TRANSPORTATION MANAGEMENT STUDY & TRANSPORTATION ASSESSMENT

ELFRIDA LANDS SECONDARY PLAN

CITY OF HAMILTON

PREPARED FOR:

ELFRIDA COMMUNITY BUILDERS LANDOWNERS GROUP INC.

PREPARED BY:

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APRIL 2026

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Revision Number	Date	Comments
Rev.0	April 2026	Issued for Internal Review
Rev.1	April 2026	Issued for Submission

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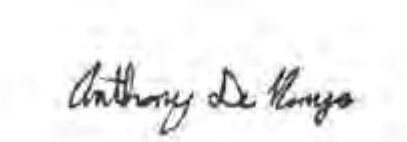

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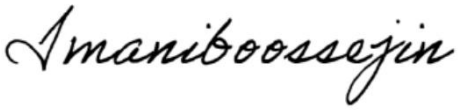

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Formal Consultation Document Comparison

Formal Consultation Document (FC-25-071 Required Submission Material)	Crozier Report Heading	Crozier Report Section	Crozier Report Page(s)
Transportation Management Study	Transportation Management Study & Transportation Assessment	Aggregate	Aggregate
Pedestrian Route and Sidewalk Analysis	Pedestrian Route and Sidewalk Analysis	Section 3.0	Page 43 - 49
Transportation Assessment	Transportation Management Study & Transportation Assessment	Aggregate	Aggregate
Cycling Route Analysis	Cycling Route Analysis	Section 4.0	Page 49 - 56
Transportation Demand Analysis	Future Mobility Context & Transportation Demand Management	Section 6.0	Page 65 - 73
Right of Way Dedications	Right of Way Considerations	Section 2.1	Page 36 - 42
Daylight Triangle Dedications	Daylight Triangle Considerations	Section 2.2	Page 42 - 43
Transit Assessment	Transit Assessment	Section 5.0	Page 57 - 64

Executive Summary

Elfrida Community Builders Group Inc. retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Management Study and Transportation Assessment to support the Elfrida Secondary Plan located in the City of Hamilton.

The Elfrida Secondary Plan includes approximately 1,226 ha in the southeastern region of the City of Hamilton, which are herein referred to as the "Subject Lands". The Elfrida Secondary Plan proposes a mixed-use community comprising approximately 70,000 people and jobs. It is proposed that the Subject Lands include low, medium, and high-density residential uses as well as commercial, institutional, and recreational uses.

The purpose of this study is to assess the operations of the existing transportation network from a multi-modal perspective and identify possible constraints of the future planned mobility network to accommodate the proposed Secondary Plan. This study also provides a review of the proposed transportation network for the internal Subject Lands. This Transportation Management Study and Transportation Assessment is in support of the Secondary Plan application.

In addition to the existing road network and planned capital works by the City of Hamilton (City), the Secondary Plan also proposes an internal network of collector roads, intended to support multi-modal connectivity within the Secondary Plan area and to the external road network.

The existing automobile intersection operations were reviewed using PTV Vissim (Vissim) software and evaluated based on the results of 5 simulations with 30-minute seeding and 60-minute recording, as outlined in the Transportation Assessment Guidelines (City of Hamilton, 2024). Existing constraints in the road network from a traffic operations perspective were noted at the intersections of Upper Red Hill Valley Parkway and Rymal Road E as well as Upper Centennial Parkway and Mud Street E. Additionally, the following 95th percentile queues are modelled to extend beyond the available auxiliary turn lane storage length:

- Upper Red Hill Valley Parkway & Rymal Road E (SBL)
- Trinity Church Road & Rymal Road E (NBL)
- Upper Centennial Parkway & Green Mountain Road E (EBL)

The OTC Multi-Modal Level of Service Guidelines (2022) require an intersection analysis and a segment analysis. Accordingly, all study intersections as well as all roadway segments located between any two study intersections were included in the multi-modal analysis. Roadway segments for each roadway were sometimes grouped together or divided up based on the consistency of roadway infrastructure provided along the corridor.

