Fernbank, Barrhaven, and Leitrim. For the South March lands, there are no impediments to a natural connection and extension of the existing grid. There is no need to assemble a new corridor as the rights-of-way (ROWs) already exist. There are no major natural features that need to be crossed with large bridges, and there are no unique constructability problems.

5.4.1 Screenline Analysis Based on City's 2046 TRANS Model

As the TRANS model accounts for approximately 640 dwellings within the South March lands (i.e. approximately 15.7% of the 4,080 dwellings projected in Section 4.1), trips generated by the remaining 3,420 dwellings have been added to the 2046 TRANS model volumes, using the same distribution described in Section 4.1.2. The remaining 3,420 dwellings are projected to generate approximately 1,485 vehicle trips (448 in, 1,037 out) during the AM peak hour. Projected traffic volumes at the screenline for the remaining 3,420 dwellings plus the 2046 TRANS model volumes (included in **Appendix J**) is included in **Figure 22**.

The total volumes and LOS at the screenline during the AM peak hour (entering the study area and exiting the study area) is included in **Table 12**.

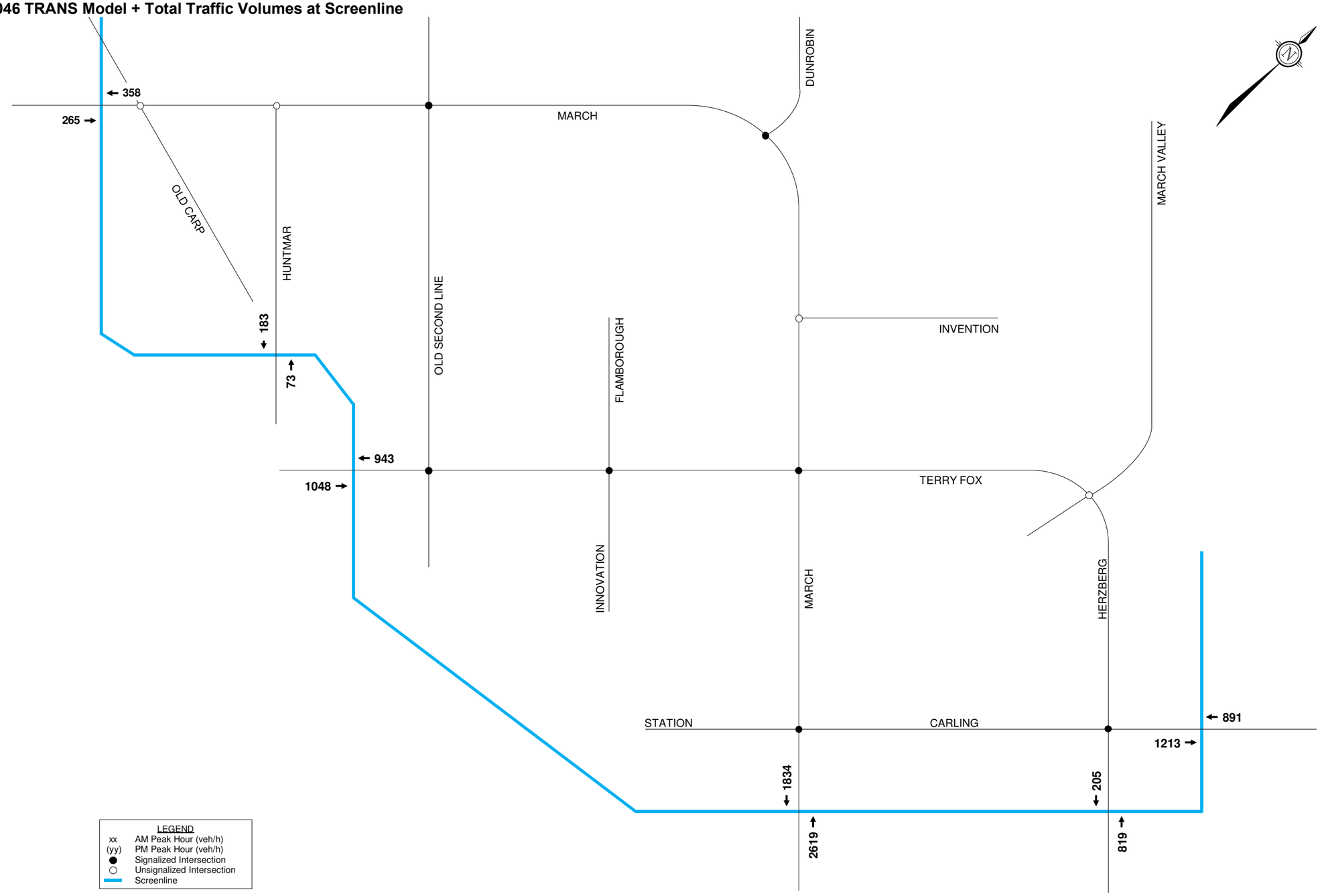
Table 12: 2046 TRANS Model – Total Screenline Performance

Roadway	Capacity (vph)(1)	Directional AM Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit
March Road (W)	1,200	265	358	307	415	0.26 [A]	0.35 [A]	-	-
Huntmar Drive	800	73	183	85	212	0.11 [A]	0.27 [A]	-	-
Terry Fox Drive	1,200	1,048	943	1,216	1,094	**1.01 [F]**	0.91 [E]	16	-
March Road (S)	2,000	2,619	1,834	3,038	2,127	**1.52 [F]**	**1.06 [F]**	1,038	127
Herzberg Road	800	819	205	950	238	**1.19 [F]**	0.30 [A]	150	-
Carling Avenue	1,200	891	1.213	1,034	1,407	0.86 [D]	**1.17 [F]**	-	207
Overall	**7,200**	**5,715**	**4,736**	**6,630**	**5,493**	**0.92 [E]**	**0.76 [C]**	**-**	**-**

1. vph: vehicle trips per hour

As shown in the previous table, the 2046 TRANS model shows the screenline to operate in the AM peak hour at an acceptable LOS C in the off-peak direction and LOS E in the peak direction.

Figure 22: 2046 TRANS Model + Total Traffic Volumes at Screenline



Considering the screenline as a whole, there is residual capacity in the peak direction, in the order of approximately 570 vph during the AM peak hour. A majority of the residual capacity is along the March Road corridor (west of Old Carp Road) and Huntmar Road corridor (south of Old Carp Road). The model shows March Road (south of Carling Avenue), Terry Fox Drive (west of Old Second Line Road), Herzberg Road (south of Carling Avenue), and Carling Avenue (east of Herzberg Road) as above capacity in one or both directions during the AM peak hour.

5.4.2 Screenline Analysis Based on Projected Volumes

The 2046 total volumes crossing the screenline on the above roadways are shown in the previous **Figure 21**. The projected 2046 total volumes and LOS at the screenline during the AM and PM peak hours is included in **Table 13**.

Table 13: 2046 Total Screenline Performance

Roadway	Capacity (vph)(1)	Directional Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		AM	PM	AM	PM	AM	PM	AM	PM
March Road (W)	1,200	570	710	661	824	0.55 [A]	0.69 [B]	-	-
Huntmar Drive	800	271	280	314	325	0.39 [A]	0.41 [A]	-	-
Terry Fox Drive	1,200	879	1,101	1,020	1,277	0.85 [D]	**1.06 [F]**	-	77
March Road (S)	2,000	2,864	2,692	3,322	3,123	**1.66 [F]**	**1.56 [F]**	1,322	1,123
Herzberg Road	800	667	699	774	811	0.97 [E]	**1.01 [F]**	-	11
Carling Avenue	1,200	1,181	1,265	1,370	1,467	**1.14 [F]**	**1.22 [F]**	170	267
Overall	**7,200**	**6,432**	**6,747**	**7,461**	**7,827**	**1.04 [F]**	**1.09 [F]**	**263**	**678**

1. vph: vehicle trips per hour

As shown in the previous table, the screenline operates overall at an LOS F during the AM and PM peak hours, and there is no residual peak hour capacity. Volumes in the peak direction exceed capacity by approximately 260 vehicles during the AM peak hour, and by approximately 680 vehicles during the PM peak hour. There is residual capacity along the March Road corridor (west of Old Carp Road) and Huntmar Road corridor (south of Old Carp Road).

The March Road corridor (south of Carling Avenue) and Carling Avenue corridor (east of Herzberg Road) are projected to exceed capacity during both peak hours, with the March Road corridor exceeding capacity by a significant margin. The Terry Fox corridor (west of Old Second Line Road) and Herzberg Road corridor (south of Carling Avenue) exceed capacity during the PM peak hour by relatively lesser margins.

Based on the projections that have been developed using methodology from the City's *TOR*, it appears that additional road capacity beyond the planned March Road Widening would be required. Based on the projected vehicle trips, another 680 vph of lane capacity may be required. This could be achieved by widening March Road (west of Old Second Line Road), Huntmar Drive, Terry Fox Drive (west of Old Second Line Road), or Carling Avenue.

Schedule C16 of the City's *Official Plan* identifies the following ROW protections:

- March Road, west of Old Second Line Road – 30m;
- Terry Fox Drive, west of Old Second Line Road – 44.5m;
- Carling Avenue, March Road to Herzberg Road – 44.5m, measured from the south ROW;
- Carling Avenue, east of Herzberg Road – 42.5m minimum as an arterial in the Greenbelt, but determined on a case-by-case basis.

The *2013 TMP* doesn't identify any planned projects for the above corridors. It does identify a planned realignment of Goulbourn Forced Road between Terry Fox Drive and Kanata Avenue as part of the 2031 Road Network Concept. The planned Goulbourn Forced Road Realignment is opposite Old Second Line Road and provides capacity for growth in Kanata North.

Additional ROW for a future widening of Old Second Line Road could be provided as part of the South March lands between March Road and Old Carp Road. South of Old Carp Road, widening to the east of Old Second Line is limited by the Morgan's Grant subdivision. Widening to the west would impact the private land parcel at 1155 Old Second Line Road and the City owned lands at the South March Highlands Conservation Forest.

The City is currently working on an update to the *2013 TMP*. The new Capital Infrastructure Plan will be prepared for Part 2 of the TMP Update, targeted for completion in 2025. The timing of the planned March Road Widening and BRT will be determined as part of the new Capital Infrastructure Plan. Additional road projects to accommodate the ultimate development of the South March lands can be considered as part of the current TMP Update, the Community Design Plan process, and/or future TMP updates as required. Buildout of the South March lands may occur over a period of 15 years and the road capacity requirements and phasing can be determined as part of the secondary plan process and prior to full buildout. Road upgrades may also be included in a future TMP update.

5.5 2046 Total Traffic Conditions

Intersection capacity analysis has been conducted for the 2046 total traffic conditions. The results included below assumes the same intersection geometry and signal timings as considered for the 2046 background conditions (included in Section 4.5).

The results of the analysis of the 2046 total traffic conditions are summarized in **Table 14** for the weekday AM and PM peak hours. Detailed Synchro reports for the 2046 total traffic conditions are included in **Appendix N**.

Table 14: 2046 Total Intersection Operations

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Donald B. Munro Drive/ Old Carp Road	NBL/T/R	610m	-	**48 s [E]**	**21**	-	**280 s [F]**	**83**
	SBL/T/R	750m		**132 s [F]**	**67**		**439 s [F]**	**111**
	EBL/T/R	150m		0 s [A]	0		1 s [A]	1
	WBL/T	420m		0 s [A]	0		0 s [A]	0
	WBR	100m		0 s [A]	0		0 s [A]	0
March Road/ Huntmar Drive	NBL/R	160m	-	17 s [C]	5	-	27 s [D]	19
	EBT/R	400m		0 s [A]	0		0 s [A]	0
	WBL/T	880m		3 s [A]	3		3 s [A]	2

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Old Second Line Road	NBL/T/R	70m	0.56 [A]	0.45 [A]	30	0.68 [B]	0.57 [A]	43
	SBL/T/R	> 1km		0.36 [A]	26		0.20 [A]	16
	EBL	35m		0.02 [A]	2		0.15 [A]	7
	EBT/R	> 1km		0.64 [B]	90		0.67 [B]	89
	WBL	45m		0.06 [A]	4		0.10 [A]	5
	WBT	800m		0.45 [A]	55		0.78 [C]	116
	WBR	35m		0.01 [A]	0		0.06 [A]	5
March Road/ Dunrobin Road	SBL/R	70m	0.73 [C]	0.74 [C]	63	0.87 [D]	0.69 [B]	48
	EBL	110m		0.29 [A]	20		0.57 [A]	#22
	EBT	500m		0.88 [D]	#203		0.58 [A]	95
	WBT	730m		0.54 [A]	82		**0.99 [E]**	**#262**
	WBR	110m		0.22 [A]	0		0.44 [A]	12
March Road/ Invention Boulevard	NBL	-	0.87 [D]	0.10 [A]	6	**1.10 [F]**	0.64 [B]	#30
	NBT	570m		0.46 [A]	86		**1.19 [F]**	**#333**
	NBR	-		0.21 [A]	5		0.44 [A]	48
	SBL	-		0.54 [A]	33		0.85 [D]	#59
	SBT/R	500m		**0.91 [E]**	**#292**		0.57 [A]	115
	EBL	-		0.14 [A]	9		0.13 [A]	8
	EBT/R	-		0.50 [A]	34		0.54 [A]	39
	WBL	-		0.82 [D]	#68		0.87 [D]	#72
	WBT/R	600m		0.29 [A]	35		0.34 [A]	44
March Road/ Terry Fox Drive	NBL	130m	**1.45 [F]**	0.53 [A]	m#31	**1.30 [F]**	0.83 [D]	m33
	NBT	890m		0.90 [D]	m99		**1.43 [F]**	**m#257**
	NBR	85m		0.17 [A]	m1		0.14 [A]	m0
	SBL	110m		0.56 [A]	#78		0.59 [A]	#47
	SBT	280m		**1.63 [F]**	**#464**		**1.02 [F]**	**#252**
	SBR	100m		0.47 [A]	46		0.38 [A]	26
	EBL	95m		**1.10 [F]**	**#47**		**1.53 [F]**	**#86**
	EBT	620m		0.53 [A]	43		0.32 [A]	27
	EBR	60m		0.67 [B]	43		0.53 [A]	25
	WBL	75m		0.50 [A]	14		0.64 [B]	m24
	WBT	110m		0.21 [A]	15		0.52 [A]	m39
	WBR	75m		0.27 [A]	1		0.60 [A]	m26
March Road/ Carling Avenue/ Station Road	NBL	80m	**1.46 [F]**	0.42 [A]	22	**1.26 [F]**	0.31 [A]	17
	NBT/R	150m		**1.66 [F]**	**#569**		**1.43 [F]**	**#429**
	SBL	200m		0.75 [C]	m36		0.82 [D]	m#71
	SBT	600m		**1.05 [F]**	**m19**		**1.23 [F]**	**m#461**
	SBR	180m		0.11 [A]	m0		0.05 [A]	m3
	EBL/T	-		0.33 [A]	26		0.14 [A]	16
	EBR	30m		0.02 [A]	0		0.04 [A]	0
	WBL	730m		0.22 [A]	16		0.50 [B]	m34
	WBT	40m		0.07 [A]	10		0.05 [A]	m5
	WBR	40m		0.85 [D]	62		0.92 [E]	m95

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
Huntmar Drive/ Old Carp Road	NBL/T/R	> 1km	-	9 s [A]	-	-	10 s [A]	-
	SBL/T/R	780m		9 s [A]	-		9 s [A]	-
	EBL/T/R	480m		9 s [A]	-		8 s [A]	-
	WBL/T/R			8 s [A]	-		9 s [A]	-
Terry Fox Drive/ Old Second Line Road	NBL	25m	0.65 [B]	0.52 [A]	15	0.94 [E]	0.23 [A]	8
	NBT/R	-		0.17 [A]	11		0.04 [A]	5
	SBL	35m		0.50 [A]	33		0.34 [A]	21
	SBT/R	400m		0.73 [C]	29		0.71 [C]	24
	EBL	55m		0.56 [A]	33		0.80 [C]	#73
	EBT	> 1km		0.54 [A]	150		0.38 [A]	89
	EBR	45m		0.05 [A]	1		0.01 [A]	0
	WBL	40m		0.19 [A]	12		0.15 [A]	10
	WBT	180m		0.62 [B]	124		**1.11 [F]**	**#301**
	WBR	120m		0.04 [A]	0		0.14 [A]	3
Terry Fox Drive/ Flamborough Way/ Innovation Drive	NBL	150m	0.58 [A]	0.26 [A]	16	0.67 [B]	0.53 [A]	42
	NBT/R	150m		0.72 [C]	57		0.82 [D]	85
	SBL	30m		**0.92 [E]**	**#47**		0.51 [A]	23
	SBT/R	30m		0.68 [B]	58		0.39 [A]	38
	EBL	75m		0.07 [A]	7		0.18 [A]	11
	EBT	210m		0.53 [A]	115		0.48 [A]	99
	EBR	120m		0.14 [A]	9		0.07 [A]	3
	WBL	110m		0.35 [A]	23		0.33 [A]	26
	WBT	620m		0.30 [A]	61		0.65 [B]	163
	WBR	130m		0.05 [A]	2		0.15 [A]	9
Terry Fox Drive/ March Valley Road	NBL/T/R	-	-	14 s [B]	0	-	12 s [B]	3
	SBL/T/R	470m		**36 s [E]**	**30**		28 s [D]	18
	EBL/T/R	160m		1 s [A]	0		0 s [A]	0
	WBL/T/R	970m		2 s [A]	1		0 s [A]	0
Herzberg Road/ Carling Avenue	NBL/T/R	90m	**0.97 [E]**	**1.09 [F]**	**#228**	**1.15 [F]**	**1.22 [F]**	**#182**
	SBL	220m		0.74 [C]	#47		**1.01 [F]**	**#164**
	SBT/R	400m		0.44 [A]	74		0.71 [C]	168
	EBL	35m		0.54 [A]	#21		0.16 [A]	m2
	EBT/R	190m		**0.93 [E]**	**#189**		**1.21 [F]**	**#290**
	WBL	160m		0.22 [A]	8		**0.92 [E]**	**#33**
	WBT	290m		**0.96 [E]**	**#197**		0.85 [C]	#176
	WBR	125m		0.77 [C]	91		0.42 [A]	17

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

From the previous table, the March Road/Terry Fox Drive, March Road/Carling Avenue/Station Road, and Herzberg Road/Carling Avenue intersections overall do not meet their target LOS during both peak hours, and the March Road/Invention Boulevard intersection overall operates at an LOS F during the PM peak hour. The stop-controlled approaches of the March Road/Donald B. Munro Drive/Old Carp Road intersection operate at an LOS E or F during the peak hours. The stop-controlled southbound approach of the Terry Fox Drive/March Valley Road intersection operates marginally at an LOS E during the AM peak hour.

The following individual movements are identified as operating at an unacceptable level of service during the peak hours:

AM Peak Hour

- March Road/Donald B. Munro Drive/Old Carp Road
  - Northbound left turn/through/right turn (LOS E);
  - Southbound left turn/through/right turn (LOS F).
- March Road/Invention Boulevard
  - Southbound through/right turn (LOS E).
- March Road/Terry Fox Drive
  - Southbound through (LOS F);
  - Eastbound left turn (LOS F).
- March Road/Carling Avenue/Station Road
  - Northbound through/right turn (LOS F);
  - Southbound through (LOS F).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn (LOS E).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS F);
  - Eastbound through/right turn (LOS E);
  - Westbound through (LOS E).

PM Peak Hour

- March Road/Donald B. Munro Drive/Old Carp Road
  - Northbound left turn/through/right turn (LOS F);
  - Southbound left turn/through/right turn (LOS F).
- March Road/Dunrobin Road
  - Westbound through (LOS E).
- March Road/Invention Boulevard
  - Northbound through (LOS F).
- March Road/Terry Fox Drive
  - Northbound through (LOS F);
  - Southbound through (LOS F);
  - Eastbound left turn (LOS F).
- March Road/Carling Avenue/Station Road
  - Northbound through/right turn (LOS F);
  - Southbound through (LOS F).
- Terry Fox Drive/Old Second Line Road
  - Westbound through (LOS F).
- Terry Fox Drive/March Valley Road
  - Southbound left turn/through/right turn (LOS E).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS F);
  - Southbound left turn (LOS F);
  - Eastbound through/right turn (LOS F);
  - Westbound left turn (LOS E).

The following movements have 95th-percentile (i.e. maximum) queue lengths that exceed the storage length provided or extends upstream into an upstream intersection or adjacent rail corridor.

AM Peak Hour

- March Road/Terry Fox Drive
  - Southbound through: 464m (extends through Morgan's Grant Way/Shirley's Brook Drive).
- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 569m (extends through Renfrew Rail corridor and signalized access to Gateway Plaza);
  - Westbound right turn: 62m (exceeds 40m storage length).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn: 47m (exceeds 30m storage length);
  - Southbound through/right turn: 58m (extends through McPeake Place).

- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 228m (extends through Bayfield Avenue).

PM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 429m (extends through Renfrew Rail corridor and signalized access to Gateway Plaza);
  - Westbound right turn: 95m (exceeds 40m storage length).
- Terry Fox Drive/Old Second Line Road
  - Eastbound left turn: 73m (exceeds 55m storage length);
  - Westbound through: 301m (extends through Statewood Drive).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound through/right turn: 38m (extends through McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 182m (extends through Bayfield Avenue);
  - Eastbound through/right turn: 290m (extends through Teron Road).

Mitigations for the over-capacity movements within the study area are discussed below, and have been analyzed in Synchro. Detailed Synchro reports with mitigations implemented is included in **Appendix N**.

March Road/Donald B. Munro Drive/Old Carp Road

In the mitigated scenario where signalization is implemented, all approaches operate at an LOS C or better. The maximum eastbound queue lengths do not extend back to the Renfrew rail corridor during the peak hours.

March Road/Dunrobin Road

The westbound through movement operates at an LOS E during the PM peak hour. Synchro identifies that can improve this movement to the target LOS D while maintaining acceptable operations for all other movements, by providing additional green time to the eastbound-westbound through phase (increasing the cycle length from 103.9 seconds to 130 seconds).

March Road/Invention Boulevard
The southbound through movement operates marginally at an LOS E during the AM peak hour, and the northbound through movement operates at an LOS F during the PM peak hour. Synchro does not identify a signal timing plan that allows all movements to operate at the target LOS D. The results shown in the previous table assumes a cycle length of 130 seconds, with the minimum green time for east-west traffic that maintained acceptable operations for the heavy westbound left turn movement. Using demand rationalization, the following approximate volume reductions would be required:

- Northbound through: reduction of 450 vehicles during PM peak hour;
- Southbound through: reduction of 20 vehicles during AM peak hour.

March Road/Terry Fox Drive
The southbound through and eastbound left turn movements operate at an LOS F during the AM peak hour, and the northbound through, southbound through, and eastbound left turn movements operate at an LOS F during the PM peak hour. Synchro does not identify timing adjustments that can improve movements operating at an LOS F. If the cycle length is increased to 150 seconds as described in Section 4.5, the eastbound left turn movement improves to the target LOS E during the AM peak hour and the southbound through movement improves to the target LOS E during the PM peak hour. For the remaining movements, the following approximate volume reductions would be required:

- Northbound through: reduction of 500 vehicles during PM peak hour;
- Southbound through: reduction of 740 vehicles during AM peak hour;
- Eastbound left turn: reduction of 110 vehicles during PM peak hour.

March Road/Carling Avenue/Station Road
The northbound through/right turn and southbound through movements operate at an LOS F during both peak hours. Synchro does not identify timing adjustments that can improve the LOS for all movements. Using demand rationalization, the following approximate volume reductions would be required:

- Northbound through/right: reduction of 1,110 vehicles during AM peak hour;
  reduction of 670 vehicles during PM peak hour;
- Southbound through: reduction of 90 vehicles during AM peak hour;
  reduction of 460 vehicles during PM peak hour.

Terry Fox Drive/Old Second Line Road
The westbound through movement operates at an LOS F during the PM peak hour. If the cycle length is increased to 140 seconds as described in Section 4.5, the westbound through movement remains marginally at an LOS F, while all movements operate at an acceptable level of service. With no signal timing adjustments, a reduction of approximately 80 westbound through vehicles during the PM peak hour are required.

Terry Fox Drive/Flamborough Way/Innovation Drive
The southbound through/right turn movement operates marginally at an LOS E during the AM peak hour. This movement can improve to the target LOS D while maintaining an acceptable level of service for all other movements, by re-allocating five seconds of green time to the northbound/ southbound phase from the eastbound/westbound through phase.

Terry Fox Drive/March Valley Road
The southbound approach operates marginally at an LOS E during the AM peak hour. Synchro indicates that a reduction of two southbound vehicles allows the approach to operate at the target LOS D.

Herzberg Road/Carling Avenue
During the AM peak hour, the northbound approach operates at an LOS F, and the eastbound through/right turn and westbound through movements operate at an LOS E. During the PM peak hour, the northbound approach, southbound left turn, and eastbound through/right turn movements operate at an LOS F, and the westbound left turn movement operates at an LOS E. Synchro does not identify timing adjustments that can simultaneously improve all movements to the target LOS D.

With the provision of an auxiliary northbound left turn lane, dual southbound left turn lanes, an additional eastbound receiving lane and an additional eastbound through lane, Synchro analysis suggests that all movements operate at the target LOS D during the PM peak hour. During the AM peak hour, all movements operate at the target LOS D except for the northbound through and westbound through movements, which marginally exceed the target with a v/c ratio of 0.92 to 0.93. To achieve the target for these movements, the following approximate volume reductions would be required:

- Northbound through: reduction of 50 vehicles during AM peak hour;
- Westbound through: reduction of 10 vehicles during AM peak hour.

Applying only signal timing adjustments, the following approximate volume reductions would be required to meet the target LOS D during the peak hours:

- Northbound left/through/right: reduction of 110 vehicles during AM peak hour;
  reduction of 140 vehicles during PM peak hour;
- Southbound left: reduction of 10 vehicles during PM peak hour;
- Eastbound through: reduction of 10 vehicles during AM peak hour;
  reduction of 180 vehicles during PM peak hour;
- Westbound through: reduction of 10 vehicles during AM peak hour.

The foregoing analysis of key study area intersections supports the conclusions of the previous screenline analysis, which finds that additional roadway capacity beyond the March Road widening is required. Additional road widening projects such as March Road (west of Old Second Line Road), Huntmar Drive, Terry Fox Drive (west of Old Second Line Road), and Carling Avenue, can be considered as part of the CDP process, the current TMP updates, and/or future TMP updates as required.

6.0 ADJUSTED ALTERNATE ANALYSIS

Given the size of the study area, the TIA approach of applying a background growth rate to account for traffic passing through a study area and adding traffic from other development applications separately in our opinion introduces some double-counting in this case. Therefore, an adjusted analysis has been conducted for an alternate scenario where background traffic is accounted for strictly with a 1% annual background growth rate, as this growth rate also accounts for some future development and growth in the study area (i.e. the projected traffic volumes generated by other area developments have not been applied to the background and total traffic volumes). Turning movement volumes at March Road/Invention Boulevard have been maintained.

The alternate 2046 background traffic volumes and 2046 total traffic volumes are shown in **Figure 23** and **Figure 24**, respectively. The alternate 2046 background and total screenline volumes are shown in **Figure 25** and **Figure 26**, respectively.

In our professional opinion, we believe there are some issues with the methodology outlined in the City's TOR (dated October 20, 2024). The total future traffic is likely somewhere between the initial and Alternate Scenario projections considered in this assessment. The shared trips between the South March lands and the Kanata North Business Park are likely higher than the ITE industry standard rates, given the high congestion along the arterial corridors. ITE and TRANS residential trip rates will likely decrease slightly over time as they are updated to reflect sustained hybrid work-from-home arrangements. All of these factors will continue to fluctuate over the next few years, which supports the position that the specific road capacity modification requirements and phasing of modifications should be determined as part of the CDP/secondary plan process and prior to full buildout.

6.1 Alternate Screenline Volumes

6.1.1 2046 Background Screenline Analysis Based on Projected Volumes

The alternate 2046 background volumes crossing the screenline are shown in the previous **Figure 25**. There is no planned increased capacity identified on the study area roadways that cross the screenline. The projected 2046 background volumes and LOS at the screenline during the AM and PM peak hours is included in **Table 15**.

Table 15: Alternate 2046 Background Screenline Performance

Roadway	Capacity (vph)(1)	Directional Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		AM	PM	AM	PM	AM	PM	AM	PM
March Road (W)	1,200	280	347	325	403	0.27 [A]	0.34 [A]	-	-
Huntmar Drive	800	192	207	223	240	0.28 [A]	0.30 [A]	-	-
Terry Fox Drive	1,200	659	746	764	865	0.64 [B]	0.72 [C]	-	-
March Road (S)	2,000	1,759	1,691	2,040	1,962	**1.02 [F]**	0.98 [E]	40	-
Herzberg Road	800	554	525	643	609	0.80 [C]	0.76 [C]	-	-
Carling Avenue	1,200	1,065	1,107	1,235	1,284	**1.03 [F]**	**1.07 [F]**	35	84
Overall	**7,200**	**4,509**	**4,623**	**5,230**	**5,363**	**0.73 [C]**	**0.75 [C]**	**-**	**-**

1. vph: vehicle trips per hour

Figure 23: Alternate 2046 Background Traffic Volumes

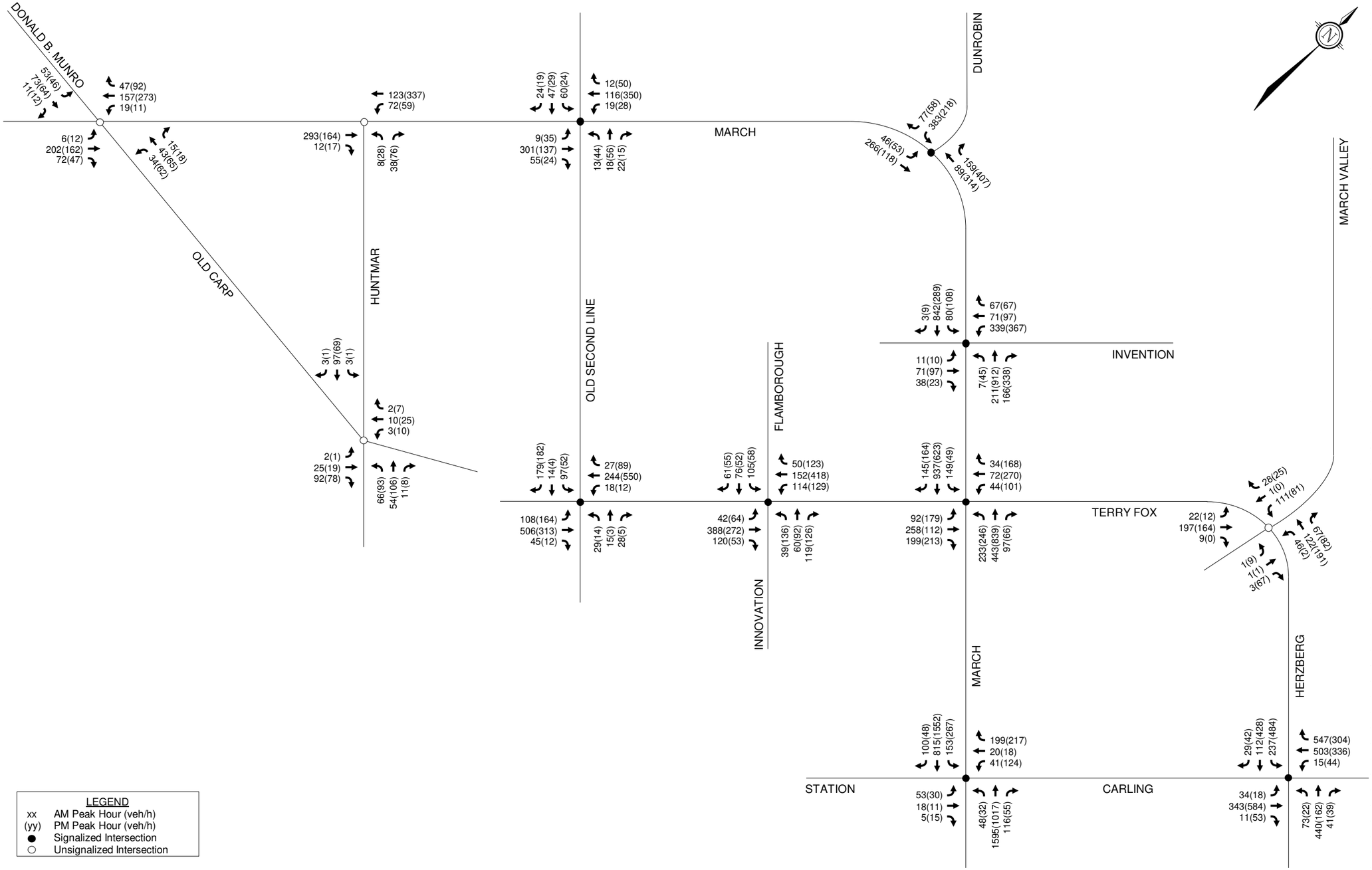


Figure 24: Alternate 2046 Total Traffic Volumes

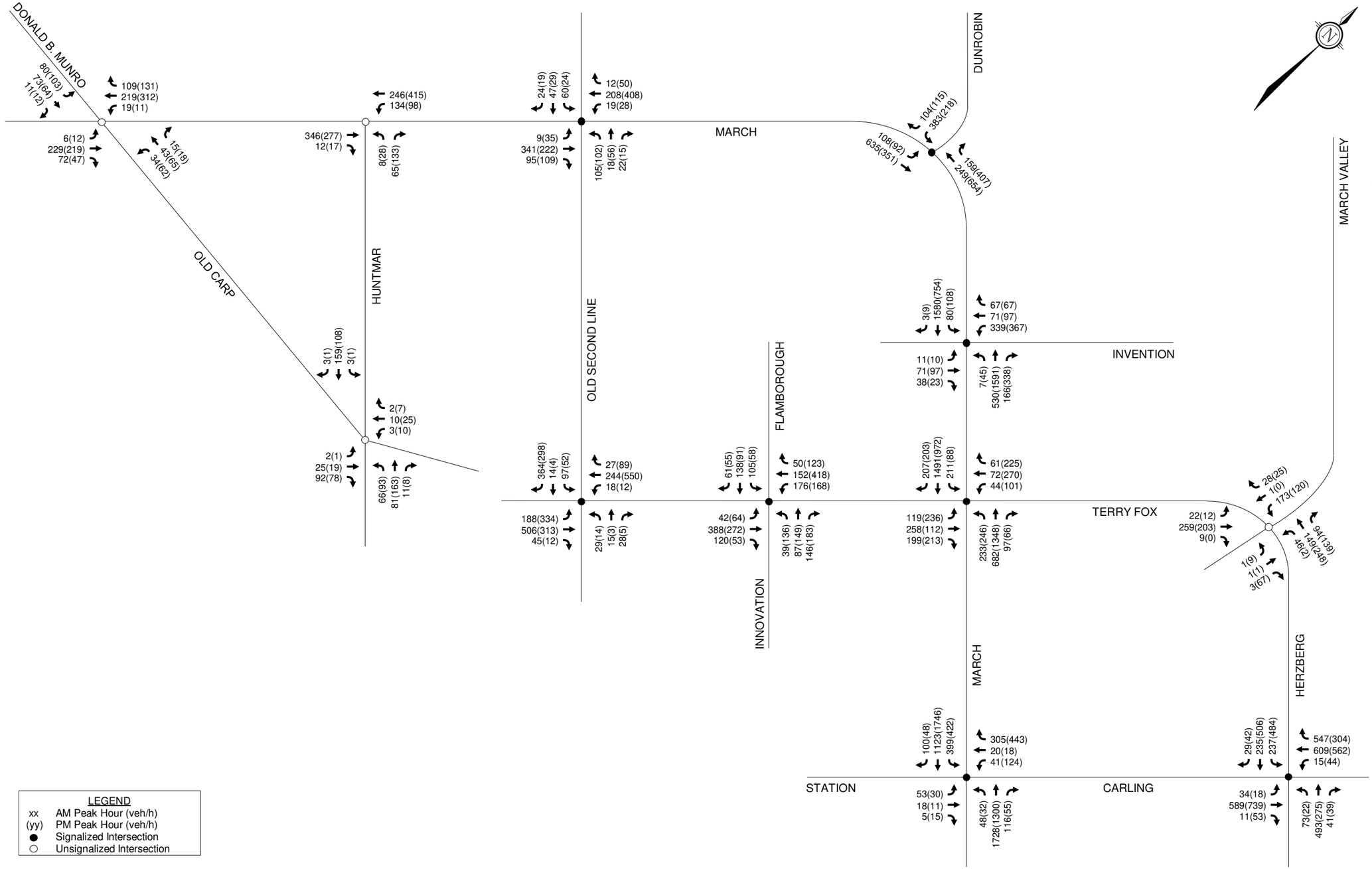


Figure 25: Alternate 2046 Background Traffic Volumes at Screenline

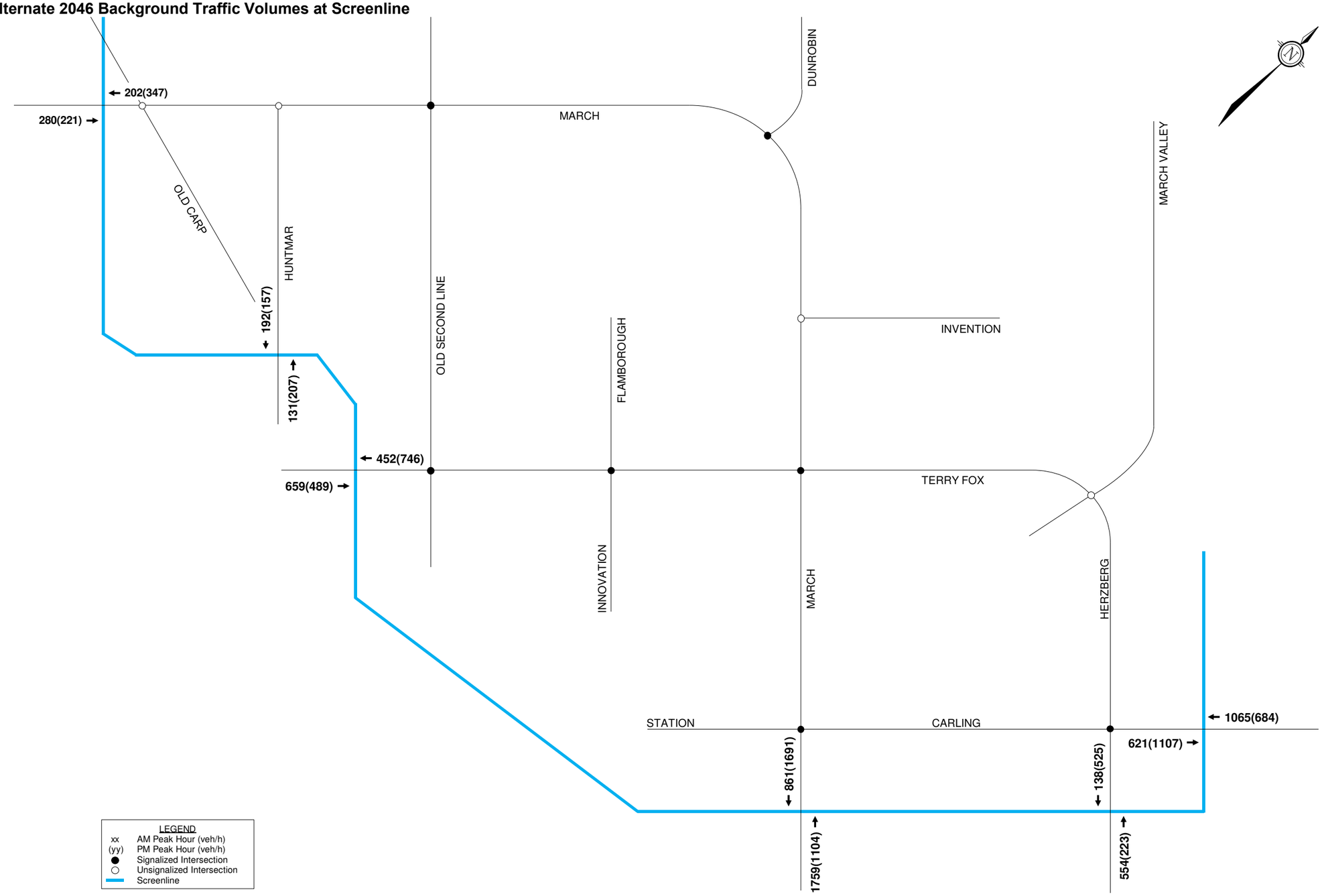
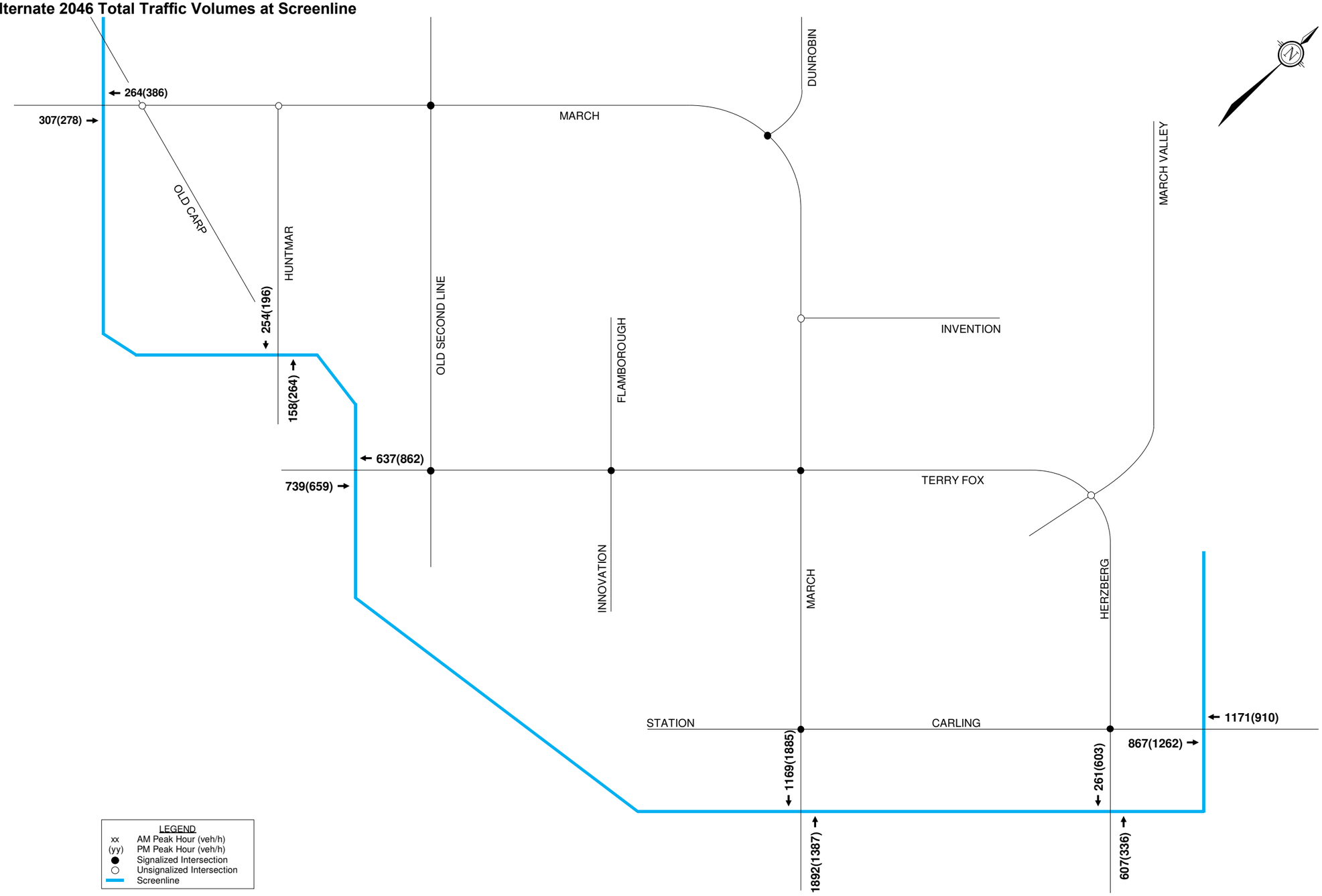


Figure 26: Alternate 2046 Total Traffic Volumes at Screenline



As shown in the previous table, the screenline is operating overall at an acceptable LOS C during the AM and PM peak hours. Considering the screenline as a whole, there is spare capacity in the order of approximately 1,970 vph during the AM peak hour and approximately 1,830 vph during the PM peak hour.

The March Road corridor south of Carling Avenue is projected to marginally exceed capacity during the AM peak hour. The Carling Avenue corridor east of Herzberg Road is projected to marginally exceed capacity during both peak hours.

6.1.2 2046 Total Screenline Analysis Based on Projected Volumes

The alternate 2046 total volumes crossing the screenline are shown in the previous **Figure 26**. The projected 2046 total volumes and LOS at the screenline during the AM and PM peak hours is included in **Table 16**.

Table 16: Alternate 2046 Total Screenline Performance

Roadway	Capacity (vph)(1)	Directional Volumes		Directional PCUs		v/c Ratio and LOS		Deficiencies	
		AM	PM	AM	PM	AM	PM	AM	PM
March Road (W)	1,200	307	386	356	448	0.30 [A]	0.37 [A]	-	-
Huntmar Drive	800	254	264	295	306	0.37 [A]	0.38 [A]	-	-
Terry Fox Drive	1,200	739	862	857	1,000	0.71 [C]	0.83 [D]	-	-
March Road (S)	2,000	1,892	1,885	2,195	2,187	**1.10 [F]**	**1.09 [F]**	195	187
Herzberg Road	800	607	603	704	699	0.88 [D]	0.87 [D]	-	-
Carling Avenue	1,200	1,171	1,262	1,358	1,464	**1.13 [F]**	**1.22 [F]**	158	264
Overall	**7,200**	**4,970**	**5,262**	**5,765**	**6,104**	**0.80 [C]**	**0.85 [D]**	**-**	**-**

1. vph: vehicle trips per hour

As shown in the previous table, the screenline is operating overall at an acceptable LOS C or D during the AM and PM peak hours. Considering the screenline as a whole, there is capacity in the order of approximately 1,440 vph during the AM peak hour and approximately 1,100 vph during the PM peak hour.

The March Road corridor south of Carling Avenue and Carling Avenue corridor east of Herzberg Road is projected to exceed capacity by a significant margin during both peak hours.

6.2 Alternate Traffic Conditions

6.2.1 2046 Background Intersection Operations

Intersection capacity analysis has been conducted for the alternate 2046 background traffic conditions. The results included below assumes the same intersection geometry and signal timings as considered for the 2046 background conditions (included in Section 4.5).

The results of the analysis of the alternate 2046 background traffic conditions are summarized in **Table 17** for the weekday AM and PM peak hours. Detailed Synchro reports for the alternate 2046 background traffic conditions are included in **Appendix O**.

Table 17: Alternate 2046 Background Intersection Operations

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Donald B. Munro Drive/ Old Carp Road	NBL/T/R	610m	-	14 s [B]	5	-	17 s [C]	10
	SBL/T/R	750m		15 s [B]	8		16 s [C]	8
	EBL/T/R	150m		0 s [A]	0		1 s [A]	1
	WBL/T	420m		1 s [A]	0		0 s [A]	0
	WBR	100m		0 s [A]	0		0 s [A]	0
March Road/ Huntmar Drive	NBL/R	160m	-	11 s [B]	2	-	11 s [B]	4
	EBT/R	400m		0 s [A]	0		0 s [A]	0
	WBL/T	880m		3 s [A]	2		2 s [A]	1
March Road/ Old Second Line Road	NBL/T/R	70m	0.34 [A]	0.14 [A]	7	0.32 [A]	0.32 [A]	14
	SBL/T/R	> 1km		0.36 [A]	16		0.19 [A]	9
	EBL	35m		0.01 [A]	2		0.07 [A]	6
	EBT/R	> 1km		0.38 [A]	39		0.17 [A]	17
	WBL	45m		0.04 [A]	4		0.05 [A]	5
	WBT	800m		0.12 [A]	13		0.37 [A]	39
	WBR	35m		0.02 [A]	1		0.06 [A]	4
March Road/ Dunrobin Road	SBL/R	70m	0.40 [A]	0.52 [A]	22	0.39 [A]	0.37 [A]	18
	EBL	110m		0.09 [A]	7		0.12 [A]	7
	EBT	500m		0.35 [A]	31		0.13 [A]	14
	WBT	730m		0.12 [A]	12		0.45 [A]	49
	WBR	110m		0.16 [A]	0		0.38 [A]	5
March Road/ Invention Boulevard	NBL	-	0.55 [A]	0.10 [A]	6	0.67 [B]	0.64 [B]	#30
	NBT	570m		0.13 [A]	24		0.59 [A]	109
	NBR	-		0.21 [A]	5		0.40 [A]	16
	SBL	-		0.54 [A]	33		0.85 [D]	#59
	SBT/R	500m		0.44 [A]	91		0.17 [A]	30
	EBL	-		0.14 [A]	9		0.13 [A]	8
	EBT/R	-		0.50 [A]	34		0.54 [A]	39
	WBL	-		0.82 [D]	#68		0.87 [D]	#72
	WBT/R	600m		0.29 [A]	35		0.34 [A]	44
March Road/ Terry Fox Drive	NBL	130m	0.56 [A]	0.50 [A]	m#55	0.53 [A]	0.68 [B]	36
	NBT	280m		0.25 [A]	m62		0.48 [A]	107
	NBR	20m		0.11 [A]	m8		0.08 [A]	m3
	SBL	90m		0.58 [A]	#31		0.32 [A]	12
	SBT	280m		0.58 [A]	112		0.42 [A]	81
	SBR	100m		0.19 [A]	11		0.22 [A]	8
	EBL	95m		0.49 [A]	20		0.80 [C]	#39
	EBT	620m		0.53 [A]	36		0.20 [A]	18
	EBR	60m		0.61 [B]	29		0.50 [A]	20
	WBL	60m		0.38 [A]	11		0.48 [A]	21
	WBT	110m		0.18 [A]	12		0.47 [A]	38
	WBR	75m		0.11 [A]	0		0.41 [A]	10

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Carling Avenue/ Station Road	NBL	80m	0.78 [C]	0.42 [A]	22	0.59 [A]	0.31 [A]	17
	NBT/R	150m		0.83 [D]	#280		0.56 [A]	125
	SBL	200m		0.54 [A]	30		0.71 [C]	45
	SBT	600m		0.37 [A]	21		0.69 [B]	218
	SBR	180m		0.10 [A]	1		0.05 [A]	m4
	EBL/T	-		0.44 [A]	26		0.19 [A]	16
	EBR	30m		0.02 [A]	0		0.05 [A]	0
	WBL	730m		0.29 [A]	16		0.67 [B]	42
	WBT	40m		0.09 [A]	10		0.07 [A]	9
	WBR	40m		0.61 [B]	24		0.53 [A]	18
Huntmar Drive/ Old Carp Road	NBL/T/R	> 1km	-	8 s [A]	-	-	9 s [A]	-
	SBL/T/R	780m		8 s [A]	-		8 s [A]	-
	EBL/T/R	480m		8 s [A]	-		8 s [A]	-
	WBL/T/R			8 s [A]	-		8 s [A]	-
Terry Fox Drive/ Old Second Line Road	NBL	25m	0.54 [A]	0.28 [A]	13	0.44 [A]	0.16 [A]	8
	NBT/R	-		0.18 [A]	11		0.04 [A]	5
	SBL	35m		0.52 [A]	32		0.33 [A]	20
	SBT/R	400m		0.55 [A]	20		0.56 [A]	18
	EBL	55m		0.35 [A]	20		0.44 [A]	29
	EBT	> 1km		0.54 [A]	150		0.25 [A]	53
	EBR	45m		0.05 [A]	1		0.01 [A]	0
	WBL	40m		0.19 [A]	11		0.15 [A]	10
	WBT	180m		0.61 [B]	121		0.75 [C]	#175
	WBR	120m		0.04 [A]	0		0.13 [A]	3
Terry Fox Drive/ Flamborough Way/ Innovation Drive	NBL	150m	0.45 [A]	0.23 [A]	16	0.46 [A]	0.67 [B]	43
	NBT/R	150m		0.59 [A]	39		0.70 [B]	52
	SBL	30m		0.74 [C]	37		0.45 [A]	22
	SBT/R	30m		0.51 [A]	37		0.37 [A]	25
	EBL	75m		0.06 [A]	7		0.12 [A]	9
	EBT	210m		0.38 [A]	73		0.27 [A]	50
	EBR	120m		0.13 [A]	8		0.06 [A]	3
	WBL	110m		0.19 [A]	15		0.19 [A]	17
	WBT	620m		0.14 [A]	26		0.36 [A]	77
	WBR	130m		0.05 [A]	2		0.13 [A]	8
Terry Fox Drive/ March Valley Road	NBL/T/R	-	-	11 s [B]	0	-	10 s [A]	2
	SBL/T/R	470m		15 s [B]	8		14 s [B]	6
	EBL/T/R	160m		1 s [A]	0		1 s [A]	0
	WBL/T/R	970m		2 s [A]	1		0 s [A]	0
Herzberg Road/ Carling Avenue	NBL/T/R	90m	0.79 [C]	**0.93 [E]**	**#168**	0.88 [D]	0.84 [D]	#75
	SBL	220m		0.70 [B]	42		**0.95 [E]**	**#126**
	SBT/R	400m		0.17 [A]	24		0.58 [A]	95
	EBL	35m		0.20 [A]	13		0.05 [A]	7
	EBT/R	190m		0.52 [B]	87		0.88 [D]	#188
	WBL	160m		0.06 [A]	7		0.43 [A]	19
	WBT	290m		0.73 [C]	135		0.46 [A]	75
	WBR	125m		0.70 [B]	72		0.39 [A]	15

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

From the previous table, all intersections overall operate acceptably during the peak hours. The Herzberg Road/Carling Avenue intersection has one critical movement during each peak hour that operates at an LOS E. This includes the northbound left turn/through/right turn movement during the AM peak hour and the southbound left turn movement during the PM peak hour.

The following movements have 95th-percentile (i.e. maximum) queue lengths that exceed the storage length provided or extends upstream into an upstream intersection or adjacent rail corridor.

AM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 280m (extends through Renfrew Rail corridor and into signalized access to Gateway Plaza).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn: 37m (exceeds 30m storage length);
  - Southbound through/right turn: 37m (extends through McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 168m (extends through Bayfield Avenue).

Synchro identifies that signal timing adjustments at Herzberg Road/Carling Avenue can improve all movements to the target LOS D during the peak hours. Detailed Synchro reports with signal timing adjustments are included in **Appendix O**.

6.2.2 2046 Total Intersection Operations

Intersection capacity analysis has been conducted for the alternate 2046 total traffic conditions. The results included below assumes the same intersection geometry and signal timings as considered for the 2046 background and 2046 total conditions (included in Sections 4.5 and 5.5, respectively).

The results of the analysis of the alternate 2046 total traffic conditions are summarized in **Table 18** for the weekday AM and PM peak hours. Detailed Synchro reports for the 2046 total traffic conditions are included in **Appendix O**.

Table 18: Alternate 2046 Total Intersection Operations

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Donald B. Munro Drive/ Old Carp Road	NBL/T/R	610m	-	15 s [B]	6	-	20 s [C]	12
	SBL/T/R	750m		19 s [C]	13		24 s [C]	19
	EBL/T/R	150m		0 s [A]	0		0 s [A]	0
	WBL/T	420m		1 s [A]	0		0 s [A]	0
	WBR	100m		0 s [A]	0		0 s [A]	0
March Road/ Huntmar Drive	NBL/R	160m	-	12 s [B]	3	-	14 s [B]	8
	EBT/R	400m		0 s [A]	0		0 s [A]	0
	WBL/T	880m		3 s [A]	3		2 s [A]	2

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
March Road/ Old Second Line Road	NBL/T/R	70m	0.43 [A]	0.44 [A]	21	0.45 [A]	0.53 [A]	26
	SBL/T/R	> 1km		0.36 [A]	19		0.19 [A]	11
	EBL	35m		0.01 [A]	2		0.09 [A]	6
	EBT/R	> 1km		0.47 [A]	48		0.41 [A]	32
	WBL	45m		0.04 [A]	4		0.06 [A]	5
	WBT	800m		0.22 [A]	22		0.50 [A]	45
	WBR	35m		0.02 [A]	1		0.07 [A]	4
March Road/ Dunrobin Road	SBL/R	70m	0.61 [B]	0.52 [A]	22	0.66 [B]	0.48 [A]	29
	EBL	110m		0.09 [A]	7		0.31 [A]	10
	EBT	500m		0.35 [A]	31		0.35 [A]	37
	WBT	730m		0.12 [A]	12		0.80 [C]	118
	WBR	110m		0.16 [A]	0		0.37 [A]	4
March Road/ Invention Boulevard	NBL	-	0.80 [C]	0.10 [A]	6	**0.96 [E]**	0.64 [B]	#30
	NBT	570m		0.33 [A]	60		**1.02 [F]**	**#267**
	NBR	-		0.21 [A]	5		0.43 [A]	42
	SBL	-		0.54 [A]	33		0.85 [D]	#59
	SBT/R	500m		0.82 [D]	#249		0.44 [A]	82
	EBL	-		0.14 [A]	9		0.13 [A]	8
	EBT/R	-		0.50 [A]	34		0.54 [A]	39
	WBL	-		0.82 [D]	#68		0.87 [D]	#72
	WBT/R	600m		0.29 [A]	35		0.34 [A]	44
March Road/ Terry Fox Drive	NBL	130m	0.87 [D]	0.50 [A]	m#42	0.80 [C]	0.68 [B]	m33
	NBT	280m		0.42 [A]	m79		0.81 [D]	#210
	NBR	20m		0.12 [A]	m4		0.08 [A]	m0
	SBL	90m		0.62 [B]	#49		0.51 [A]	#21
	SBT	280m		0.97 [E]	#241		0.66 [B]	#147
	SBR	100m		0.27 [A]	15		0.27 [A]	15
	EBL	95m		0.72 [C]	#27		**1.05 [F]**	**#55**
	EBT	620m		0.47 [A]	36		0.20 [A]	18
	EBR	60m		0.57 [A]	29		0.51 [A]	21
	WBL	60m		0.38 [A]	11		0.48 [A]	m19
	WBT	110m		0.18 [A]	12		0.47 [A]	m37
	WBR	75m		0.20 [A]	0		0.55 [A]	m23
March Road/ Carling Avenue/ Station Road	NBL	80m	0.98 [E]	0.42 [A]	22	0.84 [D]	0.31 [A]	17
	NBT/R	150m		**1.08 [F]**	**#320**		0.84 [D]	179
	SBL	200m		0.74 [C]	m#58		0.81 [D]	#85
	SBT	600m		0.54 [A]	m18		0.83 [D]	#275
	SBR	180m		0.11 [A]	m0		0.05 [A]	m5
	EBL/T	-		0.35 [A]	26		0.15 [A]	16
	EBR	30m		0.02 [A]	0		0.04 [A]	0
	WBL	730m		0.23 [A]	16		0.53 [A]	m35
	WBT	40m		0.07 [A]	10		0.05 [A]	m5
	WBR	40m		0.83 [D]	57		0.91 [E]	m94

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

Intersection	Lane Group	Storage/ Spacing(1)	AM Peak Hour			PM Peak Hour		
			Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)	Intersection v/c & LOS(2)	v/c or Delay [LOS]	95th% Queue (m)
Huntmar Drive/ Old Carp Road	NBL/T/R	> 1km	-	9 s [A]	-	-	10 s [A]	-
	SBL/T/R	780m		9 s [A]	-		8 s [A]	-
	EBL/T/R	480m		8 s [A]	-		8 s [A]	-
	WBL/T/R			8 s [A]	-		8 s [A]	-
Terry Fox Drive/ Old Second Line Road	NBL	25m	0.57 [A]	0.52 [A]	15	0.76 [C]	0.23 [A]	8
	NBT/R	-		0.18 [A]	11		0.04 [A]	5
	SBL	35m		0.51 [A]	33		0.34 [A]	21
	SBT/R	400m		0.73 [C]	28		0.70 [B]	24
	EBL	55m		0.55 [A]	32		0.79 [C]	#67
	EBT	> 1km		0.42 [A]	106		0.25 [A]	53
	EBR	45m		0.05 [A]	1		0.01 [A]	0
	WBL	40m		0.19 [A]	12		0.15 [A]	10
	WBT	180m		0.35 [A]	66		0.78 [C]	#182
	WBR	120m		0.04 [A]	0		0.14 [A]	3
Terry Fox Drive/ Flamborough Way/ Innovation Drive	NBL	150m	0.52 [A]	0.28 [A]	16	0.56 [A]	0.54 [A]	43
	NBT/R	150m		0.74 [C]	58		0.83 [D]	88
	SBL	30m		**0.92 [E]**	**#45**		0.53 [A]	24
	SBT/R	30m		0.69 [B]	58		0.38 [A]	38
	EBL	75m		0.06 [A]	7		0.13 [A]	12
	EBT	210m		0.39 [A]	77		0.30 [A]	58
	EBR	120m		0.14 [A]	9		0.07 [A]	3
	WBL	110m		0.29 [A]	23		0.26 [A]	26
	WBT	620m		0.14 [A]	27		0.42 [A]	91
	WBR	130m		0.05 [A]	2		0.14 [A]	9
Terry Fox Drive/ March Valley Road	NBL/T/R	-	-	12 s [B]	0	-	11 s [B]	3
	SBL/T/R	470m		22 s [C]	18		20 s [C]	12
	EBL/T/R	160m		1 s [A]	0		1 s [A]	0
	WBL/T/R	970m		2 s [A]	1		0 s [A]	0
Herzberg Road/ Carling Avenue	NBL/T/R	90m	**0.91 [E]**	**0.98 [E]**	**#197**	**1.07 [F]**	**0.97 [E]**	**#134**
	SBL	220m		0.70 [B]	42		**0.93 [E]**	**#144**
	SBT/R	400m		0.30 [A]	46		0.60 [A]	131
	EBL	35m		0.47 [A]	#19		0.16 [A]	m3
	EBT/R	190m		**0.93 [E]**	**#189**		**1.21 [F]**	**#301**
	WBL	160m		0.21 [A]	8		**0.92 [E]**	**#33**
	WBT	290m		**0.94 [E]**	**#192**		0.85 [A]	#176
	WBR	125m		0.74 [C]	82		0.42 [A]	17

1: Storage length for any auxiliary turn lanes, or approximate spacing to next upstream intersection or rail crossing for through lanes
2: Overall intersection v/c and LOS applies to signalized intersections only
m: Queues are metered by an upstream signal
#: Volume for the 95th percentile cycle exceeds capacity

From the previous table, the Herzberg Road/Carling Avenue intersection overall does not meet the target LOS D during both peak hours, and the March Road/Invention Boulevard intersection overall does not meet the target LOS D during the PM peak hour. During both peak hours, all other intersections overall and all approaches at unsignalized intersections operate at acceptable levels of service.

The following individual movements are identified as operating at an unacceptable level of service during the peak hours.

AM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through/right turn (LOS F).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn (LOS E).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS E);
  - Eastbound through/right turn (LOS E);
  - Westbound through (LOS E).

PM Peak Hour

- March Road/Invention Boulevard
  - Northbound through (LOS F).
- March Road/Terry Fox Drive
  - Eastbound left turn (LOS F).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn (LOS E);
  - Southbound left turn (LOS E);
  - Eastbound through/right turn (LOS F);
  - Westbound left turn (LOS E).

The following movements have 95th-percentile (i.e. maximum) queue lengths that exceed the storage length provided or extends upstream into an upstream intersection or adjacent rail corridor.

AM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 320m (extends through Renfrew Rail corridor and signalized access to Gateway Plaza);
  - Westbound right turn: 57m (exceeds 40m storage length).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound left turn: 45m (exceeds 30m storage length);
  - Southbound through/right turn: 58m (extends through McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 197m (extends through Bayfield Avenue).

PM Peak Hour

- March Road/Carling Avenue/Station Road
  - Northbound through/right turn: 179m (extends through Renfrew Rail corridor);
  - Westbound right turn: 94m (exceeds 40m storage length).
- Terry Fox Drive/Old Second Line Road
  - Eastbound left turn: 67m (exceeds 55m storage length);
  - Westbound through: 182m (extends to Statewood Drive).
- Terry Fox Drive/Flamborough Way/Innovation Drive
  - Southbound through/right turn: 38m (extends through McPeake Place).
- Herzberg Road/Carling Avenue
  - Northbound left turn/through/right turn: 134m (extends through Bayfield Avenue);
  - Eastbound through/right turn: 301m (extends through Teron Road).

Mitigations for the over-capacity movements within the study area are discussed below, and have been analyzed in Synchro. Detailed Synchro reports with mitigations implemented is included in **Appendix O**.

March Road/Invention Boulevard
The northbound through movement operates at an LOS F during the PM peak hour. Synchro does not identify a signal timing plan that allows all movements to operate at the target LOS D. The results shown in the previous table assumes a cycle length of 130 seconds, with the minimum green time for east-west traffic that maintained acceptable operations for the heavy westbound left turn movement. Using demand rationalization, an approximate volume reduction of 190 northbound through vehicles would be required to meet the target LOS D during the PM peak hour.

March Road/Terry Fox Drive
The eastbound left turn movement operates at an LOS F during the PM peak hour. If the cycle length is increased to 150 seconds as described in Section 4.5, the eastbound left turn movement improves to the target LOS E while maintaining acceptable levels of service for all other movements.

March Road/Carling Avenue/Station Road
The northbound through/right turn operates at an LOS F during the AM peak hour. Synchro does not identify timing adjustments that can improve the LOS for all movements. Using demand rationalization, an approximate volume reduction of 130 northbound through vehicles would be required to meet the target LOS E during the AM peak hour.

Terry Fox Drive/Flamborough Way/Innovation Drive
The southbound left turn movement operates marginally at an LOS E during the AM peak hour. This movement can improve to the target LOS D while maintaining an acceptable level of service for all other movements, by re-allocating five seconds of green time to the northbound/southbound phase from the eastbound/westbound through phase.

Herzberg Road/Carling Avenue
During the AM peak hour, the northbound approach, eastbound through/right turn, and westbound through movements operate at an LOS E. During the PM peak hour, the eastbound through/right turn movement operates at an LOS F, and the northbound approach, southbound left turn, and westbound left turn movements operate at an LOS E. Synchro does not identify timing adjustments that can simultaneously improve all movements to the target LOS D.

With the provision of an auxiliary northbound left turn lane, dual southbound left turn lanes, an additional eastbound receiving lane and an additional eastbound through lane, Synchro analysis suggests that all movements operate at the target LOS D or better during both peak hours.

Applying only signal timing adjustments, the following approximate volume reductions would be required to meet the target LOS D during the peak hours:

- Northbound left/through/right: reduction of 50 vehicles during AM peak hour;
  reduction of 140 vehicles during PM peak hour;
- Southbound left: reduction of 10 vehicles during PM peak hour;
- Eastbound through: reduction of 180 vehicles during PM peak hour.

7.0 CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the addition of the South March lands to the settlement area are a natural extension of the full transportation grid. The development of the lands will naturally integrate with the existing abutting suburban community. In addition to March Road, Old Second Line Road and March Valley Road can be used as alternative travel routes to diversify the flow of traffic. Spreading peak hour travel demand to alternative routes is consistent with the principles of demand rationalization, and it is common in other suburban areas of the City such as Kanata West/Fernbank, Barrhaven, and Leitrim. For the South March lands, there are no impediments to a natural connection and extension of the existing grid. There is no need to assemble a new corridor as the rights-of-way (ROWs) already exist in the area. There are no major natural features that need to be crossed with large bridges, and there are no unique constructability problems.

Based on the projections that have been developed using the methodology from the City's *Terms of Reference* (TOR) dated October 20, 2024, it appears that additional road capacity beyond the planned March Road Widening may be required. Based on the projected vehicle trips, another 680 vehicles per hour of lane capacity may be required. This could be achieved by widening March Road (west of Old Second Line Road), Huntmar Drive, Terry Fox Drive (west of Old Second Line Road), or Carling Avenue. The analysis of key study area intersections supports the conclusions of the screenline analysis, which finds that additional roadway capacity beyond the March Road widening may be required. Additional road widening projects can be considered as part of the current TMP update, the Community Design Plan (CDP) process, and/or future TMP updates as required.

Given the size of the study area, the TIA approach recommended by the City in the TOR (dated October 20, 2024) of applying a background growth rate to account for traffic passing through a study area and adding traffic from other development applications separately, in our opinion introduces some double-counting in this case. This incorrectly increases the traffic volumes.

Therefore, an analysis has been conducted for an Alternate Scenario where background traffic is accounted for strictly with a 1% annual background growth rate, as this growth rate also accounts for some future development and growth in the study area. The Alternate Scenario projections identify that additional road capacity may not be required.

In our professional opinion, we believe there are some issues with the methodology outlined in the City's TOR (dated October 20, 2024). The total future traffic is likely somewhere between the initial and Alternate Scenario projections considered in this assessment. The shared trips between the South March lands and the Kanata North Business Park are likely higher than the ITE industry standard rates, given the high congestion along the arterial corridors. ITE and TRANS residential trip rates will likely decrease slightly over time as they are updated to reflect sustained hybrid work-from-home arrangements. All of these factors will continue to fluctuate over the next few years which supports the position that the specific road capacity modification requirements and phasing of modifications should be determined as part of the CDP/secondary plan process and prior to full buildout.

The City is currently working on an update to the *2013 TMP*. The new Capital Infrastructure Plan will be prepared for Part 2 of the TMP Update, targeted for completion in 2025. The timing of the planned March Road Widening and bus rapid transit (BRT) will be determined as part of the new Capital Infrastructure Plan. Additional road projects to accommodate the ultimate development of the South March lands can be considered as part of the current TMP Update, the CDP/secondary plan process, and/or future TMP updates as required. Buildout of the South March lands may occur over a period of 15 years and the road capacity requirements and phasing of modifications can be determined as part of the CDP/secondary plan process and prior to full buildout. Road upgrades may also be included in a future TMP update.

The South March lands have good access to the planned park-and-ride lot and future BRT along March Road, with a planned transit station at the southern edge of the subject lands' boundary. The subject lands are well positioned with several amenities including shopping, employment centers, recreational facilities, and are very close to fire services.

These key points are summarized in the City's previous scoring of the subject lands, when they were considered for inclusion at the time of the new *Official Plan* in 2021, Novatech's previous scoring submissions for various parcels within the South March lands, and Novatech's new scoring submission for all parcels.

Based on our review, we recommend a Category 1 – Future Neighbourhood Overlay designation on the South March lands 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

City of Ottawa Scoring – South March Cluster

DOCUMENT 2

Category 1 and 2 Lands

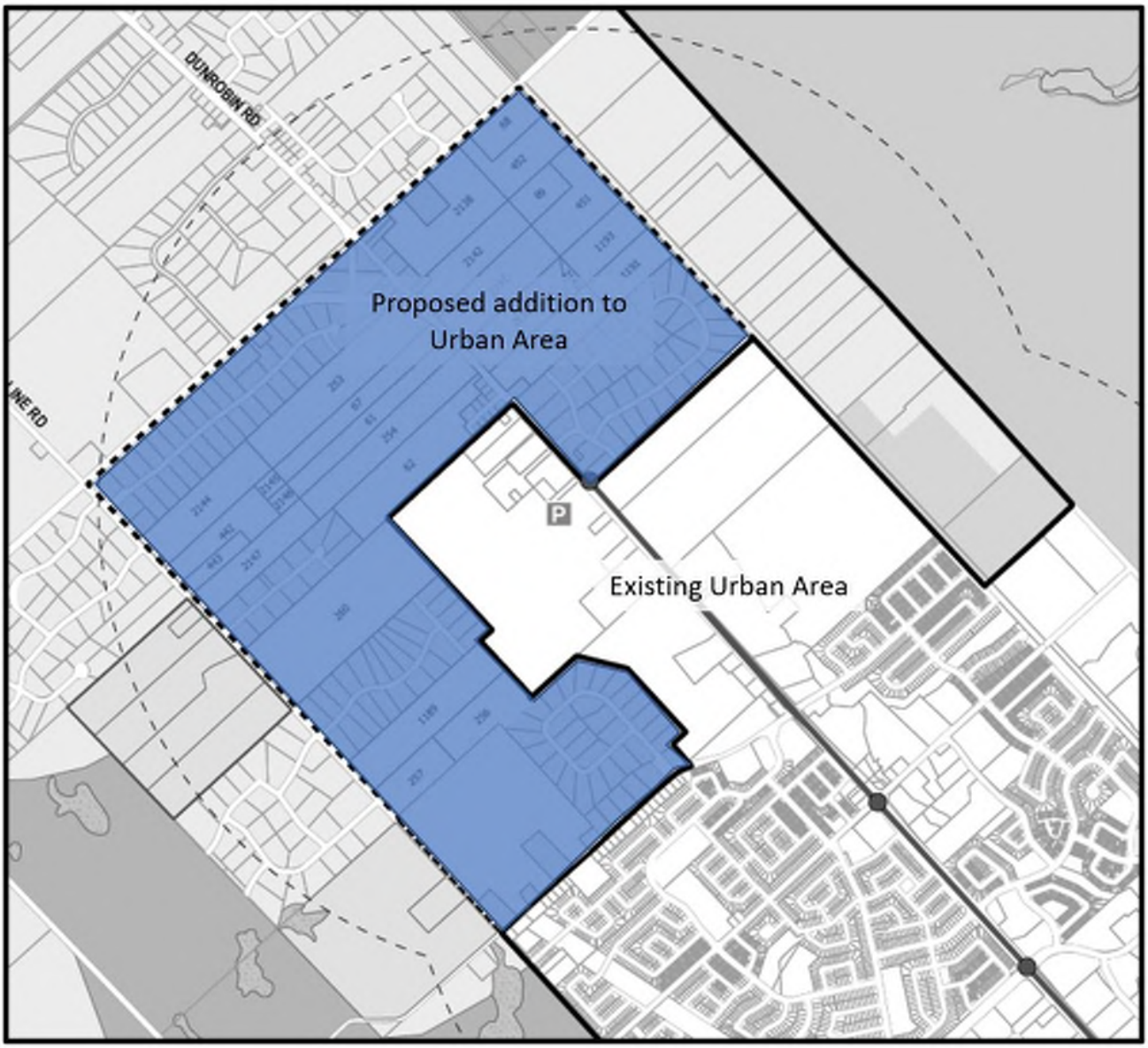
- South March Cluster
- Stittsville Cluster
- Barrhaven South Cluster
- Riverside South Cluster
- Leitrim Cluster
- Orléans South Cluster
- Orléans North Cluster

Introduction

This document presents a planning overview and the results of the evaluation of candidate lands for urban expansion. It summarizes the evaluation results for Category 1 lands (Pass 1 and 2) with strong Adherence to the GMS and Five Big Moves and Category 2 lands with partial adherence to the GMS and Five Big Moves. Additional refinements and detail are outlined in Document 1.

The land use planning overview includes commentary on existing land area, Official Plan designation(s), land use, planning context and proximity to employment, retail and recreational facilities and the natural environment. The servicing and transportation evaluation criteria and implications are provided for seven clusters of land across the city. The servicing evaluation and scoring for each of the clusters considers on-site and off-site requirements and is presented in five main factors: water supply; wastewater capacity; stormwater outlet; integration factor and penalty factors / geotechnical conditions. The Transportation analysis and evaluation focuses on the primary evaluation criteria including lands within or in proximity to the 1.9 km radial Transit Catchment Area as well as transit capital and operating, road capacity, modal share and vehicle kilometres traveled (VKT) considerations.

South March Cluster



Net Developable Area:	**175.35 ha**	Planning Status:	no applications
Official Plan Designation:	General Rural Area	Zoning:	RU – Rural Countryside
Land Use:	Fields and forested areas with some agricultural and single detached residential uses. Pockets of rural estate subdivisions. Some tributaries of Shirley's Brook can be found within the cluster.		
Description:	Located in South March east of Old Second Line Road and south of March Road. The Beachburg rail corridor (non-active) runs along the eastern edge of the cluster. East of the corridor are lands constrained from development by the Connaught Range and Primary Training Facility (DND). The lands include five existing subdivisions which would be added to the urban boundary and public service area. The current urban boundary is irregular shaped, a result of the previous urban expansion approved through OPA 76 hearings. The approved Kanata North Community Design Plan as well as active subdivision applications contemplate		

	further road connections to the cluster. This would facilitate connectivity and integration with the existing urban area. The cluster is in close proximity to existing facilities and services such as retail (including grocery store), recreational facilities, schools and employment uses including the Kanata North Technology Park, the largest non-governmental cluster of jobs in Ottawa. Parcels east of the Beachburg rail corridor adjacent to March Valley Road are impacted from the Connaught Range and Primary Training Facility and have therefore been excluded from further consideration. This is consistent with the outcome of OPA 76 hearings on the matter as well as recent correspondence from the Department of National Defense confirming the range is intended to continue to operate on a daily basis (both day and nighttime) and with a range of noise sources including firearms, explosives and heavy vehicles.
Servicing	**Water** The South March Servicing Cluster Areas (SCAs) are situated adjacent to two pressure zones: 2W/2C and the Morgan's Grant pressure zone. With the exception of areas west of Old Second Line Road, and SM-9b, (see Identification map below) the area can be serviced with good water pressure from Zone 2W/2C via watermain connections in the Kanata North Urban Expansion Area (KNUEA) lands. Due to high elevation, of the parcels west of Old Second Line Road, and SCA SM-9b they would ideally be serviced by pressure zone 3W, which would require the construction of a new watermain on Old Second Line south to Terry Fox Drive. The construction of this watermain would create an opportunity to eliminate the Morgan's Grant pressure zone, and by connection to the Morgan's Grant water distribution network, provide looping for redundancy. A 3W zonal capacity upgrade, MG pump station decommissioning, and installation of PRV's in the existing MG area would also be required. If the parcels west of Old Second Line Road and SM-9b are not serviced by pressure zone 3W then the water pump station serving the Morgan's Grant pressure zone would require an upgrade to service these SCAs, a new watermain constructed on Old Second Line and several watermains would need to be upgraded in the Morgan's Grant area to provide redundancy. **Wastewater** The future March Road Collector and East March Trunk have capacity to service expansion areas contiguous to the Kanata North Urban Expansion Area (SM-1a, SM-2, SM-5, SM-6a, SM-8) by gravity. However, service to areas SM-3, SM-9a, SM-9b and the parcels west of Old Second Line Road would require major upgrades to the March Road Collector or a new sewer conveying flows to the East March Trunk. Furthermore, twinning sections of the East March Trunk would also be required to store excess flow during large wet weather events. Servicing areas SM-1b, SM-6b, would require a new off-site trunk discharging to future sanitary sewers within the Kanata North Urban Expansion area. Depending on actual future flows, sufficient residual capacity to service SM-3, SM-9a, SM-9b and the parcels west of Old Second Line Road could be available in the downstream trunk sewers. To reduce off-site servicing costs and minimize impacts on existing development areas, SCAs SM-3, SM-9a, SM-9b and the parcels west of Old Second Line Road could be gated until flow monitoring demonstrates sufficient residual capacity. **Stormwater** All South March SCAs are located within the Shirley's Brook watershed. Surface

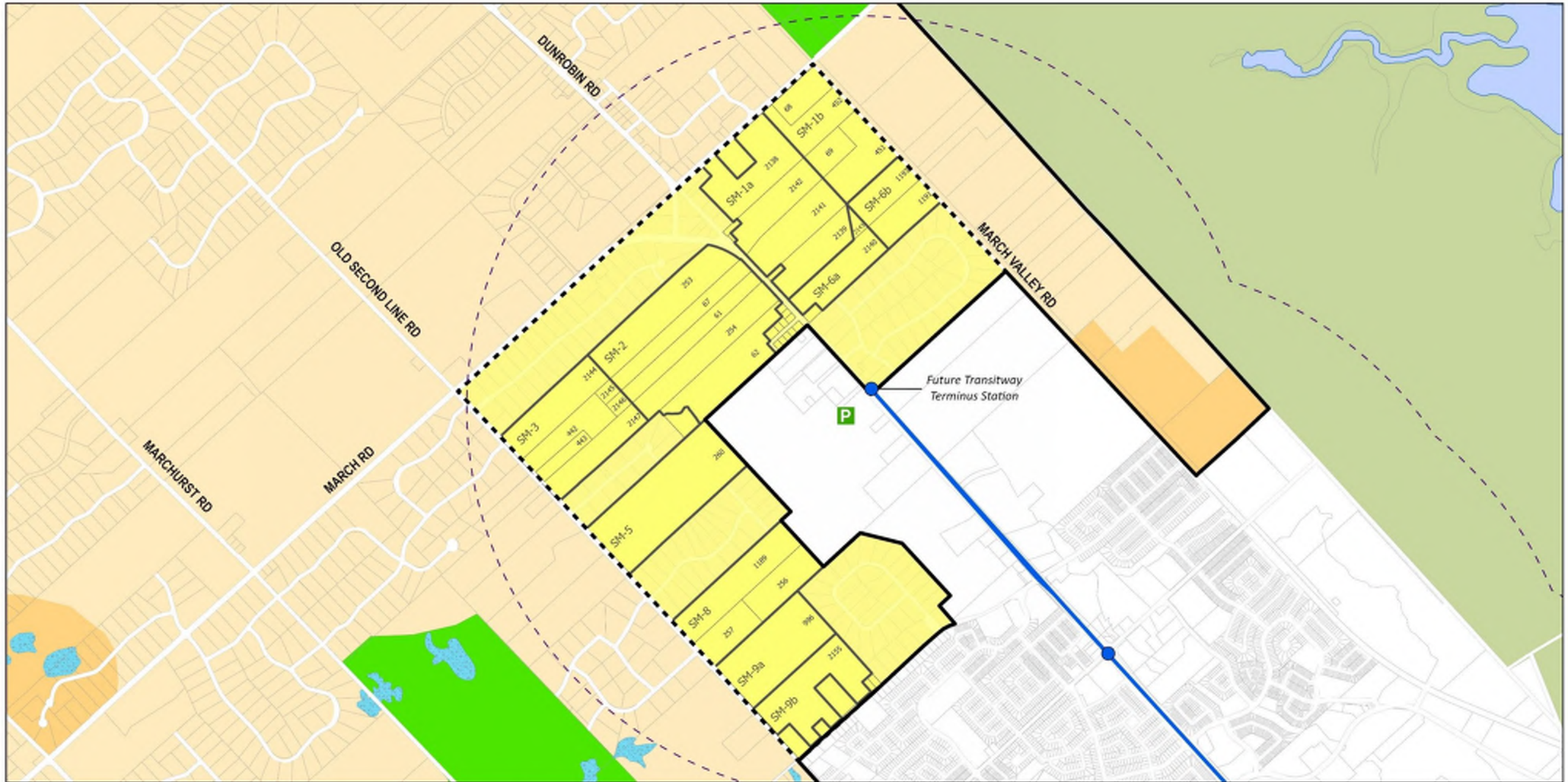
	runoff from the SCAs is collected in small tributaries or ditch drainage systems of Shirley's Brook, which are expected to require some improvements to establish a reliable outlet for urban drainage. Shirley's Brook itself has existing erosion problems that require analysis and implementation of a long-term mitigation plan prior to any new development. Geotechnical conditions and topographic relief in the area of available stormwater outlets are favourable in all SCAs to avoid long-term maintenance challenges associated with submerged storm sewer systems. **Penalty Factors** Much of the area is underlaid by shallow bedrock, and some SCAs are located adjacent to Country lot subdivisions on private services (well and septic) that could be at risk due to blasting. Isolated areas have depressional storage / imperfect drainage that, if lost through urbanization, would add to the increase in runoff volume that would be normally expected as a result of development based on conventional practices. This would contribute further to erosion conditions in Shirley's Brook.
Transportation	Parcels in this cluster are within the 1.9km radial catchment area from the planned March Road Transitway transit stations. There is a planned park & ride lot located at the terminus transit station on March Road, at the southern edge of the cluster boundary. March Road provides the only direct arterial road access to Highway 417.

South March Cluster – Scoring – Category 1

SCA	ID	1. Water	2. Wastewater (sanitary)	3.a) Stormwater characteristics and availability of surface water outlets	3. b) Stormwater - expected grade raise requirement relative to restrictions and other topographic constraints on drainage.	4.Servicing Integration Factor	5.Servicing Risk Factors	**Total Servicing**	6.Availability of Rapid Transit or Transit Priority - Isolated Measures	7.Proximity to nearest Rapid Transit Station, Transit Priority Corridor – Isolated Measures or Park and Ride feeding Rapid Transit System	**Total Transit**	8. Proximity to Jobs	9.Proximity to Convenience Retail	10.Distance to Major City Facilities	11.Distance to Emergency Services – Fire	12.Potential Arterial Road Upgrades	13.Connectivity	14. Conflict with Agricultural Land Uses	15.Active Agricultural Operation	16.Natural Heritage Linkages	**Total Score**	**Category**
SM-1-a	2138	8	8	0	6	6	-4	**24**	10	4	**14**	6	1	1	3	0	6	0	-1	0	**54**	**1**
SM-1-a	2142	8	8	0	6	6	-4	**24**	10	4	**14**	6	1	1	3	0	8	0	-2	0	**55**	**1**
SM-1-a	2141	8	8	0	6	6	-4	**24**	10	8	**18**	6	1	1	3	0	6	0	-2	0	**57**	**1**
SM-1-a	2139	8	8	0	6	6	-4	**24**	10	8	**18**	8	1	1	3	0	6	0	-1	0	**60**	**1**
SM-1-b	68	8	2	0	6	4	-4	**16**	10	4	**14**	6	1	0	3	0	6	0	-1	0	**45**	**1**
SM-1-b	452	8	2	0	6	4	-4	**16**	10	4	**14**	6	1	1	3	0	6	0	-1	0	**46**	**1**
SM-1-b	69	8	2	0	6	4	-4	**16**	10	4	**14**	6	1	1	3	0	8	0	-2	0	**47**	**1**
SM-1-b	451	8	2	0	6	4	-4	**16**	10	8	**18**	6	1	1	3	0	6	0	-2	0	**49**	**1**
SM-2	253	8	8	0	6	6	-4	**24**	10	4	14	8	1	1	3	0	6	0	-2	0	**55**	**1**
SM-2	67	8	8	0	6	6	-4	**24**	10	8	**18**	8	1	1	3	0	8	0	-1	0	**62**	**1**
SM-2	61	8	8	0	6	6	-4	**24**	10	8	**18**	8	1	2	3	0	8	0	-1	0	**63**	**1**
SM-2	254	8	8	0	6	6	-4	**24**	10	8	**18**	8	1	2	3	0	6	0	-1	0	**61**	**1**
SM-2	62	8	8	0	6	6	-4	**24**	10	8	**18**	8	1	2	3	0	6	0	-1	0	**61**	**1**
SM-3	2144	6	2	0	6	6	-4	**14**	10	4	14	8	1	1	3	0	6	0	-2	0	**45**	**1**
SM-3	442	6	2	0	6	6	-4	**14**	10	4	**14**	8	1	2	3	0	6	0	-1	0	**49**	**1**
SM-3	2145	6	2	0	6	6	-4	**14**	10	8	**18**	8	1	1	3	0	8	0	-1	0	**52**	**1**
SM-3	2146	6	2	0	6	6	-4	**14**	10	8	**18**	8	1	2	3	0	8	0	-1	0	**53**	**1**
SM-3	443	6	2	0	6	6	-4	**14**	10	4	**14**	8	1	2	3	0	8	0	-1	0	**49**	**1**
SM-3	2147	6	2	0	6	6	-4	**14**	10	8	**18**	8	1	2	3	0	6	0	-1	0	**51**	**1**
SM-5	260	6	6	0	6	6	-2	**22**	10	8	**18**	8	1	2	3	0	2	0	-1	0	**55**	**1**
SM-6-a	2143	8	2	0	6	4	-2	**18**	10	8	**18**	8	1	1	3	0	6	0	-1	0	**60**	**1**
SM-6-a	2140	8	2	0	6	4	-2	**18**	10	8	**18**	8	1	2	3	0	2	0	-1	0	**57**	**1**
SM-6-b	1193	8	2	0	6	4	-2	**18**	10	8	**18**	8	1	1	3	0	6	0	-1	0	**54**	**1**

		1. Water	2. Wastewater (sanitary)	3.a) Stormwater characteristics and availability of surface water outlets	3. b) Stormwater - expected grade raise requirement relative to restrictions and other topographic constraints on drainage.	4.Servicing Integration Factor	5.Servicing Risk Factors	**Total Servicing**	6.Availability of Rapid Transit or Transit Priority - Isolated Measures	7.Proximity to nearest Rapid Transit Station, Transit Priority Corridor – Isolated Measures or Park and Ride feeding Rapid Transit System	**Total Transit**	8. Proximity to Jobs	9.Proximity to Convenience Retail	10.Distance to Major City Facilities	11.Distance to Emergency Services – Fire	12.Potential Arterial Road Upgrades	13.Connectivity	14. Conflict with Agricultural Land Uses	15.Active Agricultural Operation	16.Natural Heritage Linkages	**Total Score**	**Category**
SM-6-b	1191	8	2	0	6	4	-2	**18**	10	8	**18**	8	1	2	3	0	2	0	-1	0	**51**	**1**
SM-8	1189	6	8	0	6	6	-2	**24**	10	8	**18**	8	1	3	3	0	6	0	0	0	**63**	**1**
SM-8	257	6	8	0	6	6	-2	**24**	10	4	**14**	8	1	3	3	0	8	0	-1	0	**60**	**1**
SM-8	256	6	8	0	6	6	-2	**24**	10	8	**18**	8	1	3	3	0	6	0	0	0	**63**	**1**
SM-9a	996	6	2	0	6	4	-2	**16**	10	4	**14**	8	3	4	3	0	6	0	0	0	**54**	**1**
SM-9b	2155	2	2	0	6	2	-2	**10**	10	4	**14**	8	3	4	3	0	6	0	0	0	**48**	*

*Note the area (ha) of SM-9b has not been included in the total area due to servicing constraints however the entire parcel which consist of SM-9a and b has been included since this logical urban area boundary.



OFFICIAL PLAN

URBAN BOUNDARY EXPANSION STUDY

South March

- Urban Area
- Greenbelt (See Schedule B)
- General Rural Area
- Rural Natural Features Area
- Natural Environment Area
- Significant Wetlands
- Park & Ride
- Transitway Station
- Transitway
- Transit 1900m Radius
- Servicing Cluster Areas (SCAs)
- Urban Boundary (Official Plan)
- Category 2 - Assessed - (Not Recommended)

Category 1 - Recommended Additions to the Urban Boundary

- Pass 1
- Pass 2
- New Urban Boundary (Proposed)

N

Ottawa

0 250 500 750 1,000 m

Planning, Infrastructure and Economic Development Department, Geospatial Analytics, Technology and Solutions
Services de la planification, de l'infrastructure et du développement économique, Analyse géospatiale, technologie et solutions

APPENDIX B

Previous Novatech Scoring Submissions

December 22, 2020

City of Ottawa
Planning, Infrastructure & Economic Development Department
110 Laurier Avenue West 4th Floor
Ottawa, ON, K1P 1J1

Attention: **Alain Miguelez, Manager Policy Planning**

Reference: **Urban Expansion Candidate Parcel – 17 Campbell Reid Court**

Council recently approved the 'Balanced' approach to urban expansion as part of the current Official Plan review. This sets an intensification target of 60% by 2046. To accommodate the remaining development, an expansion of the urban area by 1281 gross hectares is required.

On behalf of the owner of 17 Campbell Reid Court, Cynthia Nash, Novatech has assessed her parcel for inclusion in the expanded urban area. The parcel is legally described as Part of Lot 15 Concession Number 4, March Township, otherwise described as Part 1 on 5R-4525.

Novatech has a great deal of experience and acquired knowledge regarding the planning, engineering and transportation around this parcel and have enclosed the information with this letter as we believe that it will prove useful to the City in its evaluation and scoring of candidate parcels.

It is understood that City staff are currently assessing suitable candidate parcels that are currently designated General Rural to make up this expansion area. It is also understood that the completion of existing communities is the preference for expansion areas.

17 Campbell Reid Court is excellent candidate for inclusion in the expanded urban area. The parcel is 10.12 ha in area and 440 m from the current urban boundary. We calculate that it meets the three minimum scores required - a transit score greater than zero, a combined servicing score of 14 or greater and a total score of at least 30 points. The parcels are designated General Rural Area and zoned Rural Countryside.

Figure 1: The parcel shown (in red) in proximity to the existing urban boundary (purple)

Surrounding Context

North: to the north is 680 Cameron Harvey Drive, a large parcel that runs between Campbell Reid Court and the CN Railway line and south of Cameron Harvey Drive. Aerial photos suggest that is a former farm property that is regenerating as a partially wooded area.

East: the CN Railway corridor where the tracks have been removed. Farther east is another rural parcel and March Valley Road.

South: to the south is 1210 March Road, and two other similar parcels which may be good candidates for inclusion in the urban area, although they are not assessed here. The Hillsview Country Lot Subdivision is located further south and adjacent to the northern edge of the urban boundary and the Kanata North Community Design Plan Area.

West: to the west is March Road and Campbell Reid Court. There are several small developed parcels on Campbell Reid Court. West of March Road are several larger rural parcels, that may be good candidates for inclusion in the urban area, and another Country Lot Subdivision along Monaghan Lane.

Figure 2: Surrounding Context

Land Evaluation and Area Review (LEAR)

The subject site has a LEAR score in the non-qualifying bracket of 115-125 (117) so is classified as 'Land Designated for Other Purposes' (i.e. not agriculture) and not included in the Agricultural Resource Area in the Official Plan.

Engineering Context

The subject site is comprised of vegetated areas and gentle rolling pastureland that drains from west to east, which is tributary to Shirley's Brook, and ultimately to the Ottawa River. The ground elevations of the subject site vary between ~76m and 90m. The site is within proximity of the following existing and/or planned infrastructure and stormwater outlets:

- Water: The 2Ww Pressure Zone, 1200m south of subject site, services areas ranging from elevation 68m to 99m. As part of the Kanata North CDP Area, a planned 400mm Ø watermain

network extension [of 2Ww Zone] should be able to meet domestic and fire fighting demand. Some elevations within the western half of the site may have low pressures; however, additional looping to local watermains / future upgrades may resolve this issue.

- Wastewater: As part of the Kanata North CDP Lands, a planned 600mm Ø sanitary trunk extension (March Road Trunk) should be able to meet wastewater demand, based on the subject site's elevations and unit potential. The eastern third of the site may require a substantial grade raise (up to 3~4m), where existing elevations are below 80m. However, based on our experience in the area, the underlying soils in this area are typically shallow bed rock, which can accommodate substantial grade raises. Moreover, the eastern part of the site may also serve as a location for a stormwater management facility; therefore, it may not require a grade raise.
- Stormwater: The subject site drains into a tributary of Shirley's Brook. Based on our experience in the area, the following criteria will likely form the stormwater management strategy of the site:
    - Quality Control: Enhanced level protection (80% TSS removal)
    - Quantity Control: Control post-development peak flows to pre-development (up to and including the 100-year event).
    - Erosion Control: Ensure no adverse impacts on erosion of downstream water courses by controlling frequent events to erosion thresholds.
    - Retention Control: Promote the use of LIDs and/or implement standard BMPs to increase infiltration to and groundwater recharge.

Based on the site's topographic relief and soil conditions (in the surrounding area), submerged sewers or watercourse alterations are <u>not</u> anticipated.

<u>Criteria Information</u>

Below is a summary of our suggested scoring for the parcel. Refer to the attached Scoring Table and Scoring Plan for a complete assessment against the City's latest scoring criteria.

- Servicing: the parcels score 27 out of a possible 30 points for servicing, including full points for Servicing Integration.
- Transit: the parcel is between 0.6km and 1.1km from the terminus of the planned BRT station in Kanata North, scoring 18 out of a possible 30 points.
- Employment: we suggest it would score in the highest quartile (8 out of a possible 8 points) for number of jobs within the median commute distance (8.6km) as it is close to the Kanata North Business Park.
- Services: the parcel is 1.6km from proposed retail on March Road, 4.2km from the Richcraft Recreation Centre and 1.1km from a proposed fire station. In total it scores 6 out of a possible 14 points for these criteria.
- Connectivity: the parcel is completely unobstructed so scores 8 out of a possible 8 points.
- Conflicting uses: the parcel is not within 250m of an Agricultural Resource Area so does not lose points. It loses 4 points as a Natural Heritage Linkage affects more than 25% of the parcel.

Based on Novatech's evaluation, the subject parcel should score 63 out of a possible 90 points overall.

Conclusion

Novatech's knowledge of the surrounding area strongly suggests that including the subject parcel in the urban area, along with parcels to south and west, is a logical addition to the urban area which makes use of the extensive existing services in Kanata North. We trust that the information provided will prove useful to the City in its evaluation and scoring of candidate parcels. We welcome any opportunity to share and discuss the data and information addressed in this letter.

Yours truly,

NOVATECH

Greg Winters, Senior Project Manager, Planning & Development

Attachments: 17 Campbell Reid Court Scoring Table
17 Campbell Reid Court Scoring Plan
17 Campbell Reid Court Engineering Plan

NOVATECH
Engineers, Planners & Landscape Architects

17 Campbell Reid Court

Potential Evaluation Scores by category using May 2020 criteria

M:\2019\119202\DATA\Calculations\Planning

Category	Criterion	Possible Scoring	Possible Parcel Score	
		Score Range	Score	Basis / Notes
Engineering	Water	0, 2, 4, 6 or 8	**8**	Watermains are nearby. Some elevations may cause low pressures but additional looping/future upgrades should resolve this issue.
	Wastewater	0, 2, 4, 6 or 8	**8**	Gravity sewers are nearby. March Road Trunk.
	Stormwater A - characteristics / avail of surface water outlets	0, 1 or 2	**1**	Shirley's Brooke. Similar to KN. LIDs required.
	Stormwater B - expected grade raise requirements	0, 3 or 6	**6**	No grade raise anticpated.
	Servicing Integration Factor	0, 2, 4 or 6	**6**	Water, wastewater, stormwater above 4.
	Servicing Risk Factors	Lose up to 4	**-2**	Bedrock <5m
Total for Engineering		30	**27**	
Transportation	Availability of High Order Transit	0, 2, 10, 14 or 18	**10**	Terminus of proposed Kanata North BRT is within 1.9km radial distance and has an EA.
	Distance to Rapid Transit Station	0, 4, 8 or 12	**8**	Terminus of proposed Kanata North BRT is within 0.6km to 1.1km radial distance bracket.
	Greatest number of jobs (within median commute distance)	2, 4, 6 or 8	**8**	Uses quartile grouping of candidate parcels' number of jobs within 8.6km radial. This includes all Kanata North Business Park and Town Centre. Assumed top quartile.
	Distance to convenience retail	0, 1, 3 or 5	**1**	Proposed retail on March Road is in the 1.1km to 2.9km radial distance bracket.
	Distance to community facilities	0-5	**1**	Nearest qualifying Major Recreation Facility (Richcraft Recreation Centre) is within the 3.8km to 4.5km radial distance bracket.
	Distance to emergency services (Fire)	0, 3 or 4	**4**	Based on estimated response within 5min. Proposed fire Station is 1km radial distance away, so assumed sub 5min response and 1 responder = 1 fire truck.
	Potential arterial road upgrades	Lose up to 8	**0**	Future transit (BRT) shown on Ultimate Plan within 1.9km radial distance from parcel centre.
Total for Transportation		52	**32**	
Integration with Community	Connectivity	0, 2, 4, 6 or 8	**8**	Completely unobstructed.
Total for Integration		8	**8**	
Conflicting Use	Agricultural Resource within 250m	Lose none or 4	**0**	None within 250m.
	Natural Heritage Links	Lose none, 2 or 4	**-4**	A Natural Heritage Linkage affects more than 25% of the parcel.
Total for Conflicting		-8	**-4**	
TOTAL		90	**63**	

Revision	Date
1	22-Dec-20

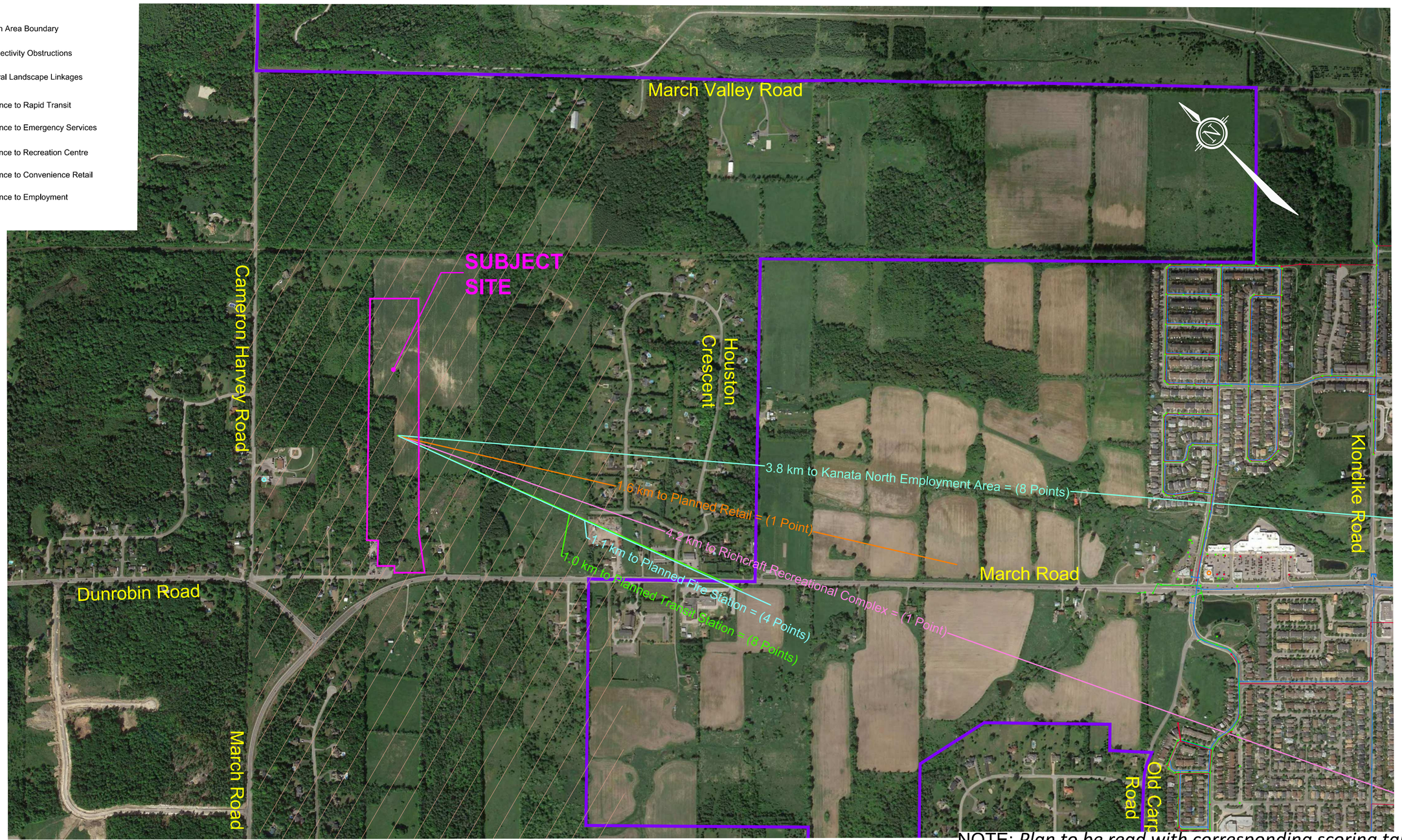


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	DEC 22/20	GLW

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
17 CAMPBELL REID COURT

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

PLANA1x0.DWG - 914.4mmx609.6mm

M:\PROPOSALS\2020\John Riddell\Claridge Street\Scoring Plans\17CampbellReid-Scoring.dwg, Scoring, Dec 22, 2020 - 1:48pm, wskiss

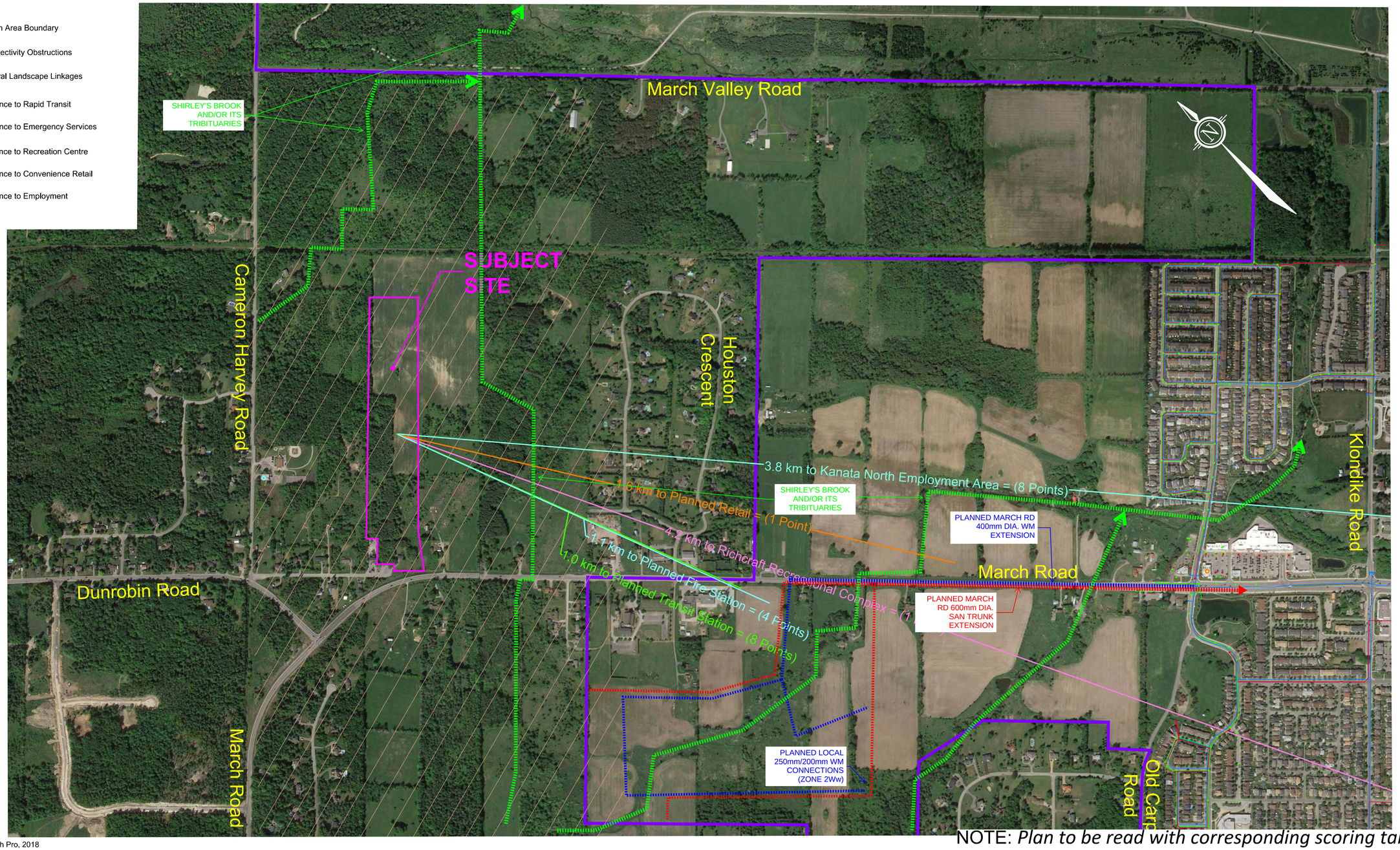


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	DEC 22/20	GLW

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
17 CAMPBELL REID COURT

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

PLANNER (PLAN) - 24x36 (841mmx594mm)

M:\PROPOSALS\2020\John Riddell\Claridge Stave\Scoring Plans\17CampbellReid-Scoring.dwg, Scoring, Dec 22, 2020 - 1:48pm, wlsloss

December 24, 2020

City of Ottawa
Planning, Infrastructure & Economic Development Department
110 Laurier Avenue West 4th Floor
Ottawa, ON, K1P 1J1

Attention: **Alain Miguelez, Manager Policy Planning**

Reference: **Urban Expansion Candidate Parcel – 680 Cameron Harvey Drive**

Council recently approved the 'Balanced' approach to urban expansion as part of the current Official Plan review. This sets an intensification target of 60% by 2046. To accommodate the remaining development, an expansion of the urban area by 1281 gross hectares is required.