Roadway cross-sections and daylighting triangle dimensions have been provided in this report to guide the required right-of-way designs, particularly for the internal major and minor collector road system. Conceptual cross-sections for existing arterial roadways have also been provided.

The pedestrian, cycling, and transit networks in the Elfrida Secondary Plan are essential to promote active transportation. They offer residents and visitors alternative means of moving throughout the Subject Lands, while connecting to the external existing and planned pedestrian, cycling, and transit networks. Providing these opportunities in addition to complete communities with complimentary land uses will encourage the use of more sustainable modes for everyday travel and assist in reducing peak hour congestion on the road network.

TABLE OF CONTENTS

PROJECT TEAM III

FORMAL CONSULTATION DOCUMENT COMPARISON IV

EXECUTIVE SUMMARY V

1.0 INTRODUCTION & EXISTING CONDITIONS 1
1.1 Development Lands 1
1.2 Development Proposal 1
1.3 Study Purpose and Scope 4
1.4 Existing Mobility Context 7
1.4.1 Existing Study Road Network 7
1.5 Existing Automobile Analysis 11
1.5.1 Transportation Data 11
1.5.2 Existing Traffic Volumes 12
1.5.3 Traffic Modelling and Assumptions 16
1.5.4 Intersection Operations 16
1.5.5 Queuing Analysis 26
1.6 Existing Multi-Modal Analysis 27
1.6.1 Existing Car Network 30
1.6.2 Existing Truck Network 33

2.0 SECONDARY PLAN ROADWAY CONSIDERATIONS 36
2.1 Right of Way Considerations 36
2.1.1 Boundary/External Road Network Considerations 36
2.1.2 Major Arterial Roads 38
2.1.3 Major Collector Roads 40
2.1.4 Minor Collector Roads 41
2.1.5 Local Roads 42
2.2 Daylight Triangle Considerations 42

3.0 PEDESTRIAN ROUTE AND SIDEWALK ANALYSIS 43
3.1 Existing Pedestrian Network 43
3.2 Future Background Pedestrian Network 48
3.3 Development Lands Pedestrian Network and Pedestrian Crossing Considerations 48

4.0 CYCLING ROUTE ANALYSIS 49
4.1 Existing Cycling Network 49

4.2 Future Background Cycling Network 54
4.3 Future Total Cycling Network 55

5.0 TRANSIT ASSESSMENT 57
5.1 Existing Transit Network 57
5.2 Future Background Bus Network 61
5.3 Proposed Elfrida Transit Plan 62

6.0 FUTURE MOBILITY CONTEXT & TRANSPORTATION DEMAND MANAGEMENT 65
6.1 Planning Context 65
6.1.1 City of Hamilton TMP Review and Update (August 2018) 65
6.1.2 City of Hamilton Strategic Transportation Network Review (May 2024) 66
6.1.3 Proposed Accelerated Active Transportation Implementation Plan 2024 – 2028 (November 2023) 66
6.1.4 Metrolinx 2041 Regional Transportation Plan (March 2018) 66
6.1.5 HSR Next: Moving Hamilton Forward (February 2025) 67
6.1.6 Growth-Related Integrated Development Strategy (October 2021) 67
6.2 Future Background Improvements 67
6.3 Traffic Calming Measures 70
6.4 Transportation Demand Management Strategy 71
6.5 Parking Review 74
6.5.1 Off-Street Parking 74
6.5.2 On-Street Parking 74

7.0 NEXT STEPS 74
7.1 Terms of Reference and Scope Confirmation 74
7.2 Transportation Impact Studies 75
7.3 Road Network and Geometric Design Development 75
7.4 Multi-Modal Network Refinement 76
7.5 Transportation Demand Management 76
7.6 Ongoing Coordination 76