On behalf of the owner of 680 Cameron Harvey Drive, Vijaya Garapati, Sateesh Ravipati, Novatech has assessed her parcel for inclusion in the expanded urban area. The parcel is legally described as Part of Lot 15 Concession Number 4, March Township, in MH5906 (FIRSTLY) Except 5R615 & CT113076.

Novatech has a great deal of experience and acquired knowledge regarding the planning, engineering and transportation around this parcel and have enclosed the information with this letter as we believe that it will prove useful to the City in its evaluation and scoring of candidate parcels.

It is understood that City staff are currently assessing suitable candidate parcels that are currently designated General Rural to make up this expansion area. It is also understood that the completion of existing communities is the preference for expansion areas.

680 Cameron Harvey Drive is excellent candidate for inclusion in the expanded urban area. The parcel is 17.66 ha in area and 614 m from the current urban boundary. We calculate that it meets the three minimum scores required - a transit score greater than zero, a combined servicing score of 14 or greater and a total score of at least 30 points. The parcel is designated General Rural Area and zoned Rural Countryside.

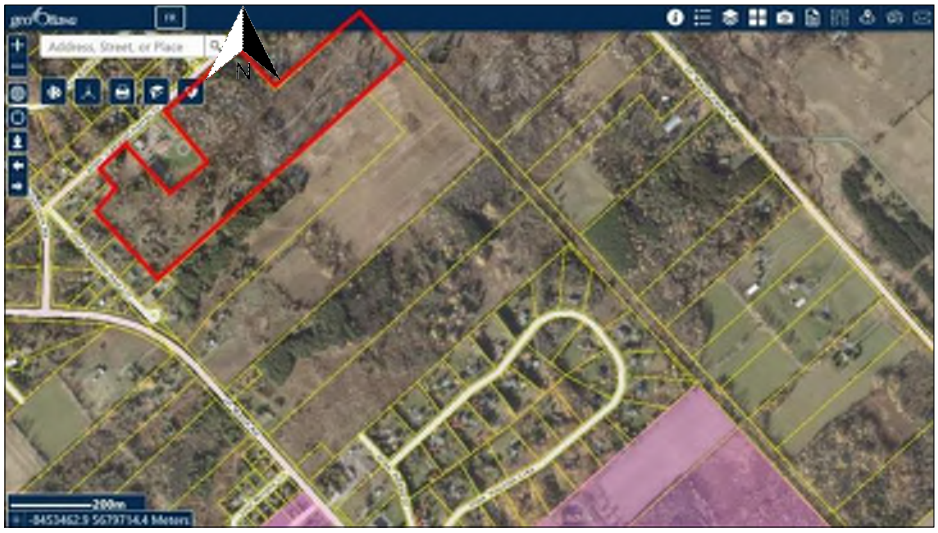


Figure 1: *The parcel shown (in red) in proximity to the existing urban boundary (purple)*

Surrounding Context

North: the parcel is bounded to the north by Cameron Harvey Drive, a rural parcel at 580 Cameron Harvey Drive, Ottawa Fire Station 45, and the March Montessori School/March Central Community Centre. North of Cameron Harvey are some larger rural parcels and a country estate subdivision that are all designed General Rural Area.

East: the CN Railway corridor where the tracks have been removed. Farther east is another rural parcel and March Valley Road.

South: to the south is, 17 Campbell Reid Court, 1210 March Road, and two other similar parcels which may be good candidates for inclusion in the urban area, although they are not assessed here. We made a previous separate submission regarding 17 Campbell Reid Court. The Hillsview Country Lot Subdivision is located further south and adjacent to the northern edge of the urban boundary and the Kanata North Community Design Plan Area.

West: to the west is March Road and Campbell Reid Court. There are several small developed parcels on Campbell Reid Court. West of March Road are several larger rural parcels, that may be good candidates for inclusion in the urban area, and another Country Lot Subdivision along Monaghan Lane.

Figure 2: *Surrounding Context*

Land Evaluation and Area Review (LEAR)

The subject site has a LEAR score in the non-qualifying bracket of 0-105 (100) and not included in the Agricultural Resource Area in the Official Plan.

Engineering Context

The subject site is comprised of vegetated areas and gentle rolling pastureland that drains from west to east, which is tributary to Shirley's Brook, and ultimately to the Ottawa River. The ground elevations of the subject site vary between ~76m and 90m. The site is within proximity of the following existing and/or planned infrastructure and stormwater outlets:

- Water: The 2Ww Pressure Zone, 1200m south of subject site, services areas ranging from elevation 68m to 99m. As part of the Kanata North CDP Area, a planned 400mm Ø watermain

network extension [of 2Ww Zone] should be able to meet domestic and fire fighting demand. Some elevations within the western half of the site may have low pressures; however, additional looping to local watermains / future upgrades may resolve this issue.

- Wastewater: As part of the Kanata North CDP Lands, a planned 600mm Ø sanitary trunk extension (March Road Trunk) should be able to meet wastewater demand, based on the subject site's elevations and unit potential. The eastern third of the site may require a substantial grade raise (up to 3~4m), where existing elevations are below 80m. However, based on our experience in the area, the underlying soils in this area are typically shallow bed rock, which can accommodate substantial grade raises. Moreover, the eastern part of the site may also serve as a location for a stormwater management facility; therefore, it may not require a grade raise.
- Stormwater: The subject site drains into a tributary of Shirley's Brook. Based on our experience in the area, the following criteria will likely form the stormwater management strategy of the site:
    - Quality Control: Enhanced level protection (80% TSS removal)
    - Quantity Control: Control post-development peak flows to pre-development (up to and including the 100-year event).
    - Erosion Control: Ensure no adverse impacts on erosion of downstream water courses by controlling frequent events to erosion thresholds.
    - Retention Control: Promote the use of LIDs and/or implement standard BMPs to increase infiltration to and groundwater recharge.

Based on the site's topographic relief and soil conditions (in the surrounding area), submerged sewers or watercourse alterations are <u>not</u> anticipated. This parcel provides access to the ditch within the railway corridor as a stormwater outlet.

<u>Criteria Information</u>

Below is a summary of our suggested scoring for the parcel. Refer to the attached Scoring Table and Scoring Plan for a complete assessment against the City's latest scoring criteria.

- Servicing: the parcels score 27 out of a possible 30 points for servicing, including full points for Servicing Integration.
- Transit: the parcel is between 1.1km and 1.9km from the terminus of the planned BRT station in Kanata North, scoring 14 out of a possible 30 points.
- Employment: we suggest it would score in the highest quartile (8 out of a possible 8 points) for number of jobs within the median commute distance (8.6km) as it is close to the Kanata North Business Park.
- Services: the parcel is 1.8km from proposed retail on March Road, 4.4km from the Richcraft Recreation Centre and 1.3km from a proposed fire station (although it is also immediately adjacent to Ottawa Fire Station 45. In total it scores 6 out of a possible 14 points for these criteria.
- Connectivity: the parcel is obstructed in two directions due to the existing parcels on Campbell Reid Court so scores 6 out of a possible 8 points. Crossings of the CN Railway have been provided previously for the Kanata North Community Design Plan to the south.
- Conflicting uses: the parcel is not within 250m of an Agricultural Resource Area so does not lose points. It loses 4 points as a Natural Heritage Linkage affects more than 25% of the parcel.

Based on Novatech's evaluation, the subject parcel should score 57 out of a possible 90 points overall.

Conclusion

Novatech's knowledge of the surrounding area strongly suggests that including the subject parcel in the urban area, along with parcels to south and west, is a logical addition to the urban area which makes use of the extensive existing services in Kanata North. We trust that the information provided will prove useful to the City in its evaluation and scoring of candidate parcels. We welcome any opportunity to share and discuss the data and information addressed in this letter.

Yours truly,

NOVATECH

Greg Winters, Senior Project Manager, Planning & Development

Attachments: *680 Cameron Harvey Drive Scoring Table*
680 Cameron Harvey Drive Scoring_Engineering Plan

NOVATECH
Engineers, Planners & Landscape Architects

680 Cameron Harvey Drive

Potential Evaluation Scores by category using May 2020 criteria

M:\2019\119202\DATA\Calculations\Planning

Category	Criterion	Possible Scoring	Possible Parcel Score	
		Score Range	Score	Basis / Notes
Engineering	Water	0, 2, 4, 6 or 8	**8**	Watermains are nearby. Some elevations may cause low pressures but additional looping/future upgrades should resolve this issue.
	Wastewater	0, 2, 4, 6 or 8	**8**	Gravity sewers are nearby. March Road Trunk.
	Stormwater A - characteristics / avail of surface water outlets	0, 1 or 2	**1**	Shirley's Brooke. Similar to KN. LIDs required.
	Stormwater B - expected grade raise requirements	0, 3 or 6	**6**	No grade raise anticpated.
	Servicing Integration Factor	0, 2, 4 or 6	**6**	Water, wastewater, stormwater above 4.
	Servicing Risk Factors	Lose up to 4	**-2**	Bedrock <5m. Rural country lots
Total for Engineering		30	**27**	
Transportation	Availability of High Order Transit	0, 2, 10, 14 or 18	**10**	Terminus of proposed Kanata North BRT is within 1.9km radial distance and has an EA.
	Distance to Rapid Transit Station	0, 4, 8 or 12	**4**	Terminus of proposed Kanata North BRT is within 1.1km to 1.9km radial distance bracket.
	Greatest number of jobs (within median commute distance)	2, 4, 6 or 8	**8**	Uses quartile grouping of candidate parcels' number of jobs within 8.6km radial. This includes all Kanata North Business Park and Town Centre. Assumed top quartile.
	Distance to convenience retail	0, 1, 3 or 5	**1**	Proposed retail on March Road is in the 1.1km to 2.9km radial distance bracket.
	Distance to community facilities	0-5	**1**	Nearest qualifying Major Recreation Facility (Richcraft Recreation Centre) is within the 3.8km to 4.5km radial distance bracket.
	Distance to emergency services (Fire)	0, 3 or 4	**4**	Based on estimated response within 5min. Proposed fire Station is 1km radial distance away, so assumed sub 5min response and 1 responder = 1 fire truck.
	Potential arterial road upgrades	Lose up to 8	**0**	Future transit (BRT) shown on Ultimate Plan within 1.9km radial distance from parcel centre.
Total for Transportation		52	**28**	
Integration with Community	Connectivity	0, 2, 4, 6 or 8	**6**	Obstruction in one direction (crossings have been provided to CN Railway as part of Kanata North Community Design Plan)
Total for Integration		8	**6**	
Conflicting Use	Agricultural Resource within 250m	Lose none or 4	**0**	None within 250m.
	Natural Heritage Links	Lose none, 2 or 4	**-4**	A Natural Heritage Linkage affects more than 25% of the parcel.
Total for Conflicting		-8	**-4**	
TOTAL		90	**57**	

Revision	Date
1	24-Dec-20

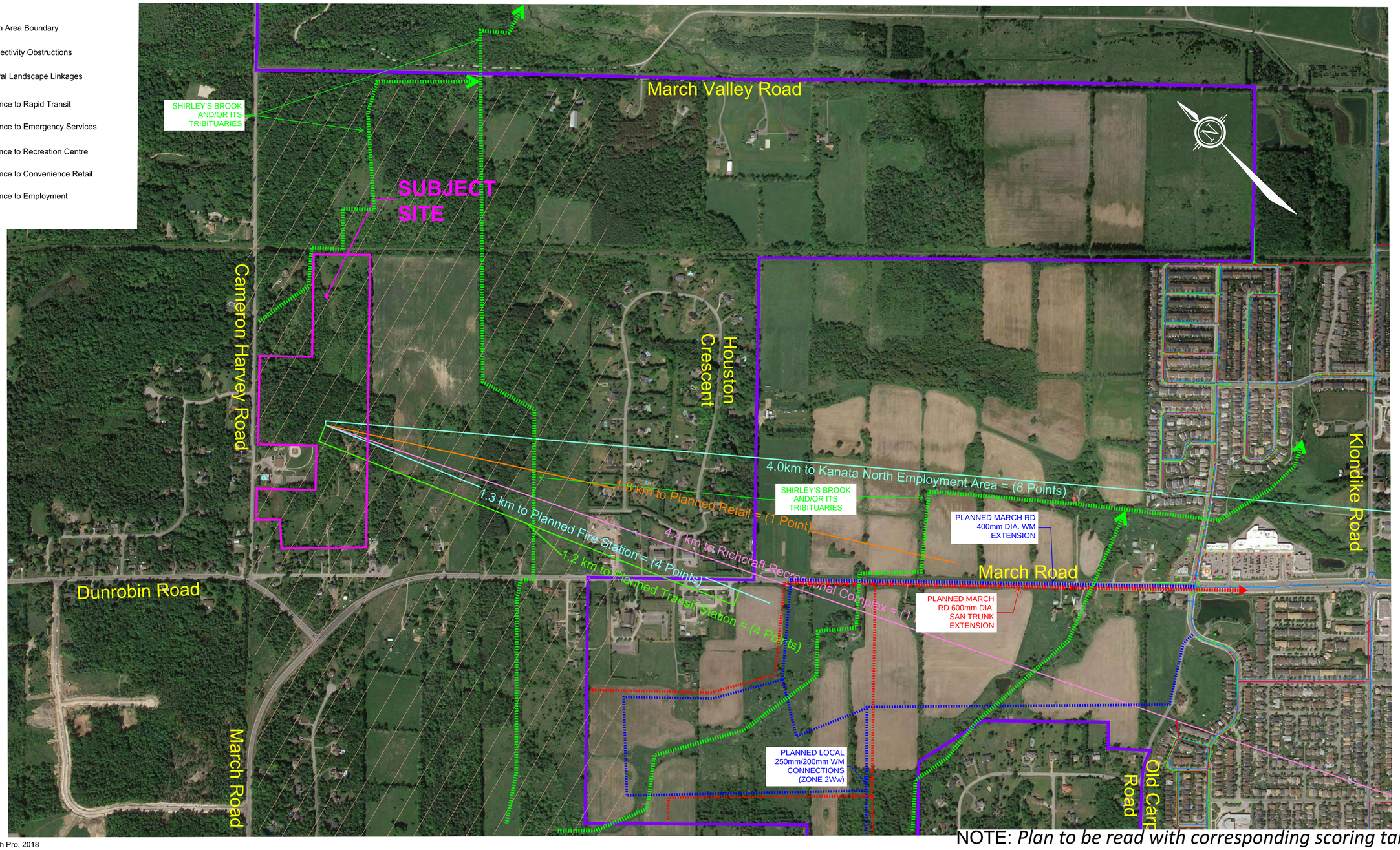


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	DEC 22/20	GLW

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
680 Cameron Harvey Drive

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

PLANNING DWG - 24x36x0.08 dwg

M:\PROPOSALS\2020\John Riddell\Claridge Stage\Scoring Plans\680\CameronHarvey\Scoring.dwg, Scoring, Dec 22, 2020 - 2:02pm, shahia

July 10, 2020

City of Ottawa
Planning, Infrastructure & Economic Development Department
110 Laurier Avenue West 4th Floor
Ottawa, ON K1P 1J1

Attention: Alain Miguelez, Manager Policy Planning

Reference: Urban Expansion Candidate Parcel – 1221 March Road

---

Council recently approved the 'Balanced' approach to urban expansion as part of the current Official Plan review. This sets an intensification target of 60% by 2046. To accommodate the remaining development, an expansion of the urban area by 1281 gross hectares is required.

On behalf of Claridge Homes, Novatech has assessed a number of their parcels for inclusion in the expanded urban area. Novatech has a great deal of experience and acquired knowledge regarding the planning, engineering and transportation around these parcels and have enclosed the information with this letter as we believe that it will prove useful to the City in its evaluation and scoring of candidate parcels.

It is understood that City staff are currently assessing suitable candidate parcels that are currently designated General Rural to make up this expansion area. It is also understood that the completion of existing communities is the preference for expansion areas.

Claridge's parcel at 1221 March Road is excellent candidate for inclusion in the expanded urban area. The parcel is 7.49 ha in area and 300m from the current urban boundary. We calculate that it meets the three minimum scores required - a transit score greater than zero, a combined servicing score of 14 or greater and a total score of at least 30 points. The parcels are designated General Rural Area and zoned Rural Countryside.

Figure 1: *The parcel shown (in red) in proximity to the existing urban boundary (purple)*

Surrounding Context

North: to the north is 1235 March Road, a large parcel the runs between Old Second Line and March Roads. Aerial photos suggest that it may still be farmed.

East: across March Road to the east is a large rural lot with a house and a commercial property (a U-Haul neighbourhood dealer)

South: to the south is 1205 March Road, a very similar parcel which likely another good candidate for inclusion in the urban area, although it is not assessed here. Between this parcel and the urban boundary is 1480 Old Second Line Road, a parcel we have assessed separately for Claridge, and 14 Murphy

West: to the west are two rural lots with houses, one larger lot with a smaller lot that was likely severed.

Figure 2: *Surrounding Context*

Land Evaluation and Area Review (LEAR)

The subject site has a LEAR score in the non-qualifying bracket of 0-105 (99) so is classified as 'Land Designated for Other Purposes' (i.e. not agriculture) and not included in the Agricultural Resource Area in the Official Plan.

Engineering Context

The subject site is comprised of vegetated areas and gentle rolling pastureland that drains from west to east, which is tributary to Shirley's Brook, and ultimately to the Ottawa River. The

ground elevations of the subject site vary between ~86m and 93m. The site is within proximity of the following existing and/or planned infrastructure and stormwater outlets:

- Water: The 2Ww Pressure Zone, 200m south of subject site, services areas ranging from elevation 68m to 99m. As part of the Kanata North CDP Area, a planned 400mm Ø watermain network extension [of 2Ww Zone] should be able to meet domestic and fire fighting demand. Opportunities are available to utilize local watermains within the proposed subdivision (D07-16-18-0023) in proximity of the site. Some elevations may cause low pressures within the western half of the site; however, additional looping to local watermains / future upgrades may resolve this issue.
- Wastewater : As part of the Kanata North CDP Lands, a planned 600mm Ø sanitary trunk extension (March Road Trunk) should be able to meet wastewater demand, based on the subject site's elevations and unit potential. Opportunities are available to utilize local sanitary sewers within the proposed subdivision (D07-16-18-0023) in proximity of the site.
- Stormwater : The subject site drains into two Tributaries 1 and 2 of Shirley's Brook. Based on our experience in the area, the following criteria will likely form the stormwater management strategy of the site:
    - Quality Control: Enhanced level protection (80% TSS removal)
    - Quantity Control: Control post-development peak flows to pre-development (up to and including the 100-year event).
    - Erosion Control: Ensure no adverse impacts on erosion of downstream water courses by controlling frequent events to erosion thresholds.
    - Retention Control: Promote the use of LIDs and/or implement standard BMPs to increase infiltration to and groundwater recharge.

Based on the site's topographic relief and soil conditions (in the surrounding area), submerged sewers or watercourse alterations are <u>not</u> anticipated.

<u>Criteria Information</u>

Below is a summary of our suggested scoring for the parcel. Refer to the attached Scoring Table and Scoring Plan for a complete assessment against the City's latest scoring criteria.

- Servicing: the parcels score 28 out of a possible 30 points for servicing, including full points for Servicing Integration.
- Transit: the parcel is between 0.6km and 1.1km from the terminus of the planned BRT station in Kanata North, scoring 18 out of a possible 30 points.
- Employment: we suggest it would score in the highest quartile (8 out of a possible 8 points) for number of jobs within the median commute distance (8.6km) as it is close to the Kanata North Business Park.
- Services: the parcel is 1.5km from proposed retail on March Road, 3.8km from the Richcraft Recreation Centre and 1km from a proposed fire station. In total it scores 7 out of a possible 14 points for these criteria.
- Connectivity: the parcel is completely unobstructed so scores 8 out of a possible 8 points.

- Conflicting uses: the parcel is not within 250m of an Agricultural Resource Area so does not lose points. It loses 4 points as a Natural Heritage Linkage affects more than 25% of the parcel.

Based on Novatech's evaluation, the subject parcel should score 65 out of a possible 90 points overall.

Conclusion

Novatech's knowledge of the surrounding area strongly suggests that including the subject parcel in the urban area, along with parcels to south, is a logical addition to the urban area which makes use of the extensive existing services in Kanata North. Further northwards expansion would be restricted by the country lot subdivision on Monaghan Lane. We trust that the information provided will prove useful to the City in its evaluation and scoring of candidate parcels. We welcome any opportunity to share and discuss the data and information addressed in this letter.

Yours truly,

NOVATECH

James Ireland, BUPD
Project Planner

Attachments: 1221 March Road Scoring Table
1221 March Road Scoring Plan
1221 March Road Engineering Plan

cc: Claridge Homes Inc.

NOVATECH
Engineers, Planners & Landscape Architects

1221 March Road

Potential Evaluation Scores by category using May 2020 criteria

M:\2019\119202\DATA\Calculations\Planning

Category	Criterion	Possible Scoring	Possible Parcel Score	
		Score Range	Score	Basis / Notes
Engineering	Water	0, 2, 4, 6 or 8	**8**	Watermains are nearby. Some elevations may cause low pressures but additional looping/future upgrades should resolve this issue.
	Wastewater	0, 2, 4, 6 or 8	**8**	Gravity sewers are nearby. March Road Trunk.
	Stormwater A - characteristics / avail of surface water outlets	0, 1 or 2	**1**	Shirley's Brooke. Similar to KN. LIDs required.
	Stormwater B - expected grade raise requirements	0, 3 or 6	**6**	No grade raise anticpated.
	Servicing Integration Factor	0, 2, 4 or 6	**6**	Water, wastewater, stormwater above 4.
	Servicing Risk Factors	Lose up to 4	**-1**	Bedrock <5m
Total for Engineering		30	**28**	
Transportation	Availability of High Order Transit	0, 2, 10, 14 or 18	**10**	Terminus of proposed Kanata North BRT is within 1.9km radial distance and has an EA.
	Distance to Rapid Transit Station	0, 4, 8 or 12	**8**	Terminus of proposed Kanata North BRT is within 0.6km to 1.1km radial distance bracket.
	Greatest number of jobs (within median commute distance)	2, 4, 6 or 8	**8**	Uses quartile grouping of candidate parcels' number of jobs within 8.6km radial. This includes all Kanata North Business Park and Town Centre. Assumed top quartile.
	Distance to convenience retail	0, 1, 3 or 5	**1**	Proposed retail on March Road is in the 1.1km to 2.9km radial distance bracket.
	Distance to community facilities	0-5	**2**	Nearest qualifying Major Recreation Facility (Richcraft Recreation Centre) is within the 3km to 3.8km radial distance bracket.
	Distance to emergency services (Fire)	0, 3 or 4	**4**	Based on estimated response within 5min. Proposed fire Station is 1km radial distance away, so assumed sub 5min response and 1 responder = 1 fire truck.
	Potential arterial road upgrades	Lose up to 8	**0**	Future transit (BRT) shown on Ultimate Plan within 1.9km radial distance from parcel centre.
Total for Transportation		52	**33**	
Integration with Community	Connectivity	0, 2, 4, 6 or 8	**8**	Completely unobstructed.
Total for Integration		8	**8**	
Conflicting Use	Agricultural Resource within 250m	Lose none or 4	**0**	None within 250m.
	Natural Heritage Links	Lose none, 2 or 4	**-4**	A Natural Heritage Linkage affects more than 25% of the parcel.
Total for Conflicting		-8	**-4**	
TOTAL		90	**65**	

Revision	Date
10	28-Jun-20

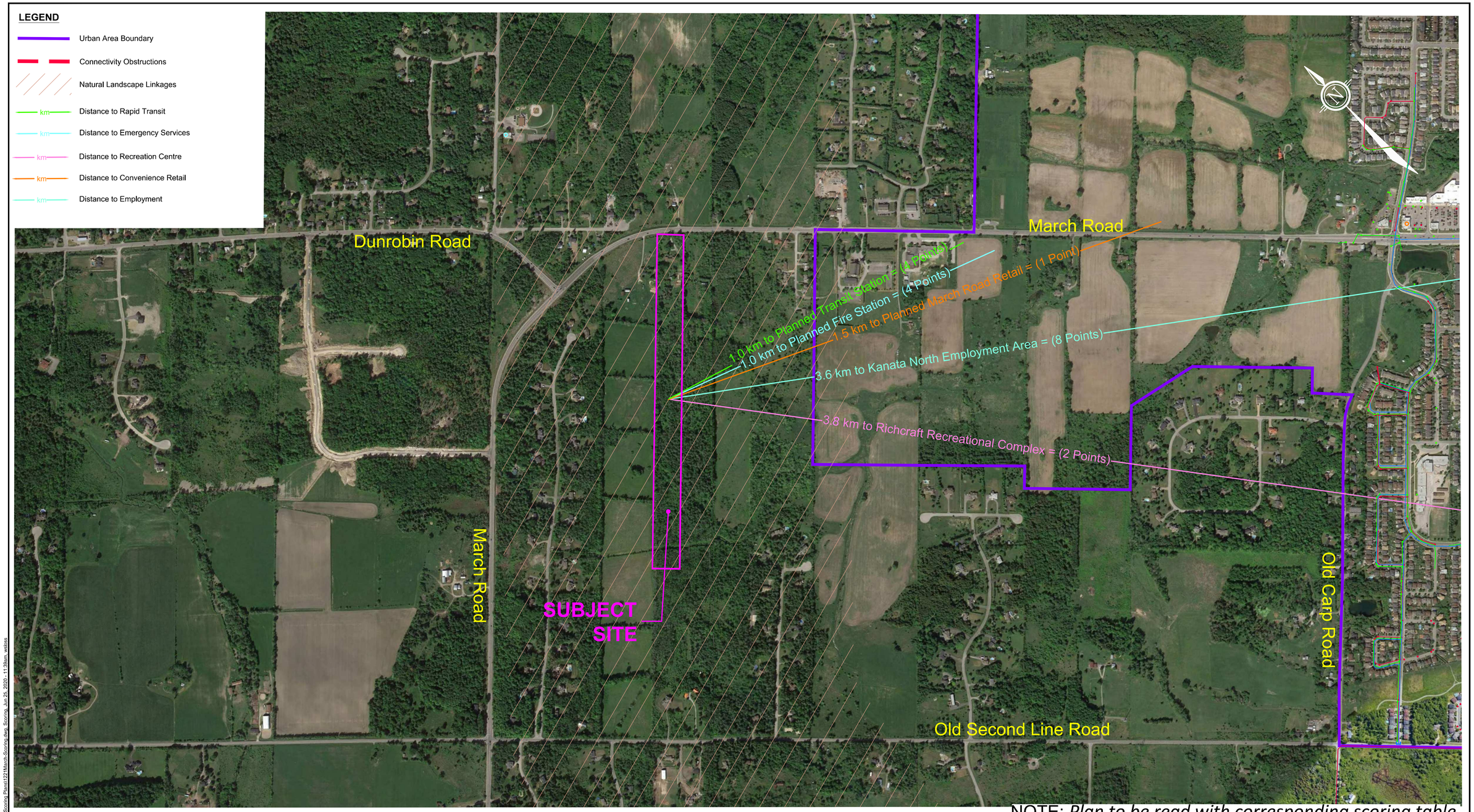


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	JUNE 09/20	JI

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
1221 MARCH ROAD

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

PLANNING DWG - 914 (Arch)(ISO)

M:\PROPOSAL\2020\John Riddell\Claridge Sites\Scoring Plans\1221March-Scoring.dwg, Scoring, Jun 25, 2020 - 11:38am, wslopes

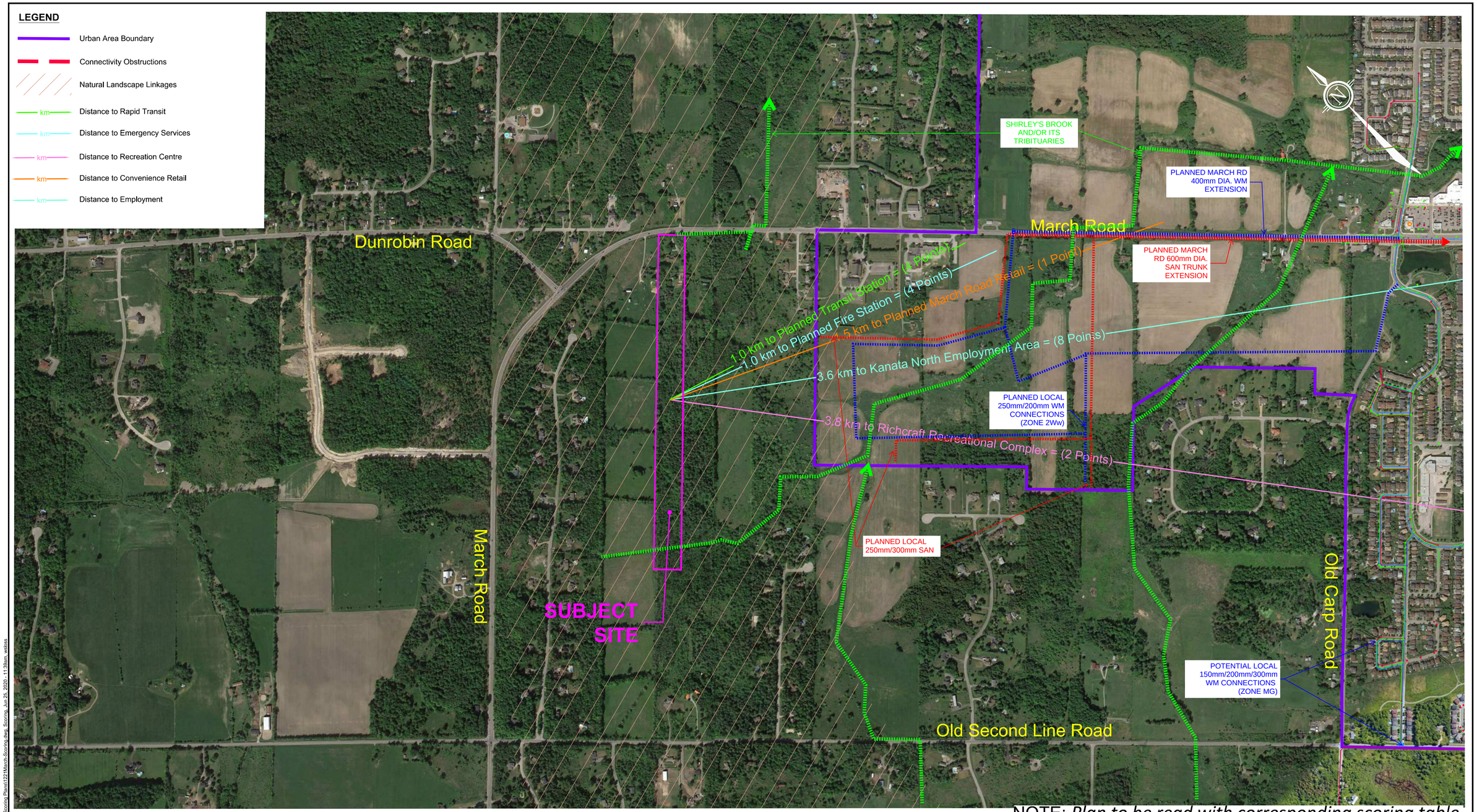


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	JUNE 09/20	JI

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
1221 MARCH ROAD

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

M:\PROPOSALS\2020\John Riddell\Claridge Steel\Scoring Plans\1221March-Scoring.dwg, Scoring, Jun 25, 2020 - 11:38am, wklass

PLANNA.B DWG - 914 arrowsBlack

June 24, 2020

City of Ottawa
Planning, Infrastructure & Economic Development Department
110 Laurier Avenue West 4th Floor
Ottawa, ON K1P 1J1

Attention: Alain Miguelez, Manager Policy Planning

Reference: Urban Expansion Candidate Parcels – 1310 & 1340 Old Second Line Road

---

Council recently approved the 'Balanced' approach to urban expansion as part of the current Official Plan review. This sets an intensification target of 60% by 2046. To accommodate the remaining development, an expansion of the urban area by 1281 gross hectares is required.

On behalf of Regional Group, Novatech has assessed a number of their parcels for inclusion in the expanded urban area.

It is understood that City staff are currently assessing suitable candidate parcels that are currently designated General Rural to make up this expansion area. It is also understood that the completion of existing communities is the preference for expansion areas.

Regional's parcels at 1310 and 1340 Old Second Line Road are excellent candidates for inclusion in the expanded urban area. Together the parcels are 15.77 ha and are immediately outside the current urban boundary. We calculate that they meet the three minimum scores required for consideration – a transit score greater than zero, a combined servicing score of 14 or greater and a total score of at least 30 points. The parcels are designated General Rural Area and zoned Rural Countryside.

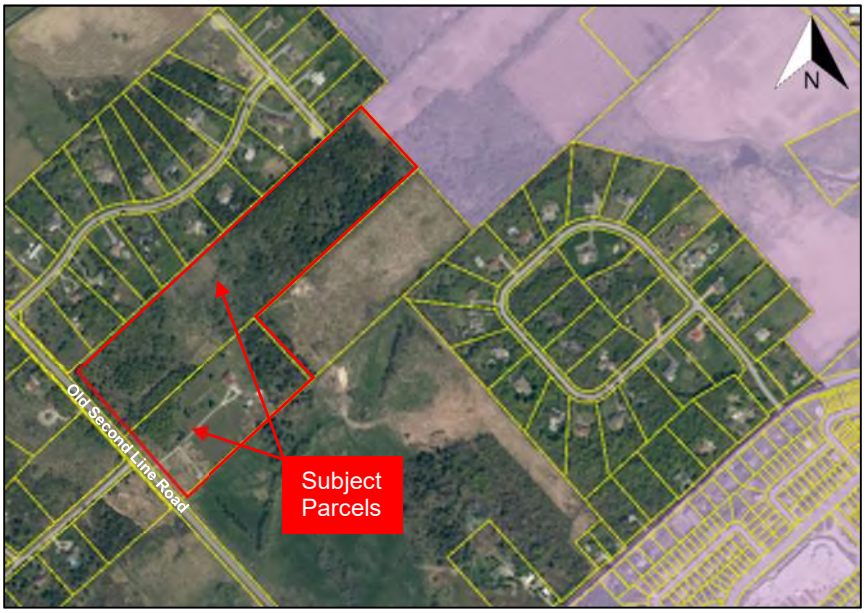


Figure 1: *the parcels shown (in red) in proximity to the existing urban boundary (purple)*

Surrounding Context

North: a country lot subdivision borders the parcels to the north. It comprises detached dwellings on large un-serviced lots on a 'T' shaped street network. Panandrick View Drive runs from Old Second Line Road. Nadia Lane runs from the site's northern to southern boundaries. It has turning circles at both ends, but the road allowance potentially allows through connections.

East: the current urban boundary is immediately to the east of the parcels. Inside the boundary is 1075 March Road, a 46.05 ha parcel owned by CU Developments Inc. and proposed for development as part of the Kanata North CDP. The Demonstration Plan in the CDP shows a collector road connection to the subject parcels.

South: the current Urban Boundary is also 600m to the south of the parcels, running along Old Carp Road. Between the parcels and the urban boundary is the 'Elk Ranch' property. It comprises a 28.49 ha parcel (1271 Carp Road) and a 6.06 parcel (also 1310 Old Second Line Road). The parcels have LEAR scores of 96 and 67 and are used to rear elk. Along with five parcels with houses on Old Carp Road, the 'Elk Ranch' parcels are likely also good candidates for inclusion in the urban area, although they are not assessed here.

West: To the west across Old Second Line Road is another country lot subdivision, arranged on Thomas Fuller Drive, Sharne Lane and Rolston Way.

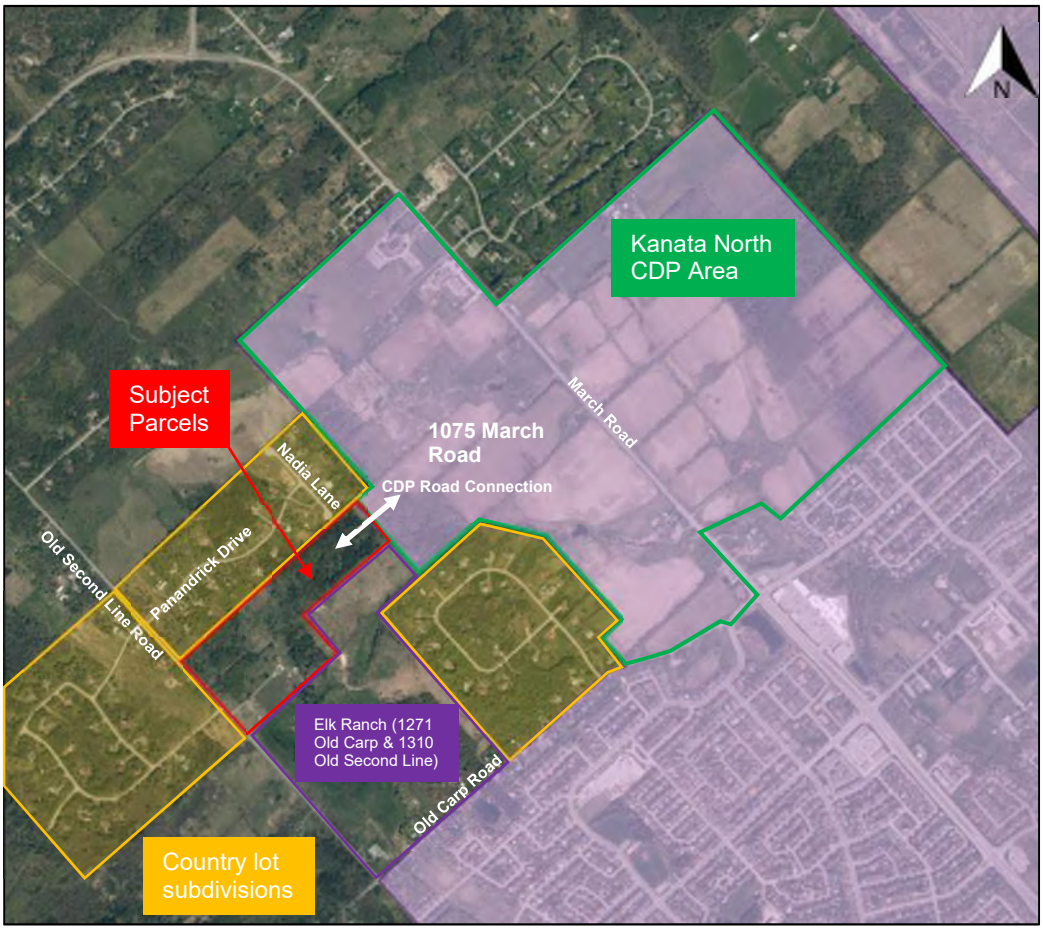


Figure 2: *Surrounding Context*

NOVATECH
Engineers, Planners & Landscape Architects

Land Evaluation and Area Review (LEAR)

The parcels have LEAR scores in the non-qualifying bracket of 0-105 (they score 71 and 72) so are classified as 'Land Designated for Other Purposes' (i.e. not agriculture) and not included in the Agricultural Resource Area.

Potential Scoring

Below is a summary of our suggested scoring for the parcel. Refer to the attached Scoring Table and Scoring Plan for a complete assessment against the City's latest scoring criteria.

- Servicing: the parcels score 27 out of a possible 30 points for servicing, including full points for Servicing Integration.
- Transit: the parcel is between 1.1km and 1.9km from the planned BRT station at March Road and Old Carp Road, scoring 14 out of a possible 30 points.
- Employment: we suggest it would score in the highest quartile (8 out of a possible 8 points) for number of jobs within the median commute distance (8.6km) as it is close to the Kanata North Business Park.
- Services: the parcel is 1.4km from the shopping centre on March Road anchored by a Sobey's, 2.5km from the Richcraft Recreation Centre and 1.2km from a proposed fire station. In total it scores 8 out of a possible 14 points for these criteria.
- Connectivity: the parcel is partially unobstructed in one direction so scores 6 out of a possible 8 points.
- Conflicting uses: the parcel is not within 250m of an Agricultural Resource Area and is not affected by a Natural Heritage Linkage so does not lose points.

The subject parcel scores 63 out of a possible 90 points overall.

Including the subject parcels in the urban area, along with the Elk Ranch land which lies between the parcels and the current Urban Boundary to the south is a logical 'rounding off' of the urban boundary. This newly included area would then be surrounded by country lot subdivisions and would therefore likely be the last extension of the urban area in this direction for some time. The direct road connection to the Kanata North CDP area also suggests this as a westward extension of that existing urban area.

Yours truly,

NOVATECH

James Ireland, BUPD
Project Planner

Attachments: 1310 & 1340 Old Second Line Road Scoring Table
1310 & 1340 Old Second Line Road Scoring Plan

cc: David Kardish, Regional Group

July 7, 2020

City of Ottawa
Planning, Infrastructure & Economic Development Department
110 Laurier Avenue West 4th Floor
Ottawa, ON K1P 1J1

Attention: Alain Miguelez, Manager Policy Planning

Reference: Urban Expansion Candidate Parcel – 1480 Old Second Line Road

---

Council recently approved the 'Balanced' approach to urban expansion as part of the current Official Plan review. This sets an intensification target of 60% by 2046. To accommodate the remaining development, an expansion of the urban area by 1281 gross hectares is required.

On behalf of Claridge Homes, Novatech has assessed a number of their parcels for inclusion in the expanded urban area. Novatech has a great deal of experience and acquired knowledge regarding the planning, engineering and transportation around these parcels and have enclosed the information with this letter as we believe that it will prove useful to the City in its evaluation and scoring of candidate parcels.

It is understood that City staff are currently assessing suitable candidate parcels that are currently designated General Rural to make up this expansion area. It is also understood that the completion of existing communities is the preference for expansion areas.

Claridge's parcel at 1480 Old Second Line Road is an excellent candidate for inclusion in the expanded urban area. The parcel is between Old Second Line Road and March Road, is 16.95 ha in area and 185m from the current urban boundary. We calculate that it meets the three minimum scores required - a transit score greater than zero, a combined servicing score of 14 or greater and a total score of at least 30 points. The parcel is designated General Rural Area and zoned Rural Countryside.

Figure 1: *The parcel (in red) shown in proximity to the current urban boundary (in purple)*

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Surrounding Context

North: to the north are three large parcels; two have houses on them and one is part of (with a lot further north) a residential/rural property. The 1976 aerial photo suggests these may have been farmed but are now fallow/regenerating.

East: across March Road to the east are rural lots with houses.

South: just under half the southern boundary is shared with a country lot subdivision on a cul de sac, Wild Acre Lane. Although it is a cul de sac, there appears to be a possible connection through the subdivision from north to south. The remainder is a large undeveloped rural lot, 1075 March Road. If included with the subject parcel in the urban boundary there would be a link with the current urban boundary and lands under the Kanata North CDP.

West: across Old Second Line Road to the west are rural lots with houses.

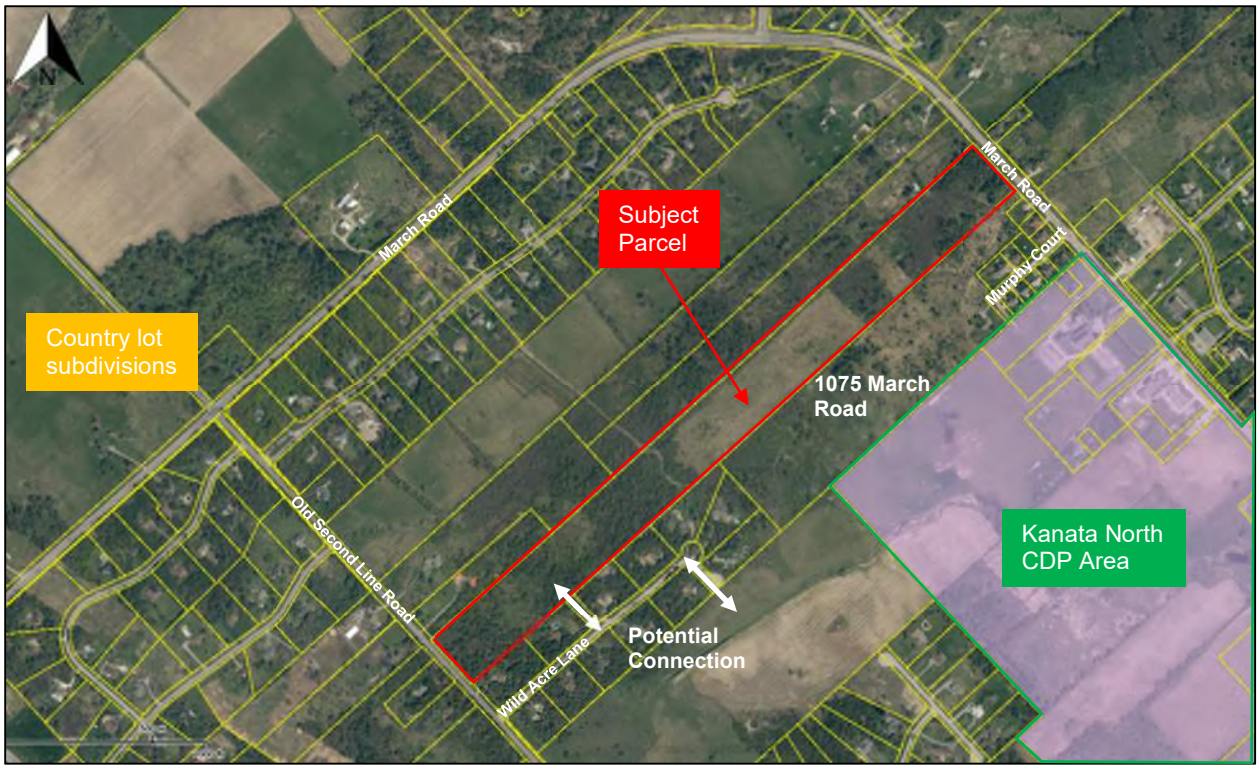


Figure 2: *Surrounding Context*

Land Evaluation and Area Review (LEAR)

The subject site has a LEAR score in the non-qualifying bracket of 0-105 (98) so is classified as 'Land Designated for Other Purposes' (i.e. not agriculture) and not included in the Agricultural Resource Area in the Official Plan.

Engineering Context

The subject site is comprised of vegetated areas and gentle rolling pastureland that drains from west to east, which is tributary to Shirley's Brook, and ultimately to the Ottawa River. The ground elevations of the subject site vary between ~86m and 96m. The site is within proximity of the following existing and/or planned infrastructure and stormwater outlets:

- Water: The 2Ww Pressure Zone, 200m south of subject site, services areas ranging from elevation 68m to 99m. As part of the Kanata North CDP Area, a planned 400mm Ø watermain network extension [of 2Ww Zone] should be able to meet domestic and fire fighting demand. Opportunities are available to utilize local watermains within the adjacent proposed subdivision (D07-16-18-0023). Some elevations may cause low pressures within the western half of the site; however, additional looping to local watermains / future upgrades may resolve this issue.

  Notwithstanding the above, there is potential for the western half of the site to be serviced by the MG Pressure Zone, 1700m south of subject site, which services areas ranging from elevation 91m to 107m, and will resolve the low-pressure issues. Such a solution would provide an opportunity for rural lands to the south of the subject site to benefit from an extension of the MG Zone's network.

- Wastewater : As part of the Kanata North CDP Lands, a planned 600mm Ø sanitary trunk extension (March Road Trunk) should be able to meet wastewater demand, based on the subject site's elevations and unit potential. Opportunities are available to utilize local sanitary sewers within the adjacent proposed subdivision (D07-16-18-0023).

- Stormwater : The subject site drains into two Tributaries 1 and 2 of Shirley's Brook. Based on our experience in the area, the following criteria will likely form the stormwater management strategy of the site:

  - Quality Control: Enhanced level protection (80% TSS removal)
  - Quantity Control: Control post-development peak flows to pre-development (up to and including the 100-year event).
  - Erosion Control: Ensure no adverse impacts on erosion of downstream water courses by controlling frequent events to erosion thresholds.
  - Retention Control: Promote the use of LIDs and/or implement standard BMPs to increase infiltration to and groundwater recharge.

  Based on the site's topographic relief and soil conditions (in the surrounding area), submerged sewers or watercourse alterations are <u>not</u> anticipated.

Potential Scoring

Below is a summary of our suggested information for scoring the parcel. Refer to the attached Scoring Table and Scoring Plan for a complete assessment against the City's latest scoring criteria.

- Engineering: the parcel scores 27 out of a possible 30 points, including full points for Servicing Integration.

- Transit: the parcel is between 0.6km and 1.1km from the terminus of the planned BRT station in Kanata North, scoring 18 out of a possible 30 points.
- Employment: we suggest it would score in the highest quartile (8 out of a possible 8 points) for number of jobs within the median commute distance (8.6km) as it is close to the Kanata North Business Park.
- Services: the parcel is 1.5km from proposed retail on March Road, 3.7km from the Richcraft Recreation Centre and 1km from a proposed fire station. In total it scores 7 out of a possible 14 points for these criteria.
- Connectivity: the parcel is partially obstructed by a county lot subdivision so scores 6 out of a possible 8 points.
- Conflicting uses: the parcel is not within 250m of an Agricultural Resource Area so does not lose points. It loses 4 points as a Natural Heritage Linkage affects more than 25% of the parcel.

Based on Novatech's evaluation, the subject parcel should score 62 out of a possible 90 points overall.

Conclusion

Novatech's knowledge of the surrounding area strongly suggests that including the subject parcel in the urban area, along with 1075 March Road to the south and potentially parcels to the north, is a logical addition to the urban area which makes use of the extensive existing services in Kanata North. We trust that the information provided will prove useful to the City in its evaluation and scoring of candidate parcels. We welcome any opportunity to share and discuss the data and information addressed in this letter.

Yours truly,

NOVATECH

James Ireland, BUPD
Project Planner

Attachments: 1480 Old Second Line Road Scoring Table
1480 Old Second Line Road Scoring Plan
1480 Old Second Line Road Engineering Plan

cc: Claridge Homes Inc.

NOVATECH
Engineers, Planners & Landscape Architects

1480 Old Second Line Road

Potential Evaluation Scores by category using May 2020 criteria

M:\2019\119202\DATA\Calculations\Planning

Category	Criterion	Possible Scoring	Possible Parcel Score	
		Score Range	Score	Basis / Notes
Engineering	Water	0, 2, 4, 6 or 8	**8**	Watermains are nearby. Some elevations may cause low pressures but additional looping/future upgrades should resolve this issue.
	Wastewater	0, 2, 4, 6 or 8	**8**	Gravity sewers are nearby. March Road Trunk.
	Stormwater A - characteristics / avail of surface water outlets	0, 1 or 2	**1**	Shirley's Brooke. Similar to KN. LIDs required.
	Stormwater B - expected grade raise requirements	0, 3 or 6	**6**	No grade raise anticpated.
	Servicing Integration Factor	0, 2, 4 or 6	**6**	Water, wastewater, stormwater above 4.
	Servicing Risk Factors	Lose up to 4	**-2**	Bedrock <5m abuts rural estate lots
Total for Engineering		30	**27**	
Transportation	Availability of High Order Transit	0, 2, 10, 14 or 18	**10**	Terminus of proposed Kanata North BRT is within 1.9km radial distance and has an EA.
	Distance to Rapid Transit Station	0, 4, 8 or 12	**8**	Terminus of proposed Kanata North BRT is within 1.1km to 1.9km radial distance bracket.
	Greatest number of jobs (within median commute distance)	2, 4, 6 or 8	**8**	Uses quartile grouping of candidate parcels' number of jobs within 8.6km radial. This includes all Kanata North Business Park and town centre - assumed top quartile.
	Distance to convenience retail	0, 1, 3 or 5	**1**	Proposed retail on March Road is in the 1.1km to 2.9km radial distance bracket.
	Distance to community facilities	0-5	**2**	Nearest qualifying Major Recreation Facility (Richcraft Recreation Centre) is within the 3km to 3.8km radial distance bracket.
	Distance to emergency services (Fire)	0, 3 or 4	**4**	Based on estimated response within 5min. Proposed fire Station is 1km radial distance away, so assumed sub 5min response and 1 responder = 1 fire truck.
	Potential arterial road upgrades	Lose up to 8	**0**	Future transit (BRT) shown on Ultimate Plan within 1.9km radial distance from parcel centre.
Total for Transportation		52	**33**	
Integration with Community	Connectivity	0, 2, 4, 6 or 8	**6**	Partial obstruction in one direction (country lot subdivision).
Total for Integration		8	**6**	
Conflicting Use	Agricultural Resource within 250m	Lose none or 4	**0**	None within 250m.
	Natural Heritage Links	Lose none, 2 or 4	**-4**	A Natural Heritage Linkage affects more than 25% of the parcel.
Total for Conflicting		-8	**-4**	
TOTAL		90	**62**	

Revision	Date
10	28-Jun-20

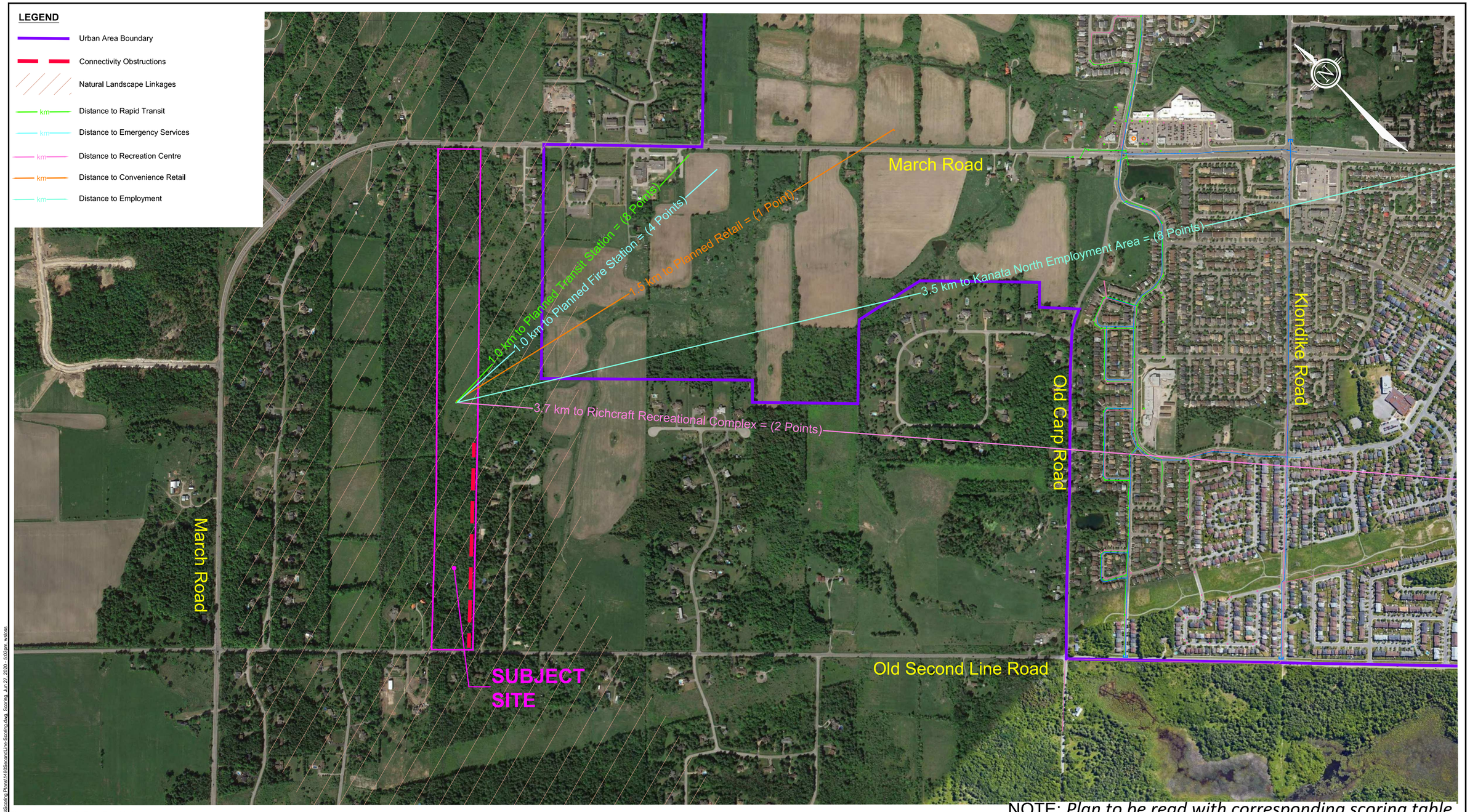


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	JUNE 09/20	JI

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
1480 OLD SECOND LINE ROAD

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

PLANcH-B.DWG - 914.4mmx609.6mm

M:\PROPOSALS\2020\John Riddell\Claridge Street\Scoring Plans\1480SecondLine-Scoring.dwg, Scoring, Jun 27, 2020 - 5:03pm, wslaws

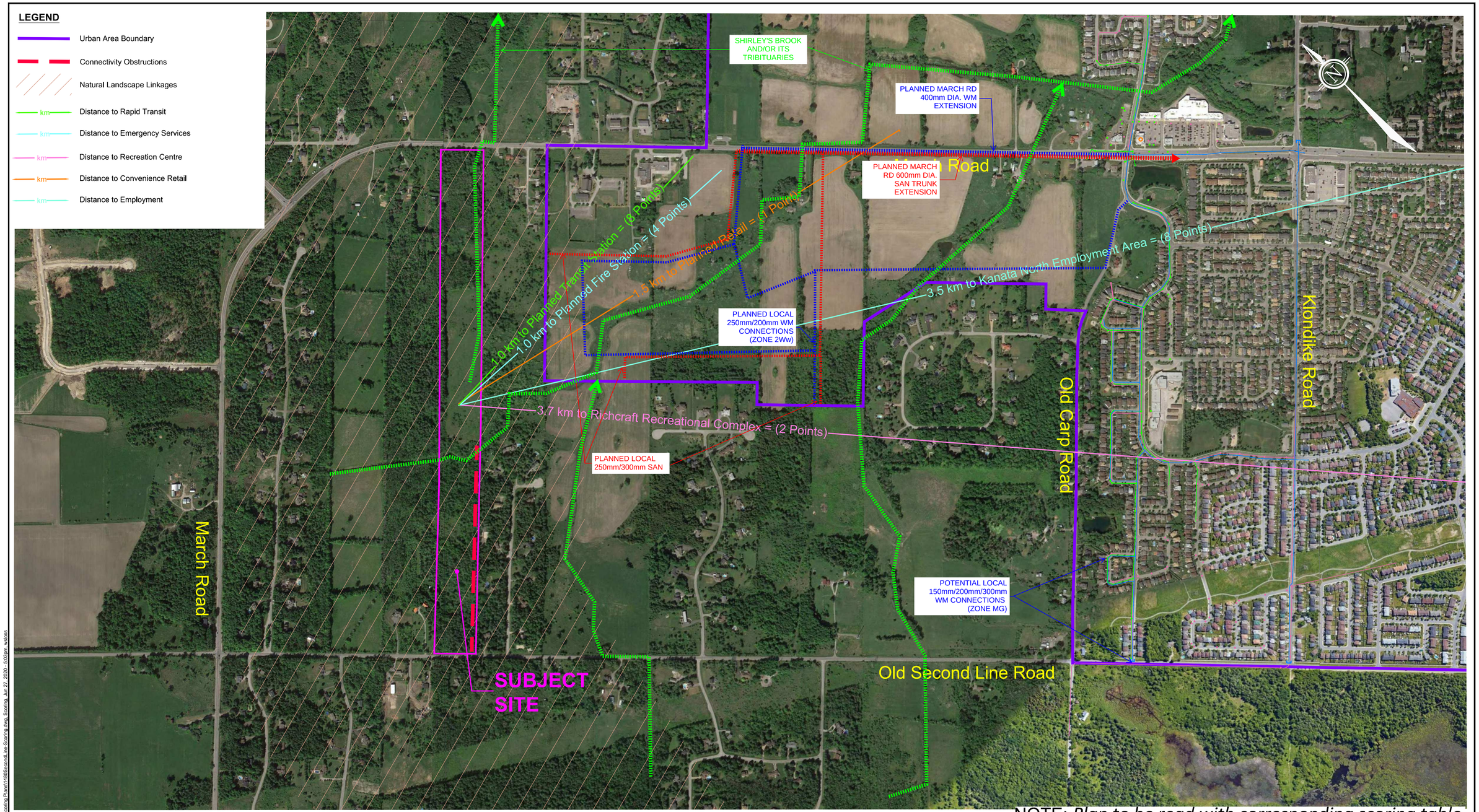


Photo Source: Google Earth Pro, 2018

NOTE: *Plan to be read with corresponding scoring table*

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
I.	PREPARED FOR DISCUSSION	JUNE 09/20	JI

SCALE
1:5000 (A1) / 1:10000 (11x17)
1:5000
0 50 100 150 200

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

FOR REVIEW ONLY

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

LOCATION
CITY of OTTAWA
1480 OLD SECOND LINE ROAD

DRAWING NAME
URBAN BOUNDARY EXPANSION CANDIDATE SCORING PLAN

PROJECT No. 000000-00
REV REV # X
DRAWING No. SCORING

M:\PROPOSALS\2020\John Rickett\Claridge Sites\Scoring Plans\1480\SecondLine-Scoring.dwg, Scoring, Jun 27, 2020 - 5:03pm, wslows

APPENDIX C

Urban Expansion Detailed Evaluation Criteria

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
Engineering (Serviceability)			
1. Water PPS policies (See Appendix 1 policies (1.1.1 e & g) (1.1.3.2 a) 2. (1.1.3.8 b) 1.6.1 & 1.6.3 1.6.6.1 a-d	Water scores will be assigned to individual parcels based on the anticipated scope of servicing requirements determined through high-level servicing strategies formulated for each of the candidate urban expansion areas. Adjustments to the scores indicated below may be justified for a candidate area(s), such as: • Pump station upgrade would only involve addition of new pumping capacity, but upgrade remains within current rated capacity. • Servicing a candidate site could require a new drinking water pumping station and pressure zone but could also provide an opportunity to improve service levels in existing adjacent areas. Scores for each site range from 0 to 8 based on consideration of the factors in the next column.	• **8 points:** Where trunk systems, in proximity, have adequate residual capacity. local conditions that do not require any new pump facilities, or existing facility upgrades, to overcome topographic constraints. No major highway, railway and/or water crossing(s) required • **6 points:** Where trunk systems, in proximity, have adequate residual capacity, local conditions that do not require any new pump facilities, or existing facility upgrades, to overcome topographic constraints. Major highway, railway and/or crossing(s) required. • **4 points:** Where localized upgrades to off-site trunk facilities required to establish enough capacity; local conditions do not require any new pump facilities, or existing facility upgrades, to overcome topographic constraints. • **2 point:** Where topographic conditions require upgraded existing pumping facilities to meet level of service requirements; OR Extensive and major upgrades to off-site trunk facilities required to establish enough capacity. • **0 points:** Where extensive and major upgrades to off-site trunk facilities, or new local storage facility required to establish enough capacity; and topographic conditions which require new or upgraded pumping facilities to meet level of	**8**

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
		service requirements.	
2. Wastewater (Sanitary) PPS (See Appendix 1) policies (1.1.1 e & g) (1.1.3.2 a) 2. (1.1.3.8 b) 1.6.1 & 1.6.3 1.6.6.1 a-d	Wastewater scores will be assigned to individual parcels based on the anticipated scope of servicing requirements determined through high-level servicing strategies formulated for each of the candidate urban expansion areas. Adjustments to the scores indicated below may be justified for a candidate area(s), such as: • Pump station upgrade would only involve addition of new pumping capacity, but upgrade remains within current rated capacity. Scores for each site range from 0 to 8 based on consideration of the factors in the next column.	• **8 points:** Where trunk systems in proximity have adequate residual capacity; local conditions do not require any new pump facilities, or existing facility upgrades, to overcome topographic constraints; and no major highway, railway and/or water crossing(s) or excavations required. • **6 points:** Where trunk systems in proximity have adequate residual capacity; local conditions do not require any new pump facilities, or existing facility upgrades are needed to overcome topographic constraints. Major highway, railway and/or water crossing(s) or excavations required. • **4 points:** Where localized upgrades to off-site trunk facilities are required to establish sufficient capacity; local conditions do not require any new major pump facilities, or existing facility upgrades, to overcome topographic constraints. • **2 points:** Where localized upgrades to off-site trunk facilities are required to establish sufficient capacity and topographic conditions require new major or upgraded pumping facilities to meet the level-of-service requirements; **OR** Extensive and major upgrades to off-site trunk facilities are required to establish sufficient	**8**

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
		capacity. • **0 points:** Where extensive major upgrades to off-site trunk facilities to establish sufficient capacity, **AND** topographic conditions which require major new pump facilities, or major upgrades to existing pump facilities to meet level of service requirements.	
3. Stormwater PPS (See Appendix 1) policies (1.1.1 e & g) (1.1.3.2 a) 2. (1.1.3.8 b) 1.6.1 & 1.6.3 1.6.6.1 a-d	Stormwater scores will be assigned to individual parcels based on: • expected grade raise requirements relative to restrictions; and other topographic constraints to drainage • capacity and condition of surface water outlets and resulting storm water management criteria, considering suitability for Low Impact Development (LID); For Potential Urban Expansion Areas Total scores for Stormwater ranged from 0 to 8 based on consideration of the factors listed in a-e below. The maximum possible score 8.		
a) Stormwater-characteristics and availability of surface water outlets PPS (See Appendix 1) policies 2.2.1 a -c & h 1.6.1 & 1.6.3 1.6.6.1 a-d	Scores for each site range from 0 to 2 based on consideration of the factors in the next column	• **2 points:** Major Surface Outlet Available: No issues anticipated with capacity or condition of the receiving watercourse. Standard quantity and quality SWM controls. • **1 point:** Minor Surface Outlet Available: Some issues are anticipated with the capacity and/or condition of the receiving watercourse. Requires additional volume/flow controls. • **0 points:** Limited Surface Outlet Available: Issues are anticipated or known with the capacity and/or condition of the receiving watercourse. Requires additional volume/flow controls and is not suitable for infiltration-based LID.	**2**

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
b) Stormwater - expected grade raise requirement relative to restrictions and other topographic constraints on drainage.	Scores for each site range from 0 to 6 based on consideration of the factors in the next column	• **6 points:** No observable grade restrictions and/or topographic constraints anticipated that would result in submerged sewers or alteration of existing watercourses. • **3 points:** Some grade restrictions and/or topographic constraints that could potentially result in submerged sewers or alteration of watercourses. • **0 points:** Significant grade restrictions and/or topographic constraints that would result in submerged sewers, alteration of watercourses and/or the use of EPS fill.	**6**
4. Servicing Integration Factor PPS (See Appendix 1) policies 2.2.1 a -c & h 1.6.1 & 1.6.3	The Servicing Integration Factor represents the lowest common servicing denominator that has the potential to affect the timing of development and the cost of major trunk system upgrades. The Integration Factor will be used to enhance the score of candidate sites with (highly or moderately) favourable water, wastewater, and stormwater conditions. This is to enable a differentiation of such sites from those that that may score well for two services but, have a major deficiency in a third service.	• **6 points:** Scores for water, wastewater and stormwater criteria are 4 or higher. • **4 points:** The score for one of the water, wastewater or stormwater criteria is 1 or 2. Remaining scores are 4 or higher. • **2 points:** The score for two of the water, wastewater, or stormwater criteria is minimum 2. Remaining score is 4 or higher. • **0 points:** The score for one or more of the water, wastewater or stormwater criteria is 0.	**6**
5. Servicing Risk Factors (Serviceability Penalty Factors) PPS (See Appendix 1) policies	Penalty factors are proposed to account for potential site-specific development and servicing issues that would not otherwise be accounted for in the water, wastewater or stormwater criteria. Penalty factors are proposed to address the	• **- 2 points:** Extensive presence of Grey compressible clays in the area **OR** • **- 1 point:** Extensive presence of	**Potential loss of 4 points**

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
(1.1.1 e & g) 1.6.6.1 a-d	following potential issues: a) Differential settlement risk due to compressible clays, b) Shallow depth to bedrock, c) Parcel includes large depression/hydrologic storage area, d) Risk to private wells due to rock blasting required for servicing.	shallow bedrock (<5m) in the area **OR** • **- 2 points:** Parcel abuts country lot subdivision and extensive presence of shallow bedrock (<5m) in the area • **- 2 points:** Depression storage area exceeds 10% of the parcel area.	
			Maximum Engineering Score 30
	Transportation		
6. Availability of Rapid Transit PPS (See Appendix 1) policies 1.1.1 e), 1.1.3.2a) 2, 4 & 5,	Availability of existing or planned rapid transit (LOS A & B) station within 2.5 km (1.9 km radial) The distance threshold of 2.5 km (1.9km radial) is based on a 5-minute local bus ride (at 30 km/hr) and a 10-minute bicycle ride (at 15 km/hr).	• **18 points:** Available now / Stage 2 LRT • **14 points:** Shown in current 2031 Affordable Network Plan • **10 points:** Shown in current Ultimate Network Plan or EA • **2 points:** Shown as a conceptual future transit corridor (grey arrow) • **0 points:** No Rapid Transit planned	**18**
7. Proximity to nearest Rapid Transit Station PPS (See Appendix 1) policies 1.1.1 e), 1.1.3.2a) 2, 4 & 5,	Distance to nearest rapid transit station (existing or planned) max 2.5 km (1.9 km radial) The distance threshold of 2.5 km (1.9km radial) is based on a 5-minute local bus ride (at 30 km/hr) and a 10-minute bicycle ride (at 15 km/hr).	• **12 points:** 0 to 0.6 km • **8 points:** >0.6 km to 1.1 km • **4 points:** >1.1 km to 1.9 km • **0 points:** >1.9 km	**12**
8. Proximity to Jobs PPS (See Appendix 1)	Urban expansion areas that have a greater number of opportunities for local employment are preferable. The Ottawa median	• **8 points:** >75% to 100% • **6 points:** >50% to 75% • **4 points:** >25% to 50%	**8**

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
policies 1.1.1 e), 1.1.3.2 a) 2, 4 & 5,	commute to work distance for all modes of travel was used to rank candidate sites by the potential number of jobs within a distance of 11.4 km (8.6 km radial). The parcels capturing the higher number of jobs within this distance achieve the most points. **Note:** Scores for existing jobs are weighted by 1 while planned jobs are weighted by 0.5. The numbers of jobs in each class are documented.	• **2 points:** 0% to 25%	
9. Proximity to Convenience Retail PPS (See Appendix 1) policies 1.1.3.2a) 2, 4 & 5,	Reflects proximity to convenience retail clustered around a major grocery store. Scores sites that on day one will take advantage of existing and known proposed commercial services. Proximity to convenience retail for all modes has a city median distance of 3.8 km converted to 2.9km radial distance.	• **5 points:** 0 to 0.6 km • **3 points:** >0.6 km to 1.1 km • **1 point:** >1.1km to 2.9 km • **0 points:** > 2.9 km	**5**
10. Distance to Major City Facilities PPS (See Appendix 1) policies 1.1.3.2a) 2, 4 & 5,	Distance to one or more Major Recreation Facilities **Note**: Major Recreation Facilities which contain a Pool and 2 or more other indoor and outdoor recreation facility types on one site, such as arena(s), community centre, library, major sports fields, etc.	• **5 points:** 0 to 1.5 km • **4 points:** >1.5 km to 2.3 km • **3 points:** >2.3 km to 3.0 km • **2 points:** >3.0 km to 3.8 km • **1 point:** >3.8 km to 4.5 km • **0 points:** >4.5 km	**5**
11. Distance to Emergency Services – Fire PPS (See Appendix 1) Section 1.6.3 & 1.6.5	Emergency Services (Fire) – Estimated response within 5 min and based upon assumed service area information provided by Fire Services.	• **4 points:** 2 or more responders within 5 mins • **3 points:** 1 responder within 5 mins • **0 points:** 1 responder >5 mins	**4**

Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
12. Potential Arterial Road Upgrades PPS (See Appendix 1) policies 1.1.3.2 a) 2	Scoring seeks to reflect the relative cost of possible Arterial Road construction or upgrades required by future development. Potential is assessed based on, the distance travelled over roads that provide the shortest travel distance to an existing urban arterial road system or an existing series 400 Highway Interchange. Each parcel is put into one of four groups (closest to farthest) based on proximity / distance measured.	• **0 points –** Frontage on an existing serviced Urban Arterial Road or site is within 1.9 km of planned rapid transit **First Group: 0% to 25% (closest distance)** • **- 2 point** **Second Group: >25% to 50%** • **- 4 points** **Third Group: >50% to 75%** • **- 6 Points** **Fourth Group: >75% to 100% (furthest distance)** • **- 8 Points**	**Potential loss of 8 points**
		Maximum Transportation Score	**52**
Community Integration			
13. Connectivity PPS (See Appendix 1) policies 1.1.3.2 a) 2	It is assumed that all candidate lands can be developed with an urban road network including existing and new arterials and collector roads, cycle routes, pathways and greenspaces. This factor recognises that some parcels may have limitations to the provision of road access or integration with urban area lands in some directions, due to barriers or physical obstructions such as landform (ravines, major watercourses, significant natural areas etc.) or man-made	• **8 points:** good – totally unobstructed in all directions; • **6 points:** less than good – full or partial obstruction in one direction; • **4 points:** medium – full obstruction in one direction and a partial obstruction in another direction; • **2 points:** poor – full obstruction in 2 directions • **0 Points:** very poor – full	**8**

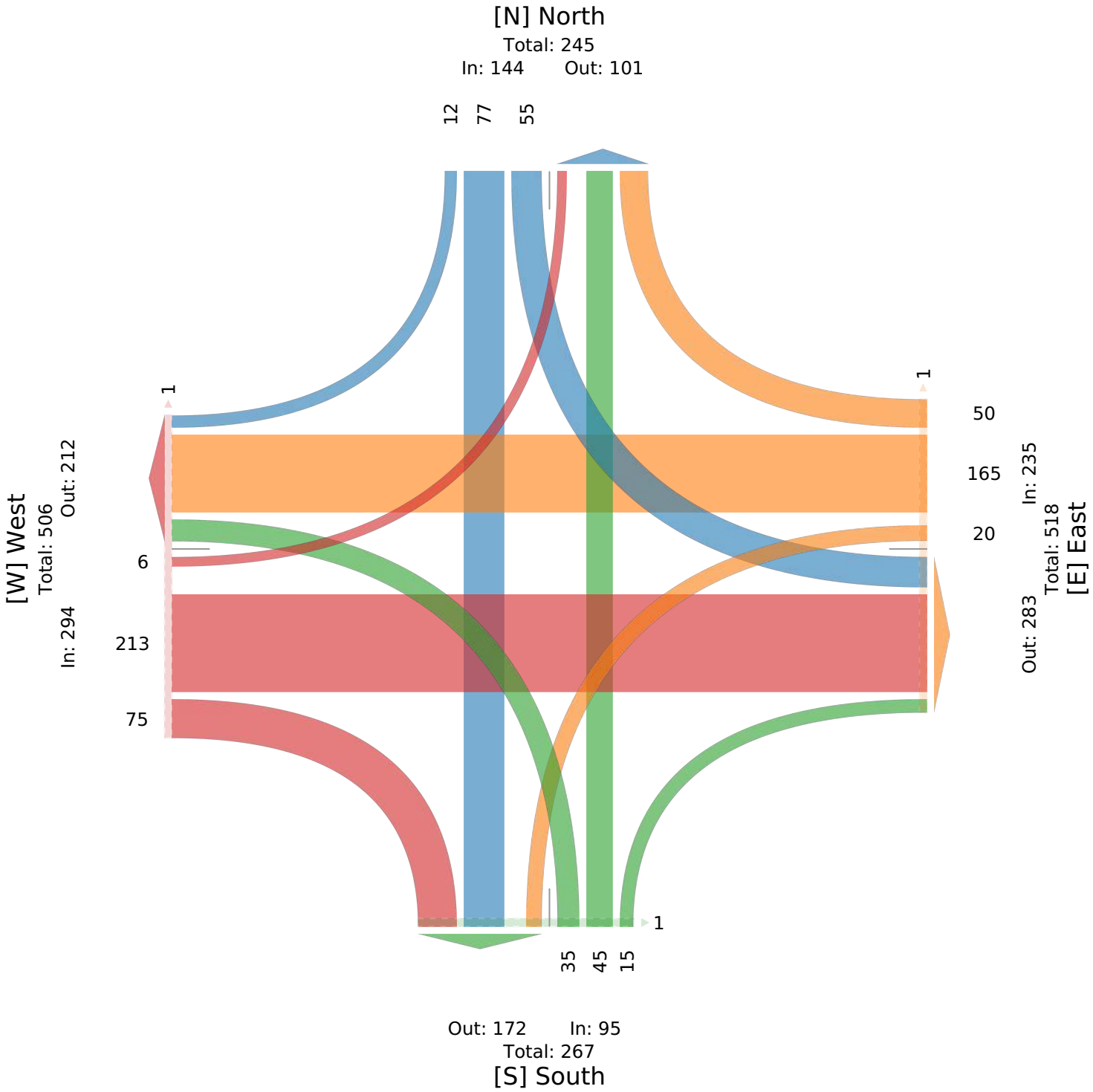
Table 2: Detailed Evaluation Criteria and Scores			
Criteria	**Description**	**Scores**	**Max Score**
	obstructions such as railways, highways or existing development (e.g. country lot subdivisions, land designated for pits or quarries).	obstructions in 3 directions	
		Maximum Integration Score	**8**
Conflicting Uses			
14. Conflict with Agricultural Land Uses	Agricultural Resource Area within 250 metres of the parcel	• **0 points:** No • **- 4 points:** Yes	**Potential loss of 4 points**
15. Natural Heritage Linkages PPS (See Appendix 1) policies 2.1.2	Presence of features that form part of Natural Heritage Linkages	• **0 points:** Natural Heritage Linkage does not impact the parcel • **- 2 points:** the Natural Heritage Linkage impacts less than 25 % of the parcel • **- 4 points:** the Natural Heritage Linkage impacts more than 25% of the parcel	**Potential loss of 4 points**
		Maximum Loss Conflicting Uses	**- 8**
		Maximum Site Score	**90**

APPENDIX D

Traffic Count Data

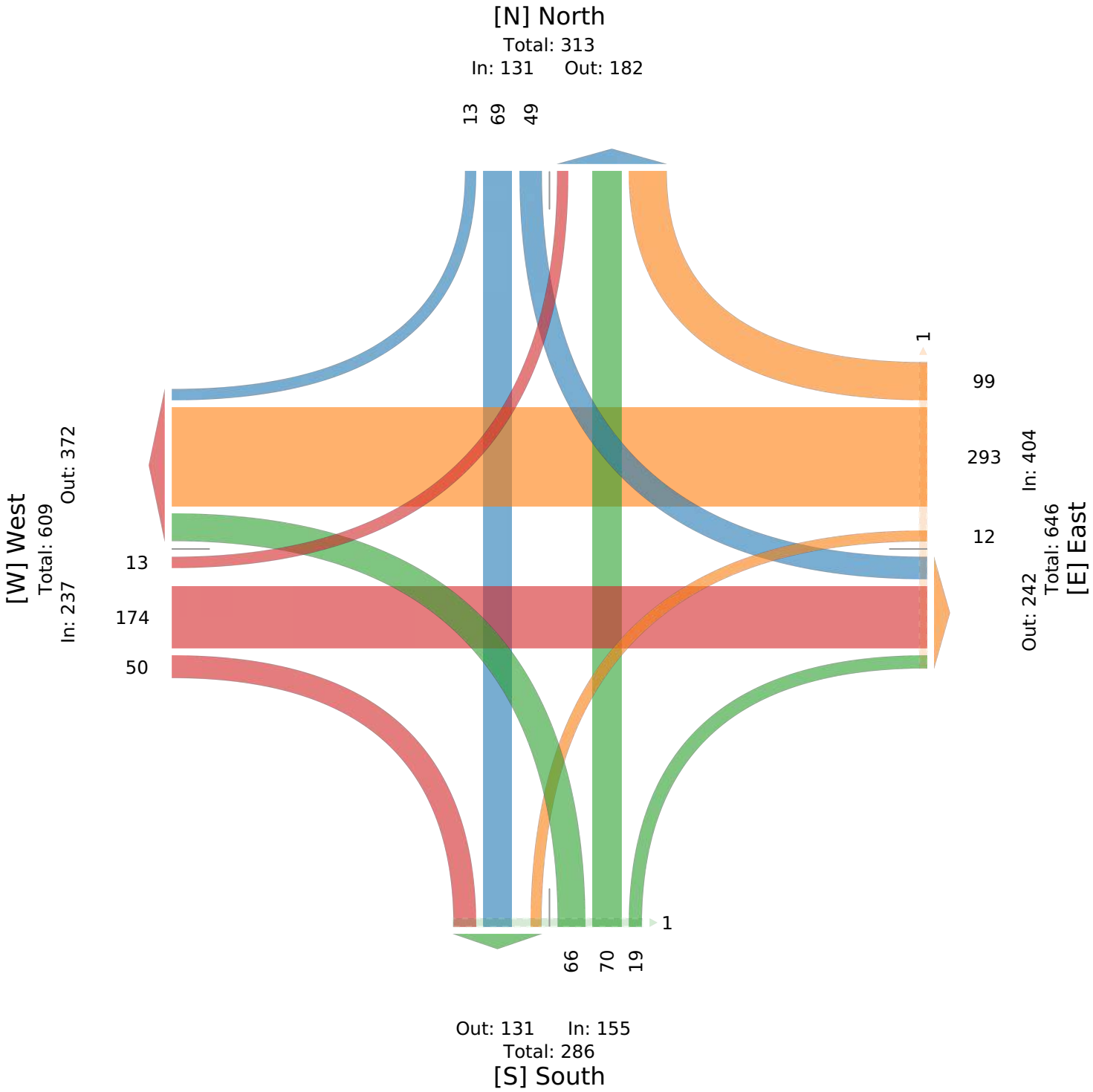
5670364 - Donald Munro- Dr/ Old Carp Rd and ... - TMC
Tue Jul 30, 2024
AM Peak (8 AM - 9 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1214637, Location: 45.342249, -76.011427, Site Code: 41774103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5670364 - Donald Munro- Dr/ Old Carp Rd and ... - TMC
Tue Jul 30, 2024
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1214637, Location: 45.342249, -76.011427, Site Code: 41774103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



NOVATECH
Engineers, Planners & Landscape Architects

MARCH ROAD @ HUNTMAR DRIVE

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

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

AM Peak Hour 08:00-09:00 — Total Volume 574

NB Out 0 | SB In 0

SB: N/A

				% Heavy
0	0	0	0	Total
0	0	0	0	Heavy
0	0	0	0	Cars

EB Out 349 | WB In 204

EB: March Road

% Heavy	Total	Heavy	Cars
	0	0	0
	0	0	0
5.2%	309	16	293
30.8%	13	4	9

WB: March Road

Cars	Heavy	Total	% Heavy
0	0	0	
118	11	129	8.5%
72	3	75	4.0%
0	0	0	

EB In 322 | WB Out 137

NB: Huntmar Drive

Cars	0	7	0	37
Heavy	0	1	0	3
Total	0	8	0	40
% Heavy		12.5%		7.5%

NB In 48 | SB Out 88

PM Peak Hour 16:00-17:00 — Total Volume 732

NB Out 0 | SB In 0

SB: N/A

				% Heavy
0	0	0	0	Total
0	0	0	0	Heavy
0	0	0	0	Cars

EB Out 258 | WB In 426

EB: March Road

% Heavy	Total	Heavy	Cars
	0	0	0
	0	0	0
1.1%	176	2	174
0.0%	18	0	18

WB: March Road

Cars	Heavy	Total	% Heavy
0	0	0	
340	22	362	6.1%
61	3	64	4.7%
0	0	0	

EB In 194 | WB Out 392

NB: Huntmar Drive

Cars	0	28	0	79
Heavy	0	2	0	3
Total	0	30	0	82
% Heavy		6.7%		3.7%

NB In 112 | SB Out 82

MARCH ROAD @ OLD SECOND LINE ROAD

NOVATECH
Engineers, Planners & Landscape Architects

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

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

AM Peak Hour 08:00-09:00 — Total Volume 735

NB Out 42 | SB In 138

EB Out 405 | WB In 155

EB In 385 | WB Out 161

NB In 57 | SB Out 127

SB: Old Second Line Road

0.0%	10.2%	1.6%		% Heavy
25	49	64	0	Total
0	5	1	0	Heavy
25	44	63	0	Cars

EB: March Road

% Heavy	Total	Heavy	Cars
	0	0	0
0.0%	10	0	10
4.1%	317	13	304
6.9%	58	4	54

WB: March Road

Cars	Heavy	Total	% Heavy
12	1	13	7.7%
112	10	122	8.2%
19	1	20	5.0%
0	0	0	

NB: Old Second Line Road

Cars	0	14	18	23
Heavy	0	0	1	1
Total	0	14	19	24
% Heavy		0.0%	5.3%	4.2%

PM Peak Hour 16:00-17:00 — Total Volume 867

NB Out 151 | SB In 76

EB Out 188 | WB In 459

EB In 209 | WB Out 442

NB In 123 | SB Out 86

SB: Old Second Line Road

5.0%	0.0%	4.0%		% Heavy
20	31	25	0	Total
1	0	1	0	Heavy
19	31	24	0	Cars

EB: March Road

% Heavy	Total	Heavy	Cars
	0	0	0
2.7%	37	1	36
1.4%	147	2	145
4.0%	25	1	24

WB: March Road

Cars	Heavy	Total	% Heavy
53	1	54	1.9%
361	14	375	3.7%
28	2	30	6.7%
0	0	0	

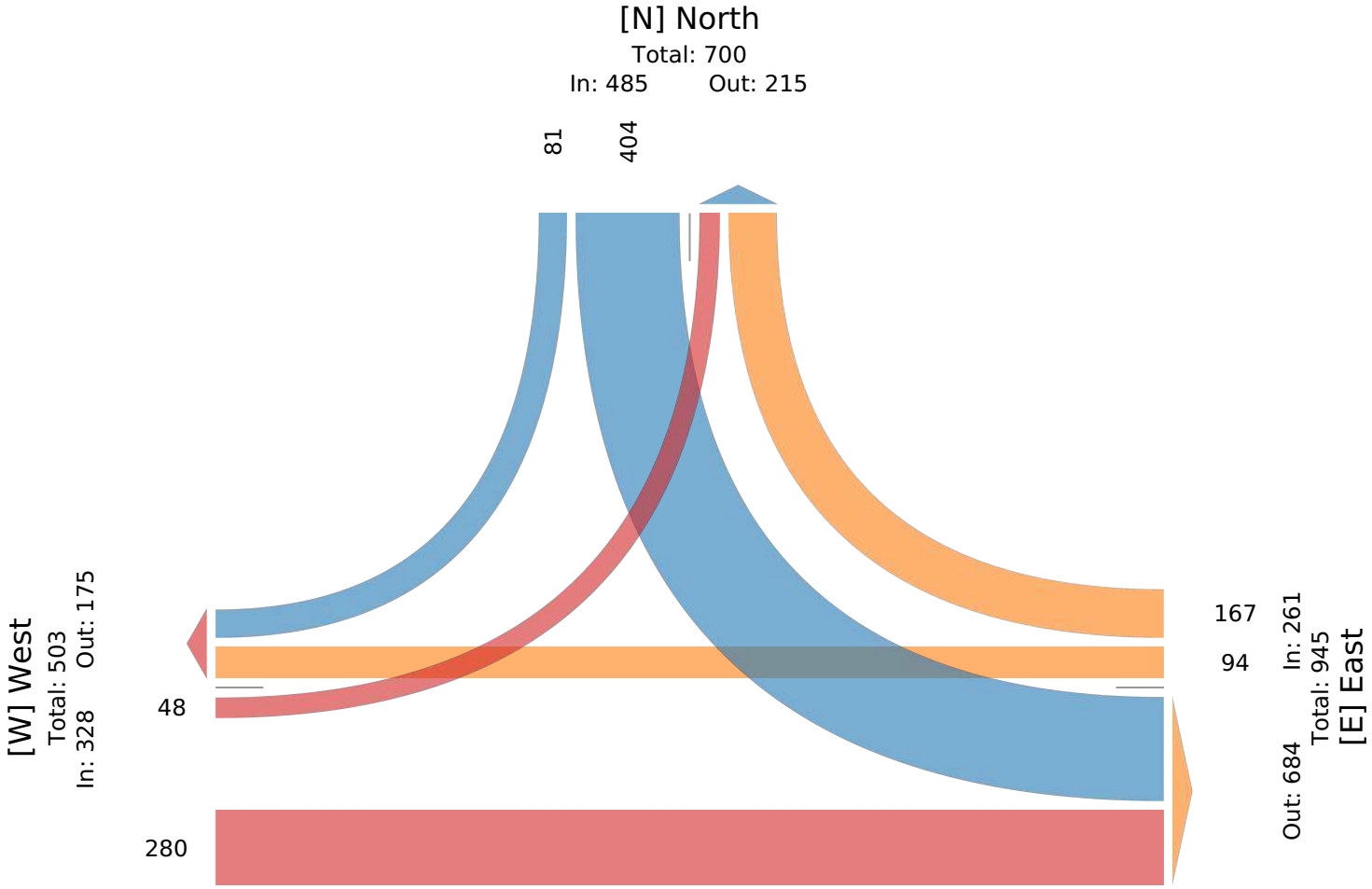
NB: Old Second Line Road

Cars	0	43	56	15
Heavy	0	4	4	1
Total	0	47	60	16
% Heavy		8.5%	6.7%	6.3%

5656487 - DUNROBIN RD @ MARCH RD - APR 3 2024 - TMC

Wed Apr 3, 2024
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1171682, Location: 45.37326, -75.958939, Site Code: 41502103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5656487 - DUNROBIN RD @ MARCH RD - APR 3 2024 - TMC

Wed Apr 3, 2024

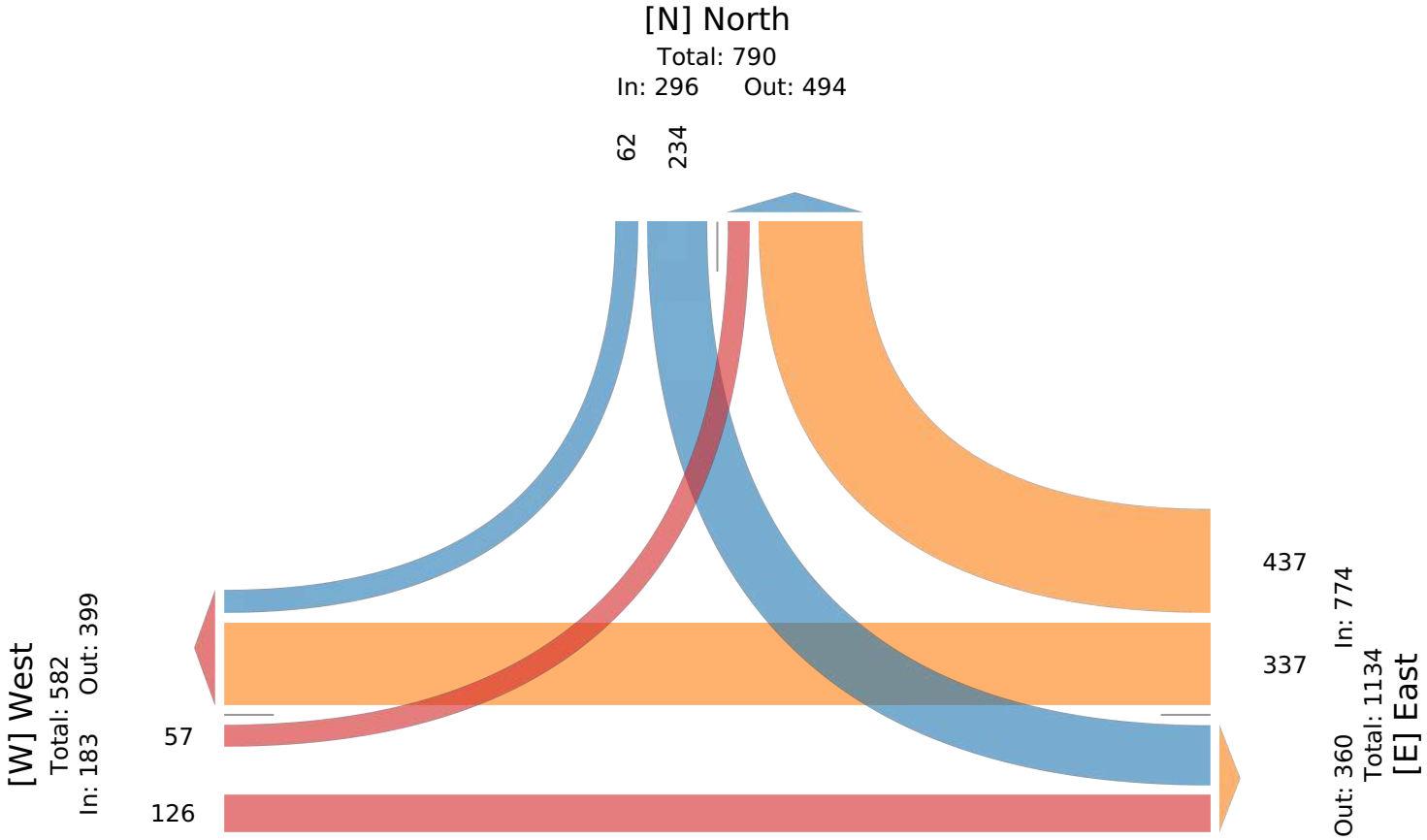
PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1171682, Location: 45.37326, -75.958939, Site Code: 41502103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



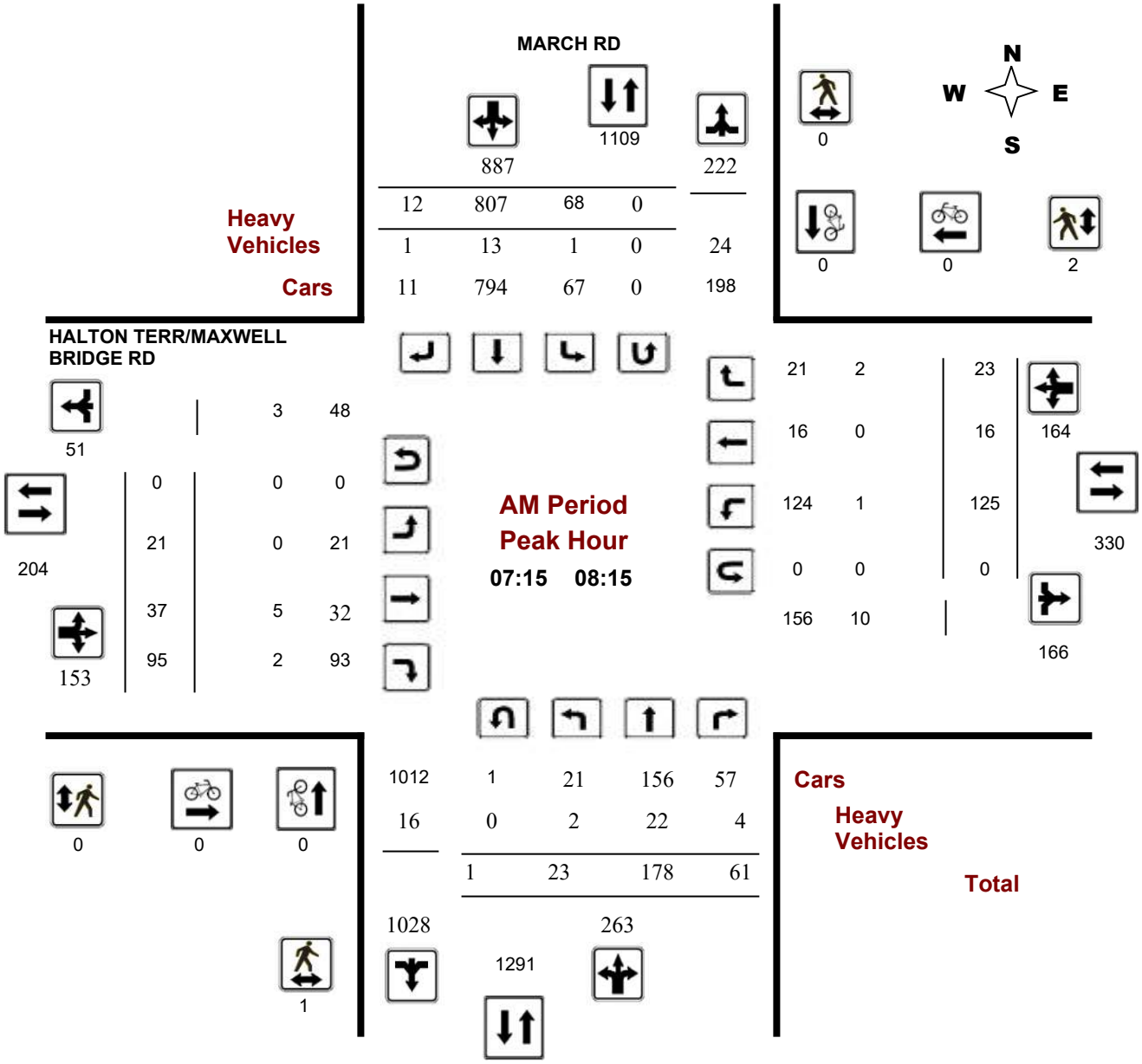
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALTON TERR/MAXWELL BRIDGE RD @ MARCH RD

Survey Date: Wednesday, March 04, 2020 **WO No:** 39372

Start Time: 07:00 **Device:** Miovision



Comments 5472187 - WED JAN 22, 2020 - 8HRS - LORETTA

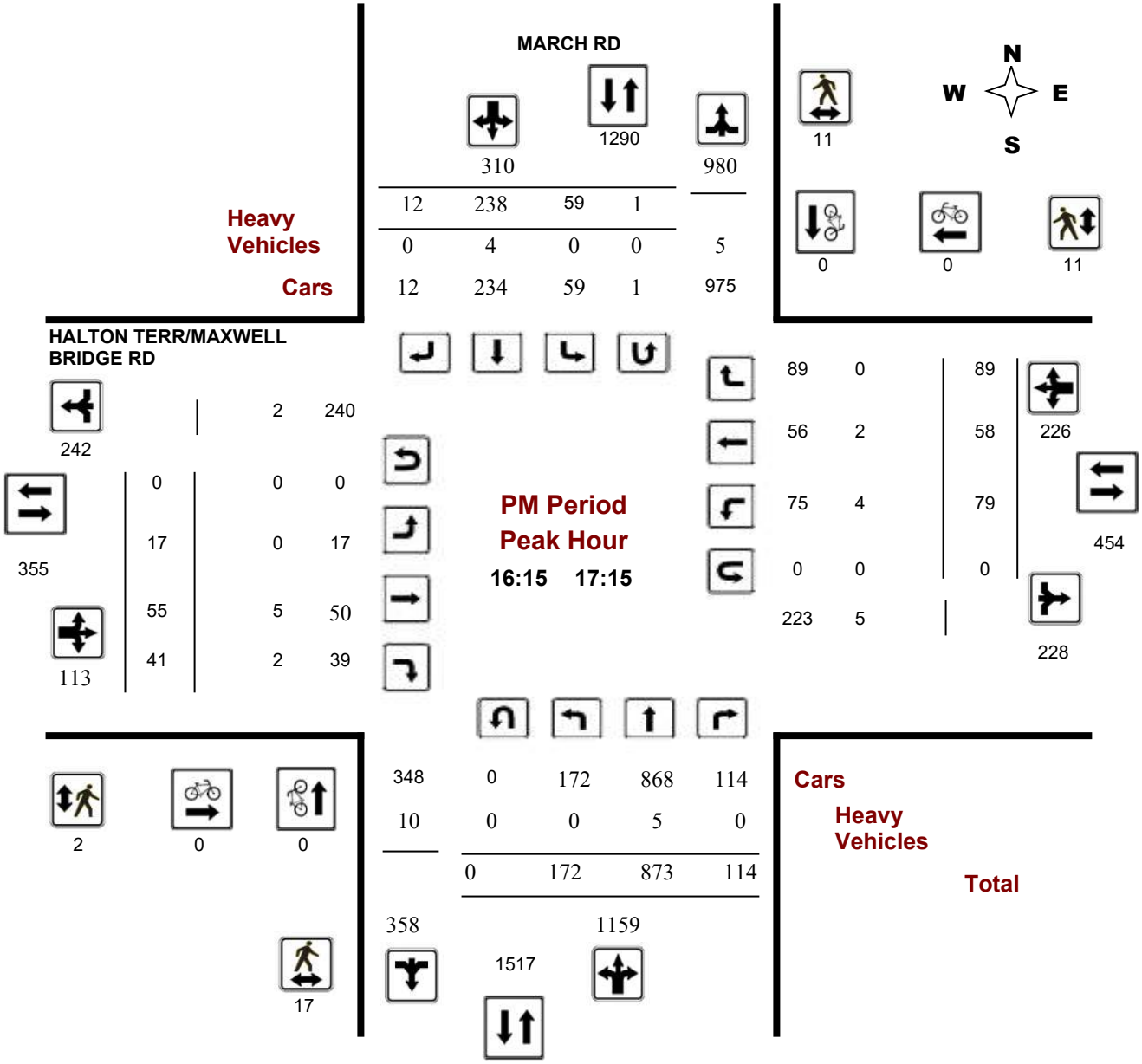
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HALTON TERR/MAXWELL BRIDGE RD @ MARCH RD

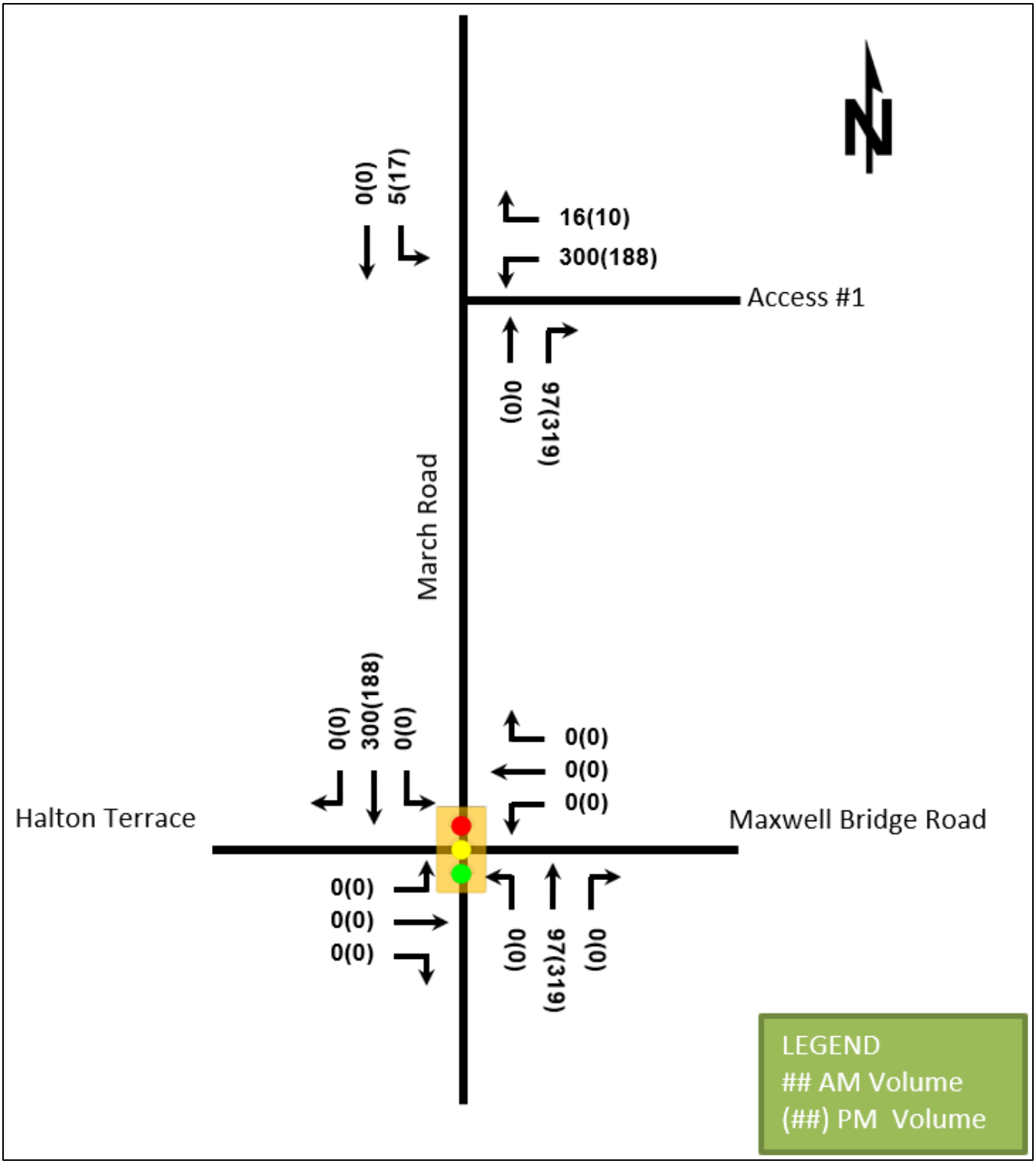
Survey Date: Wednesday, March 04, 2020 **WO No:** 39372

Start Time: 07:00 **Device:** Miovision



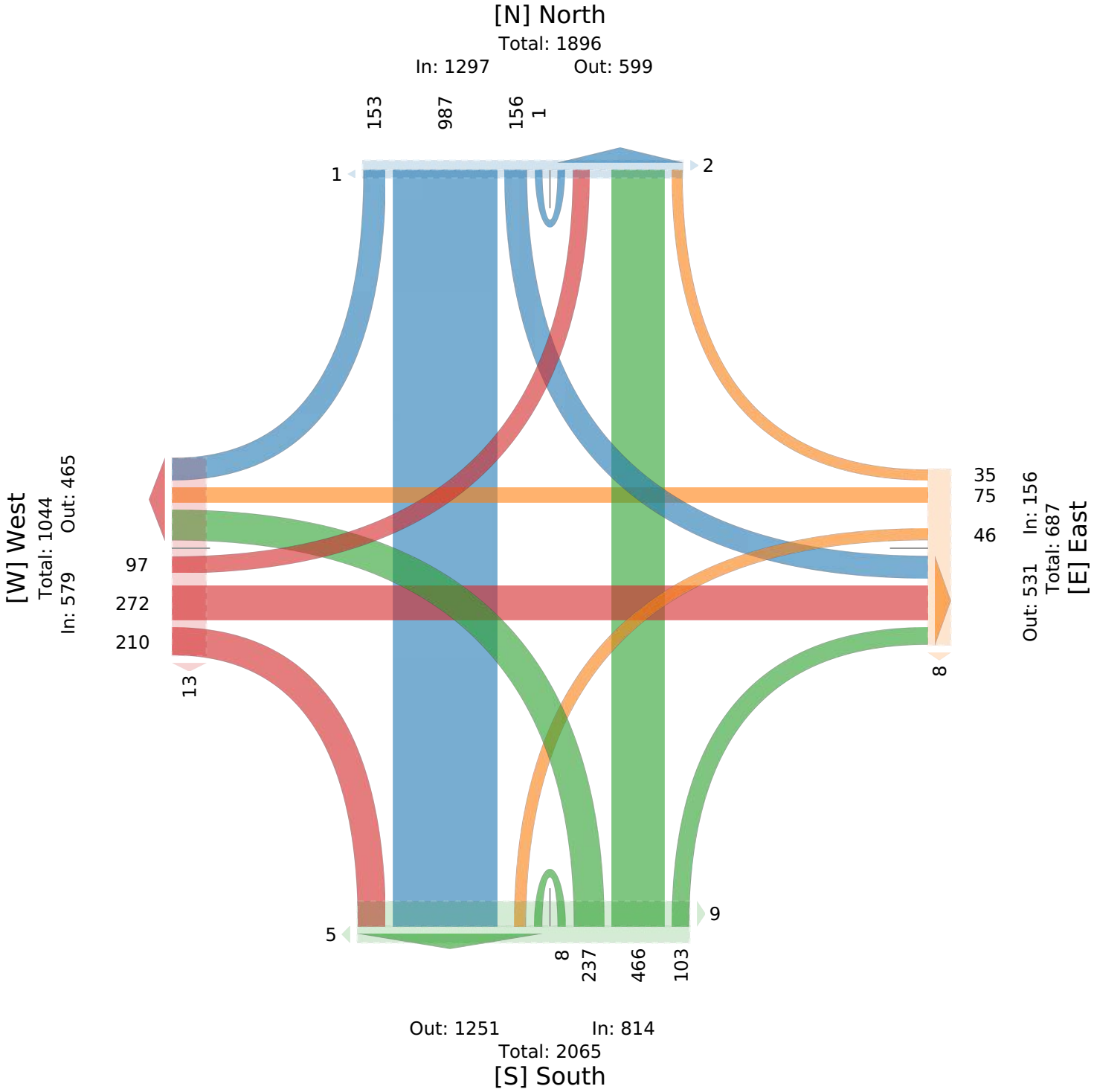
Comments 5472187 - WED JAN 22, 2020 - 8HRS - LORETTA

Figure 8: Assignment (Volumes)



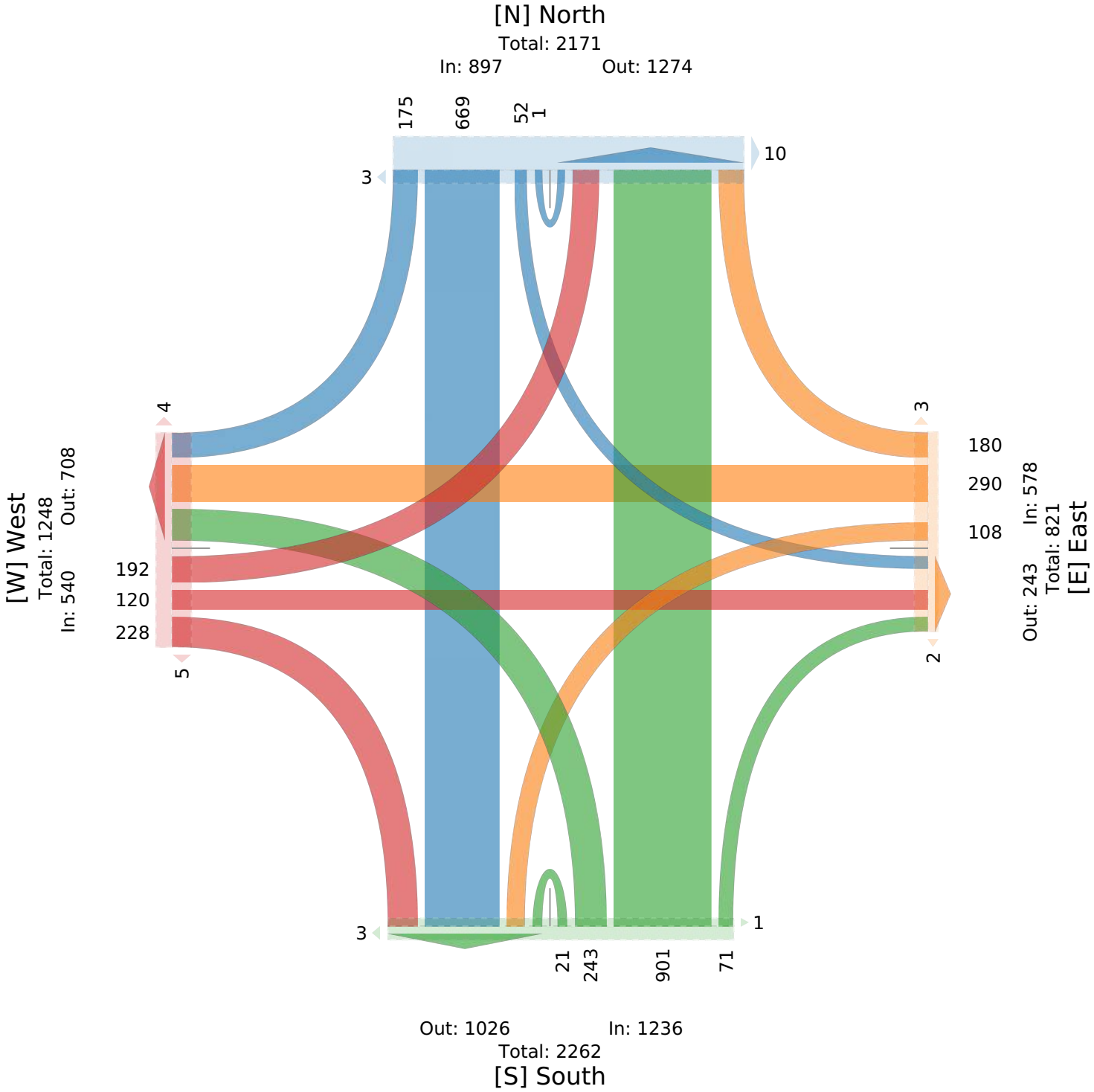
5652809 - MARCH RD @ TERRY FOX DR - FEB 29 2... - TMC
Thu Feb 29, 2024
AM Peak (8 AM - 9 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1192178, Location: 45.349011, -75.924814, Site Code: 41713103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



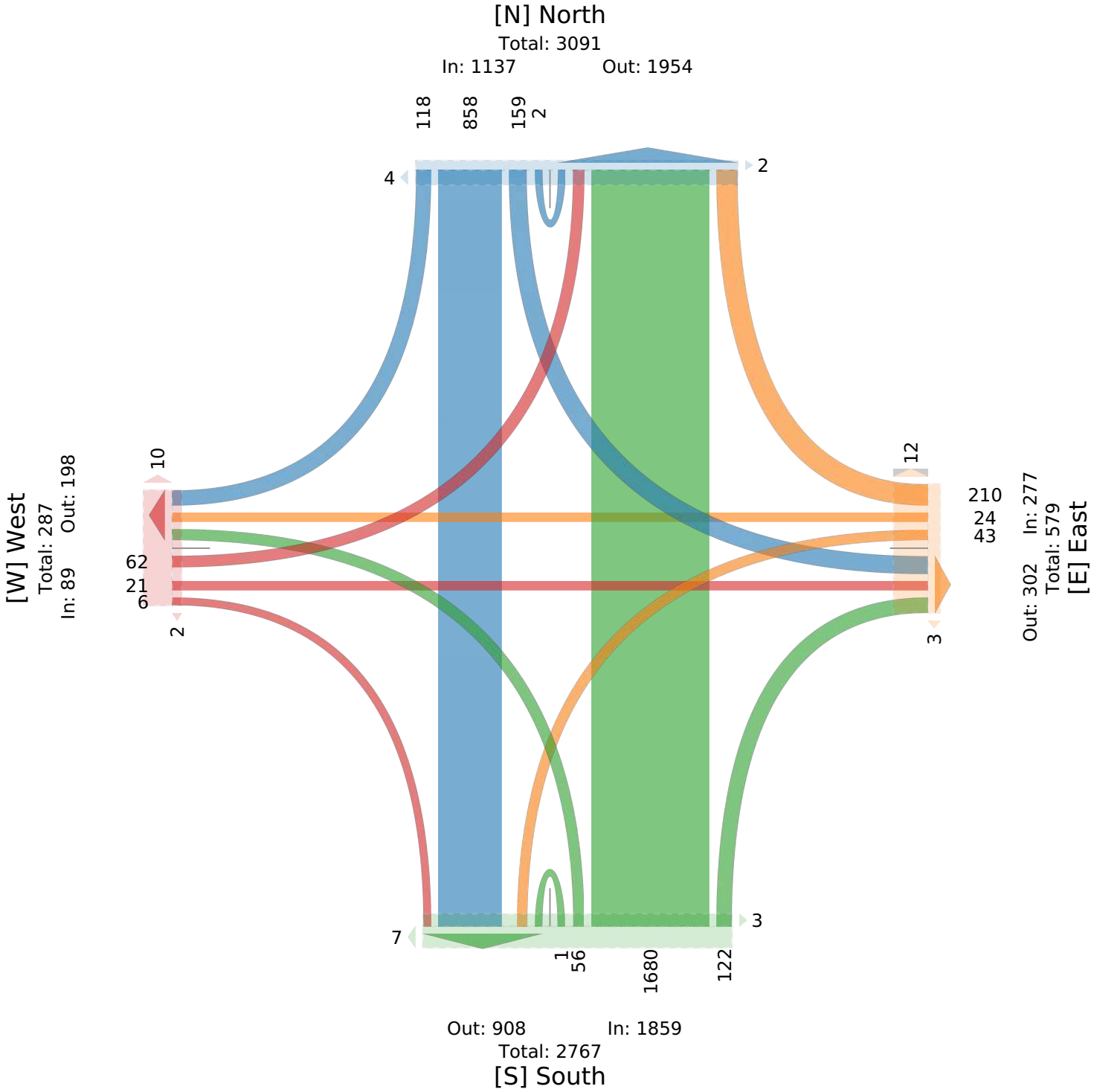
5652809 - MARCH RD @ TERRY FOX DR - FEB 29 2... - TMC
Thu Feb 29, 2024
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1192178, Location: 45.349011, -75.924814, Site Code: 41713103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



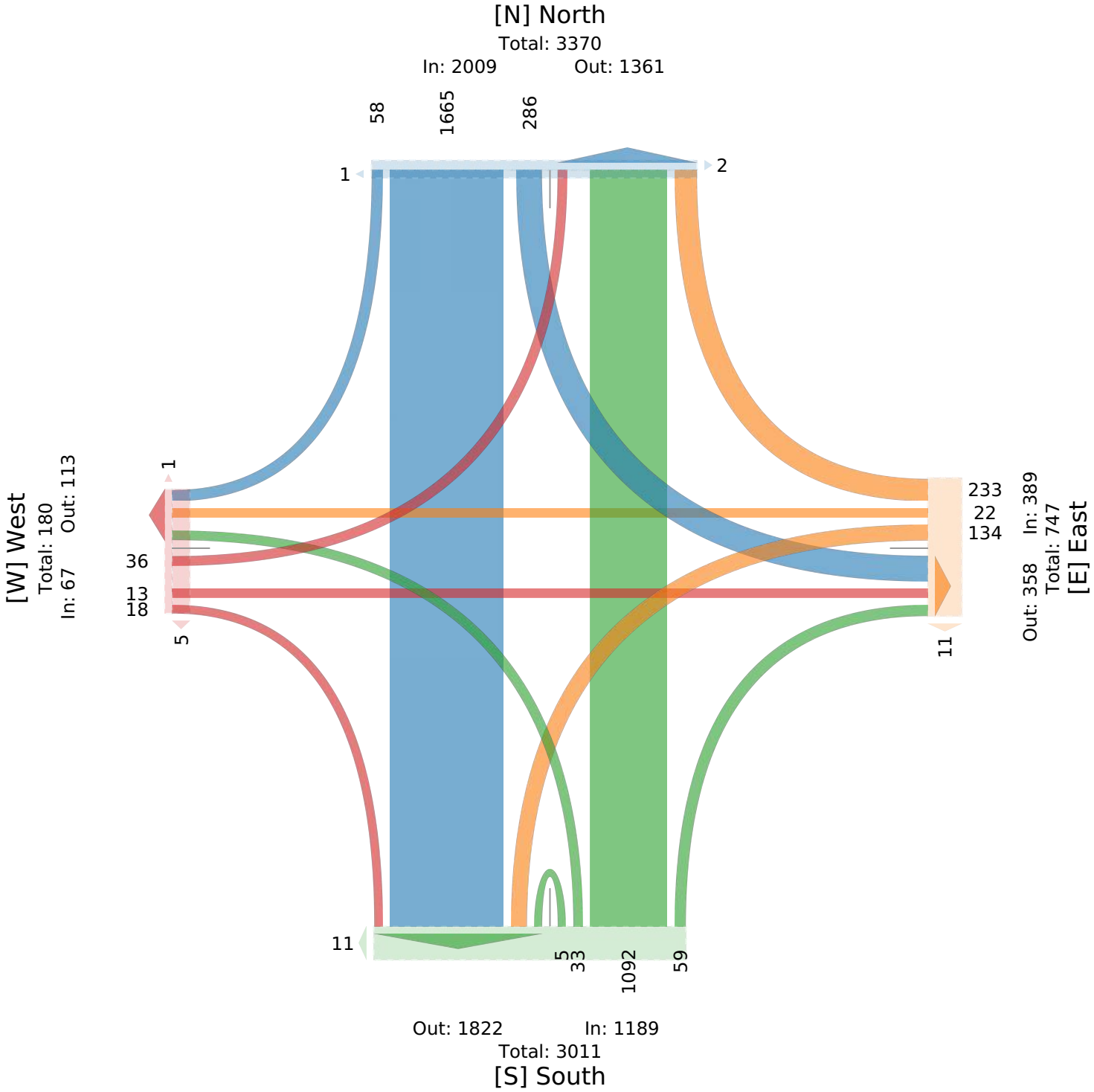
5670056 - Carling and March - Aug 28 2024 - TMC
Wed Aug 28, 2024
AM Peak (8:15 AM - 9:15 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1226083, Location: 45.338682, -75.911644, Site Code: 41863103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5670056 - Carling and March - Aug 28 2024 - TMC
Wed Aug 28, 2024
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1226083, Location: 45.338682, -75.911644, Site Code: 41863103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



OLD CARP ROAD @ HUNTMAR DRIVE

NOVATECH
Engineers, Planners & Landscape Architects

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

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

AM Peak Hour 08:15-09:15 — Total Volume 389

NB Out 61 | SB In 109

SB: Huntmar Drive

100.0%	2.9%	0.0%		% Heavy
3	102	4	0	Total
3	3	0	0	Heavy
0	99	4	0	Cars

EB Out 42 | WB In 17

EB: Old Carp Road

% Heavy	Total	Heavy	Cars
	0	0	0
50.0%	2	1	1
3.8%	26	1	25
3.1%	96	3	93

2	0	2	0.0%	
11	0	11	0.0%	
4	0	4	0.0%	
0	0	0		
Cars	Heavy	Total	% Heavy	

WB: Old Carp Road

EB In 124 | WB Out 84

Cars	0	70	56	11
Heavy	0	0	1	1
Total	0	70	57	12
% Heavy		0.0%	1.8%	8.3%

NB: Huntmar Drive

NB In 139 | SB Out 202

PM Peak Hour 15:45-16:45 — Total Volume 449

NB Out 122 | SB In 76

SB: Huntmar Drive

0.0%	0.0%	0.0%		% Heavy
1	74	1	0	Total
0	0	0	0	Heavy
1	74	1	0	Cars

EB Out 30 | WB In 45

EB: Old Carp Road

% Heavy	Total	Heavy	Cars
	0	0	0
100.0%	1	1	0
0.0%	21	0	21
0.0%	84	0	84

7	0	7	0.0%	
26	1	27	3.7%	
11	0	11	0.0%	
0	0	0		
Cars	Heavy	Total	% Heavy	

WB: Old Carp Road

EB In 106 | WB Out 128

Cars	0	99	109	8
Heavy	0	1	5	0
Total	0	100	114	8
% Heavy		1.0%	4.4%	0.0%

NB: Huntmar Drive

NB In 222 | SB Out 169

NOVATECH
Engineers, Planners & Landscape Architects

TERRY FOX DRIVE @ OLD SECOND LINE ROAD

TURNING MOVEMENT COUNT
PEAK HOUR SUMMARIES

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

AM Peak Hour 08:15-09:15 — Total Volume 1,398

NB Out 160 | SB In 307

SB: Old Second Line Road

	Cars	Heavy	Total	% Heavy
	176	12	188	6.4%
	15	2	17	11.8%
	101	1	102	1.0%
	0	0	0	
	Cars	Heavy	Total	% Heavy

EB Out 669 | WB In 306

EB: Terry Fox Drive

Cars	Heavy	Total	% Heavy
0	0	0	
107	7	114	6.1%
526	7	533	1.3%
48	5	53	9.4%

WB: Terry Fox Drive

Cars	Heavy	Total	% Heavy
28	0	28	0.0%
250	7	257	2.7%
18	2	20	10.0%
1	0	1	0.0%

EB In 700 | WB Out 479

NB: Kanata Highlands School

	Cars	Heavy	Total	% Heavy
	0	0	0	
	29	5	34	14.7%
	14	4	18	22.2%
	33	0	33	0.0%

NB In 85 | SB Out 90

PM Peak Hour 16:30-17:30 — Total Volume 1,508

NB Out 275 | SB In 255

SB: Old Second Line Road

	Cars	Heavy	Total	% Heavy
	192	3	195	1.5%
	5	0	5	0.0%
	55	0	55	0.0%
	0	0	0	
	Cars	Heavy	Total	% Heavy

EB Out 400 | WB In 700

EB: Terry Fox Drive

Cars	Heavy	Total	% Heavy
0	0	0	
176	0	176	0.0%
333	3	336	0.9%
14	0	14	0.0%

WB: Terry Fox Drive

Cars	Heavy	Total	% Heavy
95	0	95	0.0%
588	2	590	0.3%
12	0	12	0.0%
3	0	3	0.0%

EB In 526 | WB Out 802

NB: Kanata Highlands School

	Cars	Heavy	Total	% Heavy
	0	0	0	
	17	0	17	0.0%
	4	0	4	0.0%
	6	0	6	0.0%
	Cars	Heavy	Total	% Heavy

NB In 27 | SB Out 31

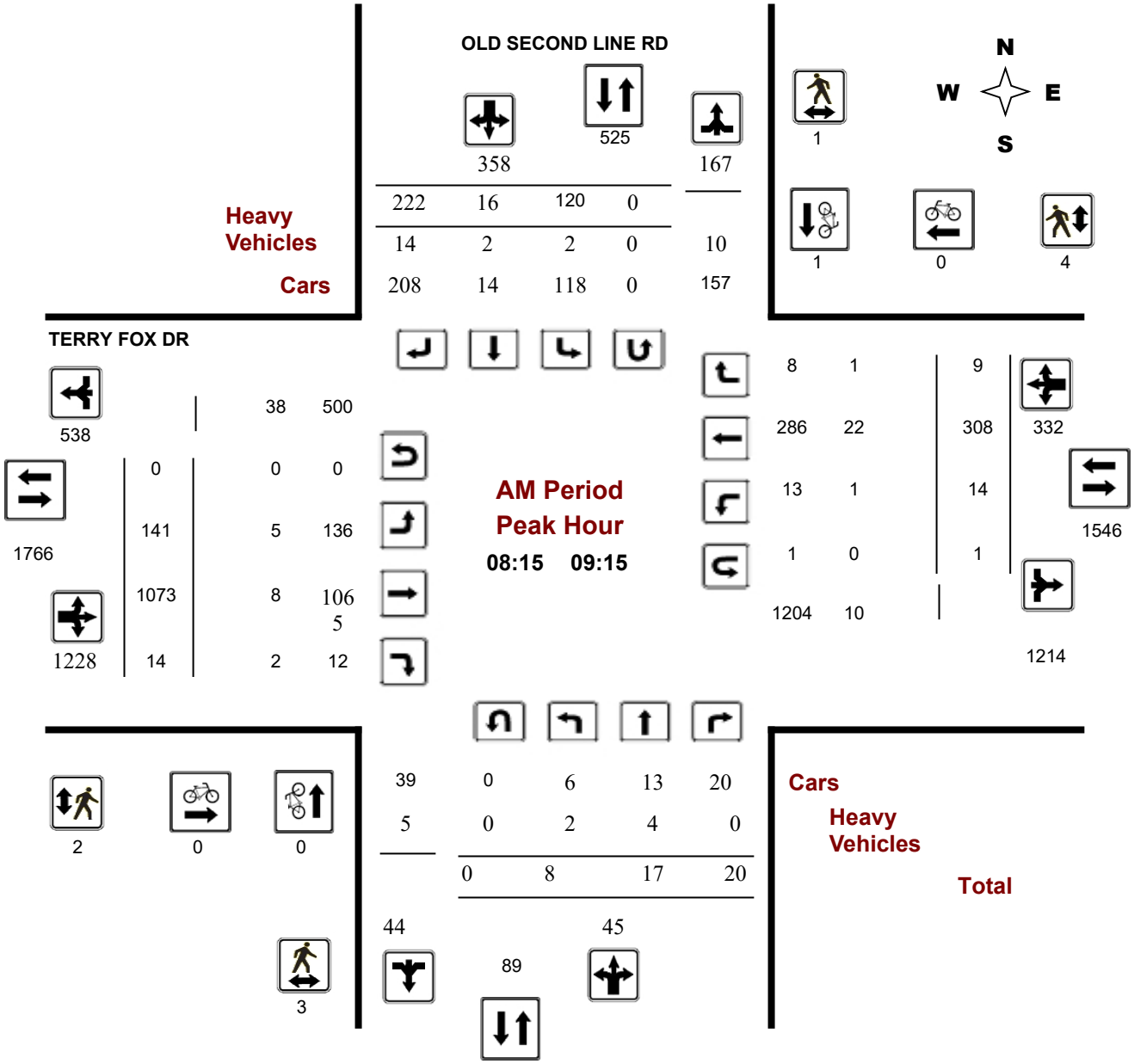
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

OLD SECOND LINE RD @ TERRY FOX DR

Survey Date: Wednesday, April 11, 2018 **WO No:** 37664

Start Time: 07:00 **Device:** Miovision



Comments

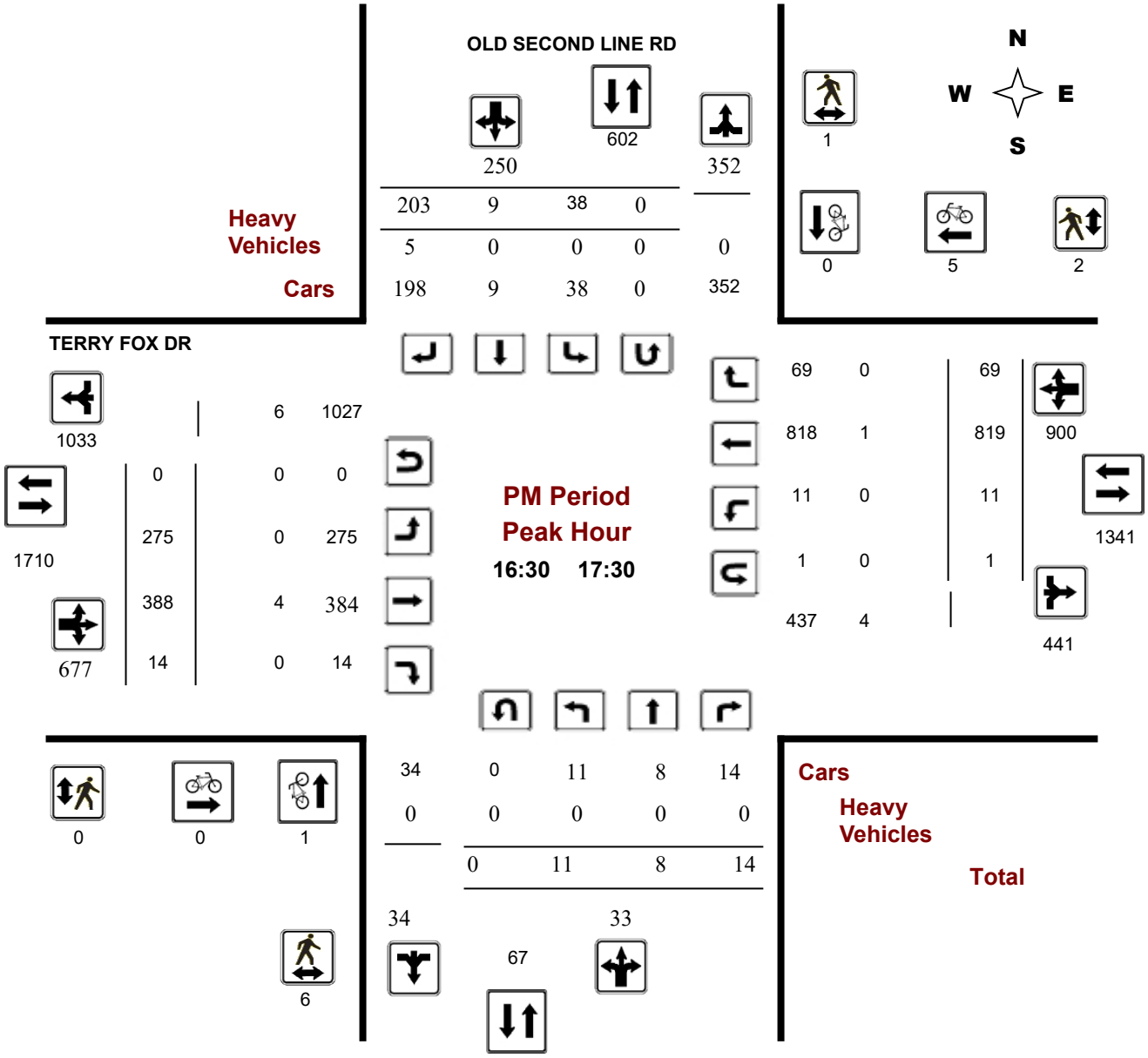
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

OLD SECOND LINE RD @ TERRY FOX DR

Survey Date: Wednesday, April 11, 2018 **WO No:** 37664

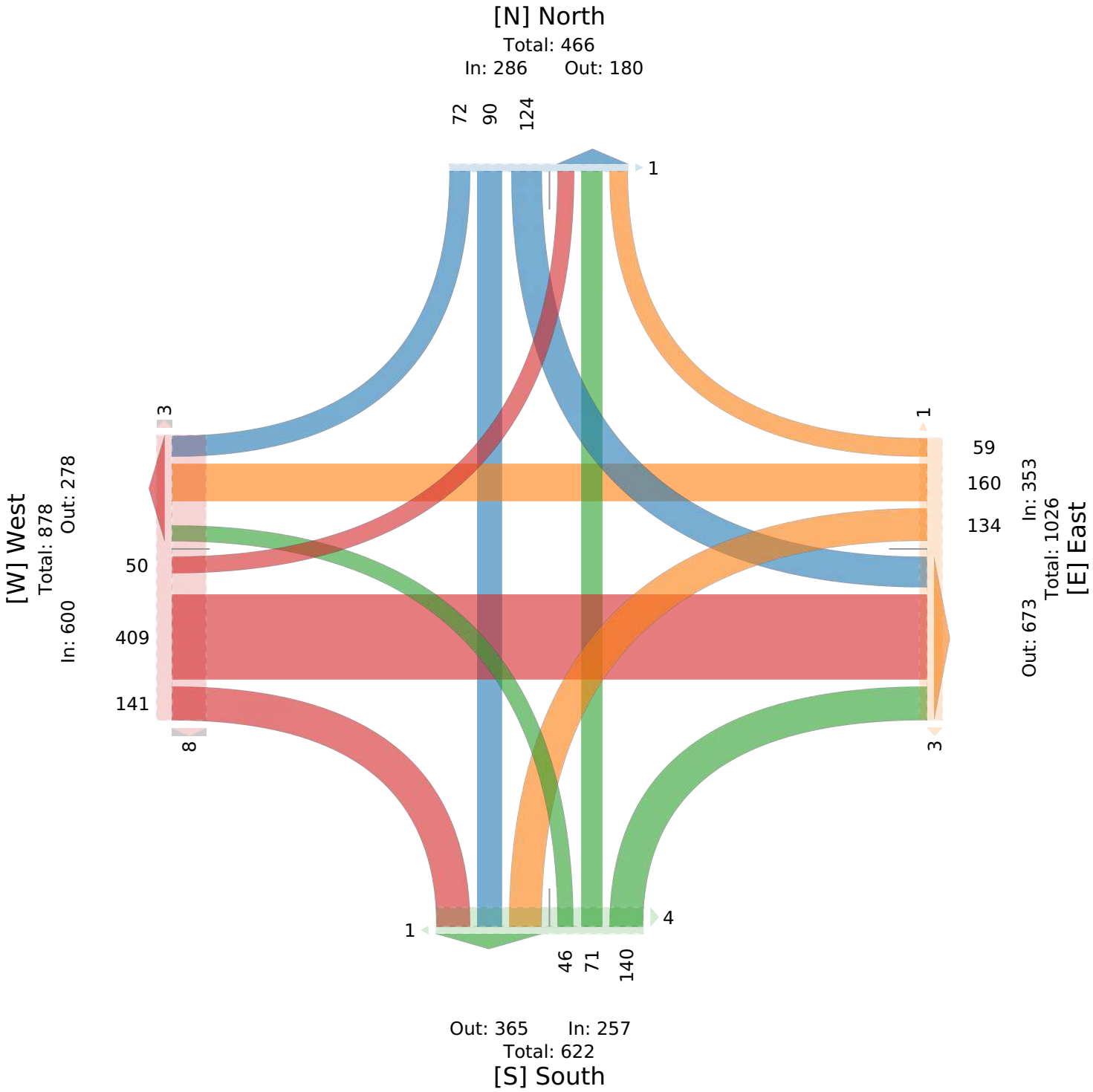
Start Time: 07:00 **Device:** Miovision



Comments

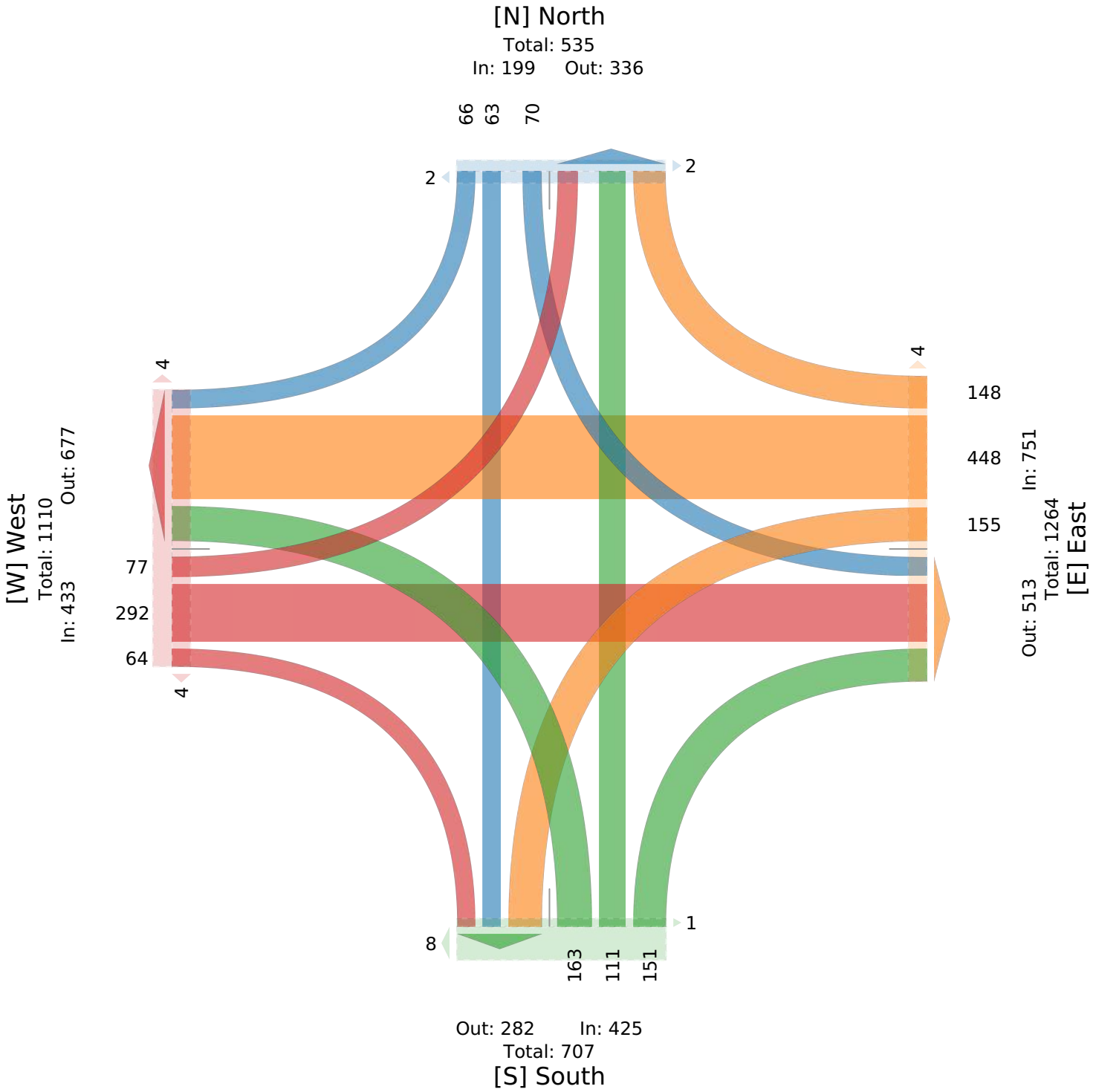
5600459 - TERRY FOX DR N : FLAMBOROUGH WAY/I... - TMC
Wed Feb 14, 2024
AM Peak (8 AM - 9 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1183376, Location: 45.345111, -75.931066, Site Code: 41698103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



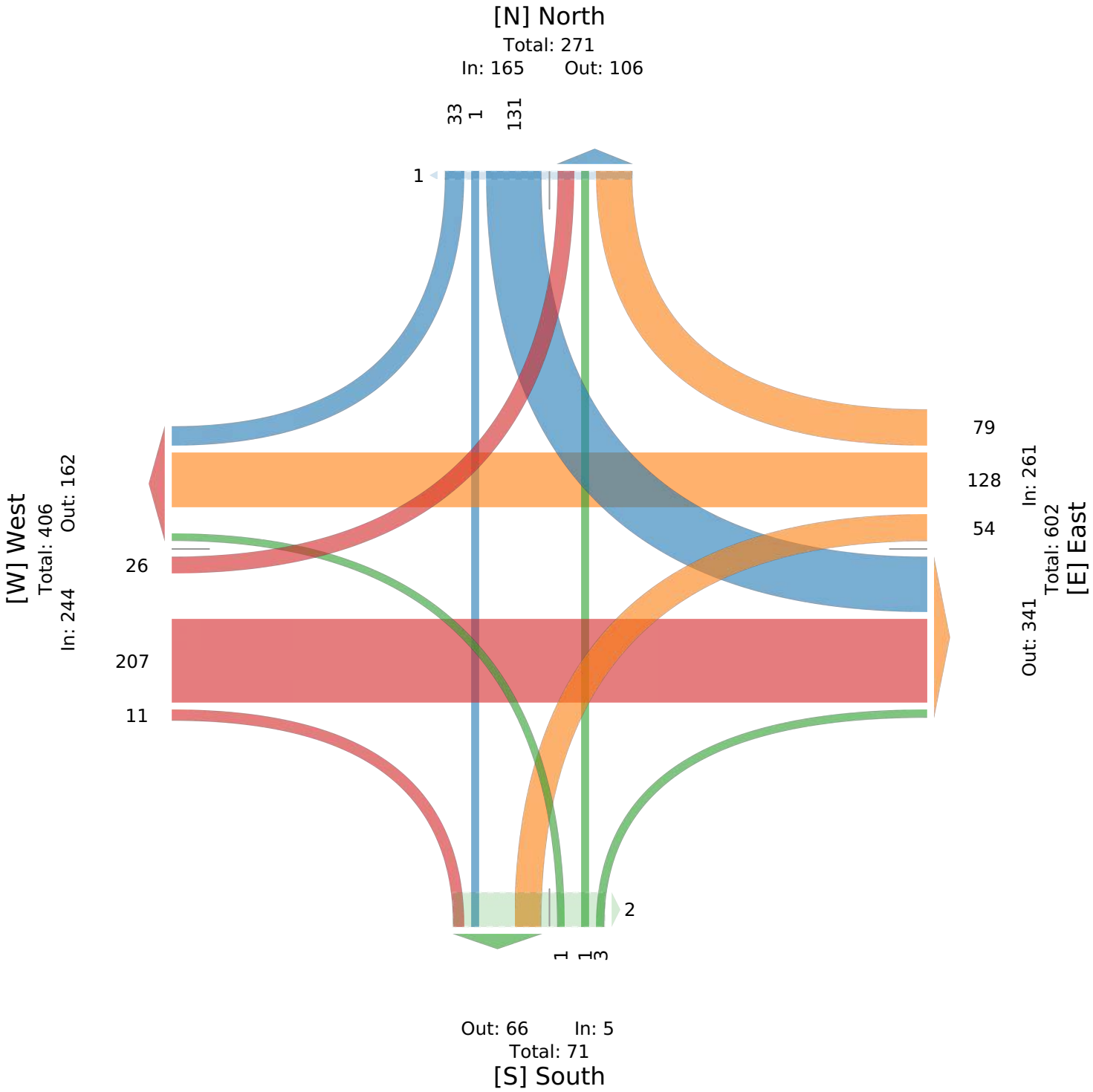
5600459 - TERRY FOX DR N : FLAMBOROUGH WAY/I... - TMC
Wed Feb 14, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1183376, Location: 45.345111, -75.931066, Site Code: 41698103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



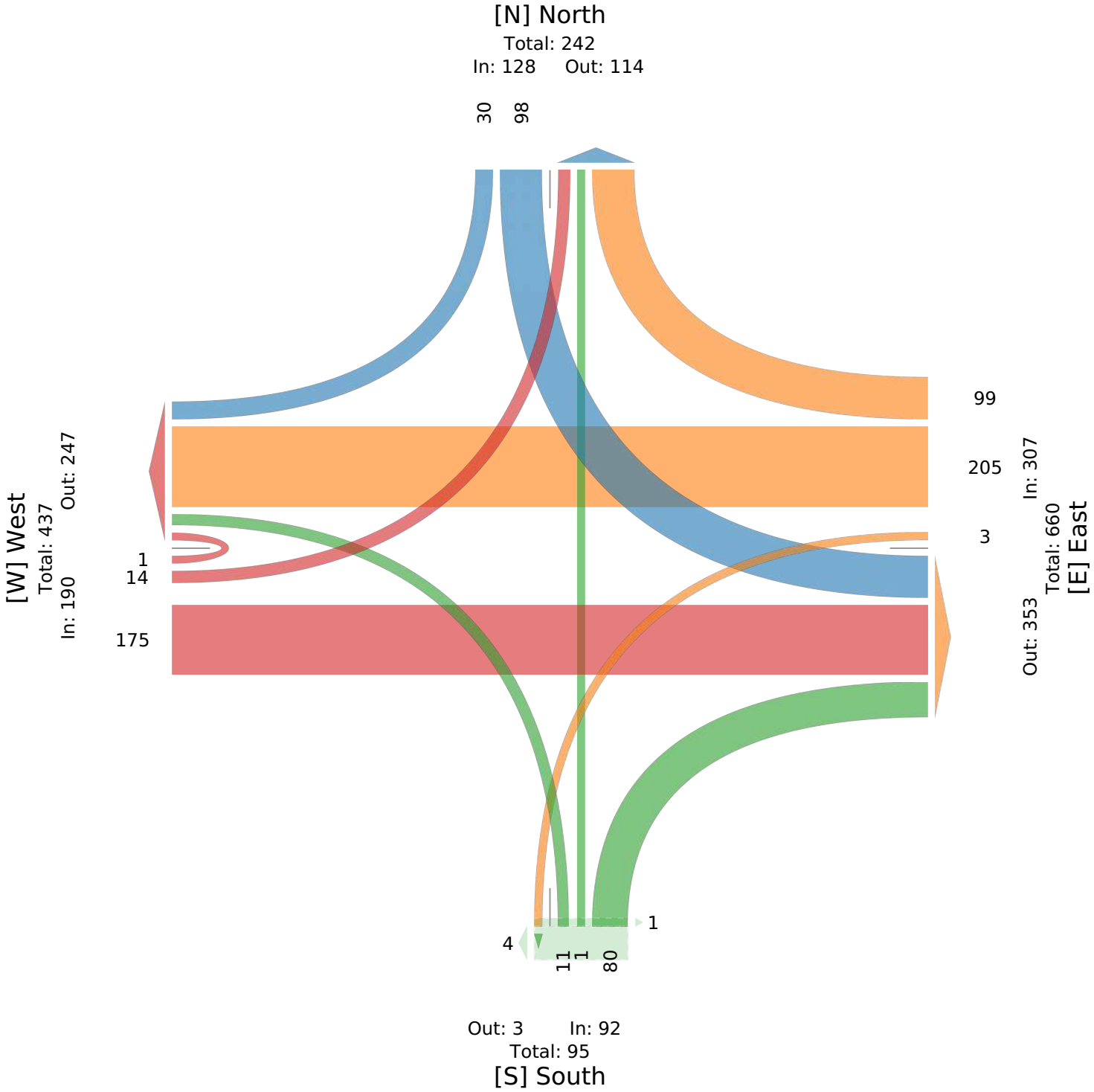
5603198 - MARCH VALLEY RD @ TERRY FOX RD - M... - TMC
Thu Mar 9, 2023
AM Peak (8 AM - 9 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1049100, Location: 45.352496, -75.913408, Site Code: 40879103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5603198 - MARCH VALLEY RD @ TERRY FOX RD - M... - TMC
Thu Mar 9, 2023
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1049100, Location: 45.352496, -75.913408, Site Code: 40879103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



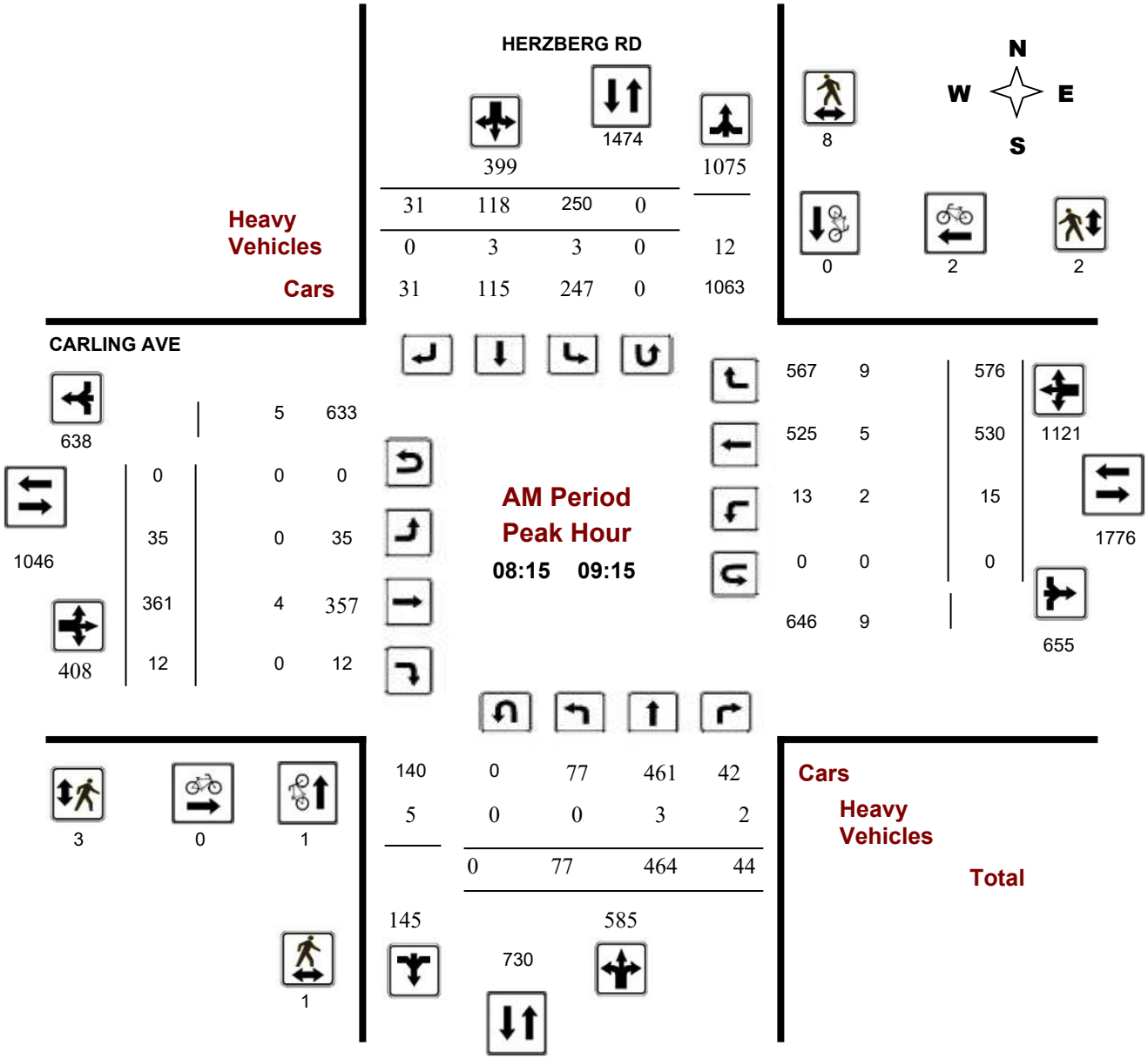
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

Start Time: 07:00 **Device:** Miovision



Comments 5479341 - MAR 10 2020 - 8HRS - LORETTA

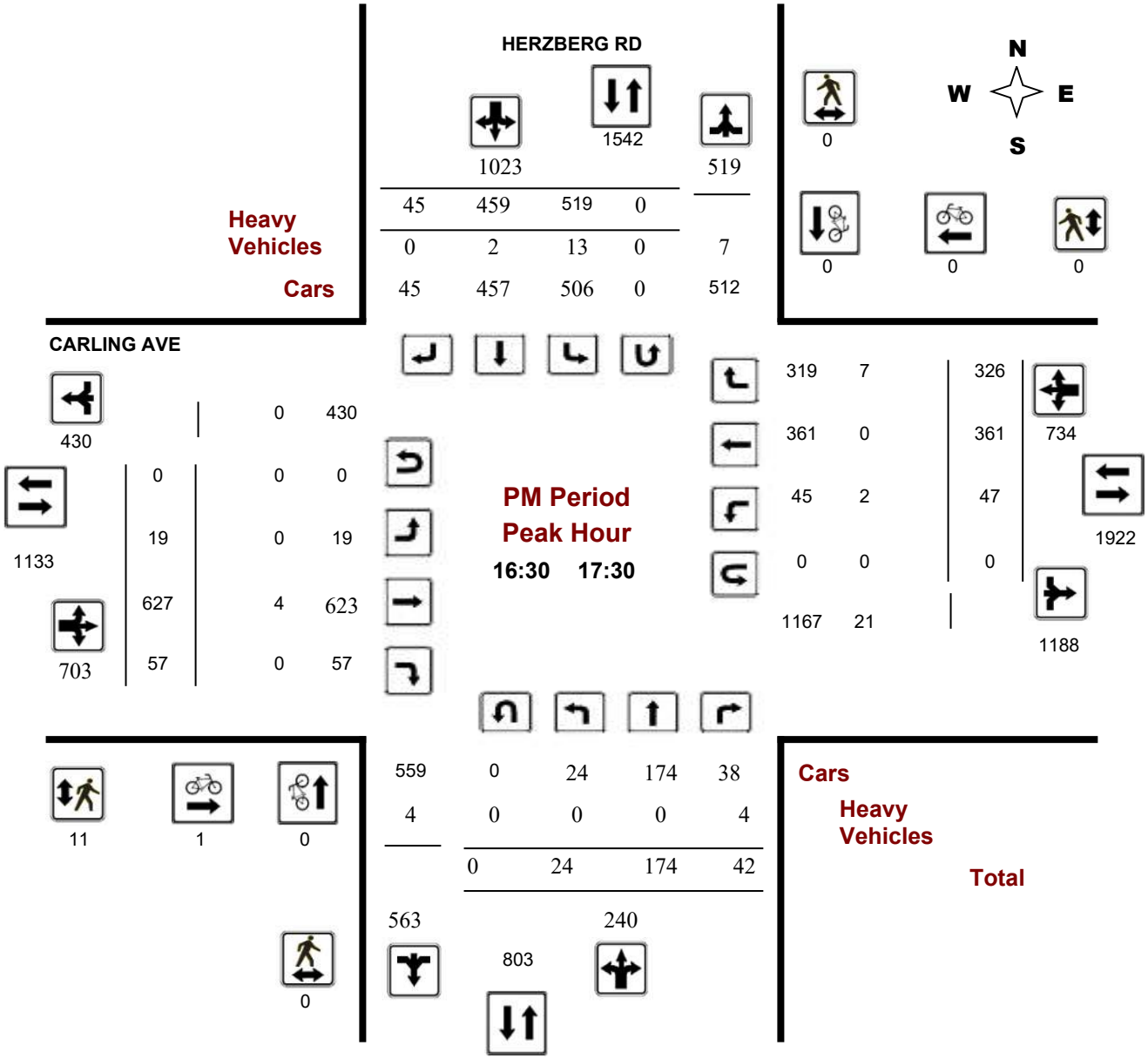
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

HERZBERG RD @ CARLING AVE

Survey Date: Tuesday, March 10, 2020 **WO No:** 39591

Start Time: 07:00 **Device:** Miovision



Comments 5479341 - MAR 10 2020 - 8HRS - LORETTA

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: CARLING AVE/STATION RD @ MARCH RD

Traffic Control: Traffic signal **Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-07, Wed,12:25	Snow	Turning movement	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Mar-02, Fri,09:37	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-Mar-08, Thu,16:44	Snow	Rear end	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Mar-28, Wed,18:49	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-02, Mon,11:57	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-02, Wed,14:34	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	
2018-Jun-20, Wed,09:59	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	
2018-Oct-15, Mon,11:33	Rain	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-Nov-04, Sun,10:50	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-09, Sun,04:00	Clear	SMV other	P.D. only	Packed snow	West	Going ahead	Automobile, station wagon	Curb	0
2019-Mar-09, Sat,14:00	Clear	Rear end	Non-fatal injury	Dry	West	Turning right	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: CARLING AVE/STATION RD @ MARCH RD

Traffic Control: Traffic signal **Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-04, Tue,10:56	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	
2019-Jun-12, Wed,12:22	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jun-27, Thu,22:44	Rain	Turning movement	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2019-Jul-09, Tue,08:30	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	
2019-Aug-07, Wed,16:24	Clear	Turning movement	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-25, Wed,09:13	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jul-29, Wed,07:21	Clear	Rear end	P.D. only	Wet	North	Turning left	Truck - dump	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Aug-30, Sun,15:35	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Nov-22, Sun,16:30	Snow	Rear end	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2020-Dec-09, Wed,08:10	Snow	Approaching	P.D. only	Slush	North	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2021-Jan-03, Sun,12:05	Clear	SMV other	P.D. only	Dry	South	Turning left	Tow truck	Pole (sign, parking meter)	0
2021-Jan-16, Sat,05:53	Snow	Other	P.D. only	Loose snow	South	Slowing or stopping	Pick-up truck	Pole (sign, parking meter)	0
					East	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: CARLING AVE/STATION RD @ MARCH RD

Traffic Control: Traffic signal **Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Jan-22, Fri,15:35	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-May-15, Sat,14:44	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Motorcycle	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2021-Jul-06, Tue,16:25	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2021-Aug-21, Sat,15:25	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2022-Feb-12, Sat,12:19	Drifting Snow	Sideswipe	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2022-Nov-28, Mon,22:00	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-01, Thu,16:45	Clear	Angle	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-07, Wed,18:00	Clear	Rear end	P.D. only	Wet	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-14, Wed,16:05	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Overtaking	Automobile, station wagon	Other motor vehicle	

Location: DONALD B. MUNRO DR/OLD CARP RD W @ MARCH RD

Traffic Control: Stop sign **Total Collisions:** 10

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: DONALD B. MUNRO DR/OLD CARP RD W @ MARCH RD

Traffic Control: Stop sign **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-05, Mon,17:55	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-17, Wed,15:08	Clear	Angle	P.D. only	Dry	South	Going ahead	School bus	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2019-Nov-22, Fri,03:24	Rain	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	
2021-Jun-12, Sat,13:28	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Tow truck	Other motor vehicle	
2021-Dec-08, Wed,16:49	Drifting Snow	Angle	Non-fatal injury	Loose snow	West	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-Mar-30, Wed,15:56	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2022-Aug-12, Fri,17:36	Clear	Angle	Non-fatal injury	Wet	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Sep-24, Sat,13:00	Clear	Angle	P.D. only	Dry	East	Turning left	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Nov-18, Fri,09:30	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-06, Tue,03:00	Rain	Angle	P.D. only	Wet	South	Going ahead	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: DUNROBIN RD @ MARCH RD

Traffic Control: Traffic signal **Total Collisions:** 17

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jun-23, Sat,11:41	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	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-01, Thu,06:30	Clear	Sideswipe	P.D. only	Dry	East	Merging	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-09, Thu,16:40	Clear	Rear end	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-22, Sat,09:10	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Unknown	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-24, Mon,09:30	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	School bus	Other motor vehicle	
2019-Sep-04, Wed,17:48	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-06, Fri,16:32	Clear	Turning movement	P.D. only	Wet	East	Turning left	Delivery van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-May-16, Sat,22:46	Clear	Rear end	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2020-May-20, Wed,11:01	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2020-Oct-06, Tue,11:01	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	
2021-Feb-16, Tue,16:38	Snow	Angle	P.D. only	Loose snow	West	Slowing or stopping	Pick-up truck	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: DUNROBIN RD @ MARCH RD

Traffic Control: Traffic signal **Total Collisions:** 17

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Jul-25, Sun,20:02	Clear	Angle	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					West	Unknown	Pick-up truck	Other motor vehicle	
2021-Dec-04, Sat,10:10	Snow	Rear end	P.D. only	Packed snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Dec-14, Tue,09:29	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	
2022-Mar-19, Sat,01:39	Clear	SMV other	P.D. only	Wet	West	Turning right	Automobile, station wagon	Ran off road	0
2022-Apr-29, Fri,11:42	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	
2022-Dec-22, Thu,00:18	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

Location: HERZBERG RD @ CARLING AVE

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Sep-05, Wed,18:13	Rain	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-15, Mon,08:15	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-Oct-29, Mon,15:45	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-09, Fri,17:20	Rain	Rear end	P.D. only	Wet	East	Going ahead	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					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: HERZBERG RD @ CARLING AVE

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-16, Wed,18:37	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-20, Wed,08:47	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	
2019-Mar-20, Wed,17:21	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Mar-22, Fri,14:04	Rain	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Ditch	0
2019-May-10, Fri,09:20	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2019-Sep-18, Wed,17:45	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	0
					East	Slowing or stopping	Bicycle	Other motor vehicle	
2019-Nov-06, Wed,06:35	Clear	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-09, Thu,19:07	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	
2020-Jan-31, Fri,12:55	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Mar-06, Fri,06:31	Snow	Sideswipe	P.D. only	Ice	North	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Jul-28, Wed,09:13	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jul-14, Thu,21:06	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: HERZBERG RD @ CARLING AVE

Traffic Control: Traffic signal **Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Sep-01, Thu,17:42	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2022-Nov-08, Tue,20:59	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MARCH RD @ HUNTMAR DR

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-01, Fri,09:45	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-Dec-20, Fri,13:34	Clear	Angle	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Jul-20, Tue,16:30	Rain	Angle	P.D. only	Wet	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Nov-23, Tue,15:29	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MARCH RD @ OLD SECOND LINE RD

Traffic Control: Traffic signal **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-May-14, Mon,18:19	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-09, Thu,14:13	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	
2019-Nov-12, Tue,21:25	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Ran off road	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD @ OLD SECOND LINE RD

Traffic Control: Traffic signal **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Oct-31, Sat,12:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2020-Nov-12, Thu,14:39	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Dec-04, Sat,23:01	Snow	SMV other	P.D. only	Loose snow	East	Turning right	Pick-up truck	Skidding/sliding	0
2022-Feb-18, Fri,14:52	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-May-13, Fri,16:11	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jul-19, Tue,10:25	Clear	Angle	P.D. only	Dry	East	Going ahead	Truck and trailer	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Location: MARCH RD @ TERRY FOX DR

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-14, Sun,12:37	Clear	Rear end	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-21, Sun,21:32	Clear	Angle	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-09, Fri,23:12	Snow	Turning movement	Non-fatal injury	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Feb-11, Sun,18:56	Freezing Rain	SMV other	P.D. only	Ice	East	Turning right	Automobile, station wagon	Skidding/sliding	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD @ TERRY FOX DR

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-22, Thu,17:20	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Feb-28, Wed,13:53	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-06, Wed,17:35	Clear	Rear end	P.D. only	Dry	North	Unknown	Motorcycle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-09, Sat,17:11	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Curb	0
2018-Jun-22, Fri,15:38	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jul-14, Sat,11:41	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-24, Tue,09:30	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-14, Wed,19:00	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-18, Tue,08:59	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-21, Fri,16:20	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-26, Tue,16:30	Snow	Sideswipe	P.D. only	Ice	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-10, Sun,14:45	Snow	Rear end	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	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: MARCH RD @ TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-26, Wed,09:46	Rain	Approaching	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-05, Tue,18:17	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Truck and trailer	Other motor vehicle	
2019-Dec-24, Tue,22:58	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-May-24, Sun,14:00	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Aug-13, Thu,14:30	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2020-Oct-14, Wed,22:26	Clear	Turning movement	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Nov-22, Sun,17:45	Snow	SMV other	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
2021-Nov-07, Sun,14:26	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2021-Nov-22, Mon,07:39	Clear	SMV other	P.D. only	Ice	East	Turning right	Automobile, station wagon	Skidding/sliding	0
2021-Dec-22, Wed,15:45	Snow	Angle	Non-fatal injury	Ice	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jan-18, Tue,11:55	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Snow plow	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2022-May-01, Sun,13:30	Clear	Rear end	P.D. only	Dry	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD @ TERRY FOX DR

Traffic Control: Traffic signal **Total Collisions:** 33

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Jun-06, Mon,20:45	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2022-Aug-29, Mon,15:01	Clear	Other	P.D. only	Dry	South	Reversing	Truck - closed	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2022-Oct-13, Thu,19:42	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-22, Tue,09:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Nov-23, Wed,11:55	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Merging	Passenger van	Other motor vehicle	

Location: MARCH VALLEY RD @ TERRY FOX DR

Traffic Control: Stop sign **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-12, Wed,12:30	Clear	Rear end	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-27, Sun,20:40	Clear	Approaching	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-16, Sat,23:59	Clear	SMV other	P.D. only	Ice	South	Slowing or stopping	Passenger van	Skidding/sliding	0

Location: OLD SECOND LINE RD @ TERRY FOX DR

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-02, Fri,07:21	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: OLD SECOND LINE RD @ TERRY FOX DR

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-28, Wed,14:19	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-29, Fri,09:49	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Unknown	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jul-12, Thu,12:50	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	
2018-Aug-19, Sun,00:26	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Oct-12, Fri,12:40	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	
2018-Nov-07, Wed,18:35	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	
2019-Jan-16, Wed,17:45	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Feb-02, Sat,09:25	Snow	Rear end	Non-fatal injury	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-04, Mon,13:11	Clear	SMV other	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2019-Nov-11, Mon,07:56	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-20, Fri,14:28	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	
2020-Jan-06, Mon,07:15	Snow	Rear end	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Unknown	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: OLD SECOND LINE RD @ TERRY FOX DR

Traffic Control: Traffic signal **Total Collisions:** 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Mar-10, Tue,10:30	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	
2022-Feb-17, Thu,18:05	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Dec-11, Sun,22:30	Snow	Rear end	P.D. only	Slush	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR @ FLAMBOROUGH WAY/INNOVATION DR

Traffic Control: Traffic signal **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-13, Sat,14:18	Clear	Turning movement	Non-fatal injury	Loose snow	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-16, Tue,15:00	Clear	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-05, Thu,17:54	Clear	Turning movement	P.D. only	Dry	West	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-24, Thu,13:46	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-04, Mon,17:47	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	
2018-Sep-12, Wed,19:05	Clear	SMV other	P.D. only	Dry	North	Turning left	Unknown	Pedestrian	1
2019-Oct-01, Tue,09:00	Rain	Rear end	Non-fatal injury	Wet	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	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 @ FLAMBOROUGH WAY/INNOVATION DR

Traffic Control: Traffic signal **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-28, Mon,17:48	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-14, Thu,07:45	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 motor vehicle	
2020-Feb-25, Tue,17:20	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Unknown	Other motor vehicle	
2020-Sep-21, Mon,18:51	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2021-Feb-11, Thu,11:45	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2021-May-01, Sat,09:49	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-Aug-20, Fri,07:36	Clear	SMV other	P.D. only	Dry	East	Turning right	Municipal transit bus	Pole (utility, power)	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: HERZBERG RD btwn BAYFIELD AVE & MARCH 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-Jan-13, Sat,05:07	Snow	SMV other	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Ran off road	0
2018-Jun-19, Tue,08:08	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	
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2018-Jul-26, Thu,08:50	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Truck - closed	Other motor vehicle	
2018-Sep-18, Tue,06:15	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Ran off road	0
2018-Oct-11, Thu,09:40	Fog, mist, smoke, dust	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Location: HERZBERG RD btwn CARLING AVE & BAYFIELD AVE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Mar-16, Mon,00:55	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Ran off road	0

Location: HERZBERG RD btwn LEGGET DR & CARLING AVE

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
2018-Jul-23, Mon,16:44	Clear	Turning movement	Non-fatal injury	Wet	East	Turning left	Bicycle	Cyclist	0
					East	Turning left	Bicycle	Cyclist	
					South	Going ahead	Automobile, station wagon	Cyclist	
2019-Mar-08, Fri,16:30	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: HERZBERG RD btwn LEGGET DR & CARLING AVE

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
2019-Sep-05, Thu,07:49	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	

Location: HERZBERG RD btwn TURTLE POINT PRIV & LEGGET DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Dec-12, Sat,17:44	Rain	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Animal - wild	0

Location: HUNTMAR DR btwn MARGARET ANNE DR & TOPOL LANE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Jun-27, Sun,08:00	Clear	SMV other	P.D. only	Dry	South	Going ahead	Pick-up truck	Ran off road	0

Location: HUNTMAR DR btwn TERRACE RIDGE DR & OLD CARP RD

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-08, Mon,19:20	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Ran off road	0
2020-Mar-26, Thu,07:34	Rain	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Animal - wild	0

Location: HUNTMAR DR btwn TOPOL LANE & WELDALE DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-20, Sun,00:30	Snow	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Animal - wild	0

Location: HUNTMAR DR btwn WELDALE DR & TERRACE RIDGE DR

Traffic Control: No control **Total Collisions:** 1

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: HUNTMAR DR btwn WELDALE DR & TERRACE RIDGE DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Feb-17, Wed,19:58	Clear	SMV other	P.D. only	Dry	South	Going ahead	Pick-up truck	Animal - wild	0

Location: MARCH RD btwn 250 N OF KLONDIKE RD & KLONDIKE RD

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Sep-08, Sun,00:48	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Aug-28, Fri,14:57	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	

Location: MARCH RD btwn 280 S OF CARLING AVE/STATION RD & CARLING AVE/STATION RD

Traffic Control: No control **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-16, Tue,08:23	Snow	Rear end	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	School bus	Other motor vehicle	
2018-Feb-04, Sun,03:03	Snow	SMV other	P.D. only	Packed snow	North	Going ahead	Automobile, station wagon	Snowbank/drift	0
2018-Sep-21, Fri,09:10	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-15, Thu,18:02	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-May-21, Tue,19:54	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2019-Jul-02, Tue,10:58	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Curb	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn 280 S OF CARLING AVE/STATION RD & CARLING AVE/STATION RD

Traffic Control: No control **Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-11, Fri,16:28	Clear	Angle	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Motorcycle	Other motor vehicle	
2020-Jul-03, Fri,18:07	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-Jun-09, Thu,15:11	Clear	Sideswipe	P.D. only	Dry	South	Other	Delivery van	Other motor vehicle	0
					South	Overtaking	Automobile, station wagon	Other motor vehicle	

Location: MARCH RD btwn 280 S OF CARLING AVE/STATION RD & TERON RD

Traffic Control: No control **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-08, Mon,12:05	Snow	Rear end	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Changing lanes	Tow truck	Other	
2018-Dec-17, Mon,00:40	Clear	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Ran off road	0
2019-Jul-23, Tue,09:31	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-26, Thu,08:53	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Municipal transit bus	Other motor vehicle	
2019-Oct-01, Tue,11:30	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-30, Wed,16:06	Rain	Angle	Non-fatal injury	Wet	East	Turning left	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: MARCH RD btwn 280 S OF CARLING AVE/STATION RD & TERON RD

Traffic Control: No control **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Dec-07, Sat,08:40	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-Jan-06, Mon,08:21	Snow	Rear end	P.D. only	Packed snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-18, Tue,11:02	Snow	Rear end	P.D. only	Slush	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Municipal transit bus	Other motor vehicle	
2021-Dec-02, Thu,17:32	Rain	SMV other	Fatal injury	Wet	North	Going ahead	Automobile, station wagon	Pedestrian	1
2022-Jan-21, Fri,07:17	Clear	SMV other	P.D. only	Ice	South	Going ahead	Passenger van	Ran off road	0
2022-Jul-07, Thu,15:51	Clear	Sideswipe	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Sep-22, Thu,17:11	Clear	Angle	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Oct-15, Sat,12:03	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Location: MARCH RD btwn BEACHVALE LANE & MARCHURST RD

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
2019-Aug-09, Fri,06:39	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Ran off road	0
2020-Jan-24, Fri,06:47	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Animal - wild	0
2020-Dec-10, Thu,01:42	Clear	SMV other	P.D. only	Dry	East	Going ahead	Pick-up truck	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn DERBEYSHIRE ST & DUNROBIN RD

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
2018-Nov-28, Wed,19:24	Rain	SMV other	P.D. only	Wet	North	Going ahead	Pick-up truck	Animal - wild	0
2021-Mar-14, Sun,10:30	Strong wind	Other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Debris falling off vehicle	0
					North	Going ahead	Pick-up truck	Other	
2021-Jun-16, Wed,07:16	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Animal - wild	0
2022-Nov-21, Mon,05:30	Clear	SMV other	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Animal - wild	0

Location: MARCH RD btwn DONALD B. MUNRO DR & DONALD B. MUNRO DR

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Jan-15, Wed,07:09	Clear	SMV other	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Animal - wild	0
2022-Jun-13, Mon,09:11	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Ran off road	0

Location: MARCH RD btwn DUNROBIN RD & MURPHY CRT

Traffic Control: No control **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-14, Sun,11:45	Clear	SMV other	P.D. only	Dry	North	Going ahead	Pick-up truck	Animal - wild	0
2018-Jun-21, Thu,04:55	Clear	SMV other	P.D. only	Dry	South	Going ahead	Delivery van	Animal - wild	0
2018-Nov-14, Wed,17:35	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - domestic	0
2018-Dec-03, Mon,17:33	Clear	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Dec-06, Thu,19:08	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Dec-13, Thu,20:46	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Dec-20, Thu,20:46	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Jan-03, Thu,18:25	Clear	SMV other	P.D. only	Wet	South	Going ahead	Pick-up truck	Animal - wild	0
2019-Jan-07, Mon,05:30	Clear	SMV other	P.D. only	Dry	South	Going ahead	Pick-up truck	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn DUNROBIN RD & MURPHY CRT

Traffic Control: No control **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Dec-26, Thu,16:45	Clear	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-24, Fri,18:44	Clear	SMV other	P.D. only	Dry	North	Going ahead	Pick-up truck	Animal - wild	0
2020-Mar-05, Thu,12:53	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Jan-14, Thu,22:50	Fog, mist, smoke, dust	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Dec-29, Wed,06:50	Clear	SMV other	P.D. only	Wet	South	Going ahead	Pick-up truck	Animal - wild	0

Location: MARCH RD btwn HALTON TERR/MAXWELL BRIDGE RD & 250 N OF KLONDIKE 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-Jan-24, Wed,15:03	Snow	Sideswipe	P.D. only	Packed snow	South	Changing lanes	Truck - tractor	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2019-Nov-03, Sun,08:58	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2020-May-04, Mon,11:51	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	
2021-Jan-05, Tue,17:45	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2022-May-01, Sun,14:30	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MARCH RD btwn KLONDIKE RD & MORGAN'S GRANT WAY

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-03, Mon,09:24	Snow	SMV other	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Ran off road	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn KLONDIKE RD & MORGAN'S GRANT WAY

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
2019-Dec-02, Mon,08:22	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-Jan-13, Mon,06:14	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Apr-25, Sat,09:33	Clear	SMV unattended vehicle	P.D. only	Dry	North	Going ahead	Pick-up truck	Unattended vehicle	0
2022-Feb-25, Fri,20:00	Snow	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Skidding/sliding	0

Location: MARCH RD btwn MARCH RD & BEACHVALE LANE

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-Jan-16, Tue,22:00	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Jan-26, Fri,06:45	Clear	Approaching	P.D. only	Dry	East	Going ahead	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-05, Thu,22:30	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-14, Tue,17:15	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Animal - wild	0
2020-Nov-23, Mon,12:43	Clear	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Mar-09, Tue,23:43	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Animal - wild	0
2021-Dec-10, Fri,19:00	Fog, mist, smoke, dust	SMV other	P.D. only	Wet	West	Unknown	Pick-up truck	Animal - wild	0

Location: MARCH RD btwn MARCHURST RD & OLD SECOND LINE RD

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-08, Thu,18:37	Snow	Approaching	Non-fatal injury	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn MARCHURST RD & OLD SECOND LINE RD

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Jan-06, Wed,17:30	Clear	SMV other	P.D. only	Dry	East	Going ahead	Pick-up truck	Animal - wild	0

Location: MARCH RD btwn MAXWELL RD & MAXWELL BRIDGE RD

Traffic Control: No control **Total Collisions:** 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-01, Thu,17:05	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Making "U" turn	Snow plow	Other	
2018-Dec-05, Wed,16:50	Snow	SMV other	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Animal - wild	0
2019-May-26, Sun,18:54	Clear	Turning movement	P.D. only	Dry	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-26, Thu,16:40	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Nov-15, Fri,22:25	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Dec-18, Wed,05:40	Clear	SMV other	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-21, Tue,14:45	Clear	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other	0
2020-Jan-24, Fri,19:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2020-Feb-28, Fri,08:18	Clear	SMV other	P.D. only	Packed snow	South	Going ahead	Automobile, station wagon	Ran off road	0
2020-Apr-16, Thu,20:41	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Nov-10, Tue,18:50	Clear	SMV other	P.D. only	Dry	North	Going ahead	Pick-up truck	Animal - wild	0
2020-Nov-10, Tue,19:09	Clear	SMV other	P.D. only	Dry	South	Going ahead	Pick-up truck	Animal - wild	0
2020-Nov-22, Sun,17:57	Snow	SMV other	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Ran off road	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn MAXWELL RD & MAXWELL BRIDGE RD

Traffic Control: No control **Total Collisions:** 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Dec-26, Sat,13:29	Clear	SMV other	P.D. only	Wet	South	Going ahead	Pick-up truck	Animal - wild	0
2021-Jan-09, Sat,00:08	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2021-Feb-10, Wed,16:24	Clear	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Feb-17, Thu,21:02	Snow	SMV other	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
2022-Mar-29, Tue,14:38	Clear	Sideswipe	P.D. only	Loose sand or gravel	South	Going ahead	Construction equipment	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2022-May-03, Tue,18:10	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Slowing or stopping	Passenger van	Other motor vehicle	
2022-Dec-23, Fri,13:00	Rain	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Rollover	0
2022-Dec-29, Thu,17:05	Clear	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Animal - wild	0

Location: MARCH RD btwn MORGAN'S GRANT WAY/SHIRLEY'S BROOK DR & TERRY FOX DR

Traffic Control: No control **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-23, Fri,13:12	Freezing Rain	SMV other	Non-fatal injury	Ice	North	Going ahead	Automobile, station wagon	Ran off road	0
2018-Oct-29, Mon,07:27	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Delivery van	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-14, Tue,20:48	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Delivery van	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn MORGAN'S GRANT WAY/SHIRLEY'S BROOK DR & TERRY FOX DR

Traffic Control: No control **Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-May-28, Tue,10:39	Rain	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Curb	0
2019-Nov-05, Tue,06:41	Clear	Rear end	Non-fatal injury	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-04, Sat,19:54	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MARCH RD btwn MURPHY CRT & MAXWELL RD

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
2018-Oct-01, Mon,19:31	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2018-Dec-11, Tue,18:30	Snow	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Nov-23, Tue,16:40	Clear	Approaching	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jan-25, Tue,15:35	Clear	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	

Location: MARCH RD btwn OLD SECOND LINE RD & DERBEYSHIRE ST

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-Mar-28, Thu,05:20	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Dec-12, Sat,11:42	Freezing Rain	SMV other	P.D. only	Wet	East	Going ahead	Pick-up truck	Animal - wild	0
2021-Dec-13, Mon,07:15	Clear	SMV other	P.D. only	Dry	East	Going ahead	Pick-up truck	Animal - wild	0
2022-Sep-15, Thu,19:15	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn SOLANDT RD & STATION RD

Traffic Control: No control

Total Collisions: 17

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-20, Tue,09:24	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Truck - closed	Other motor vehicle	
2018-May-02, Wed,07:30	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-23, Thu,07:52	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	
2018-Sep-09, Sun,19:25	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Jan-23, Wed,21:25	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Truck - dump	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-May-02, Thu,14:11	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jul-10, Wed,17:06	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-13, Sat,16:15	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-01, Tue,09:15	Rain	Rear end	Non-fatal injury	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-02, Mon,16:30	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-Aug-13, Thu,21:26	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-01, Thu,06:55	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	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn SOLANDT RD & STATION RD

Traffic Control: No control **Total Collisions:** 17

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Feb-25, Thu,01:04	Clear	Other	P.D. only	Packed snow	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
					North	Going ahead	Snow plow	Other motor vehicle	
2022-Jan-21, Fri,02:20	Clear	SMV other	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Curb	0
2022-Apr-03, Sun,19:54	Clear	SMV other	P.D. only	Dry	South	Going ahead	Pick-up truck	Animal - wild	0
2022-Sep-23, Fri,15:50	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-Oct-11, Tue,18:00	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Location: MARCH RD btwn TALL FOREST DR & HUNTMAR DR

Traffic Control: No control **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jul-15, Sun,05:19	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
2019-Jan-09, Wed,20:25	Snow	SMV other	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2019-Feb-20, Wed,11:15	Snow	SMV other	P.D. only	Packed snow	East	Pulling onto shoulder or toward curb	Automobile, station wagon	Ran off road	0
2019-Mar-05, Tue,19:34	Snow	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Ran off road	0
2019-Nov-21, Thu,18:00	Rain	SMV other	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-14, Tue,08:20	Clear	SMV other	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-26, Sun,00:07	Snow	SMV other	P.D. only	Slush	East	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Mar-06, Fri,18:29	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Nov-05, Fri,22:46	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Animal - wild	0
2022-May-17, Tue,21:08	Clear	SMV other	P.D. only	Dry	West	Going ahead	Passenger van	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn TALL FOREST DR & TALL FOREST 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-Dec-01, Sat,20:42	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Jan-08, Tue,16:43	Clear	SMV other	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Mar-17, Sun,20:34	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-19, Sun,19:40	Clear	SMV other	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Mar-15, Mon,06:30	Clear	SMV other	P.D. only	Dry	East	Going ahead	Passenger van	Animal - wild	0
2021-Jul-03, Sat,09:53	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Motorcycle	Skidding/sliding	0
2021-Nov-17, Wed,06:00	Clear	SMV other	P.D. only	Dry	West	Going ahead	Pick-up truck	Animal - wild	0

Location: MARCH RD btwn TERON RD & HERZBERG RD

Traffic Control: No control **Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-24, Wed,08:45	Clear	Rear end	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-16, Sat,23:24	Clear	SMV other	P.D. only	Dry	West	Going ahead	Passenger van	Animal - wild	0
2018-Sep-28, Fri,08:17	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Unknown	Other motor vehicle	
2018-Nov-21, Wed,01:53	Clear	SMV other	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Steel guide rail	0
2018-Dec-23, Sun,12:23	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Ran off road	0
2019-Feb-21, Thu,17:56	Clear	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jun-14, Fri,08:20	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Jun-24, Fri,04:16	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: MARCH RD btwn TERRY FOX DR & SOLANDT RD

Traffic Control: No control **Total Collisions:** 13

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-30, Tue,17:12	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	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-18, Thu,03:22	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2019-May-23, Thu,16:30	Rain	Rear end	P.D. only	Wet	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-04, Sun,11:40	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Motorcycle	Skidding/sliding	0
2019-Nov-16, Sat,19:07	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Debris on road	0
2019-Nov-26, Tue,07:00	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Dec-31, Tue,07:57	Snow	Rear end	P.D. only	Slush	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Apr-03, Fri,09:29	Rain	SMV other	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2020-Oct-29, Thu,07:10	Clear	SMV other	P.D. only	Dry	South	Going ahead	Passenger van	Animal - wild	0
2021-Mar-28, Sun,16:54	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Jun-01, Tue,16:05	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jul-05, Tue,11:30	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	
2022-Oct-29, Sat,07:18	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: OLD CARP RD btwn CHERRYHILL DR & LADY LOCHEAD LANE

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Dec-18, Sat,23:00	Snow	SMV other	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Tree, shrub, stump	0

Location: OLD CARP RD btwn GOURLAY LANE & HUNTMAR DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Apr-05, Sun,22:00	Clear	SMV other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Ran off road	0

Location: OLD CARP RD btwn MARCH RD & LADY LOCHEAD LANE

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-Nov-14, Thu,22:26	Snow	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-17, Tue,16:20	Snow	Approaching	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Feb-09, Sun,18:04	Clear	SMV other	P.D. only	Dry	South	Going ahead	Pick-up truck	Animal - wild	0
2022-Feb-24, Thu,17:30	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Location: OLD SECOND LINE RD btwn BRADY AVE & TERRY FOX DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Jan-18, Tue,09:00	Snow	SMV other	P.D. only	Slush	South	Going ahead	Automobile, station wagon	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: OLD SECOND LINE RD btwn GOWARD DR & KLONDIKE RD

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Jan-21, Fri,20:53	Clear	SMV other	P.D. only	Dry	North	Going ahead	Pick-up truck	Skidding/sliding	0

Location: OLD SECOND LINE RD btwn MALEY LANE & WILD ACRE LANE

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-21, Sun,17:19	Snow	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Jul-27, Tue,14:16	Rain	Rear end	P.D. only	Wet	North	Overtaking	Passenger van	Skidding/sliding	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Location: OLD SECOND LINE RD btwn MARCH RD & WEATHERLY DR

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-16, Tue,18:45	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2021-Nov-18, Thu,17:16	Rain	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Animal - wild	0

Location: OLD SECOND LINE RD btwn PANANDRICK VIEW DR & THOMAS FULLER DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-06, Thu,18:48	Clear	SMV other	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Animal - wild	0

Location: OLD SECOND LINE RD btwn THOMAS FULLER DR & OLD CARP RD

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-05, Mon,12:17	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Ditch	0
2022-Dec-13, Tue,17:05	Clear	SMV other	P.D. only	Packed snow	South	Going ahead	Automobile, station wagon	Animal - wild	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: OLD SECOND LINE RD btwn WILD ACRE LANE & SHARNE LANE

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
2018-May-24, Thu,21:14	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Nov-20, Tue,06:44	Snow	SMV other	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Animal - wild	0
2020-Jan-10, Fri,07:00	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2022-Mar-21, Mon,19:50	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0

Location: TERRY FOX DR btwn INNOVATION DR & MARCH 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-Apr-22, Sun,15:43	Clear	SMV other	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Animal - wild	0
2018-Jun-14, Thu,17:32	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-22, Mon,11:30	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-29, Thu,17:09	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	
2022-May-06, Fri,21:11	Clear	Other	P.D. only	Dry	West	Overtaking	Automobile, station wagon	Curb	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	

Location: TERRY FOX DR btwn LEGGET DR & HELMSDALE 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-Jan-18, Fri,09:20	Snow	Rear end	P.D. only	Packed snow	East	Slowing or stopping	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: TERRY FOX DR btwn LEGGET DR & HELMSDALE 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-Jan-23, Wed,08:45	Snow	Rear end	Non-fatal injury	Packed snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-03, Sun,17:00	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-26, Tue,13:29	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	

Location: TERRY FOX DR btwn MARCH VALLEY RD & HERZBERG RD

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-18, Wed,10:45	Clear	Turning movement	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Making "U" turn	Automobile, station wagon	Other motor vehicle	
2018-Aug-06, Mon,07:25	Clear	SMV other	P.D. only	Dry	East	Going ahead	Delivery van	Ran off road	0

Location: TERRY FOX DR btwn MCKINLEY DR & LEGGET 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
2018-May-26, Sat,06:15	Clear	SMV other	P.D. only	Wet	West	Going ahead	Pick-up truck	Ran off road	0
2019-Aug-24, Sat,15:35	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Curb	0
2020-Mar-06, Fri,13:18	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Feb-26, Fri,10:46	Clear	SMV other	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Skidding/sliding	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: TERRY FOX DR btwn OLD SECOND LINE RD & STATEWOOD DR

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
2018-Nov-22, Thu,08:30	Clear	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Passenger van	Other motor vehicle	
2018-Nov-28, Wed,18:15	Snow	SMV other	Non-fatal injury	Wet	West	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Jun-25, Tue,21:24	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Motorcycle	Animal - wild	0

Location: TERRY FOX DR btwn PARK 'N RIDE/240 S OF INNOVATION DR & FLAMBOROUGH WAY/INNOVATION DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Aug-01, Wed,10:03	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: TERRY FOX DR btwn STATEWOOD DR & PARK 'N RIDE/240 S OF INNOVATION DR

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-17, Sat,03:00	Clear	SMV other	P.D. only	Dry	East	Going ahead	Off-road 4 wheels	Ran off road	0
2019-Mar-01, Fri,13:18	Clear	Sideswipe	P.D. only	Dry	East	Overtaking	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Construction equipment	Other motor vehicle	

APPENDIX F

Signal Timing Plans

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

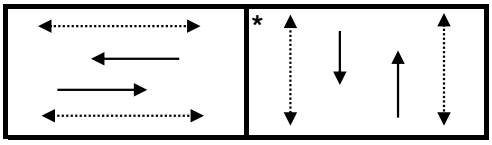
Intersection:	***Main:*** March	***Side:***	Old Second Line
Controller:	**ATC 3**	**TSD:**	**6669**
Author:	Kymen Kwan	**Date:**	30-Jan-2025

Existing Timing Plans†

	Plan				**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	***Walk***	***DW***	***A+R***
Cycle	95	75	95	70			
Offset	X	X	X	X			
EB Thru	57	42	62	42	7	9	4.6+1.8
WB Thru	57	42	62	42	7	9	4.6+1.8
NB Thru	38	33	33	28	7	11	4.2+2.2
SB Thru	38	33	33	28	7	11	4.2+2.2

Phasing Sequence‡

Plan: All



Schedule

Weekday

Time	Plan
0:10	4
6:20	1
9:30	2
15:00	3
18:30	2
22:00	4

Weekend

Time	Plan
0:10	4
8:00	2
22:00	4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄┈┈┈► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

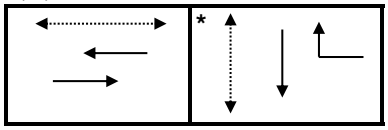
Intersection:	***Main:*** March	***Side:***	Dunrobin
Controller:	**ATC 3**	**TSD:**	**5645**
Author:	Kymen Kwan	**Date:**	28-Jan-2025

Existing Timing Plans†

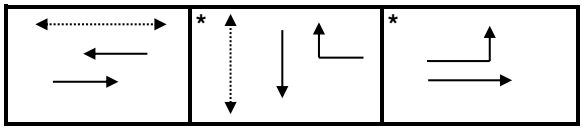
	Plan				Ped Minimum Time		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	***Walk***	***DW***	***A+R***
Cycle	97.6	72.6	103.9	67.6			
Offset	X	X	X	X			
EB Thru	56.3	41.3	56.3	41.3	-	-	4.6+1.7
WB Thru	56.3	41.3	56.3	41.3	7	13	4.6+1.7
SB Thru	41.3	31.3	36.3	26.3	7	14	3.7+2.6
WB Right	41.3	31.3	36.3	26.3	-	-	3.7+2.6
EB Left	-	-	11.3	-	-	-	4.6+1.7

Phasing Sequence‡

Plan: **1, 2, 4**



Plan: **3**



Schedule

Weekday

Time	Plan
0:10	4
6:00	1
9:30	2
14:20	3
18:00	2
22:00	4

Weekend

Time	Plan
0:10	4
10:00	2
21:00	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

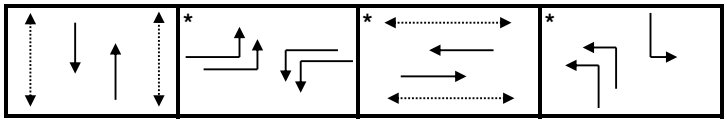
Intersection:	***Main:*** March	***Side:***	Terry Fox
Controller:	**ATC 3**	**TSD:**	**5920**
Author:	Kymen Kwan	**Date:**	28-Jan-2025

Existing Timing Plans†

	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Heavy PM** 13	***Walk***	***DW***	***A+R***
Cycle	130	110	120	105	130			
Offset	114	80	72	X	96			
NB Thru	47	38	38	38	41	7	19	4.6+2.1
SB Thru	47	38	38	38	41	7	19	4.6+2.1
EB Left (fp)	16	15	19	13	24	-	-	3.7+3.1
WB Left (fp)	16	15	19	13	24	-	-	3.7+3.1
EB Thru	42	42	42	42	42	7	28	3.7+3.2
WB Thru	42	42	42	42	42	7	28	3.7+3.2
NB Left (fp)	25	15	21	12	23	-	-	4.6+2.2
SB Left (fp)	25	15	21	12	23	-	-	4.6+2.2

Phasing Sequence‡

Plan: **All**



Notes: 1) For Plans 2, 3, 13, if the EW pedestrian phase is not actuated, the EW Thru movement will force off 20s early

Schedule

Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
16:30	13
18:00	3
18:30	2
22:00	4

Weekend

Time	Plan
0:10	4
8:00	2
22:00	4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄┈┈┈► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

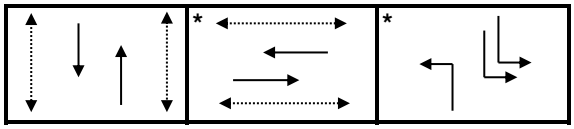
Intersection:	***Main:*** March	***Side:***	Carling / Station
Controller:	**MS 3200**	**TSD:**	**5830**
Author:	Kymen Kwan	**Date:**	28-Jan-2025

Existing Timing Plans†

	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Heavy PM** 13	***Walk***	***DW***	***A+R***
Cycle	130	110	120	95	130			
Offset	68	76	96	X	102			
NB Thru	67	47	57	32	67	7	17	3.7+2.6
SB Thru	67	47	57	32	67	7	17	3.7+2.6
EB Thru	40	40	40	40	40	7	26	3.7+2.8
WB Thru	40	40	40	40	40	7	26	3.7+2.8
NB Left (fp)	23	23	23	23	23	-	-	3.7+2.8
SB Left (fp)	23	23	23	23	23	-	-	3.7+2.8

Phasing Sequence‡

Plan: **All**



Notes: 1) All unused time will go to the NS Thru phases

Schedule

Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
16:30	13
18:00	3
18:30	2
22:00	4

Weekend

Time	Plan
0:10	4
8:00	2
22:00	4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

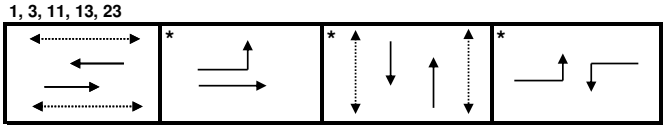
Intersection:	***Main:*** Terry Fox	***Side:***	Old Second Line
Controller:	**MS 3200**	**TSD:**	**6769**
Author:	Kymen Kwan	**Date:**	30-Jan-2025

Existing Timing Plans†

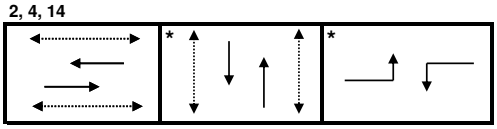
	Plan								Ped Minimum Time		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**AM School** 11	**PM Heavy** 13	**Weekend** 14	**PM School** 23	***Walk***	***DW***	***A+R***
Cycle	130	110	120	80	130	130	100	130			
Offset	X	X	X	X	X	X	X	X			
EB Thru	74	57	67	31	69	73	41	69	7	16	3.7+2.2
WB Thru	52	57	48	31	49	51	41	47	7	16	3.7+2.2
EB Left (fp)	22	-	19	-	20	22	-	22	-	-	3.7+2.7
NB Thru	34	34	34	34	41	35	34	39	7	21	3.3+3.4
SB Thru	34	34	34	34	41	35	34	39	7	21	3.3+3.4
EB Left (fp)	22	19	19	15	20	22	25	22	-	-	3.7+2.7
WB Left (fp)	22	19	19	15	20	22	25	22	-	-	3.7+2.7

Phasing Sequence‡

Plan: 1, 3, 11, 13, 23



Plan: 2, 4, 14



Notes: 1) For Plans 11, 23, there is an alternate walk time of 12s

Schedule

Weekday

Time	Plan
0:10	4
6:30	1
8:02	11
8:39	1
9:30	2
15:00	3
15:02	23
15:48	3
16:30	13
18:00	3
18:30	2
22:00	4

Weekend

Time	Plan
0:10	4
8:00	2
8:05	14
22:00	4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄┈┈┈► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

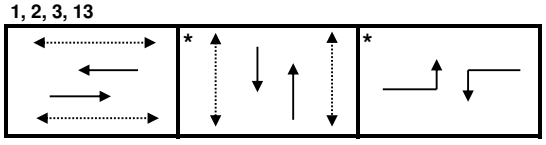
Intersection:	***Main:*** Terry Fox	***Side:***	Innovation / Flamborough
Controller:	**ATC 3**	**TSD:**	**6768**
Author:	Kymen Kwan	**Date:**	30-Jan-2025

Existing Timing Plans†

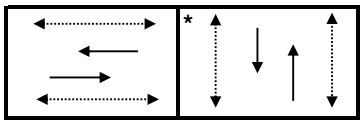
	Plan					**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Heavy PM** 13	***Walk***	***DW***	***A+R***
Cycle	130	110	125	80	135			
Offset	X	X	X	X	X			
EB Thru	70	56	62	42	65	7	15	3.7+2.2
WB Thru	70	56	62	42	65	7	15	3.7+2.2
NB Thru	42	40	45	38	52	7	22	3.0+3.6
SB Thru	42	40	45	38	52	7	22	3.0+3.6
EB Left	18	14	18	-	18	-	-	3.7+2.2
WB Left	18	14	18	-	18	-	-	3.7+2.2

Phasing Sequence‡

Plan: **1, 2, 3, 13**



Plan: **4**



Schedule

Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
16:30	13
18:00	3
18:30	2
22:00	4

Sunday

Time	Plan
0:10	4
8:00	2
22:00	4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄┈┈┈► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

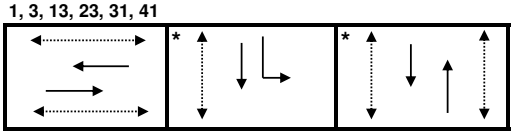
Intersection:	***Main:*** Carling	***Side:***	Herzberg
Controller:	**ATC 3**	**TSD:**	**5693**
Author:	Kymen Kwan	**Date:**	31-Jan-2025

Existing Timing Plans†

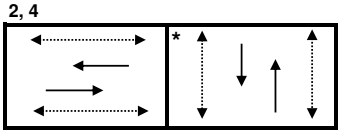
	Plan								**Ped Minimum Time**		
	Early AM	**Off Peak**	**Light PM**	**Night**	**PM 1**	**PM 2**	**AM Peak**	**Late AM**	***Walk***	***DW***	***A+R***
	1	2	3	4	13	23	31	41			
Cycle	110	70	105	70	115	115	120	120			
Offset	110	0	0	X	0	0	120	119			
EB Thru	45	35	55	35	55	52	51	50	7	14	3.7+2.4
WB Thru	45	35	55	35	55	52	51	50	7	14	3.7+2.4
SB Left	25	-	17	-	27	34	21	16	-	-	3.3+3.9
NB Thru	40	35	33	35	33	29	48	54	7	15	3.3+3.9
SB Thru	65	35	50	35	60	63	69	70	7	15	3.3+3.9

Phasing Sequence‡

Plan: **1, 3, 13, 23, 31, 41**



Plan: **2, 4**



Notes: 1) The NB Right Turn movement is prohibited on red

Schedule

Weekday

Time	Plan
0:10	4
6:20	1
7:30	31
8:45	41
9:50	2
15:00	3
16:30	13
17:00	23
18:00	3
19:00	2
22:00	4

Saturday

Time	Plan
0:10	4
8:00	2
22:00	4

Sunday

Time	Plan
0:10	4
9:00	2
22:00	4

Notes

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

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

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄┈┈┈► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

APPENDIX G

Existing Synchro Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	213	75	20	165	50	35	45	15	55	77	12
Future Volume (vph)	6	213	75	20	165	50	35	45	15	55	77	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.966				0.850		0.978			0.989	
Flt Protected		0.999			0.995			0.982			0.981	
Satd. Flow (prot)	0	1521	0	0	1457	1498	0	1693	0	0	1694	0
Flt Permitted		0.999			0.995			0.982			0.981	
Satd. Flow (perm)	0	1521	0	0	1457	1498	0	1693	0	0	1694	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			1			1			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 (%)	17%	17%	1%	1%	24%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	7	237	83	22	183	56	39	50	17	61	86	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	327	0	0	205	56	0	106	0	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 39.5%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	309	13	75	129	8	40
Future Volume (vph)	309	13	75	129	8	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.888	
Flt Protected				0.982	0.992	
Satd. Flow (prot)	1671	0	0	1641	1443	0
Flt Permitted				0.982	0.992	
Satd. Flow (perm)	1671	0	0	1641	1443	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	30%	4%	8%	12%	8%
Adj. Flow (vph)	343	14	83	143	9	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	357	0	0	226	53	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

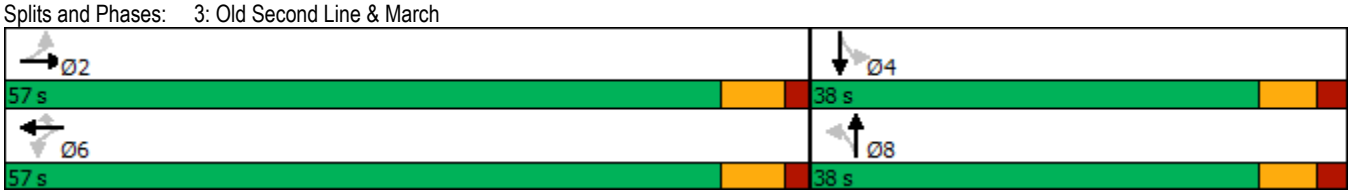
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	317	58	20	122	13	14	19	24	64	49	25
Future Volume (vph)	10	317	58	20	122	13	14	19	24	64	49	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977				0.850		0.943			0.975	
Flt Protected	0.950			0.950				0.988			0.977	
Satd. Flow (prot)	1674	1665	0	1610	1648	1401	0	1601	0	0	1620	0
Flt Permitted	0.670			0.496				0.891			0.820	
Satd. Flow (perm)	1181	1665	0	841	1648	1401	0	1444	0	0	1360	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				39		27			13	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
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%	4%	7%	5%	8%	8%	1%	5%	4%	2%	10%	1%
Adj. Flow (vph)	11	352	64	22	136	14	16	21	27	71	54	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	416	0	22	136	14	0	64	0	0	153	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	57.0	57.0		57.0	57.0	57.0	38.0	38.0		38.0	38.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	50.6	50.6		50.6	50.6	50.6	31.6	31.6		31.6	31.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	23.4	23.4		23.4	23.4	23.4		11.9			11.9	
Actuated g/C Ratio	0.48	0.48		0.48	0.48	0.48		0.25			0.25	
v/c Ratio	0.02	0.51		0.05	0.17	0.02		0.17			0.44	
Control Delay	8.0	11.7		8.4	8.7	1.3		9.9			17.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	8.0	11.7		8.4	8.7	1.3		9.9			17.4	
LOS	A	B		A	A	A		A			B	
Approach Delay		11.6			8.0			9.9			17.4	
Approach LOS		B			A			A			B	
Queue Length 50th (m)	0.4	17.3		0.7	4.9	0.0		2.0			8.2	
Queue Length 95th (m)	2.5	46.4		4.1	15.1	0.9		8.2			20.2	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	1136	1602		809	1585	1349		968			908	
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	0.26		0.03	0.09	0.01		0.07			0.17	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 48.3	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March

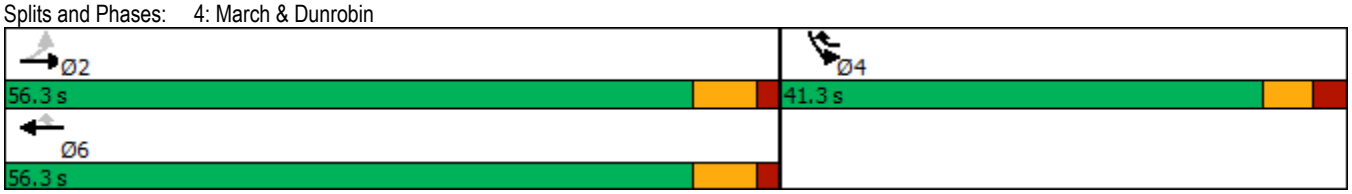


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	48	280	94	167	404	81
Future Volume (vph)	48	280	94	167	404	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			110.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Frt				0.850	0.975	
Flt Protected	0.950				0.960	
Satd. Flow (prot)	1626	1728	1633	1427	3093	0
Flt Permitted	0.690				0.960	
Satd. Flow (perm)	1181	1728	1633	1427	3093	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					28	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	3%	9%	6%	4%	7%
Adj. Flow (vph)	53	311	104	186	449	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	311	104	186	539	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	NA	NA	pm+ov	Prot	
Protected Phases		2	6	4	4	
Permitted Phases	2			6		
Detector Phase	2	2	6	4	4	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	26.3	26.3	26.3	27.3	27.3	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (s)	56.3	56.3	56.3	41.3	41.3	
Total Split (%)	57.7%	57.7%	57.7%	42.3%	42.3%	
Maximum Green (s)	50.0	50.0	50.0	35.0	35.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	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	
Recall Mode	Min	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	20.1	20.1	20.1	46.5	13.7	
Actuated g/C Ratio	0.43	0.43	0.43	1.00	0.29	
v/c Ratio	0.10	0.42	0.15	0.13	0.58	
Control Delay	10.1	12.4	10.0	0.2	15.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.1	12.4	10.0	0.2	15.6	
LOS	B	B	B	A	B	
Approach Delay		12.0	3.7		15.6	
Approach LOS		B	A		B	
Queue Length 50th (m)	2.1	14.1	4.1	0.0	16.3	
Queue Length 95th (m)	8.3	37.1	13.4	0.0	26.0	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0			110.0	70.0	
Base Capacity (vph)	1165	1705	1611	1427	2349	
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	0.05	0.18	0.06	0.13	0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 97.6			
Actuated Cycle Length: 46.5			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: March & Dunrobin



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	60	3	222	19	1	887
Future Volume (vph)	60	3	222	19	1	887
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994		0.989			
Flt Protected	0.954					
Satd. Flow (prot)	1655	0	1726	0	0	1745
Flt Permitted	0.954					
Satd. Flow (perm)	1655	0	1726	0	0	1745
Link Speed (k/h)	50		80			80
Link Distance (m)	446.4		376.9			1487.3
Travel Time (s)	32.1		17.0			66.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	3	247	21	1	986
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	268	0	0	987
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.5%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	97	272	210	46	75	35	8	237	466	103	1	156
Future Volume (vph)	97	272	210	46	75	35	8	237	466	103	1	156
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	75.0		75.0		130.0		85.0		110.0
Storage Lanes	2		2	2		1		2		2		1
Taper Length (m)	40.0			20.0				90.0				40.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.91	0.97	0.91	1.00	0.91	1.00
Ped Bike Factor	1.00		0.97	0.99		0.98		0.99		0.96		0.99
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	4628	1498	0	1674
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3086	3316	1429	3034	3131	1406	0	3225	4628	1439	0	1658
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			233			145				147		
Link Speed (k/h)		60			60				80			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				13.8			
Confl. Peds. (#/hr)	3		14	14		3		13		8		8
Confl. Bikes (#/hr)												
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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	108	302	233	51	83	39	9	263	518	114	1	173
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	302	233	51	83	39	0	272	518	114	0	174
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		10.5			10.5				10.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