8.0 CONCLUSIONS AND RECOMMENDATIONS 77
8.1 Conclusions 77
8.2 Recommendations 77

LIST OF TABLES

Table 1: Existing Arterial Study Roadways 8
Table 2: Existing Collector Study Roadways 9
Table 3: Turning Movement Count and Signal Timing Plan Data Summary 12
Table 4: Historical Turning Movement Count Data Summary 13
Table 5: 2025 Existing Levels of Service 17
Table 6: 2025 Existing Queueing Analysis 26
Table 7: Equivalent Ontario Traffic Council Street Typologies 29
Table 8: 2025 Existing Car LOS – Signalized Intersections 30
Table 9: 2025 Existing Car LOS – Unsignalized Intersections 31
Table 10: 2025 Existing Car LOS – Segment 32
Table 11: 2025 Existing Truck LOS – Signalized Intersections 33
Table 12: 2025 Existing Truck LOS – Unsignalized Intersections 34
Table 13: 2025 Existing Truck LOS – Segment 35
Table 14: Daylighting Requirements 43
Table 15: 2025 Existing Pedestrian LOS – Signalized Intersections 45
Table 16: 2025 Existing Pedestrian LOS – Unsignalized Intersections 46
Table 17: 2025 Existing Pedestrian LOS – Segment 47
Table 18: 2025 Existing Cycling LOS – Signalized Intersections 51
Table 19: 2025 Existing Cycling LOS – Unsignalized Intersections 52
Table 20: 2025 Existing Cycling LOS – Segment 53
Table 21: Planned Cycling Network Improvements 54
Table 22: Existing Transit Services 57
Table 23: 2025 Existing Bus LOS – Signalized Intersections 59
Table 24: 2025 Existing Bus LOS – Segment 60
Table 25: Potential Traffic Calming Measures 70
Table 26: Potential Transportation Demand Management Strategies 73

LIST OF FIGURES

Figure 1: Site Location 2
Figure 2: Secondary Plan 3
Figure 3: Existing Study Intersections 6
Figure 4: 2025 Existing Study Road Network 10
Figure 5: 2025 Existing Traffic Volumes 14

Figure 6: 2025 Existing Intersection Operations 24
Figure 7: Proposed Road Network Hierarchy 37
Figure 8: Conceptual 45.7 m Major Arterial Cross-Section 39
Figure 9: Conceptual 36.5 m Major Arterial Cross-Section (Alternative 1) 40
Figure 10: Conceptual 36.5 m Major Arterial Cross-Section (Alternative 2) 40
Figure 11: Proposed Major Collector Cross-Section (26.5 m) 41
Figure 12: Proposed Minor Collector Cross-Section (22 m) 42
Figure 13: Proposed Local Cross-Section (18.5 m) 42
Figure 14: 2025 Existing Pedestrian Network 44
Figure 15: 2025 Existing Cycling Network 50
Figure 16: Future Total Cycling Network 56
Figure 17: 2025 Existing Transit Network 58
Figure 18: Proposed Elfrida Transit Plan 63
Figure 19: Future Background Road Improvements 69

LIST OF APPENDICES

Appendix A: Terms of Reference Correspondence
Appendix B: Transportation Data
Appendix C: Vissim Model Calibration Results
Appendix D: Vissim Model Outputs
Appendix E: OTC Multi-Modal LOS Definitions
Appendix F: Draft Road Classification and Right-of-Way Width Review Excerpts
Appendix G: OTC MMLOS Worksheets
Appendix H: Cycling Master Plan Review and Update Excerpts
Appendix I: Existing Transit Data
Appendix J: HSR Next Plan Excerpts
Appendix K: Transportation Improvement Excerpts

1.0 Introduction & Existing Conditions

Elfrida Community Builders Group Inc. retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Management Study and Transportation Assessment to support the Elfrida Secondary Plan located in the City of Hamilton.

1.1 Development Lands

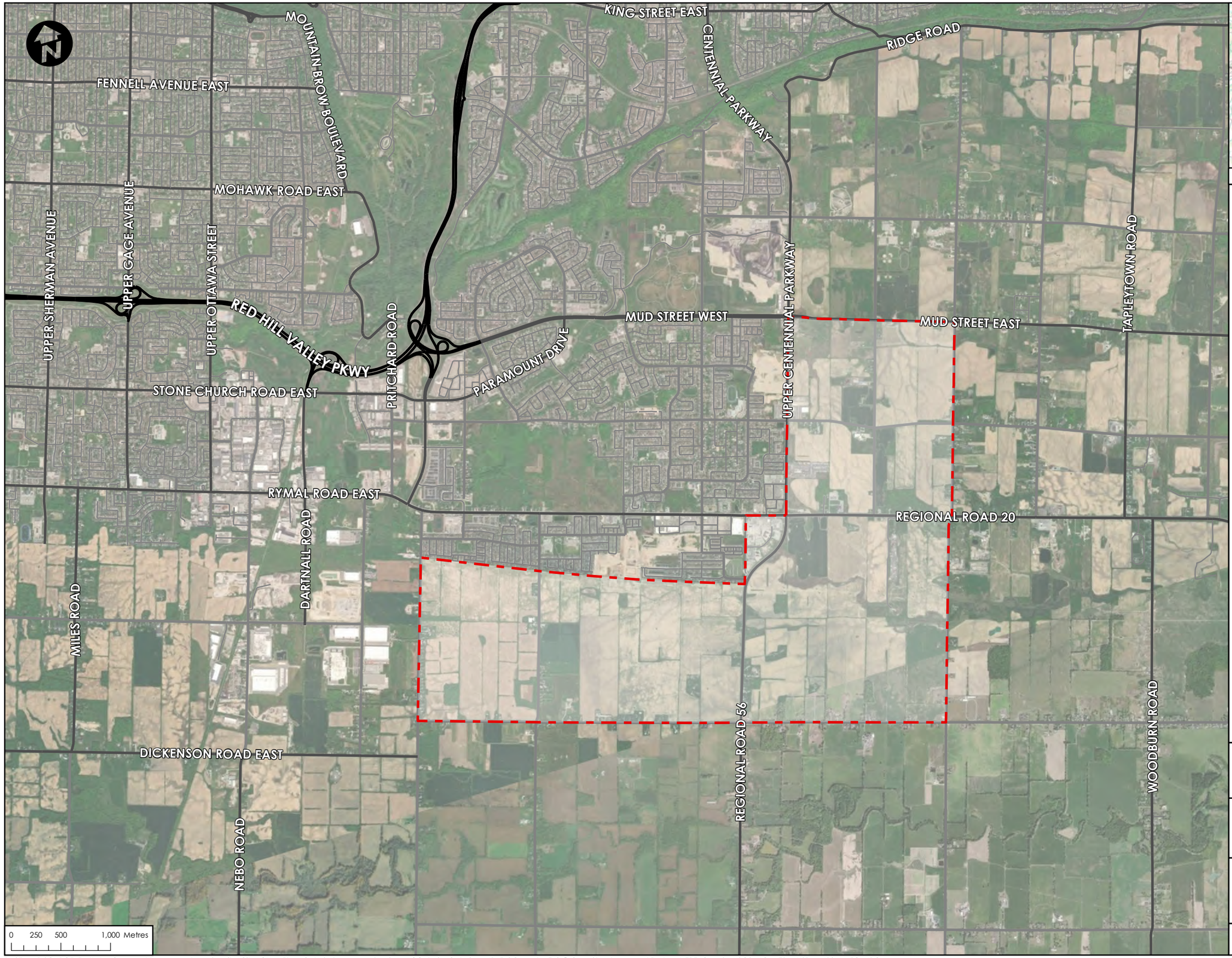
The Elfrida Secondary Plan includes approximately 1,226 ha in the southeastern region of the City of Hamilton. The area primarily consists of undeveloped greenfield lands. These lands are herein referred to as the "Subject Lands". The primary roads intersecting the Subject Lands include Rymal Road E, Trinity Church Road, Golf Club Road, Fletcher Road, Upper Centennial Parkway, First Road E, Second Road E, Highland Road, and Mud Street E.