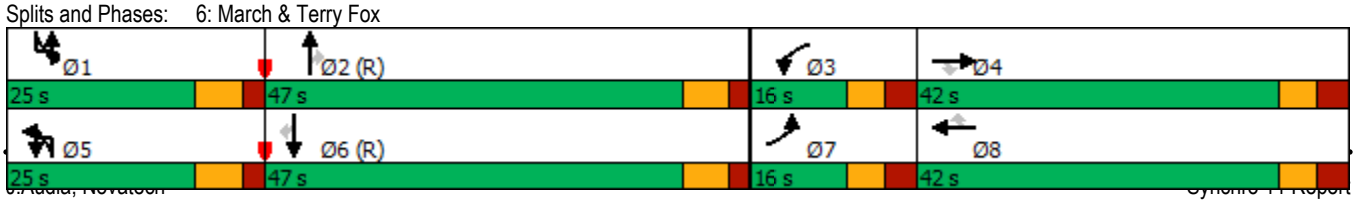
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	987	153
Future Volume (vph)	987	153
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.91	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	4764	1469
Flt Permitted		
Satd. Flow (perm)	4764	1422
Right Turn on Red		Yes
Satd. Flow (RTOR)		170
Link Speed (k/h)	80	
Link Distance (m)	316.8	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1097	170
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1097	170
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	7.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	20.0	20.0	5.0	5.0
Minimum Split (s)	11.8	42.0	42.0	11.8	42.0	42.0	11.9	11.9	32.7	32.7	11.9	11.9
Total Split (s)	16.0	42.0	42.0	16.0	42.0	42.0	25.0	25.0	47.0	47.0	25.0	25.0
Total Split (%)	12.3%	32.3%	32.3%	12.3%	32.3%	32.3%	19.2%	19.2%	36.2%	36.2%	19.2%	19.2%
Maximum Green (s)	9.2	35.1	35.1	9.2	35.1	35.1	18.2	18.2	40.3	40.3	18.2	18.2
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	3.1	3.2	3.2	3.1	3.2	3.2	2.2	2.2	2.1	2.1	2.2	2.2
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)	6.8	6.9	6.9	6.8	6.9	6.9		6.8	6.7	6.7		6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	8.7	22.1	22.1	7.5	18.4	18.4		15.7	58.0	58.0		17.7
Actuated g/C Ratio	0.07	0.17	0.17	0.06	0.14	0.14		0.12	0.45	0.45		0.14
v/c Ratio	0.52	0.54	0.53	0.29	0.19	0.12		0.70	0.25	0.16		0.77
Control Delay	68.0	52.5	9.8	62.4	47.2	0.8		57.1	30.0	8.7		75.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	68.0	52.5	9.8	62.4	47.2	0.8		57.1	30.0	8.7		75.5
LOS	E	D	A	E	D	A		E	C	A		E
Approach Delay		39.6			41.2				35.5			
Approach LOS		D			D				D			
Queue Length 50th (m)	12.8	36.3	0.0	6.0	9.4	0.0		33.1	23.7	1.0		39.6
Queue Length 95th (m)	21.7	42.2	18.1	12.1	13.9	0.0		m39.6	m39.1	m7.9		#69.2
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	75.0		75.0		130.0		85.0		110.0
Base Capacity (vph)	219	895	555	216	845	485		455	2065	723		246
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	0.49	0.34	0.42	0.24	0.10	0.08		0.60	0.25	0.16		0.71

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 34.4 Intersection LOS: C
Intersection Capacity Utilization 76.2% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	20.0	20.0
Minimum Split (s)	32.7	32.7
Total Split (s)	47.0	47.0
Total Split (%)	36.2%	36.2%
Maximum Green (s)	40.3	40.3
Yellow Time (s)	4.6	4.6
All-Red Time (s)	2.1	2.1
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.7	6.7
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	60.0	60.0
Actuated g/C Ratio	0.46	0.46
v/c Ratio	0.50	0.23
Control Delay	27.5	5.0
Queue Delay	0.0	0.0
Total Delay	27.5	5.0
LOS	C	A
Approach Delay	30.7	
Approach LOS	C	
Queue Length 50th (m)	63.0	0.0
Queue Length 95th (m)	100.5	14.7
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	2199	748
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.50	0.23

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	62	21	6	43	24	210	1	56	1680	122	2	159
Future Volume (vph)	62	21	6	43	24	210	1	56	1680	122	2	159
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		95.0		80.0		175.0
Storage Lanes	0		1	1		2		1		1		2
Taper Length (m)	10.0			10.0				40.0				70.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.97
Ped Bike Factor		0.99	0.98	0.99		0.98		0.99		0.96		1.00
Frt			0.850			0.850				0.850		
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3283	1414	0	3248
Flt Permitted		0.762		0.697				0.950				0.950
Satd. Flow (perm)	0	1316	1461	1147	1762	1468	0	1613	3283	1359	0	3238
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			82			172				89		
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			1			1				7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	69	23	7	48	27	233	1	62	1867	136	2	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	7	48	27	233	0	63	1867	136	0	179
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				7.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8				2		
Detector Phase	4	4	4	8	8	8	5	5	2	2	1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	858	118
Future Volume (vph)	858	118
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		15.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1423
Right Turn on Red		Yes
Satd. Flow (RTOR)		84
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	953	131
Shared Lane Traffic (%)		
Lane Group Flow (vph)	953	131
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	10.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	20.0	20.0	5.0	5.0
Minimum Split (s)	39.5	39.5	39.5	39.5	39.5	39.5	11.5	11.5	30.3	30.3	11.5	11.5
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0	67.0	23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%	51.5%	17.7%	17.7%
Maximum Green (s)	33.5	33.5	33.5	33.5	33.5	33.5	16.5	16.5	60.7	60.7	16.5	16.5
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.6	2.6	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)		6.5	6.5	6.5	6.5	6.5		6.5	6.3	6.3		6.5
Lead/Lag							Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	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)	26.0	26.0	26.0	26.0	26.0	26.0			17.0	17.0		
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9	9		
Act Effct Green (s)		17.2	17.2	17.2	17.2	17.2		10.4	81.0	81.0		12.5
Actuated g/C Ratio		0.13	0.13	0.13	0.13	0.13		0.08	0.62	0.62		0.10
v/c Ratio		0.53	0.03	0.32	0.12	0.68		0.48	0.91	0.15		0.58
Control Delay		61.4	0.2	53.2	46.5	24.6		68.9	30.8	6.0		95.8
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		61.4	0.2	53.2	46.5	24.6		68.9	30.8	6.0		95.8
LOS		E	A	D	D	C		E	C	A		F
Approach Delay		57.1			31.0				30.3			
Approach LOS		E			C				C			
Queue Length 50th (m)		21.1	0.0	10.7	5.8	13.6		14.5	178.1	3.8		22.9
Queue Length 95th (m)		31.8	0.0	18.8	12.0	33.2		27.3	#319.3	16.6		34.4
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		95.0		80.0		175.0
Base Capacity (vph)		339	437	295	454	505		206	2046	880		412
Starvation Cap Reductn		0	0	0	0	0		0	0	0		0
Spillback Cap Reductn		0	0	0	0	0		0	0	0		0
Storage Cap Reductn		0	0	0	0	0		0	0	0		0
Reduced v/c Ratio		0.27	0.02	0.16	0.06	0.46		0.31	0.91	0.15		0.43

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 27.0 Intersection LOS: C
Intersection Capacity Utilization 105.9% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	20.0	20.0
Minimum Split (s)	30.3	30.3
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.7	60.7
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.6	2.6
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.3	6.3
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)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	85.6	85.6
Actuated g/C Ratio	0.66	0.66
v/c Ratio	0.45	0.14
Control Delay	6.1	0.4
Queue Delay	0.0	0.0
Total Delay	6.1	0.4
LOS	A	A
Approach Delay	18.2	
Approach LOS	B	
Queue Length 50th (m)	6.8	0.0
Queue Length 95th (m)	131.3	0.0
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		15.0
Base Capacity (vph)	2141	965
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.45	0.14

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	26	96	4	11	2	70	57	12	4	102	3
Future Volume (vph)	2	26	96	4	11	2	70	57	12	4	102	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.895			0.985			0.989			0.997	
Flt Protected		0.999			0.989			0.975			0.998	
Satd. Flow (prot)	0	1532	0	0	1717	0	0	1683	0	0	1681	0
Flt Permitted		0.999			0.989			0.975			0.998	
Satd. Flow (perm)	0	1532	0	0	1717	0	0	1683	0	0	1681	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	50%	4%	3%	1%	1%	1%	1%	2%	8%	1%	3%	100%
Adj. Flow (vph)	2	29	107	4	12	2	78	63	13	4	113	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	0	0	18	0	0	154	0	0	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.3%		ICU Level of Service A	
Analysis Period (min) 15			

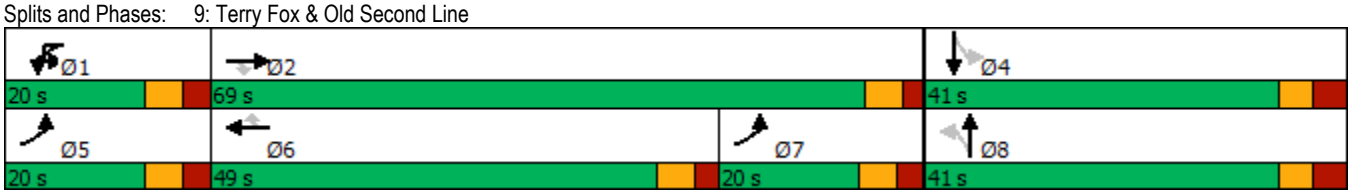
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	114	533	53	1	20	257	28	34	18	33	102	17
Future Volume (vph)	114	533	53	1	20	257	28	34	18	33	102	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97		1.00		0.98	1.00	0.98		1.00	0.98
Frt			0.850				0.850		0.903			0.862
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1595	1762	1388	0	1543	1728	1498	1470	1460	0	1674	1412
Flt Permitted	0.950				0.950			0.358			0.720	
Satd. Flow (perm)	1593	1762	1348	0	1536	1728	1465	553	1460	0	1264	1412
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		37			209
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	1		4		4		1	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 (%)	6%	1%	9%	1%	10%	3%	1%	15%	22%	1%	1%	12%
Adj. Flow (vph)	127	592	59	1	22	286	31	38	20	37	113	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	592	59	0	23	286	31	38	57	0	113	228
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4
Switch Phase												

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	188		
Future Volume (vph)	188		
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)	1		
Peak Hour Factor	0.90		
Heavy Vehicles (%)	6%		
Adj. Flow (vph)	209		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			
Switch Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		33.9	33.9	11.4	11.4	33.9	33.9	39.7	39.7		39.7	39.7
Total Split (s)		69.0	69.0	20.0	20.0	49.0	49.0	41.0	41.0		41.0	41.0
Total Split (%)		53.1%	53.1%	15.4%	15.4%	37.7%	37.7%	31.5%	31.5%		31.5%	31.5%
Maximum Green (s)		63.1	63.1	13.6	13.6	43.1	43.1	34.3	34.3		34.3	34.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	Max	None	None		None	None
Walk Time (s)		12.0	12.0			12.0	12.0	12.0	12.0		12.0	12.0
Flash Dont Walk (s)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		3	3			3	3	4	4		4	4
Act Effct Green (s)	22.1	72.8	72.8		7.2	43.4	43.4	16.9	16.9		16.9	16.9
Actuated g/C Ratio	0.20	0.67	0.67		0.07	0.40	0.40	0.16	0.16		0.16	0.16
v/c Ratio	0.39	0.50	0.06		0.22	0.41	0.05	0.44	0.22		0.57	0.57
Control Delay	24.6	13.9	1.5		56.0	27.4	0.1	56.9	20.2		53.5	13.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	24.6	13.9	1.5		56.0	27.4	0.1	56.9	20.2		53.5	13.2
LOS	C	B	A		E	C	A	E	C		D	B
Approach Delay		14.7				26.8			34.9			26.5
Approach LOS		B				C			C			C
Queue Length 50th (m)	13.3	37.0	0.0		4.2	37.1	0.0	6.7	3.3		20.3	3.1
Queue Length 95th (m)	22.3	134.0	3.1		13.3	76.9	0.0	16.8	13.4		37.2	22.4
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	404	1187	935		195	695	671	177	492		404	594
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	0.31	0.50	0.06		0.12	0.41	0.05	0.21	0.12		0.28	0.38

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 108	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		20.0	20.0
Total Split (%)		15%	15%
Maximum Green (s)		13.6	13.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	409	141	134	160	59	46	71	140	124	90	72
Future Volume (vph)	50	409	141	134	160	59	46	71	140	124	90	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98	0.98	0.98		0.99	0.98	
Frt			0.850			0.850		0.900			0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1483	1728	1483	1642	1712	1469	1674	1482	0	1674	1511	0
Flt Permitted	0.645			0.394			0.540			0.419		
Satd. Flow (perm)	1005	1728	1432	678	1712	1435	935	1482	0	734	1511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			157			80		75			30	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	1		5	5		1	11		4	4		11
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 (%)	14%	3%	2%	3%	4%	3%	1%	6%	6%	1%	2%	15%
Adj. Flow (vph)	56	454	157	149	178	66	51	79	156	138	100	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	454	157	149	178	66	51	235	0	138	180	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	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)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	70.0	70.0	18.0	70.0	70.0	42.0	42.0		42.0	42.0	
Total Split (%)	13.8%	53.8%	53.8%	13.8%	53.8%	53.8%	32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	12.1	64.1	64.1	12.1	64.1	64.1	35.4	35.4		35.4	35.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	71.7	64.6	64.6	77.0	69.3	69.3	23.6	23.6		23.6	23.6	
Actuated g/C Ratio	0.62	0.56	0.56	0.66	0.60	0.60	0.20	0.20		0.20	0.20	
v/c Ratio	0.09	0.47	0.18	0.28	0.17	0.07	0.27	0.65		0.93	0.54	
Control Delay	8.3	19.4	3.1	9.0	13.6	2.5	41.8	36.8		102.4	40.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.3	19.4	3.1	9.0	13.6	2.5	41.8	36.8		102.4	40.0	
LOS	A	B	A	A	B	A	D	D		F	D	
Approach Delay		14.6			10.0			37.7			67.1	
Approach LOS		B			B			D			E	
Queue Length 50th (m)	3.5	54.6	0.0	9.8	16.8	0.0	9.0	30.6		28.3	28.0	
Queue Length 95th (m)	9.6	100.2	10.1	21.8	34.5	4.8	19.7	55.7		#56.9	48.9	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	715	962	867	561	1023	890	287	508		225	485	
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	0.08	0.47	0.18	0.27	0.17	0.07	0.18	0.46		0.61	0.37	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 115.9
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 27.5 — Intersection LOS: C
Intersection Capacity Utilization 74.4% — 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: 10: Innovation/Flamborough & Terry Fox

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	207	11	54	128	79	1	1	3	131	1	33
Future Volume (vph)	26	207	11	54	128	79	1	1	3	131	1	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.959			0.919			0.973	
Flt Protected		0.995			0.990			0.990			0.962	
Satd. Flow (prot)	0	1731	0	0	1607	0	0	1347	0	0	1572	0
Flt Permitted		0.995			0.990			0.990			0.962	
Satd. Flow (perm)	0	1731	0	0	1607	0	0	1347	0	0	1572	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		185.1			991.2			145.1			590.1	
Travel Time (s)		13.3			71.4			17.4			42.5	
Confl. Peds. (#/hr)	1		5	5		1						
Confl. Bikes (#/hr)						2						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	1%	9%	1%	2%	13%	1%	1%	33%	6%	1%	6%
Adj. Flow (vph)	29	230	12	60	142	88	1	1	3	146	1	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	290	0	0	5	0	0	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	361	12	15	530	576	77	464	44	250	118	31
Future Volume (vph)	35	361	12	15	530	576	77	464	44	250	118	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00		0.96		1.00			0.99	
Frt		0.995				0.850		0.990			0.969	
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1674	1752	0	1510	1762	1483	0	1724	0	1674	1672	0
Flt Permitted	0.131			0.323				0.925		0.266		
Satd. Flow (perm)	231	1752	0	513	1762	1418	0	1605	0	469	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				332		4			16	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		1	1		8	3		2	2		3
Confl. Bikes (#/hr)						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%	1%	1%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	39	401	13	17	589	640	86	516	49	278	131	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	414	0	17	589	640	0	651	0	278	165	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	54.0	54.0		16.0	70.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	45.0%	45.0%		13.3%	58.3%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	46.8	46.8		8.8	62.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	43.9	43.9		43.9	43.9	43.9		46.8		62.8	62.8	
Actuated g/C Ratio	0.37	0.37		0.37	0.37	0.37		0.39		0.52	0.52	
v/c Ratio	0.46	0.64		0.09	0.91	0.88		1.04		0.83	0.19	
Control Delay	50.5	37.1		26.8	56.8	31.5		82.0		41.7	14.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	50.5	37.1		26.8	56.8	31.5		82.0		41.7	14.2	
LOS	D	D		C	E	C		F		D	B	
Approach Delay		38.2			43.4			82.0			31.5	
Approach LOS		D			D			F			C	
Queue Length 50th (m)	6.4	73.6		2.4	120.7	69.5		~151.6		33.2	16.3	
Queue Length 95th (m)	#19.2	105.2		7.4	#182.7	#139.2		#216.8		#63.7	27.6	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	84	642		187	644	729		628		333	882	
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	0.46	0.64		0.09	0.91	0.88		1.04		0.83	0.19	

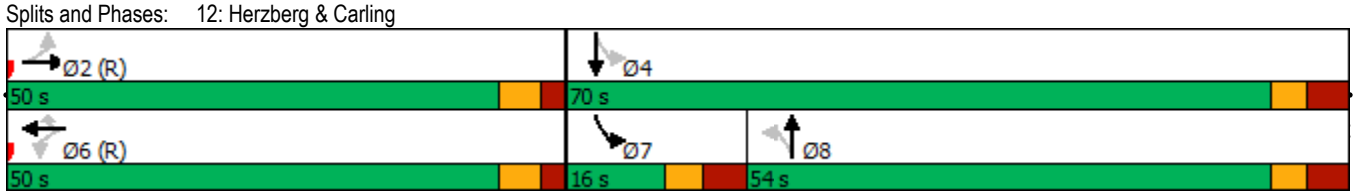
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 49.7 Intersection LOS: D
Intersection Capacity Utilization 96.1% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	174	50	12	293	99	66	70	19	49	69	13
Future Volume (vph)	13	174	50	12	293	99	66	70	19	49	69	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.971				0.850		0.984			0.987	
Flt Protected		0.997			0.998			0.979			0.982	
Satd. Flow (prot)	0	1559	0	0	1664	1498	0	1698	0	0	1697	0
Flt Permitted		0.997			0.998			0.979			0.982	
Satd. Flow (perm)	0	1559	0	0	1664	1498	0	1698	0	0	1697	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)						2			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	14%	1%	1%	7%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	14	193	56	13	326	110	73	78	21	54	77	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	263	0	0	339	110	0	172	0	0	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	176	18	64	362	30	82
Future Volume (vph)	176	18	64	362	30	82
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987				0.901	
Flt Protected				0.993	0.987	
Satd. Flow (prot)	1739	0	0	1670	1510	0
Flt Permitted				0.993	0.987	
Satd. Flow (perm)	1739	0	0	1670	1510	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	5%	6%	7%	4%
Adj. Flow (vph)	196	20	71	402	33	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	216	0	0	473	124	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	147	25	30	375	54	47	60	16	25	31	20
Future Volume (vph)	37	147	25	30	375	54	47	60	16	25	31	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978				0.850		0.982			0.965	
Flt Protected	0.950			0.950				0.981			0.984	
Satd. Flow (prot)	1642	1716	0	1580	1712	1483	0	1599	0	0	1640	0
Flt Permitted	0.513			0.637				0.839			0.836	
Satd. Flow (perm)	887	1716	0	1060	1712	1483	0	1367	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				60		8			19	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	1%	4%	7%	4%	2%	8%	7%	6%	4%	1%	5%
Adj. Flow (vph)	41	163	28	33	417	60	52	67	18	28	34	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	191	0	33	417	60	0	137	0	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	62.0	62.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0	
Total Split (%)	65.3%	65.3%		65.3%	65.3%	65.3%	34.7%	34.7%		34.7%	34.7%	
Maximum Green (s)	55.6	55.6		55.6	55.6	55.6	26.6	26.6		26.6	26.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	25.5	25.5		25.5	25.5	25.5		11.5			11.5	
Actuated g/C Ratio	0.57	0.57		0.57	0.57	0.57		0.26			0.26	
v/c Ratio	0.08	0.20		0.06	0.43	0.07		0.38			0.23	
Control Delay	8.4	8.0		8.1	10.6	3.2		16.9			12.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	8.4	8.0		8.1	10.6	3.2		16.9			12.6	
LOS	A	A		A	B	A		B			B	
Approach Delay		8.1			9.6			16.9			12.6	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	1.4	6.4		1.1	18.0	0.0		7.4			3.6	
Queue Length 95th (m)	6.2	19.1		5.3	47.0	4.5		18.9			11.3	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	887	1716		1060	1712	1483		819			840	
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	0.05	0.11		0.03	0.24	0.04		0.17			0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 45	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 10.5	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	57	126	337	437	234	62
Future Volume (vph)	57	126	337	437	234	62
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			110.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Frt				0.850	0.969	
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1610	1695	1745	1469	3174	0
Flt Permitted	0.365				0.962	
Satd. Flow (perm)	619	1695	1745	1469	3174	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				486	33	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	2%	3%	1%	3%
Adj. Flow (vph)	63	140	374	486	260	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	140	374	486	329	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	pm+ov	Prot	
Protected Phases	5	2	6	4	4	
Permitted Phases	2			6		
Detector Phase	5	2	6	4	4	
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	11.3	26.3	26.3	27.3	27.3	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Total Split (s)	11.3	67.6	56.3	36.3	36.3	
Total Split (%)	10.9%	65.1%	54.2%	34.9%	34.9%	
Maximum Green (s)	5.0	61.3	50.0	30.0	30.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	27.6	27.6	21.6	44.1	12.8	
Actuated g/C Ratio	0.52	0.52	0.40	0.82	0.24	
v/c Ratio	0.15	0.16	0.53	0.38	0.42	
Control Delay	7.8	7.7	17.9	1.2	18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.8	7.7	17.9	1.2	18.1	
LOS	A	A	B	A	B	
Approach Delay		7.8	8.4		18.1	
Approach LOS		A	A		B	
Queue Length 50th (m)	2.3	5.4	27.2	0.0	12.3	
Queue Length 95th (m)	8.2	15.8	59.3	4.8	23.1	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0			110.0	70.0	
Base Capacity (vph)	415	1651	1568	1444	1857	
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	0.15	0.08	0.24	0.34	0.18	

Intersection Summary	
Area Type: Other	
Cycle Length: 103.9	
Actuated Cycle Length: 53.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: March & Dunrobin

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	38	2	979	64	3	310
Future Volume (vph)	38	2	979	64	3	310
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994		0.992			
Flt Protected	0.954					
Satd. Flow (prot)	1655	0	1731	0	0	1745
Flt Permitted	0.954					
Satd. Flow (perm)	1655	0	1731	0	0	1745
Link Speed (k/h)	50		80			80
Link Distance (m)	446.4		376.9			1487.3
Travel Time (s)	32.1		17.0			66.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	2	1088	71	3	344
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	1159	0	0	347
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.5%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	192	120	228	108	290	180	21	243	901	71	1	52
Future Volume (vph)	192	120	228	108	290	180	21	243	901	71	1	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	75.0		75.0		130.0		85.0		110.0
Storage Lanes	2		2	2		1		2		2		1
Taper Length (m)	40.0			20.0				90.0				40.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.91	0.97	0.91	1.00	0.91	1.00
Ped Bike Factor	0.99		0.98	1.00		0.97		0.99		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3248	3221	1498	3248	3316	1498	0	3248	4811	1498	0	1674
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3218	3221	1474	3236	3316	1459	0	3222	4811	1450	0	1669
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			253			200				147		
Link Speed (k/h)		60			60				80			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				13.8			
Confl. Peds. (#/hr)	13		4	4		13		9		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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	213	133	253	120	322	200	23	270	1001	79	1	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	133	253	120	322	200	0	293	1001	79	0	59
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		10.5			10.5				10.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	20.0	20.0	5.0	5.0

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	669	175
Future Volume (vph)	669	175
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.91	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	4811	1498
Flt Permitted		
Satd. Flow (perm)	4811	1460
Right Turn on Red		Yes
Satd. Flow (RTOR)		194
Link Speed (k/h)	80	
Link Distance (m)	316.8	
Travel Time (s)	14.3	
Confl. Peds. (#/hr)		9
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	743	194
Shared Lane Traffic (%)		
Lane Group Flow (vph)	743	194
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	7.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		
Minimum Initial (s)	20.0	20.0

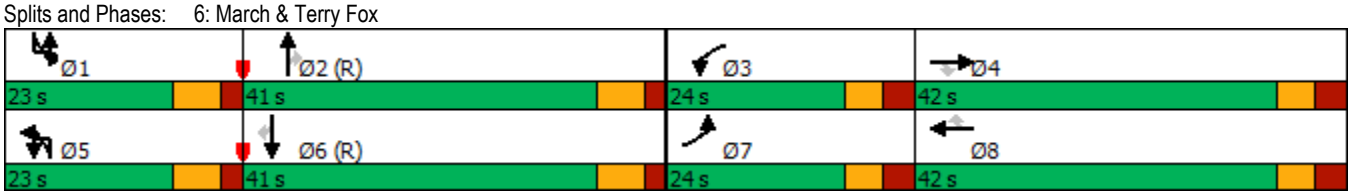
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Split (s)	11.8	42.0	42.0	11.8	42.0	42.0	11.9	11.9	32.7	32.7	11.9	11.9
Total Split (s)	24.0	42.0	42.0	24.0	42.0	42.0	23.0	23.0	41.0	41.0	23.0	23.0
Total Split (%)	18.5%	32.3%	32.3%	18.5%	32.3%	32.3%	17.7%	17.7%	31.5%	31.5%	17.7%	17.7%
Maximum Green (s)	17.2	35.1	35.1	17.2	35.1	35.1	16.2	16.2	34.3	34.3	16.2	16.2
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	3.1	3.2	3.2	3.1	3.2	3.2	2.2	2.2	2.1	2.1	2.2	2.2
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)	6.8	6.9	6.9	6.8	6.9	6.9		6.8	6.7	6.7		6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	13.7	27.0	27.0	10.2	23.4	23.4		15.8	58.3	58.3		9.9
Actuated g/C Ratio	0.11	0.21	0.21	0.08	0.18	0.18		0.12	0.45	0.45		0.08
v/c Ratio	0.62	0.20	0.50	0.47	0.54	0.47		0.74	0.46	0.11		0.46
Control Delay	63.6	40.8	7.6	63.1	50.4	8.6		49.1	28.7	6.7		68.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	63.6	40.8	7.6	63.1	50.4	8.6		49.1	28.7	6.7		68.3
LOS	E	D	A	E	D	A		D	C	A		E
Approach Delay		34.9			39.7				31.8			
Approach LOS		C			D				C			
Queue Length 50th (m)	25.2	14.5	0.0	14.2	38.7	0.0		30.7	75.2	2.2		13.6
Queue Length 95th (m)	36.0	19.5	17.6	22.9	44.8	16.6		45.2	104.3	m9.1		26.0
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	75.0		75.0		130.0		85.0		110.0
Base Capacity (vph)	429	909	597	429	895	539		418	2156	730		208
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	0.50	0.15	0.42	0.28	0.36	0.37		0.70	0.46	0.11		0.28

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 96 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 33.1 — Intersection LOS: C
Intersection Capacity Utilization 73.8% — ICU Level of Service D
Analysis Period (min) 15

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

Splits and Phases: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Split (s)	32.7	32.7
Total Split (s)	41.0	41.0
Total Split (%)	31.5%	31.5%
Maximum Green (s)	34.3	34.3
Yellow Time (s)	4.6	4.6
All-Red Time (s)	2.1	2.1
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.7	6.7
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	49.9	49.9
Actuated g/C Ratio	0.38	0.38
v/c Ratio	0.40	0.29
Control Delay	32.7	6.2
Queue Delay	0.0	0.0
Total Delay	32.7	6.2
LOS	C	A
Approach Delay	29.6	
Approach LOS	C	
Queue Length 50th (m)	43.7	0.0
Queue Length 95th (m)	68.9	16.8
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1845	679
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.40	0.29

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	36	13	18	134	22	233	5	33	1092	59	286	1665
Future Volume (vph)	36	13	18	134	22	233	5	33	1092	59	286	1665
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		95.0		80.0	175.0	
Storage Lanes	0		1	1		2		1		1	2	
Taper Length (m)	10.0			10.0				40.0			70.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00		0.97	0.99	
Frt			0.850			0.850				0.850		
Flt Protected		0.964		0.950				0.950			0.950	
Satd. Flow (prot)	0	1699	1498	1580	1762	1498	0	1674	3316	1483	3248	3349
Flt Permitted		0.777		0.722				0.950			0.950	
Satd. Flow (perm)	0	1366	1458	1187	1762	1474	0	1672	3316	1439	3230	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			82			257				84		
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	40	14	20	149	24	259	6	37	1213	66	318	1850
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	20	149	24	259	0	43	1213	66	318	1850
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				7.0			10.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA	Perm	Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8				2		
Detector Phase	4	4	4	8	8	8	5	5	2	2	1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	58
Future Volume (vph)	58
Ideal Flow (vphpl)	1800
Storage Length (m)	15.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	84
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	0.90
Heavy Vehicles (%)	1%
Adj. Flow (vph)	64
Shared Lane Traffic (%)	
Lane Group Flow (vph)	64
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	20.0	20.0	5.0	20.0
Minimum Split (s)	39.5	39.5	39.5	39.5	39.5	39.5	11.5	11.5	30.3	30.3	11.5	30.3
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0	67.0	23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%	51.5%	17.7%	51.5%
Maximum Green (s)	33.5	33.5	33.5	33.5	33.5	33.5	16.5	16.5	60.7	60.7	16.5	60.7
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.6	2.6	2.8	2.6
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	6.3	6.3	6.5	6.3
Lead/Lag							Lead	Lead	Lag	Lag	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	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	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)	26.0	26.0	26.0	26.0	26.0	26.0			17.0	17.0		17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6	6		6
Act Effct Green (s)		22.1	22.1	22.1	22.1	22.1		8.7	71.6	71.6	17.0	82.3
Actuated g/C Ratio		0.17	0.17	0.17	0.17	0.17		0.07	0.55	0.55	0.13	0.63
v/c Ratio		0.23	0.06	0.74	0.08	0.56		0.38	0.66	0.08	0.75	0.87
Control Delay		46.1	0.4	71.3	42.0	9.8		66.9	24.6	2.5	58.9	36.2
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		46.1	0.4	71.3	42.0	9.8		66.9	24.6	2.5	58.9	36.2
LOS		D	A	E	D	A		E	C	A	E	D
Approach Delay		33.7			32.8				24.8			38.6
Approach LOS		C			C				C			D
Queue Length 50th (m)		11.2	0.0	34.0	4.8	0.4		9.9	103.8	0.0	38.5	189.5
Queue Length 95th (m)		20.3	0.0	50.5	10.8	19.7		20.7	149.8	4.8	51.9	#302.7
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		95.0		80.0	175.0	
Base Capacity (vph)		352	436	305	454	570		212	1827	830	440	2119
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		0.15	0.05	0.49	0.05	0.45		0.20	0.66	0.08	0.72	0.87

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 33.4 Intersection LOS: C
Intersection Capacity Utilization 98.6% 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	20.0
Minimum Split (s)	30.3
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.7
Yellow Time (s)	3.7
All-Red Time (s)	2.6
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.3
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	82.3
Actuated g/C Ratio	0.63
v/c Ratio	0.07
Control Delay	7.2
Queue Delay	0.0
Total Delay	7.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	m9.0
Internal Link Dist (m)	
Turn Bay Length (m)	15.0
Base Capacity (vph)	938
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.07

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	21	84	11	27	7	100	114	8	1	74	1
Future Volume (vph)	1	21	84	11	27	7	100	114	8	1	74	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.893			0.978			0.995			0.998	
Flt Protected					0.988			0.978			0.999	
Satd. Flow (prot)	0	1561	0	0	1673	0	0	1689	0	0	1757	0
Flt Permitted					0.988			0.978			0.999	
Satd. Flow (perm)	0	1561	0	0	1673	0	0	1689	0	0	1757	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	100%	1%	1%	1%	4%	1%	1%	4%	1%	1%	1%	1%
Adj. Flow (vph)	1	23	93	12	30	8	111	127	9	1	82	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	50	0	0	247	0	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	176	336	14	3	12	590	95	17	4	6	55	5
Future Volume (vph)	176	336	14	3	12	590	95	17	4	6	55	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor									0.99		1.00	
Frt			0.850				0.850		0.905			0.854
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1572	0	1674	1491
Flt Permitted	0.950				0.950			0.292			0.750	
Satd. Flow (perm)	1674	1762	1498	0	1674	1762	1498	515	1572	0	1319	1491
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		7			217
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)										1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	196	373	16	3	13	656	106	19	4	7	61	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	373	16	0	16	656	106	19	11	0	61	223
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4
Switch Phase												

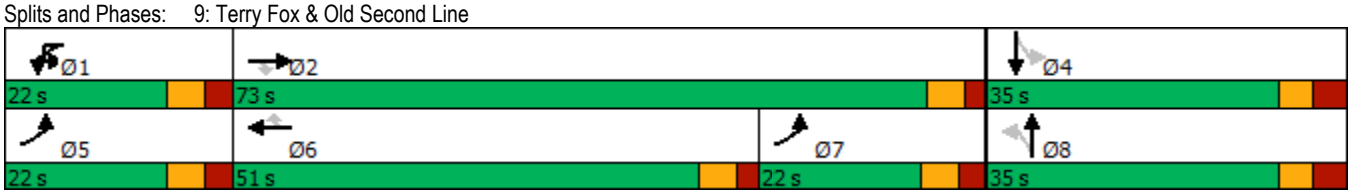
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	195		
Future Volume (vph)	195		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor	0.90		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	217		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			
Switch Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	25.0	77.9	77.9		6.7	45.4	45.4	13.7	13.7		13.7	13.7
Actuated g/C Ratio	0.23	0.71	0.71		0.06	0.41	0.41	0.12	0.12		0.12	0.12
v/c Ratio	0.51	0.30	0.01		0.16	0.90	0.15	0.30	0.05		0.37	0.59
Control Delay	26.4	8.8	0.0		55.2	48.1	2.5	55.6	28.1		50.4	13.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	26.4	8.8	0.0		55.2	48.1	2.5	55.6	28.1		50.4	13.2
LOS	C	A	A		E	D	A	E	C		D	B
Approach Delay		14.5				42.0			45.5			21.2
Approach LOS		B				D			D			C
Queue Length 50th (m)	22.2	15.6	0.0		2.9	109.7	0.0	3.4	0.7		11.0	1.0
Queue Length 95th (m)	34.5	65.0	0.0		10.4	#232.5	5.9	10.4	5.4		23.3	20.3
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	479	1252	1089		239	729	701	133	413		342	548
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	0.41	0.30	0.01		0.07	0.90	0.15	0.14	0.03		0.18	0.41

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 109.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 28.9 — Intersection LOS: C
Intersection Capacity Utilization 74.1% — 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: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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

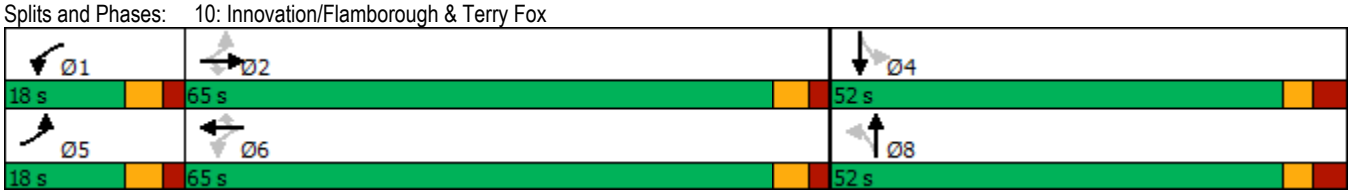
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	292	64	155	448	148	163	111	151	70	63	66
Future Volume (vph)	77	292	64	155	448	148	163	111	151	70	63	66
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.95	0.99		0.97	0.99	0.98		0.99	0.98	
Frt			0.850			0.850		0.913			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	1762	1483	1658	1762	1498	1674	1564	0	1674	1518	0
Flt Permitted	0.406			0.491			0.635			0.318		
Satd. Flow (perm)	669	1762	1414	845	1762	1459	1102	1564	0	558	1518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			164		55			42	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	4		9	9		2	8		4	4		8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	1%	2%	2%	1%	1%	1%	1%	3%	1%	1%	11%
Adj. Flow (vph)	86	324	71	172	498	164	181	123	168	78	70	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	324	71	172	498	164	181	291	0	78	143	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	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)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	65.0	65.0	18.0	65.0	65.0	52.0	52.0		52.0	52.0	
Total Split (%)	13.3%	48.1%	48.1%	13.3%	48.1%	48.1%	38.5%	38.5%		38.5%	38.5%	
Maximum Green (s)	12.1	59.1	59.1	12.1	59.1	59.1	45.4	45.4		45.4	45.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	67.3	59.5	59.5	71.9	63.9	63.9	23.1	23.1		23.1	23.1	
Actuated g/C Ratio	0.61	0.54	0.54	0.65	0.58	0.58	0.21	0.21		0.21	0.21	
v/c Ratio	0.18	0.34	0.09	0.28	0.49	0.18	0.79	0.79		0.67	0.41	
Control Delay	8.8	17.6	3.7	8.9	18.6	3.0	64.8	48.6		68.1	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.8	17.6	3.7	8.9	18.6	3.0	64.8	48.6		68.1	29.4	
LOS	A	B	A	A	B	A	E	D		E	C	
Approach Delay		14.0			13.6			54.8			43.0	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	5.3	34.9	0.0	11.1	58.4	0.0	34.2	45.0		14.3	17.1	
Queue Length 95th (m)	13.7	67.4	6.5	25.1	110.1	10.3	58.2	74.0		30.4	34.2	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	531	946	795	649	1017	911	455	678		230	651	
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	0.16	0.34	0.09	0.27	0.49	0.18	0.40	0.43		0.34	0.22	

Intersection Summary

Area Type: Other
Cycle Length: 135
Actuated Cycle Length: 110.7
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 26.6 — Intersection LOS: C
Intersection Capacity Utilization 75.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Innovation/Flamborough & Terry Fox



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	14	175	0	3	205	99	11	1	80	98	0
Future Volume (vph)	1	14	175	0	3	205	99	11	1	80	98	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.956			0.882			0.969
Flt Protected			0.996						0.994			0.963
Satd. Flow (prot)	0	0	1732	0	0	1679	0	0	1545	0	0	1613
Flt Permitted			0.996						0.994			0.963
Satd. Flow (perm)	0	0	1732	0	0	1679	0	0	1545	0	0	1613
Link Speed (k/h)			50			50			30			50
Link Distance (m)			185.1			991.2			145.1			590.1
Travel Time (s)			13.3			71.4			17.4			42.5
Confl. Peds. (#/hr)				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%	7%	2%	1%	1%	1%	2%	1%	1%	1%	3%	1%
Adj. Flow (vph)	1	16	194	0	3	228	110	12	1	89	109	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	211	0	0	341	0	0	102	0	0	142
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)			3.0			3.0			0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Sign Control			Free			Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	30
Future Volume (vph)	30
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	3%
Adj. Flow (vph)	33
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
Turning Speed (k/h)	14
Sign Control	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	627	57	47	361	326	24	174	42	519	459	45
Future Volume (vph)	19	627	57	47	361	326	24	174	42	519	459	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						1.00			1.00	
Frt		0.988				0.850		0.976			0.987	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1674	1738	0	1510	1762	1483	0	1688	0	1642	1732	0
Flt Permitted	0.372			0.086				0.888		0.280		
Satd. Flow (perm)	656	1738	0	137	1762	1483	0	1504	0	484	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				362		8			6	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)							11					11
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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	21	697	63	52	401	362	27	193	47	577	510	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	760	0	52	401	362	0	267	0	577	560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	29.0	29.0		34.0	63.0	
Total Split (%)	45.2%	45.2%		45.2%	45.2%	45.2%	25.2%	25.2%		29.6%	54.8%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	21.8	21.8		26.8	55.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	46.3	46.3		46.3	46.3	46.3		21.4		55.4	55.4	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40		0.19		0.48	0.48	
v/c Ratio	0.08	1.08		0.95	0.57	0.45		0.93		1.15	0.67	
Control Delay	22.7	92.0		148.7	30.5	4.2		84.3		113.1	27.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	22.7	92.0		148.7	30.5	4.2		84.3		113.1	27.3	
LOS	C	F		F	C	A		F		F	C	
Approach Delay		90.2			26.4			84.3			70.8	
Approach LOS		F			C			F			E	
Queue Length 50th (m)	2.7	~177.6		10.3	63.7	0.0		53.3		~113.5	84.5	
Queue Length 95th (m)	7.7	#244.9		#34.0	92.3	16.2		#98.2		#175.4	120.5	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	263	702		55	709	813		291		502	843	
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	1.08		0.95	0.57	0.45		0.92		1.15	0.66	

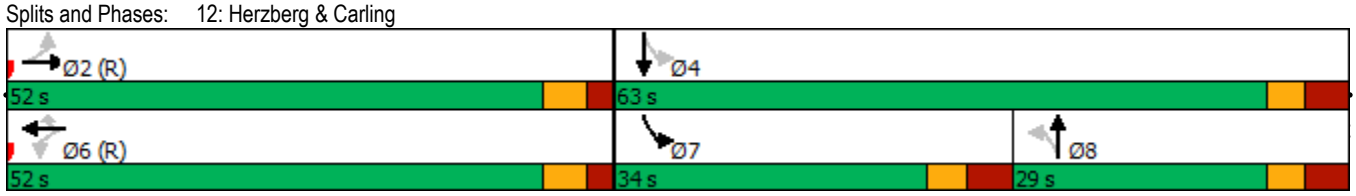
Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 65.0 Intersection LOS: E
Intersection Capacity Utilization 102.4% 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.

Splits and Phases: 12: Herzberg & Carling



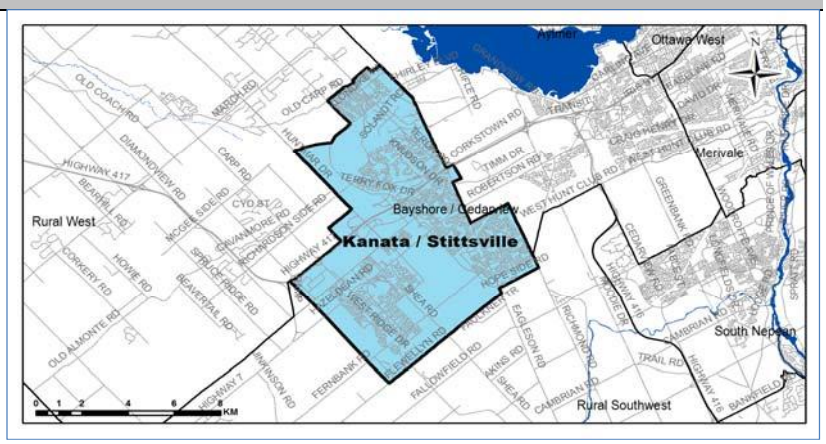
APPENDIX H

TRANS Mode Shares

Kanata - Stittsville

Demographic Characteristics

Population	105,210	Actively Travelled	83,460
Employed Population	49,640	Number of Vehicles	64,540
Households	38,010	Area (km^2)	82.6



Occupation

Status (age 5+)	Male	Female	Total
Full Time Employed	24,670	19,590	44,260
Part Time Employed	1,540	3,840	5,380
Student	13,630	13,410	27,040
Retiree	6,480	8,350	14,820
Unemployed	850	940	1,790
Homemaker	160	3,310	3,470
Other	350	1,010	1,360
Total:	47,690	50,440	98,120

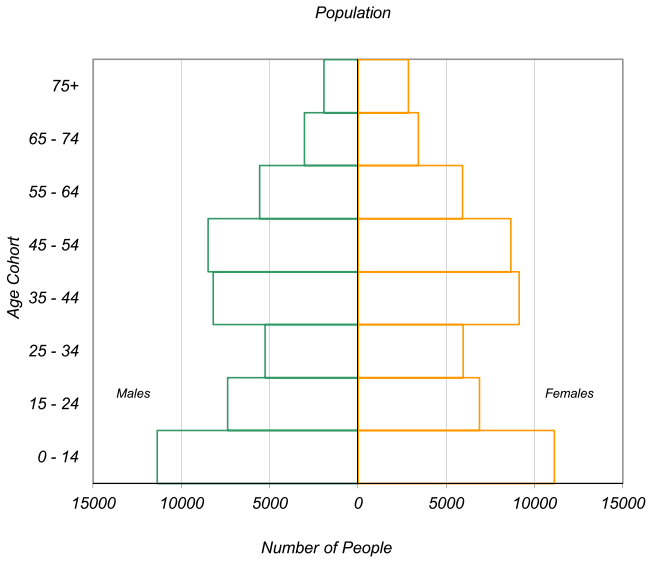
Traveller Characteristics	Male	Female	Total
Transit Pass Holders	5,940	6,920	12,860
Licensed Drivers	36,280	36,790	73,070
Telecommuters	200	380	580
Trips made by residents	135,300	143,330	278,630

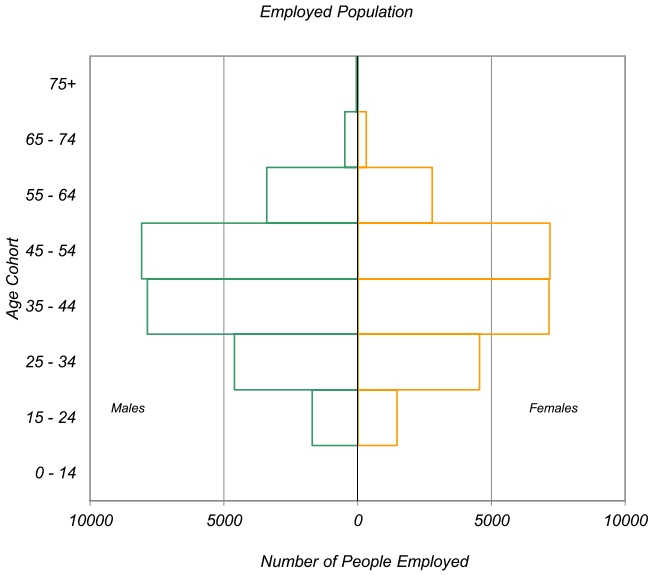
Household Size		
1 person	5,810	15%
2 persons	11,660	31%
3 persons	7,490	20%
4 persons	8,890	23%
5+ persons	4,160	11%
Total:	38,010	100%

Households by Vehicle Availability		
0 vehicles	1,050	3%
1 vehicle	14,090	37%
2 vehicles	19,110	50%
3 vehicles	3,000	8%
4+ vehicles	770	2%
Total:	38,010	100%

Selected Indicators	
Daily Trips per Person (age 5+)	2.84
Vehicles per Person	0.61
Number of Persons per Household	2.77
Daily Trips per Household	7.33
Vehicles per Household	1.70
Workers per Household	1.31
Population Density (Pop/km2)	1270

Households by Dwelling Type		
Single-detached	21,610	57%
Semi-detached	3,890	10%
Townhouse	10,550	28%
Apartment/Condo	1,960	5%
Total:	38,010	100%



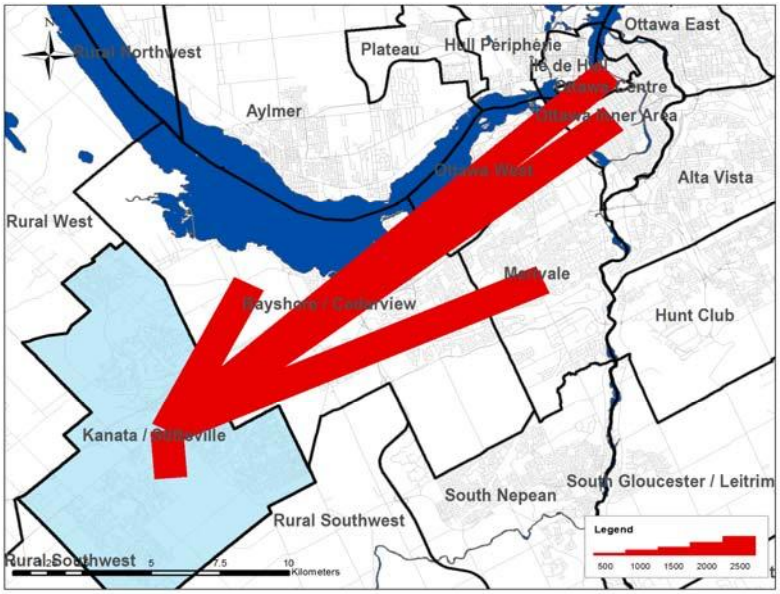


* In 2005 data was only collected for household members aged 11$^+$ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Destinations of Trips from Kanata - Stittsville

AM Peak Period



Summary of Trips to and from Kanata - Stittsville

AM Peak Period (6:30 - 8:59) Districts	Destinations of Trips From District	% Total	Origins of Trips To District	% Total
Ottawa Centre	4,560	8%	140	0%
Ottawa Inner Area	3,350	6%	970	2%
Ottawa East	660	1%	260	1%
Beacon Hill	280	0%	170	0%
Alta Vista	1,810	3%	660	1%
Hunt Club	490	1%	420	1%
Merivale	3,410	6%	1,200	3%
Ottawa West	2,020	4%	840	2%
Bayshore / Cedarview	5,010	9%	2,420	5%
Orléans	290	1%	500	1%
Rural East	100	0%	30	0%
Rural Southeast	50	0%	260	1%
South Gloucester / Leitrim	60	0%	140	0%
South Nepean	690	1%	1,800	4%
Rural Southwest	1,130	2%	1,850	4%
Kanata / Stittsvile	30,360	54%	30,360	66%
Rural West	1,050	2%	3,250	7%
Île de Hull	670	1%	30	0%
Hull Périphérie	160	0%	30	0%
Plateau	100	0%	230	0%
Aylmer	0	0%	190	0%
Rural Northwest	20	0%	60	0%
Pointe Gatineau	20	0%	80	0%
Gatineau Est	0	0%	60	0%
Rural Northeast	30	0%	50	0%
Buckingham / Masson-Angers	30	0%	10	0%
Ontario Sub-Total:	55,320	98%	45,270	98%
Québec Sub-Total:	1,030	2%	740	2%
Total:	56,350	100%	46,010	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	27,180	29%	17,020	18%	14,550	9%
School	7,070	7%	2,500	3%	15,110	9%
Shopping	6,070	6%	9,150	10%	22,480	14%
Leisure	8,450	9%	10,590	11%	17,090	11%
Medical	2,520	3%	1,170	1%	2,660	2%
Pick-up / drive passenger	6,570	7%	5,470	6%	15,190	9%
Return Home	33,610	35%	45,620	48%	65,770	41%
Other	3,560	4%	3,590	4%	8,440	5%
Total:	95,030	100%	95,110	100%	161,290	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	18,030	69%	11,020	70%	7,430	24%
School	4,890	19%	2,280	15%	11,740	39%
Shopping	170	1%	320	2%	760	3%
Leisure	340	1%	400	3%	780	3%
Medical	330	1%	230	1%	350	1%
Pick-up / drive passenger	1,260	5%	580	4%	4,760	16%
Return Home	290	1%	380	2%	1,980	7%
Other	670	3%	430	3%	2,560	8%
Total:	25,980	100%	15,640	100%	30,360	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	390	2%	350	1%	930	2%
School	370	2%	0	0%	90	0%
Shopping	1,030	5%	1,910	7%	5,100	14%
Leisure	2,140	11%	3,080	11%	4,130	11%
Medical	230	1%	180	1%	400	1%
Pick-up / drive passenger	1,980	10%	1,980	7%	3,410	9%
Return Home	12,130	64%	20,550	71%	21,560	58%
Other	680	4%	860	3%	1,850	5%
Total:	18,950	100%	28,910	100%	37,470	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	351,430		46%
AM Peak Period	71,980	20%	42%
PM Peak Period	85,330	24%	44%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	63,470	67%	63,830	67%	92,190	57%
Auto Passenger	15,220	16%	14,920	16%	31,880	20%
Transit	12,200	13%	12,270	13%	4,050	3%
Bicycle	360	0%	410	0%	960	1%
Walk	40	0%	50	0%	21,080	13%
Other	3,730	4%	3,660	4%	11,130	7%
Total:	95,020	100%	95,140	100%	161,290	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	15,360	59%	11,530	74%	13,630	45%
Auto Passenger	2,450	9%	1,160	7%	5,050	17%
Transit	6,230	24%	1,290	8%	1,210	4%
Bicycle	30	0%	80	1%	220	1%
Walk	0	0%	40	0%	5,730	19%
Other	1,900	7%	1,560	10%	4,510	15%
Total:	25,970	100%	15,660	100%	30,350	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	13,850	73%	17,660	61%	21,240	57%
Auto Passenger	3,240	17%	4,270	15%	8,570	23%
Transit	1,270	7%	5,980	21%	670	2%
Bicycle	40	0%	100	0%	260	1%
Walk	40	0%	0	0%	4,570	12%
Other	520	3%	910	3%	2,160	6%
Total:	18,960	100%	28,920	100%	37,470	100%

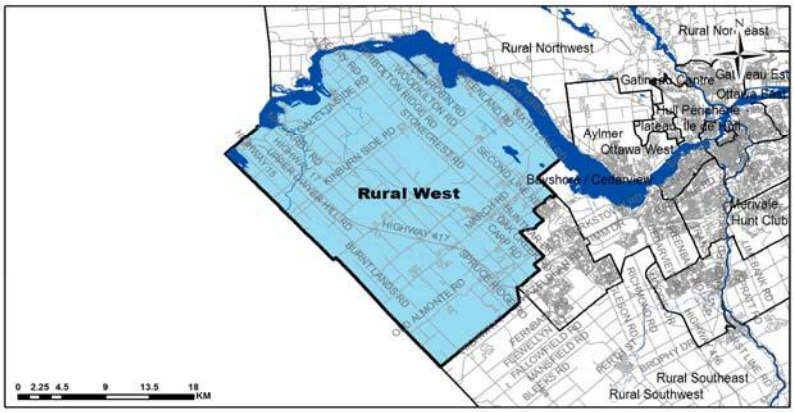
Avg Vehicle Occupancy	From District	To District	Within District
24 Hours	1.24	1.23	1.35
AM Peak Period	1.16	1.10	1.37
PM Peak Period	1.23	1.24	1.40

Transit Modal Split	From District	To District	Within District
24 Hours	13%	13%	3%
AM Peak Period	26%	9%	6%
PM Peak Period	7%	21%	2%

Rural West

Demographic Characteristics

Population	24,960	Actively Travelled	19,280
Employed Population	12,280	Number of Vehicles	18,930
Households	8,750	Area (km^2)	744.4



Occupation Status (age 5+)	Male	Female	Total
Full Time Employed	6,190	4,610	10,800
Part Time Employed	480	990	1,470
Student	2,720	2,970	5,680
Retiree	1,920	1,900	3,820
Unemployed	300	150	450
Homemaker	60	970	1,030
Other	260	140	390
Total:	11,920	11,730	23,660

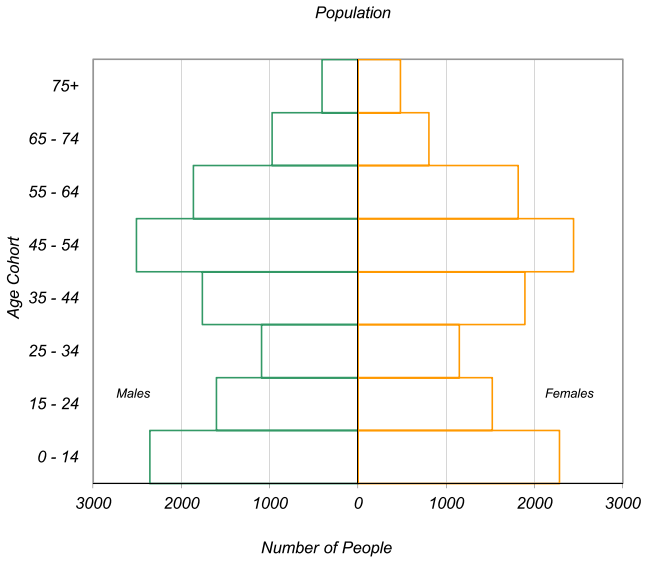
Traveller Characteristics	Male	Female	Total
Transit Pass Holders	620	550	1,170
Licensed Drivers	9,590	9,180	18,770
Telecommuters	90	100	190
Trips made by residents	28,240	31,610	59,850

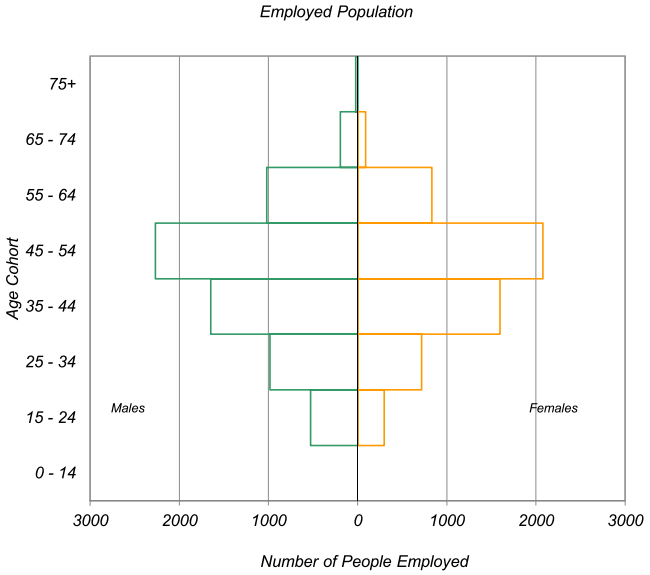
Household Size		
1 person	1,280	15%
2 persons	3,330	38%
3 persons	1,520	17%
4 persons	1,800	21%
5+ persons	820	9%
Total:	8,750	100%

Households by Vehicle Availability		
0 vehicles	90	1%
1 vehicle	1,820	21%
2 vehicles	4,540	52%
3 vehicles	1,530	17%
4+ vehicles	770	9%
Total:	8,750	100%

Selected Indicators	
Daily Trips per Person (age 5+)	2.53
Vehicles per Person	0.76
Number of Persons per Household	2.85
Daily Trips per Household	6.84
Vehicles per Household	2.16
Workers per Household	1.40
Population Density (Pop/km2)	30

Households by Dwelling Type		
Single-detached	8,330	95%
Semi-detached	160	2%
Townhouse	170	2%
Apartment/Condo	90	1%
Total:	8,750	100%



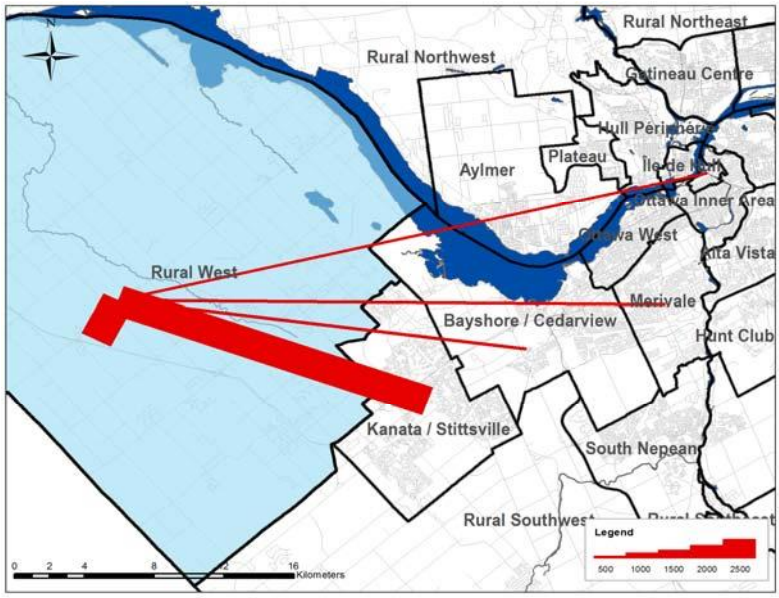


* In 2005 data was only collected for household members aged 11$^+$ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Destinations of Trips from Rural West

AM Peak Period



Summary of Trips to and from Rural West

AM Peak Period (6:30 - 8:59) Districts	Destinations of Trips From District	% Total	Origins of Trips To District	% Total
Ottawa Centre	430	4%	0	0%
Ottawa Inner Area	380	4%	20	0%
Ottawa East	80	1%	90	1%
Beacon Hill	70	1%	40	1%
Alta Vista	180	2%	20	0%
Hunt Club	80	1%	60	1%
Merivale	720	7%	70	1%
Ottawa West	170	2%	70	1%
Bayshore / Cedarview	760	7%	380	6%
Orléans	0	0%	70	1%
Rural East	0	0%	0	0%
Rural Southeast	20	0%	0	0%
South Gloucester / Leitrim	60	1%	40	1%
South Nepean	30	0%	80	1%
Rural Southwest	160	2%	80	1%
Kanata / Stittsvile	3,250	31%	1,050	17%
Rural West	4,020	38%	4,020	65%
Île de Hull	140	1%	0	0%
Hull Périphérie	50	0%	0	0%
Plateau	0	0%	0	0%
Aylmer	0	0%	50	1%
Rural Northwest	10	0%	0	0%
Pointe Gatineau	20	0%	10	0%
Gatineau Est	0	0%	20	0%
Rural Northeast	0	0%	0	0%
Buckingham / Masson-Angers	0	0%	0	0%
Ontario Sub-Total:	10,410	98%	6,090	99%
Québec Sub-Total:	220	2%	80	1%
Total:	10,630	100%	6,170	100%

Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	6,640	32%	2,300	11%	1,860	12%
School	1,930	9%	460	2%	2,220	14%
Shopping	2,930	14%	220	1%	750	5%
Leisure	2,240	11%	1,440	7%	1,310	8%
Medical	680	3%	150	1%	420	3%
Pick-up / drive passenger	1,610	8%	800	4%	1,400	9%
Return Home	3,570	17%	14,860	72%	6,720	43%
Other	1,080	5%	370	2%	880	6%
Total:	20,680	100%	20,600	100%	15,560	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	4,090	62%	1,410	65%	1,140	28%
School	1,480	22%	420	19%	2,010	50%
Shopping	130	2%	0	0%	90	2%
Leisure	110	2%	40	2%	40	1%
Medical	120	2%	30	1%	0	0%
Pick-up / drive passenger	460	7%	50	2%	430	11%
Return Home	0	0%	150	7%	170	4%
Other	230	3%	60	3%	140	3%
Total:	6,620	100%	2,160	100%	4,020	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	40	1%	30	0%	50	1%
School	40	1%	0	0%	0	0%
Shopping	550	17%	30	0%	140	4%
Leisure	510	16%	290	4%	510	14%
Medical	170	5%	40	1%	0	0%
Pick-up / drive passenger	360	11%	360	5%	430	12%
Return Home	1,380	42%	5,950	88%	2,310	63%
Other	200	6%	40	1%	230	6%
Total:	3,250	100%	6,740	100%	3,670	100%

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	56,840		27%
AM Peak Period	12,800	23%	31%
PM Peak Period	13,660	24%	27%

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	15,110	73%	15,000	73%	8,640	55%
Auto Passenger	3,170	15%	3,310	16%	2,320	15%
Transit	790	4%	680	3%	0	0%
Bicycle	190	1%	180	1%	50	0%
Walk	0	0%	0	0%	720	5%
Other	1,430	7%	1,430	7%	3,840	25%
Total:	20,690	100%	20,600	100%	15,570	100%

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	4,400	67%	1,570	73%	1,670	42%
Auto Passenger	610	9%	180	8%	490	12%
Transit	650	10%	0	0%	0	0%
Bicycle	0	0%	0	0%	0	0%
Walk	0	0%	0	0%	140	3%
Other	950	14%	400	19%	1,720	43%
Total:	6,610	100%	2,150	100%	4,020	100%

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	2,590	80%	5,070	75%	1,960	54%
Auto Passenger	540	17%	850	13%	870	24%
Transit	0	0%	450	7%	0	0%
Bicycle	10	0%	0	0%	20	1%
Walk	0	0%	0	0%	180	5%
Other	100	3%	370	5%	630	17%
Total:	3,240	100%	6,740	100%	3,660	100%

Avg Vehicle Occupancy	From District	To District	Within District
24 Hours	1.21	1.22	1.27
AM Peak Period	1.14	1.11	1.29
PM Peak Period	1.21	1.17	1.44

Transit Modal Split	From District	To District	Within District
24 Hours	4%	4%	0%
AM Peak Period	11%	0%	0%
PM Peak Period	0%	7%	0%

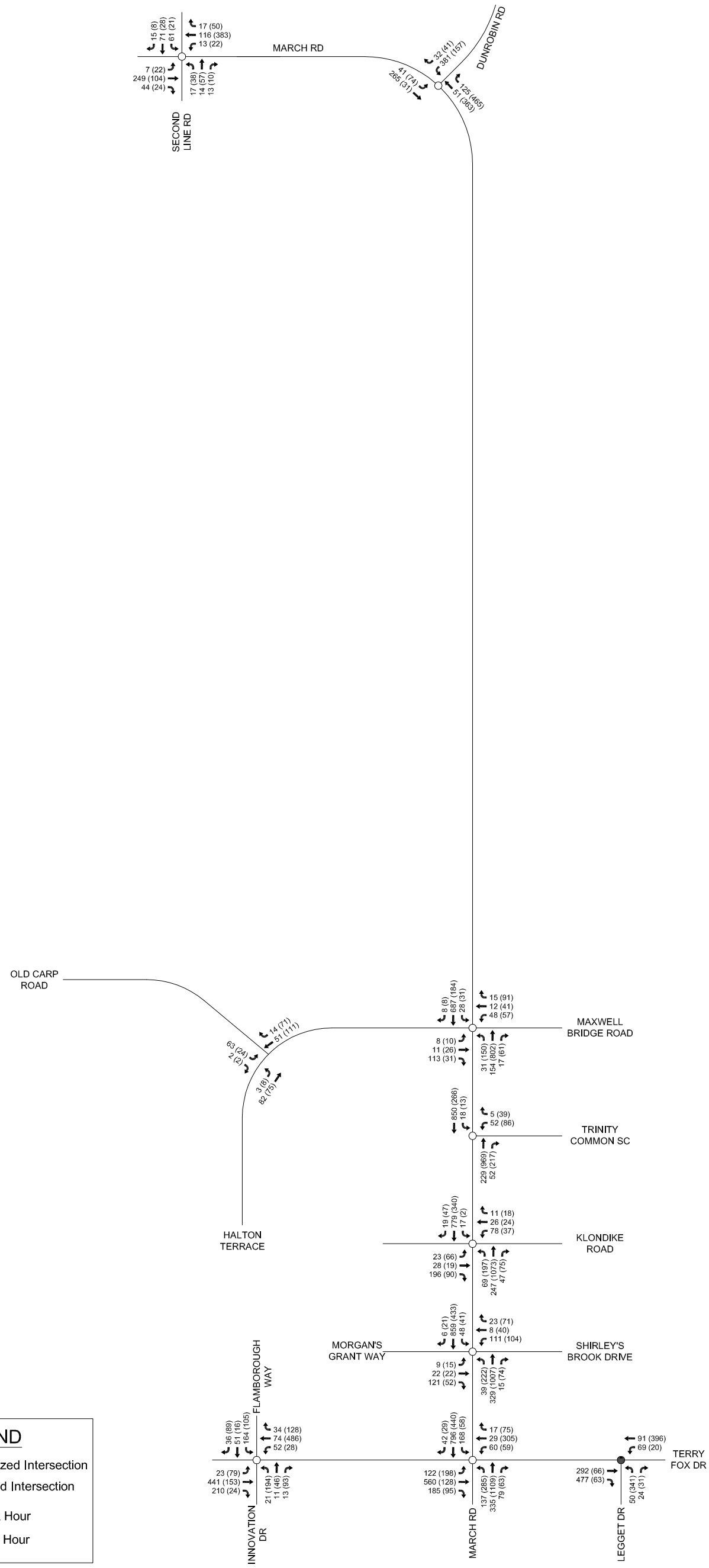
Table 5: Residential Mode Share by District (All Dwelling Types)

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	18%	3%	26%	1%	52%
	PM	18%	10%	21%	1%	51%
Ottawa Inner Area	AM	29%	8%	25%	7%	31%
	PM	29%	9%	19%	7%	36%
Île de Hull	AM	32%	7%	30%	8%	23%
	PM	32%	10%	23%	8%	27%
Ottawa East	AM	40%	11%	33%	6%	11%
	PM	42%	15%	26%	5%	13%
Beacon Hill	AM	48%	11%	28%	2%	11%
	PM	50%	18%	21%	2%	9%
Alta Vista	AM	43%	14%	30%	3%	10%
	PM	47%	17%	23%	3%	11%
Hunt Club	AM	45%	12%	35%	1%	6%
	PM	48%	16%	27%	1%	7%
Merivale	AM	47%	12%	29%	4%	8%
	PM	49%	15%	23%	3%	10%
Ottawa West	AM	38%	13%	27%	6%	16%
	PM	39%	13%	18%	7%	24%
Bayshore/Cedarview	AM	45%	13%	31%	2%	9%
	PM	47%	16%	25%	1%	11%
Hull Périphérie	AM	48%	15%	25%	3%	9%
	PM	48%	16%	21%	3%	11%
Orleans	AM	48%	14%	28%	1%	9%
	PM	53%	17%	22%	1%	6%
South Gloucester / Leitrim	AM	56%	23%	13%	1%	7%
	PM	57%	23%	11%	1%	8%
South Nepean	AM	50%	14%	26%	1%	9%
	PM	51%	17%	20%	1%	10%
Kanata - Stittsville	AM	52%	15%	21%	1%	12%
	PM	56%	19%	15%	1%	9%
Plateau	AM	48%	15%	29%	4%	5%
	PM	53%	15%	24%	2%	6%
Aylmer	AM	52%	17%	23%	2%	7%
	PM	52%	20%	18%	2%	8%
Pointe Gatineau	AM	50%	15%	23%	2%	10%
	PM	54%	16%	19%	2%	9%
Gatineau Est	AM	54%	15%	21%	1%	10%
	PM	59%	18%	16%	1%	7%
Masson-Angers	AM	61%	13%	18%	1%	7%
	PM	62%	17%	15%	1%	5%
Other Rural Districts	AM	60%	14%	24%	0%	2%
	PM	66%	17%	14%	0%	2%

APPENDIX I

Other Area Developments

Figure 35 – Demonstration Plan



LEGEND

- Unsignalized Intersection
- Signalized Intersection

xx VPH AM Peak Hour

(xx) VPH PM Peak Hour

KANATA NORTH

COMMUNITY DESIGN PLAN

DATE JUN 2016

JOB 112117

SCALE N.T.S.

FIGURE NO. 11

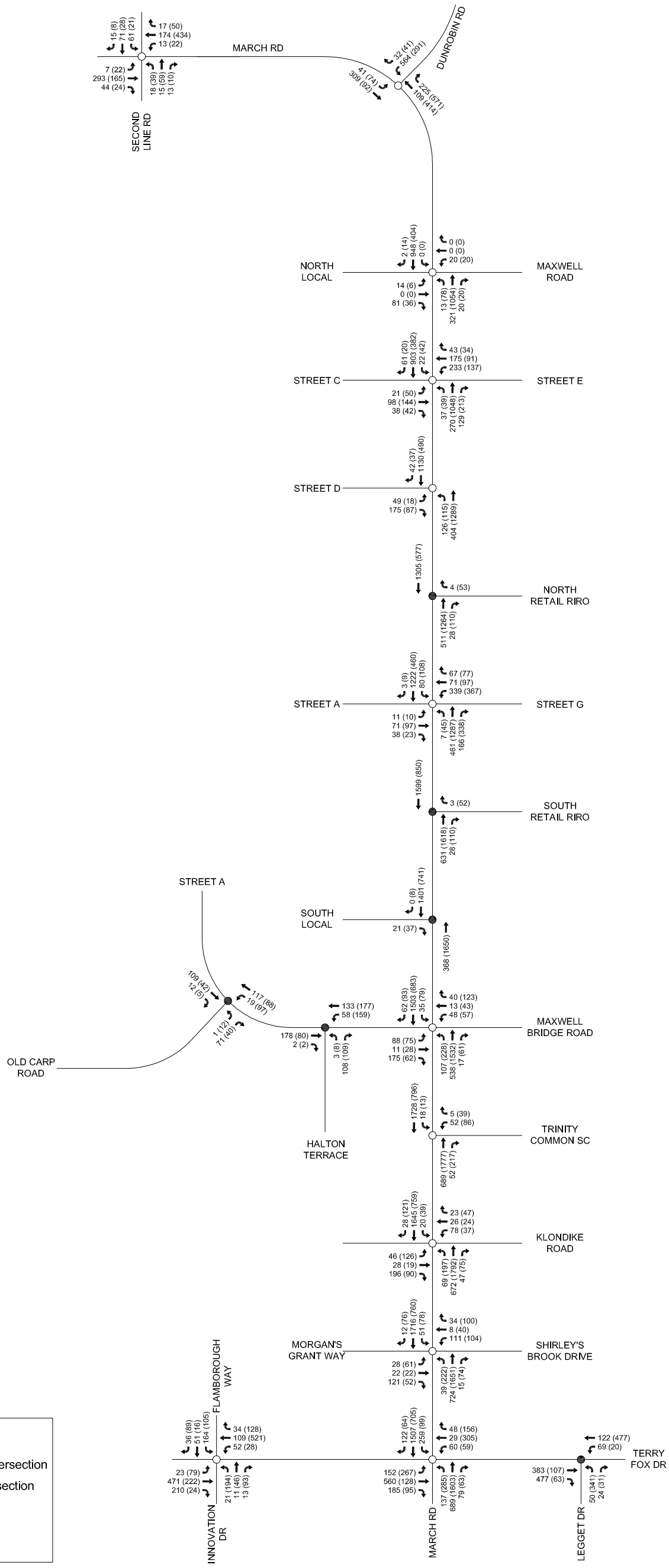
2026 BACKGROUND TRAFFIC VOLUMES

NOVATECH

Engineers, Planners & Landscape Architects

M:\2012\112117\CAD\Design\Figures\Traffic\TMP\FINAL\Traffic Figures.dwg, 2026 BACKGROUND, Mar 28, 2016 - 3:07pm, bbyvelds

SHT11x17.DWG - 279mmx432mm



LEGEND

- Unsignalized Intersection
- Signalized Intersection

xx VPH AM Peak Hour

(xx) VPH PM Peak Hour

KANATA NORTH

COMMUNITY DESIGN PLAN

DATE JUN 2016

JOB 112117

SCALE N.T.S.

FIGURE NO. 36

2026 TOTAL TRAFFIC VOLUMES

NOVATECH

Engineers, Planners & Landscape Architects

M:\2012\112117\CAD\Design\Figures\Traffic\TMP\FINAL\Traffic Figures.dwg, 2026 TOTAL, Mar 28, 2016 - 3:07pm, bbyvelds

SHT11x17.DWG - 279mmx432mm

Figure 12 - Site Traffic Volumes| Site build Out (2034)

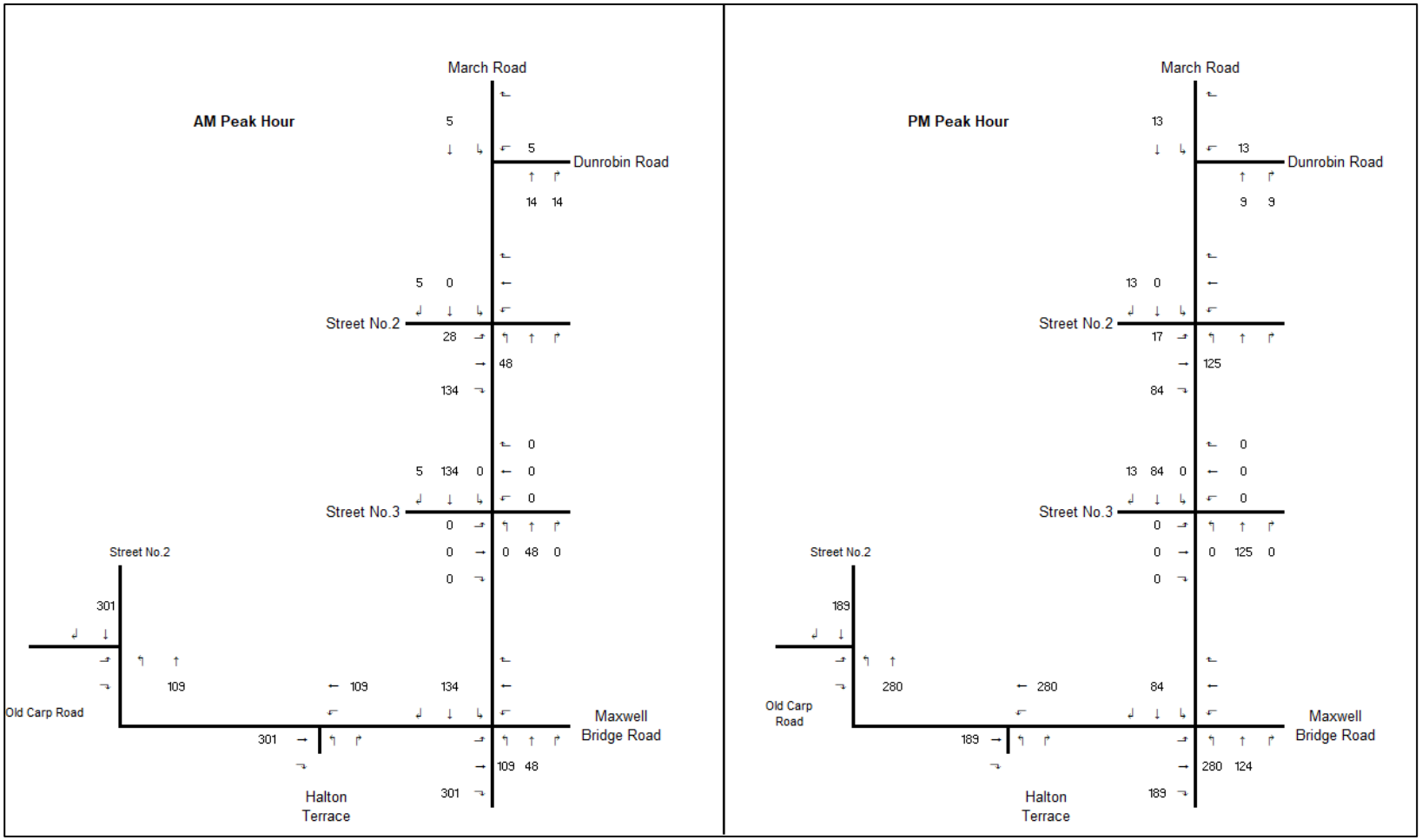


Figure 8: Assignment (Volumes)

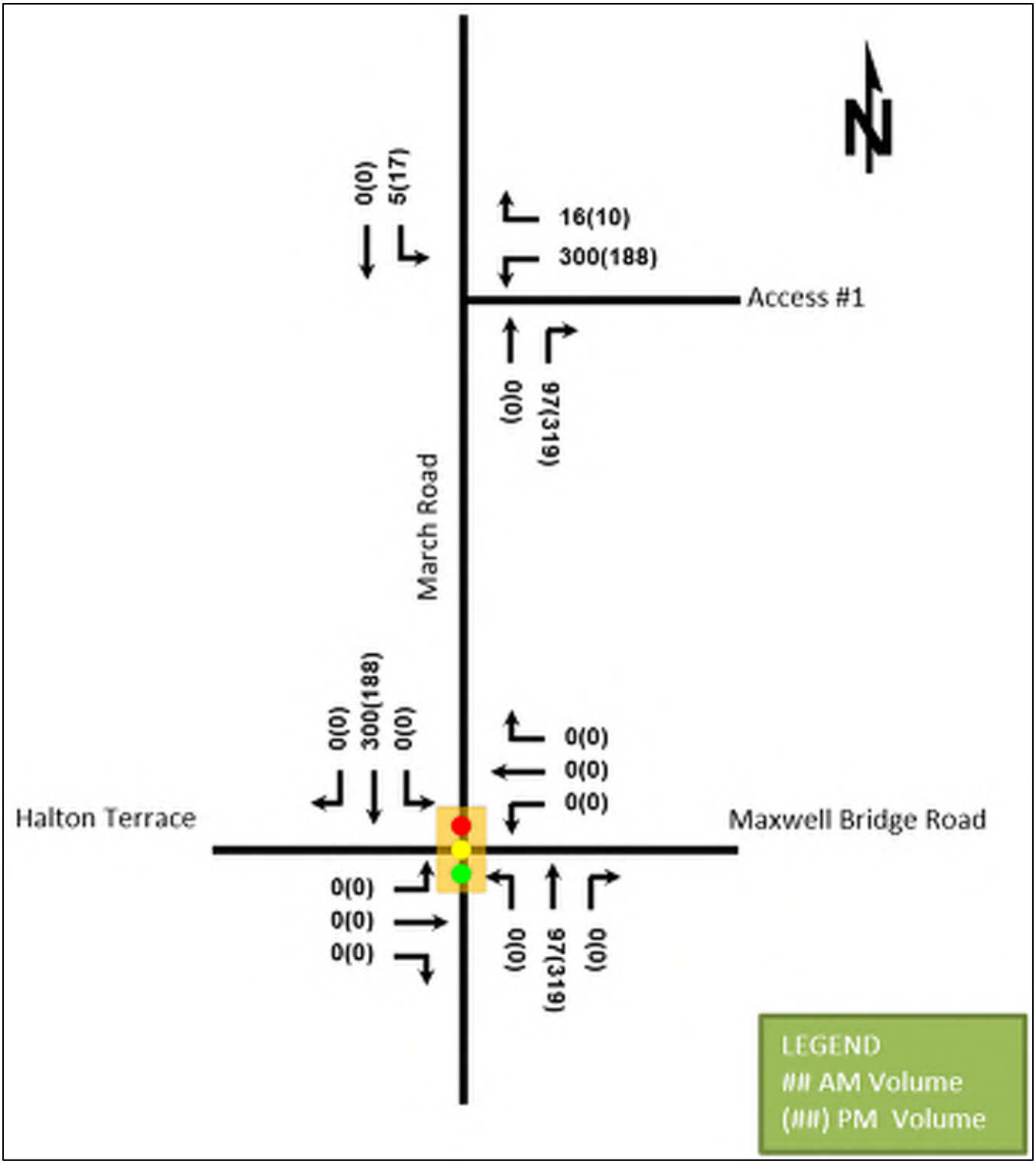
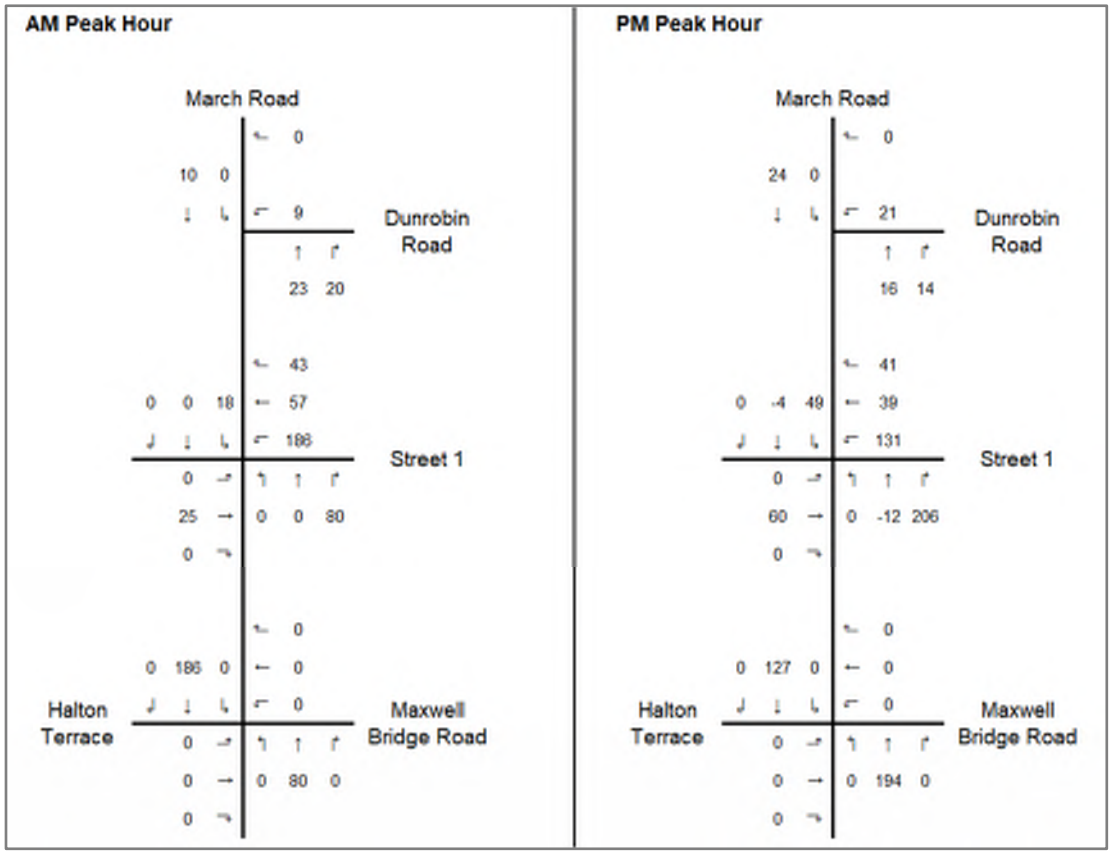


Figure 9 - Site Traffic Volumes



3.2 BACKGROUND NETWORK TRAVEL DEMAND

3.2.1 Transportation Network Plans

As outlined in **Table 3** in **Section 2.1.3.1**, the March Road widening and March Road Transit projects are anticipated to occur within the study area. In the absence of any definitive timelines in the TMP, these transportation improvements are not assumed to be in place for the study horizons of the subject TIA.

3.2.2 Background Growth

Existing traffic volumes were grown at a rate of 0.5% annually, non-compounding, to represent 2031 background traffic volumes. This rate of growth is consistent with the approved *Kanata North Community Design Plan Transportation Master Plan* (Novatech, June 2016).

The modal shares associated with the proposed development are anticipated to be consistent with the KNUEA CDP TMP. The transit modal share in the KNUEA CDP TMP was developed based on the 2031 target in the City's 2013 TMP for the Kanata/Stittsville area. The modal shares identified in the 2011 TRANS O-D Survey Report for the Kanata/Stittsville area were adjusted to reflect the increased transit modal share of 21%, with the auto driver share reduced accordingly. A comparison of the person trips by modal share between the proposed development and the assumed development in the KNUEA CDP TMP is provided in the following table.

Table 4: Site-Generated Trips by Modal Share

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
KNUEA CDP TMP							
Total Person Trips		**140**	**531**	**671**	**542**	**294**	**836**
Auto Driver	59%	82	314	396	320	173	493
Auto Passenger	15%	21	79	100	81	44	125
Transit	21%	30	111	141	114	62	176
Non-Auto	5%	7	27	34	27	15	42
Proposed Development							
Total Person Trips		**138**	**434**	**572**	**442**	**259**	**701**
Auto Driver	59%	82	256	338	261	153	414
Auto Passenger	15%	21	65	86	66	39	105
Transit	21%	29	92	121	93	54	147
Non-Auto	5%	6	21	27	22	13	35
Auto Driver (Difference)		**0**	**-58**	**-58**	**-59**	**-20**	**-79**
Auto Passenger (Difference)		**0**	**-14**	**-14**	**-15**	**-5**	**-20**
Transit (Difference)		**-1**	**-19**	**-20**	**-21**	**-8**	**-29**
Non-Auto (Difference)		**-1**	**-6**	**-7**	**-5**	**-2**	**-7**

Based on the foregoing, the proposed development is anticipated to generate approximately 60 to 80 less vehicle trips compared to the assumed development in the KNUEA CDP TMP.

3.1.2 Trip Distribution

The distribution of traffic generated by the proposed development is anticipated be consistent with the distribution presented in the KNUEA CDP TMP, and is summarized as follows:

- 85% to/from the south
- 15% to/from the north

As the trips generated by the proposed development are anticipated to be less than the assumed development in the KNUEA CDP TMP, the site traffic projections in the TMP are considered a

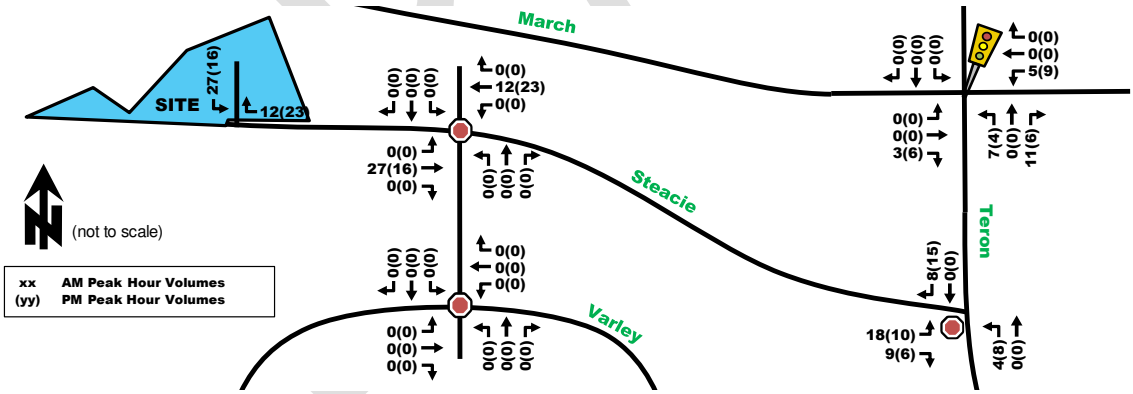
3.1.2. TRIP DISTRIBUTION AND ASSIGNMENT

Based on the 2011 OD Survey (Kanata - Stittsville district) and the location of adjacent arterial roadways and neighbourhoods, the distribution of site-generated traffic volumes was estimated as shown in **Figure 11**. Note that no trips were added to Varley Dr, but it has been identified as a potential unlikely route.

Figure 11: Site Generated Traffic Percent Distribution

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 12**, for the total site-generated traffic for custom mode share.

Figure 12: Site-Generated Traffic Using Custom Mode Shares



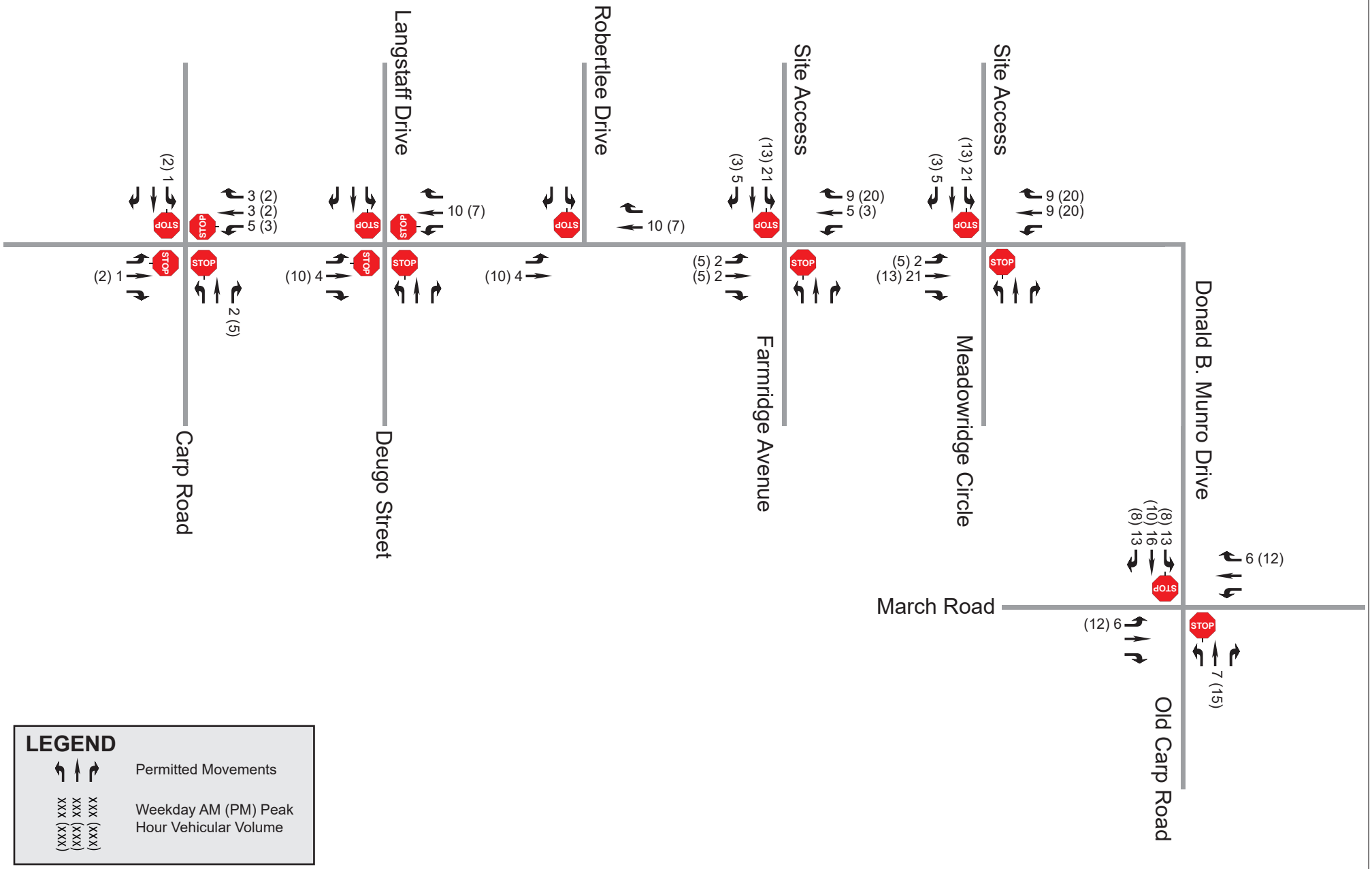
3.2. Background Network Traffic

3.2.1. TRANSPORTATION NETWORK PLANS

Refer to Section 2.1.3: Planned Study Area Transportation Network Changes.

3.2.2. BACKGROUND GROWTH

The background traffic growth through the immediate study area (summarized in **Table 9**) was calculated based on historical traffic count data (years 2009, 2010, 2011, 2017 and 2023) provided by the City of Ottawa at the March/Teron intersection. Detailed analysis of the background growth is included in **Appendix E**.



IBI

232 Donald B. Munro Drive
Transportation Impact Assessment

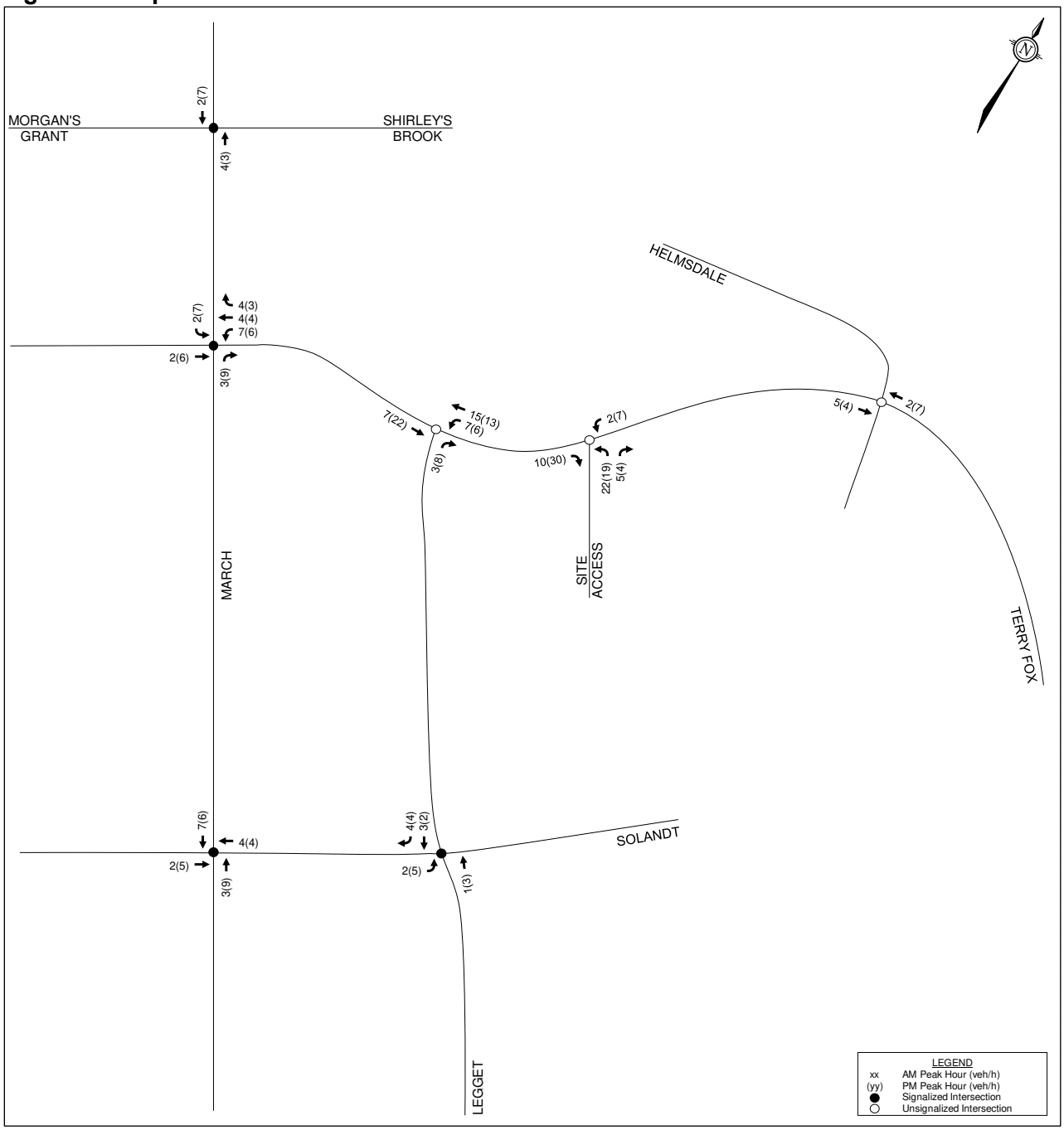
Exhibit 5:
Site-Generated
Traffic

PROJECT No. 131947

SCALE: N.T.S.

- Other area development-generated traffic volumes in 2029 are shown in **Figure 12**;
- Background traffic volumes in 2024 are shown in **Figure 13**;
- Background traffic volumes in 2029 are shown in **Figure 14**;
- Total traffic volumes in 2024 are shown in **Figure 15**;
- Total traffic volumes in 2029 are shown in **Figure 16**.