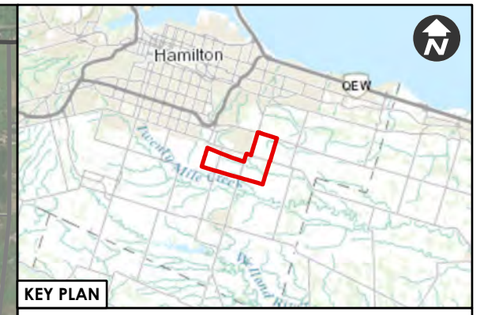
1.2 Development Proposal

The Elfrida Secondary Plan proposes a mixed-use community comprising approximately 70,000 people and jobs. It is proposed that the Subject Lands include low, medium, and high-density residential uses as well as commercial, institutional, and recreational uses.

In addition to the existing road network and planned capital works by the City of Hamilton (City), the Secondary Plan also proposes an internal network of collector roads, intended to support multi-modal connectivity within the Secondary Plan area and to the external road network.

Figure 1 and Figure 2 illustrate the location of the Subject Lands and conceptual Elfrida Secondary Plan prepared by Bousfields Inc., dated April 23, 2026, respectively.





LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

Project:

ELFRIDA SECONDARY PLAN

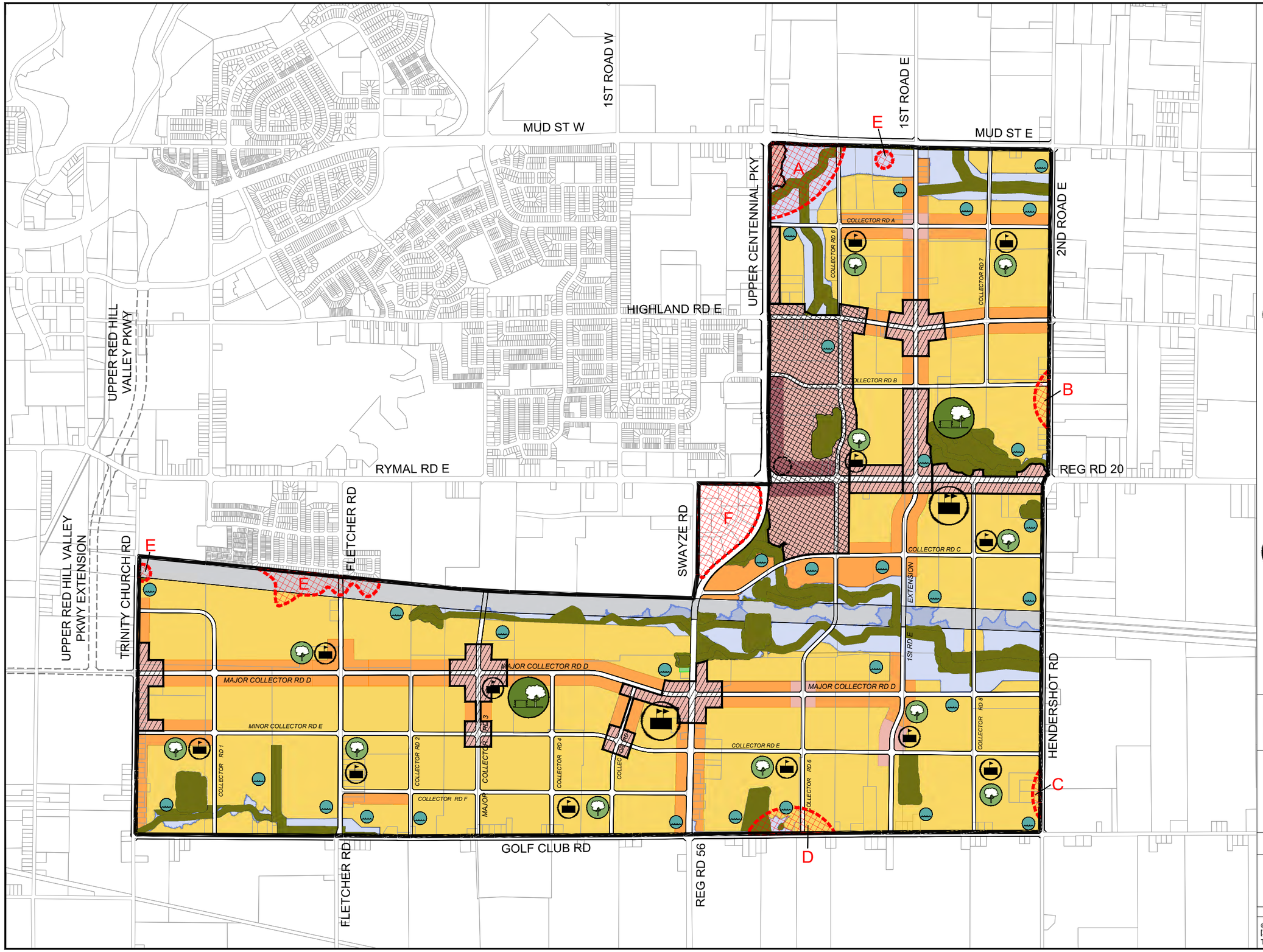
Title:

SITE LOCATION

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 01**

BASE MAP SOURCE: Earthstar Geographics, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan



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THIS IS NOT A PLAN OF SURVEY.

1.3 Study Purpose and Scope

The purpose of this study is to assess the operations of the existing transportation network from a multi-modal perspective and identify possible constraints of the future planned mobility network to accommodate the Elfrida Secondary Plan. This study also provides a review of the proposed transportation network for the internal Subject Lands. This Transportation Management Study and Transportation Assessment is in support of the Secondary Plan application.

The study reviews the proposed Elfrida Secondary Plan, from a transportation engineering perspective, for the following:

- Constraints of the current study road network through analyzing the existing traffic operations.
- Proposed Secondary Plan from a geometric and transportation safety perspective to develop appropriate cross-sections and alignments of the internal road network and its external connections.
- The external active transportation and transit networks in the existing and future background condition to identify gaps in the multi-modal mobility networks. The proposed active transportation and transit networks for the Subject Lands, which aim to address the identified gaps, will also be discussed.
- Future mobility context of the Subject Lands based on relevant planning documents, including future planned improvements to the study road network.
- Existing and future transportation demand management opportunities to develop a foundational Transportation Demand Management Strategy for the Subject Lands.

This study has been completed to address the transportation-related information and materials required as per the Formal Consultation (FC) Document provided by the City of Hamilton dated December 5, 2025. The Formal Consultation Document Comparison Table on Page iv summarizes where each of the required items from the FC Document can be found within this study.

A Terms of Reference was sent to City of Hamilton Transportation Planning Staff on March 2, 2026, and a meeting with City Staff was held on March 24, 2026. The transportation analysis included within this study has been completed in accordance with the FC Document and the City of Hamilton's Transportation Assessment Guidelines (2024). The Terms of Reference sent to the City of Hamilton Transportation Planning Staff is included in Appendix A.

For the existing conditions analysis, the weekday a.m. and p.m. peak hours were analyzed in the 2025 study year. Given the scale of the Subject Lands and the purpose of this study to support the Secondary Plan, a 2051 ultimate horizon year for the analysis of the future mobility network was considered.

Per the intersections outlined in the Terms of Reference, the Transportation Management Study and Transportation Assessment considers the following existing study intersections:

- Upper Red Hill Valley Parkway & Rymal Road E
- Trinity Church Road & Rymal Road E
- Trinity Church Road & Golf Club Road
- Fletcher Road & Golf Club Road
- Fletcher Road & Rymal Road E
- Second Road W/Kingsborough Drive & Rymal Road E
- Highway 56 & Golf Club Road
- Hendershot Road & Golf Club Road
- Highway 56/Upper Centennial Parkway & Rymal Road E
- First Road E & Regional Road 20
- Hendershot Road/Second Road E & Regional Road 20
- Upper Centennial Parkway & Highland Road E
- First Road E & Highland Road E
- Second Road E & Highland Road E
- Upper Centennial Parkway & Mud Street E
- First Road E & Mud Street E
- Second Road E & Mud Street E
- Upper Centennial Parkway & Green Mountain Road E
- First Road E & Green Mountain Road E
- Second Road E & Green Mountain Road E

Figure 3 outlines the existing study intersections.