Figure 8: Proposed Site-Generated Volumes



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

4.5. TRAFFIC DISTRIBUTION AND ASSIGNMENT

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

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

Figure 6: Site-Generated Peak Hour Traffic Assignment

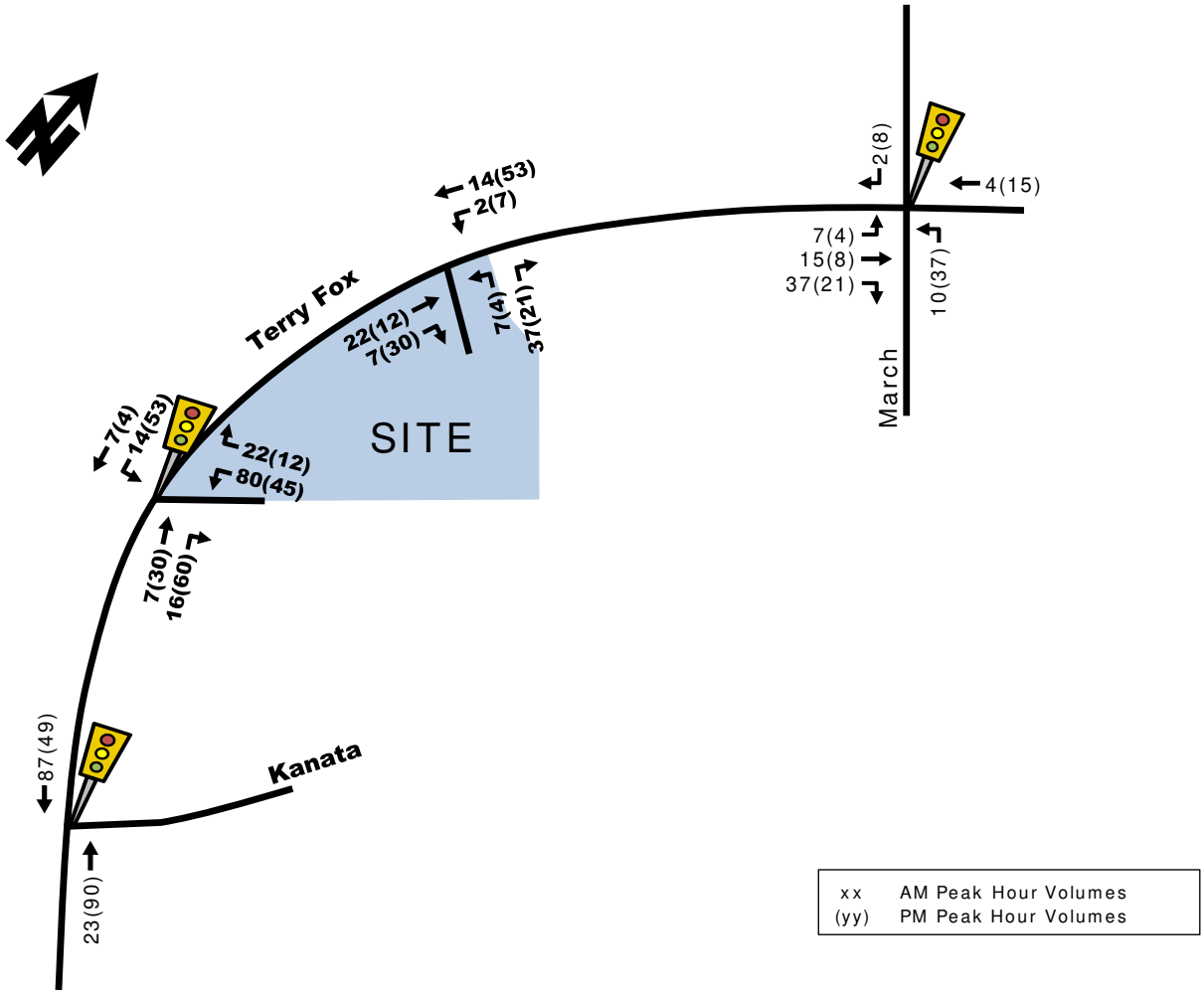


Figure 10: Net Site-Generated Volumes

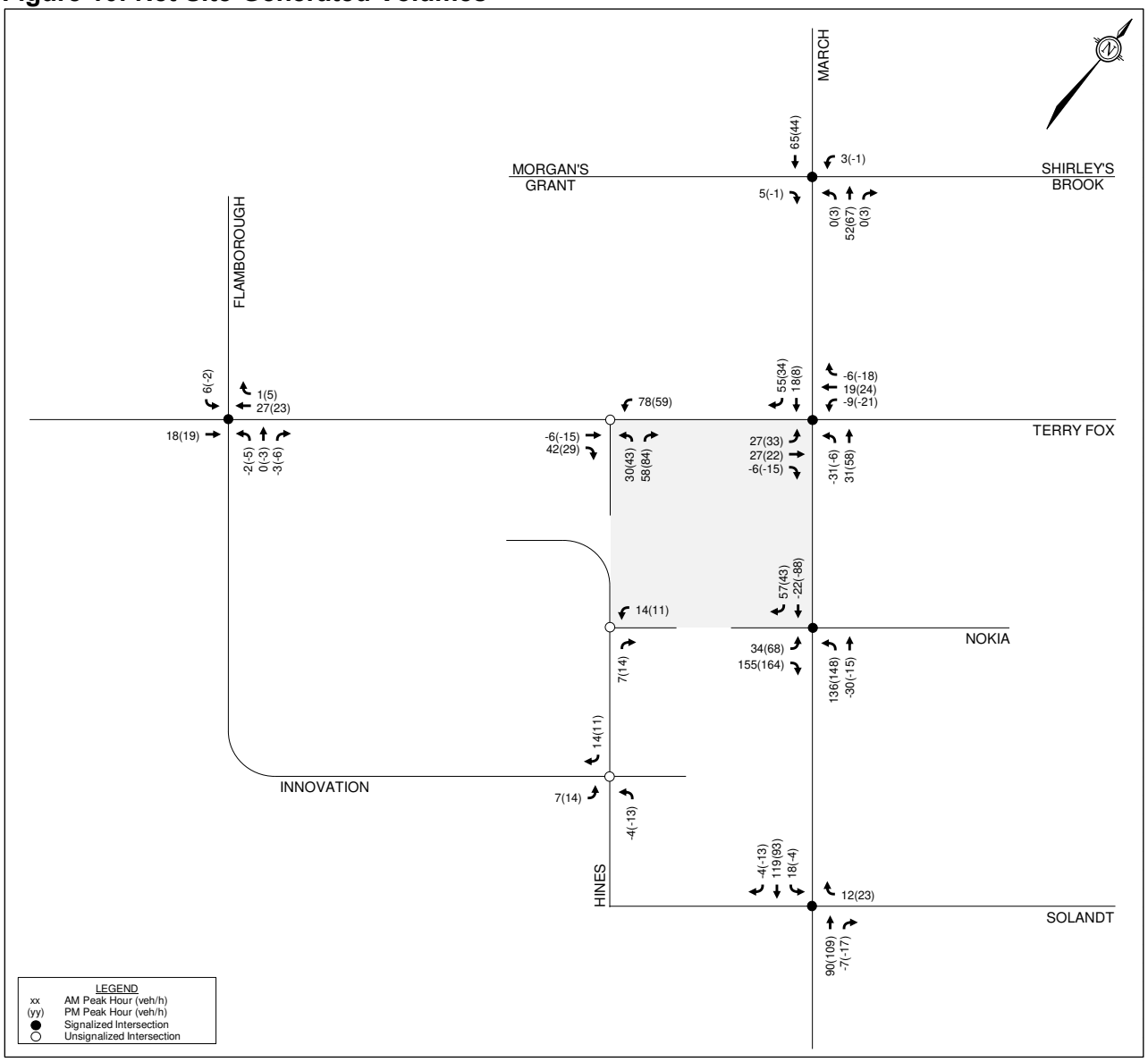


Figure 13 - Site Generated Traffic Volumes – Residential Land Use

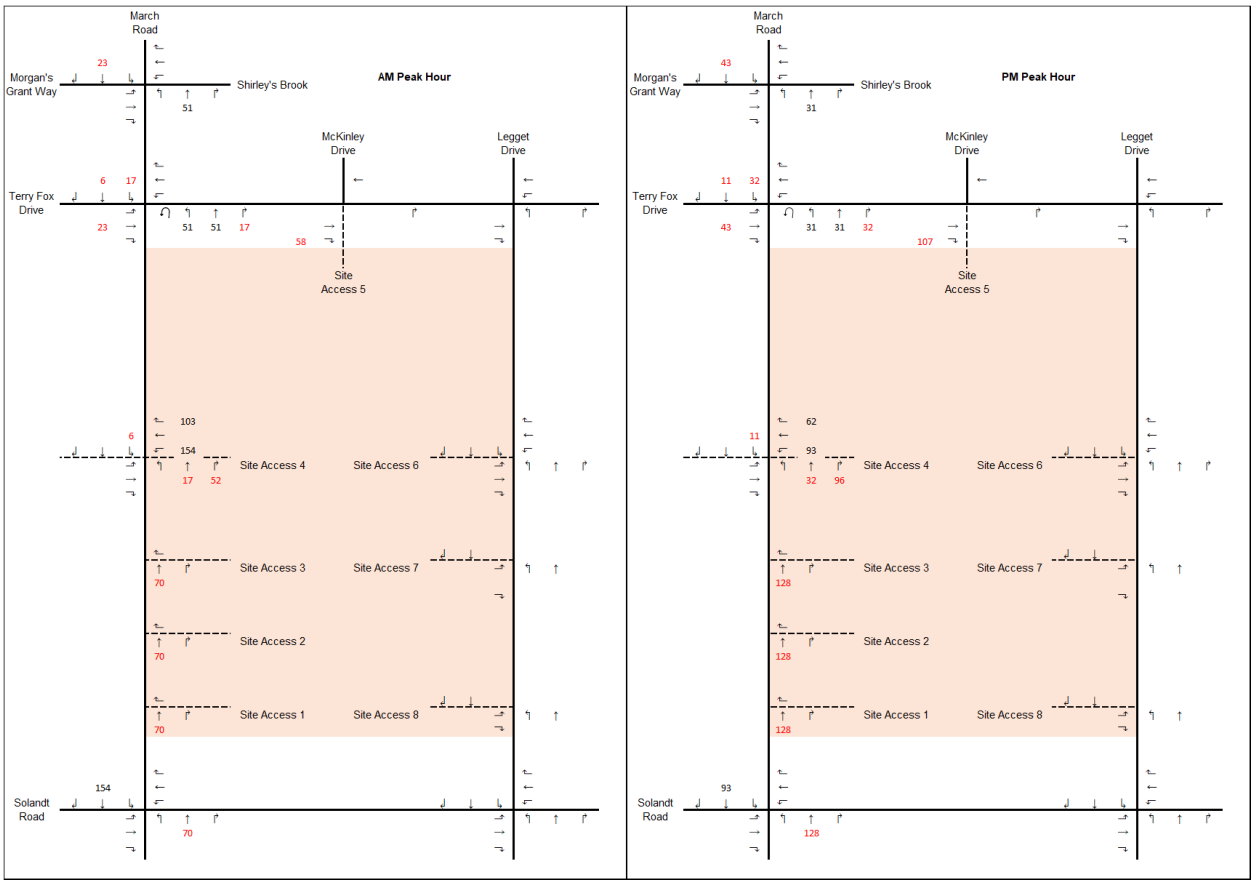


Figure 9 - Projected Site-Generated Traffic

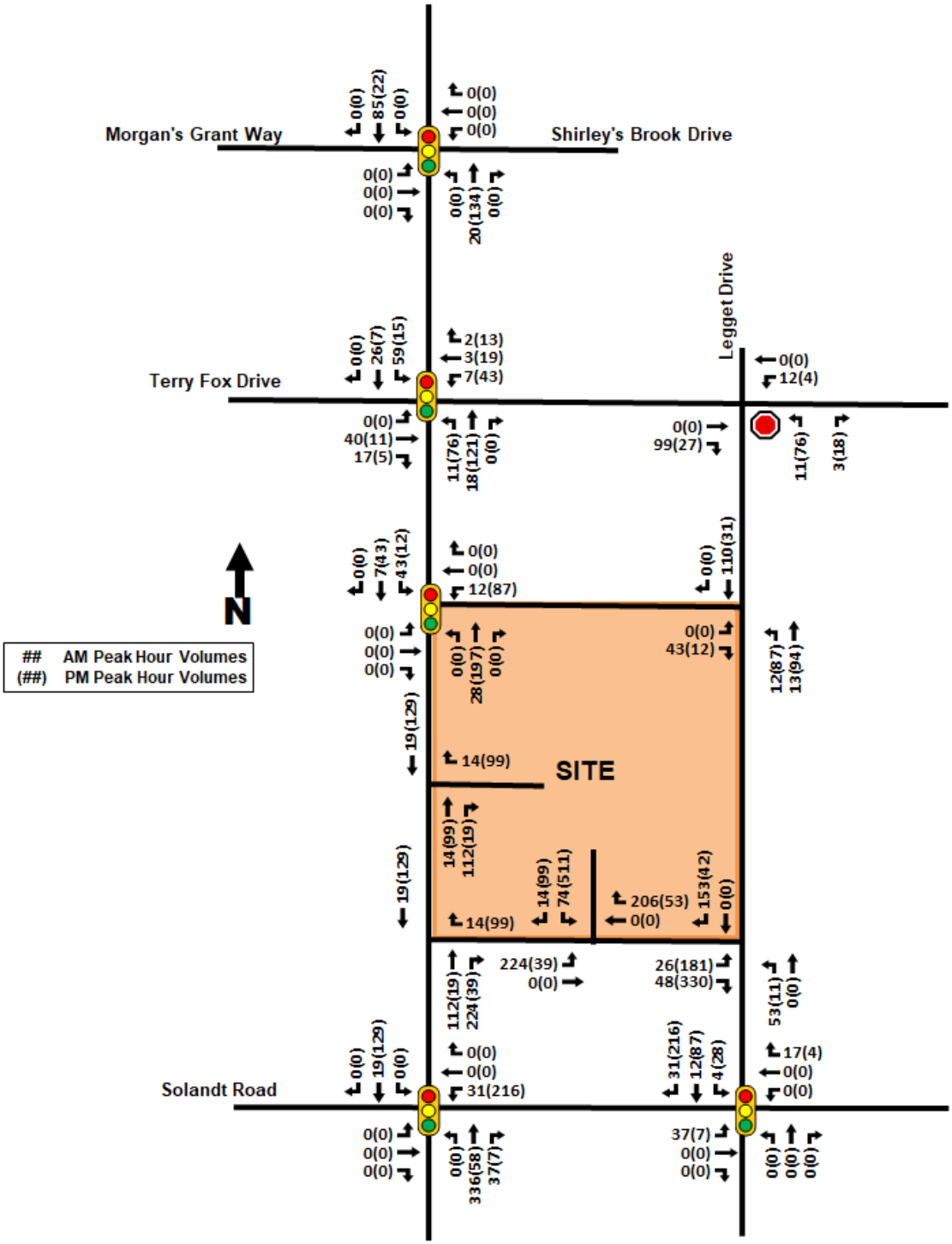


Figure 22: Net New Site Generation Auto Volumes

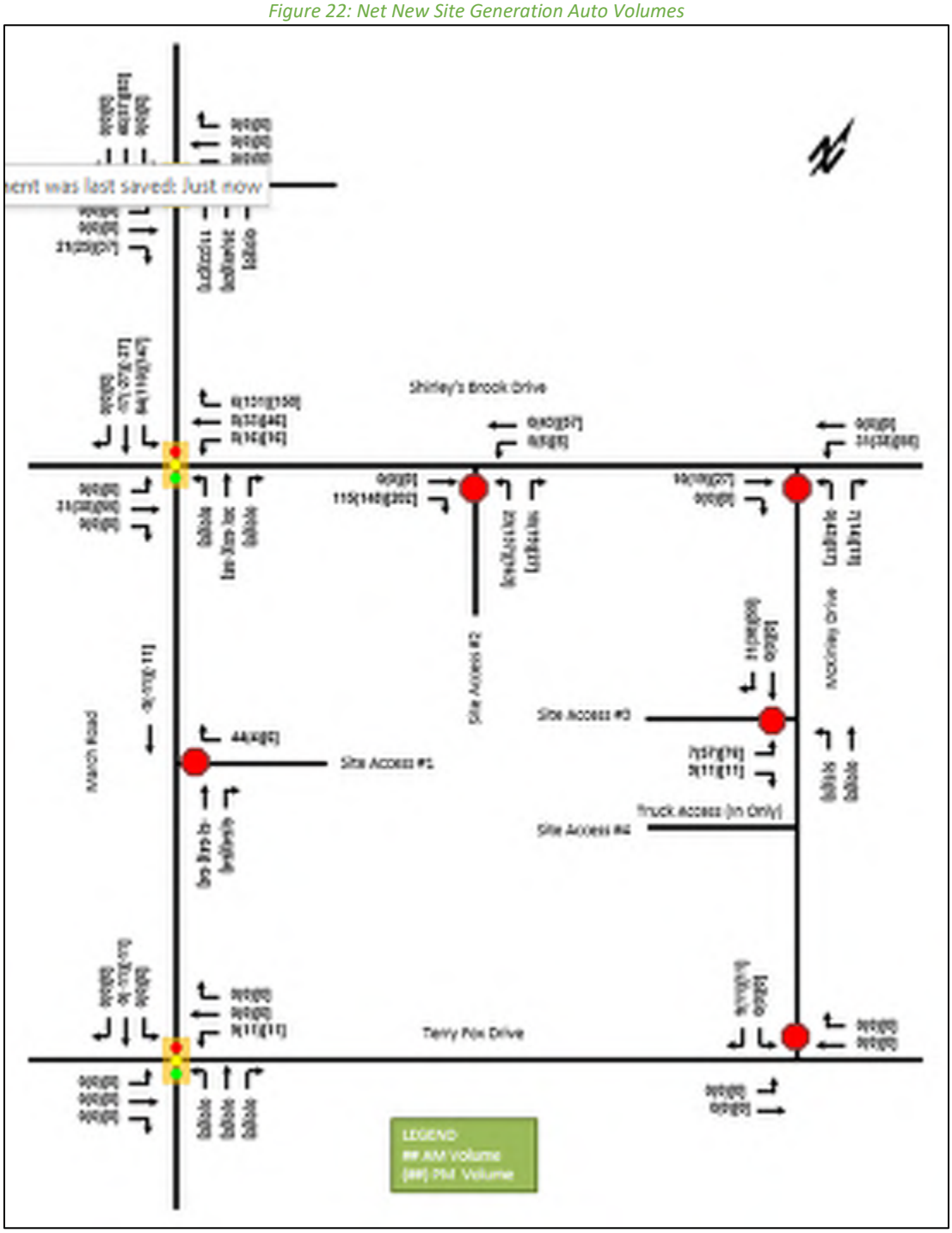
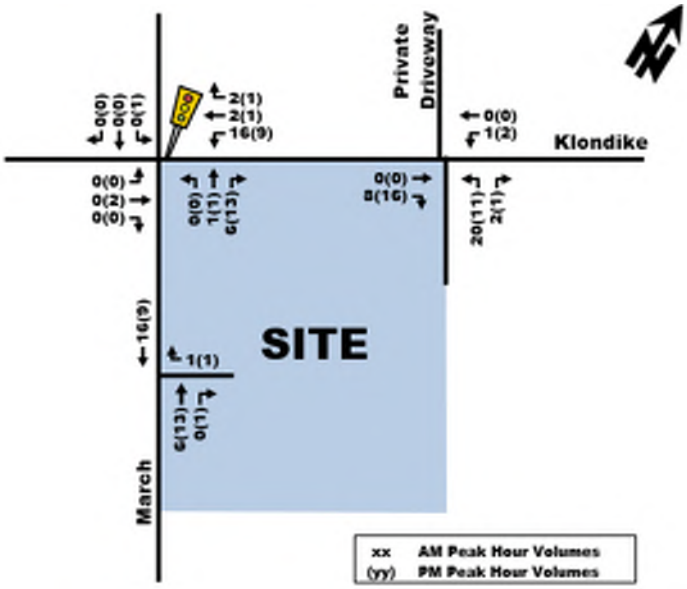


Table 2: Site Person Trip Generation Using OD-Survey Mode Share – Updated

Travel Mode	AM Mode Share	AM Peak (persons/h)			PM Peak (persons/h)		
		In	Out	Total	In	Out	Total
Auto Driver	50%	9	23	32	19	13	32
Auto Passenger	10%	1	5	6	4	3	7
Transit	25%	4	13	17	9	7	16
Non-motorized	15%	3	7	10	5	5	10
Total People Trips	100%	17	48	65	37	28	65
Total 'New' High-Rise Condominium (2023) Auto Trips		9	23	32	19	13	32

The total two-way anticipated site generated person trips are 65 for the AM and PM peak hours, and the total two-way vehicle generated trips are 32 trips for the AM and PM peak hours. Figure 1, below shows the updated vehicle volumes assigned to the local roadways within the study area.

Figure 1: Updated Total Site Generated Vehicle Trips



2.3. Difference in Forecasted Trips

To understand the difference between the previous Site Plan and the updated Site Plan with regard to trip generation, the forecasted volumes from the original TIA were compared to those associated with the updated Site Plan. Table 3 summarizes the difference (Table 2 - Table 1 values).

Figure 24: Net New Site Generation Auto Volumes 2022

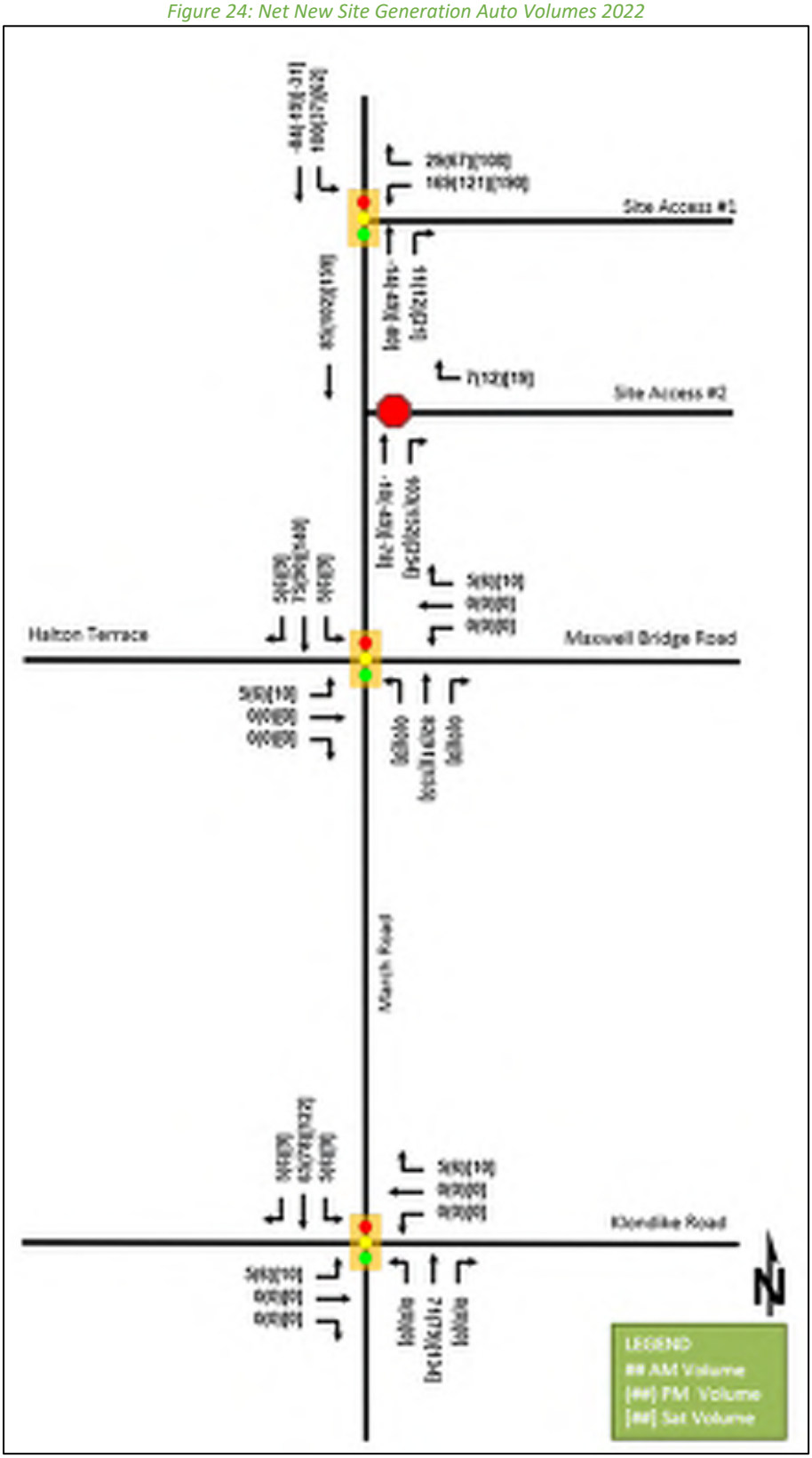


Figure 9: Proposed Site-Generated Traffic

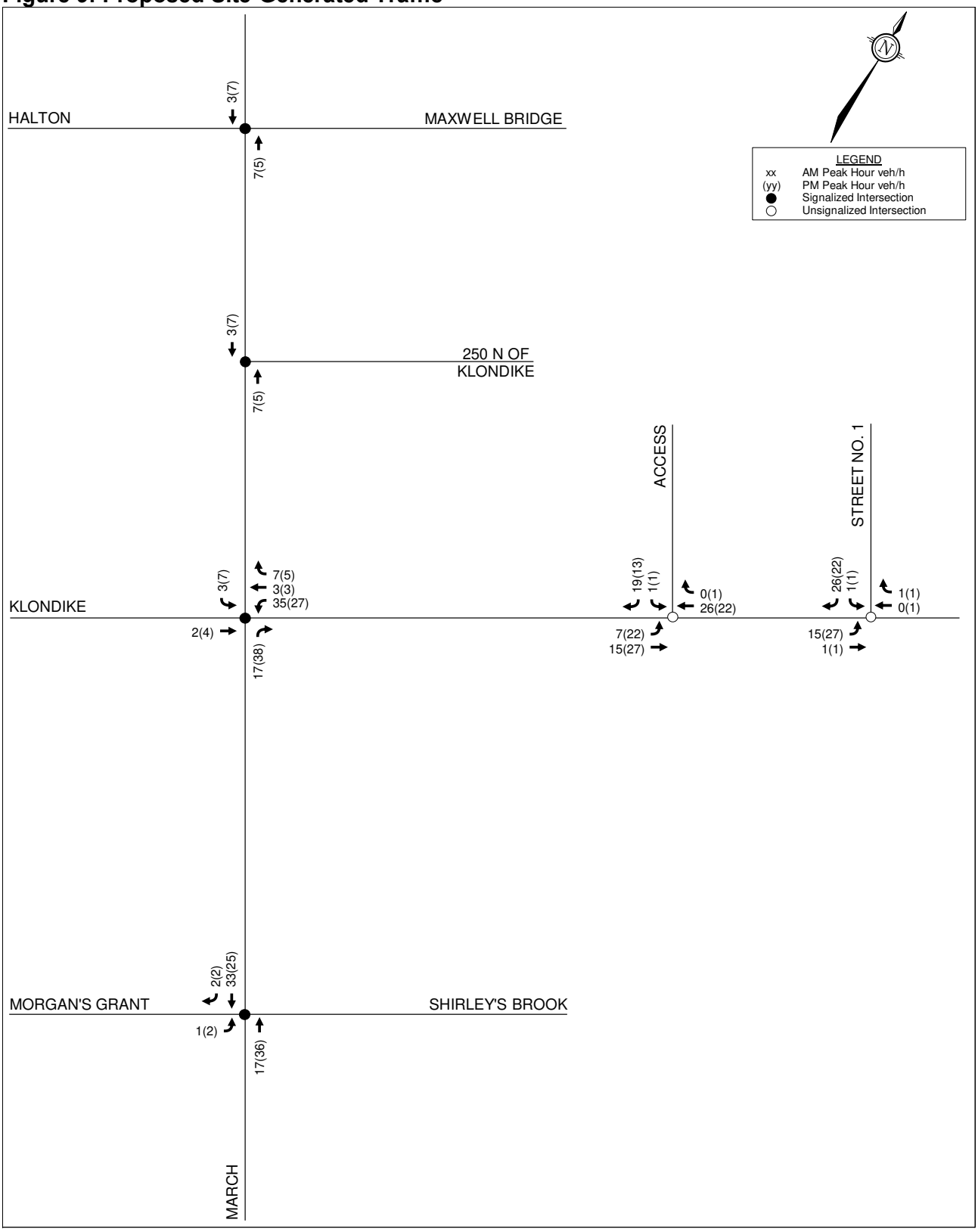
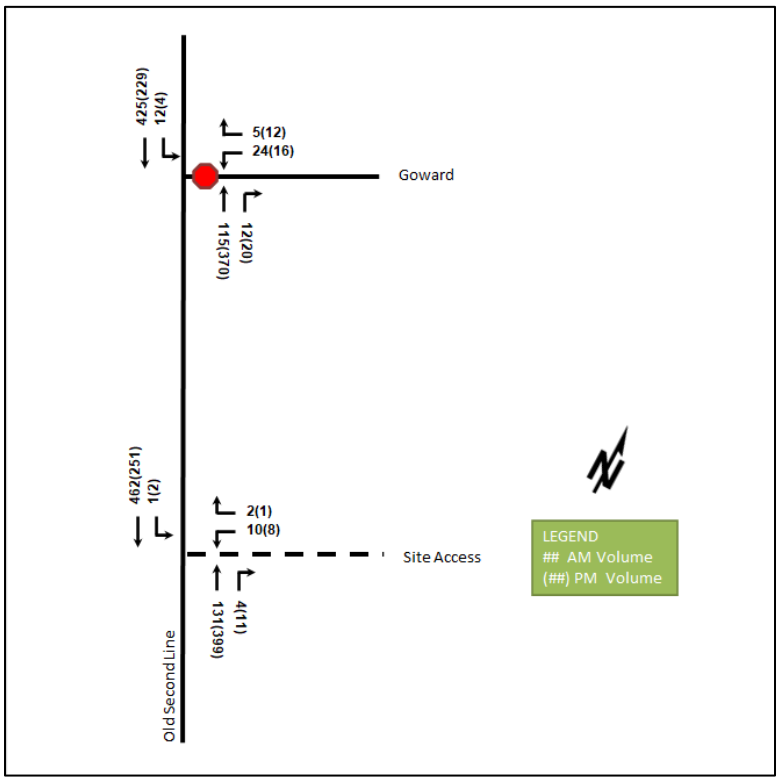


Figure 1: Future Total 2025 Volumes



3 Left-Turn Lane Warrant Analysis

The left-turn lane warrants were examined using the intersection volumes projected at the 2025 horizon. The completed warrants by peak hour are illustrated below in Figure 2.

Figure 2: AM and PM Peak Hour Left-turn Lane Warrant Analysis

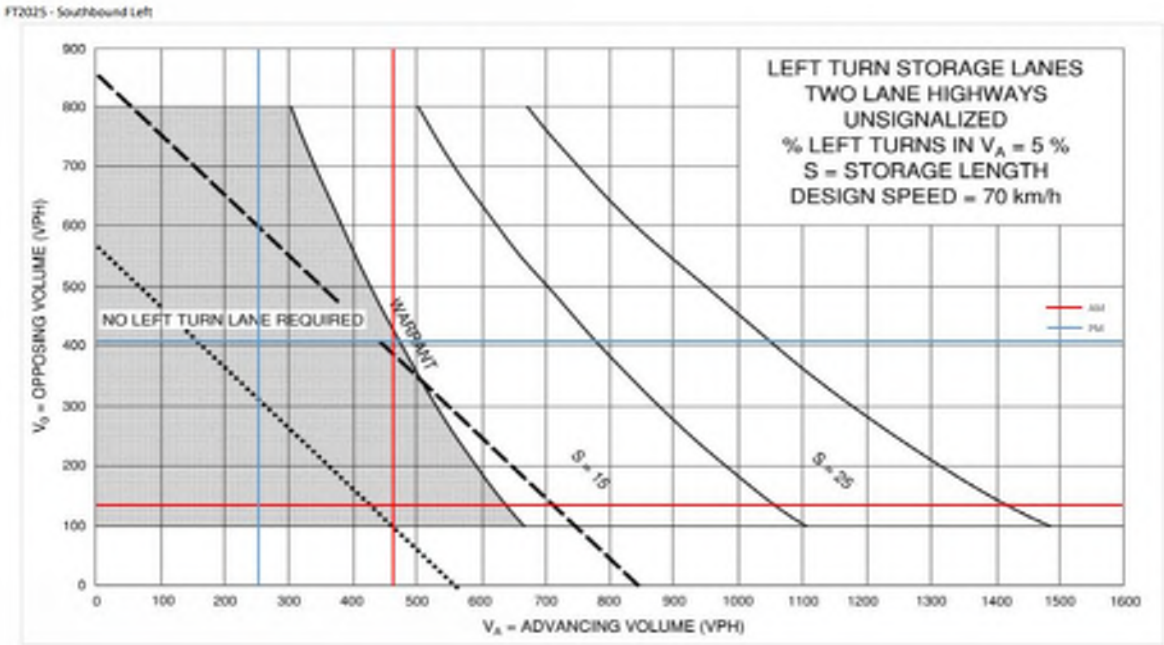
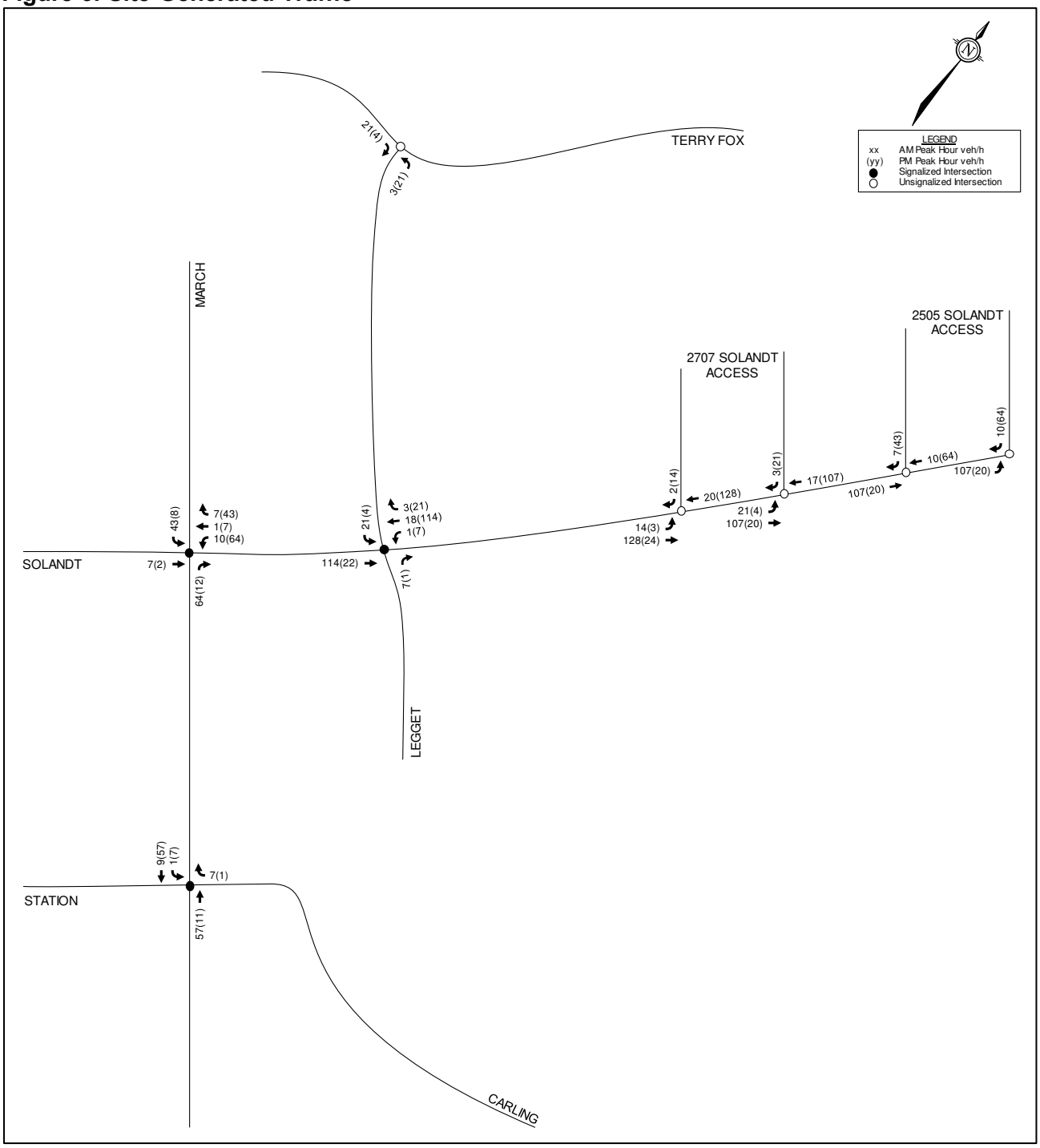


Figure 3-1. Vehicle Trips Generated by Development

Figure 6: Site-Generated Traffic



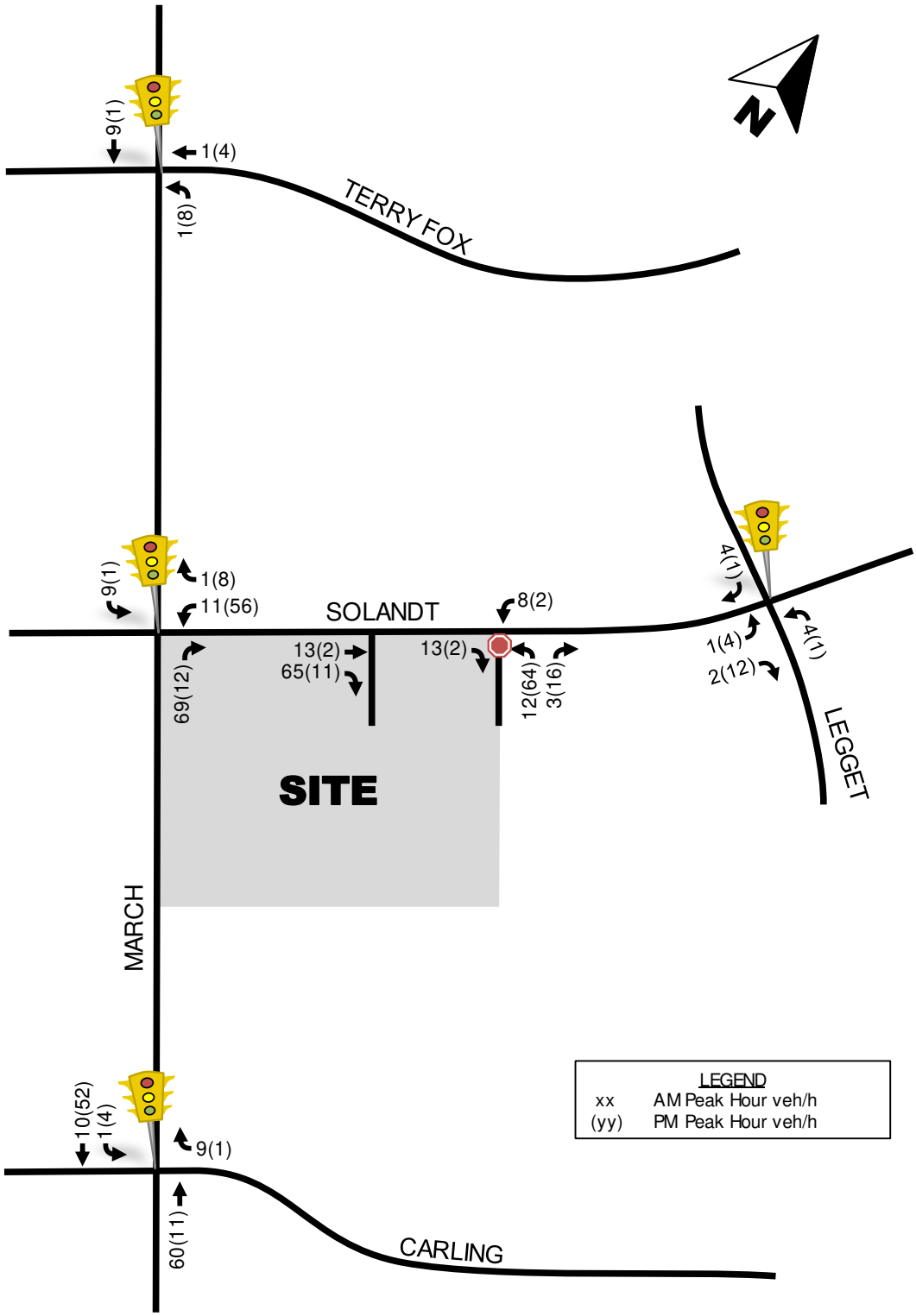


Figure 7: Projected Site-Generated Traffic

APPENDIX J

Long-Range Model Snapshots

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Old Second Line Road & March Road

2011 Model - Basecase

N/A

User Initials: MANS
Plot Prepared: August 29, 2023
EMME Scenario: 21713

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

100 1000

N

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

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

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

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Old Second Line Road & March Road

2031 Model - Basecase

N/A

User Initials: MANS
Plot Prepared: August 29, 2023
EMME Scenario: 21717

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

100 1000

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 Nov, 2024

AM Peak Hour Total Traffic Volume

South March UEA OPA

2046 Base Model

Please note total volume includes passenger car and truck volumes

User Initials: DG
Plot Prepared: Dec, 2024
EMME Scenario:46001

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

100 1000

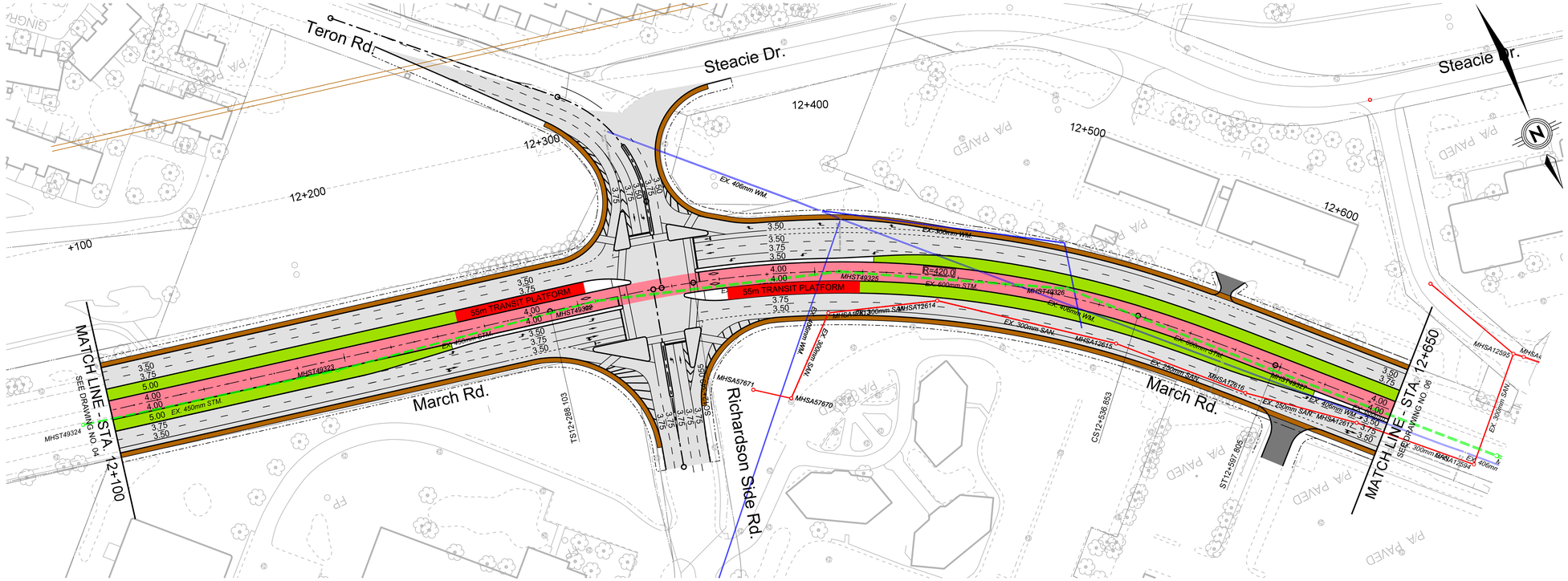
The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and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

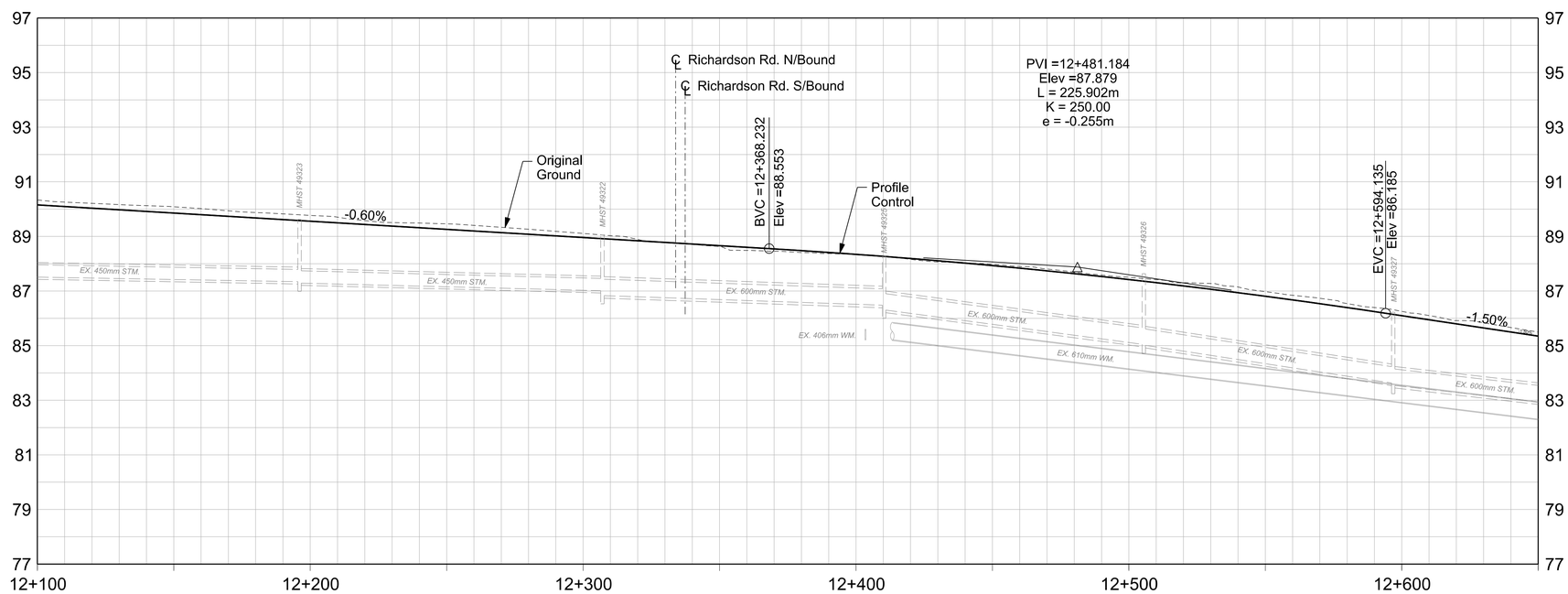
Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena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

APPENDIX K

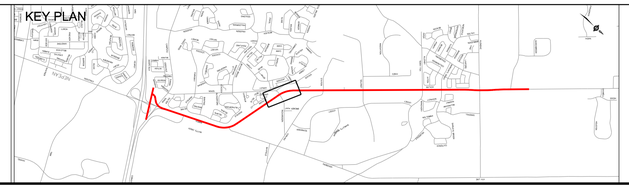
March Road BRT Functional Design





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO O.LD.CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN



LEGEND:

	TRANSIT STATION		TRANSIT CENTRELINE
	TRANSIT LANES		PROPOSED RIGHT-OF- WAY
	TRAFFIC LANES		STRUCTURE OUTLINE
	SIDEWALK		PEDESTRIAN BRIDGE
	EDGE OF PAVEMENT		BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG

Scale: HORIZONTAL 0m 10 20 40 60 / VERTICAL 1 2 4 6

CAD File Name: TO3065TOD-2.0-005.DGN

Plot Date: 30/09/2013

Ottawa

Kanata North Transitway

(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.:

Revision 01

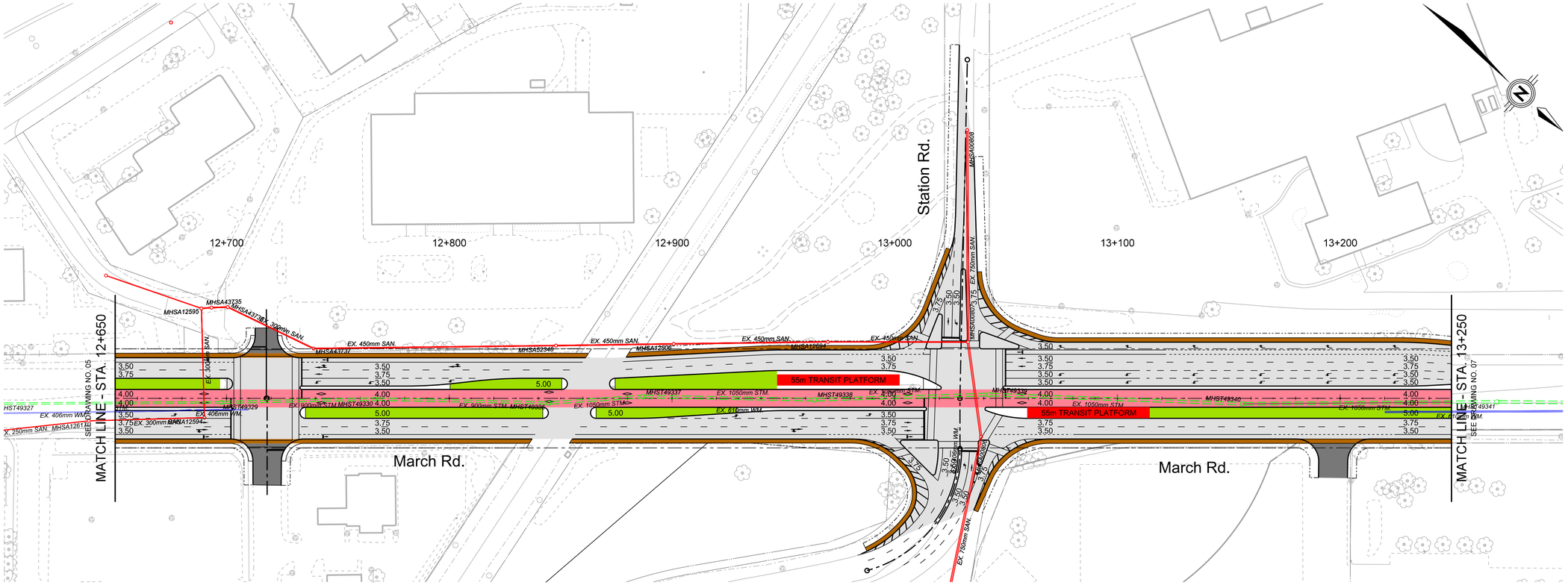
Sheet No. 05

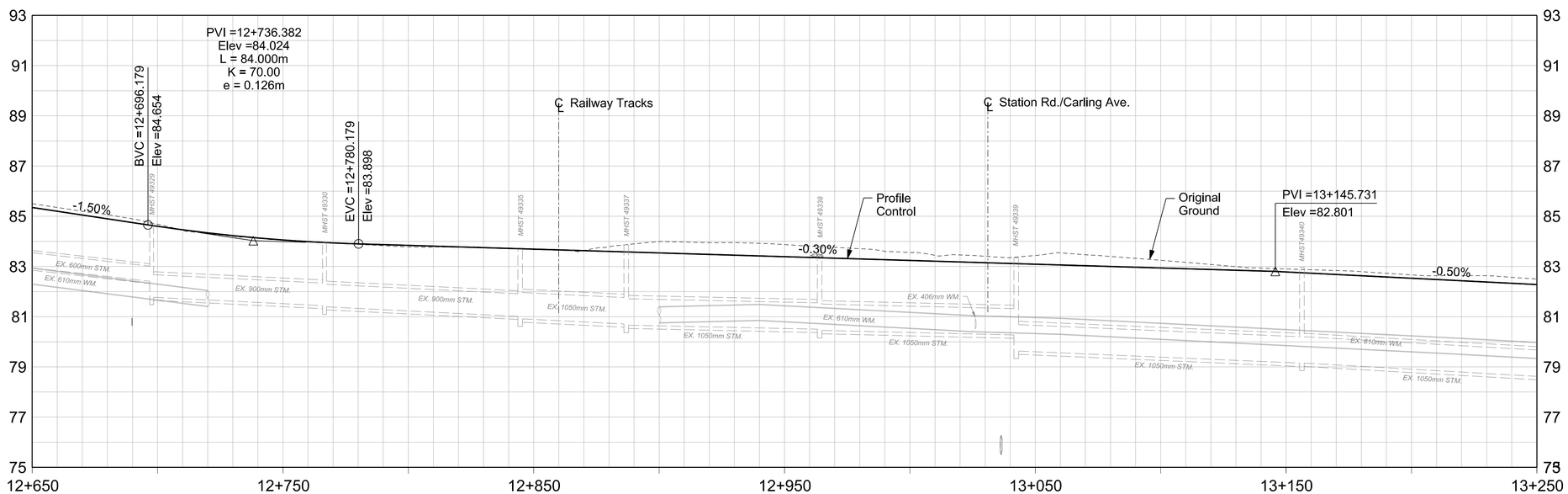
TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 30/09/2013 2:11:10 PM

Last Saved: 30/09/2013 12:59:49 PM

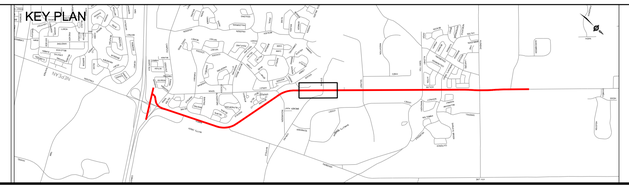
Consultant's Information: H:\SOT\O3065\TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-005.Dgn





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD
STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN



LEGEND:
- TRANSIT STATION
- TRANSIT LANES
- TRAFFIC LANES
- SIDEWALK
- EDGE OF PAVEMENT
- TRANSIT CENTRELINE
- PROPOSED RIGHT-OF- WAY
- STRUCTURE OUTLINE
- PEDESTRIAN BRIDGE
- BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG
Scale: HORIZONTAL 0m 10 20 40 60 / VERTICAL 1 2 4 6		
CAD File Name: TO3065TOD-2.0-006.DGN		Plot Date: 30/09/2013

Ottawa

Kanata North Transitway
(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

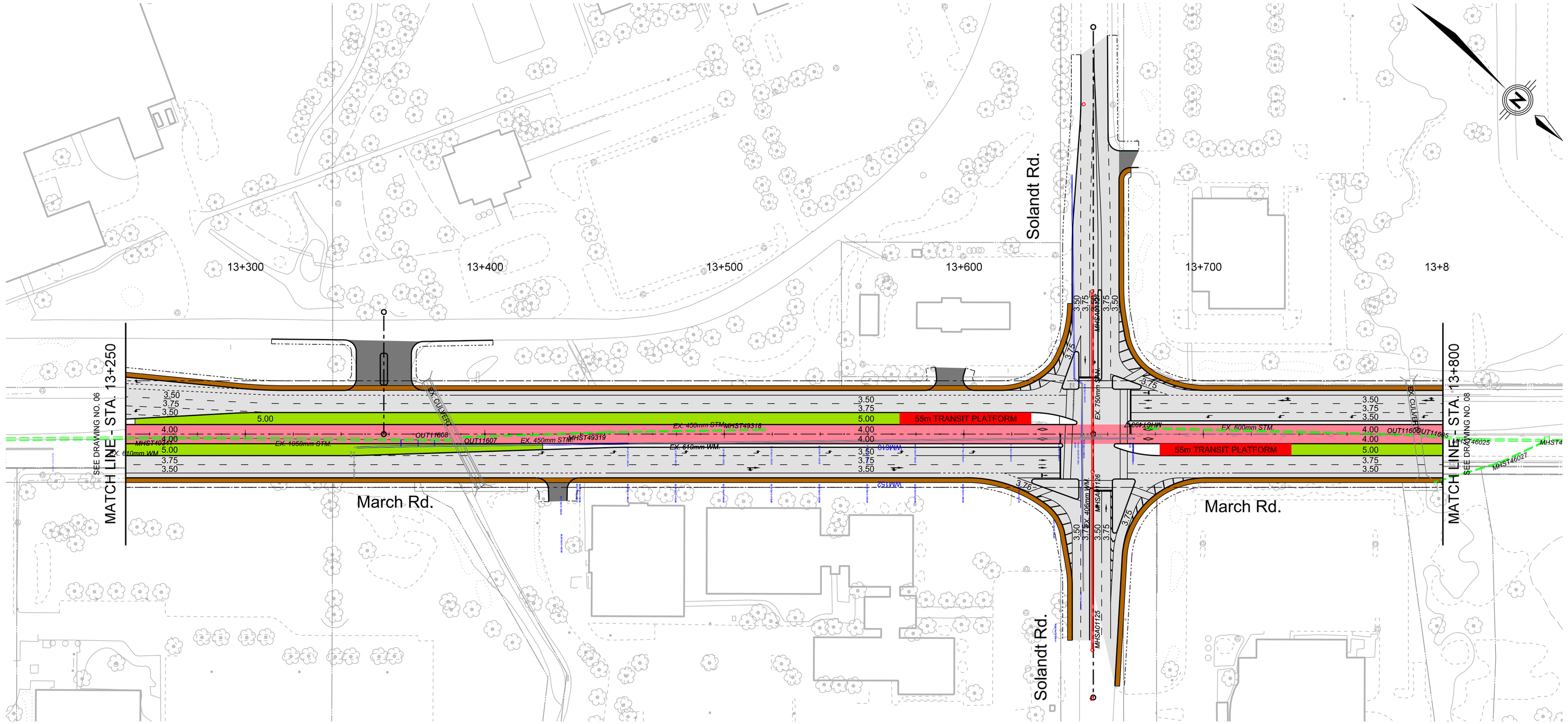
Drawings No.: | Revision 01 | Sheet No. 06

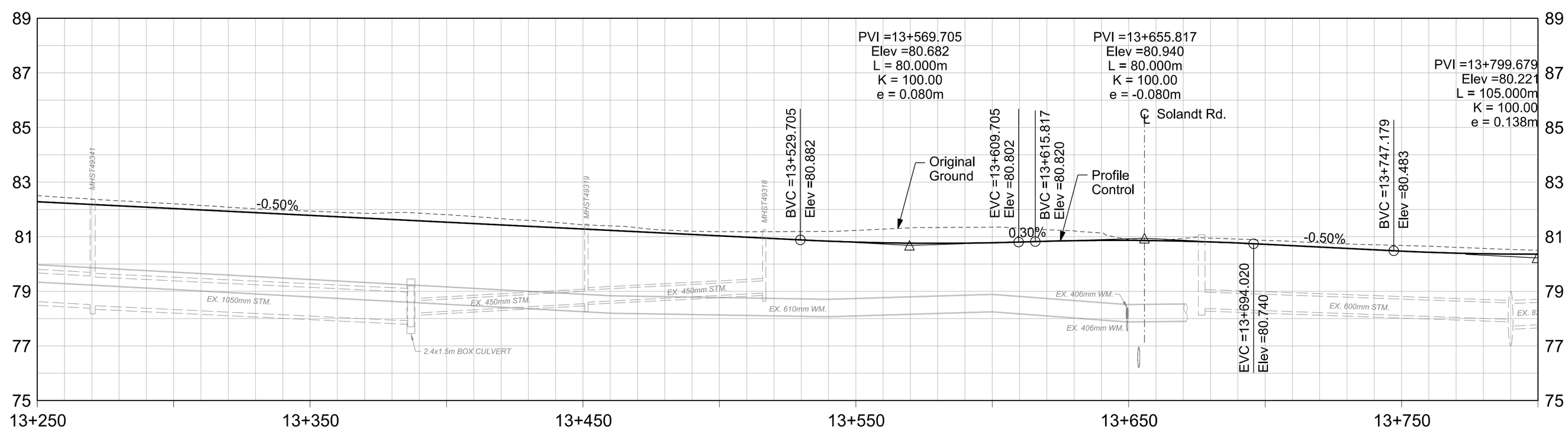
TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 30/09/2013 2:11:53 PM

Last Saved: 30/09/2013 1:00:19 PM

Consultant's Information: H:\SOT\O3065TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-006.Dgn





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):

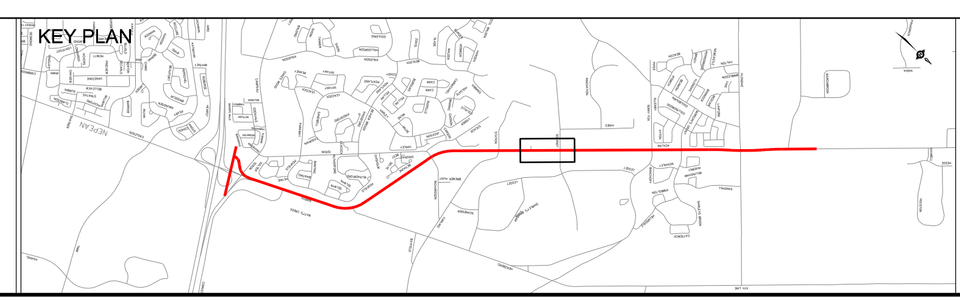
MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD

-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION

-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN



LEGEND:

- TRANSIT STATION
- TRANSIT LANES
- TRAFFIC LANES
- SIDEWALK
- EDGE OF PAVEMENT
- TRANSIT CENTRELINE
- PROPOSED RIGHT-OF- WAY
- STRUCTURE OUTLINE
- PEDESTRIAN BRIDGE
- BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG

Scale: HORIZONTAL 0m 10 20 40 60; VERTICAL 1 2 4 6

CAD File Name: TO3065TOD-2.0-007.DGN

Plot Date: 30/09/2013

Ottawa

Kanata North Transitway

(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.:

Revision 01

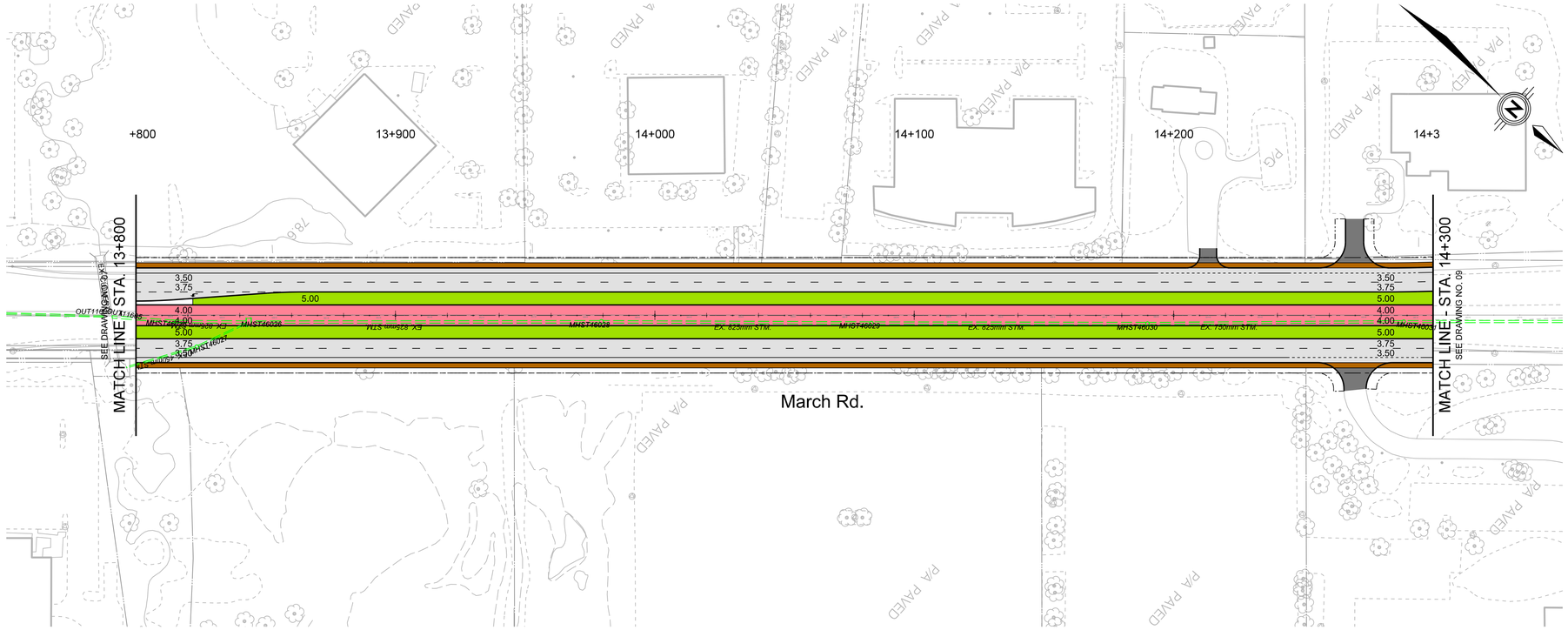
Sheet No. 07

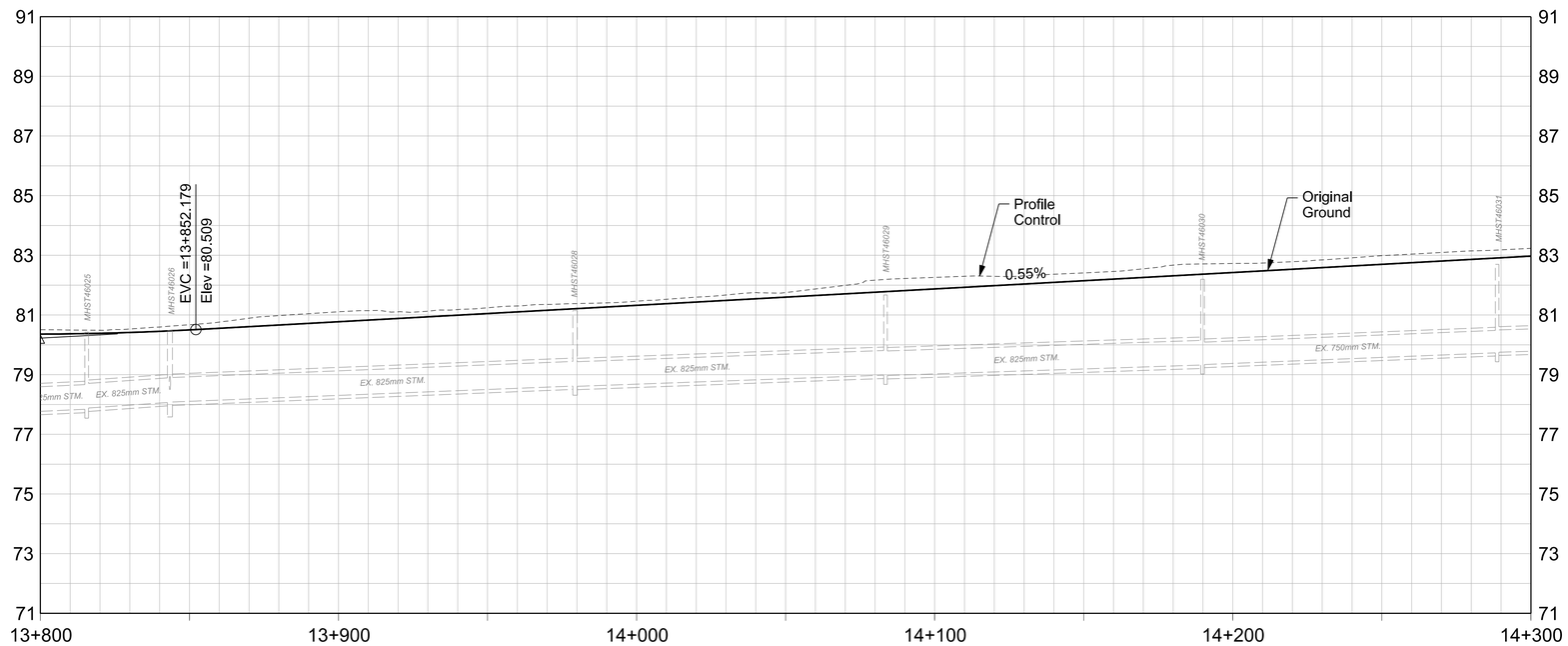
TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 30/09/2013 2:12:29 PM

Last Saved: 30/09/2013 1:00:55 PM

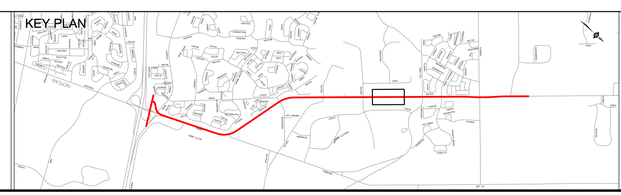
Consultant's Information: H:\SOITO3065\TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-007.Dgn





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO Q.ED.CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN



LEGEND:

TRANSIT STATION	TRANSIT CENTRELINE
TRANSIT LANES	PROPOSED RIGHT-OF- WAY
TRAFFIC LANES	STRUCTURE OUTLINE
SIDEWALK	PEDESTRIAN BRIDGE
EDGE OF PAVEMENT	BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG

Scale: HORIZONTAL 0m 10 20 40 60 / VERTICAL 1 2 4 6

CAD File Name: TO3065TOD-2.0-008.DGN

Plot Date: 30/09/2013

Ottawa

Kanata North Transitway
(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.:

Revision 01

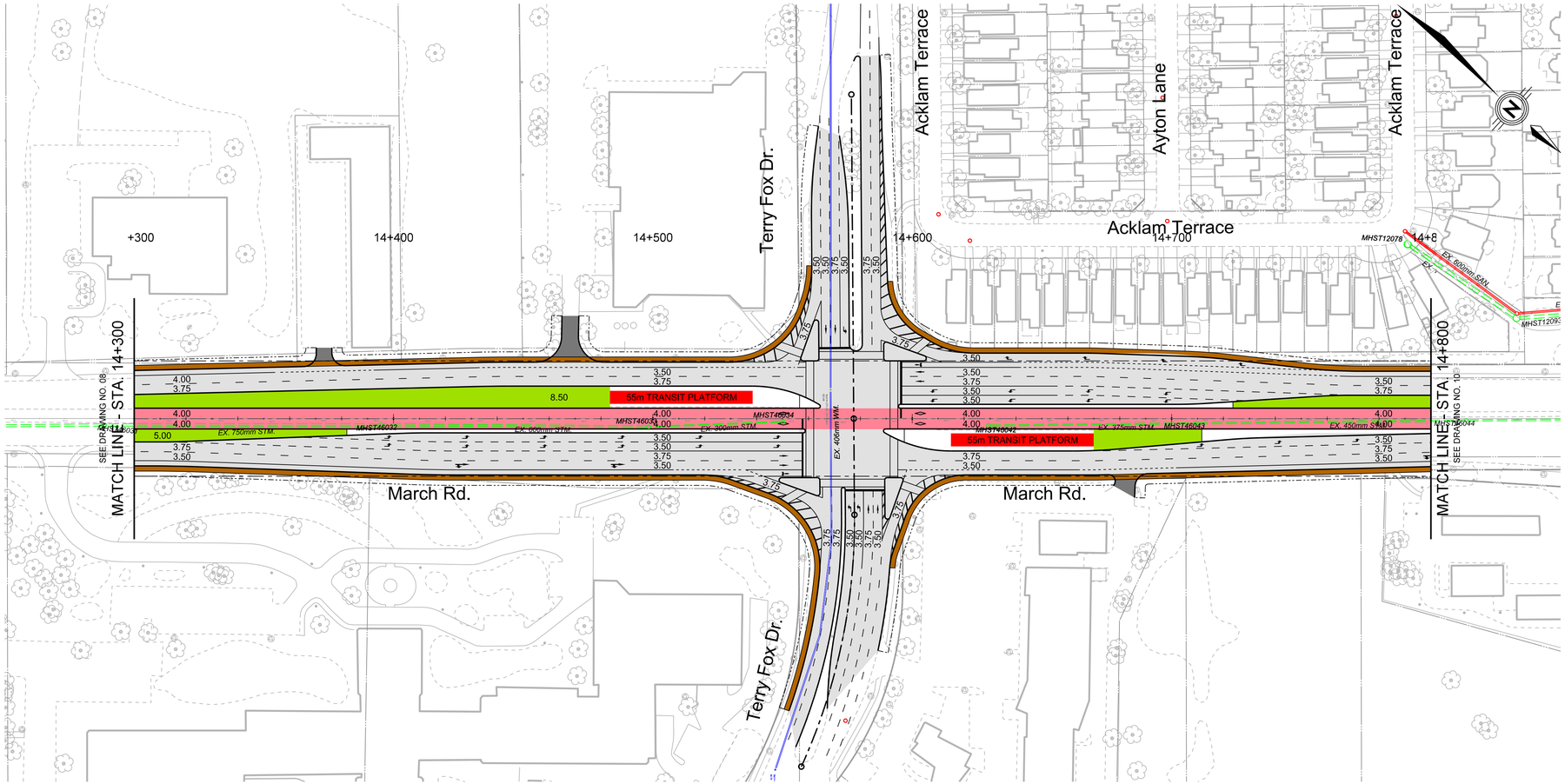
Sheet No. 08

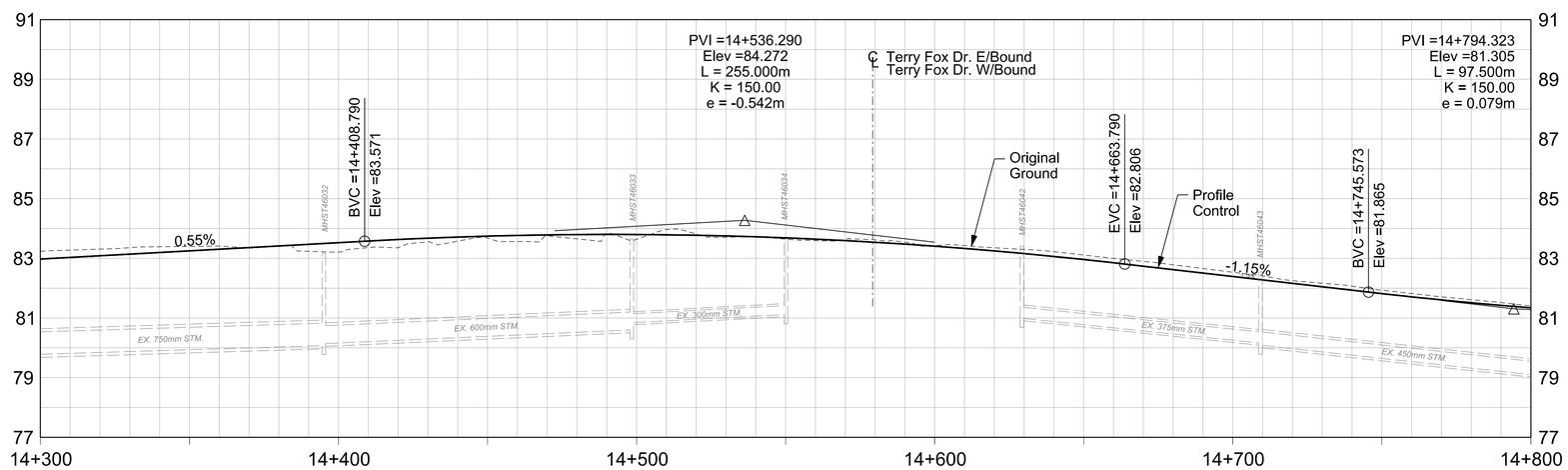
TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 30/09/2013 2:13:01 PM

Last Saved: 30/09/2013 1:01:36 PM

Consultant's Information: H:\SOT\O3065T\OD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-008.Dgn





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD
STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN

LEGEND:

	TRANSIT STATION		TRANSIT CENTRELINE
	TRANSIT LANES		PROPOSED RIGHT-OF- WAY
	TRAFFIC LANES		STRUCTURE OUTLINE
	SIDEWALK		PEDESTRIAN BRIDGE
	EDGE OF PAVEMENT		BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG
Scale: HORIZONTAL 0m 10 20 40 60 / 1 2 4 6 VERTICAL		
CAD File Name: TO3065TOD-2.0-009.DGN		Plot Date: 30/09/2013

Ottawa

Kanata North Transitway
(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

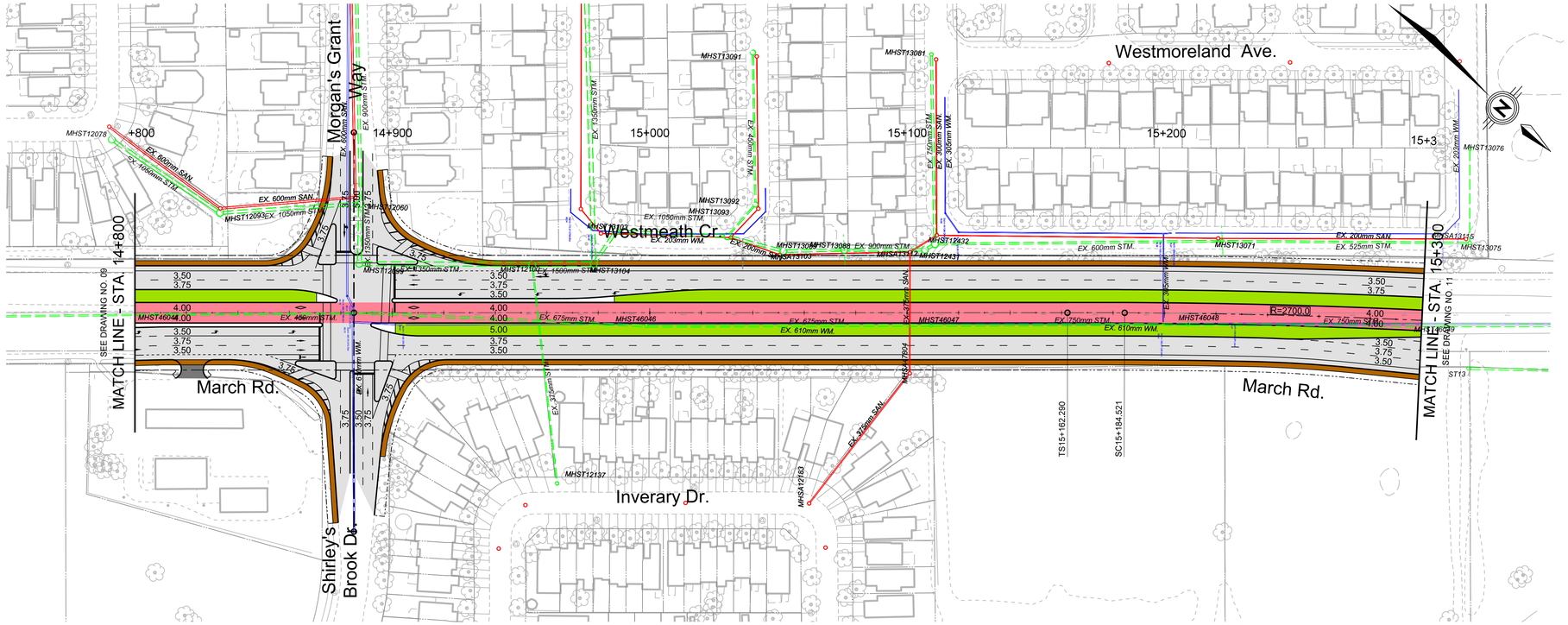
Drawings No.: | Revision 01 | Sheet No. 09

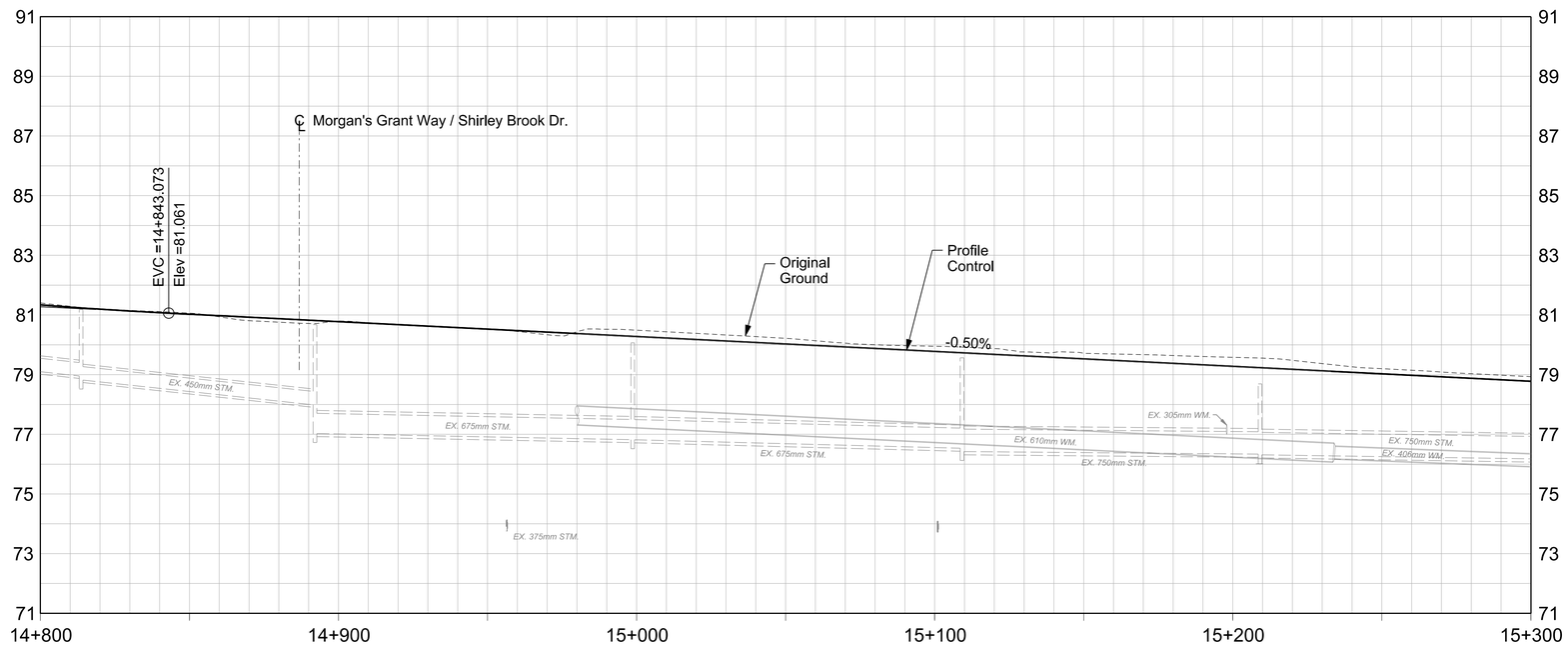
TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 30/09/2013 2:13:29 PM

Last Saved: 30/09/2013 1:02:58 PM

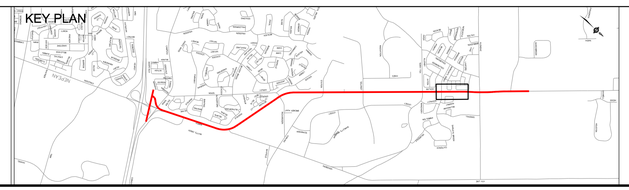
Consultant's Information: H:\SOLTO3065\TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-009.Dgn





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN



LEGEND:

TRANSIT STATION	TRANSIT CENTRELINE
TRANSIT LANES	PROPOSED RIGHT-OF- WAY
TRAFFIC LANES	STRUCTURE OUTLINE
SIDEWALK	PEDESTRIAN BRIDGE
EDGE OF PAVEMENT	BRIDGE ACCESS POINT SEE SHEET 13

Delcan

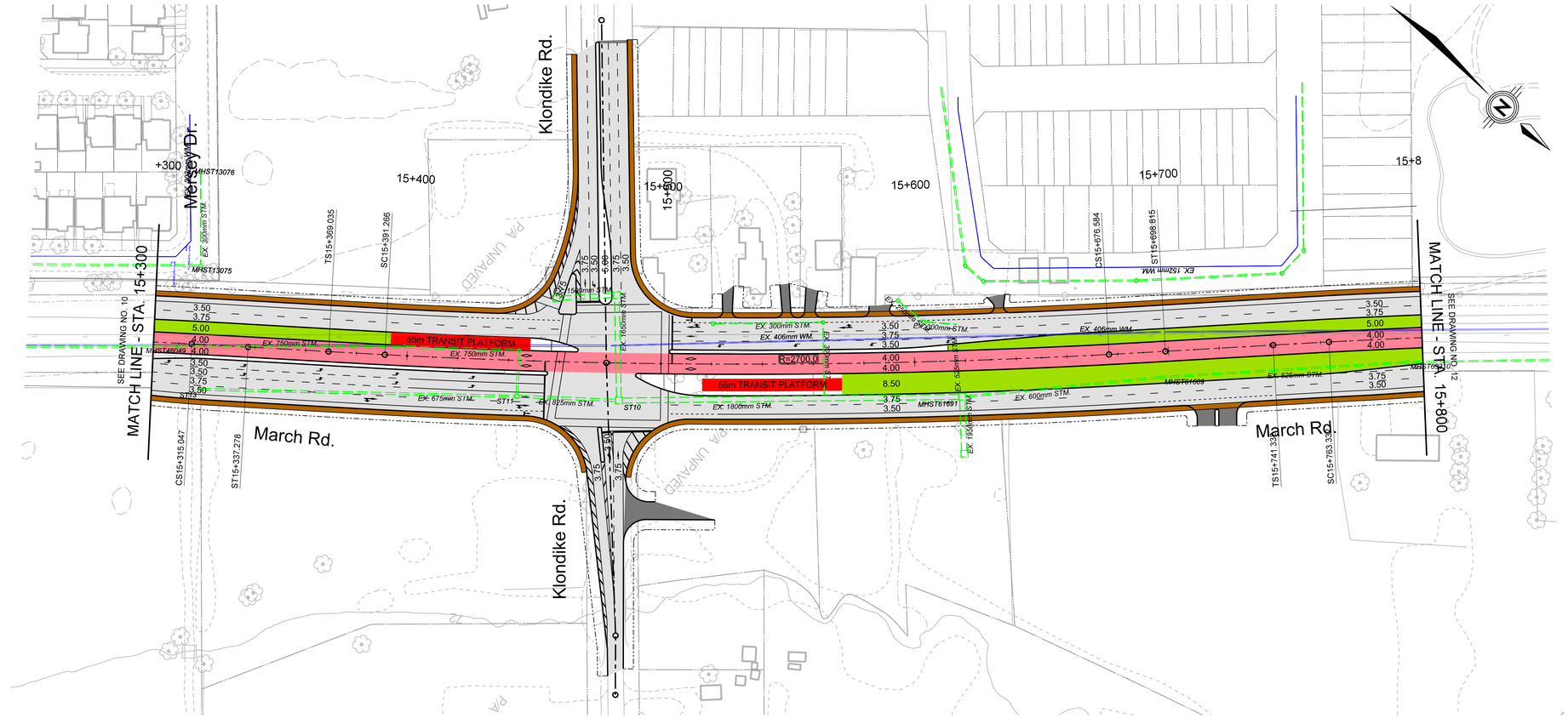
Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG
Scale: HORIZONTAL 0m 10 20 40 60 / VERTICAL 1 2 4 6		
CAD File Name: TO3065TOD-2.0-010.DGN	Plot Date: 30/09/2013	

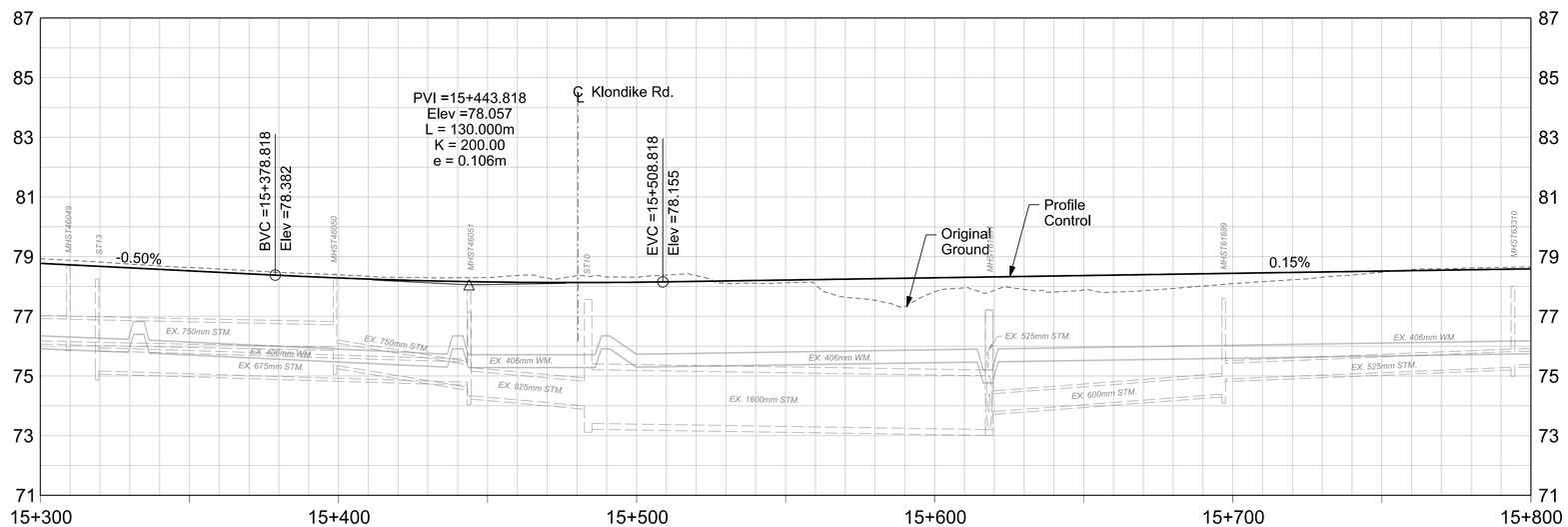
Ottawa

Kanata North Transitway
(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.:	Revision	Sheet No.
	01	10

TITLE FRAME: 790mm x 534mm City of Ottawa 2008
Plot Date: 30/09/2013 2:14:00 PM
Last Saved: 30/09/2013 1:03:36 PM
Consultant's Information: H:\ISO\TO3065\TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-010.Dgn





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN

LEGEND:
- TRANSIT STATION
- TRANSIT LANES
- TRAFFIC LANES
- SIDEWALK
- EDGE OF PAVEMENT
- TRANSIT CENTRELINE
- PROPOSED RIGHT-OF- WAY
- STRUCTURE OUTLINE
- PEDESTRIAN BRIDGE
- BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG

Scale: HORIZONTAL 0m 10 20 40 60; VERTICAL 1 2 4 6

CAD File Name: TO3065TOD-2.0-011.DGN

Plot Date: 30/09/2013

Ottawa

Kanata North Transitway
(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.:

Revision 01

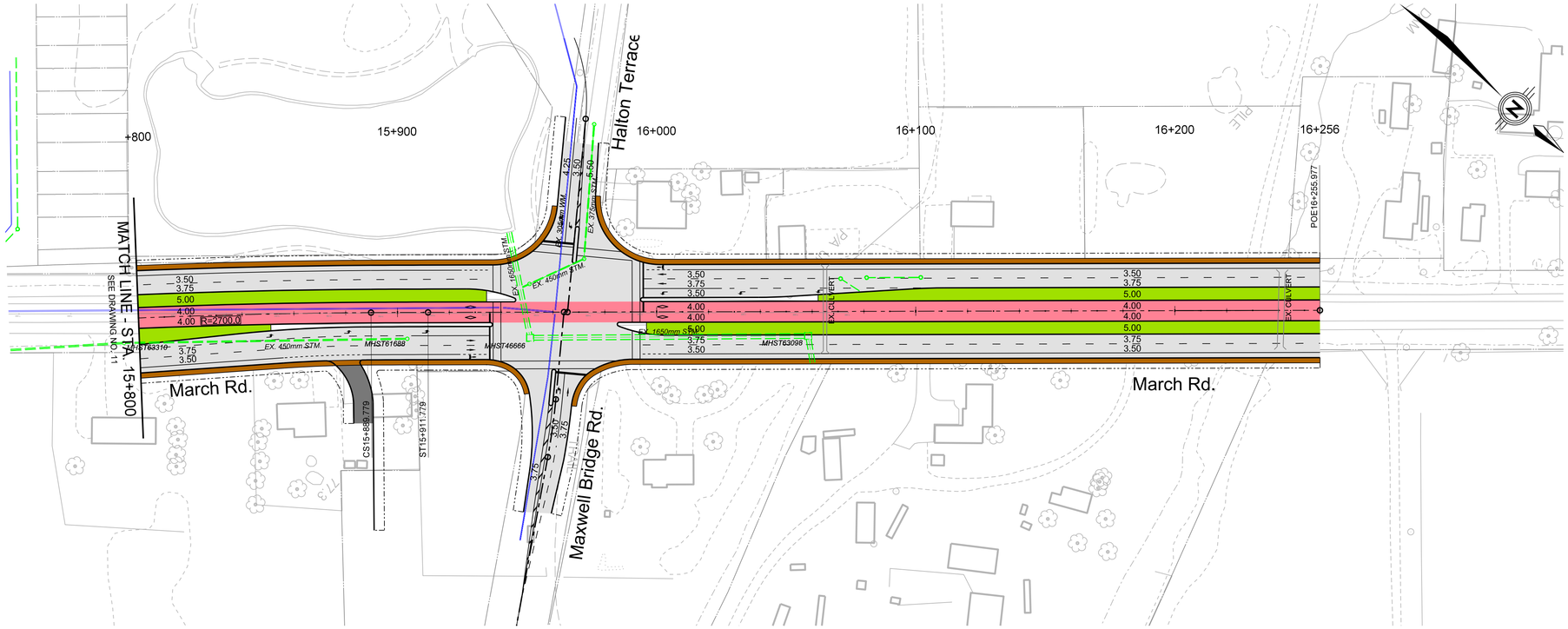
Sheet No. 11

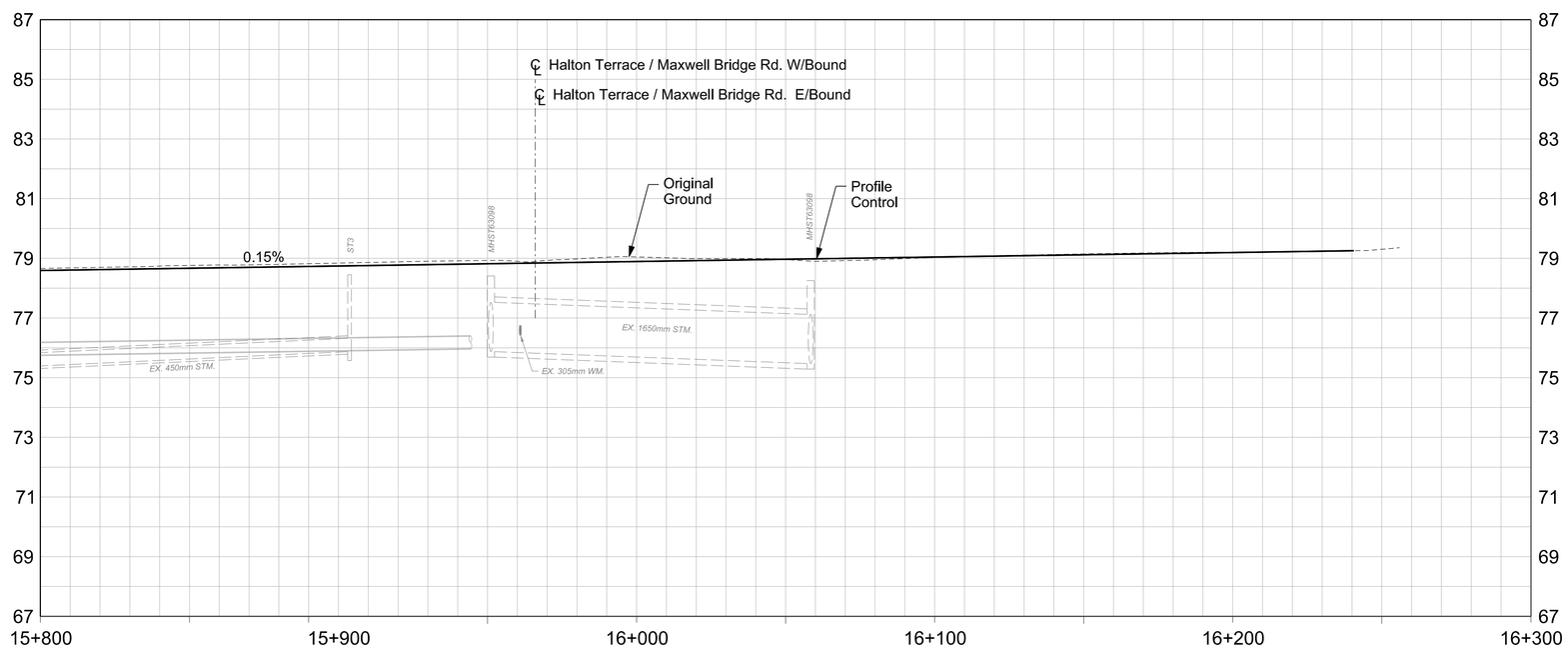
Consultant's Information: H:\BS\TO3065\TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-011.Dgn

Last Saved: 30/09/2013 1:04:06 PM

Plot Date: 30/09/2013 2:14:33 PM

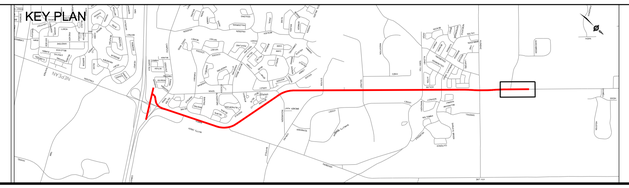
TITLE FRAME: 790mm x 534mm City of Ottawa 2008





NOTES:
1. DURING DETAILED DESIGN STAGE,SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND TROUGH THE INTERCECTION.
2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW):
MARCH ROAD - CORKSTOWN ROAD TO O.D.CARP ROAD
-PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.
-PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.
SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION
-ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m . THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.

KEY PLAN



LEGEND:
- TRANSIT STATION
- TRANSIT LANES
- TRAFFIC LANES
- SIDEWALK
- EDGE OF PAVEMENT
- TRANSIT CENTRELINE
- PROPOSED RIGHT-OF- WAY
- STRUCTURE OUTLINE
- PEDESTRIAN BRIDGE
- BRIDGE ACCESS POINT SEE SHEET 13

Delcan

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Dicipline Engineer: DAH	Checked By: RRG
Scale: HORIZONTAL 0m 10 20 40 60 / VERTICAL 1 2 4 6		
CAD File Name: TO3065TOD-2.0-012.DGN		Plot Date: 30/09/2013

Ottawa

Kanata North Transitway
(Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.:	Revision	Sheet No.
	01	12

TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: 30/09/2013 2:15:23 PM

Last Saved: 30/09/2013 1:05:07 PM

Consultant's Information: H:\ISO\TO3065\TOD\DWGS\01-Functional Design\2.0 March Rd\TO3065TOD-2.0-012.Dgn

APPENDIX L

Background Synchro Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	403	128	19	411	53	39	50	15	66	89	24
Future Volume (vph)	12	403	128	19	411	53	39	50	15	66	89	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.968				0.850		0.981			0.982	
Flt Protected		0.999			0.998			0.982			0.982	
Satd. Flow (prot)	0	1593	0	0	1621	1498	0	1698	0	0	1685	0
Flt Permitted		0.999			0.998			0.982			0.982	
Satd. Flow (perm)	0	1593	0	0	1621	1498	0	1698	0	0	1685	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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 (%)	17%	10%	1%	1%	10%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	12	403	128	19	411	53	39	50	15	66	89	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	543	0	0	430	53	0	104	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.2%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	506	13	72	381	10	38
Future Volume (vph)	506	13	72	381	10	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.893	
Flt Protected				0.992	0.990	
Satd. Flow (prot)	1680	0	0	1684	1446	0
Flt Permitted				0.992	0.990	
Satd. Flow (perm)	1680	0	0	1684	1446	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	30%	4%	5%	12%	8%
Adj. Flow (vph)	506	13	72	381	10	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	519	0	0	453	48	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

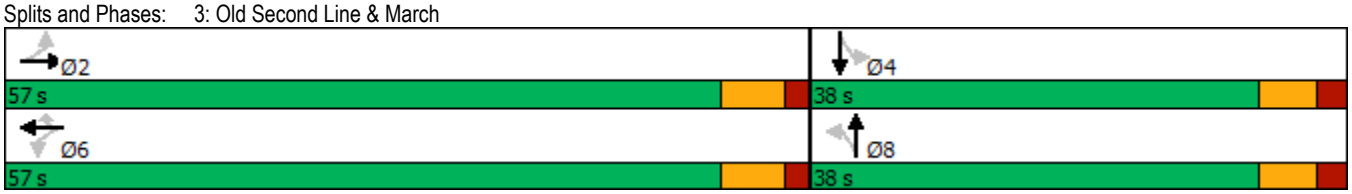
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	514	55	19	373	12	14	19	22	60	47	24
Future Volume (vph)	9	514	55	19	373	12	14	19	22	60	47	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		0.99			1.00	
Frt		0.986				0.850		0.946			0.975	
Flt Protected	0.950			0.950				0.987			0.978	
Satd. Flow (prot)	1674	1679	0	1610	1695	1401	0	1588	0	0	1614	0
Flt Permitted	0.540			0.385				0.880			0.826	
Satd. Flow (perm)	952	1679	0	653	1695	1368	0	1416	0	0	1363	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				39		22			13	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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%	4%	7%	5%	5%	8%	1%	5%	4%	2%	10%	1%
Adj. Flow (vph)	9	514	55	19	373	12	14	19	22	60	47	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	569	0	19	373	12	0	55	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	38.0	38.0		38.0	38.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	50.6	50.6		50.6	50.6	50.6	31.6	31.6		31.6	31.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	28.1	28.1		28.1	28.1	28.1		11.8			11.8	
Actuated g/C Ratio	0.59	0.59		0.59	0.59	0.59		0.25			0.25	
v/c Ratio	0.02	0.57		0.05	0.37	0.01		0.15			0.38	
Control Delay	7.1	12.0		7.6	9.4	0.6		12.1			18.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	7.1	12.0		7.6	9.4	0.6		12.1			18.5	
LOS	A	B		A	A	A		B			B	
Approach Delay		12.0			9.0			12.1			18.5	
Approach LOS		B			A			B			B	
Queue Length 50th (m)	0.3	27.7		0.6	15.6	0.0		1.8			6.7	
Queue Length 95th (m)	2.1	68.9		3.6	39.3	0.5		9.3			22.0	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	911	1608		625	1623	1311		967			928	
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	0.35		0.03	0.23	0.01		0.06			0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 47.8	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March

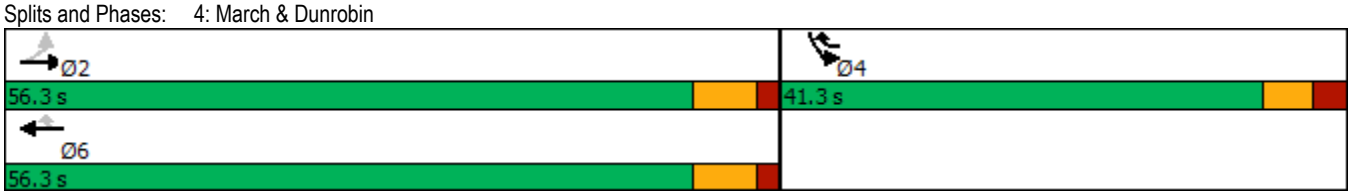


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	46	479	346	259	566	77
Future Volume (vph)	46	479	346	259	566	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor	0.99			0.97	1.00	
Frt				0.850	0.982	
Flt Protected	0.950				0.958	
Satd. Flow (prot)	1626	1728	1695	1441	3099	0
Flt Permitted	0.536				0.958	
Satd. Flow (perm)	911	1728	1695	1393	3099	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					17	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	5%	4%	7%
Adj. Flow (vph)	46	479	346	259	566	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	479	346	259	643	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	NA	NA	pm+ov	Prot	
Protected Phases		2	6	4	4	
Permitted Phases	2			6		
Detector Phase	2	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	26.3	26.3	26.3	27.3	27.3	
Total Split (s)	56.3	56.3	56.3	41.3	41.3	
Total Split (%)	57.7%	57.7%	57.7%	42.3%	42.3%	
Maximum Green (s)	50.0	50.0	50.0	35.0	35.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	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	
Recall Mode	Min	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	23.7	23.7	23.7	40.7	17.0	
Actuated g/C Ratio	0.44	0.44	0.44	0.76	0.32	
v/c Ratio	0.11	0.63	0.46	0.24	0.65	
Control Delay	11.0	16.9	13.8	1.4	19.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.0	16.9	13.8	1.4	19.0	
LOS	B	B	B	A	B	
Approach Delay		16.3	8.5		19.0	
Approach LOS		B	A		B	
Queue Length 50th (m)	2.2	29.9	19.6	0.2	21.0	
Queue Length 95th (m)	8.2	68.1	46.1	0.4	46.3	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	832	1578	1548	1256	2095	
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	0.06	0.30	0.22	0.21	0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 97.6			
Actuated Cycle Length: 53.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 14.6		Intersection LOS: B	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: March & Dunrobin



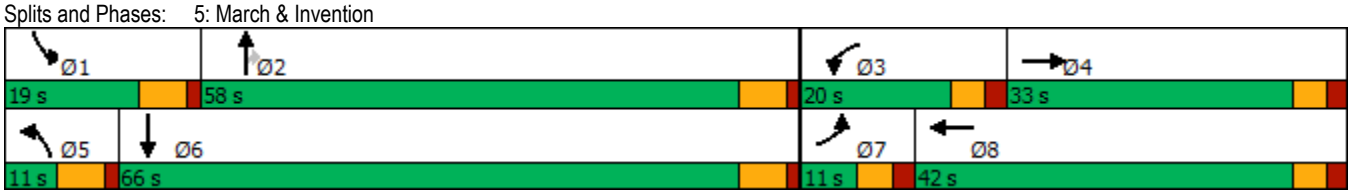
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	71	38	339	71	67	7	410	166	80	1011	3
Future Volume (vph)	11	71	38	339	71	67	7	410	166	80	1011	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00		0.96	0.99	1.00	
Frt		0.948			0.927				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1640	0	3216	1600	0	1658	3316	1483	1658	3315	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1640	0	3183	1600	0	1651	3316	1422	1642	3315	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			36				214			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	11	71	38	339	71	67	7	410	166	80	1011	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	109	0	339	138	0	7	410	166	80	1014	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		20.0	42.0		11.0	58.0	58.0	19.0	66.0	
Total Split (%)	8.5%	25.4%		15.4%	32.3%		8.5%	44.6%	44.6%	14.6%	50.8%	
Maximum Green (s)	5.5	27.5		14.5	36.5		5.0	52.0	52.0	13.0	60.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.1		14.6	32.3		5.0	54.1	54.1	10.3	65.7	
Actuated g/C Ratio	0.05	0.12		0.13	0.28		0.04	0.48	0.48	0.09	0.58	
v/c Ratio	0.14	0.50		0.82	0.29		0.10	0.26	0.21	0.54	0.53	
Control Delay	60.0	46.1		66.2	26.1		59.6	20.3	1.7	64.5	17.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	46.1		66.2	26.1		59.6	20.3	1.7	64.5	17.3	
LOS	E	D		E	C		E	C	A	E	B	
Approach Delay		47.4			54.6			15.5			20.7	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	2.2	17.4		34.6	15.7		1.4	25.7	0.0	15.5	55.3	
Queue Length 95th (m)	8.5	33.7		#67.6	34.9		6.3	45.8	5.1	33.4	116.1	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	80	414		414	542		73	1583	790	191	1920	
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	0.14	0.26		0.82	0.25		0.10	0.26	0.21	0.42	0.53	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 113.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 66.1%	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: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	156	312	247	58	93	58	8	267	1000	117	1	247
Future Volume (vph)	156	312	247	58	93	58	8	267	1000	117	1	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3070	3316	1423	3014	3131	1397	0	3240	3221	1458	0	3232
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			141			141				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	156	312	247	58	93	58	8	267	1000	117	1	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	312	247	58	93	58	0	275	1000	117	0	248
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1813	282
Future Volume (vph)	1813	282
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1420
Right Turn on Red		Yes
Satd. Flow (RTOR)		219
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1813	282
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1813	282
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	14.0	44.0	44.0	12.0	42.0	42.0	12.0	12.0	59.0	59.0	15.0	15.0
Total Split (%)	10.8%	33.8%	33.8%	9.2%	32.3%	32.3%	9.2%	9.2%	45.4%	45.4%	11.5%	11.5%
Maximum Green (s)	7.0	37.0	37.0	5.0	35.0	35.0	5.6	5.6	52.6	52.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	7.0	23.0	23.0	5.0	18.6	18.6		20.8	60.9	60.9		16.8
Actuated g/C Ratio	0.05	0.18	0.18	0.04	0.14	0.14		0.16	0.47	0.47		0.13
v/c Ratio	0.94	0.53	0.67	0.50	0.21	0.18		0.53	0.66	0.15		0.59
Control Delay	116.4	51.6	29.9	75.9	47.6	1.2		42.4	38.7	10.5		60.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	116.4	51.6	29.9	75.9	47.6	1.2		42.4	38.7	10.5		60.1
LOS	F	D	C	E	D	A		D	D	B		E
Approach Delay		58.2			42.6				37.0			
Approach LOS		E			D				D			
Queue Length 50th (m)	19.2	37.5	24.6	7.0	10.6	0.0		31.7	85.5	1.9		28.5
Queue Length 95th (m)	#39.0	42.6	43.4	13.8	15.1	0.0		m#40.6	m93.7	m4.5		#60.3
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	166	943	505	117	842	479		519	1508	760		419
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	0.94	0.33	0.49	0.50	0.11	0.12		0.53	0.66	0.15		0.59

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 84.5 Intersection LOS: F
Intersection Capacity Utilization 109.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: March & Terry Fox

Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	62.0	62.0
Total Split (%)	47.7%	47.7%
Maximum Green (s)	55.6	55.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	56.9	56.9
Actuated g/C Ratio	0.44	0.44
v/c Ratio	1.25	0.38
Control Delay	151.5	7.5
Queue Delay	0.0	0.0
Total Delay	151.5	7.5
LOS	F	A
Approach Delay	124.5	
Approach LOS	F	
Queue Length 50th (m)	~274.2	8.4
Queue Length 95th (m)	#323.7	26.6
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1450	744
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.25	0.38

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	209	1	47	2567	116	2	150
Future Volume (vph)	53	18	5	41	20	209	1	47	2567	116	2	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		1.00	1.00			1.00
Frt			0.850			0.850			0.994			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3253	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1623	3253	0	0	3245
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			163			5			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	209	1	47	2567	116	2	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	209	0	48	2683	0	0	152
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1860	100
Future Volume (vph)	1860	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	1860	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1860	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		15.9	15.9	15.9	15.9	15.9		9.2	82.9			11.4
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12		0.07	0.64			0.09
v/c Ratio		0.44	0.02	0.29	0.09	0.65		0.42	1.29			0.53
Control Delay		58.7	0.2	53.4	46.9	22.6		67.8	159.8			60.3
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		58.7	0.2	53.4	46.9	22.6		67.8	159.8			60.3
LOS		E	A	D	D	C		E	F			E
Approach Delay		54.9			29.1				158.2			
Approach LOS		D			C				F			
Queue Length 50th (m)		16.3	0.0	9.2	4.4	10.3		11.0	~414.3			19.3
Queue Length 95th (m)		25.5	0.0	16.4	9.7	28.4		22.3	#529.6			m17.8
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	496		200	2075			399
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		0.21	0.01	0.14	0.04	0.42		0.24	1.29			0.38

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.29
Intersection Signal Delay: 91.7 Intersection LOS: F
Intersection Capacity Utilization 125.6% 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.

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

Splits and Phases: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	87.6	87.6
Actuated g/C Ratio	0.67	0.67
v/c Ratio	0.85	0.10
Control Delay	12.2	0.0
Queue Delay	0.0	0.0
Total Delay	12.2	0.0
LOS	B	A
Approach Delay	15.1	
Approach LOS	B	
Queue Length 50th (m)	48.2	0.3
Queue Length 95th (m)	m25.7	m0.0
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2190	987
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.85	0.10

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	81	108	3	15	2	73	56	11	3	98	3
Future Volume (vph)	2	81	108	3	15	2	73	56	11	3	98	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.924			0.986			0.989			0.996	
Flt Protected		0.999			0.993			0.975			0.999	
Satd. Flow (prot)	0	1581	0	0	1726	0	0	1684	0	0	1675	0
Flt Permitted		0.999			0.993			0.975			0.999	
Satd. Flow (perm)	0	1581	0	0	1726	0	0	1684	0	0	1675	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	50%	4%	3%	1%	1%	1%	1%	2%	8%	1%	3%	100%
Adj. Flow (vph)	2	81	108	3	15	2	73	56	11	3	98	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	20	0	0	140	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 33.2%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	112	642	45	1	18	428	27	29	15	28	97	14
Future Volume (vph)	112	642	45	1	18	428	27	29	15	28	97	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.99		0.95	0.99	0.97		0.98	0.96
Frt			0.850				0.850		0.902			0.860
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1595	1762	1388	0	1544	1728	1498	1470	1438	0	1674	1377
Flt Permitted	0.950				0.950			0.421			0.729	
Satd. Flow (perm)	1575	1762	1324	0	1529	1728	1426	643	1438	0	1261	1377
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		28			189
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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 (%)	6%	1%	9%	1%	10%	3%	1%	15%	22%	1%	1%	12%
Adj. Flow (vph)	112	642	45	1	18	428	27	29	15	28	97	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	642	45	0	19	428	27	29	43	0	97	203
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

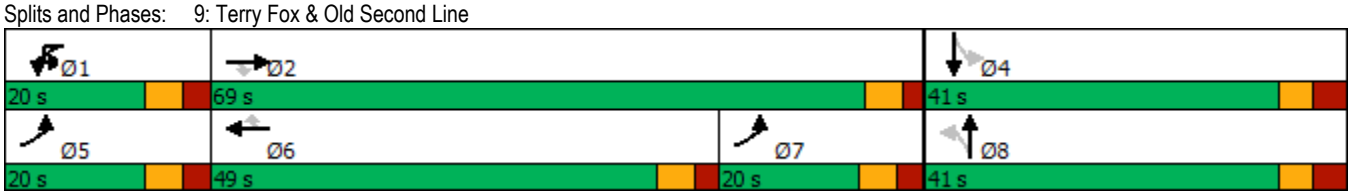
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	189		
Future Volume (vph)	189		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	6%		
Adj. Flow (vph)	189		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		33.9	33.9	11.4	11.4	33.9	33.9	39.7	39.7		39.7	39.7
Total Split (s)		69.0	69.0	20.0	20.0	49.0	49.0	41.0	41.0		41.0	41.0
Total Split (%)		53.1%	53.1%	15.4%	15.4%	37.7%	37.7%	31.5%	31.5%		31.5%	31.5%
Maximum Green (s)		63.1	63.1	13.6	13.6	43.1	43.1	34.3	34.3		34.3	34.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	Max	None	None		None	None
Walk Time (s)		12.0	12.0			12.0	12.0	12.0	12.0		12.0	12.0
Flash Dont Walk (s)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		3	3			3	3	4	4		4	4
Act Effct Green (s)	21.6	72.5	72.5		6.9	43.5	43.5	16.0	16.0		16.0	16.0
Actuated g/C Ratio	0.20	0.68	0.68		0.06	0.41	0.41	0.15	0.15		0.15	0.15
v/c Ratio	0.35	0.54	0.05		0.19	0.61	0.04	0.30	0.18		0.52	0.55
Control Delay	23.8	14.3	0.5		54.9	31.4	0.1	47.8	20.8		51.1	13.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	23.8	14.3	0.5		54.9	31.4	0.1	47.8	20.8		51.1	13.1
LOS	C	B	A		D	C	A	D	C		D	B
Approach Delay		14.8				30.6			31.7			25.3
Approach LOS		B				C			C			C
Queue Length 50th (m)	11.6	39.1	0.0		3.4	59.5	0.0	4.9	2.5		17.1	2.3
Queue Length 95th (m)	20.1	149.9	1.0		11.4	121.1	0.0	12.9	11.2		32.3	20.2
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	409	1197	927		198	703	662	208	485		408	574
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	0.27	0.54	0.05		0.10	0.61	0.04	0.14	0.09		0.24	0.35

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 106.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 22.0 — Intersection LOS: C
Intersection Capacity Utilization 81.7% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		20.0	20.0
Total Split (%)		15%	15%
Maximum Green (s)		13.6	13.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	524	120	114	336	51	37	60	116	111	76	61
Future Volume (vph)	42	524	120	114	336	51	37	60	116	111	76	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	1.00		0.96	0.98	0.99		1.00	0.98	
Frt			0.850			0.850		0.901			0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1483	1728	1483	1642	1712	1469	1674	1490	0	1674	1506	0
Flt Permitted	0.558			0.364			0.628			0.518		
Satd. Flow (perm)	865	1728	1427	627	1712	1413	1085	1490	0	908	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			80		74			31	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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 (%)	14%	3%	2%	3%	4%	3%	1%	6%	6%	1%	2%	15%
Adj. Flow (vph)	42	524	120	114	336	51	37	60	116	111	76	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	524	120	114	336	51	37	176	0	111	137	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	70.0	70.0	18.0	70.0	70.0	42.0	42.0		42.0	42.0	
Total Split (%)	13.8%	53.8%	53.8%	13.8%	53.8%	53.8%	32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	12.1	64.1	64.1	12.1	64.1	64.1	35.4	35.4		35.4	35.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	71.0	64.5	64.5	76.0	70.9	70.9	17.7	17.7		17.7	17.7	
Actuated g/C Ratio	0.65	0.59	0.59	0.70	0.65	0.65	0.16	0.16		0.16	0.16	
v/c Ratio	0.07	0.51	0.13	0.22	0.30	0.05	0.21	0.58		0.76	0.51	
Control Delay	6.2	16.6	2.8	6.7	11.4	1.2	41.5	31.4		73.1	38.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.2	16.6	2.8	6.7	11.4	1.2	41.5	31.4		73.1	38.1	
LOS	A	B	A	A	B	A	D	C		E	D	
Approach Delay		13.5			9.3			33.2			53.7	
Approach LOS		B			A			C			D	
Queue Length 50th (m)	2.0	54.3	0.0	5.6	29.1	0.0	6.3	18.0		20.7	18.7	
Queue Length 95th (m)	6.6	107.2	8.2	14.7	58.8	2.4	15.1	38.4		39.5	36.5	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	679	1025	896	562	1117	950	355	538		297	514	
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	0.06	0.51	0.13	0.20	0.30	0.05	0.10	0.33		0.37	0.27	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 108.6	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Innovation/Flamborough & Terry Fox

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	329	9	46	175	67	1	1	3	111	1	28
Future Volume (vph)	22	329	9	46	175	67	1	1	3	111	1	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.969			0.919			0.973	
Flt Protected		0.997			0.992			0.990			0.962	
Satd. Flow (prot)	0	1745	0	0	1639	0	0	1347	0	0	1572	0
Flt Permitted		0.997			0.992			0.990			0.962	
Satd. Flow (perm)	0	1745	0	0	1639	0	0	1347	0	0	1572	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		185.1			991.2			145.1			590.1	
Travel Time (s)		13.3			71.4			17.4			42.5	
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)			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 (%)	4%	1%	9%	1%	2%	13%	1%	1%	33%	6%	1%	6%
Adj. Flow (vph)	22	329	9	46	175	67	1	1	3	111	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	0	288	0	0	5	0	0	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

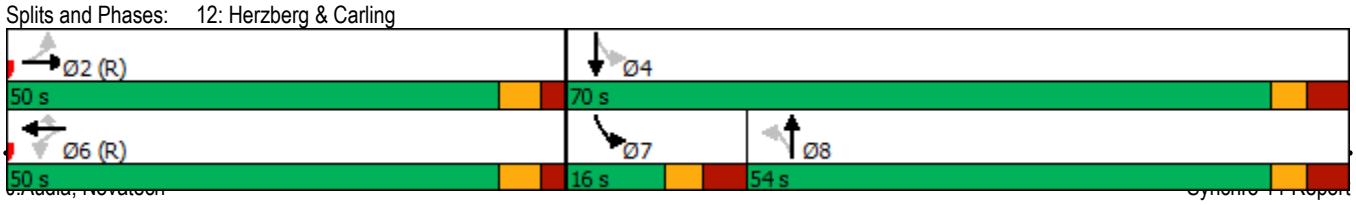
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	342	11	15	513	547	73	500	41	237	245	29
Future Volume (vph)	34	342	11	15	513	547	73	500	41	237	245	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.95		1.00			1.00	
Frt		0.995				0.850		0.991			0.984	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1674	1751	0	1510	1762	1483	0	1727	0	1674	1697	0
Flt Permitted	0.213			0.394				0.916		0.275		
Satd. Flow (perm)	375	1751	0	622	1762	1413	0	1590	0	485	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				338		4			7	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	342	11	15	513	547	73	500	41	237	245	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	353	0	15	513	547	0	614	0	237	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	54.0	54.0		16.0	70.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	45.0%	45.0%		13.3%	58.3%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	46.8	46.8		8.8	62.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	43.9	43.9		43.9	43.9	43.9		46.8		62.8	62.8	
Actuated g/C Ratio	0.37	0.37		0.37	0.37	0.37		0.39		0.52	0.52	
v/c Ratio	0.25	0.55		0.07	0.80	0.75		0.99		0.70	0.31	
Control Delay	32.6	34.0		25.9	44.8	19.4		69.8		29.0	17.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	32.6	34.0		25.9	44.8	19.4		69.8		29.0	17.0	
LOS	C	C		C	D	B		E		C	B	
Approach Delay		33.9			31.6			69.8			22.5	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	5.1	60.0		2.1	98.7	40.1		129.9		27.5	31.6	
Queue Length 95th (m)	13.4	87.2		6.6	#138.9	83.1		#199.8		42.2	47.9	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	137	641		227	644	731		622		341	891	
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	0.25	0.55		0.07	0.80	0.75		0.99		0.70	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 39.2 Intersection LOS: D
Intersection Capacity Utilization 97.6% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	447	68	11	572	104	79	80	18	54	74	20
Future Volume (vph)	24	447	68	11	572	104	79	80	18	54	74	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.983				0.850		0.986			0.982	
Flt Protected		0.998			0.999			0.978			0.982	
Satd. Flow (prot)	0	1610	0	0	1695	1498	0	1699	0	0	1684	0
Flt Permitted		0.998			0.999			0.978			0.982	
Satd. Flow (perm)	0	1610	0	0	1695	1498	0	1699	0	0	1684	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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%	10%	1%	1%	5%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	24	447	68	11	572	104	79	80	18	54	74	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	539	0	0	583	104	0	177	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.3%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	455	19	59	647	29	76
Future Volume (vph)	455	19	59	647	29	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.902	
Flt Protected				0.996	0.986	
Satd. Flow (prot)	1754	0	0	1688	1510	0
Flt Permitted				0.996	0.986	
Satd. Flow (perm)	1754	0	0	1688	1510	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	5%	5%	7%	4%
Adj. Flow (vph)	455	19	59	647	29	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	474	0	0	706	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 82.5%		ICU Level of Service E	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	428	24	28	659	50	45	58	15	24	29	19
Future Volume (vph)	35	428	24	28	659	50	45	58	15	24	29	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		1.00			0.99	
Frt		0.992				0.850		0.983			0.964	
Flt Protected	0.950			0.950				0.981			0.984	
Satd. Flow (prot)	1642	1743	0	1580	1712	1483	0	1595	0	0	1627	0
Flt Permitted	0.325			0.484				0.844			0.843	
Satd. Flow (perm)	562	1743	0	805	1712	1449	0	1372	0	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				42		8			19	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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 (%)	3%	1%	4%	7%	4%	2%	8%	7%	6%	4%	1%	5%
Adj. Flow (vph)	35	428	24	28	659	50	45	58	15	24	29	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	452	0	28	659	50	0	118	0	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	62.0	62.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0	
Total Split (%)	65.3%	65.3%		65.3%	65.3%	65.3%	34.7%	34.7%		34.7%	34.7%	
Maximum Green (s)	55.6	55.6		55.6	55.6	55.6	26.6	26.6		26.6	26.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	31.5	31.5		31.5	31.5	31.5		11.9			11.9	
Actuated g/C Ratio	0.62	0.62		0.62	0.62	0.62		0.23			0.23	
v/c Ratio	0.10	0.42		0.06	0.62	0.06		0.36			0.21	
Control Delay	7.5	9.0		6.8	12.4	3.1		21.3			16.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	7.5	9.0		6.8	12.4	3.1		21.3			16.3	
LOS	A	A		A	B	A		C			B	
Approach Delay		8.9			11.6			21.3			16.3	
Approach LOS		A			B			C			B	
Queue Length 50th (m)	1.2	19.7		1.0	35.1	0.3		7.0			3.2	
Queue Length 95th (m)	5.4	47.1		4.4	83.9	3.9		23.5			14.0	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	536	1664		768	1634	1385		747			764	
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	0.27		0.04	0.40	0.04		0.16			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 51.1	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	409	624	513	352	58
Future Volume (vph)	53	409	624	513	352	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor				0.97	0.99	
Frt				0.850	0.979	
Flt Protected	0.950				0.959	
Satd. Flow (prot)	1610	1695	1745	1469	3184	0
Flt Permitted	0.206				0.959	
Satd. Flow (perm)	349	1695	1745	1418	3184	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				513	18	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	5%	2%	3%	1%	3%
Adj. Flow (vph)	53	409	624	513	352	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	409	624	513	410	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	pm+ov	Prot	
Protected Phases	5	2	6	4	4	
Permitted Phases	2			6		
Detector Phase	5	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	11.3	26.3	26.3	27.3	27.3	
Total Split (s)	11.3	67.6	56.3	36.3	36.3	
Total Split (%)	10.9%	65.1%	54.2%	34.9%	34.9%	
Maximum Green (s)	5.0	61.3	50.0	30.0	30.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	37.5	37.5	31.8	47.6	15.8	
Actuated g/C Ratio	0.56	0.56	0.47	0.71	0.24	
v/c Ratio	0.18	0.43	0.76	0.44	0.54	
Control Delay	7.9	9.8	22.8	1.4	26.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.9	9.8	22.8	1.4	26.8	
LOS	A	A	C	A	C	
Approach Delay		9.6	13.1		26.8	
Approach LOS		A	B		C	
Queue Length 50th (m)	2.4	23.1	62.9	0.0	21.3	
Queue Length 95th (m)	7.1	47.4	114.9	3.9	43.6	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	297	1459	1354	1308	1568	
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	0.18	0.28	0.46	0.39	0.26	

Intersection Summary	
Area Type: Other	
Cycle Length: 103.9	
Actuated Cycle Length: 67.1	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: March & Dunrobin

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	1170	338	108	519	9
Future Volume (vph)	10	97	23	367	97	67	45	1170	338	108	519	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3303	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1644	3316	1422	1652	3303	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				290		2	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	1170	338	108	519	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	1170	338	108	528	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	0.75	0.41	0.85	0.31	
Control Delay	60.5	53.7		71.3	30.0		94.8	30.4	5.7	103.0	17.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	30.4	5.7	103.0	17.9	
LOS	E	D		E	C		F	C	A	F	B	
Approach Delay		54.3			58.6			26.9			32.3	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	100.7	5.3	22.6	32.3	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	153.7	25.6	#58.8	53.6	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	820	127	1725	
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	0.13	0.30		0.87	0.31		0.64	0.75	0.41	0.85	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.3 — Intersection LOS: D
Intersection Capacity Utilization 73.5% — 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: 5: March & Invention

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	285	186	224	140	309	195	21	369	1678	107	1	131
Future Volume (vph)	285	186	224	140	309	195	21	369	1678	107	1	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3197	3221	1466	3225	3316	1453	0	3231	3349	1465	0	3244
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			195			195				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	285	186	224	140	309	195	21	369	1678	107	1	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	285	186	224	140	309	195	0	390	1678	107	0	132
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

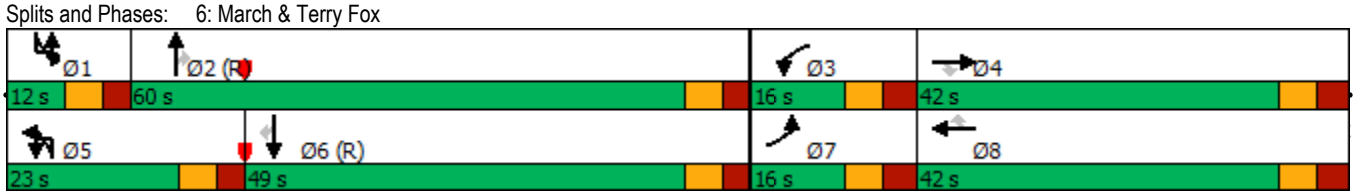
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1027	241
Future Volume (vph)	1027	241
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1455
Right Turn on Red		Yes
Satd. Flow (RTOR)		241
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1027	241
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1027	241
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	42.0	42.0	16.0	42.0	42.0	23.0	23.0	60.0	60.0	12.0	12.0
Total Split (%)	12.3%	32.3%	32.3%	12.3%	32.3%	32.3%	17.7%	17.7%	46.2%	46.2%	9.2%	9.2%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	16.6	16.6	53.6	53.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	9.0	23.4	23.4	8.8	23.2	23.2		18.9	62.3	62.3		8.8
Actuated g/C Ratio	0.07	0.18	0.18	0.07	0.18	0.18		0.15	0.48	0.48		0.07
v/c Ratio	1.27	0.32	0.53	0.64	0.52	0.47		0.83	1.05	0.14		0.61
Control Delay	200.0	45.9	12.7	73.0	50.1	8.7		63.8	49.1	1.4		71.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	200.0	45.9	12.7	73.0	50.1	8.7		63.8	49.1	1.4		71.1
LOS	F	D	B	E	D	A		E	D	A		E
Approach Delay		98.4			42.6				49.3			
Approach LOS		F			D				D			
Queue Length 50th (m)	~43.6	21.5	6.1	16.8	37.1	0.0		40.7	~222.3	0.9		15.4
Queue Length 95th (m)	#69.6	27.3	24.6	26.9	43.2	16.4		m43.3	m#244.6	m1.9		#34.8
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	224	867	537	224	892	533		471	1603	777		218
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	1.27	0.21	0.42	0.63	0.35	0.37		0.83	1.05	0.14		0.61

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 94 (72%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 51.8 Intersection LOS: D
Intersection Capacity Utilization 103.4% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	49.0	49.0
Total Split (%)	37.7%	37.7%
Maximum Green (s)	42.6	42.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	52.2	52.2
Actuated g/C Ratio	0.40	0.40
v/c Ratio	0.76	0.33
Control Delay	39.8	5.1
Queue Delay	0.0	0.0
Total Delay	39.8	5.1
LOS	D	A
Approach Delay	36.7	
Approach LOS	D	
Queue Length 50th (m)	105.8	0.0
Queue Length 95th (m)	#161.3	16.5
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1343	727
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.76	0.33

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	217	5	27	1942	55	270	2359
Future Volume (vph)	30	11	15	124	18	217	5	27	1942	55	270	2359
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.996			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3300	0	3248	3349
Flt Permitted		0.789		0.730				0.950			0.950	
Satd. Flow (perm)	0	1387	1458	1199	1762	1474	0	1673	3300	0	3242	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			217			3			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	217	5	27	1942	55	270	2359
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	217	0	32	1997	0	270	2359
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	90
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	51.5%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	60.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		20.0	20.0	20.0	20.0	20.0		8.0	75.0		15.2	87.4
Actuated g/C Ratio		0.15	0.15	0.15	0.15	0.15		0.06	0.58		0.12	0.67
v/c Ratio		0.19	0.05	0.67	0.07	0.53		0.31	1.05		0.71	1.05
Control Delay		46.3	0.3	68.1	42.8	10.2		65.5	62.7		57.5	63.4
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		46.3	0.3	68.1	42.8	10.2		65.5	62.7		57.5	63.4
LOS		D	A	E	D	B		E	E		E	E
Approach Delay		34.0			31.8				62.7			61.7
Approach LOS		C			C				E			E
Queue Length 50th (m)		8.6	0.0	28.3	3.7	0.0		7.4	~268.3		29.5	~336.7
Queue Length 95th (m)		16.2	0.0	42.0	9.1	17.9		16.8	#356.2		m41.5	#432.8
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		355	436	307	451	538		206	1905		409	2252
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		0.12	0.03	0.40	0.04	0.40		0.16	1.05		0.66	1.05

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 59.7 Intersection LOS: E
Intersection Capacity Utilization 119.5% 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	87.4
Actuated g/C Ratio	0.67
v/c Ratio	0.05
Control Delay	2.4
Queue Delay	0.0
Total Delay	2.4
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	m3.6
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	994
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	40	88	10	42	7	108	107	8	1	71	1
Future Volume (vph)	1	40	88	10	42	7	108	107	8	1	71	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.908			0.984			0.995			0.998	
Flt Protected					0.992			0.976			0.999	
Satd. Flow (prot)	0	1588	0	0	1685	0	0	1687	0	0	1757	0
Flt Permitted					0.992			0.976			0.999	
Satd. Flow (perm)	0	1588	0	0	1685	0	0	1687	0	0	1757	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	100%	1%	1%	1%	4%	1%	1%	4%	1%	1%	1%	1%
Adj. Flow (vph)	1	40	88	10	42	7	108	107	8	1	71	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	59	0	0	223	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	175	483	12	3	12	781	89	14	3	5	52	4
Future Volume (vph)	175	483	12	3	12	781	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.99		0.95	0.98	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.853
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1546	0	1674	1414
Flt Permitted	0.950				0.950			0.384			0.752	
Satd. Flow (perm)	1658	1762	1421	0	1650	1762	1419	666	1546	0	1295	1414
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		5			190
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	175	483	12	3	12	781	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	483	12	0	15	781	89	14	8	0	52	194
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	190		
Future Volume (vph)	190		
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)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	190		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	24.5	77.4	77.4		6.6	45.4	45.4	13.4	13.4		13.4	13.4
Actuated g/C Ratio	0.23	0.71	0.71		0.06	0.42	0.42	0.12	0.12		0.12	0.12
v/c Ratio	0.47	0.39	0.01		0.15	1.06	0.13	0.17	0.04		0.33	0.57
Control Delay	25.4	9.7	0.0		54.6	83.5	1.3	47.1	29.4		48.9	13.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	25.4	9.7	0.0		54.6	83.5	1.3	47.1	29.4		48.9	13.5
LOS	C	A	A		D	F	A	D	C		D	B
Approach Delay		13.6				74.8			40.6			20.9
Approach LOS		B				E			D			C
Queue Length 50th (m)	19.6	21.6	0.0		2.7	~155.8	0.0	2.5	0.5		9.3	0.7
Queue Length 95th (m)	31.1	89.4	0.0		9.9	#292.7	2.6	8.1	4.6		20.5	18.6
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	483	1253	1035		241	734	672	174	408		338	510
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	0.36	0.39	0.01		0.06	1.06	0.13	0.08	0.02		0.15	0.38

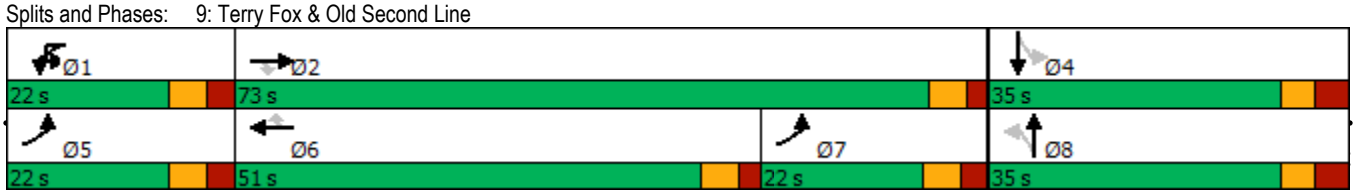
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 108.8
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 44.6 — Intersection LOS: D
Intersection Capacity Utilization 85.8% — 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: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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			

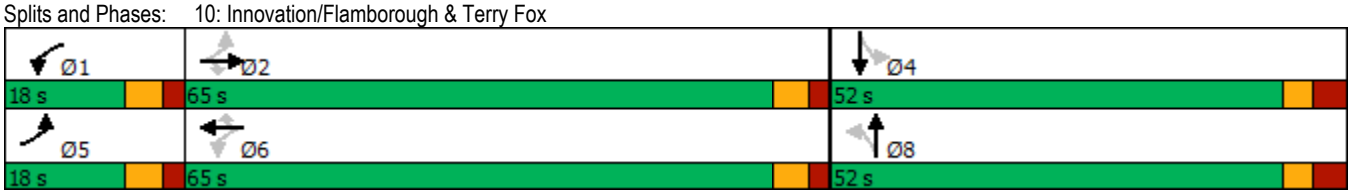
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	442	53	129	649	128	131	89	120	56	52	55
Future Volume (vph)	64	442	53	129	649	128	131	89	120	56	52	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.95	0.99		0.96	0.98	0.99		1.00	0.98	
Frt			0.850			0.850		0.914			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	1762	1483	1658	1762	1498	1674	1572	0	1674	1513	0
Flt Permitted	0.315			0.419			0.688			0.452		
Satd. Flow (perm)	519	1762	1407	725	1762	1439	1193	1572	0	793	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			128		54			42	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		9	9		5	8		5	5		8
Confl. Bikes (#/hr)			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 (%)	8%	1%	2%	2%	1%	1%	1%	1%	3%	1%	1%	11%
Adj. Flow (vph)	64	442	53	129	649	128	131	89	120	56	52	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	442	53	129	649	128	131	209	0	56	107	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	65.0	65.0	18.0	65.0	65.0	52.0	52.0		52.0	52.0	
Total Split (%)	13.3%	48.1%	48.1%	13.3%	48.1%	48.1%	38.5%	38.5%		38.5%	38.5%	
Maximum Green (s)	12.1	59.1	59.1	12.1	59.1	59.1	45.4	45.4		45.4	45.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	66.4	59.5	59.5	70.1	63.3	63.3	17.4	17.4		17.4	17.4	
Actuated g/C Ratio	0.64	0.57	0.57	0.68	0.61	0.61	0.17	0.17		0.17	0.17	
v/c Ratio	0.16	0.44	0.06	0.23	0.60	0.14	0.66	0.68		0.42	0.37	
Control Delay	7.0	15.8	1.7	6.8	18.0	2.7	55.8	40.8		48.2	27.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.0	15.8	1.7	6.8	18.0	2.7	55.8	40.8		48.2	27.2	
LOS	A	B	A	A	B	A	E	D		D	C	
Approach Delay		13.4			14.3			46.6			34.4	
Approach LOS		B			B			D			C	
Queue Length 50th (m)	3.0	42.3	0.0	6.3	71.5	0.0	22.7	26.9		9.3	10.5	
Queue Length 95th (m)	9.2	86.4	3.2	16.5	141.0	8.3	41.5	49.6		21.0	24.9	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	482	1011	840	618	1075	928	526	723		349	690	
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	0.13	0.44	0.06	0.21	0.60	0.14	0.25	0.29		0.16	0.16	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 103.6	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Innovation/Flamborough & Terry Fox



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	12	253	0	2	279	82	9	1	67	81	0
Future Volume (vph)	1	12	253	0	2	279	82	9	1	67	81	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.970			0.883			0.968
Flt Protected			0.998						0.994			0.963
Satd. Flow (prot)	0	0	1738	0	0	1706	0	0	1547	0	0	1611
Flt Permitted			0.998						0.994			0.963
Satd. Flow (perm)	0	0	1738	0	0	1706	0	0	1547	0	0	1611
Link Speed (k/h)			50			50			30			50
Link Distance (m)			185.1			991.2			145.1			590.1
Travel Time (s)			13.3			71.4			17.4			42.5
Confl. Peds. (#/hr)		5		5	5		5	5				
Confl. Bikes (#/hr)				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%	7%	2%	1%	1%	1%	2%	1%	1%	1%	3%	1%
Adj. Flow (vph)	1	12	253	0	2	279	82	9	1	67	81	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	266	0	0	363	0	0	77	0	0	106
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)			3.0			3.0			0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Sign Control			Free			Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Confl. Bikes (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	25
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
Turning Speed (k/h)	14
Sign Control	

Intersection Summary

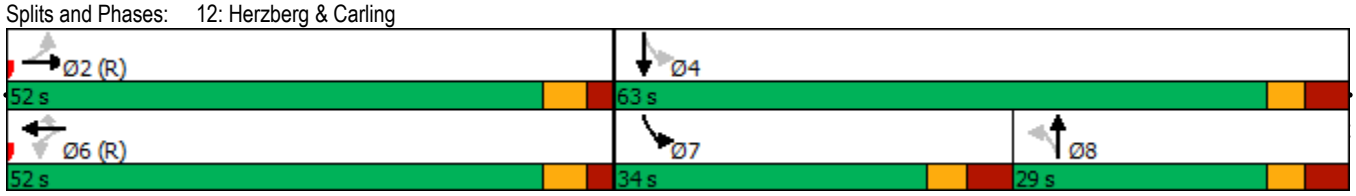
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	587	53	44	336	304	22	251	39	484	524	42
Future Volume (vph)	18	587	53	44	336	304	22	251	39	484	524	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00				0.96		0.99			1.00	
Frt		0.988				0.850		0.983			0.989	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1674	1736	0	1510	1762	1483	0	1700	0	1642	1736	0
Flt Permitted	0.440			0.128				0.923		0.220		
Satd. Flow (perm)	770	1736	0	203	1762	1427	0	1573	0	380	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				304		6			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	587	53	44	336	304	22	251	39	484	524	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	640	0	44	336	304	0	312	0	484	566	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	29.0	29.0		34.0	63.0	
Total Split (%)	45.2%	45.2%		45.2%	45.2%	45.2%	25.2%	25.2%		29.6%	54.8%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	21.8	21.8		26.8	55.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	45.9	45.9		45.9	45.9	45.9		21.8		55.8	55.8	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40		0.19		0.49	0.49	
v/c Ratio	0.06	0.92		0.54	0.48	0.40		1.03		1.01	0.67	
Control Delay	22.1	53.0		55.4	28.5	4.3		105.0		72.2	27.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	22.1	53.0		55.4	28.5	4.3		105.0		72.2	27.3	
LOS	C	D		E	C	A		F		E	C	
Approach Delay		52.1			19.5			105.0			48.0	
Approach LOS		D			B			F			D	
Queue Length 50th (m)	2.3	123.4		6.9	50.9	0.0		~68.3		~81.1	86.0	
Queue Length 95th (m)	6.7	#189.2		#23.5	75.2	15.2		#119.3		#142.8	122.4	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	307	695		81	703	752		303		478	844	
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	0.92		0.54	0.48	0.40		1.03		1.01	0.67	

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 48.3 Intersection LOS: D
Intersection Capacity Utilization 105.4% 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.

Splits and Phases: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	146	312	247	58	93	58	8	267	1000	117	1	247
Future Volume (vph)	146	312	247	58	93	58	8	267	1000	117	1	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3070	3316	1423	3014	3131	1397	0	3234	3221	1458	0	3232
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			141			141				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	146	312	247	58	93	58	8	267	1000	117	1	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	312	247	58	93	58	0	275	1000	117	0	248
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

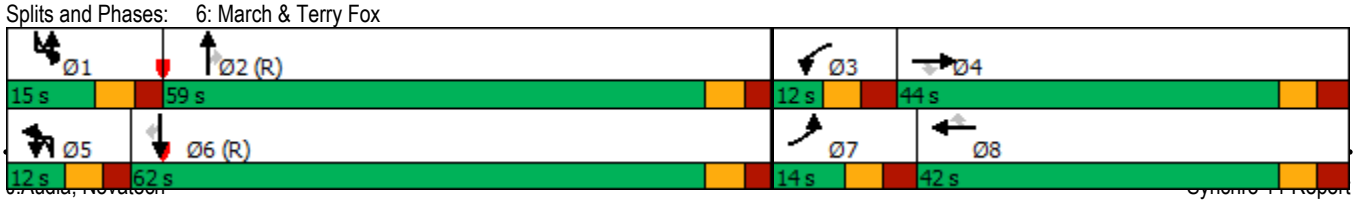
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1443	282
Future Volume (vph)	1443	282
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1420
Right Turn on Red		Yes
Satd. Flow (RTOR)		275
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1443	282
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1443	282
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	14.0	44.0	44.0	12.0	42.0	42.0	12.0	12.0	59.0	59.0	15.0	15.0
Total Split (%)	10.8%	33.8%	33.8%	9.2%	32.3%	32.3%	9.2%	9.2%	45.4%	45.4%	11.5%	11.5%
Maximum Green (s)	7.0	37.0	37.0	5.0	35.0	35.0	5.6	5.6	52.6	52.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	7.0	23.0	23.0	5.0	18.6	18.6		20.8	60.9	60.9		16.8
Actuated g/C Ratio	0.05	0.18	0.18	0.04	0.14	0.14		0.16	0.47	0.47		0.13
v/c Ratio	0.88	0.53	0.67	0.50	0.21	0.18		0.53	0.66	0.15		0.59
Control Delay	104.7	51.6	29.9	73.4	43.9	1.0		45.1	38.2	10.4		60.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	104.7	51.6	29.9	73.4	43.9	1.0		45.1	38.2	10.4		60.1
LOS	F	D	C	E	D	A		D	D	B		E
Approach Delay		55.0			40.2				37.2			
Approach LOS		D			D				D			
Queue Length 50th (m)	17.9	37.5	24.6	6.7	10.6	0.0		32.4	85.6	1.8		28.5
Queue Length 95th (m)	#36.0	42.6	43.4	m10.2	m12.2	m0.0		m#55.6	m118.6	m9.1		#60.3
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	166	943	505	117	842	479		519	1508	760		419
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	0.88	0.33	0.49	0.50	0.11	0.12		0.53	0.66	0.15		0.59

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 46.8 Intersection LOS: D
Intersection Capacity Utilization 98.8% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	62.0	62.0
Total Split (%)	47.7%	47.7%
Maximum Green (s)	55.6	55.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	56.9	56.9
Actuated g/C Ratio	0.44	0.44
v/c Ratio	1.00	0.36
Control Delay	59.0	4.2
Queue Delay	0.0	0.0
Total Delay	59.0	4.2
LOS	E	A
Approach Delay	51.3	
Approach LOS	D	
Queue Length 50th (m)	170.4	0.9
Queue Length 95th (m)	#228.5	15.7
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1450	775
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.00	0.36

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	209	1	47	1957	116	2	150
Future Volume (vph)	53	18	5	41	20	209	1	47	1957	116	2	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		1.00	1.00			1.00
Frt			0.850			0.850			0.992			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3243	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1623	3243	0	0	3241
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			165			6			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	209	1	47	1957	116	2	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	209	0	48	2073	0	0	152
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1860	100
Future Volume (vph)	1860	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	1860	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1860	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		15.9	15.9	15.9	15.9	15.9		9.2	82.9			11.4
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12		0.07	0.64			0.09
v/c Ratio		0.44	0.02	0.29	0.09	0.65		0.42	1.00			0.53
Control Delay		58.7	0.2	60.3	55.8	39.2		67.8	44.3			63.5
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		58.7	0.2	60.3	55.8	39.2		67.8	44.3			63.5
LOS		E	A	E	E	D		E	D			E
Approach Delay		54.9			43.7				44.9			
Approach LOS		D			D				D			
Queue Length 50th (m)		16.3	0.0	10.0	4.8	27.9		11.0	219.4			18.9
Queue Length 95th (m)		25.5	0.0	m13.2	m6.7	m46.1		22.3	#373.4			m22.4
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	497		200	2069			399
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		0.21	0.01	0.14	0.04	0.42		0.24	1.00			0.38

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 115.4% ICU Level of Service H
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	87.6	87.6
Actuated g/C Ratio	0.67	0.67
v/c Ratio	0.85	0.10
Control Delay	12.8	0.2
Queue Delay	0.0	0.0
Total Delay	12.8	0.2
LOS	B	A
Approach Delay	15.9	
Approach LOS	B	
Queue Length 50th (m)	40.9	0.0
Queue Length 95th (m)	m#282.8	m0.2
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2190	987
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.85	0.10

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	342	11	15	513	547	73	450	41	237	245	29
Future Volume (vph)	34	342	11	15	513	547	73	450	41	237	245	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.95		1.00			1.00	
Frt		0.995				0.850		0.990			0.984	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1674	1751	0	1510	1762	1483	0	1724	0	1674	1697	0
Flt Permitted	0.250			0.415				0.909		0.303		
Satd. Flow (perm)	441	1751	0	655	1762	1410	0	1575	0	534	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				358		4			7	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	342	11	15	513	547	73	450	41	237	245	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	353	0	15	513	547	0	564	0	237	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	65.0	65.0		13.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	50.0%	50.0%		10.0%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	57.8	57.8		5.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	52.4	52.4		52.4	52.4	52.4		51.3		64.3	64.3	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40		0.39		0.49	0.49	
v/c Ratio	0.19	0.50		0.06	0.72	0.70		0.90		0.75	0.33	
Control Delay	28.1	30.8		28.0	41.3	16.9		55.4		39.4	18.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	28.1	30.8		28.0	41.3	16.9		55.4		39.4	18.1	
LOS	C	C		C	D	B		E		D	B	
Approach Delay		30.6			28.7			55.4			27.9	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	6.2	71.3		2.2	103.4	37.3		120.2		40.4	52.9	
Queue Length 95th (m)	m12.5	m89.9		7.2	#160.3	84.1		158.4		42.9	48.2	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	177	706		263	709	781		702		315	927	
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	0.50		0.06	0.72	0.70		0.80		0.75	0.30	

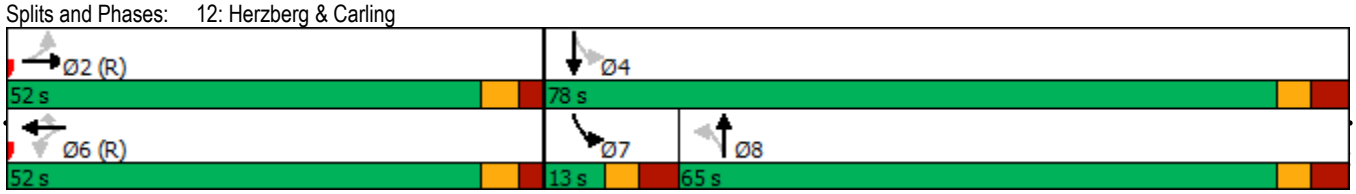
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 34.8 — Intersection LOS: C
Intersection Capacity Utilization 94.8% — 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	403	128	19	411	53	39	50	15	66	89	24
Future Volume (vph)	12	403	128	19	411	53	39	50	15	66	89	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00			1.00	
Frt		0.968				0.850		0.981			0.982	
Flt Protected		0.999			0.998			0.982			0.982	
Satd. Flow (prot)	0	1585	0	0	1621	1498	0	1691	0	0	1679	0
Flt Permitted		0.990			0.971			0.822			0.854	
Satd. Flow (perm)	0	1570	0	0	1577	1463	0	1416	0	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				53		10			9	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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 (%)	17%	10%	1%	1%	10%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	12	403	128	19	411	53	39	50	15	66	89	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	543	0	0	430	53	0	104	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.8	32.8		32.8	32.8	32.8	32.3	32.3		32.3	32.3	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	33.0	33.0		33.0	33.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%	63.3%	36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	51.2	51.2		51.2	51.2	51.2	27.7	27.7		27.7	27.7	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2	1.2	1.6	1.6		1.6	1.6	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.8			5.8	5.8		5.3			5.3	
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	Max	Max		Max	Max	Max	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)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		5	5	
Act Effct Green (s)		54.1			54.1	54.1		15.7			15.7	
Actuated g/C Ratio		0.67			0.67	0.67		0.19			0.19	
v/c Ratio		0.51			0.41	0.05		0.37			0.62	
Control Delay		9.7			8.8	2.4		27.6			36.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		9.7			8.8	2.4		27.6			36.7	
LOS		A			A	A		C			D	
Approach Delay		9.7			8.1			27.6			36.7	
Approach LOS		A			A			C			D	
Queue Length 50th (m)		28.7			22.0	0.0		11.0			21.1	
Queue Length 95th (m)		76.4			57.7	4.1		22.6			37.8	
Internal Link Dist (m)		499.3			1388.9			1041.2			482.1	
Turn Bay Length (m)						90.0						
Base Capacity (vph)		1058			1053	995		493			507	
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		0.51			0.41	0.05		0.21			0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 81	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Old Carp/Donald B. Munro & March

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	156	312	247	58	93	58	8	267	1000	117	1	247
Future Volume (vph)	156	312	247	58	93	58	8	267	1000	117	1	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		0.99
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3066	3316	1419	3006	3131	1395	0	3238	3221	1456	0	3229
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			122			122				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	156	312	247	58	93	58	8	267	1000	117	1	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	312	247	58	93	58	0	275	1000	117	0	248
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

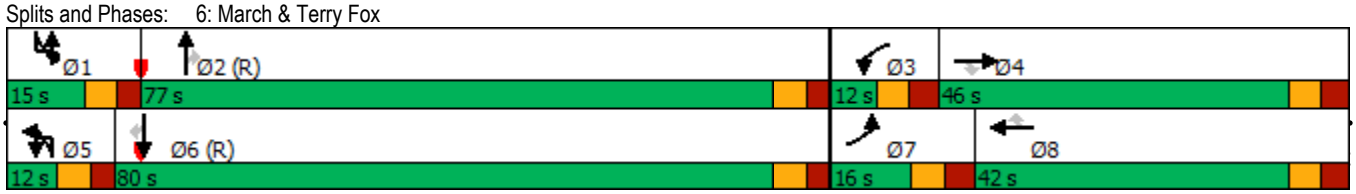
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1813	282
Future Volume (vph)	1813	282
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.96
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1416
Right Turn on Red		Yes
Satd. Flow (RTOR)		213
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1813	282
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1813	282
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	46.0	46.0	12.0	42.0	42.0	12.0	12.0	77.0	77.0	15.0	15.0
Total Split (%)	10.7%	30.7%	30.7%	8.0%	28.0%	28.0%	8.0%	8.0%	51.3%	51.3%	10.0%	10.0%
Maximum Green (s)	9.0	39.0	39.0	5.0	35.0	35.0	5.6	5.6	70.6	70.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	9.0	25.4	25.4	5.0	19.0	19.0		21.6	75.2	75.2		20.0
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	0.13		0.14	0.50	0.50		0.13
v/c Ratio	0.84	0.56	0.72	0.57	0.24	0.21		0.59	0.62	0.15		0.57
Control Delay	104.1	60.6	41.4	92.6	57.7	1.6		64.2	29.5	3.2		66.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	104.1	60.6	41.4	92.6	57.7	1.6		64.2	29.5	3.2		66.1
LOS	F	E	D	F	E	A		E	C	A		E
Approach Delay		63.5			51.8				34.1			
Approach LOS		E			D				C			
Queue Length 50th (m)	22.2	43.7	34.9	8.2	12.5	0.0		35.8	98.4	0.0		33.1
Queue Length 95th (m)	#40.4	50.1	55.7	#16.3	18.0	0.0		#90.0	130.8	8.5		#71.7
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	185	862	459	102	730	419		468	1615	793		433
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	0.84	0.36	0.54	0.57	0.13	0.14		0.59	0.62	0.15		0.57

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 114 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 63.8 Intersection LOS: E
Intersection Capacity Utilization 109.6% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	80.0	80.0
Total Split (%)	53.3%	53.3%
Maximum Green (s)	73.6	73.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	73.6	73.6
Actuated g/C Ratio	0.49	0.49
v/c Ratio	1.11	0.35
Control Delay	96.7	7.1
Queue Delay	0.0	0.0
Total Delay	96.7	7.1
LOS	F	A
Approach Delay	82.6	
Approach LOS	F	
Queue Length 50th (m)	~298.4	9.9
Queue Length 95th (m)	#336.7	26.8
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1627	803
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.11	0.35

Intersection Summary

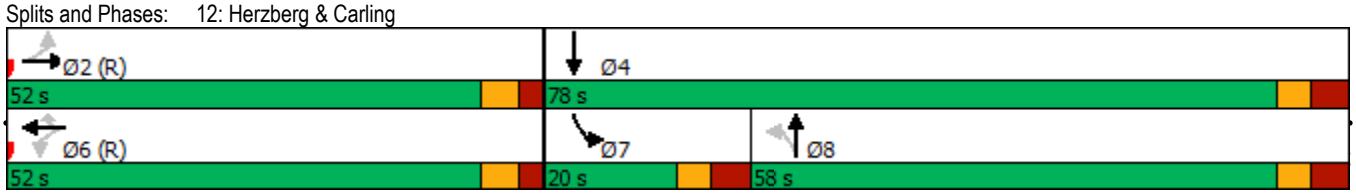
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	342	11	15	513	547	73	500	41	237	245	29
Future Volume (vph)	34	342	11	15	513	547	73	500	41	237	245	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	40.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		0.99		0.95	0.99	1.00		0.99	1.00	
Frt		0.995				0.850		0.989			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3328	0	1510	1762	1483	1674	1735	0	3248	1697	0
Flt Permitted	0.247			0.511			0.591			0.950		
Satd. Flow (perm)	435	3328	0	805	1762	1410	1031	1735	0	3225	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				377		4			7	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	342	11	15	513	547	73	500	41	237	245	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	353	0	15	513	547	73	541	0	237	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	58.0	58.0		20.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	44.6%	44.6%		15.4%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	50.8	50.8		12.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	52.1	52.1		52.1	52.1	52.1	44.9	44.9		12.4	64.6	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40	0.35	0.35		0.10	0.50	
v/c Ratio	0.20	0.26		0.05	0.73	0.69	0.21	0.90		0.76	0.32	
Control Delay	28.7	25.2		27.7	41.7	15.5	29.8	58.5		73.9	19.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.7	25.2		27.7	41.7	15.5	29.8	58.5		73.9	19.4	
LOS	C	C		C	D	B	C	E		E	B	
Approach Delay		25.5			28.2			55.1			44.7	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	6.3	34.8		2.2	103.6	32.7	11.9	117.9		28.5	35.7	
Queue Length 95th (m)	m12.0	m41.4		7.1	#160.3	78.1	21.6	153.6		#43.7	48.8	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0	40.0			220.0		
Base Capacity (vph)	174	1336		322	706	791	402	680		319	927	
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	0.20	0.26		0.05	0.73	0.69	0.18	0.80		0.74	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 91.5% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	225	186	224	140	309	195	21	369	1608	107	1	131
Future Volume (vph)	225	186	224	140	309	195	21	369	1608	107	1	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3197	3221	1466	3225	3316	1453	0	3231	3349	1465	0	3244
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			195			195				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	225	186	224	140	309	195	21	369	1608	107	1	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	186	224	140	309	195	0	390	1608	107	0	132
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1027	241
Future Volume (vph)	1027	241
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1455
Right Turn on Red		Yes
Satd. Flow (RTOR)		241
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1027	241
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1027	241
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	42.0	42.0	16.0	42.0	42.0	23.0	23.0	60.0	60.0	12.0	12.0
Total Split (%)	12.3%	32.3%	32.3%	12.3%	32.3%	32.3%	17.7%	17.7%	46.2%	46.2%	9.2%	9.2%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	16.6	16.6	53.6	53.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	9.0	23.4	23.4	8.8	23.2	23.2		18.9	62.3	62.3		8.8
Actuated g/C Ratio	0.07	0.18	0.18	0.07	0.18	0.18		0.15	0.48	0.48		0.07
v/c Ratio	1.00	0.32	0.53	0.64	0.52	0.47		0.83	1.00	0.14		0.61
Control Delay	121.1	45.9	12.7	75.0	57.3	14.8		64.7	36.6	1.4		71.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	121.1	45.9	12.7	75.0	57.3	14.8		64.7	36.6	1.4		71.1
LOS	F	D	B	E	E	B		E	D	A		E
Approach Delay		60.8			48.3				40.0			
Approach LOS		E			D				D			
Queue Length 50th (m)	~27.8	21.5	6.1	17.1	37.9	5.3		40.6	206.1	0.9		15.4
Queue Length 95th (m)	#52.4	27.3	24.6	m26.3	m43.5	m17.2		m45.8	m#243.9	m2.1		#34.8
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	224	867	537	224	892	533		471	1603	777		218
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	1.00	0.21	0.42	0.63	0.35	0.37		0.83	1.00	0.14		0.61

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 94 (72%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 42.9 Intersection LOS: D
Intersection Capacity Utilization 99.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: March & Terry Fox

Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	49.0	49.0
Total Split (%)	37.7%	37.7%
Maximum Green (s)	42.6	42.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	52.2	52.2
Actuated g/C Ratio	0.40	0.40
v/c Ratio	0.76	0.33
Control Delay	39.8	5.1
Queue Delay	0.0	0.0
Total Delay	39.8	5.1
LOS	D	A
Approach Delay	36.7	
Approach LOS	D	
Queue Length 50th (m)	105.8	0.0
Queue Length 95th (m)	#161.3	16.5
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1343	727
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.76	0.33

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	217	5	27	1852	55	270	2259
Future Volume (vph)	30	11	15	124	18	217	5	27	1852	55	270	2259
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.996			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3300	0	3248	3349
Flt Permitted		0.789		0.730				0.950			0.950	
Satd. Flow (perm)	0	1387	1458	1199	1762	1474	0	1673	3300	0	3241	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			217			3			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	217	5	27	1852	55	270	2259
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	217	0	32	1907	0	270	2259
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	90
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	51.5%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	60.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		20.0	20.0	20.0	20.0	20.0		8.0	75.0		15.2	87.4
Actuated g/C Ratio		0.15	0.15	0.15	0.15	0.15		0.06	0.58		0.12	0.67
v/c Ratio		0.19	0.05	0.67	0.07	0.53		0.31	1.00		0.71	1.00
Control Delay		46.3	0.3	94.4	70.8	39.1		65.5	49.2		57.1	50.9
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		46.3	0.3	94.4	70.8	39.1		65.5	49.2		57.1	50.9
LOS		D	A	F	E	D		E	D		E	D
Approach Delay		34.0			59.8				49.5			50.6
Approach LOS		C			E				D			D
Queue Length 50th (m)		8.6	0.0	30.3	4.3	29.0		7.4	224.5		29.4	~310.4
Queue Length 95th (m)		16.2	0.0	m45.3	m7.7	m41.9		16.8	#332.9		m41.4	#407.2
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		355	436	307	451	538		206	1905		409	2252
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		0.12	0.03	0.40	0.04	0.40		0.16	1.00		0.66	1.00

Intersection Summary

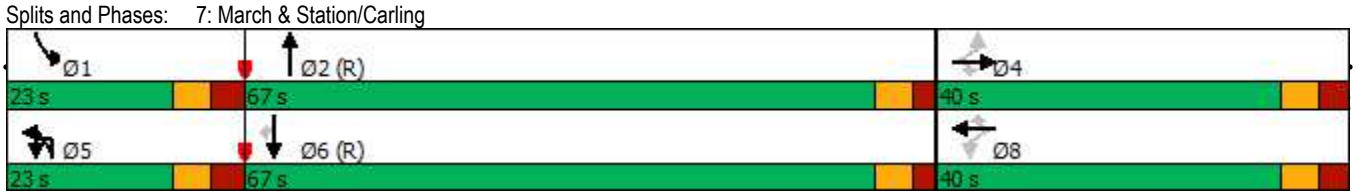
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 50.6 Intersection LOS: D
Intersection Capacity Utilization 116.5% 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: 7: March & Station/Carling



Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	87.4
Actuated g/C Ratio	0.67
v/c Ratio	0.05
Control Delay	2.5
Queue Delay	0.0
Total Delay	2.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	m3.6
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	994
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	175	483	12	3	12	731	89	14	3	5	52	4
Future Volume (vph)	175	483	12	3	12	731	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.99		0.95	0.98	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.853
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1546	0	1674	1414
Flt Permitted	0.950				0.950			0.384			0.752	
Satd. Flow (perm)	1657	1762	1421	0	1650	1762	1419	666	1546	0	1295	1414
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		5			190
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	175	483	12	3	12	731	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	483	12	0	15	731	89	14	8	0	52	194
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	190		
Future Volume (vph)	190		
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)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	190		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	24.5	77.4	77.4		6.6	45.4	45.4	13.4	13.4		13.4	13.4
Actuated g/C Ratio	0.23	0.71	0.71		0.06	0.42	0.42	0.12	0.12		0.12	0.12
v/c Ratio	0.47	0.39	0.01		0.15	1.00	0.13	0.17	0.04		0.33	0.57
Control Delay	25.4	9.7	0.0		54.6	65.1	1.3	47.1	29.4		48.9	13.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	25.4	9.7	0.0		54.6	65.1	1.3	47.1	29.4		48.9	13.5
LOS	C	A	A		D	E	A	D	C		D	B
Approach Delay		13.6				58.1			40.6			20.9
Approach LOS		B				E			D			C
Queue Length 50th (m)	19.6	21.6	0.0		2.7	129.2	0.0	2.5	0.5		9.3	0.7
Queue Length 95th (m)	31.1	89.4	0.0		9.9	#267.8	2.6	8.1	4.6		20.5	18.6
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	483	1253	1035		241	734	672	174	408		338	510
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	0.36	0.39	0.01		0.06	1.00	0.13	0.08	0.02		0.15	0.38

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 108.8
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 35.9 — Intersection LOS: D
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.

Splits and Phases: 9: Terry Fox & Old Second Line

Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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

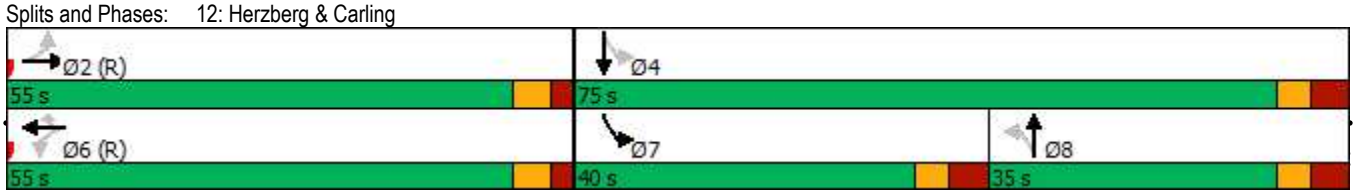
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	557	53	44	336	304	22	221	39	474	524	42
Future Volume (vph)	18	557	53	44	336	304	22	221	39	474	524	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00				0.96		0.99			1.00	
Frt		0.987				0.850		0.981			0.989	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1674	1733	0	1510	1762	1483	0	1693	0	1642	1736	0
Flt Permitted	0.427			0.141				0.918		0.270		
Satd. Flow (perm)	747	1733	0	224	1762	1424	0	1559	0	467	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				304		6			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	557	53	44	336	304	22	221	39	474	524	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	610	0	44	336	304	0	282	0	474	566	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	51.0	51.0		51.0	51.0	51.0		25.8		65.7	65.7	
Actuated g/C Ratio	0.39	0.39		0.39	0.39	0.39		0.20		0.51	0.51	
v/c Ratio	0.06	0.89		0.50	0.49	0.41		0.90		0.89	0.64	
Control Delay	17.0	43.0		55.1	33.3	4.7		79.8		50.7	34.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	17.0	43.0		55.1	33.3	4.7		79.8		50.7	34.6	
LOS	B	D		E	C	A		E		D	C	
Approach Delay		42.3			22.0			79.8			41.9	
Approach LOS		D			C			E			D	
Queue Length 50th (m)	1.6	145.4		8.0	60.7	0.0		62.9		85.8	105.0	
Queue Length 95th (m)	m3.6	m#199.2		#24.0	87.2	16.8		#104.5		#129.9	141.2	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	292	682		88	691	743		338		532	907	
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	0.89		0.50	0.49	0.41		0.83		0.89	0.62	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 40.9 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	447	68	11	572	104	79	80	18	54	74	20
Future Volume (vph)	24	447	68	11	572	104	79	80	18	54	74	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		1.00			1.00	
Frt		0.983				0.850		0.986			0.982	
Flt Protected		0.998			0.999			0.978			0.982	
Satd. Flow (prot)	0	1605	0	0	1695	1498	0	1695	0	0	1678	0
Flt Permitted		0.966			0.990			0.778			0.809	
Satd. Flow (perm)	0	1554	0	0	1679	1463	0	1348	0	0	1382	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				104		7			9	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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%	10%	1%	1%	5%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	24	447	68	11	572	104	79	80	18	54	74	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	539	0	0	583	104	0	177	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.8	32.8		32.8	32.8	32.8	32.3	32.3		32.3	32.3	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	33.0	33.0		33.0	33.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%	63.3%	36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	51.2	51.2		51.2	51.2	51.2	27.7	27.7		27.7	27.7	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2	1.2	1.6	1.6		1.6	1.6	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.8			5.8	5.8		5.3			5.3	
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	Max	Max		Max	Max	Max	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)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		5	5	
Act Effct Green (s)		53.0			53.0	53.0		15.8			15.8	
Actuated g/C Ratio		0.66			0.66	0.66		0.20			0.20	
v/c Ratio		0.52			0.52	0.10		0.65			0.53	
Control Delay		10.3			10.4	2.0		39.1			33.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		10.3			10.4	2.0		39.1			33.0	
LOS		B			B	A		D			C	
Approach Delay		10.3			9.1			39.1			33.0	
Approach LOS		B			A			D			C	
Queue Length 50th (m)		30.2			33.7	0.0		21.3			16.9	
Queue Length 95th (m)		78.4			85.2	5.7		38.3			31.8	
Internal Link Dist (m)		499.3			1388.9			1041.2			482.1	
Turn Bay Length (m)						90.0						
Base Capacity (vph)		1034			1113	1005		473			486	
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		0.52			0.52	0.10		0.37			0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 79.9	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 15.2	Intersection LOS: B
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Old Carp/Donald B. Munro & March

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	285	186	224	140	309	195	21	369	1678	107	1	131
Future Volume (vph)	285	186	224	140	309	195	21	369	1678	107	1	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3189	3221	1464	3221	3316	1449	0	3228	3349	1464	0	3244
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			169			169				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	285	186	224	140	309	195	21	369	1678	107	1	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	285	186	224	140	309	195	0	390	1678	107	0	132
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

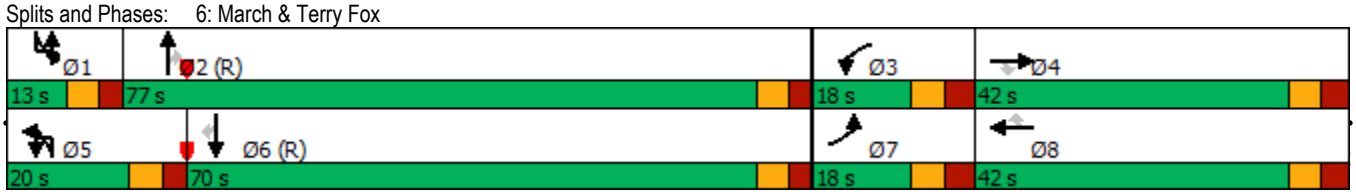
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1027	241
Future Volume (vph)	1027	241
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1453
Right Turn on Red		Yes
Satd. Flow (RTOR)		241
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1027	241
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1027	241
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	18.0	42.0	42.0	18.0	42.0	42.0	20.0	20.0	77.0	77.0	13.0	13.0
Total Split (%)	12.0%	28.0%	28.0%	12.0%	28.0%	28.0%	13.3%	13.3%	51.3%	51.3%	8.7%	8.7%
Maximum Green (s)	11.0	35.0	35.0	11.0	35.0	35.0	13.6	13.6	70.6	70.6	6.6	6.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	11.0	24.8	24.8	10.4	24.2	24.2		24.2	78.5	78.5		9.5
Actuated g/C Ratio	0.07	0.17	0.17	0.07	0.16	0.16		0.16	0.52	0.52		0.06
v/c Ratio	1.20	0.35	0.58	0.62	0.58	0.52		0.74	0.96	0.13		0.64
Control Delay	178.4	55.7	20.8	80.5	61.3	15.2		68.0	48.0	2.4		82.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	178.4	55.7	20.8	80.5	61.3	15.2		68.0	48.0	2.4		82.3
LOS	F	E	C	F	E	B		E	D	A		F
Approach Delay		94.8			51.5				49.4			
Approach LOS		F			D				D			
Queue Length 50th (m)	~48.5	25.2	13.9	19.4	43.5	6.4		51.2	219.5	0.0		18.0
Queue Length 95th (m)	#76.0	32.3	35.7	30.2	51.6	25.9		#101.5	#304.5	6.5		#38.5
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	238	751	471	238	773	467		524	1753	826		205
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	1.20	0.25	0.48	0.59	0.40	0.42		0.74	0.96	0.13		0.64

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 94 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 52.6 Intersection LOS: D
Intersection Capacity Utilization 103.4% 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.

Splits and Phases: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	70.0	70.0
Total Split (%)	46.7%	46.7%
Maximum Green (s)	63.6	63.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	63.8	63.8
Actuated g/C Ratio	0.43	0.43
v/c Ratio	0.72	0.32
Control Delay	39.4	4.1
Queue Delay	0.0	0.0
Total Delay	39.4	4.1
LOS	D	A
Approach Delay	37.3	
Approach LOS	D	
Queue Length 50th (m)	120.6	0.0
Queue Length 95th (m)	145.5	14.7
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1423	755
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.72	0.32

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	175	483	12	3	12	781	89	14	3	5	52	4
Future Volume (vph)	175	483	12	3	12	781	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.98		0.95	0.98	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.853
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1543	0	1674	1411
Flt Permitted	0.950				0.950			0.329			0.752	
Satd. Flow (perm)	1657	1762	1418	0	1648	1762	1417	570	1543	0	1293	1411
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			79				129		5			190
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	175	483	12	3	12	781	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	175	483	12	0	15	781	89	14	8	0	52	194
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	190		
Future Volume (vph)	190		
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)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	190		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		83.0	83.0	22.0	22.0	61.0	61.0	35.0	35.0		35.0	35.0
Total Split (%)		59.3%	59.3%	15.7%	15.7%	43.6%	43.6%	25.0%	25.0%		25.0%	25.0%
Maximum Green (s)		77.1	77.1	15.6	15.6	55.1	55.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	24.5	87.4	87.4		6.7	55.4	55.4	13.5	13.5		13.5	13.5
Actuated g/C Ratio	0.21	0.73	0.73		0.06	0.47	0.47	0.11	0.11		0.11	0.11
v/c Ratio	0.51	0.37	0.01		0.16	0.95	0.12	0.22	0.04		0.35	0.59
Control Delay	30.6	9.0	0.0		60.1	53.7	1.6	55.5	32.5		55.2	14.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	30.6	9.0	0.0		60.1	53.7	1.6	55.5	32.5		55.2	14.8
LOS	C	A	A		E	D	A	E	C		E	B
Approach Delay		14.5				48.5			47.1			23.3
Approach LOS		B				D			D			C
Queue Length 50th (m)	23.3	21.6	0.0		3.0	145.3	0.0	2.8	0.6		10.4	0.8
Queue Length 95th (m)	36.4	88.2	0.0		10.5	#290.5	3.5	8.9	4.9		22.2	19.8
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	441	1293	1062		220	820	728	136	372		309	482
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	0.40	0.37	0.01		0.07	0.95	0.12	0.10	0.02		0.17	0.40

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 119
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 32.6 — Intersection LOS: C
Intersection Capacity Utilization 85.8% — 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: 9: Terry Fox & Old Second Line

Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		16%	16%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	587	53	44	336	304	22	251	39	484	524	42
Future Volume (vph)	18	587	53	44	336	304	22	251	39	484	524	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	40.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	1.00		1.00		0.96	0.99	1.00		0.99	1.00	
Frt		0.988				0.850		0.980			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3297	0	1510	1762	1483	1674	1703	0	3185	1736	0
Flt Permitted	0.459			0.336			0.452			0.950		
Satd. Flow (perm)	803	3297	0	532	1762	1424	785	1703	0	3154	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				304		5			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	587	53	44	336	304	22	251	39	484	524	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	640	0	44	336	304	22	290	0	484	566	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

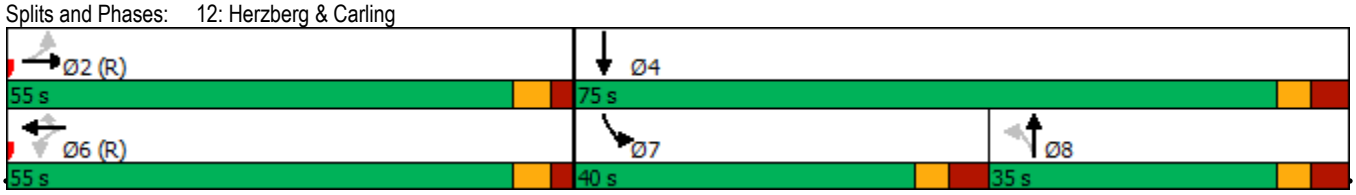
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	58.3	58.3		58.3	58.3	58.3	26.2	26.2		25.0	58.4	
Actuated g/C Ratio	0.45	0.45		0.45	0.45	0.45	0.20	0.20		0.19	0.45	
v/c Ratio	0.05	0.43		0.18	0.43	0.38	0.14	0.84		0.79	0.72	
Control Delay	16.3	16.0		28.1	28.5	4.3	43.0	69.1		59.7	34.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	16.3	16.0		28.1	28.5	4.3	43.0	69.1		59.7	34.0	
LOS	B	B		C	C	A	D	E		E	C	
Approach Delay		16.0			17.7			67.3			45.8	
Approach LOS		B			B			E			D	
Queue Length 50th (m)	1.6	30.2		6.3	54.1	0.0	4.3	64.4		56.6	104.1	
Queue Length 95th (m)	m3.6	m41.5		16.0	87.2	16.8	11.3	92.3		70.0	125.8	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0	40.0			220.0		
Base Capacity (vph)	360	1482		238	790	806	173	381		803	907	
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	0.43		0.18	0.43	0.38	0.13	0.76		0.60	0.62	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 34.0 — Intersection LOS: C
Intersection Capacity Utilization 89.7% — ICU Level of Service E
Analysis Period (min) 15

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

Splits and Phases: 12: Herzberg & Carling



APPENDIX M

Signalization Warrants

NOVATECH
Engineers, Planners & Landscape Architects

TRAFFIC SIGNAL JUSTIFICATION
USING PROJECTED VOLUMES

LOCATION: **March Road** **at** **Donald B. Munro Drive/Old Carp Road**

YEAR: **2046 Background**

JUSTIFICATION	DESCRIPTION	MINIMUM REQUIREMENT		COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	SECTIONAL		ENTIRE % (2)
		OPERATING SPEED ≥ 70KM/H	OPERATING SPEED < 70 KM/H	NUMERICAL	PERCENT	
1. MINIMUM VEHICULAR WARRANT	A. Vehicle volume, all approaches (average hour)	**480** **600 (2 or more lane approach)**	720 900 (2 or more lane approach)	715	149%	127%
	B. Vehicle volume along minor street (average hour)	**120** **180 (tee intersection)**	170 255 (tee intersection)	152	127%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volume along major street (average hour)	**480** **600 (2 or more lane approach)**	720 900 (2 or more lane approach	563	117%	117%
	B (1). Combined vehicle and pedestrian volume crossing the major street (average hour)	**50**	75	133	266%	

NOTES

1) For definition of crossing volume refer to the Ontario Traffic Manual Book 12, Section 4.5 (July 2024).
2) The lowest sectional percentage governs the entire Justification.
3) Average hourly volumes estimated from peak hour volumes, AHV = PM / 2 or **AHV = (AM + PM)** / **4**.

NOVATECH
Engineers, Planners & Landscape Architects

TRAFFIC SIGNAL JUSTIFICATION
USING PROJECTED VOLUMES

LOCATION: **March Road** **at** **Donald B. Munro Drive/Old Carp Road**

YEAR: **2046 Total**

JUSTIFICATION	DESCRIPTION	MINIMUM REQUIREMENT		COMPLIANCE		
		FREE FLOW	RESTRICTED FLOW	SECTIONAL		ENTIRE % (2)
		OPERATING SPEED ≥ 70KM/H	OPERATING SPEED < 70 KM/H	NUMERICAL	PERCENT	
1. MINIMUM VEHICULAR WARRANT	A. Vehicle volume, all approaches (average hour)	**480** **600 (2 or more lane approach)**	720 900 (2 or more lane approach)	808	168%	144%
	B. Vehicle volume along minor street (average hour)	**120** **180 (tee intersection)**	170 255 (tee intersection)	173	144%	
2. DELAY TO CROSS TRAFFIC	A. Vehicle volume along major street (average hour)	**480** **600 (2 or more lane approach)**	720 900 (2 or more lane approach	635	132%	132%
	B (1). Combined vehicle and pedestrian volume crossing the major street (average hour)	**50**	75	154	308%	

NOTES

1) For definition of crossing volume refer to the Ontario Traffic Manual Book 12, Section 4.5 (July 2024).
2) The lowest sectional percentage governs the entire Justification.
3) Average hourly volumes estimated from peak hour volumes, AHV = PM / 2 or **AHV = (AM + PM)** / **4**.

APPENDIX N

Total Synchro Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	430	128	19	473	115	39	50	15	93	89	24
Future Volume (vph)	12	430	128	19	473	115	39	50	15	93	89	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.970				0.850		0.981			0.984	
Flt Protected		0.999			0.998			0.982			0.978	
Satd. Flow (prot)	0	1595	0	0	1620	1498	0	1698	0	0	1681	0
Flt Permitted		0.999			0.998			0.982			0.978	
Satd. Flow (perm)	0	1595	0	0	1620	1498	0	1698	0	0	1681	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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 (%)	17%	10%	1%	1%	10%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	12	430	128	19	473	115	39	50	15	93	89	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	570	0	0	492	115	0	104	0	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	559	13	134	504	10	65
Future Volume (vph)	559	13	134	504	10	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.883	
Flt Protected				0.990	0.993	
Satd. Flow (prot)	1681	0	0	1682	1438	0
Flt Permitted				0.990	0.993	
Satd. Flow (perm)	1681	0	0	1682	1438	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	30%	4%	5%	12%	8%
Adj. Flow (vph)	559	13	134	504	10	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	572	0	0	638	75	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

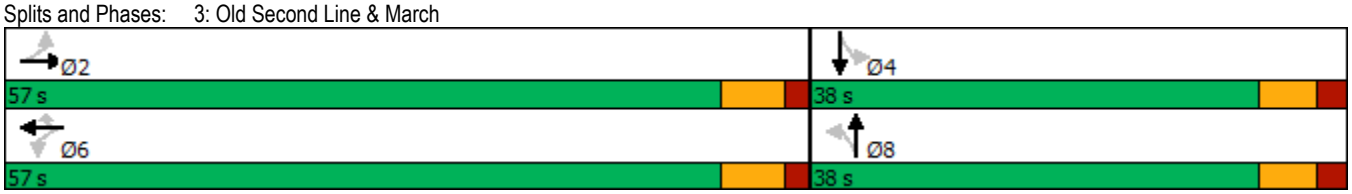
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 82.5%		ICU Level of Service E	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	554	95	19	465	12	106	19	22	60	47	24
Future Volume (vph)	9	554	95	19	465	12	106	19	22	60	47	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		1.00			1.00	
Frt		0.978				0.850		0.980			0.975	
Flt Protected	0.950			0.950				0.965			0.978	
Satd. Flow (prot)	1674	1661	0	1610	1695	1401	0	1645	0	0	1614	0
Flt Permitted	0.467			0.323				0.717			0.816	
Satd. Flow (perm)	823	1661	0	548	1695	1368	0	1222	0	0	1346	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				39		10			13	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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%	4%	7%	5%	5%	8%	1%	5%	4%	2%	10%	1%
Adj. Flow (vph)	9	554	95	19	465	12	106	19	22	60	47	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	649	0	19	465	12	0	147	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	38.0	38.0		38.0	38.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	50.6	50.6		50.6	50.6	50.6	31.6	31.6		31.6	31.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	31.8	31.8		31.8	31.8	31.8		13.7			13.7	
Actuated g/C Ratio	0.61	0.61		0.61	0.61	0.61		0.26			0.26	
v/c Ratio	0.02	0.64		0.06	0.45	0.01		0.45			0.36	
Control Delay	7.2	13.6		7.8	10.4	0.3		23.4			20.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	7.2	13.6		7.8	10.4	0.3		23.4			20.7	
LOS	A	B		A	B	A		C			C	
Approach Delay		13.5			10.0			23.4			20.7	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	0.3	37.5		0.7	23.3	0.0		9.2			7.7	
Queue Length 95th (m)	2.2	90.2		3.7	54.9	0.4		30.3			26.0	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	742	1500		494	1529	1238		809			892	
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	0.43		0.04	0.30	0.01		0.18			0.15	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 52.1	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March



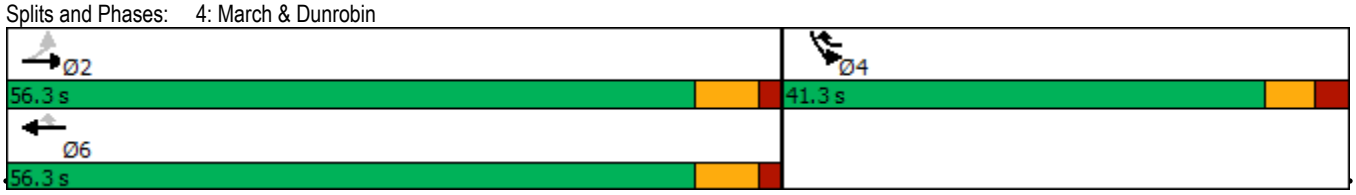
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	108	848	506	259	566	104
Future Volume (vph)	108	848	506	259	566	104
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor	1.00			0.97	0.99	
Frt				0.850	0.977	
Flt Protected	0.950				0.959	
Satd. Flow (prot)	1626	1728	1695	1441	3080	0
Flt Permitted	0.396				0.959	
Satd. Flow (perm)	675	1728	1695	1393	3080	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					25	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	5%	4%	7%
Adj. Flow (vph)	108	848	506	259	566	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	108	848	506	259	670	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	NA	NA	pm+ov	Prot	
Protected Phases		2	6	4	4	
Permitted Phases	2			6		
Detector Phase	2	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	26.3	26.3	26.3	27.3	27.3	
Total Split (s)	56.3	56.3	56.3	41.3	41.3	
Total Split (%)	57.7%	57.7%	57.7%	42.3%	42.3%	
Maximum Green (s)	50.0	50.0	50.0	35.0	35.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	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	
Recall Mode	Min	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	45.3	45.3	45.3	68.7	23.4	
Actuated g/C Ratio	0.56	0.56	0.56	0.84	0.29	
v/c Ratio	0.29	0.88	0.54	0.22	0.74	
Control Delay	13.5	29.9	14.9	1.0	31.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.5	29.9	14.9	1.0	31.5	
LOS	B	C	B	A	C	
Approach Delay		28.0	10.2		31.5	
Approach LOS		C	B		C	
Queue Length 50th (m)	7.6	98.9	42.9	0.2	46.5	
Queue Length 95th (m)	20.3	#203.4	82.2	0.4	63.2	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	424	1086	1065	1292	1369	
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	0.25	0.78	0.48	0.20	0.49	

Intersection Summary	
Area Type: Other	
Cycle Length: 97.6	
Actuated Cycle Length: 81.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 81.1%	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: 4: March & Dunrobin



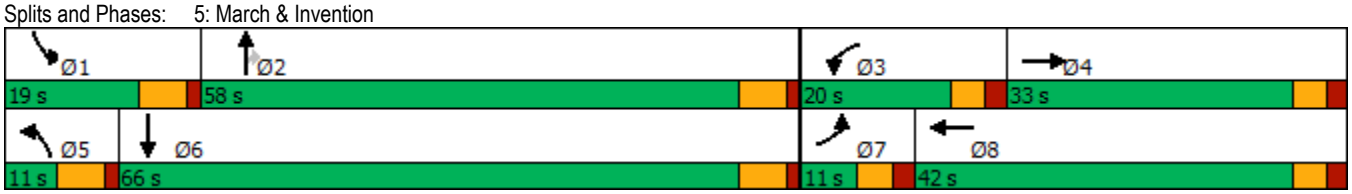
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	71	38	339	71	67	7	729	166	80	1749	3
Future Volume (vph)	11	71	38	339	71	67	7	729	166	80	1749	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00		0.96	0.99	1.00	
Frt		0.948			0.927				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1640	0	3216	1600	0	1658	3316	1483	1658	3315	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1640	0	3183	1600	0	1655	3316	1422	1648	3315	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			36				214			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	11	71	38	339	71	67	7	729	166	80	1749	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	109	0	339	138	0	7	729	166	80	1752	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		20.0	42.0		11.0	58.0	58.0	19.0	66.0	
Total Split (%)	8.5%	25.4%		15.4%	32.3%		8.5%	44.6%	44.6%	14.6%	50.8%	
Maximum Green (s)	5.5	27.5		14.5	36.5		5.0	52.0	52.0	13.0	60.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.1		14.6	32.3		5.0	54.1	54.1	10.3	65.7	
Actuated g/C Ratio	0.05	0.12		0.13	0.28		0.04	0.48	0.48	0.09	0.58	
v/c Ratio	0.14	0.50		0.82	0.29		0.10	0.46	0.21	0.54	0.91	
Control Delay	60.0	46.1		66.2	26.1		59.6	23.0	1.7	64.5	30.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	46.1		66.2	26.1		59.6	23.0	1.7	64.5	30.9	
LOS	E	D		E	C		E	C	A	E	C	
Approach Delay		47.4			54.6			19.4			32.4	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	2.2	17.4		34.6	15.7		1.4	51.3	0.0	15.5	140.8	
Queue Length 95th (m)	8.5	33.7		#67.6	34.9		6.3	85.9	5.1	33.4	#291.9	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	80	414		414	542		73	1583	790	191	1920	
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	0.14	0.26		0.82	0.25		0.10	0.46	0.21	0.42	0.91	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.4
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 32.6 — Intersection LOS: C
Intersection Capacity Utilization 87.6% — 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: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Future Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3070	3316	1423	3014	3131	1397	0	3244	3221	1458	0	3236
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			141			141				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	312	247	58	93	85	0	275	1239	117	0	310
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2367	344
Future Volume (vph)	2367	344
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1420
Right Turn on Red		Yes
Satd. Flow (RTOR)		204
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	2367	344
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2367	344
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	14.0	44.0	44.0	12.0	42.0	42.0	12.0	12.0	59.0	59.0	15.0	15.0
Total Split (%)	10.8%	33.8%	33.8%	9.2%	32.3%	32.3%	9.2%	9.2%	45.4%	45.4%	11.5%	11.5%
Maximum Green (s)	7.0	37.0	37.0	5.0	35.0	35.0	5.6	5.6	52.6	52.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	7.0	23.0	23.0	5.0	18.6	18.6		20.8	55.7	55.7		22.0
Actuated g/C Ratio	0.05	0.18	0.18	0.04	0.14	0.14		0.16	0.43	0.43		0.17
v/c Ratio	1.10	0.53	0.67	0.50	0.21	0.27		0.53	0.90	0.17		0.56
Control Delay	155.2	51.6	29.9	75.9	47.6	2.5		37.6	53.7	14.3		55.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	155.2	51.6	29.9	75.9	47.6	2.5		37.6	53.7	14.3		55.1
LOS	F	D	C	E	D	A		D	D	B		E
Approach Delay		69.9			38.3				48.1			
Approach LOS		E			D				D			
Queue Length 50th (m)	~25.2	37.5	24.6	7.0	10.6	0.0		31.0	137.1	6.1		34.9
Queue Length 95th (m)	#47.1	42.6	43.4	13.8	15.1	1.4		m#31.1	m98.5	m1.4		#77.9
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	166	943	505	117	842	479		519	1379	707		549
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	1.10	0.33	0.49	0.50	0.11	0.18		0.53	0.90	0.17		0.56

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.63
Intersection Signal Delay: 161.3 Intersection LOS: F
Intersection Capacity Utilization 125.7% 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: 6: March & Terry Fox

Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	62.0	62.0
Total Split (%)	47.7%	47.7%
Maximum Green (s)	55.6	55.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	56.9	56.9
Actuated g/C Ratio	0.44	0.44
v/c Ratio	1.63	0.47
Control Delay	315.7	12.1
Queue Delay	0.0	0.0
Total Delay	315.7	12.1
LOS	F	B
Approach Delay	254.4	
Approach LOS	F	
Queue Length 50th (m)	~417.2	20.3
Queue Length 95th (m)	#464.3	45.6
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1450	736
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.63	0.47

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	315	1	47	2700	116	2	396
Future Volume (vph)	53	18	5	41	20	315	1	47	2700	116	2	396
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		1.00	1.00			1.00
Frt			0.850			0.850			0.994			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3253	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1624	3253	0	0	3245
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			163			4			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	315	1	47	2700	116	2	396
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	315	0	48	2816	0	0	398
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2168	100
Future Volume (vph)	2168	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	2168	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2168	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		20.9	20.9	20.9	20.9	20.9		9.2	67.9			21.4
Actuated g/C Ratio		0.16	0.16	0.16	0.16	0.16		0.07	0.52			0.16
v/c Ratio		0.33	0.02	0.22	0.07	0.85		0.42	1.66			0.75
Control Delay		49.6	0.0	46.3	42.0	44.6		67.8	323.4			67.9
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		49.6	0.0	46.3	42.0	44.6		67.8	323.4			67.9
LOS		D	A	D	D	D		E	F			E
Approach Delay		46.3			44.6				319.1			
Approach LOS		D			D				F			
Queue Length 50th (m)		15.1	0.0	8.6	4.1	36.6		11.0	~516.6			51.5
Queue Length 95th (m)		25.5	0.0	16.4	9.7	61.8		22.3	#569.2			m35.7
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	496		200	1700			534
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		0.21	0.01	0.14	0.04	0.64		0.24	1.66			0.75

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.66
Intersection Signal Delay: 176.7 Intersection LOS: F
Intersection Capacity Utilization 152.9% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	82.6	82.6
Actuated g/C Ratio	0.64	0.64
v/c Ratio	1.05	0.11
Control Delay	44.1	0.0
Queue Delay	0.0	0.0
Total Delay	44.1	0.0
LOS	D	A
Approach Delay	46.0	
Approach LOS	D	
Queue Length 50th (m)	~112.6	0.1
Queue Length 95th (m)	m18.6	m0.0
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2066	937
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.05	0.11

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	81	108	3	15	2	73	83	11	3	160	3
Future Volume (vph)	2	81	108	3	15	2	73	83	11	3	160	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.924			0.986			0.991			0.998	
Flt Protected		0.999			0.993			0.979			0.999	
Satd. Flow (prot)	0	1581	0	0	1726	0	0	1694	0	0	1695	0
Flt Permitted		0.999			0.993			0.979			0.999	
Satd. Flow (perm)	0	1581	0	0	1726	0	0	1694	0	0	1695	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	50%	4%	3%	1%	1%	1%	1%	2%	8%	1%	3%	100%
Adj. Flow (vph)	2	81	108	3	15	2	73	83	11	3	160	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	191	0	0	20	0	0	167	0	0	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 40.7%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	192	642	45	1	18	428	27	29	15	28	97	14
Future Volume (vph)	192	642	45	1	18	428	27	29	15	28	97	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.99		0.95	0.99	0.97		0.98	0.96
Frt			0.850				0.850		0.902			0.855
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1595	1762	1388	0	1544	1728	1498	1470	1438	0	1674	1369
Flt Permitted	0.950				0.950			0.237			0.729	
Satd. Flow (perm)	1575	1762	1324	0	1529	1728	1426	364	1438	0	1261	1369
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		28			374
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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 (%)	6%	1%	9%	1%	10%	3%	1%	15%	22%	1%	1%	12%
Adj. Flow (vph)	192	642	45	1	18	428	27	29	15	28	97	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	642	45	0	19	428	27	29	43	0	97	388
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

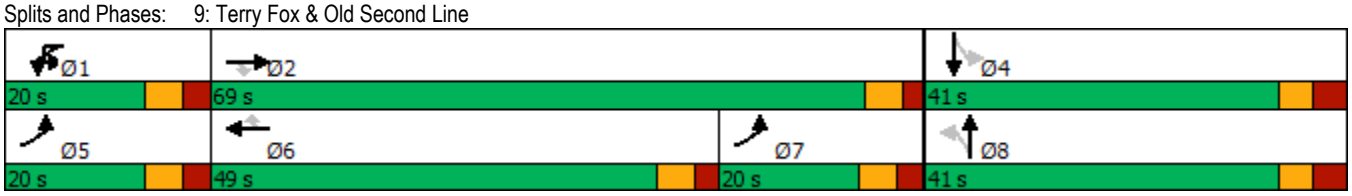
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	374		
Future Volume (vph)	374		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	6%		
Adj. Flow (vph)	374		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		33.9	33.9	11.4	11.4	33.9	33.9	39.7	39.7		39.7	39.7
Total Split (s)		69.0	69.0	20.0	20.0	49.0	49.0	41.0	41.0		41.0	41.0
Total Split (%)		53.1%	53.1%	15.4%	15.4%	37.7%	37.7%	31.5%	31.5%		31.5%	31.5%
Maximum Green (s)		63.1	63.1	13.6	13.6	43.1	43.1	34.3	34.3		34.3	34.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	Max	None	None		None	None
Walk Time (s)		12.0	12.0			12.0	12.0	12.0	12.0		12.0	12.0
Flash Dont Walk (s)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		3	3			3	3	4	4		4	4
Act Effct Green (s)	23.4	74.3	74.3		7.0	43.5	43.5	16.9	16.9		16.9	16.9
Actuated g/C Ratio	0.21	0.68	0.68		0.06	0.40	0.40	0.15	0.15		0.15	0.15
v/c Ratio	0.56	0.54	0.05		0.19	0.62	0.04	0.52	0.17		0.50	0.73
Control Delay	28.4	14.6	0.4		56.8	33.5	0.1	73.9	20.8		50.8	13.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	28.4	14.6	0.4		56.8	33.5	0.1	73.9	20.8		50.8	13.9
LOS	C	B	A		E	C	A	E	C		D	B
Approach Delay		16.9				32.5			42.2			21.3
Approach LOS		B				C			D			C
Queue Length 50th (m)	21.0	40.9	0.0		3.5	62.4	0.0	5.2	2.5		17.4	2.4
Queue Length 95th (m)	32.9	149.5	0.9		11.6	124.0	0.0	14.6	11.3		33.1	28.7
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	400	1197	926		193	686	650	115	474		398	688
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	0.48	0.54	0.05		0.10	0.62	0.04	0.25	0.09		0.24	0.56

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 109.4
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 22.8 — Intersection LOS: C
Intersection Capacity Utilization 82.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		20.0	20.0
Total Split (%)		15%	15%
Maximum Green (s)		13.6	13.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	524	120	176	336	51	37	87	143	111	138	61
Future Volume (vph)	42	524	120	176	336	51	37	87	143	111	138	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	1.00		0.96	0.98	0.99		1.00	0.98	
Frt			0.850			0.850		0.907			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1483	1728	1483	1642	1712	1469	1674	1502	0	1674	1577	0
Flt Permitted	0.558			0.346			0.468			0.391		
Satd. Flow (perm)	865	1728	1427	596	1712	1413	811	1502	0	686	1577	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			80		63			17	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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 (%)	14%	3%	2%	3%	4%	3%	1%	6%	6%	1%	2%	15%
Adj. Flow (vph)	42	524	120	176	336	51	37	87	143	111	138	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	524	120	176	336	51	37	230	0	111	199	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	70.0	70.0	18.0	70.0	70.0	42.0	42.0		42.0	42.0	
Total Split (%)	13.8%	53.8%	53.8%	13.8%	53.8%	53.8%	32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	12.1	64.1	64.1	12.1	64.1	64.1	35.4	35.4		35.4	35.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	71.1	64.5	64.5	78.5	72.4	72.4	20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.63	0.57	0.57	0.70	0.64	0.64	0.18	0.18		0.18	0.18	
v/c Ratio	0.07	0.53	0.14	0.35	0.30	0.05	0.26	0.72		0.92	0.68	
Control Delay	7.0	18.8	3.1	8.3	12.4	1.2	43.8	44.4		107.3	51.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.0	18.8	3.1	8.3	12.4	1.2	43.8	44.4		107.3	51.1	
LOS	A	B	A	A	B	A	D	D		F	D	
Approach Delay		15.3			10.1			44.3			71.2	
Approach LOS		B			B			D			E	
Queue Length 50th (m)	2.2	60.6	0.0	10.0	31.3	0.0	6.5	32.0		22.1	34.5	
Queue Length 95th (m)	7.0	114.6	8.5	23.3	61.4	2.4	15.5	57.2		#46.7	57.7	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	657	991	870	533	1102	938	257	519		217	511	
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	0.06	0.53	0.14	0.33	0.30	0.05	0.14	0.44		0.51	0.39	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 112.4
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 27.4 — Intersection LOS: C
Intersection Capacity Utilization 84.5% — 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: 10: Innovation/Flamborough & Terry Fox

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	391	9	46	202	94	1	1	3	173	1	28
Future Volume (vph)	22	391	9	46	202	94	1	1	3	173	1	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.963			0.919			0.981	
Flt Protected		0.997			0.993			0.990			0.959	
Satd. Flow (prot)	0	1746	0	0	1623	0	0	1347	0	0	1580	0
Flt Permitted		0.997			0.993			0.990			0.959	
Satd. Flow (perm)	0	1746	0	0	1623	0	0	1347	0	0	1580	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		185.1			991.2			145.1			590.1	
Travel Time (s)		13.3			71.4			17.4			42.5	
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)			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 (%)	4%	1%	9%	1%	2%	13%	1%	1%	33%	6%	1%	6%
Adj. Flow (vph)	22	391	9	46	202	94	1	1	3	173	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	422	0	0	342	0	0	5	0	0	202	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.8%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	588	11	15	619	547	73	553	41	237	368	29
Future Volume (vph)	34	588	11	15	619	547	73	553	41	237	368	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.95		1.00			1.00	
Frt		0.997				0.850		0.992			0.989	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1674	1756	0	1510	1762	1483	0	1731	0	1674	1707	0
Flt Permitted	0.099			0.120				0.902		0.250		
Satd. Flow (perm)	174	1756	0	191	1762	1413	0	1568	0	441	1707	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				310		3			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	588	11	15	619	547	73	553	41	237	368	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	599	0	15	619	547	0	667	0	237	397	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	54.0	54.0		16.0	70.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	45.0%	45.0%		13.3%	58.3%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	46.8	46.8		8.8	62.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	43.9	43.9		43.9	43.9	43.9		46.8		62.8	62.8	
Actuated g/C Ratio	0.37	0.37		0.37	0.37	0.37		0.39		0.52	0.52	
v/c Ratio	0.54	0.93		0.22	0.96	0.77		1.09		0.74	0.44	
Control Delay	65.0	59.5		36.0	65.0	22.1		98.1		32.5	19.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	65.0	59.5		36.0	65.0	22.1		98.1		32.5	19.5	
LOS	E	E		D	E	C		F		C	B	
Approach Delay		59.8			44.8			98.1			24.3	
Approach LOS		E			D			F			C	
Queue Length 50th (m)	5.8	123.7		2.2	130.2	46.9		~162.6		27.5	50.8	
Queue Length 95th (m)	#20.8	#188.6		8.0	#197.1	91.1		#228.3		#46.6	73.5	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	63	643		69	644	713		613		321	895	
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	0.54	0.93		0.22	0.96	0.77		1.09		0.74	0.44	

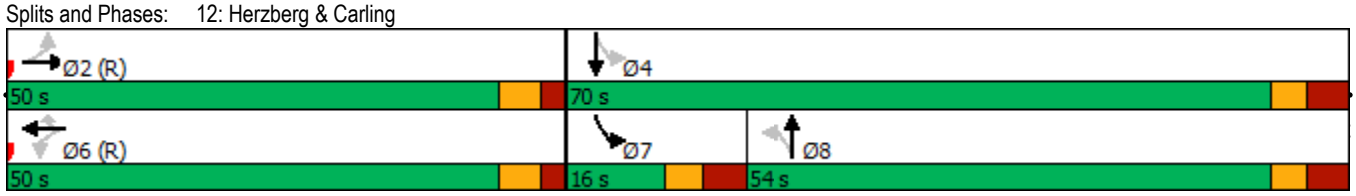
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 55.1 — Intersection LOS: E
Intersection Capacity Utilization 111.5% — 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	504	68	11	611	143	79	80	18	111	74	20
Future Volume (vph)	24	504	68	11	611	143	79	80	18	111	74	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985				0.850		0.986			0.987	
Flt Protected		0.998			0.999			0.978			0.974	
Satd. Flow (prot)	0	1611	0	0	1695	1498	0	1699	0	0	1683	0
Flt Permitted		0.998			0.999			0.978			0.974	
Satd. Flow (perm)	0	1611	0	0	1695	1498	0	1699	0	0	1683	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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%	10%	1%	1%	5%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	24	504	68	11	611	143	79	80	18	111	74	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	596	0	0	622	143	0	177	0	0	205	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	568	19	98	725	29	133
Future Volume (vph)	568	19	98	725	29	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.996				0.889	
Flt Protected				0.994	0.991	
Satd. Flow (prot)	1755	0	0	1685	1500	0
Flt Permitted				0.994	0.991	
Satd. Flow (perm)	1755	0	0	1685	1500	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	5%	5%	7%	4%
Adj. Flow (vph)	568	19	98	725	29	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	587	0	0	823	162	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 99.1%		ICU Level of Service F	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	513	109	28	717	50	103	58	15	24	29	19
Future Volume (vph)	35	513	109	28	717	50	103	58	15	24	29	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		1.00			0.99	
Frt		0.974				0.850		0.988			0.964	
Flt Protected	0.950			0.950				0.972			0.984	
Satd. Flow (prot)	1642	1701	0	1580	1712	1483	0	1587	0	0	1627	0
Flt Permitted	0.252			0.323				0.779			0.854	
Satd. Flow (perm)	435	1701	0	537	1712	1449	0	1272	0	0	1412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				39		5			19	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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 (%)	3%	1%	4%	7%	4%	2%	8%	7%	6%	4%	1%	5%
Adj. Flow (vph)	35	513	109	28	717	50	103	58	15	24	29	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	622	0	28	717	50	0	176	0	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	62.0	62.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0	
Total Split (%)	65.3%	65.3%		65.3%	65.3%	65.3%	34.7%	34.7%		34.7%	34.7%	
Maximum Green (s)	55.6	55.6		55.6	55.6	55.6	26.6	26.6		26.6	26.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	33.5	33.5		33.5	33.5	33.5		15.0			15.0	
Actuated g/C Ratio	0.54	0.54		0.54	0.54	0.54		0.24			0.24	
v/c Ratio	0.15	0.67		0.10	0.78	0.06		0.57			0.20	
Control Delay	9.6	14.5		8.6	18.6	3.6		30.3			18.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	9.6	14.5		8.6	18.6	3.6		30.3			18.7	
LOS	A	B		A	B	A		C			B	
Approach Delay		14.3			17.3			30.3			18.7	
Approach LOS		B			B			C			B	
Queue Length 50th (m)	1.5	37.2		1.2	48.7	0.4		13.9			3.9	
Queue Length 95th (m)	6.7	89.1		5.4	115.6	4.7		42.6			16.4	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	384	1503		474	1511	1283		585			656	
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	0.09	0.41		0.06	0.47	0.04		0.30			0.11	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 62.2
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 17.5 — Intersection LOS: B
Intersection Capacity Utilization 67.4% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Old Second Line & March

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	92	642	964	513	352	115
Future Volume (vph)	92	642	964	513	352	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor				0.97	0.99	
Frt				0.850	0.963	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1610	1695	1745	1469	3129	0
Flt Permitted	0.070				0.964	
Satd. Flow (perm)	119	1695	1745	1418	3129	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				278	44	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	5%	2%	3%	1%	3%
Adj. Flow (vph)	92	642	964	513	352	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	642	964	513	467	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	pm+ov	Prot	
Protected Phases	5	2	6	4	4	
Permitted Phases	2			6		
Detector Phase	5	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	11.3	26.3	26.3	27.3	27.3	
Total Split (s)	11.3	67.6	56.3	36.3	36.3	
Total Split (%)	10.9%	65.1%	54.2%	34.9%	34.9%	
Maximum Green (s)	5.0	61.3	50.0	30.0	30.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	59.1	59.1	50.5	69.0	18.5	
Actuated g/C Ratio	0.65	0.65	0.56	0.76	0.20	
v/c Ratio	0.57	0.58	0.99	0.44	0.69	
Control Delay	25.6	12.0	49.9	2.3	36.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.6	12.0	49.9	2.3	36.0	
LOS	C	B	D	A	D	
Approach Delay		13.7	33.4		36.0	
Approach LOS		B	C		D	
Queue Length 50th (m)	4.8	50.7	~160.8	6.3	33.5	
Queue Length 95th (m)	#21.9	95.3	#261.7	11.8	47.8	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	161	1160	974	1279	1077	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.57	0.55	0.99	0.40	0.43	

Intersection Summary

Area Type: Other
Cycle Length: 103.9
Actuated Cycle Length: 90.4
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 28.5 — Intersection LOS: C
Intersection Capacity Utilization 89.7% — 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: March & Dunrobin

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	1849	338	108	984	9
Future Volume (vph)	10	97	23	367	97	67	45	1849	338	108	984	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		1.00		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3311	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1651	3316	1422	1656	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				183		1	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	1849	338	108	984	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	1849	338	108	993	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	1.19	0.44	0.85	0.57	
Control Delay	60.5	53.7		71.3	30.0		94.8	122.5	11.8	103.0	22.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	122.5	11.8	103.0	22.3	
LOS	E	D		E	C		F	F	B	F	C	
Approach Delay		54.3			58.6			105.2			30.2	
Approach LOS		D			E			F			C	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	~241.8	18.7	22.6	73.2	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	#333.0	48.2	#58.8	114.5	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	763	127	1729	
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	0.13	0.30		0.87	0.31		0.64	1.19	0.44	0.85	0.57	

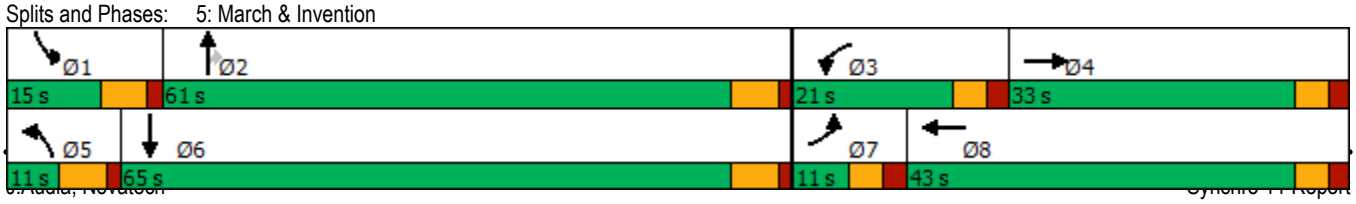
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 76.6 — Intersection LOS: E
Intersection Capacity Utilization 93.3% — 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: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	342	186	224	140	309	252	21	369	2187	107	1	170
Future Volume (vph)	342	186	224	140	309	252	21	369	2187	107	1	170
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3197	3221	1466	3225	3316	1453	0	3237	3349	1465	0	3246
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			195			195				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	342	186	224	140	309	252	21	369	2187	107	1	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	186	224	140	309	252	0	390	2187	107	0	171
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

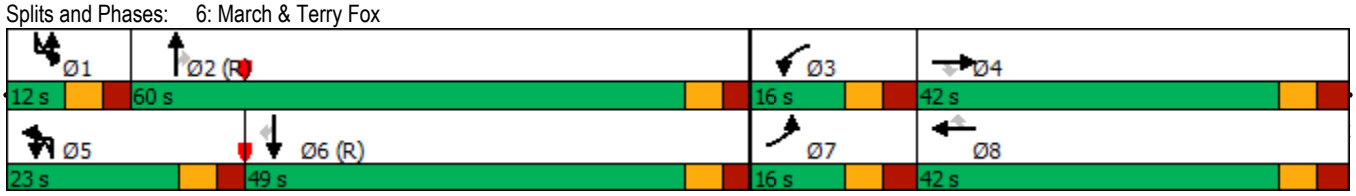
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1376	280
Future Volume (vph)	1376	280
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1455
Right Turn on Red		Yes
Satd. Flow (RTOR)		243
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1376	280
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1376	280
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	42.0	42.0	16.0	42.0	42.0	23.0	23.0	60.0	60.0	12.0	12.0
Total Split (%)	12.3%	32.3%	32.3%	12.3%	32.3%	32.3%	17.7%	17.7%	46.2%	46.2%	9.2%	9.2%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	16.6	16.6	53.6	53.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	9.0	23.4	23.4	8.8	23.2	23.2		18.9	59.4	59.4		11.6
Actuated g/C Ratio	0.07	0.18	0.18	0.07	0.18	0.18		0.15	0.46	0.46		0.09
v/c Ratio	1.53	0.32	0.53	0.64	0.52	0.60		0.83	1.43	0.14		0.59
Control Delay	297.9	45.9	12.7	75.3	59.5	26.2		68.1	215.6	0.9		65.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	297.9	45.9	12.7	75.3	59.5	26.2		68.1	215.6	0.9		65.9
LOS	F	D	B	E	E	C		E	F	A		E
Approach Delay		150.6			50.7				185.6			
Approach LOS		F			D				F			
Queue Length 50th (m)	~57.9	21.5	6.1	17.2	38.3	15.2		42.1	~363.4	0.5		19.7
Queue Length 95th (m)	#85.8	27.3	24.6	m24.0	m39.4	m25.7		m33.2	m#256.7	m0.3		#47.0
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	224	867	537	224	892	533		471	1529	748		290
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	1.53	0.21	0.42	0.63	0.35	0.47		0.83	1.43	0.14		0.59

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 94 (72%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.53
Intersection Signal Delay: 126.8 — Intersection LOS: F
Intersection Capacity Utilization 123.4% — 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	49.0	49.0
Total Split (%)	37.7%	37.7%
Maximum Green (s)	42.6	42.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	52.2	52.2
Actuated g/C Ratio	0.40	0.40
v/c Ratio	1.02	0.38
Control Delay	69.5	7.6
Queue Delay	0.0	0.0
Total Delay	69.5	7.6
LOS	E	A
Approach Delay	59.7	
Approach LOS	E	
Queue Length 50th (m)	166.9	5.2
Queue Length 95th (m)	#252.4	26.3
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1343	729
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.02	0.38

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	443	5	27	2225	55	425	2553
Future Volume (vph)	30	11	15	124	18	443	5	27	2225	55	425	2553
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.996			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3300	0	3248	3349
Flt Permitted		0.808		0.730				0.950			0.950	
Satd. Flow (perm)	0	1420	1458	1199	1762	1474	0	1673	3300	0	3244	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			228			3			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	443	5	27	2225	55	425	2553
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	443	0	32	2280	0	425	2553
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	90
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	51.5%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	60.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		26.8	26.8	26.8	26.8	26.8		8.0	62.7		20.7	80.7
Actuated g/C Ratio		0.21	0.21	0.21	0.21	0.21		0.06	0.48		0.16	0.62
v/c Ratio		0.14	0.04	0.50	0.05	0.92		0.31	1.43		0.82	1.23
Control Delay		40.1	0.2	79.0	68.5	70.7		65.5	226.6		54.5	139.2
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		40.1	0.2	79.0	68.5	70.7		65.5	226.6		54.5	139.2
LOS		D	A	E	E	E		E	F		D	F
Approach Delay		29.4			72.4				224.4			125.2
Approach LOS		C			E				F			F
Queue Length 50th (m)		7.8	0.0	30.5	4.3	81.4		7.4	~391.3		47.7	~423.9
Queue Length 95th (m)		16.2	0.0	m34.4	m5.0	m94.6		16.8	#429.1		m#70.8	m#460.9
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		363	436	307	451	547		206	1593		517	2078
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	0.03	0.40	0.04	0.81		0.16	1.43		0.82	1.23

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 157.5 Intersection LOS: F
Intersection Capacity Utilization 126.5% 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	80.7
Actuated g/C Ratio	0.62
v/c Ratio	0.05
Control Delay	3.5
Queue Delay	0.0
Total Delay	3.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	m3.2
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	924
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	40	88	10	42	7	108	164	8	1	110	1
Future Volume (vph)	1	40	88	10	42	7	108	164	8	1	110	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.908			0.984			0.996			0.999	
Flt Protected					0.992			0.981				
Satd. Flow (prot)	0	1588	0	0	1685	0	0	1693	0	0	1761	0
Flt Permitted					0.992			0.981				
Satd. Flow (perm)	0	1588	0	0	1685	0	0	1693	0	0	1761	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	100%	1%	1%	1%	4%	1%	1%	4%	1%	1%	1%	1%
Adj. Flow (vph)	1	40	88	10	42	7	108	164	8	1	110	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	59	0	0	280	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	345	483	12	3	12	781	89	14	3	5	52	4
Future Volume (vph)	345	483	12	3	12	781	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.99		0.95	0.99	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.852
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1546	0	1674	1412
Flt Permitted	0.950				0.950			0.296			0.752	
Satd. Flow (perm)	1658	1762	1421	0	1650	1762	1419	516	1546	0	1295	1412
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		5			306
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	345	483	12	3	12	781	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	483	12	0	15	781	89	14	8	0	52	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	306		
Future Volume (vph)	306		
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)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	306		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	29.2	82.1	82.1		6.6	45.3	45.3	13.5	13.5		13.5	13.5
Actuated g/C Ratio	0.26	0.72	0.72		0.06	0.40	0.40	0.12	0.12		0.12	0.12
v/c Ratio	0.80	0.38	0.01		0.15	1.11	0.14	0.23	0.04		0.34	0.71
Control Delay	39.9	9.4	0.0		57.1	102.3	1.4	53.9	30.5		51.6	14.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	39.9	9.4	0.0		57.1	102.3	1.4	53.9	30.5		51.6	14.8
LOS	D	A	A		E	F	A	D	C		D	B
Approach Delay		21.8				91.4			45.4			20.1
Approach LOS		C				F			D			C
Queue Length 50th (m)	43.4	21.6	0.0		2.9	~171.9	0.0	2.6	0.6		9.9	0.7
Queue Length 95th (m)	#73.0	89.1	0.0		10.1	#300.6	2.5	8.3	4.7		20.8	24.3
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	461	1272	1050		231	702	648	129	390		324	582
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	0.75	0.38	0.01		0.06	1.11	0.14	0.11	0.02		0.16	0.53

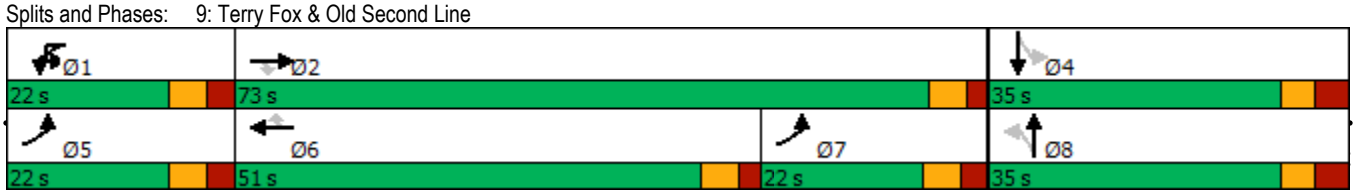
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.6
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 51.0 — Intersection LOS: D
Intersection Capacity Utilization 101.2% — 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: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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			

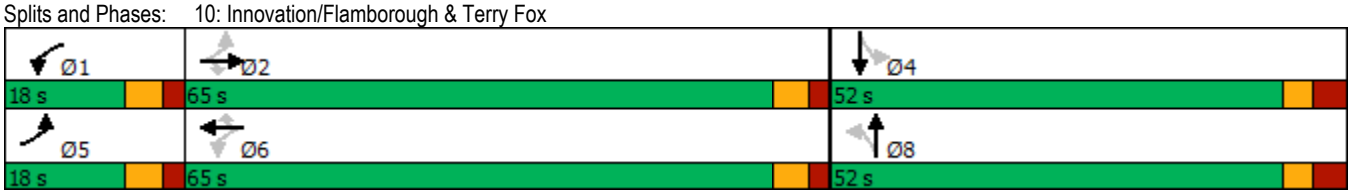
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	442	53	168	649	128	131	146	177	56	91	55
Future Volume (vph)	64	442	53	168	649	128	131	146	177	56	91	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.95	0.99		0.96	0.99	0.99		1.00	0.98	
Frt			0.850			0.850		0.918			0.943	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	1762	1483	1658	1762	1498	1674	1581	0	1674	1576	0
Flt Permitted	0.290			0.388			0.632			0.280		
Satd. Flow (perm)	478	1762	1407	671	1762	1439	1097	1581	0	492	1576	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			128		49			24	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		9	9		5	8		5	5		8
Confl. Bikes (#/hr)			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 (%)	8%	1%	2%	2%	1%	1%	1%	1%	3%	1%	1%	11%
Adj. Flow (vph)	64	442	53	168	649	128	131	146	177	56	91	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	442	53	168	649	128	131	323	0	56	146	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	65.0	65.0	18.0	65.0	65.0	52.0	52.0		52.0	52.0	
Total Split (%)	13.3%	48.1%	48.1%	13.3%	48.1%	48.1%	38.5%	38.5%		38.5%	38.5%	
Maximum Green (s)	12.1	59.1	59.1	12.1	59.1	59.1	45.4	45.4		45.4	45.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	66.8	59.5	59.5	72.5	64.4	64.4	25.4	25.4		25.4	25.4	
Actuated g/C Ratio	0.59	0.53	0.53	0.64	0.57	0.57	0.22	0.22		0.22	0.22	
v/c Ratio	0.18	0.48	0.07	0.33	0.65	0.15	0.53	0.82		0.51	0.39	
Control Delay	9.9	20.9	2.0	10.2	23.3	3.2	46.6	52.6		55.1	33.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	9.9	20.9	2.0	10.2	23.3	3.2	46.6	52.6		55.1	33.6	
LOS	A	C	A	B	C	A	D	D		E	C	
Approach Delay		17.8			18.3			50.9			39.5	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	4.2	54.6	0.0	11.6	90.0	0.0	23.5	53.7		10.0	20.9	
Queue Length 95th (m)	11.1	99.2	3.4	25.5	162.8	9.2	41.7	85.2		23.0	38.2	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	420	927	777	545	1004	875	443	668		198	651	
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	0.15	0.48	0.07	0.31	0.65	0.15	0.30	0.48		0.28	0.22	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 113	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Innovation/Flamborough & Terry Fox



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	12	292	0	2	336	139	9	1	67	120	0
Future Volume (vph)	1	12	292	0	2	336	139	9	1	67	120	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.961			0.883			0.977
Flt Protected			0.998						0.994			0.960
Satd. Flow (prot)	0	0	1738	0	0	1689	0	0	1547	0	0	1621
Flt Permitted			0.998						0.994			0.960
Satd. Flow (perm)	0	0	1738	0	0	1689	0	0	1547	0	0	1621
Link Speed (k/h)			50			50			30			50
Link Distance (m)			185.1			991.2			145.1			590.1
Travel Time (s)			13.3			71.4			17.4			42.5
Confl. Peds. (#/hr)		5		5	5		5	5				
Confl. Bikes (#/hr)				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%	7%	2%	1%	1%	1%	2%	1%	1%	1%	3%	1%
Adj. Flow (vph)	1	12	292	0	2	336	139	9	1	67	120	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	305	0	0	477	0	0	77	0	0	145
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)			3.0			3.0			0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Sign Control			Free			Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Confl. Bikes (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	25
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
Turning Speed (k/h)	14
Sign Control	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Future Volume (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.96		1.00			1.00	
Frt		0.990				0.850		0.988			0.990	
Flt Protected	0.950			0.950				0.997		0.950		
Satd. Flow (prot)	1674	1740	0	1510	1762	1483	0	1717	0	1642	1738	0
Flt Permitted	0.169			0.082				0.938		0.145		
Satd. Flow (perm)	298	1740	0	130	1762	1424	0	1614	0	251	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				304		4			4	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	795	0	44	562	304	0	425	0	484	644	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	48.9	48.9		48.9	48.9	48.9		27.8		67.8	67.8	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38		0.21		0.52	0.52	
v/c Ratio	0.16	1.21		0.92	0.85	0.42		1.22		1.01	0.71	
Control Delay	17.3	132.1		150.7	50.8	4.8		165.4		78.5	36.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	17.3	132.1		150.7	50.8	4.8		165.4		78.5	36.1	
LOS	B	F		F	D	A		F		E	D	
Approach Delay		129.6			40.3			165.4			54.3	
Approach LOS		F			D			F			D	
Queue Length 50th (m)	1.4	~232.5		9.7	120.5	0.0		~122.8		~100.2	126.3	
Queue Length 95th (m)	m2.6	m#290.0		#32.6	#175.8	16.8		#181.5		#164.3	167.6	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	112	656		48	662	725		348		481	908	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.16	1.21		0.92	0.85	0.42		1.22		1.01	0.71	

Intersection Summary

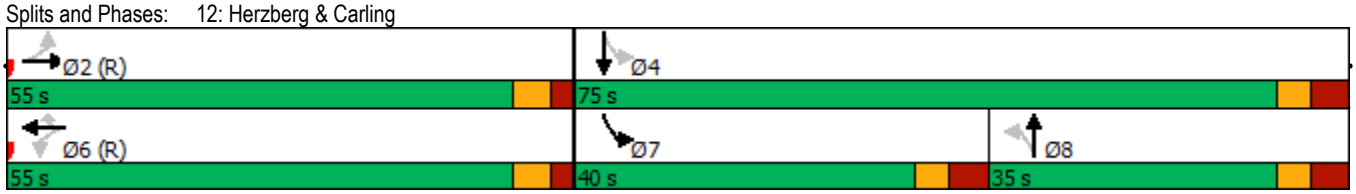
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 83.5 Intersection LOS: F
Intersection Capacity Utilization 122.0% 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: 12: Herzberg & Carling



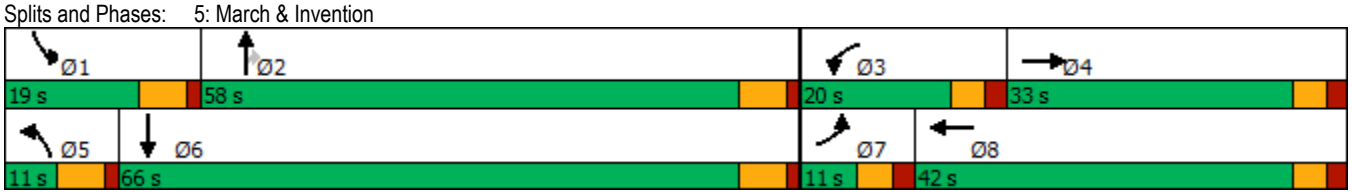
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	71	38	339	71	67	7	729	166	80	1729	3
Future Volume (vph)	11	71	38	339	71	67	7	729	166	80	1729	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00		0.96	0.99	1.00	
Frt		0.948			0.927				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1640	0	3216	1600	0	1658	3316	1483	1658	3315	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1640	0	3183	1600	0	1655	3316	1422	1648	3315	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			36				214			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	11	71	38	339	71	67	7	729	166	80	1729	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	109	0	339	138	0	7	729	166	80	1732	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		20.0	42.0		11.0	58.0	58.0	19.0	66.0	
Total Split (%)	8.5%	25.4%		15.4%	32.3%		8.5%	44.6%	44.6%	14.6%	50.8%	
Maximum Green (s)	5.5	27.5		14.5	36.5		5.0	52.0	52.0	13.0	60.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.1		14.6	32.3		5.0	54.1	54.1	10.3	65.7	
Actuated g/C Ratio	0.05	0.12		0.13	0.28		0.04	0.48	0.48	0.09	0.58	
v/c Ratio	0.14	0.50		0.82	0.29		0.10	0.46	0.21	0.54	0.90	
Control Delay	60.0	46.1		66.2	26.1		59.6	23.0	1.7	64.5	30.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	46.1		66.2	26.1		59.6	23.0	1.7	64.5	30.0	
LOS	E	D		E	C		E	C	A	E	C	
Approach Delay		47.4			54.6			19.4			31.5	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	2.2	17.4		34.6	15.7		1.4	51.3	0.0	15.5	137.4	
Queue Length 95th (m)	8.5	33.7		#67.6	34.9		6.3	85.9	5.1	33.4	#286.7	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	80	414		414	542		73	1583	790	191	1920	
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	0.14	0.26		0.82	0.25		0.10	0.46	0.21	0.42	0.90	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.4
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 32.1 — Intersection LOS: C
Intersection Capacity Utilization 87.0% — 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.