Upper Centennial Parkway & Green Mountain Road E

First Road E & Green Mountain Road E

GREEN MOUNTAIN RD

Second Road E & Green Mountain Road E

Upper Centennial Parkway & Mud Street E

MUD STREET WEST

MUD STREET EAST

Second Road E & Mud Street E

First Road E & Mud Street E

RED HILL VALLEY PKWY

UPPER RED HILL VALLEY PKWY

UPPER CENTENNIAL PKWY

FIRST ROAD E

SECOND ROAD E

HIGHLAND ROAD

Upper Centennial Parkway & Highland Road E

First Road E & Highland Road E

Second Road E & Highland Road E

Trinity Church Road & Rymal Road E

Upper Red Hill Valley Parkway & Rymal Road E

RYMAL ROAD

Fletcher Road & Rymal Road E

Second Road W/Kingsborough Drive & Rymal Road E

Highway 56/Upper Centennial Parkway & Rymal Road E

First Road E & Regional Road 20

REGIONAL RD 20

Hendershot Road/Second Road E & Regional Road 20

HENDERSHOT ROAD

FLETCHER ROAD

REGIONAL ROAD 56

Trinity Church Road & Golf Club Road

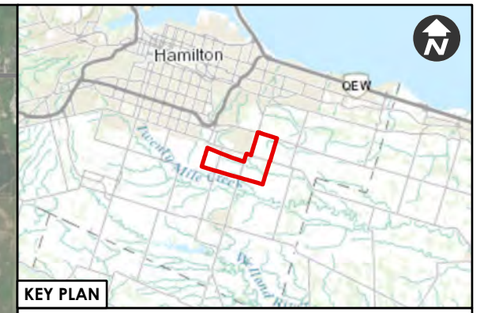
GOLF CLUB ROAD

Fletcher Road & Golf Club Road

Highway 56 & Golf Club Road

Hendershot Road & Golf Club Road

0 250 500 1,000 Metres



KEY PLAN

LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

Project:

ELFRIDA SECONDARY PLAN

Title:

EXISTING STUDY INTERSECTIONS

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 3**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

1.4 Existing Mobility Context

1.4.1 Existing Study Road Network

Table 1 and Table 2 provide key information regarding the arterial study roadways and collector study roadways, respectively. This includes vehicle and active transportation network features.

Figure 4 illustrates the lane configurations and traffic control at each of the existing study road intersections.

Table 1: Existing Arterial Study Roadways

Arterial Roadway	Direction	Span	Classification[1]	Posted Speed Limit	Number of Travel Lanes	Median Type	Active Transportation Facilities
Upper Red Hill Valley Parkway	North-South	Stone Church Rd E to Rymal Rd E	Urban Major Arterial	60 km/h	4 Lanes	Concrete	Multi-Use Path (east side)
Rymal Road E	East-West	Upper James St to Upper Centennial Pkwy	Urban Major Arterial	60 km/h	4 Lanes	Two-Way Left-Turn Lane	Multi-Use Path (north side)[2] Sidewalk (south side)[3]
Regional Road 20	East-West	Upper Centennial Pkwy to City Boundary	Rural Arterial	60 km/h	2 Lanes	None	None
Upper Centennial Parkway	North-South	450 m north of Ridge Rd to Rymal Rd E	Major Arterial	60 km/h[4]	4 Lanes	None[5]	Sidewalk (west side)[6]
Highway 56	North-South	Rymal Rd E to City Boundary	Rural Arterial	60 km/h	2 Lanes[7]	None	None
Mud Street E	East-West	Upper Centennial Pkwy to City Boundary	Rural Arterial	70 km/h	2 Lanes	None	None