Splits and Phases: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Future Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3066	3316	1419	3006	3131	1395	0	3235	3221	1456	0	3235
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			122			122				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	312	247	58	93	85	0	275	1239	117	0	310
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

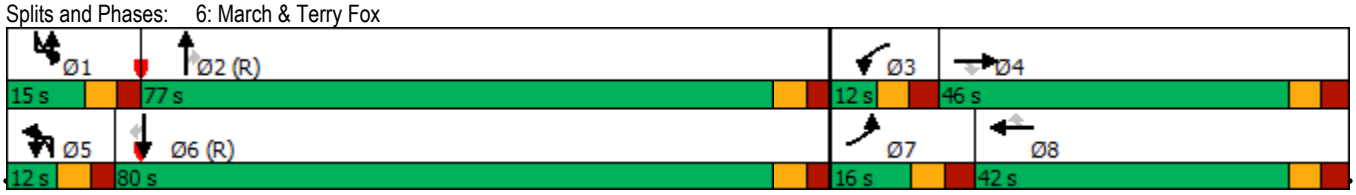
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1627	344
Future Volume (vph)	1627	344
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.96
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1416
Right Turn on Red		Yes
Satd. Flow (RTOR)		289
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1627	344
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1627	344
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	46.0	46.0	12.0	42.0	42.0	12.0	12.0	77.0	77.0	15.0	15.0
Total Split (%)	10.7%	30.7%	30.7%	8.0%	28.0%	28.0%	8.0%	8.0%	51.3%	51.3%	10.0%	10.0%
Maximum Green (s)	9.0	39.0	39.0	5.0	35.0	35.0	5.6	5.6	70.6	70.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	9.0	25.4	25.4	5.0	19.0	19.0		21.6	71.2	71.2		24.1
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	0.13		0.14	0.47	0.47		0.16
v/c Ratio	0.99	0.56	0.72	0.57	0.24	0.30		0.59	0.81	0.15		0.60
Control Delay	132.2	60.6	41.4	92.6	57.7	4.9		64.2	39.0	3.3		62.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	132.2	60.6	41.4	92.6	57.7	4.9		64.2	39.0	3.3		62.9
LOS	F	E	D	F	E	A		E	D	A		E
Approach Delay		71.9			47.3				40.6			
Approach LOS		E			D				D			
Queue Length 50th (m)	26.2	43.7	34.9	8.2	12.5	0.0		35.8	146.5	0.0		40.7
Queue Length 95th (m)	#49.7	50.1	55.7	#16.3	18.0	4.5		#90.0	179.3	8.5		#91.9
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	185	862	459	102	730	419		468	1528	757		521
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	0.99	0.36	0.54	0.57	0.13	0.20		0.59	0.81	0.15		0.60

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 114 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 51.1 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.

Splits and Phases: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	80.0	80.0
Total Split (%)	53.3%	53.3%
Maximum Green (s)	73.6	73.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	73.6	73.6
Actuated g/C Ratio	0.49	0.49
v/c Ratio	1.00	0.41
Control Delay	60.1	5.8
Queue Delay	0.0	0.0
Total Delay	60.1	5.8
LOS	E	A
Approach Delay	52.3	
Approach LOS	D	
Queue Length 50th (m)	229.8	7.8
Queue Length 95th (m)	#282.0	26.0
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1627	841
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.00	0.41

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	315	1	47	1590	116	2	396
Future Volume (vph)	53	18	5	41	20	315	1	47	1590	116	2	396
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		1.00	1.00			1.00
Frt			0.850			0.850			0.990			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3233	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1624	3233	0	0	3236
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			170			8			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	315	1	47	1590	116	2	396
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	315	0	48	1706	0	0	398
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2078	100
Future Volume (vph)	2078	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	2078	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2078	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		20.5	20.5	20.5	20.5	20.5		9.2	68.2			21.5
Actuated g/C Ratio		0.16	0.16	0.16	0.16	0.16		0.07	0.52			0.17
v/c Ratio		0.34	0.02	0.22	0.07	0.84		0.42	1.00			0.74
Control Delay		50.1	0.2	56.6	53.5	54.2		67.8	54.3			60.8
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		50.1	0.2	56.6	53.5	54.2		67.8	54.3			60.8
LOS		D	A	E	D	D		E	D			E
Approach Delay		46.8			54.4				54.6			
Approach LOS		D			D				D			
Queue Length 50th (m)		15.2	0.0	9.8	4.8	52.4		11.0	~224.6			45.7
Queue Length 95th (m)		25.5	0.0	m11.8	m5.9	m66.7		22.3	#284.2			#78.4
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	501		200	1699			536
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		0.21	0.01	0.14	0.04	0.63		0.24	1.00			0.74

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 50.0 Intersection LOS: D
Intersection Capacity Utilization 120.6% 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.

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

Splits and Phases: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	83.0	83.0
Actuated g/C Ratio	0.64	0.64
v/c Ratio	1.00	0.11
Control Delay	45.7	3.2
Queue Delay	0.0	0.0
Total Delay	45.7	3.2
LOS	D	A
Approach Delay	46.4	
Approach LOS	D	
Queue Length 50th (m)	~274.4	0.0
Queue Length 95th (m)	#366.7	8.3
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2075	941
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.00	0.11

Intersection Summary

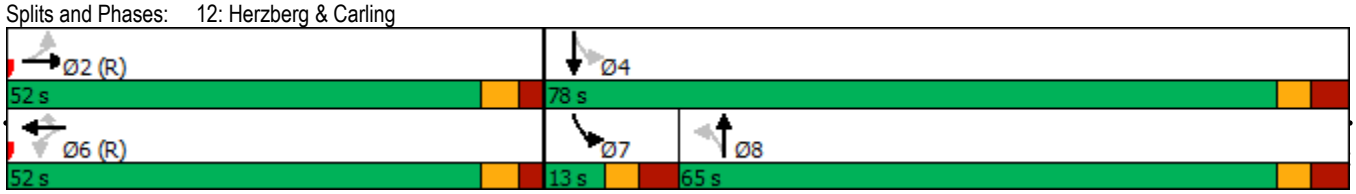
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	578	11	15	609	547	73	443	41	237	280	29
Future Volume (vph)	34	578	11	15	609	547	73	443	41	237	280	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.95		1.00			1.00	
Frt		0.997				0.850		0.990			0.986	
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1674	1756	0	1510	1762	1483	0	1723	0	1674	1701	0
Flt Permitted	0.157			0.176				0.901		0.306		
Satd. Flow (perm)	277	1756	0	280	1762	1410	0	1561	0	539	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				364		4			6	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	578	11	15	609	547	73	443	41	237	280	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	589	0	15	609	547	0	557	0	237	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	65.0	65.0		13.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	50.0%	50.0%		10.0%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	57.8	57.8		5.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	52.5	52.5		52.5	52.5	52.5		51.2		64.2	64.2	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40		0.39		0.49	0.49	
v/c Ratio	0.31	0.83		0.13	0.86	0.70		0.90		0.75	0.37	
Control Delay	26.8	38.1		31.9	49.9	16.4		55.4		37.1	20.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	26.8	38.1		31.9	49.9	16.4		55.4		37.1	20.4	
LOS	C	D		C	D	B		E		D	C	
Approach Delay		37.4			34.0			55.4			27.7	
Approach LOS		D			C			E			C	
Queue Length 50th (m)	7.2	139.7		2.3	132.7	35.7		118.7		31.1	41.7	
Queue Length 95th (m)	m10.6	m#191.3		7.9	#210.8	82.2		156.3		43.0	55.9	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	111	709		112	711	786		696		316	929	
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	0.31	0.83		0.13	0.86	0.70		0.80		0.75	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 37.7 Intersection LOS: D
Intersection Capacity Utilization 100.0% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	430	128	19	473	115	39	50	15	93	89	24
Future Volume (vph)	12	430	128	19	473	115	39	50	15	93	89	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00			1.00	
Frt		0.970				0.850		0.981			0.984	
Flt Protected		0.999			0.998			0.982			0.978	
Satd. Flow (prot)	0	1587	0	0	1620	1498	0	1691	0	0	1676	0
Flt Permitted		0.989			0.973			0.820			0.827	
Satd. Flow (perm)	0	1571	0	0	1579	1463	0	1412	0	0	1417	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27				115		10			8	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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 (%)	17%	10%	1%	1%	10%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	12	430	128	19	473	115	39	50	15	93	89	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	570	0	0	492	115	0	104	0	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.8	32.8		32.8	32.8	32.8	32.3	32.3		32.3	32.3	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	33.0	33.0		33.0	33.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%	63.3%	36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	51.2	51.2		51.2	51.2	51.2	27.7	27.7		27.7	27.7	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2	1.2	1.6	1.6		1.6	1.6	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.8			5.8	5.8		5.3			5.3	
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	Max	Max		Max	Max	Max	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)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		5	5	
Act Effct Green (s)		53.2			53.2	53.2		16.9			16.9	
Actuated g/C Ratio		0.65			0.65	0.65		0.21			0.21	
v/c Ratio		0.55			0.48	0.12		0.35			0.68	
Control Delay		10.9			10.2	1.9		26.5			39.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		10.9			10.2	1.9		26.5			39.7	
LOS		B			B	A		C			D	
Approach Delay		10.9			8.6			26.5			39.7	
Approach LOS		B			A			C			D	
Queue Length 50th (m)		34.7			29.5	0.0		11.0			25.2	
Queue Length 95th (m)		83.1			69.3	5.9		22.6			44.1	
Internal Link Dist (m)		499.3			1388.9			1041.2			482.1	
Turn Bay Length (m)						90.0						
Base Capacity (vph)		1038			1034	997		489			489	
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		0.55			0.48	0.12		0.21			0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 81.3	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Old Carp/Donald B. Munro & March

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Future Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3066	3316	1419	3006	3131	1395	0	3244	3221	1456	0	3235
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			122			122				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	312	247	58	93	85	0	275	1239	117	0	310
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

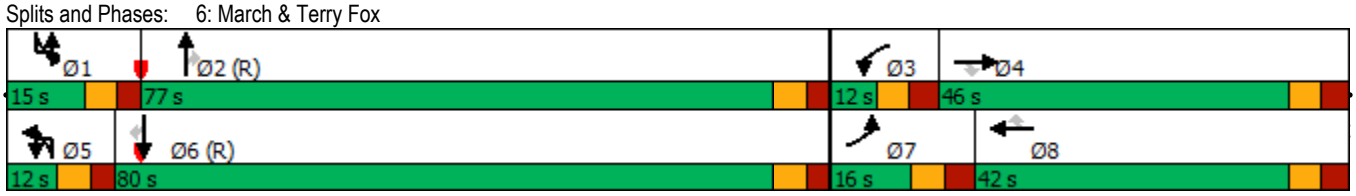
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2367	344
Future Volume (vph)	2367	344
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.96
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1416
Right Turn on Red		Yes
Satd. Flow (RTOR)		199
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	2367	344
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2367	344
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	46.0	46.0	12.0	42.0	42.0	12.0	12.0	77.0	77.0	15.0	15.0
Total Split (%)	10.7%	30.7%	30.7%	8.0%	28.0%	28.0%	8.0%	8.0%	51.3%	51.3%	10.0%	10.0%
Maximum Green (s)	9.0	39.0	39.0	5.0	35.0	35.0	5.6	5.6	70.6	70.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	9.0	25.4	25.4	5.0	19.0	19.0		21.6	71.2	71.2		24.1
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	0.13		0.14	0.47	0.47		0.16
v/c Ratio	0.99	0.56	0.72	0.57	0.24	0.30		0.59	0.81	0.15		0.60
Control Delay	132.2	60.6	41.4	92.6	57.7	4.9		50.5	39.6	9.0		62.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	132.2	60.6	41.4	92.6	57.7	4.9		50.5	39.6	9.0		62.9
LOS	F	E	D	F	E	A		D	D	A		E
Approach Delay		71.9			47.3				39.2			
Approach LOS		E			D				D			
Queue Length 50th (m)	26.2	43.7	34.9	8.2	12.5	0.0		38.1	111.1	5.0		40.7
Queue Length 95th (m)	#49.7	50.1	55.7	#16.3	18.0	4.5		m#41.9	m78.2	m0.9		#91.9
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	185	862	459	102	730	419		468	1528	757		521
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	0.99	0.36	0.54	0.57	0.13	0.20		0.59	0.81	0.15		0.60

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 114 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 127.4 Intersection LOS: F
Intersection Capacity Utilization 125.7% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	80.0	80.0
Total Split (%)	53.3%	53.3%
Maximum Green (s)	73.6	73.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	73.6	73.6
Actuated g/C Ratio	0.49	0.49
v/c Ratio	1.45	0.43
Control Delay	238.9	11.4
Queue Delay	0.0	0.0
Total Delay	238.9	11.4
LOS	F	B
Approach Delay	195.0	
Approach LOS	F	
Queue Length 50th (m)	~464.0	23.2
Queue Length 95th (m)	#499.0	45.5
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1627	796
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.45	0.43

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	315	1	47	2700	116	2	396
Future Volume (vph)	53	18	5	41	20	315	1	47	2700	116	2	396
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		1.00	1.00			1.00
Frt			0.850			0.850			0.994			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3253	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1326	1453	1168	1762	1461	0	1624	3253	0	0	3245
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			124			124			5			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	315	1	47	2700	116	2	396
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	315	0	48	2816	0	0	398
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2168	100
Future Volume (vph)	2168	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.96
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1417
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	2168	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2168	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	12.0	12.0	90.0		20.0	20.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	8.0%	8.0%	60.0%		13.3%	13.3%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	5.0	5.0	83.9		13.0	13.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		25.6	25.6	25.6	25.6	25.6		8.2	83.9			20.7
Actuated g/C Ratio		0.17	0.17	0.17	0.17	0.17		0.05	0.56			0.14
v/c Ratio		0.31	0.01	0.21	0.07	0.89		0.55	1.55			0.89
Control Delay		55.9	0.0	52.8	48.8	63.4		90.2	276.1			86.3
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		55.9	0.0	52.8	48.8	63.4		90.2	276.1			86.3
LOS		E	A	D	D	E		F	F			F
Approach Delay		52.2			61.5				273.0			
Approach LOS		D			E				F			
Queue Length 50th (m)		17.1	0.0	9.7	4.6	53.7		12.8	~573.2			59.6
Queue Length 95th (m)		29.7	0.0	19.5	11.1	84.4		#38.0	#604.6			m#48.1
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		294	419	259	391	420		88	1821			447
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		0.24	0.01	0.16	0.05	0.75		0.55	1.55			0.89

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 151.9 Intersection LOS: F
Intersection Capacity Utilization 152.9% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	98.0	98.0
Total Split (%)	65.3%	65.3%
Maximum Green (s)	91.9	91.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	96.4	96.4
Actuated g/C Ratio	0.64	0.64
v/c Ratio	1.04	0.11
Control Delay	30.2	0.0
Queue Delay	0.0	0.0
Total Delay	30.2	0.0
LOS	C	A
Approach Delay	37.4	
Approach LOS	D	
Queue Length 50th (m)	~354.2	0.0
Queue Length 95th (m)	m17.8	m0.0
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2090	946
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.04	0.11

Intersection Summary

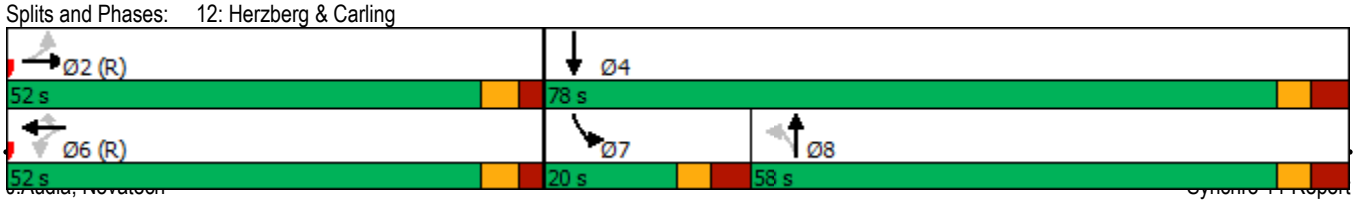
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	588	11	15	619	547	73	553	41	237	368	29
Future Volume (vph)	34	588	11	15	619	547	73	553	41	237	368	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	40.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		1.00		0.95	0.99	1.00		0.99	1.00	
Frt		0.997				0.850		0.990			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3336	0	1510	1762	1483	1674	1737	0	3248	1707	0
Flt Permitted	0.116			0.331			0.528			0.950		
Satd. Flow (perm)	204	3336	0	524	1762	1410	923	1737	0	3227	1707	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				350		3			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	588	11	15	619	547	73	553	41	237	368	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	599	0	15	619	547	73	594	0	237	397	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	58.0	58.0		20.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	44.6%	44.6%		15.4%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	50.8	50.8		12.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	49.5	49.5		49.5	49.5	49.5	47.6	47.6		12.4	67.2	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38	0.37	0.37		0.10	0.52	
v/c Ratio	0.44	0.47		0.08	0.92	0.73	0.22	0.93		0.76	0.45	
Control Delay	54.1	32.6		29.4	60.2	18.8	29.1	61.7		73.9	20.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.1	32.6		29.4	60.2	18.8	29.1	61.7		73.9	20.8	
LOS	D	C		C	E	B	C	E		E	C	
Approach Delay		33.8			40.6			58.1			40.7	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	6.2	57.8		2.3	144.3	42.0	11.3	128.5		28.5	53.2	
Queue Length 95th (m)	#19.6	74.4		7.3	#215.7	86.6	21.9	#188.5		#43.7	74.9	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0	40.0			220.0		
Base Capacity (vph)	77	1271		199	670	753	360	680		319	931	
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	0.44	0.47		0.08	0.92	0.73	0.20	0.87		0.74	0.43	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 43.0 Intersection LOS: D
Intersection Capacity Utilization 94.5% 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: 12: Herzberg & Carling



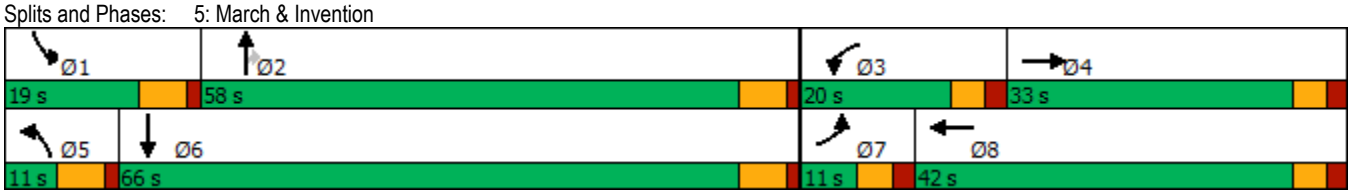
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	71	38	339	71	67	7	729	166	80	1729	3
Future Volume (vph)	11	71	38	339	71	67	7	729	166	80	1729	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00		0.96	0.99	1.00	
Frt		0.948			0.927				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1640	0	3216	1600	0	1658	3316	1483	1658	3315	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1640	0	3183	1600	0	1655	3316	1422	1648	3315	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			36				214			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	11	71	38	339	71	67	7	729	166	80	1729	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	109	0	339	138	0	7	729	166	80	1732	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		20.0	42.0		11.0	58.0	58.0	19.0	66.0	
Total Split (%)	8.5%	25.4%		15.4%	32.3%		8.5%	44.6%	44.6%	14.6%	50.8%	
Maximum Green (s)	5.5	27.5		14.5	36.5		5.0	52.0	52.0	13.0	60.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.1		14.6	32.3		5.0	54.1	54.1	10.3	65.7	
Actuated g/C Ratio	0.05	0.12		0.13	0.28		0.04	0.48	0.48	0.09	0.58	
v/c Ratio	0.14	0.50		0.82	0.29		0.10	0.46	0.21	0.54	0.90	
Control Delay	60.0	46.1		66.2	26.1		59.6	23.0	1.7	64.5	30.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	46.1		66.2	26.1		59.6	23.0	1.7	64.5	30.0	
LOS	E	D		E	C		E	C	A	E	C	
Approach Delay		47.4			54.6			19.4			31.5	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	2.2	17.4		34.6	15.7		1.4	51.3	0.0	15.5	137.4	
Queue Length 95th (m)	8.5	33.7		#67.6	34.9		6.3	85.9	5.1	33.4	#286.7	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	80	414		414	542		73	1583	790	191	1920	
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	0.14	0.26		0.82	0.25		0.10	0.46	0.21	0.42	0.90	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.4
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 32.1 — Intersection LOS: C
Intersection Capacity Utilization 87.0% — 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.

Splits and Phases: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Future Volume (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		1.00
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3066	3316	1419	3006	3131	1395	0	3235	3221	1456	0	3235
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			122			122				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	183	312	247	58	93	85	8	267	1239	117	1	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	312	247	58	93	85	0	275	1239	117	0	310
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1627	344
Future Volume (vph)	1627	344
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.96
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1416
Right Turn on Red		Yes
Satd. Flow (RTOR)		289
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1627	344
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1627	344
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	46.0	46.0	12.0	42.0	42.0	12.0	12.0	77.0	77.0	15.0	15.0
Total Split (%)	10.7%	30.7%	30.7%	8.0%	28.0%	28.0%	8.0%	8.0%	51.3%	51.3%	10.0%	10.0%
Maximum Green (s)	9.0	39.0	39.0	5.0	35.0	35.0	5.6	5.6	70.6	70.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	9.0	25.4	25.4	5.0	19.0	19.0		21.6	71.2	71.2		24.1
Actuated g/C Ratio	0.06	0.17	0.17	0.03	0.13	0.13		0.14	0.47	0.47		0.16
v/c Ratio	0.99	0.56	0.72	0.57	0.24	0.30		0.59	0.81	0.15		0.60
Control Delay	132.2	60.6	41.4	92.6	57.7	4.9		51.9	40.0	8.4		62.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	132.2	60.6	41.4	92.6	57.7	4.9		51.9	40.0	8.4		62.9
LOS	F	E	D	F	E	A		D	D	A		E
Approach Delay		71.9			47.3				39.7			
Approach LOS		E			D				D			
Queue Length 50th (m)	26.2	43.7	34.9	8.2	12.5	0.0		36.7	115.0	4.1		40.7
Queue Length 95th (m)	#49.7	50.1	55.7	#16.3	18.0	4.5		m#68.2	m118.2	m4.9		#91.9
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	185	862	459	102	730	419		468	1528	757		521
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	0.99	0.36	0.54	0.57	0.13	0.20		0.59	0.81	0.15		0.60

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 114 (76%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 50.8 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: 6: March & Terry Fox

Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	80.0	80.0
Total Split (%)	53.3%	53.3%
Maximum Green (s)	73.6	73.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	73.6	73.6
Actuated g/C Ratio	0.49	0.49
v/c Ratio	1.00	0.41
Control Delay	60.1	5.8
Queue Delay	0.0	0.0
Total Delay	60.1	5.8
LOS	E	A
Approach Delay	52.3	
Approach LOS	D	
Queue Length 50th (m)	229.8	7.8
Queue Length 95th (m)	#282.0	26.0
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1627	841
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.00	0.41

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	315	1	47	1700	116	2	396
Future Volume (vph)	53	18	5	41	20	315	1	47	1700	116	2	396
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		1.00	1.00			1.00
Frt			0.850			0.850			0.990			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3234	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1326	1453	1168	1762	1461	0	1624	3234	0	0	3236
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			124			124			8			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	315	1	47	1700	116	2	396
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	315	0	48	1816	0	0	398
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	2098	100
Future Volume (vph)	2098	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.96
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1417
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	2098	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2098	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	12.0	12.0	90.0		20.0	20.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	8.0%	8.0%	60.0%		13.3%	13.3%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	5.0	5.0	83.9		13.0	13.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		25.6	25.6	25.6	25.6	25.6		8.2	83.9			20.7
Actuated g/C Ratio		0.17	0.17	0.17	0.17	0.17		0.05	0.56			0.14
v/c Ratio		0.31	0.01	0.21	0.07	0.89		0.55	1.00			0.89
Control Delay		55.9	0.0	52.8	48.8	63.4		90.2	54.3			94.7
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		55.9	0.0	52.8	48.8	63.4		90.2	54.3			94.7
LOS		E	A	D	D	E		F	D			F
Approach Delay		52.2			61.5				55.3			
Approach LOS		D			E				E			
Queue Length 50th (m)		17.1	0.0	9.7	4.6	53.7		12.8	~255.1			59.0
Queue Length 95th (m)		29.7	0.0	19.5	11.1	84.4		#38.0	#309.9			m#88.8
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		294	419	259	391	420		88	1812			447
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		0.24	0.01	0.16	0.05	0.75		0.55	1.00			0.89

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54 (36%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 47.6 Intersection LOS: D
Intersection Capacity Utilization 123.8% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	98.0	98.0
Total Split (%)	65.3%	65.3%
Maximum Green (s)	91.9	91.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	96.4	96.4
Actuated g/C Ratio	0.64	0.64
v/c Ratio	1.00	0.11
Control Delay	31.5	0.2
Queue Delay	0.0	0.0
Total Delay	31.5	0.2
LOS	C	A
Approach Delay	40.0	
Approach LOS	D	
Queue Length 50th (m)	~330.6	0.0
Queue Length 95th (m)	m#344.1	m0.0
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2090	946
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	1.00	0.11

Intersection Summary

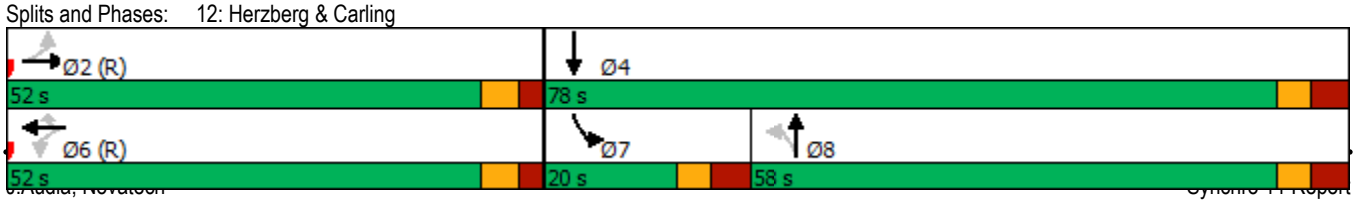
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	588	11	15	609	547	73	503	41	237	280	29
Future Volume (vph)	34	588	11	15	609	547	73	503	41	237	280	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	40.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		1.00		0.95	0.99	1.00		0.99	1.00	
Frt		0.997				0.850		0.989			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3336	0	1510	1762	1483	1674	1735	0	3248	1701	0
Flt Permitted	0.151			0.340			0.572			0.950		
Satd. Flow (perm)	266	3336	0	538	1762	1410	998	1735	0	3226	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				375		4			6	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	588	11	15	609	547	73	503	41	237	280	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	599	0	15	609	547	73	544	0	237	309	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	58.0	58.0		20.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	44.6%	44.6%		15.4%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	50.8	50.8		12.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	51.9	51.9		51.9	51.9	51.9	45.1	45.1		12.4	64.8	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	0.40	0.35	0.35		0.10	0.50	
v/c Ratio	0.32	0.45		0.07	0.87	0.69	0.21	0.90		0.76	0.36	
Control Delay	41.0	31.0		28.7	51.2	15.8	29.8	58.5		73.9	20.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	41.0	31.0		28.7	51.2	15.8	29.8	58.5		73.9	20.1	
LOS	D	C		C	D	B	C	E		E	C	
Approach Delay		31.5			34.4			55.1			43.5	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	5.6	55.0		2.2	133.9	33.3	11.8	118.4		28.5	41.3	
Queue Length 95th (m)	16.2	74.4		7.3	#210.8	78.7	21.7	154.8		#43.7	55.9	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0	40.0			220.0		
Base Capacity (vph)	106	1334		214	704	788	389	680		319	929	
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	0.32	0.45		0.07	0.87	0.69	0.19	0.80		0.74	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 39.7 Intersection LOS: D
Intersection Capacity Utilization 91.7% 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.

Splits and Phases: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	1399	338	108	984	9
Future Volume (vph)	10	97	23	367	97	67	45	1399	338	108	984	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		1.00		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3311	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1651	3316	1422	1654	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				242		1	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	1399	338	108	984	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	1399	338	108	993	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	0.90	0.43	0.85	0.57	
Control Delay	60.5	53.7		71.3	30.0		94.8	38.6	8.2	103.0	22.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	38.6	8.2	103.0	22.3	
LOS	E	D		E	C		F	D	A	F	C	
Approach Delay		54.3			58.6			34.3			30.2	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	135.1	10.9	22.6	73.2	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	#217.6	35.7	#58.8	114.5	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	794	127	1729	
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	0.13	0.30		0.87	0.31		0.64	0.90	0.43	0.85	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 37.4 — Intersection LOS: D
Intersection Capacity Utilization 80.2% — 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: 5: March & Invention

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	232	186	224	140	309	252	21	369	1667	107	1	170
Future Volume (vph)	232	186	224	140	309	252	21	369	1667	107	1	170
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3189	3221	1464	3221	3316	1449	0	3236	3349	1464	0	3243
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			169			169				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	232	186	224	140	309	252	21	369	1667	107	1	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	232	186	224	140	309	252	0	390	1667	107	0	171
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

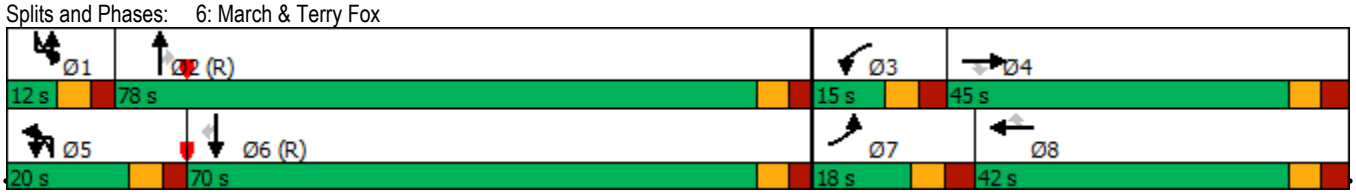
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1376	280
Future Volume (vph)	1376	280
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1453
Right Turn on Red		Yes
Satd. Flow (RTOR)		246
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1376	280
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1376	280
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	18.0	45.0	45.0	15.0	42.0	42.0	20.0	20.0	78.0	78.0	12.0	12.0
Total Split (%)	12.0%	30.0%	30.0%	10.0%	28.0%	28.0%	13.3%	13.3%	52.0%	52.0%	8.0%	8.0%
Maximum Green (s)	11.0	38.0	38.0	8.0	35.0	35.0	13.6	13.6	71.6	71.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	11.0	27.2	27.2	8.0	24.2	24.2		24.2	74.4	74.4		13.6
Actuated g/C Ratio	0.07	0.18	0.18	0.05	0.16	0.16		0.16	0.50	0.50		0.09
v/c Ratio	0.97	0.32	0.55	0.81	0.58	0.67		0.74	1.00	0.14		0.58
Control Delay	120.2	53.0	19.1	101.8	61.3	27.6		68.0	60.3	2.4		71.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	120.2	53.0	19.1	101.8	61.3	27.6		68.0	60.3	2.4		71.8
LOS	F	D	B	F	E	C		E	E	A		E
Approach Delay		65.5			57.3				58.8			
Approach LOS		E			E				E			
Queue Length 50th (m)	33.2	24.5	13.5	19.9	43.5	22.0		51.2	229.7	0.0		23.0
Queue Length 95th (m)	#58.8	31.4	34.7	#36.7	51.6	45.4		#101.5	#297.9	6.4		#54.8
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	238	815	497	173	773	467		524	1661	790		294
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	0.97	0.23	0.45	0.81	0.40	0.54		0.74	1.00	0.14		0.58

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 94 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 57.2 Intersection LOS: E
Intersection Capacity Utilization 104.9% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	70.0	70.0
Total Split (%)	46.7%	46.7%
Maximum Green (s)	63.6	63.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	63.8	63.8
Actuated g/C Ratio	0.43	0.43
v/c Ratio	0.97	0.37
Control Delay	59.2	6.2
Queue Delay	0.0	0.0
Total Delay	59.2	6.2
LOS	E	A
Approach Delay	52.3	
Approach LOS	D	
Queue Length 50th (m)	190.3	5.4
Queue Length 95th (m)	#238.5	23.1
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1423	758
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.97	0.37

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	443	5	27	1555	55	425	2093
Future Volume (vph)	30	11	15	124	18	443	5	27	1555	55	425	2093
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.995			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3296	0	3248	3349
Flt Permitted		0.807		0.730				0.950			0.950	
Satd. Flow (perm)	0	1419	1458	1199	1762	1474	0	1673	3296	0	3238	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			235			4			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	443	5	27	1555	55	425	2093
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	443	0	32	1610	0	425	2093
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	90
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	51.5%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	60.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		26.2	26.2	26.2	26.2	26.2		8.0	63.1		20.9	81.2
Actuated g/C Ratio		0.20	0.20	0.20	0.20	0.20		0.06	0.49		0.16	0.62
v/c Ratio		0.14	0.04	0.51	0.05	0.91		0.31	1.01		0.82	1.00
Control Delay		40.3	0.2	80.4	68.6	71.5		65.5	57.6		66.4	46.3
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		40.3	0.2	80.4	68.6	71.5		65.5	57.6		66.4	46.3
LOS		D	A	F	E	E		E	E		E	D
Approach Delay		29.6			73.3				57.7			48.8
Approach LOS		C			E				E			D
Queue Length 50th (m)		7.9	0.0	30.5	4.3	80.7		7.4	~215.8		50.5	~294.4
Queue Length 95th (m)		16.2	0.0	m36.2	m5.2	m100.0		16.8	#255.4		#86.7	#358.2
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		363	436	307	451	552		206	1601		521	2091
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	0.03	0.40	0.04	0.80		0.16	1.01		0.82	1.00

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 54.6 Intersection LOS: D
Intersection Capacity Utilization 111.7% 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	81.2
Actuated g/C Ratio	0.62
v/c Ratio	0.05
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)	0.8
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	929
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	345	483	12	3	12	701	89	14	3	5	52	4
Future Volume (vph)	345	483	12	3	12	701	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.99		0.95	0.99	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.852
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1546	0	1674	1412
Flt Permitted	0.950				0.950			0.296			0.752	
Satd. Flow (perm)	1656	1762	1421	0	1650	1762	1419	516	1546	0	1295	1412
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		5			306
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	345	483	12	3	12	701	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	483	12	0	15	701	89	14	8	0	52	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

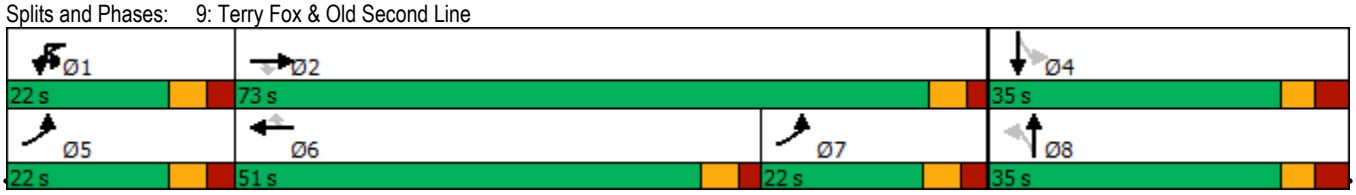
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	306		
Future Volume (vph)	306		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	306		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	29.2	82.1	82.1		6.6	45.3	45.3	13.5	13.5		13.5	13.5
Actuated g/C Ratio	0.26	0.72	0.72		0.06	0.40	0.40	0.12	0.12		0.12	0.12
v/c Ratio	0.80	0.38	0.01		0.15	1.00	0.14	0.23	0.04		0.34	0.71
Control Delay	39.9	9.4	0.0		57.1	68.8	1.4	53.9	30.5		51.6	14.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	39.9	9.4	0.0		57.1	68.8	1.4	53.9	30.5		51.6	14.8
LOS	D	A	A		E	E	A	D	C		D	B
Approach Delay		21.8				61.1			45.4			20.1
Approach LOS		C				E			D			C
Queue Length 50th (m)	43.4	21.6	0.0		2.9	132.6	0.0	2.6	0.6		9.9	0.7
Queue Length 95th (m)	#73.0	89.1	0.0		10.1	#259.5	2.5	8.3	4.7		20.8	24.3
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	461	1272	1050		231	702	648	129	390		324	582
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	0.75	0.38	0.01		0.06	1.00	0.14	0.11	0.02		0.16	0.53

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.6
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 37.4 — Intersection LOS: D
Intersection Capacity Utilization 96.8% — 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: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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

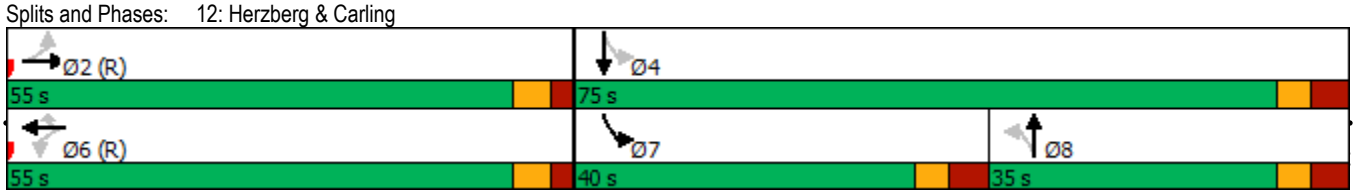
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	562	53	44	562	304	22	224	39	474	602	42
Future Volume (vph)	18	562	53	44	562	304	22	224	39	474	602	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.96		0.99			1.00	
Frt		0.987				0.850		0.982			0.990	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1674	1733	0	1510	1762	1483	0	1695	0	1642	1738	0
Flt Permitted	0.189			0.136				0.910		0.269		
Satd. Flow (perm)	333	1733	0	216	1762	1424	0	1547	0	465	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				304		6			4	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	562	53	44	562	304	22	224	39	474	602	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	615	0	44	562	304	0	285	0	474	644	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	51.0	51.0		51.0	51.0	51.0		26.1		65.7	65.7	
Actuated g/C Ratio	0.39	0.39		0.39	0.39	0.39		0.20		0.51	0.51	
v/c Ratio	0.14	0.90		0.52	0.81	0.41		0.90		0.90	0.73	
Control Delay	12.6	37.6		57.7	46.8	4.7		81.2		46.0	30.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	12.6	37.6		57.7	46.8	4.7		81.2		46.0	30.7	
LOS	B	D		E	D	A		F		D	C	
Approach Delay		36.9			33.3			81.2			37.2	
Approach LOS		D			C			F			D	
Queue Length 50th (m)	1.0	56.5		8.1	120.5	0.0		63.9		73.8	111.0	
Queue Length 95th (m)	m1.7	m#204.3		#24.7	#175.8	16.8		#107.2		#128.7	153.1	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	130	682		84	691	743		335		531	908	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.14	0.90		0.52	0.81	0.41		0.85		0.89	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 40.2 Intersection LOS: D
Intersection Capacity Utilization 108.5% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	504	68	11	611	143	79	80	18	111	74	20
Future Volume (vph)	24	504	68	11	611	143	79	80	18	111	74	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		1.00			1.00	
Frt		0.985				0.850		0.986			0.987	
Flt Protected		0.998			0.999			0.978			0.974	
Satd. Flow (prot)	0	1607	0	0	1695	1498	0	1695	0	0	1679	0
Flt Permitted		0.967			0.989			0.759			0.724	
Satd. Flow (perm)	0	1557	0	0	1678	1463	0	1315	0	0	1248	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				143		7			6	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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%	10%	1%	1%	5%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	24	504	68	11	611	143	79	80	18	111	74	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	596	0	0	622	143	0	177	0	0	205	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	32.8	32.8		32.8	32.8	32.8	32.3	32.3		32.3	32.3	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	33.0	33.0		33.0	33.0	
Total Split (%)	63.3%	63.3%		63.3%	63.3%	63.3%	36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	51.2	51.2		51.2	51.2	51.2	27.7	27.7		27.7	27.7	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	3.7	3.7		3.7	3.7	
All-Red Time (s)	1.2	1.2		1.2	1.2	1.2	1.6	1.6		1.6	1.6	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.8			5.8	5.8		5.3			5.3	
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	Max	Max		Max	Max	Max	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)	20.0	20.0		20.0	20.0	20.0	20.0	20.0		20.0	20.0	
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		5	5	
Act Effct Green (s)		52.0			52.0	52.0		17.8			17.8	
Actuated g/C Ratio		0.64			0.64	0.64		0.22			0.22	
v/c Ratio		0.59			0.58	0.14		0.60			0.74	
Control Delay		12.6			12.2	1.9		35.6			44.1	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		12.6			12.2	1.9		35.6			44.1	
LOS		B			B	A		D			D	
Approach Delay		12.6			10.3			35.6			44.1	
Approach LOS		B			B			D			D	
Queue Length 50th (m)		41.6			43.7	0.0		21.4			26.0	
Queue Length 95th (m)		92.4			94.1	6.6		38.6			46.2	
Internal Link Dist (m)		499.3			1388.9			1041.2			482.1	
Turn Bay Length (m)						90.0						
Base Capacity (vph)		1004			1078	991		456			432	
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		0.59			0.58	0.14		0.39			0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 80.9	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Old Carp/Donald B. Munro & March

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	342	186	224	140	309	252	21	369	2187	107	1	170
Future Volume (vph)	342	186	224	140	309	252	21	369	2187	107	1	170
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3189	3221	1464	3221	3316	1449	0	3236	3349	1464	0	3246
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			169			169				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	342	186	224	140	309	252	21	369	2187	107	1	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	186	224	140	309	252	0	390	2187	107	0	171
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

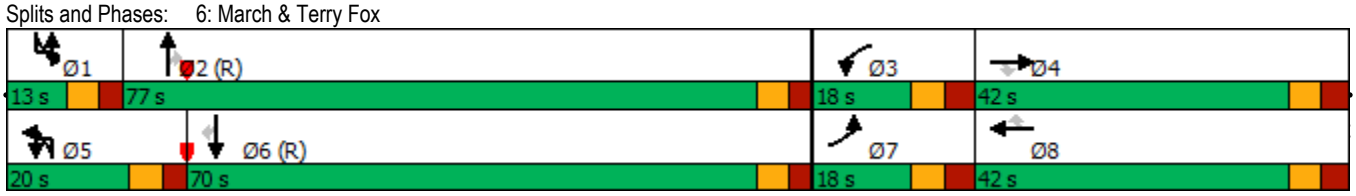
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1376	280
Future Volume (vph)	1376	280
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1453
Right Turn on Red		Yes
Satd. Flow (RTOR)		246
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1376	280
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1376	280
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	18.0	42.0	42.0	18.0	42.0	42.0	20.0	20.0	77.0	77.0	13.0	13.0
Total Split (%)	12.0%	28.0%	28.0%	12.0%	28.0%	28.0%	13.3%	13.3%	51.3%	51.3%	8.7%	8.7%
Maximum Green (s)	11.0	35.0	35.0	11.0	35.0	35.0	13.6	13.6	70.6	70.6	6.6	6.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	11.0	24.8	24.8	10.4	24.2	24.2		24.2	75.2	75.2		12.8
Actuated g/C Ratio	0.07	0.17	0.17	0.07	0.16	0.16		0.16	0.50	0.50		0.09
v/c Ratio	1.44	0.35	0.58	0.62	0.58	0.67		0.74	1.30	0.13		0.62
Control Delay	265.2	55.7	20.8	80.5	61.3	27.6		60.2	165.4	3.2		74.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	265.2	55.7	20.8	80.5	61.3	27.6		60.2	165.4	3.2		74.8
LOS	F	E	C	F	E	C		E	F	A		E
Approach Delay		140.6			53.0				143.6			
Approach LOS		F			D				F			
Queue Length 50th (m)	~65.2	25.2	13.9	19.4	43.5	22.0		46.3	~402.4	2.5		23.1
Queue Length 95th (m)	#94.5	32.3	35.7	30.2	51.6	45.4		m#49.7	m#305.1	m0.8		#51.7
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	238	751	471	238	773	467		524	1679	797		276
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	1.44	0.25	0.48	0.59	0.40	0.54		0.74	1.30	0.13		0.62

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 94 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.44
Intersection Signal Delay: 104.7 Intersection LOS: F
Intersection Capacity Utilization 123.4% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	70.0	70.0
Total Split (%)	46.7%	46.7%
Maximum Green (s)	63.6	63.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	63.8	63.8
Actuated g/C Ratio	0.43	0.43
v/c Ratio	0.97	0.37
Control Delay	59.2	6.2
Queue Delay	0.0	0.0
Total Delay	59.2	6.2
LOS	E	A
Approach Delay	52.6	
Approach LOS	D	
Queue Length 50th (m)	190.3	5.4
Queue Length 95th (m)	#238.5	23.1
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1423	758
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.97	0.37

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	443	5	27	2225	55	425	2553
Future Volume (vph)	30	11	15	124	18	443	5	27	2225	55	425	2553
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.996			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3300	0	3248	3349
Flt Permitted		0.811		0.730				0.950			0.950	
Satd. Flow (perm)	0	1425	1455	1197	1762	1473	0	1673	3300	0	3243	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			124			124			3			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	443	5	27	2225	55	425	2553
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	443	0	32	2280	0	425	2553
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1433
Right Turn on Red	Yes
Satd. Flow (RTOR)	78
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	12.0	12.0	88.0		22.0	98.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	8.0%	8.0%	58.7%		14.7%	65.3%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	5.0	5.0	81.9		15.0	91.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		33.3	33.3	33.3	33.3	33.3		5.0	81.9		15.0	94.3
Actuated g/C Ratio		0.22	0.22	0.22	0.22	0.22		0.03	0.55		0.10	0.63
v/c Ratio		0.13	0.04	0.47	0.05	1.05		0.58	1.26		1.31	1.21
Control Delay		48.2	0.1	57.4	46.4	96.3		108.9	154.8		200.3	140.4
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		48.2	0.1	57.4	46.4	96.3		108.9	154.8		200.3	140.4
LOS		D	A	E	D	F		F	F		F	F
Approach Delay		35.3			86.5				154.2			146.7
Approach LOS		D			F				F			F
Queue Length 50th (m)		9.1	0.0	29.8	3.9	~103.4		8.8	~413.7		~76.5	~464.3
Queue Length 95th (m)		19.2	0.0	49.6	10.4	#166.1		#23.9	#449.8		m#95.4	m#495.1
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		316	419	265	391	423		55	1803		324	2105
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		0.13	0.04	0.47	0.05	1.05		0.58	1.26		1.31	1.21

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 102 (68%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 142.6 Intersection LOS: F
Intersection Capacity Utilization 126.5% 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	98.0
Total Split (%)	65.3%
Maximum Green (s)	91.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	94.3
Actuated g/C Ratio	0.63
v/c Ratio	0.05
Control Delay	4.1
Queue Delay	0.0
Total Delay	4.1
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.0
Queue Length 95th (m)	m3.5
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	930
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	345	483	12	3	12	781	89	14	3	5	52	4
Future Volume (vph)	345	483	12	3	12	781	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.98		0.95	0.99	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.852
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1543	0	1674	1409
Flt Permitted	0.950				0.950			0.290			0.752	
Satd. Flow (perm)	1657	1762	1418	0	1648	1762	1417	505	1543	0	1293	1409
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			79				129		5			306
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	345	483	12	3	12	781	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	483	12	0	15	781	89	14	8	0	52	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	306		
Future Volume (vph)	306		
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)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	306		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		83.0	83.0	22.0	22.0	61.0	61.0	35.0	35.0		35.0	35.0
Total Split (%)		59.3%	59.3%	15.7%	15.7%	43.6%	43.6%	25.0%	25.0%		25.0%	25.0%
Maximum Green (s)		77.1	77.1	15.6	15.6	55.1	55.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	30.6	93.3	93.3		6.7	55.3	55.3	13.8	13.8		13.8	13.8
Actuated g/C Ratio	0.24	0.75	0.75		0.05	0.44	0.44	0.11	0.11		0.11	0.11
v/c Ratio	0.84	0.37	0.01		0.17	1.01	0.13	0.25	0.05		0.37	0.73
Control Delay	49.8	8.7	0.0		63.0	68.9	1.6	61.3	33.8		58.3	16.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	49.8	8.7	0.0		63.0	68.9	1.6	61.3	33.8		58.3	16.1
LOS	D	A	A		E	E	A	E	C		E	B
Approach Delay		25.4				62.1			51.3			22.2
Approach LOS		C				E			D			C
Queue Length 50th (m)	51.9	21.8	0.0		3.2	165.9	0.0	3.0	0.6		11.2	0.8
Queue Length 95th (m)	#87.8	87.9	0.0		10.5	#298.6	3.4	9.2	5.0		22.5	25.5
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	418	1312	1076		209	777	697	114	353		293	556
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	0.83	0.37	0.01		0.07	1.01	0.13	0.12	0.02		0.18	0.56

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 125.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 40.5 — Intersection LOS: D
Intersection Capacity Utilization 101.2% — 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: 9: Terry Fox & Old Second Line

Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		16%	16%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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

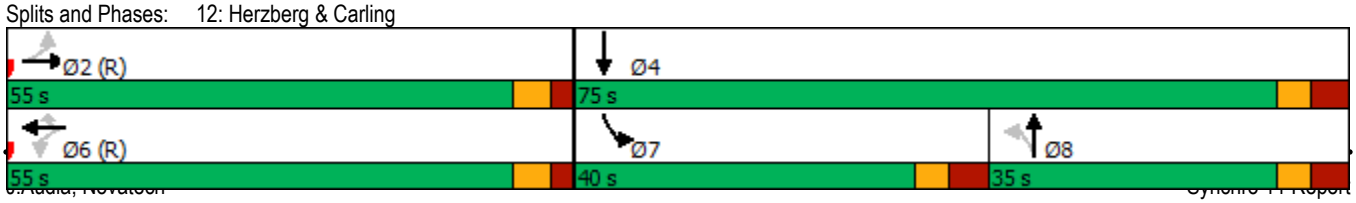
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Future Volume (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	40.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		1.00		0.96	0.99	1.00		0.99	1.00	
Frt		0.990				0.850		0.985			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3306	0	1510	1762	1483	1674	1718	0	3185	1738	0
Flt Permitted	0.169			0.219			0.420			0.950		
Satd. Flow (perm)	298	3306	0	347	1762	1424	730	1718	0	3158	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				304		4			4	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	795	0	44	562	304	22	403	0	484	644	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	48.9	48.9		48.9	48.9	48.9	35.6	35.6		25.0	67.8	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38	0.27	0.27		0.19	0.52	
v/c Ratio	0.16	0.64		0.34	0.85	0.42	0.11	0.85		0.79	0.71	
Control Delay	31.7	35.9		38.2	50.8	4.8	39.9	62.7		59.7	28.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	31.7	35.9		38.2	50.8	4.8	39.9	62.7		59.7	28.8	
LOS	C	D		D	D	A	D	E		E	C	
Approach Delay		35.8			34.8			61.5			42.1	
Approach LOS		D			C			E			D	
Queue Length 50th (m)	2.8	79.7		7.4	120.5	0.0	3.9	89.6		56.6	111.0	
Queue Length 95th (m)	8.8	99.4		18.0	#175.8	16.8	11.3	#157.3		70.0	153.1	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0	40.0			220.0		
Base Capacity (vph)	112	1247		130	662	725	200	473		803	908	
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	0.16	0.64		0.34	0.85	0.42	0.11	0.85		0.60	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 41.0 Intersection LOS: D
Intersection Capacity Utilization 100.2% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	1399	338	108	984	9
Future Volume (vph)	10	97	23	367	97	67	45	1399	338	108	984	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		1.00		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3311	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1651	3316	1422	1654	3311	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				242		1	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	1399	338	108	984	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	1399	338	108	993	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	0.90	0.43	0.85	0.57	
Control Delay	60.5	53.7		71.3	30.0		94.8	38.6	8.2	103.0	22.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	38.6	8.2	103.0	22.3	
LOS	E	D		E	C		F	D	A	F	C	
Approach Delay		54.3			58.6			34.3			30.2	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	135.1	10.9	22.6	73.2	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	#217.6	35.7	#58.8	114.5	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	794	127	1729	
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	0.13	0.30		0.87	0.31		0.64	0.90	0.43	0.85	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 37.4 — Intersection LOS: D
Intersection Capacity Utilization 80.2% — 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: 5: March & Invention

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	232	186	224	140	309	252	21	369	1687	107	1	170
Future Volume (vph)	232	186	224	140	309	252	21	369	1687	107	1	170
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3189	3221	1464	3221	3316	1449	0	3236	3349	1464	0	3244
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			169			169				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	232	186	224	140	309	252	21	369	1687	107	1	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	232	186	224	140	309	252	0	390	1687	107	0	171
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

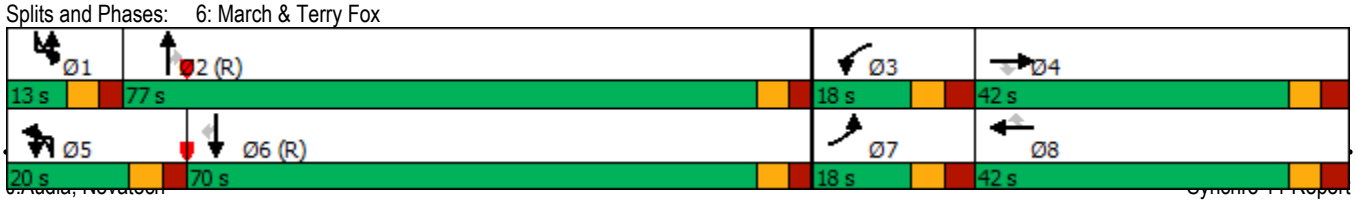
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1376	280
Future Volume (vph)	1376	280
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1453
Right Turn on Red		Yes
Satd. Flow (RTOR)		246
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	1376	280
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1376	280
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	18.0	42.0	42.0	18.0	42.0	42.0	20.0	20.0	77.0	77.0	13.0	13.0
Total Split (%)	12.0%	28.0%	28.0%	12.0%	28.0%	28.0%	13.3%	13.3%	51.3%	51.3%	8.7%	8.7%
Maximum Green (s)	11.0	35.0	35.0	11.0	35.0	35.0	13.6	13.6	70.6	70.6	6.6	6.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	11.0	24.8	24.8	10.4	24.2	24.2		24.2	75.2	75.2		12.8
Actuated g/C Ratio	0.07	0.17	0.17	0.07	0.16	0.16		0.16	0.50	0.50		0.09
v/c Ratio	0.97	0.35	0.58	0.62	0.58	0.67		0.74	1.00	0.13		0.62
Control Delay	120.2	55.7	20.8	80.5	61.3	27.6		60.8	43.0	3.0		74.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	120.2	55.7	20.8	80.5	61.3	27.6		60.8	43.0	3.0		74.8
LOS	F	E	C	F	E	C		E	D	A		E
Approach Delay		66.8			53.0				44.2			
Approach LOS		E			D				D			
Queue Length 50th (m)	33.2	25.2	13.9	19.4	43.5	22.0		46.8	245.5	2.1		23.1
Queue Length 95th (m)	#58.8	32.3	35.7	30.2	51.6	45.4		m#71.3	m#272.7	m2.7		#51.7
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	238	751	471	238	773	467		524	1679	797		276
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	0.97	0.25	0.48	0.59	0.40	0.54		0.74	1.00	0.13		0.62

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 94 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 50.9 Intersection LOS: D
Intersection Capacity Utilization 105.5% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	70.0	70.0
Total Split (%)	46.7%	46.7%
Maximum Green (s)	63.6	63.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	63.8	63.8
Actuated g/C Ratio	0.43	0.43
v/c Ratio	0.97	0.37
Control Delay	59.2	6.2
Queue Delay	0.0	0.0
Total Delay	59.2	6.2
LOS	E	A
Approach Delay	52.6	
Approach LOS	D	
Queue Length 50th (m)	190.3	5.4
Queue Length 95th (m)	#238.5	23.1
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1423	758
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.97	0.37

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	423	5	27	1745	55	325	2113
Future Volume (vph)	30	11	15	124	18	423	5	27	1745	55	325	2113
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.995			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3296	0	3248	3349
Flt Permitted		0.811		0.730				0.950			0.950	
Satd. Flow (perm)	0	1425	1455	1197	1762	1473	0	1673	3296	0	3239	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			124			124			3			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	423	5	27	1745	55	325	2113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	423	0	32	1800	0	325	2113
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1433
Right Turn on Red	Yes
Satd. Flow (RTOR)	78
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	12.0	12.0	88.0		22.0	98.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	8.0%	8.0%	58.7%		14.7%	65.3%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	5.0	5.0	81.9		15.0	91.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		33.3	33.3	33.3	33.3	33.3		5.0	81.9		15.0	94.3
Actuated g/C Ratio		0.22	0.22	0.22	0.22	0.22		0.03	0.55		0.10	0.63
v/c Ratio		0.13	0.04	0.47	0.05	1.00		0.58	1.00		1.00	1.00
Control Delay		48.2	0.1	57.4	46.4	84.3		108.9	55.0		96.0	68.0
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		48.2	0.1	57.4	46.4	84.3		108.9	55.0		96.0	68.0
LOS		D	A	E	D	F		F	D		F	E
Approach Delay		35.3			77.2				55.9			70.4
Approach LOS		D			E				E			E
Queue Length 50th (m)		9.1	0.0	29.8	3.9	88.3		8.8	251.6		~45.0	~330.9
Queue Length 95th (m)		19.2	0.0	49.6	10.4	#153.4		#23.9	#307.4		m#61.7	m#360.6
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		316	419	265	391	423		55	1800		324	2105
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		0.13	0.04	0.47	0.05	1.00		0.58	1.00		1.00	1.00

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 102 (68%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 65.4 Intersection LOS: E
Intersection Capacity Utilization 112.3% 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	98.0
Total Split (%)	65.3%
Maximum Green (s)	91.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	94.3
Actuated g/C Ratio	0.63
v/c Ratio	0.05
Control Delay	5.2
Queue Delay	0.0
Total Delay	5.2
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.4
Queue Length 95th (m)	m3.4
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	930
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	345	483	12	3	12	771	89	14	3	5	52	4
Future Volume (vph)	345	483	12	3	12	771	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.98		0.95	0.99	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.852
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1543	0	1674	1409
Flt Permitted	0.950				0.950			0.290			0.752	
Satd. Flow (perm)	1657	1762	1418	0	1648	1762	1417	505	1543	0	1293	1409
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			79				129		5			306
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	345	483	12	3	12	771	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	483	12	0	15	771	89	14	8	0	52	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	306		
Future Volume (vph)	306		
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)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	306		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		83.0	83.0	22.0	22.0	61.0	61.0	35.0	35.0		35.0	35.0
Total Split (%)		59.3%	59.3%	15.7%	15.7%	43.6%	43.6%	25.0%	25.0%		25.0%	25.0%
Maximum Green (s)		77.1	77.1	15.6	15.6	55.1	55.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	30.6	93.3	93.3		6.7	55.3	55.3	13.8	13.8		13.8	13.8
Actuated g/C Ratio	0.24	0.75	0.75		0.05	0.44	0.44	0.11	0.11		0.11	0.11
v/c Ratio	0.84	0.37	0.01		0.17	0.99	0.13	0.25	0.05		0.37	0.73
Control Delay	49.8	8.7	0.0		63.0	65.8	1.6	61.3	33.8		58.3	16.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	49.8	8.7	0.0		63.0	65.8	1.6	61.3	33.8		58.3	16.1
LOS	D	A	A		E	E	A	E	C		E	B
Approach Delay		25.4				59.2			51.3			22.2
Approach LOS		C				E			D			C
Queue Length 50th (m)	51.9	21.8	0.0		3.2	162.0	0.0	3.0	0.6		11.2	0.8
Queue Length 95th (m)	#87.8	87.9	0.0		10.5	#293.3	3.4	9.2	5.0		22.5	25.5
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	418	1312	1076		209	777	697	114	353		293	556
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	0.83	0.37	0.01		0.07	0.99	0.13	0.12	0.02		0.18	0.56

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 125.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 39.2 — Intersection LOS: D
Intersection Capacity Utilization 100.7% — 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: 9: Terry Fox & Old Second Line

Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		16%	16%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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

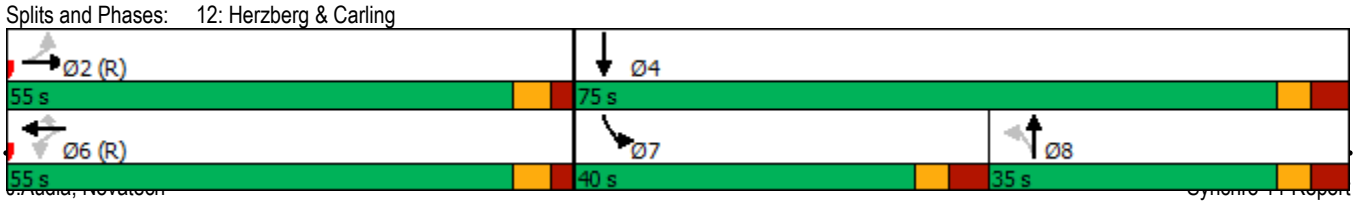
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Future Volume (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	40.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			40.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		1.00		0.96	0.99	1.00		0.99	1.00	
Frt		0.990				0.850		0.985			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3306	0	1510	1762	1483	1674	1718	0	3185	1738	0
Flt Permitted	0.169			0.219			0.420			0.950		
Satd. Flow (perm)	298	3306	0	347	1762	1424	730	1718	0	3158	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				304		4			4	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	742	53	44	562	304	22	364	39	484	602	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	795	0	44	562	304	22	403	0	484	644	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	48.9	48.9		48.9	48.9	48.9	35.6	35.6		25.0	67.8	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38	0.27	0.27		0.19	0.52	
v/c Ratio	0.16	0.64		0.34	0.85	0.42	0.11	0.85		0.79	0.71	
Control Delay	31.7	35.9		38.2	50.8	4.8	39.9	62.7		59.7	28.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	31.7	35.9		38.2	50.8	4.8	39.9	62.7		59.7	28.8	
LOS	C	D		D	D	A	D	E		E	C	
Approach Delay		35.8			34.8			61.5			42.1	
Approach LOS		D			C			E			D	
Queue Length 50th (m)	2.8	79.7		7.4	120.5	0.0	3.9	89.6		56.6	111.0	
Queue Length 95th (m)	8.8	99.4		18.0	#175.8	16.8	11.3	#157.3		70.0	153.1	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0	40.0			220.0		
Base Capacity (vph)	112	1247		130	662	725	200	473		803	908	
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	0.16	0.64		0.34	0.85	0.42	0.11	0.85		0.60	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 41.0 Intersection LOS: D
Intersection Capacity Utilization 100.2% 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: 12: Herzberg & Carling



APPENDIX O

Alternate Scenario Synchro Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	202	72	19	157	47	34	43	15	53	73	11
Future Volume (vph)	6	202	72	19	157	47	34	43	15	53	73	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.965				0.850		0.978			0.989	
Flt Protected		0.999			0.995			0.982			0.981	
Satd. Flow (prot)	0	1591	0	0	1624	1498	0	1693	0	0	1694	0
Flt Permitted		0.999			0.995			0.982			0.981	
Satd. Flow (perm)	0	1591	0	0	1624	1498	0	1693	0	0	1694	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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 (%)	17%	10%	1%	1%	10%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	6	202	72	19	157	47	34	43	15	53	73	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	280	0	0	176	47	0	92	0	0	137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 38.2%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	293	12	72	123	8	38
Future Volume (vph)	293	12	72	123	8	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.888	
Flt Protected				0.982	0.991	
Satd. Flow (prot)	1671	0	0	1671	1441	0
Flt Permitted				0.982	0.991	
Satd. Flow (perm)	1671	0	0	1671	1441	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	30%	4%	5%	12%	8%
Adj. Flow (vph)	293	12	72	123	8	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	305	0	0	195	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

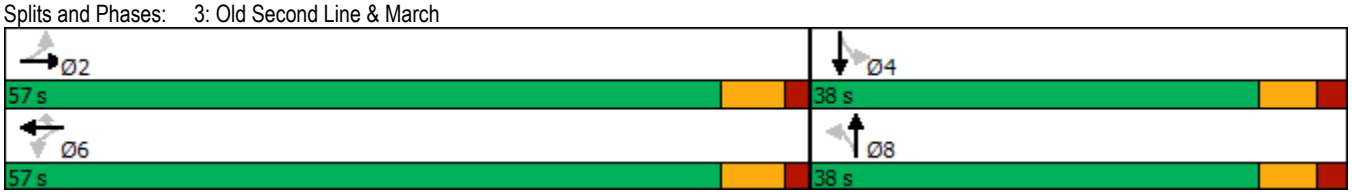
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	301	55	19	116	12	13	18	22	60	47	24
Future Volume (vph)	9	301	55	19	116	12	13	18	22	60	47	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		0.99			1.00	
Frt		0.977				0.850		0.944			0.975	
Flt Protected	0.950			0.950				0.988			0.978	
Satd. Flow (prot)	1674	1659	0	1610	1695	1401	0	1585	0	0	1614	0
Flt Permitted	0.682			0.548				0.884			0.827	
Satd. Flow (perm)	1202	1659	0	929	1695	1368	0	1419	0	0	1365	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				39		22			13	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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%	4%	7%	5%	5%	8%	1%	5%	4%	2%	10%	1%
Adj. Flow (vph)	9	301	55	19	116	12	13	18	22	60	47	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	356	0	19	116	12	0	53	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	38.0	38.0		38.0	38.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	50.6	50.6		50.6	50.6	50.6	31.6	31.6		31.6	31.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	24.7	24.7		24.7	24.7	24.7		11.4			11.4	
Actuated g/C Ratio	0.56	0.56		0.56	0.56	0.56		0.26			0.26	
v/c Ratio	0.01	0.38		0.04	0.12	0.02		0.14			0.36	
Control Delay	8.1	10.0		8.4	8.5	1.1		9.5			15.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	8.1	10.0		8.4	8.5	1.1		9.5			15.2	
LOS	A	B		A	A	A		A			B	
Approach Delay		10.0			7.9			9.5			15.2	
Approach LOS		A			A			A			B	
Queue Length 50th (m)	0.3	14.0		0.6	4.1	0.0		1.7			6.7	
Queue Length 95th (m)	2.3	38.9		3.7	13.4	0.7		6.6			15.7	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	1201	1658		928	1694	1367		1028			986	
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	0.21		0.02	0.07	0.01		0.05			0.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 44.1	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay: 10.5	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March



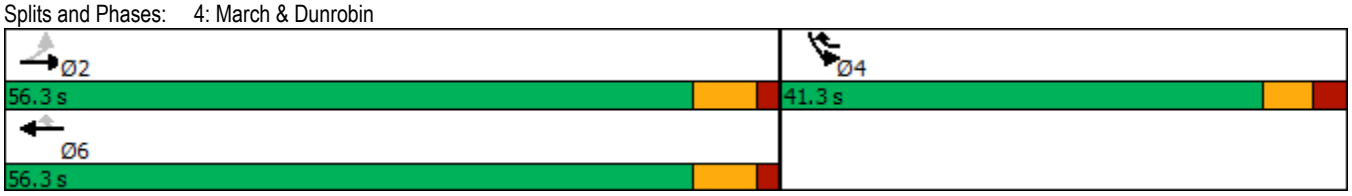
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	46	266	89	159	383	77
Future Volume (vph)	46	266	89	159	383	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor	0.99			0.97	0.99	
Frt				0.850	0.975	
Flt Protected	0.950				0.960	
Satd. Flow (prot)	1626	1728	1695	1441	3074	0
Flt Permitted	0.699				0.960	
Satd. Flow (perm)	1183	1728	1695	1393	3074	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					28	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	5%	4%	7%
Adj. Flow (vph)	46	266	89	159	383	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	266	89	159	460	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	NA	NA	pm+ov	Prot	
Protected Phases		2	6	4	4	
Permitted Phases	2			6		
Detector Phase	2	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	26.3	26.3	26.3	27.3	27.3	
Total Split (s)	56.3	56.3	56.3	41.3	41.3	
Total Split (%)	57.7%	57.7%	57.7%	42.3%	42.3%	
Maximum Green (s)	50.0	50.0	50.0	35.0	35.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	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	
Recall Mode	Min	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	20.2	20.2	20.2	32.9	12.7	
Actuated g/C Ratio	0.44	0.44	0.44	0.72	0.28	
v/c Ratio	0.09	0.35	0.12	0.16	0.52	
Control Delay	9.5	11.1	9.4	1.3	15.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.5	11.1	9.4	1.3	15.0	
LOS	A	B	A	A	B	
Approach Delay		10.9	4.2		15.0	
Approach LOS		B	A		B	
Queue Length 50th (m)	1.7	10.9	3.3	0.1	13.4	
Queue Length 95th (m)	7.4	31.4	11.8	0.3	21.9	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	1167	1705	1672	1236	2384	
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	0.04	0.16	0.05	0.13	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 97.6
Actuated Cycle Length: 45.6
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 11.1 — Intersection LOS: B
Intersection Capacity Utilization 41.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: March & Dunrobin



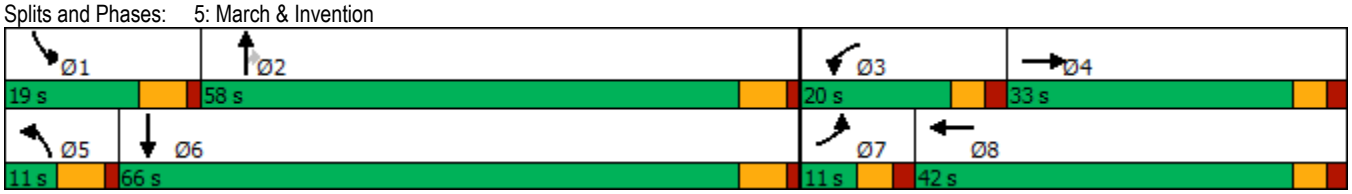
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	71	38	339	71	67	7	211	166	80	842	3
Future Volume (vph)	11	71	38	339	71	67	7	211	166	80	842	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		0.99		0.96	0.99	1.00	
Frt		0.948			0.927				0.850		0.999	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1640	0	3216	1600	0	1658	3316	1483	1658	3312	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1640	0	3183	1600	0	1649	3316	1422	1637	3312	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			36				214			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	11	71	38	339	71	67	7	211	166	80	842	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	109	0	339	138	0	7	211	166	80	845	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		20.0	42.0		11.0	58.0	58.0	19.0	66.0	
Total Split (%)	8.5%	25.4%		15.4%	32.3%		8.5%	44.6%	44.6%	14.6%	50.8%	
Maximum Green (s)	5.5	27.5		14.5	36.5		5.0	52.0	52.0	13.0	60.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.1		14.6	32.3		5.0	54.1	54.1	10.3	65.7	
Actuated g/C Ratio	0.05	0.12		0.13	0.28		0.04	0.48	0.48	0.09	0.58	
v/c Ratio	0.14	0.50		0.82	0.29		0.10	0.13	0.21	0.54	0.44	
Control Delay	60.0	46.1		66.2	26.1		59.6	19.2	1.7	64.5	15.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	46.1		66.2	26.1		59.6	19.2	1.7	64.5	15.8	
LOS	E	D		E	C		E	B	A	E	B	
Approach Delay		47.4			54.6			12.4			20.0	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	2.2	17.4		34.6	15.7		1.4	12.3	0.0	15.5	42.9	
Queue Length 95th (m)	8.5	33.7		#67.6	34.9		6.3	24.3	5.1	33.4	91.4	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	80	414		414	542		73	1583	790	191	1918	
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	0.14	0.26		0.82	0.25		0.10	0.13	0.21	0.42	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 28.9 — Intersection LOS: C
Intersection Capacity Utilization 61.2% — ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	92	258	199	44	72	34	8	225	443	97	1	148
Future Volume (vph)	92	258	199	44	72	34	8	225	443	97	1	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		0.99		0.97		0.99
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3069	3316	1423	3010	3131	1397	0	3219	3221	1458	0	3213
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			141			141				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	92	258	199	44	72	34	8	225	443	97	1	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	258	199	44	72	34	0	233	443	97	0	149
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

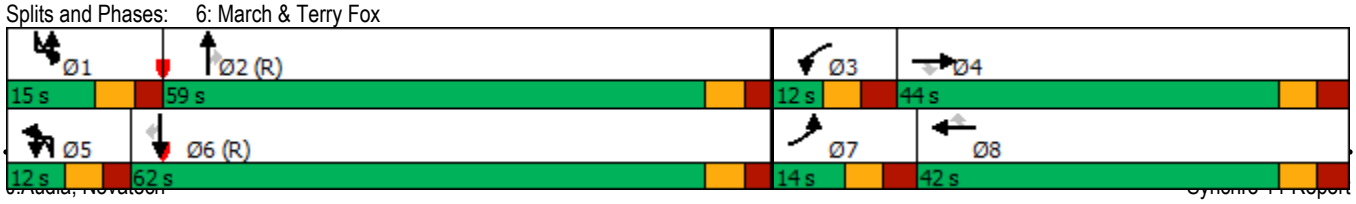
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	937	145
Future Volume (vph)	937	145
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1420
Right Turn on Red		Yes
Satd. Flow (RTOR)		146
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	937	145
Shared Lane Traffic (%)		
Lane Group Flow (vph)	937	145
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	14.0	44.0	44.0	12.0	42.0	42.0	12.0	12.0	59.0	59.0	15.0	15.0
Total Split (%)	10.8%	33.8%	33.8%	9.2%	32.3%	32.3%	9.2%	9.2%	45.4%	45.4%	11.5%	11.5%
Maximum Green (s)	7.0	37.0	37.0	5.0	35.0	35.0	5.6	5.6	52.6	52.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	7.9	19.0	19.0	5.0	17.1	17.1		18.7	71.4	71.4		10.2
Actuated g/C Ratio	0.06	0.15	0.15	0.04	0.13	0.13		0.14	0.55	0.55		0.08
v/c Ratio	0.49	0.53	0.61	0.38	0.18	0.11		0.50	0.25	0.11		0.58
Control Delay	69.2	54.1	23.2	70.4	48.1	0.7		48.4	26.0	7.9		67.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	69.2	54.1	23.2	70.4	48.1	0.7		48.4	26.0	7.9		67.4
LOS	E	D	C	E	D	A		D	C	A		E
Approach Delay		45.4			43.9				30.5			
Approach LOS		D			D				C			
Queue Length 50th (m)	11.1	31.0	12.8	5.3	8.3	0.0		27.8	30.3	0.4		17.6
Queue Length 95th (m)	19.5	35.6	29.4	11.1	12.4	0.0		m#55.3	m62.1	m8.4		#30.9
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	187	943	505	117	842	479		468	1769	866		257
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	0.49	0.27	0.39	0.38	0.09	0.07		0.50	0.25	0.11		0.58

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 33.6 Intersection LOS: C
Intersection Capacity Utilization 80.8% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	62.0	62.0
Total Split (%)	47.7%	47.7%
Maximum Green (s)	55.6	55.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	62.9	62.9
Actuated g/C Ratio	0.48	0.48
v/c Ratio	0.58	0.19
Control Delay	26.7	3.8
Queue Delay	0.0	0.0
Total Delay	26.7	3.8
LOS	C	A
Approach Delay	28.9	
Approach LOS	C	
Queue Length 50th (m)	80.5	0.0
Queue Length 95th (m)	112.4	11.0
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1604	762
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.58	0.19

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	199	1	47	1595	116	2	151
Future Volume (vph)	53	18	5	41	20	199	1	47	1595	116	2	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		0.99	1.00			1.00
Frt			0.850			0.850			0.990			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3234	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1610	3234	0	0	3236
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			170			8			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	199	1	47	1595	116	2	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	199	0	48	1711	0	0	153
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	815	100
Future Volume (vph)	815	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	815	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	815	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		15.9	15.9	15.9	15.9	15.9		9.2	82.8			11.4
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12		0.07	0.64			0.09
v/c Ratio		0.44	0.02	0.29	0.09	0.61		0.42	0.83			0.54
Control Delay		58.7	0.2	53.4	46.9	18.4		67.8	24.2			73.2
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		58.7	0.2	53.4	46.9	18.4		67.8	24.2			73.2
LOS		E	A	D	D	B		E	C			E
Approach Delay		54.9			26.1				25.4			
Approach LOS		D			C				C			
Queue Length 50th (m)		16.3	0.0	9.2	4.4	6.4		11.0	138.4			19.6
Queue Length 95th (m)		25.5	0.0	16.4	9.7	23.8		22.3	#279.9			30.3
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	501		200	2063			399
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		0.21	0.01	0.14	0.04	0.40		0.24	0.83			0.38

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 107.2% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	87.6	87.6
Actuated g/C Ratio	0.67	0.67
v/c Ratio	0.37	0.10
Control Delay	4.3	0.3
Queue Delay	0.0	0.0
Total Delay	4.3	0.3
LOS	A	A
Approach Delay	13.8	
Approach LOS	B	
Queue Length 50th (m)	13.4	0.2
Queue Length 95th (m)	21.4	0.5
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2190	987
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.37	0.10

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	25	92	3	10	2	66	54	11	3	97	3
Future Volume (vph)	2	25	92	3	10	2	66	54	11	3	97	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.896			0.982			0.989			0.996	
Flt Protected		0.999			0.990			0.975			0.999	
Satd. Flow (prot)	0	1532	0	0	1713	0	0	1683	0	0	1675	0
Flt Permitted		0.999			0.990			0.975			0.999	
Satd. Flow (perm)	0	1532	0	0	1713	0	0	1683	0	0	1675	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	50%	4%	3%	1%	1%	1%	1%	2%	8%	1%	3%	100%
Adj. Flow (vph)	2	25	92	3	10	2	66	54	11	3	97	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	15	0	0	131	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.5%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	108	506	45	1	18	244	27	29	15	28	97	14
Future Volume (vph)	108	506	45	1	18	244	27	29	15	28	97	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95		0.99		0.95	0.99	0.97		0.98	0.96
Frt			0.850				0.850		0.902			0.861
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1595	1762	1388	0	1544	1728	1498	1470	1438	0	1674	1378
Flt Permitted	0.950				0.950			0.451			0.729	
Satd. Flow (perm)	1569	1762	1324	0	1526	1728	1426	688	1438	0	1261	1378
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		28			179
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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 (%)	6%	1%	9%	1%	10%	3%	1%	15%	22%	1%	1%	12%
Adj. Flow (vph)	108	506	45	1	18	244	27	29	15	28	97	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	506	45	0	19	244	27	29	43	0	97	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

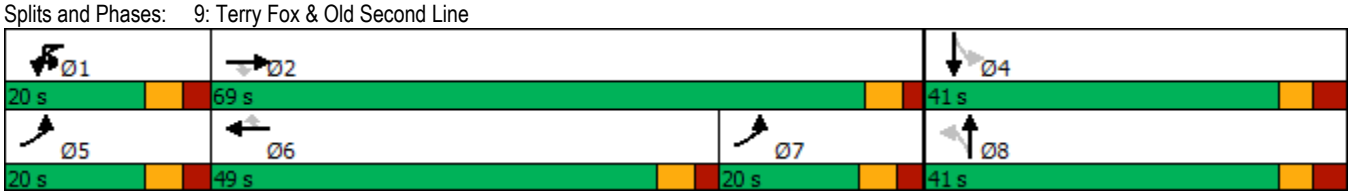
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	179		
Future Volume (vph)	179		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	6%		
Adj. Flow (vph)	179		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		33.9	33.9	11.4	11.4	33.9	33.9	39.7	39.7		39.7	39.7
Total Split (s)		69.0	69.0	20.0	20.0	49.0	49.0	41.0	41.0		41.0	41.0
Total Split (%)		53.1%	53.1%	15.4%	15.4%	37.7%	37.7%	31.5%	31.5%		31.5%	31.5%
Maximum Green (s)		63.1	63.1	13.6	13.6	43.1	43.1	34.3	34.3		34.3	34.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	Max	None	None		None	None
Walk Time (s)		12.0	12.0			12.0	12.0	12.0	12.0		12.0	12.0
Flash Dont Walk (s)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		3	3			3	3	4	4		4	4
Act Effct Green (s)	21.5	72.4	72.4		6.9	43.5	43.5	16.0	16.0		16.0	16.0
Actuated g/C Ratio	0.20	0.68	0.68		0.06	0.41	0.41	0.15	0.15		0.15	0.15
v/c Ratio	0.34	0.42	0.05		0.19	0.35	0.04	0.28	0.18		0.51	0.54
Control Delay	23.6	12.2	0.5		54.8	25.5	0.1	46.4	20.8		51.0	13.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	23.6	12.2	0.5		54.8	25.5	0.1	46.4	20.8		51.0	13.0
LOS	C	B	A		D	C	A	D	C		D	B
Approach Delay		13.3				25.1			31.1			25.7
Approach LOS		B				C			C			C
Queue Length 50th (m)	11.2	27.3	0.0		3.4	29.6	0.0	4.9	2.5		17.1	2.3
Queue Length 95th (m)	19.4	106.6	1.0		11.4	64.3	0.0	12.8	11.2		32.2	19.9
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	410	1197	926		198	704	663	223	485		409	568
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	0.26	0.42	0.05		0.10	0.35	0.04	0.13	0.09		0.24	0.34

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 106.6
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 19.6 — Intersection LOS: B
Intersection Capacity Utilization 74.1% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		20.0	20.0
Total Split (%)		15%	15%
Maximum Green (s)		13.6	13.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	388	120	114	152	50	39	60	119	105	76	61
Future Volume (vph)	42	388	120	114	152	50	39	60	119	105	76	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.98	0.98		1.00	0.98	
Frt			0.850			0.850		0.900			0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1483	1728	1483	1642	1712	1469	1674	1489	0	1674	1506	0
Flt Permitted	0.660			0.458			0.627			0.506		
Satd. Flow (perm)	1018	1728	1427	787	1712	1413	1083	1489	0	887	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			80		75			31	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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 (%)	14%	3%	2%	3%	4%	3%	1%	6%	6%	1%	2%	15%
Adj. Flow (vph)	42	388	120	114	152	50	39	60	119	105	76	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	388	120	114	152	50	39	179	0	105	137	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	70.0	70.0	18.0	70.0	70.0	42.0	42.0		42.0	42.0	
Total Split (%)	13.8%	53.8%	53.8%	13.8%	53.8%	53.8%	32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	12.1	64.1	64.1	12.1	64.1	64.1	35.4	35.4		35.4	35.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	71.0	64.5	64.5	76.0	70.9	70.9	17.3	17.3		17.3	17.3	
Actuated g/C Ratio	0.66	0.60	0.60	0.70	0.66	0.66	0.16	0.16		0.16	0.16	
v/c Ratio	0.06	0.38	0.13	0.19	0.14	0.05	0.23	0.59		0.74	0.51	
Control Delay	6.1	14.1	2.8	6.2	10.0	1.1	42.1	32.1		72.6	38.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.1	14.1	2.8	6.2	10.0	1.1	42.1	32.1		72.6	38.5	
LOS	A	B	A	A	A	A	D	C		E	D	
Approach Delay		11.0			7.2			33.9			53.3	
Approach LOS		B			A			C			D	
Queue Length 50th (m)	1.9	35.4	0.0	5.5	11.4	0.0	6.6	18.4		19.5	18.7	
Queue Length 95th (m)	6.6	73.0	8.2	14.7	26.4	2.2	15.9	38.9		37.3	36.5	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	772	1029	898	662	1121	953	356	540		291	516	
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	0.05	0.38	0.13	0.17	0.14	0.05	0.11	0.33		0.36	0.27	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 108.2	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 70.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Innovation/Flamborough & Terry Fox

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	197	9	46	122	67	1	1	3	111	1	28
Future Volume (vph)	22	197	9	46	122	67	1	1	3	111	1	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.962			0.919			0.973	
Flt Protected		0.995			0.990			0.990			0.962	
Satd. Flow (prot)	0	1734	0	0	1615	0	0	1347	0	0	1572	0
Flt Permitted		0.995			0.990			0.990			0.962	
Satd. Flow (perm)	0	1734	0	0	1615	0	0	1347	0	0	1572	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		185.1			991.2			145.1			590.1	
Travel Time (s)		13.3			71.4			17.4			42.5	
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)			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 (%)	4%	1%	9%	1%	2%	13%	1%	1%	33%	6%	1%	6%
Adj. Flow (vph)	22	197	9	46	122	67	1	1	3	111	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	0	235	0	0	5	0	0	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.8%		ICU Level of Service A	
Analysis Period (min) 15			

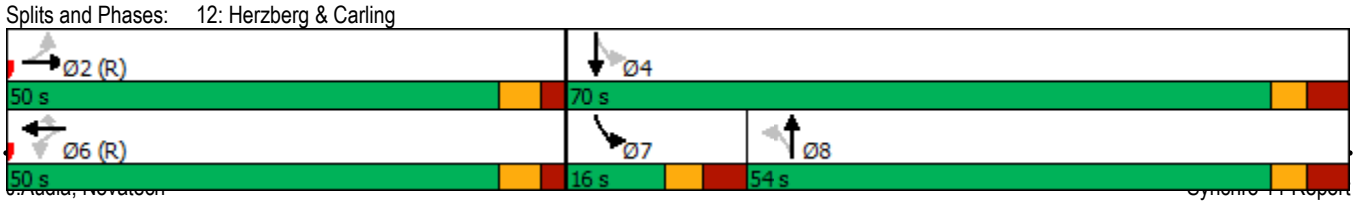
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	343	11	15	503	547	73	440	41	237	112	29
Future Volume (vph)	34	343	11	15	503	547	73	440	41	237	112	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.95		1.00			0.99	
Frt		0.995				0.850		0.990			0.969	
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1674	1751	0	1510	1762	1483	0	1723	0	1674	1669	0
Flt Permitted	0.250			0.410				0.931		0.290		
Satd. Flow (perm)	441	1751	0	648	1762	1413	0	1613	0	511	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				377		4			16	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	343	11	15	503	547	73	440	41	237	112	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	354	0	15	503	547	0	554	0	237	141	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	54.0	54.0		16.0	70.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	45.0%	45.0%		13.3%	58.3%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	46.8	46.8		8.8	62.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	46.7	46.7		46.7	46.7	46.7		44.0		60.0	60.0	
Actuated g/C Ratio	0.39	0.39		0.39	0.39	0.39		0.37		0.50	0.50	
v/c Ratio	0.20	0.52		0.06	0.73	0.70		0.93		0.70	0.17	
Control Delay	29.9	32.2		25.7	39.9	15.0		60.1		29.8	14.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	29.9	32.2		25.7	39.9	15.0		60.1		29.8	14.3	
LOS	C	C		C	D	B		E		C	B	
Approach Delay		32.0			26.9			60.1			24.0	
Approach LOS		C			C			E			C	
Queue Length 50th (m)	5.0	60.1		2.1	96.0	30.8		109.5		27.5	13.5	
Queue Length 95th (m)	12.9	87.7		6.6	135.4	71.9		#168.3		42.2	23.6	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	171	682		252	685	780		631		340	881	
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	0.20	0.52		0.06	0.73	0.70		0.88		0.70	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 35.0 Intersection LOS: C
Intersection Capacity Utilization 92.8% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	162	47	11	273	92	62	65	18	46	64	12
Future Volume (vph)	12	162	47	11	273	92	62	65	18	46	64	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.971				0.850		0.983			0.987	
Flt Protected		0.997			0.998			0.979			0.981	
Satd. Flow (prot)	0	1602	0	0	1694	1498	0	1696	0	0	1695	0
Flt Permitted		0.997			0.998			0.979			0.981	
Satd. Flow (perm)	0	1602	0	0	1694	1498	0	1696	0	0	1695	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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%	10%	1%	1%	5%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	12	162	47	11	273	92	62	65	18	46	64	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	284	92	0	145	0	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	164	17	59	337	28	76
Future Volume (vph)	164	17	59	337	28	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.987				0.901	
Flt Protected				0.993	0.987	
Satd. Flow (prot)	1739	0	0	1683	1510	0
Flt Permitted				0.993	0.987	
Satd. Flow (perm)	1739	0	0	1683	1510	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	5%	5%	7%	4%
Adj. Flow (vph)	164	17	59	337	28	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	0	0	396	104	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	137	24	28	350	50	44	56	15	24	29	19
Future Volume (vph)	35	137	24	28	350	50	44	56	15	24	29	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.98		1.00			0.99	
Frt		0.978				0.850		0.982			0.964	
Flt Protected	0.950			0.950				0.981			0.984	
Satd. Flow (prot)	1642	1710	0	1580	1712	1483	0	1593	0	0	1627	0
Flt Permitted	0.551			0.655				0.843			0.844	
Satd. Flow (perm)	952	1710	0	1090	1712	1449	0	1369	0	0	1395	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				50		8			19	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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 (%)	3%	1%	4%	7%	4%	2%	8%	7%	6%	4%	1%	5%
Adj. Flow (vph)	35	137	24	28	350	50	44	56	15	24	29	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	161	0	28	350	50	0	115	0	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	62.0	62.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0	
Total Split (%)	65.3%	65.3%		65.3%	65.3%	65.3%	34.7%	34.7%		34.7%	34.7%	
Maximum Green (s)	55.6	55.6		55.6	55.6	55.6	26.6	26.6		26.6	26.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	24.7	24.7		24.7	24.7	24.7		11.4			11.4	
Actuated g/C Ratio	0.56	0.56		0.56	0.56	0.56		0.26			0.26	
v/c Ratio	0.07	0.17		0.05	0.37	0.06		0.32			0.19	
Control Delay	8.6	8.1		8.4	10.2	3.6		14.9			11.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	8.6	8.1		8.4	10.2	3.6		14.9			11.2	
LOS	A	A		A	B	A		B			B	
Approach Delay		8.2			9.3			14.9			11.2	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	1.2	5.2		0.9	14.4	0.0		6.0			2.9	
Queue Length 95th (m)	5.7	16.7		4.8	39.0	4.3		14.4			8.9	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	952	1710		1090	1712	1449		832			853	
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	0.04	0.09		0.03	0.20	0.03		0.14			0.08	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 44.1	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay: 10.0	Intersection LOS: A
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	118	314	407	218	58
Future Volume (vph)	53	118	314	407	218	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor	0.99			0.97	0.99	
Frt				0.850	0.968	
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1610	1695	1745	1469	3145	0
Flt Permitted	0.421				0.962	
Satd. Flow (perm)	709	1695	1745	1418	3145	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				407	34	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	5%	2%	3%	1%	3%
Adj. Flow (vph)	53	118	314	407	218	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	118	314	407	276	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	pm+ov	Prot	
Protected Phases	5	2	6	4	4	
Permitted Phases	2			6		
Detector Phase	5	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	11.3	26.3	26.3	27.3	27.3	
Total Split (s)	11.3	67.6	56.3	36.3	36.3	
Total Split (%)	10.9%	65.1%	54.2%	34.9%	34.9%	
Maximum Green (s)	5.0	61.3	50.0	30.0	30.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	27.0	27.0	20.9	32.9	12.1	
Actuated g/C Ratio	0.52	0.52	0.40	0.63	0.23	
v/c Ratio	0.12	0.13	0.45	0.38	0.37	
Control Delay	7.4	7.4	16.4	1.5	16.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.4	7.4	16.4	1.5	16.9	
LOS	A	A	B	A	B	
Approach Delay		7.4	8.0		16.9	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.8	4.1	20.8	0.0	10.0	
Queue Length 95th (m)	7.4	13.9	49.4	4.6	17.9	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	456	1667	1605	1296	1880	
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	0.12	0.07	0.20	0.31	0.15	

Intersection Summary			
Area Type:	Other		
Cycle Length: 103.9			
Actuated Cycle Length: 52			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 47.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: March & Dunrobin

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	912	338	108	289	9
Future Volume (vph)	10	97	23	367	97	67	45	912	338	108	289	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3295	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1639	3316	1422	1650	3295	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				338		3	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	912	338	108	289	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	912	338	108	298	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	0.59	0.40	0.85	0.17	
Control Delay	60.5	53.7		71.3	30.0		94.8	25.6	3.8	103.0	16.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	25.6	3.8	103.0	16.4	
LOS	E	D		E	C		F	C	A	F	B	
Approach Delay		54.3			58.6			22.3			39.4	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	70.2	0.0	22.6	16.7	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	108.7	15.8	#58.8	30.0	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	845	127	1721	
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	0.13	0.30		0.87	0.31		0.64	0.59	0.40	0.85	0.17	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.2 — Intersection LOS: D
Intersection Capacity Utilization 66.0% — 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.

Splits and Phases: 5: March & Invention

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	179	112	213	101	270	168	21	225	839	66	1	48
Future Volume (vph)	179	112	213	101	270	168	21	225	839	66	1	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3194	3221	1466	3222	3316	1453	0	3217	3349	1465	0	3235
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			201			195				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	179	112	213	101	270	168	21	225	839	66	1	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	112	213	101	270	168	0	246	839	66	0	49
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

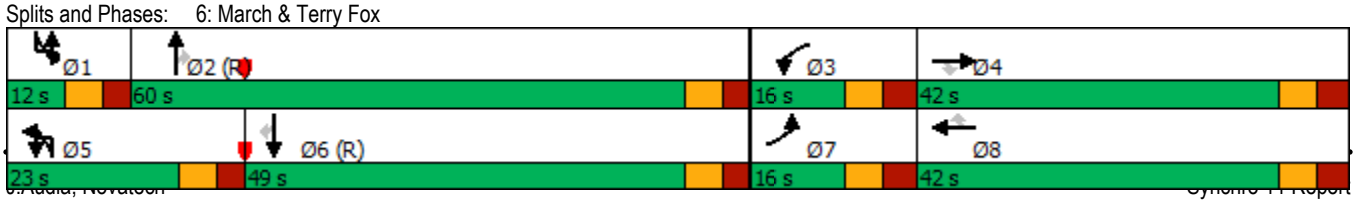
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	623	164
Future Volume (vph)	623	164
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1455
Right Turn on Red		Yes
Satd. Flow (RTOR)		200
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	623	164
Shared Lane Traffic (%)		
Lane Group Flow (vph)	623	164
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	42.0	42.0	16.0	42.0	42.0	23.0	23.0	60.0	60.0	12.0	12.0
Total Split (%)	12.3%	32.3%	32.3%	12.3%	32.3%	32.3%	17.7%	17.7%	46.2%	46.2%	9.2%	9.2%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	16.6	16.6	53.6	53.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	9.0	22.9	22.9	8.4	22.3	22.3		14.5	68.1	68.1		6.1
Actuated g/C Ratio	0.07	0.18	0.18	0.06	0.17	0.17		0.11	0.52	0.52		0.05
v/c Ratio	0.80	0.20	0.50	0.48	0.47	0.41		0.68	0.48	0.08		0.32
Control Delay	84.7	43.9	10.5	66.5	49.6	6.0		59.3	14.0	1.5		65.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	84.7	43.9	10.5	66.5	49.6	6.0		59.3	14.0	1.5		65.8
LOS	F	D	B	E	D	A		E	B	A		E
Approach Delay		44.3			39.2				23.0			
Approach LOS		D			D				C			
Queue Length 50th (m)	21.8	12.8	2.6	12.0	32.5	0.0		22.8	70.0	0.6		5.8
Queue Length 95th (m)	#38.8	17.7	19.8	20.5	38.0	10.3		36.2	107.4	m3.0		12.1
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	224	867	541	224	892	533		414	1754	836		153
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	0.80	0.13	0.39	0.45	0.30	0.32		0.59	0.48	0.08		0.32

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 94 (72%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 74.6% 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: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	49.0	49.0
Total Split (%)	37.7%	37.7%
Maximum Green (s)	42.6	42.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	57.3	57.3
Actuated g/C Ratio	0.44	0.44
v/c Ratio	0.42	0.22
Control Delay	28.6	2.5
Queue Delay	0.0	0.0
Total Delay	28.6	2.5
LOS	C	A
Approach Delay	25.7	
Approach LOS	C	
Queue Length 50th (m)	47.5	0.0
Queue Length 95th (m)	81.2	7.9
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1477	753
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.42	0.22

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	217	5	27	1017	55	267	1552
Future Volume (vph)	30	11	15	124	18	217	5	27	1017	55	267	1552
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		0.99	
Frt			0.850			0.850			0.992			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3284	0	3248	3349
Flt Permitted		0.789		0.730				0.950			0.950	
Satd. Flow (perm)	0	1387	1458	1199	1762	1474	0	1671	3284	0	3226	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			217			6			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	217	5	27	1017	55	267	1552
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	217	0	32	1072	0	267	1552
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	90
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	51.5%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	60.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		20.0	20.0	20.0	20.0	20.0		8.0	75.1		15.1	87.4
Actuated g/C Ratio		0.15	0.15	0.15	0.15	0.15		0.06	0.58		0.12	0.67
v/c Ratio		0.19	0.05	0.67	0.07	0.53		0.31	0.56		0.71	0.69
Control Delay		46.3	0.3	68.1	42.8	10.2		65.5	20.2		59.0	25.7
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		46.3	0.3	68.1	42.8	10.2		65.5	20.2		59.0	25.7
LOS		D	A	E	D	B		E	C		E	C
Approach Delay		34.0			31.8				21.6			29.9
Approach LOS		C			C				C			C
Queue Length 50th (m)		8.6	0.0	28.3	3.7	0.0		7.4	78.4		31.8	164.3
Queue Length 95th (m)		16.2	0.0	42.0	9.1	17.9		16.8	124.7		45.1	218.2
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		355	436	307	451	538		206	1899		409	2252
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		0.12	0.03	0.40	0.04	0.40		0.16	0.56		0.65	0.69

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 27.5 — Intersection LOS: C
Intersection Capacity Utilization 95.9% — ICU Level of Service F
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	87.4
Actuated g/C Ratio	0.67
v/c Ratio	0.05
Control Delay	3.3
Queue Delay	0.0
Total Delay	3.3
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.5
Queue Length 95th (m)	m4.4
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	994
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	19	78	10	25	7	93	106	8	1	69	1
Future Volume (vph)	1	19	78	10	25	7	93	106	8	1	69	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.893			0.977			0.995			0.998	
Flt Protected		0.999			0.988			0.978			0.999	
Satd. Flow (prot)	0	1557	0	0	1672	0	0	1689	0	0	1757	0
Flt Permitted		0.999			0.988			0.978			0.999	
Satd. Flow (perm)	0	1557	0	0	1672	0	0	1689	0	0	1757	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	100%	1%	1%	1%	4%	1%	1%	4%	1%	1%	1%	1%
Adj. Flow (vph)	1	19	78	10	25	7	93	106	8	1	69	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	42	0	0	207	0	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	164	313	12	3	12	550	89	14	3	5	52	4
Future Volume (vph)	164	313	12	3	12	550	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.98		0.95	0.98	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.853
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1546	0	1674	1414
Flt Permitted	0.950				0.950			0.415			0.752	
Satd. Flow (perm)	1652	1762	1421	0	1644	1762	1419	719	1546	0	1295	1414
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		5			182
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	164	313	12	3	12	550	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	164	313	12	0	15	550	89	14	8	0	52	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

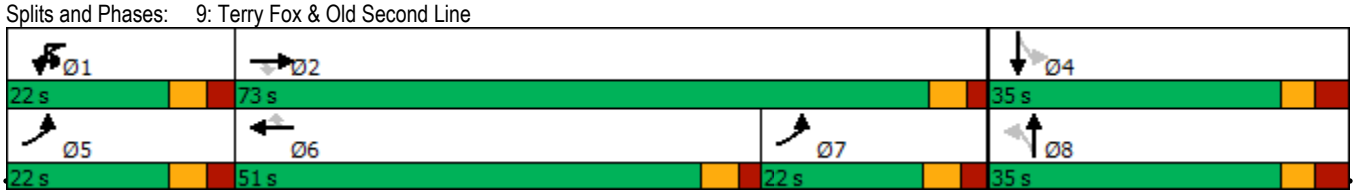
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	182		
Future Volume (vph)	182		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	182		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	24.3	77.3	77.3		6.6	45.4	45.4	13.4	13.4		13.4	13.4
Actuated g/C Ratio	0.22	0.71	0.71		0.06	0.42	0.42	0.12	0.12		0.12	0.12
v/c Ratio	0.44	0.25	0.01		0.15	0.75	0.13	0.16	0.04		0.33	0.56
Control Delay	24.9	8.4	0.0		54.5	35.9	1.3	46.0	29.2		48.7	13.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	24.9	8.4	0.0		54.5	35.9	1.3	46.0	29.2		48.7	13.4
LOS	C	A	A		D	D	A	D	C		D	B
Approach Delay		13.7				31.6			39.9			21.1
Approach LOS		B				C			D			C
Queue Length 50th (m)	18.2	12.3	0.0		2.7	82.4	0.0	2.5	0.5		9.3	0.7
Queue Length 95th (m)	29.1	53.3	0.0		9.9	#175.2	2.5	8.1	4.6		20.4	18.2
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	483	1252	1034		241	735	673	188	408		339	504
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	0.34	0.25	0.01		0.06	0.75	0.13	0.07	0.02		0.15	0.37

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 108.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 23.7 — Intersection LOS: C
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.

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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			

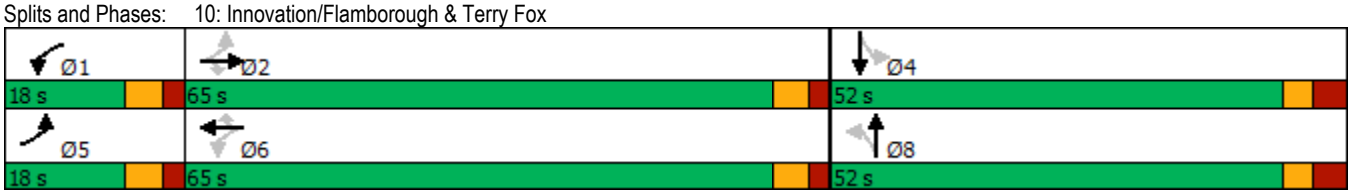
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	272	53	129	418	123	136	92	126	58	52	55
Future Volume (vph)	64	272	53	129	418	123	136	92	126	58	52	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.98		0.96	0.98	0.99		1.00	0.98	
Frt			0.850			0.850		0.913			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	1762	1483	1658	1762	1498	1674	1571	0	1674	1513	0
Flt Permitted	0.482			0.550			0.688			0.431		
Satd. Flow (perm)	790	1762	1407	945	1762	1439	1193	1571	0	756	1513	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			123		55			42	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		9	9		5	8		5	5		8
Confl. Bikes (#/hr)			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 (%)	8%	1%	2%	2%	1%	1%	1%	1%	3%	1%	1%	11%
Adj. Flow (vph)	64	272	53	129	418	123	136	92	126	58	52	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	272	53	129	418	123	136	218	0	58	107	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	65.0	65.0	18.0	65.0	65.0	52.0	52.0		52.0	52.0	
Total Split (%)	13.3%	48.1%	48.1%	13.3%	48.1%	48.1%	38.5%	38.5%		38.5%	38.5%	
Maximum Green (s)	12.1	59.1	59.1	12.1	59.1	59.1	45.4	45.4		45.4	45.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	66.4	59.4	59.4	70.1	63.3	63.3	17.7	17.7		17.7	17.7	
Actuated g/C Ratio	0.64	0.57	0.57	0.67	0.61	0.61	0.17	0.17		0.17	0.17	
v/c Ratio	0.12	0.27	0.06	0.19	0.39	0.13	0.67	0.70		0.45	0.37	
Control Delay	6.7	13.6	1.7	6.6	14.0	2.7	56.7	42.0		49.9	27.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.7	13.6	1.7	6.6	14.0	2.7	56.7	42.0		49.9	27.0	
LOS	A	B	A	A	B	A	E	D		D	C	
Approach Delay		10.9			10.5			47.6			35.0	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	3.1	23.5	0.0	6.4	38.7	0.0	23.7	28.5		9.7	10.5	
Queue Length 95th (m)	9.2	49.7	3.2	16.5	77.0	8.2	43.0	52.1		21.6	24.9	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	635	1007	837	745	1072	924	524	721		332	688	
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	0.10	0.27	0.06	0.17	0.39	0.13	0.26	0.30		0.17	0.16	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 103.9	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Innovation/Flamborough & Terry Fox



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	12	164	0	2	191	82	9	1	67	81	0
Future Volume (vph)	1	12	164	0	2	191	82	9	1	67	81	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.960			0.883			0.968
Flt Protected			0.996						0.994			0.963
Satd. Flow (prot)	0	0	1732	0	0	1687	0	0	1547	0	0	1611
Flt Permitted			0.996						0.994			0.963
Satd. Flow (perm)	0	0	1732	0	0	1687	0	0	1547	0	0	1611
Link Speed (k/h)			50			50			30			50
Link Distance (m)			185.1			991.2			145.1			590.1
Travel Time (s)			13.3			71.4			17.4			42.5
Confl. Peds. (#/hr)		5		5	5		5	5				
Confl. Bikes (#/hr)				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%	7%	2%	1%	1%	1%	2%	1%	1%	1%	3%	1%
Adj. Flow (vph)	1	12	164	0	2	191	82	9	1	67	81	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	177	0	0	275	0	0	77	0	0	106
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)			3.0			3.0			0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Sign Control			Free			Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Confl. Bikes (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	25
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
Turning Speed (k/h)	14
Sign Control	

Intersection Summary

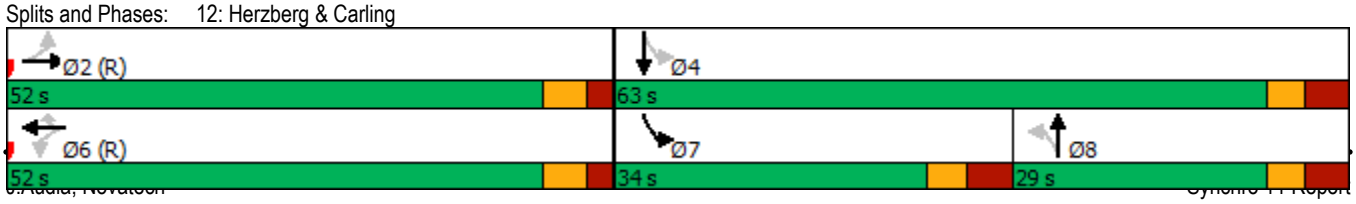
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	584	53	44	336	304	22	162	39	484	428	42
Future Volume (vph)	18	584	53	44	336	304	22	162	39	484	428	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00				0.96		0.99		0.99	1.00	
Frt		0.988				0.850		0.976			0.987	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1674	1736	0	1510	1762	1483	0	1676	0	1642	1731	0
Flt Permitted	0.451			0.154				0.906		0.310		
Satd. Flow (perm)	790	1736	0	245	1762	1427	0	1523	0	533	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				304		8			6	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	584	53	44	336	304	22	162	39	484	428	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	637	0	44	336	304	0	223	0	484	470	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	29.0	29.0		34.0	63.0	
Total Split (%)	45.2%	45.2%		45.2%	45.2%	45.2%	25.2%	25.2%		29.6%	54.8%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	21.8	21.8		26.8	55.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	48.1	48.1		48.1	48.1	48.1		19.6		53.6	53.6	
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.42		0.17		0.47	0.47	
v/c Ratio	0.05	0.88		0.43	0.46	0.39		0.84		0.95	0.58	
Control Delay	21.9	46.0		41.6	27.2	4.2		70.2		55.2	25.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	21.9	46.0		41.6	27.2	4.2		70.2		55.2	25.2	
LOS	C	D		D	C	A		E		E	C	
Approach Delay		45.4			17.9			70.2			40.4	
Approach LOS		D			B			E			D	
Queue Length 50th (m)	2.3	122.4		6.6	50.9	0.0		42.6		71.0	65.8	
Queue Length 95th (m)	6.7	#187.5		19.0	75.2	15.2		#75.0		#125.5	94.7	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	330	728		102	736	773		295		507	843	
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	0.88		0.43	0.46	0.39		0.76		0.95	0.56	

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 38.2 Intersection LOS: D
Intersection Capacity Utilization 97.7% 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.

Splits and Phases: 12: Herzberg & Carling



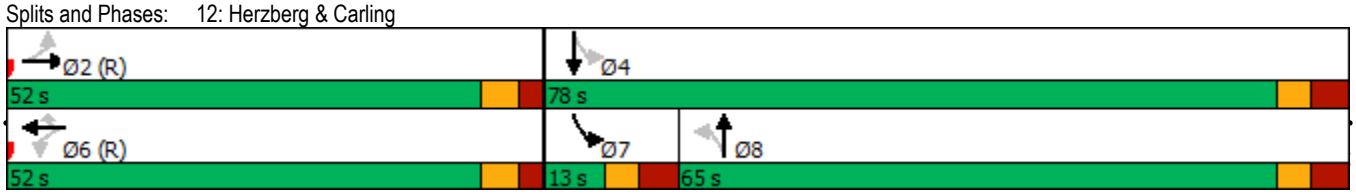
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	343	11	15	503	547	73	440	41	237	112	29
Future Volume (vph)	34	343	11	15	503	547	73	440	41	237	112	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		0.99		0.95		1.00			0.99	
Frt		0.995				0.850		0.990			0.969	
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1674	1751	0	1510	1762	1483	0	1723	0	1674	1668	0
Flt Permitted	0.271			0.422				0.931		0.301		
Satd. Flow (perm)	478	1751	0	667	1762	1410	0	1612	0	530	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				365		4			16	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	343	11	15	503	547	73	440	41	237	112	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	354	0	15	503	547	0	554	0	237	141	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	65.0	65.0		13.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	50.0%	50.0%		10.0%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	57.8	57.8		5.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	53.9	53.9		53.9	53.9	53.9		49.8		62.8	62.8	
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.41		0.38		0.48	0.48	
v/c Ratio	0.17	0.49		0.05	0.69	0.69		0.89		0.77	0.17	
Control Delay	25.7	28.7		27.3	38.9	15.8		54.6		43.7	15.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	25.7	28.7		27.3	38.9	15.8		54.6		43.7	15.3	
LOS	C	C		C	D	B		D		D	B	
Approach Delay		28.4			26.9			54.6			33.1	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	5.8	68.3		2.1	97.9	34.4		118.6		46.1	18.8	
Queue Length 95th (m)	m13.2	m96.5		7.2	#149.7	81.9		151.3		46.1	26.5	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	198	725		276	729	798		718		307	915	
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	0.17	0.49		0.05	0.69	0.69		0.77		0.77	0.15	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 92.8% 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: 12: Herzberg & Carling



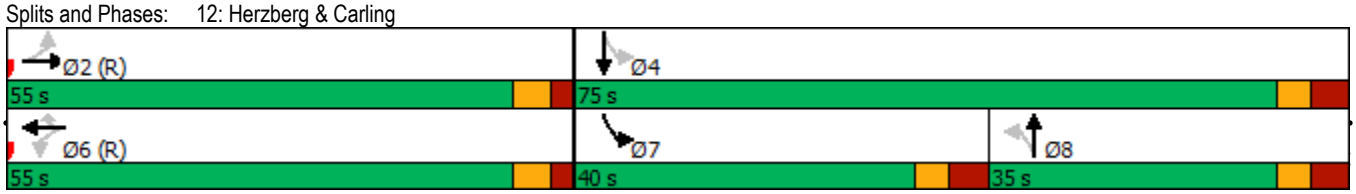
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	584	53	44	336	304	22	162	39	484	428	42
Future Volume (vph)	18	584	53	44	336	304	22	162	39	484	428	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	1.00				0.96		0.99		0.99	1.00	
Frt		0.988				0.850		0.976			0.987	
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1674	1735	0	1510	1762	1483	0	1675	0	1642	1731	0
Flt Permitted	0.441			0.145				0.909		0.311		
Satd. Flow (perm)	772	1735	0	230	1762	1424	0	1528	0	534	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				304		7			6	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	584	53	44	336	304	22	162	39	484	428	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	637	0	44	336	304	0	223	0	484	470	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	54.0	54.0		54.0	54.0	54.0		22.7		62.7	62.7	
Actuated g/C Ratio	0.42	0.42		0.42	0.42	0.42		0.17		0.48	0.48	
v/c Ratio	0.06	0.88		0.46	0.46	0.40		0.82		0.90	0.56	
Control Delay	16.9	39.6		49.6	31.1	4.5		73.1		51.7	31.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	16.9	39.6		49.6	31.1	4.5		73.1		51.7	31.3	
LOS	B	D		D	C	A		E		D	C	
Approach Delay		39.0			20.5			73.1			41.6	
Approach LOS		D			C			E			D	
Queue Length 50th (m)	1.6	145.8		7.5	57.2	0.0		49.4		89.2	83.1	
Queue Length 95th (m)	m3.9	#219.8		#23.4	87.2	16.8		73.1		#125.9	107.1	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	320	723		95	732	769		332		536	905	
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	0.88		0.46	0.46	0.40		0.67		0.90	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 38.0 Intersection LOS: D
Intersection Capacity Utilization 97.7% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	229	72	19	219	109	34	43	15	80	73	11
Future Volume (vph)	6	229	72	19	219	109	34	43	15	80	73	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.968				0.850		0.978			0.991	
Flt Protected		0.999			0.996			0.982			0.976	
Satd. Flow (prot)	0	1593	0	0	1622	1498	0	1693	0	0	1689	0
Flt Permitted		0.999			0.996			0.982			0.976	
Satd. Flow (perm)	0	1593	0	0	1622	1498	0	1693	0	0	1689	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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 (%)	17%	10%	1%	1%	10%	1%	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	6	229	72	19	219	109	34	43	15	80	73	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	238	109	0	92	0	0	164	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	12	134	246	8	65
Future Volume (vph)	346	12	134	246	8	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.880	
Flt Protected				0.983	0.995	
Satd. Flow (prot)	1673	0	0	1672	1437	0
Flt Permitted				0.983	0.995	
Satd. Flow (perm)	1673	0	0	1672	1437	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	30%	4%	5%	12%	8%
Adj. Flow (vph)	346	12	134	246	8	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	358	0	0	380	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

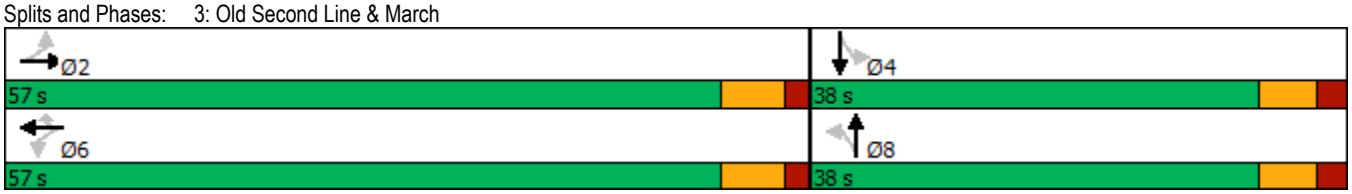
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.2%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	341	95	19	208	12	105	18	22	60	47	24
Future Volume (vph)	9	341	95	19	208	12	105	18	22	60	47	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00			1.00	
Frt		0.967				0.850		0.980			0.975	
Flt Protected	0.950			0.950				0.965			0.978	
Satd. Flow (prot)	1674	1636	0	1610	1695	1401	0	1645	0	0	1614	0
Flt Permitted	0.628			0.495				0.704			0.783	
Satd. Flow (perm)	1107	1636	0	839	1695	1368	0	1200	0	0	1292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23				39		10			13	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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%	4%	7%	5%	5%	8%	1%	5%	4%	2%	10%	1%
Adj. Flow (vph)	9	341	95	19	208	12	105	18	22	60	47	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	436	0	19	208	12	0	145	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	57.0	57.0		57.0	57.0	57.0	38.0	38.0		38.0	38.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	50.6	50.6		50.6	50.6	50.6	31.6	31.6		31.6	31.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	24.9	24.9		24.9	24.9	24.9		12.0			12.0	
Actuated g/C Ratio	0.57	0.57		0.57	0.57	0.57		0.27			0.27	
v/c Ratio	0.01	0.47		0.04	0.22	0.02		0.44			0.36	
Control Delay	7.9	10.8		8.2	8.8	0.8		18.3			16.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	7.9	10.8		8.2	8.8	0.8		18.3			16.2	
LOS	A	B		A	A	A		B			B	
Approach Delay		10.7			8.4			18.3			16.2	
Approach LOS		B			A			B			B	
Queue Length 50th (m)	0.3	18.1		0.6	7.8	0.0		7.9			6.8	
Queue Length 95th (m)	2.2	48.4		3.6	21.9	0.7		21.3			18.7	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	1084	1603		822	1660	1341		889			958	
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	0.27		0.02	0.13	0.01		0.16			0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 44	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March



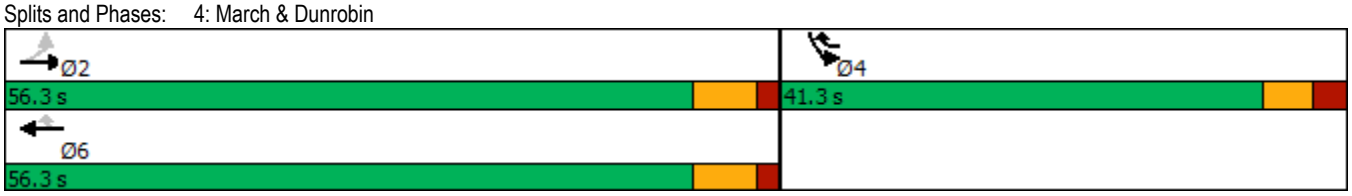
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	108	635	249	159	383	104
Future Volume (vph)	108	635	249	159	383	104
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor	0.99			0.97	0.99	
Frt				0.850	0.968	
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1626	1728	1695	1441	3049	0
Flt Permitted	0.605				0.962	
Satd. Flow (perm)	1027	1728	1695	1393	3049	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					41	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	5%	5%	4%	7%
Adj. Flow (vph)	108	635	249	159	383	104
Shared Lane Traffic (%)						
Lane Group Flow (vph)	108	635	249	159	487	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	NA	NA	pm+ov	Prot	
Protected Phases		2	6	4	4	
Permitted Phases	2			6		
Detector Phase	2	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	26.3	26.3	26.3	27.3	27.3	
Total Split (s)	56.3	56.3	56.3	41.3	41.3	
Total Split (%)	57.7%	57.7%	57.7%	42.3%	42.3%	
Maximum Green (s)	50.0	50.0	50.0	35.0	35.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	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	
Recall Mode	Min	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	27.3	27.3	27.3	42.4	15.1	
Actuated g/C Ratio	0.49	0.49	0.49	0.76	0.27	
v/c Ratio	0.21	0.75	0.30	0.15	0.57	
Control Delay	9.8	18.3	9.9	1.1	19.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.8	18.3	9.9	1.1	19.7	
LOS	A	B	A	A	B	
Approach Delay		17.0	6.4		19.7	
Approach LOS		B	A		B	
Queue Length 50th (m)	4.9	40.8	11.9	0.1	16.5	
Queue Length 95th (m)	14.6	91.7	28.7	0.3	38.9	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	909	1530	1501	1259	2031	
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	0.12	0.42	0.17	0.13	0.24	

Intersection Summary

Area Type: Other
Cycle Length: 97.6
Actuated Cycle Length: 55.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 15.2 — Intersection LOS: B
Intersection Capacity Utilization 64.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: March & Dunrobin



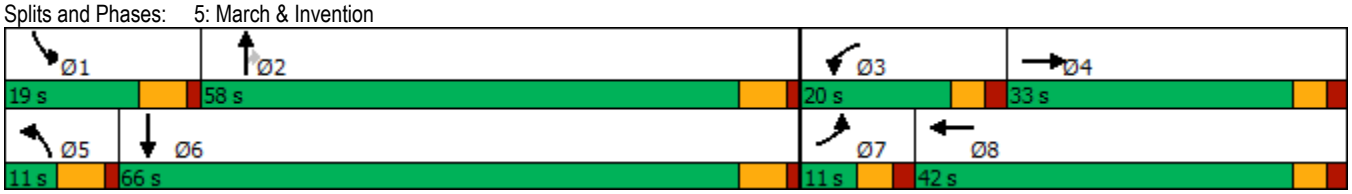
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	71	38	339	71	67	7	530	166	80	1580	3
Future Volume (vph)	11	71	38	339	71	67	7	530	166	80	1580	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		1.00		0.96	0.99	1.00	
Frt		0.948			0.927				0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1640	0	3216	1600	0	1658	3316	1483	1658	3315	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1640	0	3183	1600	0	1655	3316	1422	1644	3315	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			36				214			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	11	71	38	339	71	67	7	530	166	80	1580	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	109	0	339	138	0	7	530	166	80	1583	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		20.0	42.0		11.0	58.0	58.0	19.0	66.0	
Total Split (%)	8.5%	25.4%		15.4%	32.3%		8.5%	44.6%	44.6%	14.6%	50.8%	
Maximum Green (s)	5.5	27.5		14.5	36.5		5.0	52.0	52.0	13.0	60.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.1		14.6	32.3		5.0	54.1	54.1	10.3	65.7	
Actuated g/C Ratio	0.05	0.12		0.13	0.28		0.04	0.48	0.48	0.09	0.58	
v/c Ratio	0.14	0.50		0.82	0.29		0.10	0.33	0.21	0.54	0.82	
Control Delay	60.0	46.1		66.2	26.1		59.6	21.2	1.7	64.5	25.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	46.1		66.2	26.1		59.6	21.2	1.7	64.5	25.3	
LOS	E	D		E	C		E	C	A	E	C	
Approach Delay		47.4			54.6			17.0			27.2	
Approach LOS		D			D			B			C	
Queue Length 50th (m)	2.2	17.4		34.6	15.7		1.4	34.6	0.0	15.5	114.9	
Queue Length 95th (m)	8.5	33.7		#67.6	34.9		6.3	59.9	5.1	33.4	#248.5	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	80	414		414	542		73	1583	790	191	1920	
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	0.14	0.26		0.82	0.25		0.10	0.33	0.21	0.42	0.82	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.4
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 30.0 — Intersection LOS: C
Intersection Capacity Utilization 82.7% — 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.

Splits and Phases: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	119	258	199	44	72	61	8	225	682	97	1	210
Future Volume (vph)	119	258	199	44	72	61	8	225	682	97	1	210
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.99		0.97	0.98		0.98		1.00		0.97		0.99
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3095	3316	1469	3066	3131	1427	0	3248	3221	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3069	3316	1423	3010	3131	1397	0	3235	3221	1458	0	3223
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			141			141				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	5		14	14		5		13		8		8
Confl. Bikes (#/hr)			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 (%)	6%	2%	3%	7%	8%	6%	1%	1%	5%	1%	1%	1%
Adj. Flow (vph)	119	258	199	44	72	61	8	225	682	97	1	210
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	258	199	44	72	61	0	233	682	97	0	211
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

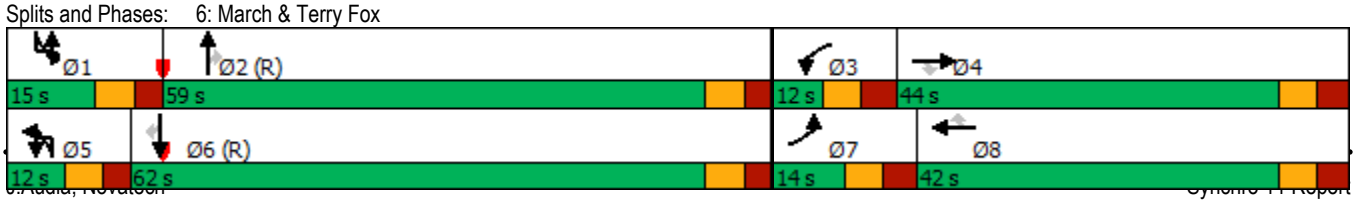
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1491	207
Future Volume (vph)	1491	207
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3316	1469
Flt Permitted		
Satd. Flow (perm)	3316	1420
Right Turn on Red		Yes
Satd. Flow (RTOR)		195
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		13
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	2%	3%
Adj. Flow (vph)	1491	207
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1491	207
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	14.0	44.0	44.0	12.0	42.0	42.0	12.0	12.0	59.0	59.0	15.0	15.0
Total Split (%)	10.8%	33.8%	33.8%	9.2%	32.3%	32.3%	9.2%	9.2%	45.4%	45.4%	11.5%	11.5%
Maximum Green (s)	7.0	37.0	37.0	5.0	35.0	35.0	5.6	5.6	52.6	52.6	8.6	8.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		7	7		1	1			5	5		
Act Effct Green (s)	7.0	21.5	21.5	5.0	17.1	17.1		18.7	65.5	65.5		13.6
Actuated g/C Ratio	0.05	0.17	0.17	0.04	0.13	0.13		0.14	0.50	0.50		0.10
v/c Ratio	0.72	0.47	0.57	0.38	0.18	0.20		0.50	0.42	0.12		0.62
Control Delay	83.9	51.5	21.5	70.4	48.1	1.5		41.4	37.4	9.5		64.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	83.9	51.5	21.5	70.4	48.1	1.5		41.4	37.4	9.5		64.1
LOS	F	D	C	E	D	A		D	D	A		E
Approach Delay		47.8			37.6				35.6			
Approach LOS		D			D				D			
Queue Length 50th (m)	14.5	31.0	12.8	5.3	8.3	0.0		25.8	72.9	1.5		24.5
Queue Length 95th (m)	#27.4	35.6	29.4	11.1	12.4	0.0		m#42.3	m79.2	m3.9		#49.4
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	166	943	505	117	842	479		468	1621	806		340
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	0.72	0.27	0.39	0.38	0.09	0.13		0.50	0.42	0.12		0.62

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 114 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 43.6 Intersection LOS: D
Intersection Capacity Utilization 96.9% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	62.0	62.0
Total Split (%)	47.7%	47.7%
Maximum Green (s)	55.6	55.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	3	3
Act Effct Green (s)	60.4	60.4
Actuated g/C Ratio	0.46	0.46
v/c Ratio	0.97	0.27
Control Delay	50.6	4.4
Queue Delay	0.0	0.0
Total Delay	50.6	4.4
LOS	D	A
Approach Delay	47.1	
Approach LOS	D	
Queue Length 50th (m)	167.0	1.4
Queue Length 95th (m)	#240.9	14.9
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1539	763
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.97	0.27

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	305	1	47	1728	116	2	397
Future Volume (vph)	53	18	5	41	20	305	1	47	1728	116	2	397
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		0.99	1.00			1.00
Frt			0.850			0.850			0.991			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3238	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1616	3238	0	0	3238
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			168			7			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	305	1	47	1728	116	2	397
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	305	0	48	1844	0	0	399
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1123	100
Future Volume (vph)	1123	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	1123	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1123	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		20.1	20.1	20.1	20.1	20.1		9.2	68.6			21.5
Actuated g/C Ratio		0.15	0.15	0.15	0.15	0.15		0.07	0.53			0.17
v/c Ratio		0.35	0.02	0.23	0.07	0.83		0.42	1.08			0.74
Control Delay		50.8	0.2	47.3	42.8	41.5		67.8	76.5			73.0
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		50.8	0.2	47.3	42.8	41.5		67.8	76.5			73.0
LOS		D	A	D	D	D		E	E			E
Approach Delay		47.5			42.2				76.3			
Approach LOS		D			D				E			
Queue Length 50th (m)		15.3	0.0	8.7	4.1	32.8		11.0	~257.9			51.5
Queue Length 95th (m)		25.5	0.0	16.4	9.7	56.8		22.3	#319.7			m#58.1
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	499		200	1711			538
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		0.21	0.01	0.14	0.04	0.61		0.24	1.08			0.74

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 49.6 Intersection LOS: D
Intersection Capacity Utilization 124.1% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	83.4	83.4
Actuated g/C Ratio	0.64	0.64
v/c Ratio	0.54	0.11
Control Delay	3.5	0.1
Queue Delay	0.0	0.0
Total Delay	3.5	0.1
LOS	A	A
Approach Delay	20.4	
Approach LOS	C	
Queue Length 50th (m)	13.3	0.0
Queue Length 95th (m)	m17.9	m0.0
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2087	945
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.54	0.11

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	25	92	3	10	2	66	81	11	3	159	3
Future Volume (vph)	2	25	92	3	10	2	66	81	11	3	159	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.896			0.982			0.991			0.998	
Flt Protected		0.999			0.990			0.980			0.999	
Satd. Flow (prot)	0	1532	0	0	1713	0	0	1695	0	0	1695	0
Flt Permitted		0.999			0.990			0.980			0.999	
Satd. Flow (perm)	0	1532	0	0	1713	0	0	1695	0	0	1695	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	50%	4%	3%	1%	1%	1%	1%	2%	8%	1%	3%	100%
Adj. Flow (vph)	2	25	92	3	10	2	66	81	11	3	159	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	15	0	0	158	0	0	165	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 35.9%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	188	506	45	1	18	244	27	29	15	28	97	14
Future Volume (vph)	188	506	45	1	18	244	27	29	15	28	97	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95		0.99		0.95	0.99	0.97		0.98	0.96
Frt			0.850				0.850		0.902			0.856
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1595	1762	1388	0	1544	1728	1498	1470	1438	0	1674	1371
Flt Permitted	0.950				0.950			0.241			0.729	
Satd. Flow (perm)	1569	1762	1324	0	1526	1728	1426	370	1438	0	1261	1371
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		28			364
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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 (%)	6%	1%	9%	1%	10%	3%	1%	15%	22%	1%	1%	12%
Adj. Flow (vph)	188	506	45	1	18	244	27	29	15	28	97	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	506	45	0	19	244	27	29	43	0	97	378
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

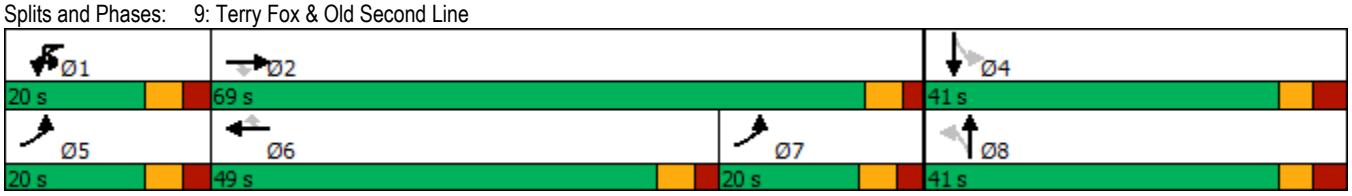
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	364		
Future Volume (vph)	364		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	6%		
Adj. Flow (vph)	364		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		33.9	33.9	11.4	11.4	33.9	33.9	39.7	39.7		39.7	39.7
Total Split (s)		69.0	69.0	20.0	20.0	49.0	49.0	41.0	41.0		41.0	41.0
Total Split (%)		53.1%	53.1%	15.4%	15.4%	37.7%	37.7%	31.5%	31.5%		31.5%	31.5%
Maximum Green (s)		63.1	63.1	13.6	13.6	43.1	43.1	34.3	34.3		34.3	34.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	Max	None	None		None	None
Walk Time (s)		12.0	12.0			12.0	12.0	12.0	12.0		12.0	12.0
Flash Dont Walk (s)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		3	3			3	3	4	4		4	4
Act Effct Green (s)	23.2	74.2	74.2		7.0	43.5	43.5	16.6	16.6		16.6	16.6
Actuated g/C Ratio	0.21	0.68	0.68		0.06	0.40	0.40	0.15	0.15		0.15	0.15
v/c Ratio	0.55	0.42	0.05		0.19	0.35	0.04	0.52	0.18		0.51	0.73
Control Delay	28.0	12.3	0.4		56.5	26.9	0.1	73.9	21.0		51.3	14.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	28.0	12.3	0.4		56.5	26.9	0.1	73.9	21.0		51.3	14.0
LOS	C	B	A		E	C	A	E	C		D	B
Approach Delay		15.6				26.4			42.3			21.6
Approach LOS		B				C			D			C
Queue Length 50th (m)	20.5	27.8	0.0		3.4	30.7	0.0	5.2	2.5		17.4	2.3
Queue Length 95th (m)	32.1	106.2	0.9		11.6	66.0	0.0	14.5	11.3		33.1	28.3
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	401	1200	928		194	689	652	117	475		400	683
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	0.47	0.42	0.05		0.10	0.35	0.04	0.25	0.09		0.24	0.55

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 108.9
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 20.6 — Intersection LOS: C
Intersection Capacity Utilization 76.3% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		20.0	20.0
Total Split (%)		15%	15%
Maximum Green (s)		13.6	13.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	388	120	176	152	50	39	87	146	105	138	61
Future Volume (vph)	42	388	120	176	152	50	39	87	146	105	138	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.98	0.99		1.00	0.98	
Frt			0.850			0.850		0.906			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1483	1728	1483	1642	1712	1469	1674	1500	0	1674	1577	0
Flt Permitted	0.660			0.442			0.464			0.376		
Satd. Flow (perm)	1018	1728	1427	759	1712	1413	804	1500	0	660	1577	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			80		64			17	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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 (%)	14%	3%	2%	3%	4%	3%	1%	6%	6%	1%	2%	15%
Adj. Flow (vph)	42	388	120	176	152	50	39	87	146	105	138	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	388	120	176	152	50	39	233	0	105	199	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	70.0	70.0	18.0	70.0	70.0	42.0	42.0		42.0	42.0	
Total Split (%)	13.8%	53.8%	53.8%	13.8%	53.8%	53.8%	32.3%	32.3%		32.3%	32.3%	
Maximum Green (s)	12.1	64.1	64.1	12.1	64.1	64.1	35.4	35.4		35.4	35.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	71.0	64.5	64.5	78.4	72.3	72.3	19.4	19.4		19.4	19.4	
Actuated g/C Ratio	0.64	0.58	0.58	0.70	0.65	0.65	0.17	0.17		0.17	0.17	
v/c Ratio	0.06	0.39	0.14	0.29	0.14	0.05	0.28	0.74		0.92	0.69	
Control Delay	6.8	15.9	3.0	7.4	10.6	1.1	44.9	46.2		111.8	52.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.8	15.9	3.0	7.4	10.6	1.1	44.9	46.2		111.8	52.4	
LOS	A	B	A	A	B	A	D	D		F	D	
Approach Delay		12.4			7.9			46.0			72.9	
Approach LOS		B			A			D			E	
Queue Length 50th (m)	2.2	39.7	0.0	9.8	12.3	0.0	6.8	32.5		20.8	34.5	
Queue Length 95th (m)	6.8	76.5	8.5	22.7	27.0	2.1	16.4	58.1		#45.0	57.7	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	749	997	874	634	1108	942	256	521		210	514	
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	0.06	0.39	0.14	0.28	0.14	0.05	0.15	0.45		0.50	0.39	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 111.7
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 29.5 — Intersection LOS: C
Intersection Capacity Utilization 77.1% — ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Innovation/Flamborough & Terry Fox

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	259	9	46	149	94	1	1	3	173	1	28
Future Volume (vph)	22	259	9	46	149	94	1	1	3	173	1	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.956			0.919			0.981	
Flt Protected		0.996			0.992			0.990			0.959	
Satd. Flow (prot)	0	1740	0	0	1601	0	0	1347	0	0	1580	0
Flt Permitted		0.996			0.992			0.990			0.959	
Satd. Flow (perm)	0	1740	0	0	1601	0	0	1347	0	0	1580	0
Link Speed (k/h)		50			50			30			50	
Link Distance (m)		185.1			991.2			145.1			590.1	
Travel Time (s)		13.3			71.4			17.4			42.5	
Confl. Peds. (#/hr)	5		5	5		5	5					5
Confl. Bikes (#/hr)			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 (%)	4%	1%	9%	1%	2%	13%	1%	1%	33%	6%	1%	6%
Adj. Flow (vph)	22	259	9	46	149	94	1	1	3	173	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	289	0	0	5	0	0	202	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.0			3.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.5%		ICU Level of Service A	
Analysis Period (min) 15			

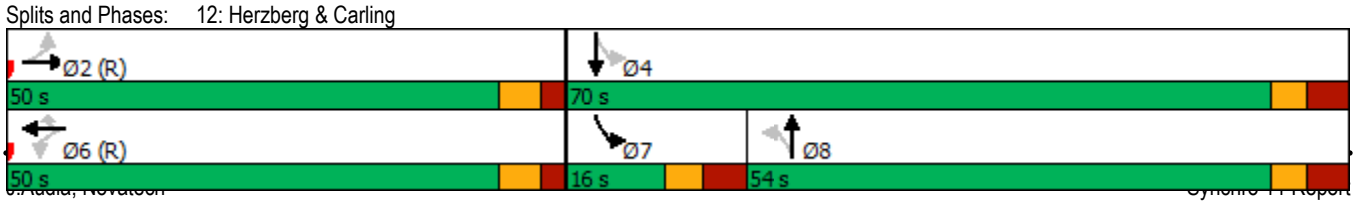
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	589	11	15	609	547	73	493	41	237	235	29
Future Volume (vph)	34	589	11	15	609	547	73	493	41	237	235	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.95		1.00			1.00	
Frt		0.997				0.850		0.991			0.984	
Flt Protected	0.950			0.950				0.994		0.950		
Satd. Flow (prot)	1674	1756	0	1510	1762	1483	0	1727	0	1674	1697	0
Flt Permitted	0.112			0.122				0.917		0.277		
Satd. Flow (perm)	197	1756	0	194	1762	1413	0	1591	0	488	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				342		4			8	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	589	11	15	609	547	73	493	41	237	235	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	600	0	15	609	547	0	607	0	237	264	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	54.0	54.0		16.0	70.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	45.0%	45.0%		13.3%	58.3%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	46.8	46.8		8.8	62.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	44.1	44.1		44.1	44.1	44.1		46.6		62.6	62.6	
Actuated g/C Ratio	0.37	0.37		0.37	0.37	0.37		0.39		0.52	0.52	
v/c Ratio	0.47	0.93		0.21	0.94	0.74		0.98		0.70	0.30	
Control Delay	54.4	59.0		35.6	61.2	18.9		68.0		29.0	16.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	54.4	59.0		35.6	61.2	18.9		68.0		29.0	16.8	
LOS	D	E		D	E	B		E		C	B	
Approach Delay		58.7			41.1			68.0			22.5	
Approach LOS		E			D			E			C	
Queue Length 50th (m)	5.6	124.0		2.2	126.9	39.2		127.4		27.5	30.1	
Queue Length 95th (m)	#18.9	#189.0		8.0	#192.1	82.0		#196.5		42.2	45.9	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	72	646		70	647	735		622		341	891	
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	0.47	0.93		0.21	0.94	0.74		0.98		0.70	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 47.4 Intersection LOS: D
Intersection Capacity Utilization 100.7% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	219	47	11	312	131	62	65	18	103	64	12
Future Volume (vph)	12	219	47	11	312	131	62	65	18	103	64	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		90.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	10.0			10.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977				0.850		0.983			0.991	
Flt Protected		0.998			0.998			0.979			0.972	
Satd. Flow (prot)	0	1606	0	0	1694	1498	0	1696	0	0	1690	0
Flt Permitted		0.998			0.998			0.979			0.972	
Satd. Flow (perm)	0	1606	0	0	1694	1498	0	1696	0	0	1690	0
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		523.3			1412.9			1065.2			506.1	
Travel Time (s)		23.5			63.6			63.9			30.4	
Confl. Bikes (#/hr)			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%	10%	1%	1%	5%	1%	1%	1%	1%	1%	1%	8%
Adj. Flow (vph)	12	219	47	11	312	131	62	65	18	103	64	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	278	0	0	323	131	0	145	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	277	17	98	415	28	133
Future Volume (vph)	277	17	98	415	28	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.992				0.888	
Flt Protected				0.991	0.991	
Satd. Flow (prot)	1748	0	0	1680	1499	0
Flt Permitted				0.991	0.991	
Satd. Flow (perm)	1748	0	0	1680	1499	0
Link Speed (k/h)	80			80	60	
Link Distance (m)	1412.9			2643.3	1558.1	
Travel Time (s)	63.6			118.9	93.5	
Confl. Bikes (#/hr)		5				5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	5%	5%	7%	4%
Adj. Flow (vph)	277	17	98	415	28	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	294	0	0	513	161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		97	97		97	97
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.6%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	222	109	28	408	50	102	56	15	24	29	19
Future Volume (vph)	35	222	109	28	408	50	102	56	15	24	29	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	45.0		35.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (m)	80.0			70.0			10.0			10.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99				0.98		1.00			0.99	
Frt		0.951				0.850		0.988			0.964	
Flt Protected	0.950			0.950				0.971			0.984	
Satd. Flow (prot)	1642	1647	0	1580	1712	1483	0	1585	0	0	1627	0
Flt Permitted	0.501			0.561				0.778			0.846	
Satd. Flow (perm)	866	1647	0	933	1712	1449	0	1270	0	0	1399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45				50		5			19	
Link Speed (k/h)		80			80			60			60	
Link Distance (m)		2643.3			819.6			1383.1			685.3	
Travel Time (s)		118.9			36.9			83.0			41.1	
Confl. Bikes (#/hr)			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 (%)	3%	1%	4%	7%	4%	2%	8%	7%	6%	4%	1%	5%
Adj. Flow (vph)	35	222	109	28	408	50	102	56	15	24	29	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	331	0	28	408	50	0	173	0	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		4	4	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	20.0	20.0		20.0	20.0	20.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	26.4	26.4		26.4	26.4	26.4	24.4	24.4		24.4	24.4	
Total Split (s)	62.0	62.0		62.0	62.0	62.0	33.0	33.0		33.0	33.0	
Total Split (%)	65.3%	65.3%		65.3%	65.3%	65.3%	34.7%	34.7%		34.7%	34.7%	
Maximum Green (s)	55.6	55.6		55.6	55.6	55.6	26.6	26.6		26.6	26.6	
Yellow Time (s)	4.6	4.6		4.6	4.6	4.6	4.2	4.2		4.2	4.2	
All-Red Time (s)	1.8	1.8		1.8	1.8	1.8	2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	6.4	6.4		6.4	6.4	6.4		6.4			6.4	
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	Min	Min		Min	Min	Min	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)	9.0	9.0		9.0	9.0	9.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	1	1		1	1	
Act Effct Green (s)	22.5	22.5		22.5	22.5	22.5		12.2			12.2	
Actuated g/C Ratio	0.47	0.47		0.47	0.47	0.47		0.26			0.26	
v/c Ratio	0.09	0.41		0.06	0.50	0.07		0.53			0.19	
Control Delay	8.6	9.6		8.4	12.1	3.4		20.9			12.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	8.6	9.6		8.4	12.1	3.4		20.9			12.1	
LOS	A	A		A	B	A		C			B	
Approach Delay		9.5			11.0			20.9			12.1	
Approach LOS		A			B			C			B	
Queue Length 50th (m)	1.3	11.9		1.0	18.4	0.0		10.1			2.9	
Queue Length 95th (m)	5.5	31.8		4.6	45.2	4.0		26.1			10.5	
Internal Link Dist (m)		2619.3			795.6			1359.1			661.3	
Turn Bay Length (m)	35.0			45.0		35.0						
Base Capacity (vph)	861	1638		928	1702	1441		718			796	
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	0.04	0.20		0.03	0.24	0.03		0.24			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 47.7	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Old Second Line & March

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	92	351	654	407	218	115
Future Volume (vph)	92	351	654	407	218	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0			0.0	70.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	80.0				80.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Ped Bike Factor				0.97	0.99	
Frt				0.850	0.948	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1610	1695	1745	1469	3075	0
Flt Permitted	0.189				0.968	
Satd. Flow (perm)	320	1695	1745	1418	3075	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				407	98	
Link Speed (k/h)		80	80		60	
Link Distance (m)		523.3	228.2		309.5	
Travel Time (s)		23.5	10.3		18.6	
Confl. Peds. (#/hr)	5			5		5
Confl. Bikes (#/hr)				5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	5%	5%	2%	3%	1%	3%
Adj. Flow (vph)	92	351	654	407	218	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	351	654	407	333	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	R NA	Left	Right	L NA	R NA
Median Width(m)		3.5	3.5		7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24			14	24	14
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		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	pm+ov	Prot	
Protected Phases	5	2	6	4	4	
Permitted Phases	2			6		
Detector Phase	5	2	6	4	4	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	5.0	20.0	20.0	10.0	10.0	
Minimum Split (s)	11.3	26.3	26.3	27.3	27.3	
Total Split (s)	11.3	67.6	56.3	36.3	36.3	
Total Split (%)	10.9%	65.1%	54.2%	34.9%	34.9%	
Maximum Green (s)	5.0	61.3	50.0	30.0	30.0	
Yellow Time (s)	4.6	4.6	4.6	3.7	3.7	
All-Red Time (s)	1.7	1.7	1.7	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			13.0	14.0	14.0	
Pedestrian Calls (#/hr)			1	1	1	
Act Effct Green (s)	39.9	39.9	31.3	44.6	13.3	
Actuated g/C Ratio	0.60	0.60	0.47	0.67	0.20	
v/c Ratio	0.31	0.35	0.80	0.37	0.48	
Control Delay	8.3	7.6	24.3	1.2	21.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.3	7.6	24.3	1.2	21.1	
LOS	A	A	C	A	C	
Approach Delay		7.8	15.5		21.1	
Approach LOS		A	B		C	
Queue Length 50th (m)	3.4	15.3	59.1	0.0	11.9	
Queue Length 95th (m)	10.2	36.7	117.6	3.6	28.8	
Internal Link Dist (m)		499.3	204.2		285.5	
Turn Bay Length (m)	110.0				70.0	
Base Capacity (vph)	295	1501	1343	1316	1534	
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	0.31	0.23	0.49	0.31	0.22	

Intersection Summary	
Area Type: Other	
Cycle Length: 103.9	
Actuated Cycle Length: 66.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: March & Dunrobin

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	1591	338	108	754	9
Future Volume (vph)	10	97	23	367	97	67	45	1591	338	108	754	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3307	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1648	3316	1422	1655	3307	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				213		1	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	1591	338	108	754	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	1591	338	108	763	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	1.02	0.43	0.85	0.44	
Control Delay	60.5	53.7		71.3	30.0		94.8	60.9	9.8	103.0	19.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	60.9	9.8	103.0	19.8	
LOS	E	D		E	C		F	E	A	F	B	
Approach Delay		54.3			58.6			52.9			30.2	
Approach LOS		D			E			D			C	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	~173.3	14.5	22.6	51.2	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	#266.9	41.9	#58.8	81.9	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	779	127	1727	
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	0.13	0.30		0.87	0.31		0.64	1.02	0.43	0.85	0.44	

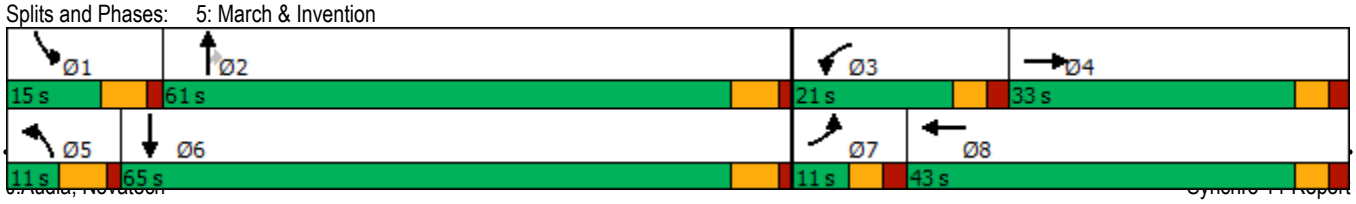
Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 48.2 — Intersection LOS: D
Intersection Capacity Utilization 85.8% — 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: 5: March & Invention



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	236	112	213	101	270	225	21	225	1348	66	1	87
Future Volume (vph)	236	112	213	101	270	225	21	225	1348	66	1	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3194	3221	1466	3222	3316	1453	0	3229	3349	1465	0	3242
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			195			195				146		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	236	112	213	101	270	225	21	225	1348	66	1	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	236	112	213	101	270	225	0	246	1348	66	0	88
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

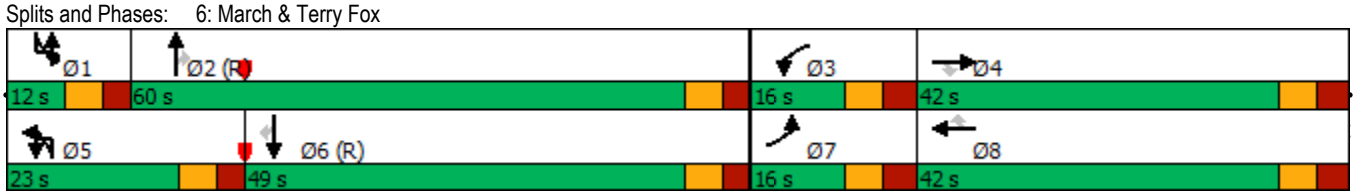
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	972	203
Future Volume (vph)	972	203
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1455
Right Turn on Red		Yes
Satd. Flow (RTOR)		203
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	972	203
Shared Lane Traffic (%)		
Lane Group Flow (vph)	972	203
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	16.0	42.0	42.0	16.0	42.0	42.0	23.0	23.0	60.0	60.0	12.0	12.0
Total Split (%)	12.3%	32.3%	32.3%	12.3%	32.3%	32.3%	17.7%	17.7%	46.2%	46.2%	9.2%	9.2%
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	35.0	16.6	16.6	53.6	53.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	9.0	22.9	22.9	8.4	22.3	22.3		14.5	64.9	64.9		6.9
Actuated g/C Ratio	0.07	0.18	0.18	0.06	0.17	0.17		0.11	0.50	0.50		0.05
v/c Ratio	1.05	0.20	0.51	0.48	0.47	0.55		0.68	0.81	0.08		0.51
Control Delay	132.0	43.9	11.4	68.7	56.9	20.0		75.5	20.6	0.4		70.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	132.0	43.9	11.4	68.7	56.9	20.0		75.5	20.6	0.4		70.8
LOS	F	D	B	E	E	C		E	C	A		E
Approach Delay		68.6			45.0				27.9			
Approach LOS		E			D				C			
Queue Length 50th (m)	~31.2	12.8	3.8	12.2	33.3	9.3		30.3	85.0	0.0		10.4
Queue Length 95th (m)	#55.4	17.7	21.2	m19.4	m37.3	m23.4		m32.7	#209.8	m0.0		#20.7
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	224	867	537	224	892	533		414	1672	804		173
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	1.05	0.13	0.40	0.45	0.30	0.42		0.59	0.81	0.08		0.51

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 94 (72%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 37.2 Intersection LOS: D
Intersection Capacity Utilization 93.6% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	49.0	49.0
Total Split (%)	37.7%	37.7%
Maximum Green (s)	42.6	42.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	57.3	57.3
Actuated g/C Ratio	0.44	0.44
v/c Ratio	0.66	0.27
Control Delay	33.9	5.0
Queue Delay	0.0	0.0
Total Delay	33.9	5.0
LOS	C	A
Approach Delay	31.8	
Approach LOS	C	
Queue Length 50th (m)	85.3	0.0
Queue Length 95th (m)	#146.8	15.2
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1477	755
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.66	0.27

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	30	11	15	124	18	443	5	27	1300	55	422	1746
Future Volume (vph)	30	11	15	124	18	443	5	27	1300	55	422	1746
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0	200.0	
Storage Lanes	0		1	1		2		1		0	2	
Taper Length (m)	10.0			10.0				40.0			60.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00	0.97	0.99		0.98		1.00	1.00		1.00	
Frt			0.850			0.850			0.994			
Flt Protected		0.965		0.950				0.950			0.950	
Satd. Flow (prot)	0	1701	1498	1580	1762	1498	0	1674	3292	0	3248	3349
Flt Permitted		0.805		0.730				0.950			0.950	
Satd. Flow (perm)	0	1415	1458	1199	1762	1474	0	1672	3292	0	3233	3349
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			246			4			
Link Speed (k/h)		50			60				60			60
Link Distance (m)		197.8			301.5				526.0			613.9
Travel Time (s)		14.2			18.1				31.6			36.8
Confl. Peds. (#/hr)	3		11	11		3		6		11	11	
Confl. Bikes (#/hr)			2			1				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	7%	1%	1%	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	30	11	15	124	18	443	5	27	1300	55	422	1746
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	15	124	18	443	0	32	1355	0	422	1746
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	L NA	L NA	R NA	L NA	L NA
Median Width(m)		3.5			7.0				18.0			18.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	24	
Number of Detectors	1	2	1	1	2	1	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	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	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			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	Prot	Prot	NA		Prot	NA
Protected Phases		4			8		5	5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	6

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	48
Future Volume (vph)	48
Ideal Flow (vphpl)	1800
Storage Length (m)	180.0
Storage Lanes	1
Taper Length (m)	
Lane Util. Factor	1.00
Ped Bike Factor	0.96
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1498
Flt Permitted	
Satd. Flow (perm)	1435
Right Turn on Red	Yes
Satd. Flow (RTOR)	90
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	6
Confl. Bikes (#/hr)	8
Peak Hour Factor	1.00
Heavy Vehicles (%)	1%
Adj. Flow (vph)	48
Shared Lane Traffic (%)	
Lane Group Flow (vph)	48
Enter Blocked Intersection	No
Lane Alignment	R NA
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	10.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	30.1
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	67.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	51.5%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	60.9
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	2.4
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1		7.0	6.1
Lead/Lag							Lead	Lead	Lag		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	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			7.0
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			17.0
Pedestrian Calls (#/hr)	4	4	4	4	4	4			6			6
Act Effct Green (s)		25.6	25.6	25.6	25.6	25.6		8.0	63.7		20.9	81.9
Actuated g/C Ratio		0.20	0.20	0.20	0.20	0.20		0.06	0.49		0.16	0.63
v/c Ratio		0.15	0.04	0.53	0.05	0.91		0.31	0.84		0.81	0.83
Control Delay		40.8	0.2	79.9	68.2	68.9		65.5	35.2		56.6	36.2
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		40.8	0.2	79.9	68.2	68.9		65.5	35.2		56.6	36.2
LOS		D	A	E	E	E		E	D		E	D
Approach Delay		29.9			71.2				35.9			39.4
Approach LOS		C			E				D			D
Queue Length 50th (m)		7.9	0.0	30.5	4.4	80.1		7.4	148.3		49.9	216.3
Queue Length 95th (m)		16.2	0.0	m34.8	m5.1	m94.0		16.8	179.0		#85.1	#274.8
Internal Link Dist (m)		173.8			277.5				502.0			589.9
Turn Bay Length (m)			30.0			40.0		80.0			200.0	
Base Capacity (vph)		362	436	307	451	560		206	1615		523	2109
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	0.03	0.40	0.04	0.79		0.16	0.84		0.81	0.83

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 102 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 42.5 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: 7: March & Station/Carling

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	10.0
Minimum Split (s)	30.1
Total Split (s)	67.0
Total Split (%)	51.5%
Maximum Green (s)	60.9
Yellow Time (s)	3.7
All-Red Time (s)	2.4
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.1
Lead/Lag	Lag
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	C-Max
Walk Time (s)	7.0
Flash Dont Walk (s)	17.0
Pedestrian Calls (#/hr)	6
Act Effct Green (s)	81.9
Actuated g/C Ratio	0.63
v/c Ratio	0.05
Control Delay	3.5
Queue Delay	0.0
Total Delay	3.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (m)	0.3
Queue Length 95th (m)	m4.7
Internal Link Dist (m)	
Turn Bay Length (m)	180.0
Base Capacity (vph)	937
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	19	78	10	25	7	93	163	8	1	108	1
Future Volume (vph)	1	19	78	10	25	7	93	163	8	1	108	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.893			0.977			0.996			0.999	
Flt Protected		0.999			0.988			0.983				
Satd. Flow (prot)	0	1557	0	0	1672	0	0	1694	0	0	1761	0
Flt Permitted		0.999			0.988			0.983				
Satd. Flow (perm)	0	1557	0	0	1672	0	0	1694	0	0	1761	0
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		277.5			305.3			814.4			1558.1	
Travel Time (s)		16.7			18.3			48.9			93.5	
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 (%)	100%	1%	1%	1%	4%	1%	1%	4%	1%	1%	1%	1%
Adj. Flow (vph)	1	19	78	10	25	7	93	163	8	1	108	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	42	0	0	264	0	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 37.4%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	334	313	12	3	12	550	89	14	3	5	52	4
Future Volume (vph)	334	313	12	3	12	550	89	14	3	5	52	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	55.0		45.0		40.0		120.0	25.0		0.0	35.0	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (m)	70.0				75.0			10.0			55.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95		0.98		0.95	0.99	0.97		0.98	0.95
Frt			0.850				0.850		0.906			0.852
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1674	1762	1498	0	1674	1762	1498	1674	1546	0	1674	1412
Flt Permitted	0.950				0.950			0.296			0.752	
Satd. Flow (perm)	1652	1762	1421	0	1644	1762	1419	516	1546	0	1295	1412
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			85				138		5			298
Link Speed (k/h)		60				60			30			50
Link Distance (m)		654.0				803.8			130.1			431.7
Travel Time (s)		39.2				48.2			15.6			31.1
Confl. Peds. (#/hr)	10		10		10		10	10		10	10	
Confl. Bikes (#/hr)			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%	1%	1%	1%	1%	1%
Adj. Flow (vph)	334	313	12	3	12	550	89	14	3	5	52	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	334	313	12	0	15	550	89	14	8	0	52	302
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)		3.5				3.5			3.5			3.5
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	14	24		14	24		14	24	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (m)	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	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	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			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	Prot	NA	Perm	Prot	Prot	NA	Perm	Perm	NA		Perm	NA
Protected Phases	5 7	2		1	1	6			8			4
Permitted Phases			2				6	8			4	
Detector Phase	5 7	2	2	1	1	6	6	8	8		4	4

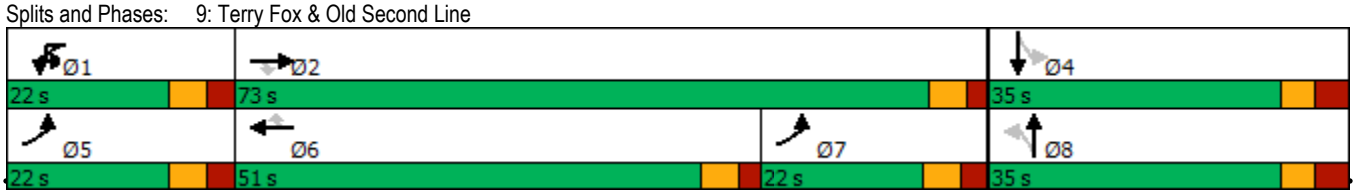
Lane Group	SBR	Ø5	Ø7
Lane Configurations			
Traffic Volume (vph)	298		
Future Volume (vph)	298		
Ideal Flow (vphpl)	1800		
Storage Length (m)	0.0		
Storage Lanes	0		
Taper Length (m)			
Lane Util. Factor	1.00		
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)	0		
Flt Permitted			
Satd. Flow (perm)	0		
Right Turn on Red	Yes		
Satd. Flow (RTOR)			
Link Speed (k/h)			
Link Distance (m)			
Travel Time (s)			
Confl. Peds. (#/hr)	10		
Confl. Bikes (#/hr)	5		
Peak Hour Factor	1.00		
Heavy Vehicles (%)	2%		
Adj. Flow (vph)	298		
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0		
Enter Blocked Intersection	No		
Lane Alignment	Right		
Median Width(m)			
Link Offset(m)			
Crosswalk Width(m)			
Two way Left Turn Lane			
Headway Factor	1.09		
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		5	7
Permitted Phases			
Detector Phase			

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0	5.0	10.0	10.0	10.0	10.0		10.0	10.0
Minimum Split (s)		28.9	28.9	11.4	11.4	28.9	28.9	34.7	34.7		34.7	34.7
Total Split (s)		73.0	73.0	22.0	22.0	51.0	51.0	35.0	35.0		35.0	35.0
Total Split (%)		56.2%	56.2%	16.9%	16.9%	39.2%	39.2%	26.9%	26.9%		26.9%	26.9%
Maximum Green (s)		67.1	67.1	15.6	15.6	45.1	45.1	28.3	28.3		28.3	28.3
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)		2.2	2.2	2.7	2.7	2.2	2.2	3.4	3.4		3.4	3.4
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		5.9	5.9		6.4	5.9	5.9	6.7	6.7		6.7	6.7
Lead/Lag		Lag	Lag	Lead	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		Max	Max	None	None	Max	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)		16.0	16.0			16.0	16.0	21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)		6	6			6	6	2	2		2	2
Act Effct Green (s)	28.7	81.6	81.6		6.6	45.4	45.4	13.5	13.5		13.5	13.5
Actuated g/C Ratio	0.25	0.72	0.72		0.06	0.40	0.40	0.12	0.12		0.12	0.12
v/c Ratio	0.79	0.25	0.01		0.15	0.78	0.14	0.23	0.04		0.34	0.70
Control Delay	38.8	8.1	0.0		56.9	39.9	1.4	53.7	30.4		51.4	14.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	38.8	8.1	0.0		56.9	39.9	1.4	53.7	30.4		51.4	14.7
LOS	D	A	A		E	D	A	D	C		D	B
Approach Delay		23.5				35.1			45.2			20.1
Approach LOS		C				D			D			C
Queue Length 50th (m)	41.7	12.3	0.0		2.8	89.6	0.0	2.6	0.6		9.8	0.7
Queue Length 95th (m)	#67.3	53.1	0.0		10.1	#181.8	2.5	8.3	4.7		20.8	23.9
Internal Link Dist (m)		630.0				779.8			106.1			407.7
Turn Bay Length (m)	55.0		45.0		40.0		120.0	25.0			35.0	
Base Capacity (vph)	464	1270	1048		232	706	651	129	392		325	578
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	0.72	0.25	0.01		0.06	0.78	0.14	0.11	0.02		0.16	0.52

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 113.1
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 27.6 — Intersection LOS: C
Intersection Capacity Utilization 87.0% — 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.

Splits and Phases: 9: Terry Fox & Old Second Line



Lane Group	SBR	Ø5	Ø7
Switch Phase			
Minimum Initial (s)		5.0	5.0
Minimum Split (s)		11.4	11.4
Total Split (s)		22.0	22.0
Total Split (%)		17%	17%
Maximum Green (s)		15.6	15.6
Yellow Time (s)		3.7	3.7
All-Red Time (s)		2.7	2.7
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)		3.0	3.0
Recall Mode		None	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			

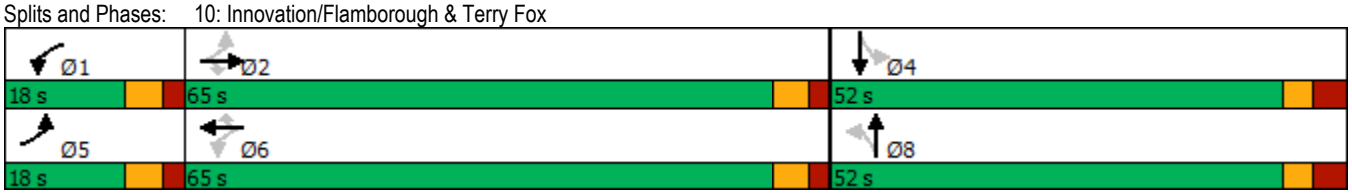
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	272	53	168	418	123	136	149	183	58	91	55
Future Volume (vph)	64	272	53	168	418	123	136	149	183	58	91	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.98		0.96	0.99	0.99		1.00	0.98	
Frt			0.850			0.850		0.917			0.943	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1566	1762	1483	1658	1762	1498	1674	1579	0	1674	1576	0
Flt Permitted	0.469			0.523			0.632			0.272		
Satd. Flow (perm)	769	1762	1407	898	1762	1439	1097	1579	0	478	1576	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			123		49			24	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		9	9		5	8		5	5		8
Confl. Bikes (#/hr)			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 (%)	8%	1%	2%	2%	1%	1%	1%	1%	3%	1%	1%	11%
Adj. Flow (vph)	64	272	53	168	418	123	136	149	183	58	91	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	272	53	168	418	123	136	332	0	58	146	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	65.0	65.0	18.0	65.0	65.0	52.0	52.0		52.0	52.0	
Total Split (%)	13.3%	48.1%	48.1%	13.3%	48.1%	48.1%	38.5%	38.5%		38.5%	38.5%	
Maximum Green (s)	12.1	59.1	59.1	12.1	59.1	59.1	45.4	45.4		45.4	45.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	66.9	59.5	59.5	72.6	64.5	64.5	26.2	26.2		26.2	26.2	
Actuated g/C Ratio	0.59	0.52	0.52	0.64	0.57	0.57	0.23	0.23		0.23	0.23	
v/c Ratio	0.13	0.30	0.07	0.26	0.42	0.14	0.54	0.83		0.53	0.38	
Control Delay	9.5	18.3	2.0	9.8	18.3	3.4	46.6	53.0		56.6	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	9.5	18.3	2.0	9.8	18.3	3.4	46.6	53.0		56.6	33.2	
LOS	A	B	A	A	B	A	D	D		E	C	
Approach Delay		14.6			13.7			51.1			39.8	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	4.3	30.3	0.0	11.9	49.0	0.0	24.6	56.0		10.4	21.0	
Queue Length 95th (m)	11.5	58.1	3.4	26.1	90.6	9.3	43.3	87.9		23.8	38.0	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	568	919	771	663	997	867	440	662		191	646	
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	0.11	0.30	0.07	0.25	0.42	0.14	0.31	0.50		0.30	0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 114	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.8	Intersection LOS: C
Intersection Capacity Utilization 78.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Innovation/Flamborough & Terry Fox



Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	12	203	0	2	248	139	9	1	67	120	0
Future Volume (vph)	1	12	203	0	2	248	139	9	1	67	120	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.952			0.883			0.977
Flt Protected			0.997						0.994			0.960
Satd. Flow (prot)	0	0	1735	0	0	1672	0	0	1547	0	0	1621
Flt Permitted			0.997						0.994			0.960
Satd. Flow (perm)	0	0	1735	0	0	1672	0	0	1547	0	0	1621
Link Speed (k/h)			50			50			30			50
Link Distance (m)			185.1			991.2			145.1			590.1
Travel Time (s)			13.3			71.4			17.4			42.5
Confl. Peds. (#/hr)		5		5	5		5	5				
Confl. Bikes (#/hr)				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%	7%	2%	1%	1%	1%	2%	1%	1%	1%	3%	1%
Adj. Flow (vph)	1	12	203	0	2	248	139	9	1	67	120	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	216	0	0	389	0	0	77	0	0	145
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(m)			3.0			3.0			0.0			0.0
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14	24		14	24		14	24		14	24	
Sign Control			Free			Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Confl. Bikes (#/hr)	5
Peak Hour Factor	1.00
Heavy Vehicles (%)	3%
Adj. Flow (vph)	25
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(m)	
Link Offset(m)	
Crosswalk Width(m)	
Two way Left Turn Lane	
Headway Factor	1.09
Turning Speed (k/h)	14
Sign Control	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	739	53	44	562	304	22	275	39	484	506	42
Future Volume (vph)	18	739	53	44	562	304	22	275	39	484	506	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.96		0.99			1.00	
Frt		0.990				0.850		0.984			0.989	
Flt Protected	0.950			0.950				0.997		0.950		
Satd. Flow (prot)	1674	1740	0	1510	1762	1483	0	1705	0	1642	1736	0
Flt Permitted	0.169			0.082				0.934		0.232		
Satd. Flow (perm)	298	1740	0	130	1762	1424	0	1595	0	401	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				304		5			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	739	53	44	562	304	22	275	39	484	506	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	792	0	44	562	304	0	336	0	484	548	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	48.9	48.9		48.9	48.9	48.9		27.8		67.8	67.8	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38		0.21		0.52	0.52	
v/c Ratio	0.16	1.21		0.92	0.85	0.42		0.97		0.93	0.60	
Control Delay	17.4	130.9		150.7	50.8	4.8		92.4		54.6	29.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	17.4	130.9		150.7	50.8	4.8		92.4		54.6	29.7	
LOS	B	F		F	D	A		F		D	C	
Approach Delay		128.4			40.3			92.4			41.3	
Approach LOS		F			D			F			D	
Queue Length 50th (m)	1.4	~230.7		9.7	120.5	0.0		78.4		85.8	96.8	
Queue Length 95th (m)	m2.8	#301.2		#32.6	#175.8	16.8		#133.8		#143.8	131.4	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	112	656		48	662	725		345		522	907	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.16	1.21		0.92	0.85	0.42		0.97		0.93	0.60	

Intersection Summary

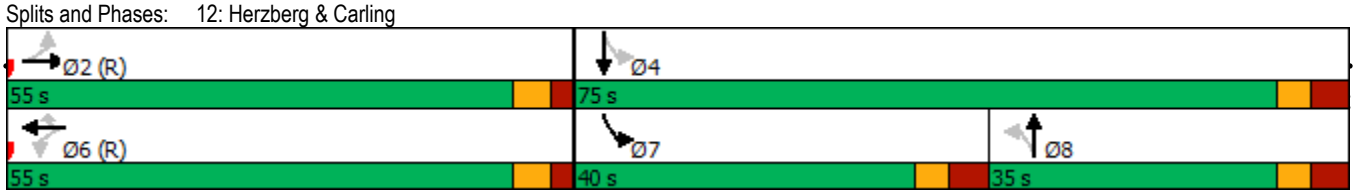
Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 69.4 — Intersection LOS: E
Intersection Capacity Utilization 111.6% — 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.

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

Splits and Phases: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	53	18	5	41	20	305	1	47	1598	116	2	397
Future Volume (vph)	53	18	5	41	20	305	1	47	1598	116	2	397
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		30.0	0.0		40.0		80.0		0.0		200.0
Storage Lanes	0		1	1		2		1		0		2
Taper Length (m)	10.0			10.0				40.0				60.0
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	0.97
Ped Bike Factor		0.99	0.97	0.99		0.98		0.99	1.00			1.00
Frt			0.850			0.850			0.990			
Flt Protected		0.964		0.950				0.950				0.950
Satd. Flow (prot)	0	1674	1498	1580	1762	1498	0	1627	3234	0	0	3248
Flt Permitted		0.768		0.711				0.950				0.950
Satd. Flow (perm)	0	1327	1456	1170	1762	1463	0	1616	3234	0	0	3236
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			85			170			8			
Link Speed (k/h)		50			60				60			
Link Distance (m)		197.8			301.5				526.0			
Travel Time (s)		14.2			18.1				31.6			
Confl. Peds. (#/hr)	6		10	10		6		12		15		15
Confl. Bikes (#/hr)			5			5				7		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	7%	1%	1%	1%	4%	3%	7%	1%	1%
Adj. Flow (vph)	53	18	5	41	20	305	1	47	1598	116	2	397
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	5	41	20	305	0	48	1714	0	0	399
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	L NA	L NA	R NA	R NA	L NA
Median Width(m)		3.5			7.0				18.0			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	14	24		14	14	24
Number of Detectors	1	2	1	1	2	1	1	1	2		1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru		Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	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	0.6	2.0	2.0	0.6	2.0	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	Perm	NA	Perm	Perm	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases		4			8		5	5	2		1	1
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	5	2		1	1

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1123	100
Future Volume (vph)	1123	100
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		180.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3252	1469
Flt Permitted		
Satd. Flow (perm)	3252	1418
Right Turn on Red		Yes
Satd. Flow (RTOR)		100
Link Speed (k/h)	60	
Link Distance (m)	613.9	
Travel Time (s)	36.8	
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	4%	3%
Adj. Flow (vph)	1123	100
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1123	100
Enter Blocked Intersection	No	No
Lane Alignment	L NA	R NA
Median Width(m)	18.0	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0
Minimum Split (s)	39.7	39.7	39.7	39.7	39.7	39.7	12.0	12.0	30.1		12.0	12.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	23.0	23.0	67.0		23.0	23.0
Total Split (%)	30.8%	30.8%	30.8%	30.8%	30.8%	30.8%	17.7%	17.7%	51.5%		17.7%	17.7%
Maximum Green (s)	33.3	33.3	33.3	33.3	33.3	33.3	16.0	16.0	60.9		16.0	16.0
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	2.4		3.3	3.3
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.7	6.7	6.7	6.7	6.7		7.0	6.1			7.0
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		3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max		None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0			7.0			
Flash Dont Walk (s)	26.0	26.0	26.0	26.0	26.0	26.0			17.0			
Pedestrian Calls (#/hr)	6	6	6	6	6	6			9			
Act Effct Green (s)		19.9	19.9	19.9	19.9	19.9		9.2	68.7			21.5
Actuated g/C Ratio		0.15	0.15	0.15	0.15	0.15		0.07	0.53			0.17
v/c Ratio		0.35	0.02	0.23	0.07	0.83		0.42	1.00			0.74
Control Delay		51.0	0.2	57.0	53.9	52.9		67.8	53.1			60.8
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		51.0	0.2	57.0	53.9	52.9		67.8	53.1			60.8
LOS		D	A	E	D	D		E	D			E
Approach Delay		47.7			53.4				53.5			
Approach LOS		D			D				D			
Queue Length 50th (m)		15.3	0.0	9.9	4.8	50.1		11.0	~214.4			45.8
Queue Length 95th (m)		25.5	0.0	m11.8	m5.9	m65.1		22.3	#286.0			#78.7
Internal Link Dist (m)		173.8			277.5				502.0			
Turn Bay Length (m)			30.0			40.0		80.0				200.0
Base Capacity (vph)		339	436	299	451	501		200	1713			538
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		0.21	0.01	0.14	0.04	0.61		0.24	1.00			0.74

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 68 (52%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 42.0 Intersection LOS: D
Intersection Capacity Utilization 120.3% 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: 7: March & Station/Carling

Lane Group	SBT	SBR
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	30.1	30.1
Total Split (s)	67.0	67.0
Total Split (%)	51.5%	51.5%
Maximum Green (s)	60.9	60.9
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.4	2.4
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	C-Max	C-Max
Walk Time (s)	7.0	7.0
Flash Dont Walk (s)	17.0	17.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	83.6	83.6
Actuated g/C Ratio	0.64	0.64
v/c Ratio	0.54	0.11
Control Delay	16.6	3.2
Queue Delay	0.0	0.0
Total Delay	16.6	3.2
LOS	B	A
Approach Delay	26.7	
Approach LOS	C	
Queue Length 50th (m)	73.6	0.0
Queue Length 95th (m)	127.7	8.3
Internal Link Dist (m)	589.9	
Turn Bay Length (m)		180.0
Base Capacity (vph)	2090	947
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.54	0.11

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	388	120	176	152	50	39	87	146	105	138	61
Future Volume (vph)	42	388	120	176	152	50	39	87	146	105	138	61
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	75.0		120.0	110.0		130.0	220.0		0.0	30.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			80.0			50.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.98	0.99		1.00	0.98	
Frt			0.850			0.850		0.906			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1483	1728	1483	1642	1712	1469	1674	1500	0	1674	1578	0
Flt Permitted	0.660			0.439			0.476			0.388		
Satd. Flow (perm)	1018	1728	1426	754	1712	1412	824	1500	0	681	1578	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			80		67			18	
Link Speed (k/h)		60			60			50			40	
Link Distance (m)		803.8			419.4			547.1			313.7	
Travel Time (s)		48.2			25.2			39.4			28.2	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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 (%)	14%	3%	2%	3%	4%	3%	1%	6%	6%	1%	2%	15%
Adj. Flow (vph)	42	388	120	176	152	50	39	87	146	105	138	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	388	120	176	152	50	39	233	0	105	199	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	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	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	0.6	2.0	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	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	1	6	6	8	8		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	5.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.0	27.9	27.9	11.0	27.9	27.9	36.3	36.3		36.3	36.3	
Total Split (s)	18.0	65.0	65.0	18.0	65.0	65.0	47.0	47.0		47.0	47.0	
Total Split (%)	13.8%	50.0%	50.0%	13.8%	50.0%	50.0%	36.2%	36.2%		36.2%	36.2%	
Maximum Green (s)	12.1	59.1	59.1	12.1	59.1	59.1	40.4	40.4		40.4	40.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	3.6	3.6		3.6	3.6	
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)	5.9	5.9	5.9	5.9	5.9	5.9	6.6	6.6		6.6	6.6	
Lead/Lag	Lead	Lag	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	Max	Max	None	Max	Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		15.0	15.0		15.0	15.0	22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		3	3		3	3	3	3		3	3	
Act Effct Green (s)	66.0	59.4	59.4	73.1	67.1	67.1	18.3	18.3		18.3	18.3	
Actuated g/C Ratio	0.63	0.56	0.56	0.69	0.64	0.64	0.17	0.17		0.17	0.17	
v/c Ratio	0.06	0.40	0.14	0.29	0.14	0.05	0.27	0.74		0.89	0.69	
Control Delay	6.6	16.0	3.1	7.3	10.6	1.2	42.5	43.5		101.6	49.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.6	16.0	3.1	7.3	10.6	1.2	42.5	43.5		101.6	49.8	
LOS	A	B	A	A	B	A	D	D		F	D	
Approach Delay		12.5			7.8			43.4			67.7	
Approach LOS		B			A			D			E	
Queue Length 50th (m)	2.0	38.1	0.0	9.3	11.8	0.0	6.4	29.9		19.4	32.2	
Queue Length 95th (m)	6.7	75.3	8.5	21.9	26.5	2.2	15.6	54.9		#42.3	54.9	
Internal Link Dist (m)		779.8			395.4			523.1			289.7	
Turn Bay Length (m)	75.0		120.0	110.0		130.0	220.0			30.0		
Base Capacity (vph)	745	974	856	632	1090	928	317	619		262	619	
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	0.06	0.40	0.14	0.28	0.14	0.05	0.12	0.38		0.40	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 105.4
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 28.1 — Intersection LOS: C
Intersection Capacity Utilization 77.1% — ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Innovation/Flamborough & Terry Fox

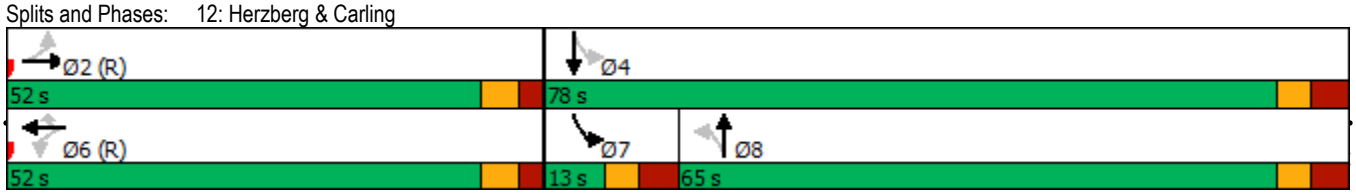
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	589	11	15	609	547	73	443	41	237	235	29
Future Volume (vph)	34	589	11	15	609	547	73	443	41	237	235	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.95		1.00			1.00	
Frt		0.997				0.850		0.990			0.984	
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1674	1756	0	1510	1762	1483	0	1723	0	1674	1697	0
Flt Permitted	0.160			0.168				0.910		0.305		
Satd. Flow (perm)	282	1756	0	267	1762	1410	0	1576	0	538	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				363		4			8	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	589	11	15	609	547	73	443	41	237	235	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	600	0	15	609	547	0	557	0	237	264	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	52.0	52.0		52.0	52.0	52.0	65.0	65.0		13.0	78.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	50.0%	50.0%		10.0%	60.0%	
Maximum Green (s)	45.9	45.9		45.9	45.9	45.9	57.8	57.8		5.8	70.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	52.8	52.8		52.8	52.8	52.8		50.9		63.9	63.9	
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.41		0.39		0.49	0.49	
v/c Ratio	0.30	0.84		0.14	0.85	0.69		0.90		0.75	0.32	
Control Delay	26.8	39.1		32.2	49.2	16.3		55.1		37.7	19.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	26.8	39.1		32.2	49.2	16.3		55.1		37.7	19.5	
LOS	C	D		C	D	B		E		D	B	
Approach Delay		38.5			33.6			55.1			28.1	
Approach LOS		D			C			E			C	
Queue Length 50th (m)	7.3	142.6		2.3	132.0	35.7		118.8		31.4	34.3	
Queue Length 95th (m)	m10.9	m#198.0		8.0	#210.8	82.5		155.0		43.0	47.0	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	114	714		108	716	788		702		315	927	
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	0.30	0.84		0.14	0.85	0.69		0.79		0.75	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 119 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 37.9 Intersection LOS: D
Intersection Capacity Utilization 97.9% 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: 12: Herzberg & Carling



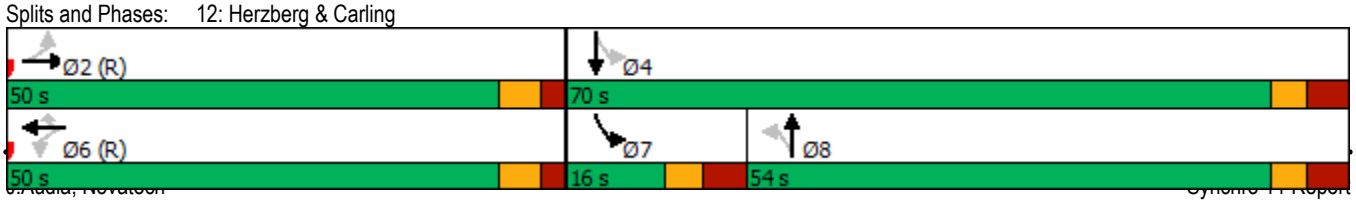
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	589	11	15	609	547	73	493	41	237	235	29
Future Volume (vph)	34	589	11	15	609	547	73	493	41	237	235	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		1.00		0.95	0.99	1.00			1.00	
Frt		0.997				0.850		0.988			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3336	0	1510	1762	1483	1674	1733	0	3248	1697	0
Flt Permitted	0.170			0.348			0.596			0.147		
Satd. Flow (perm)	300	3336	0	550	1762	1413	1040	1733	0	503	1697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				342		4			8	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	8		5	5		8	5		5	5		5
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	5%	1%	3%	1%
Adj. Flow (vph)	34	589	11	15	609	547	73	493	41	237	235	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	600	0	15	609	547	73	534	0	237	264	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	50.0	50.0		50.0	50.0	50.0	54.0	54.0		16.0	70.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	45.0%	45.0%		13.3%	58.3%	
Maximum Green (s)	43.9	43.9		43.9	43.9	43.9	46.8	46.8		8.8	62.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	8	8		8	8	8	3	3			3	
Act Effct Green (s)	49.4	49.4		49.4	49.4	49.4	41.3	41.3		57.3	57.3	
Actuated g/C Ratio	0.41	0.41		0.41	0.41	0.41	0.34	0.34		0.48	0.48	
v/c Ratio	0.28	0.44		0.07	0.84	0.70	0.20	0.89		0.54	0.32	
Control Delay	34.1	27.5		25.4	45.2	16.7	27.6	54.7		21.5	19.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.1	27.5		25.4	45.2	16.7	27.6	54.7		21.5	19.1	
LOS	C	C		C	D	B	C	D		C	B	
Approach Delay		27.9			31.6			51.4			20.3	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	4.9	49.2		2.0	119.3	36.5	10.9	106.3		14.1	32.5	
Queue Length 95th (m)	14.4	67.8		6.7	#192.1	82.0	20.3	141.2		19.3	45.9	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	123	1373		226	725	782	405	678		441	891	
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	0.28	0.44		0.07	0.84	0.70	0.18	0.79		0.54	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 33.0 Intersection LOS: C
Intersection Capacity Utilization 91.1% 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: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	23	367	97	67	45	1401	338	108	754	9
Future Volume (vph)	10	97	23	367	97	67	45	1401	338	108	754	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	70.0		0.0	145.0		70.0	120.0		0.0
Storage Lanes	1		0	2		0	1		1	1		0
Taper Length (m)	60.0			100.0			100.0			100.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.99		0.99		0.96	1.00	1.00	
Frt		0.971			0.939				0.850		0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1687	0	3216	1623	0	1658	3316	1483	1658	3307	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1648	1687	0	3183	1623	0	1648	3316	1422	1654	3307	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			27				242		1	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		279.0			446.4			376.9			1487.3	
Travel Time (s)		20.1			32.1			17.0			66.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			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
Adj. Flow (vph)	10	97	23	367	97	67	45	1401	338	108	754	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	120	0	367	164	0	45	1401	338	108	763	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			7.0			5.0			5.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	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	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	2	1	6	
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		5.0	20.0	20.0	5.0	20.0	
Minimum Split (s)	10.5	32.5		10.5	32.5		11.0	26.0	26.0	11.0	26.0	
Total Split (s)	11.0	33.0		21.0	43.0		11.0	61.0	61.0	15.0	65.0	
Total Split (%)	8.5%	25.4%		16.2%	33.1%		8.5%	46.9%	46.9%	11.5%	50.0%	
Maximum Green (s)	5.5	27.5		15.5	37.5		5.0	55.0	55.0	9.0	59.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		4.6	4.6	4.6	4.6	4.6	
All-Red Time (s)	2.2	2.2		2.2	2.2		1.4	1.4	1.4	1.4	1.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5		5.5	5.5		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	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	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0			12.0	12.0		12.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	14.9		15.5	34.0		5.0	55.1	55.1	9.0	61.5	
Actuated g/C Ratio	0.05	0.13		0.13	0.29		0.04	0.47	0.47	0.08	0.52	
v/c Ratio	0.13	0.54		0.87	0.34		0.64	0.90	0.43	0.85	0.44	
Control Delay	60.5	53.7		71.3	30.0		94.8	38.8	8.2	103.0	19.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.5	53.7		71.3	30.0		94.8	38.8	8.2	103.0	19.8	
LOS	E	D		E	C		F	D	A	F	B	
Approach Delay		54.3			58.6			34.4			30.2	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	2.1	22.5		39.0	22.0		9.4	135.4	10.9	22.6	51.2	
Queue Length 95th (m)	7.7	39.3		#72.3	43.5		#29.8	#218.1	35.7	#58.8	81.9	
Internal Link Dist (m)		255.0			422.4			352.9			1463.3	
Turn Bay Length (m)	65.0			70.0			145.0		70.0	120.0		
Base Capacity (vph)	77	401		424	537		70	1553	794	127	1727	
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	0.13	0.30		0.87	0.31		0.64	0.90	0.43	0.85	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 117.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 37.9 — Intersection LOS: D
Intersection Capacity Utilization 80.2% — 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: 5: March & Invention

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	236	112	213	101	270	225	21	225	1348	66	1	87
Future Volume (vph)	236	112	213	101	270	225	21	225	1348	66	1	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Storage Lanes	2		1	2		1		2		1		2
Taper Length (m)	40.0			20.0				90.0				75.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor	0.98		0.98	0.99		0.97		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)	3248	3221	1498	3248	3316	1498	0	3248	3349	1498	0	3248
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3186	3221	1464	3218	3316	1449	0	3226	3349	1464	0	3241
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			169			169				127		
Link Speed (k/h)		60			60				60			
Link Distance (m)		231.8			149.1				307.5			
Travel Time (s)		13.9			8.9				18.5			
Confl. Peds. (#/hr)	13		5	5		13		9		5		5
Confl. Bikes (#/hr)			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%	5%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	236	112	213	101	270	225	21	225	1348	66	1	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	236	112	213	101	270	225	0	246	1348	66	0	88
Enter Blocked Intersection	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	R NA	L NA	Left	R NA	R NA	L NA
Median Width(m)		11.5			10.5				17.5			
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Number of Detectors	1	2	1	1	2	1	1	1	2	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Left	Thru	Right	Left	Left
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	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	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	0.6	2.0	2.0	0.6	2.0	2.0	2.0	0.6	2.0	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	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8				2		
Detector Phase	7	4	4	3	8	8	5	5	2	2	1	1
Switch Phase												

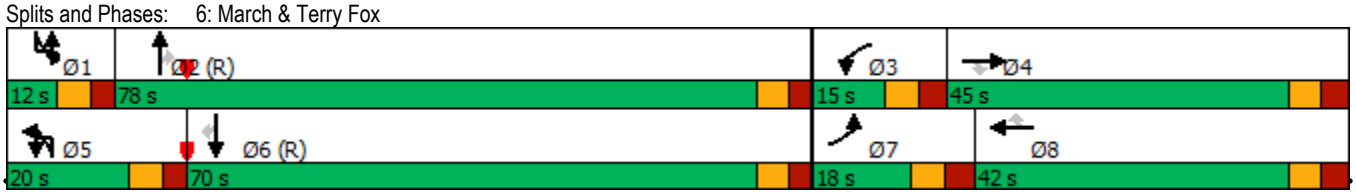
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	972	203
Future Volume (vph)	972	203
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		100.0
Storage Lanes		1
Taper Length (m)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.97
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3349	1498
Flt Permitted		
Satd. Flow (perm)	3349	1453
Right Turn on Red		Yes
Satd. Flow (RTOR)		203
Link Speed (k/h)	60	
Link Distance (m)	316.8	
Travel Time (s)	19.0	
Confl. Peds. (#/hr)		9
Confl. Bikes (#/hr)		5
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	1%
Adj. Flow (vph)	972	203
Shared Lane Traffic (%)		
Lane Group Flow (vph)	972	203
Enter Blocked Intersection	No	No
Lane Alignment	Left	R NA
Median Width(m)	17.5	
Link Offset(m)	0.0	
Crosswalk Width(m)	5.0	
Two way Left Turn Lane		
Headway Factor	1.09	1.09
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
Switch Phase		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	12.0	42.0	42.0	12.0	42.0	42.0	11.4	11.4	32.4	32.4	11.4	11.4
Total Split (s)	18.0	45.0	45.0	15.0	42.0	42.0	20.0	20.0	78.0	78.0	12.0	12.0
Total Split (%)	12.0%	30.0%	30.0%	10.0%	28.0%	28.0%	13.3%	13.3%	52.0%	52.0%	8.0%	8.0%
Maximum Green (s)	11.0	38.0	38.0	8.0	35.0	35.0	13.6	13.6	71.6	71.6	5.6	5.6
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7	2.7	2.7
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)	7.0	7.0	7.0	7.0	7.0	7.0		6.4	6.4	6.4		6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	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	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	None	C-Max	C-Max	None	None
Walk Time (s)		7.0	7.0		7.0	7.0			7.0	7.0		
Flash Dont Walk (s)		28.0	28.0		28.0	28.0			19.0	19.0		
Pedestrian Calls (#/hr)		11	11		11	11			9	9		
Act Effct Green (s)	11.0	26.4	26.4	7.8	23.2	23.2		14.5	81.6	81.6		7.3
Actuated g/C Ratio	0.07	0.18	0.18	0.05	0.15	0.15		0.10	0.54	0.54		0.05
v/c Ratio	0.99	0.20	0.54	0.60	0.53	0.61		0.78	0.74	0.08		0.56
Control Delay	124.2	51.1	17.2	84.3	60.6	22.1		83.5	30.8	0.2		83.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	124.2	51.1	17.2	84.3	60.6	22.1		83.5	30.8	0.2		83.0
LOS	F	D	B	F	E	C		F	C	A		F
Approach Delay		69.0			50.1				37.4			
Approach LOS		E			D				D			
Queue Length 50th (m)	33.9	14.6	10.9	14.2	38.0	14.3		33.8	136.5	0.0		12.1
Queue Length 95th (m)	#60.0	20.3	30.9	23.5	45.3	35.8		#54.9	196.5	0.0		#25.5
Internal Link Dist (m)		207.8			125.1				283.5			
Turn Bay Length (m)	95.0		60.0	60.0		75.0		140.0		20.0		90.0
Base Capacity (vph)	238	815	497	173	773	467		317	1822	854		158
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	0.99	0.14	0.43	0.58	0.35	0.48		0.78	0.74	0.08		0.56

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 94 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 93.6% 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: 6: March & Terry Fox



Lane Group	SBT	SBR
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	32.4	32.4
Total Split (s)	70.0	70.0
Total Split (%)	46.7%	46.7%
Maximum Green (s)	63.6	63.6
Yellow Time (s)	3.7	3.7
All-Red Time (s)	2.7	2.7
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.4	6.4
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)	19.0	19.0
Pedestrian Calls (#/hr)	9	9
Act Effct Green (s)	74.4	74.4
Actuated g/C Ratio	0.50	0.50
v/c Ratio	0.59	0.25
Control Delay	30.2	4.0
Queue Delay	0.0	0.0
Total Delay	30.2	4.0
LOS	C	A
Approach Delay	29.7	
Approach LOS	C	
Queue Length 50th (m)	93.3	0.0
Queue Length 95th (m)	135.0	13.8
Internal Link Dist (m)	292.8	
Turn Bay Length (m)		100.0
Base Capacity (vph)	1661	823
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.59	0.25

Intersection Summary

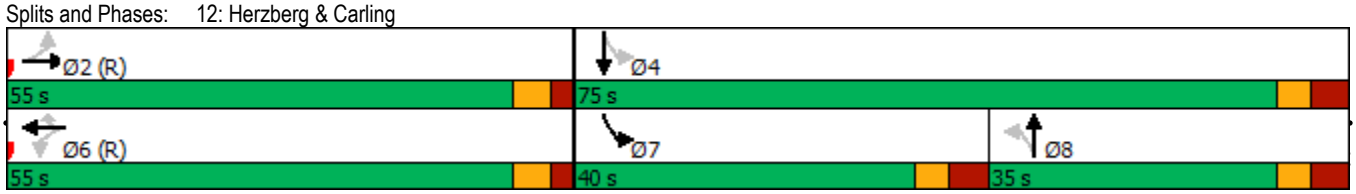
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	559	53	44	562	304	22	225	39	474	506	42
Future Volume (vph)	18	559	53	44	562	304	22	225	39	474	506	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	0		0	1		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00				0.96		0.99			1.00	
Frt		0.987				0.850		0.982			0.989	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1674	1733	0	1510	1762	1483	0	1695	0	1642	1736	0
Flt Permitted	0.187			0.137				0.922		0.266		
Satd. Flow (perm)	330	1733	0	218	1762	1424	0	1568	0	460	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				304		6			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	559	53	44	562	304	22	225	39	474	506	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	612	0	44	562	304	0	286	0	474	548	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		6.1	6.1	6.1		7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	50.8	50.8		50.8	50.8	50.8		26.0		65.9	65.9	
Actuated g/C Ratio	0.39	0.39		0.39	0.39	0.39		0.20		0.51	0.51	
v/c Ratio	0.14	0.90		0.52	0.82	0.41		0.90		0.89	0.62	
Control Delay	12.8	37.8		57.1	47.2	4.7		80.0		45.3	26.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	12.8	37.8		57.1	47.2	4.7		80.0		45.3	26.3	
LOS	B	D		E	D	A		F		D	C	
Approach Delay		37.1			33.5			80.0			35.1	
Approach LOS		D			C			F			D	
Queue Length 50th (m)	1.0	57.0		8.1	120.5	0.0		64.0		74.2	86.7	
Queue Length 95th (m)	m1.7	m#207.1		#24.5	#175.8	16.8		#106.5		#129.4	120.0	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	129	679		85	688	741		340		531	907	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.14	0.90		0.52	0.82	0.41		0.84		0.89	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 39.5 Intersection LOS: D
Intersection Capacity Utilization 103.2% 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.

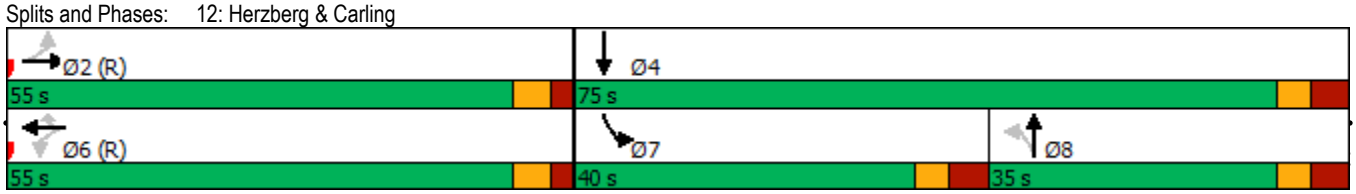
Splits and Phases: 12: Herzberg & Carling



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	739	53	44	562	304	22	275	39	484	506	42
Future Volume (vph)	18	739	53	44	562	304	22	275	39	484	506	42
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	160.0		125.0	0.0		0.0	220.0		0.0
Storage Lanes	1		0	1		1	1		0	2		0
Taper Length (m)	100.0			100.0			10.0			40.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor		1.00		1.00		0.96	0.98	1.00		0.99	1.00	
Frt		0.990				0.850		0.981			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	3306	0	1510	1762	1483	1674	1707	0	3185	1736	0
Flt Permitted	0.234			0.252			0.459			0.950		
Satd. Flow (perm)	412	3306	0	399	1762	1424	797	1707	0	3155	1736	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				304		5			5	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		418.5			270.1			534.2			439.5	
Travel Time (s)		25.1			16.2			38.5			31.6	
Confl. Peds. (#/hr)	5		5	5		5	11		5	5		11
Confl. Bikes (#/hr)			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%	12%	1%	2%	1%	1%	9%	3%	1%	1%
Adj. Flow (vph)	18	739	53	44	562	304	22	275	39	484	506	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	792	0	44	562	304	22	314	0	484	548	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			7.0			7.0	
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	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
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	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6		6	8					
Detector Phase	2	2		6	6	6	8	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	27.1	27.1		27.1	27.1	27.1	29.2	29.2		12.2	29.2	
Total Split (s)	55.0	55.0		55.0	55.0	55.0	35.0	35.0		40.0	75.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%	42.3%	26.9%	26.9%		30.8%	57.7%	
Maximum Green (s)	48.9	48.9		48.9	48.9	48.9	27.8	27.8		32.8	67.8	
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	2.4		2.4	2.4	2.4	3.9	3.9		3.9	3.9	
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)	6.1	6.1		6.1	6.1	6.1	7.2	7.2		7.2	7.2	
Lead/Lag							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	
Recall Mode	C-Max	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)	14.0	14.0		14.0	14.0	14.0	15.0	15.0			15.0	
Pedestrian Calls (#/hr)	1	1		1	1	1	11	11			11	
Act Effct Green (s)	56.4	56.4		56.4	56.4	56.4	28.1	28.1		25.0	60.3	
Actuated g/C Ratio	0.43	0.43		0.43	0.43	0.43	0.22	0.22		0.19	0.46	
v/c Ratio	0.10	0.55		0.25	0.73	0.38	0.13	0.84		0.79	0.68	
Control Delay	15.0	15.3		32.2	39.4	4.4	41.5	68.0		60.0	36.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	15.0	15.3		32.2	39.4	4.4	41.5	68.0		60.0	36.3	
LOS	B	B		C	D	A	D	E		E	D	
Approach Delay		15.3			27.4			66.3			47.4	
Approach LOS		B			C			E			D	
Queue Length 50th (m)	1.3	32.6		6.7	111.5	0.0	4.1	69.2		57.6	104.8	
Queue Length 95th (m)	m2.8	41.6		17.2	#175.8	16.8	11.3	#108.3		71.3	131.4	
Internal Link Dist (m)		394.5			246.1			510.2			415.5	
Turn Bay Length (m)	35.0			160.0		125.0				220.0		
Base Capacity (vph)	178	1438		173	765	790	181	393		803	907	
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	0.55		0.25	0.73	0.38	0.12	0.80		0.60	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 35.1 Intersection LOS: D
Intersection Capacity Utilization 94.9% 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: 12: Herzberg & Carling