Note 1: Per the Urban Hamilton's Official Plan Schedule C (December 2023) and the Rural Hamilton Official Plan Schedule C (December 2023).
Note 2: Multi-use path provided on north side of Rymal Road E between Upper Red Hill Valley Parkway and Trinity Church Road
Note 3: 670 m gap in sidewalk on north side of Rymal Road E between Second Road W and 140 m east of Fletcher Road.
Note 4: Upper Centennial Parkway has a posted speed limit of 70 km/h north of Highland Road.
Note 5: Upper Centennial Parkway has a two-way left-turn lane between Rymal Road E and Highland Road E.
Note 6: Sidewalk provided on west side of Upper Centennial Parkway between Rymal Road E and Highland Road E, as well as near the intersection of Upper Centennial Parkway and Mud Street E.
Note 7: 4 travel lanes provided between Rymal Road E and Dalgleish Trail.

Table 2: Existing Collector Study Roadways

Collector/Local Roadway	Direction	Span	Classification[1]	Posted Speed Limit	Number of Travel Lanes	Median Type	Active Transportation Facilities
Trinity Church Road	North-South	Rymal Rd E to 730 m south of Kirk Rd	Urban/Rural Collector	60 km/h[2]	2 Lanes	None	Sidewalk (east side)[3]
Golf Club Road	East-West	Trinity Church Rd to City Boundary	Rural Collector	60 km/h	2 Lanes	None	None
Fletcher Road	North-South	Rymal Rd E to Kirk Rd	Urban/Rural Collector	60 km/h[4]	2 Lanes	None	Sidewalk (both sides)[5]
Hendershot Road	North-South	Regional Rd 20 to Kirk Rd	Rural Collector	60 km/h	2 Lanes	None	None
First Road E	North-South	Ridge Rd to Regional Rd 20	Rural Collector	60 km/h	2 Lanes	None	None
Second Road E	North-South	Ridge Rd to Regional Road 20	Rural Collector	60 km/h	2 Lanes	None	None
Highland Road E	East-West	Upper Centennial Pkwy to East Townline Rd	Rural Collector	60 km/h[6]	2 Lanes	None	None
Green Mountain Road E	East-West	Upper Centennial Pkwy to Eleventh Rd E	Rural Collector	60 km/h	2 Lanes	None	None
Second Road W	North-South	750 m north of Highland Rd W to Rymal Rd E	Urban Collector	40 km/h	2 Lanes	None	Sidewalk (both sides)[7]
Kingsborough Drive	North-South	Rymal Rd E to Bellagio Ave	Urban Collector	40 km/h	2 Lanes	None	Sidewalk (both sides)

Note 1: Per the Urban Hamilton's Official Plan Schedule C (December 2023) and the Rural Hamilton Official Plan Schedule C (December 2023).
Note 2: The posted speed limit on Trinity Church Road reduces to 50 km/h between Rymal Road E and approximately 530 m south of Rymal Road E.
Note 3: Active transportation facilities on Trinity Church Road are provided between Rymal Road E and approximately 470 m south of Rymal Road E.
Note 4: The posted speed limit on Fletcher Road reduces to 50 km/h between Rymal Road E and approximately 675 m south of Rymal Road E.
Note 5: Active transportation facilities on Fletcher Road are provided between Rymal Road E and approximately 560 m south of Rymal Road E.
Note 6: The posted speed limit on Highland Road E reduces to 50 km/h between Upper Centennial Parkway and First Road E.
Note 7: Sidewalk only provided on east side of Second Road W north of Highland Road W.

Rymal Road East Detail

UPPER RED HILL VALLEY PKWY

RYMAL ROAD EAST

TRINITY CHURCH ROAD

0 50 100 200 Metres

RED HILL VALLEY PKWY

UPPER RED HILL VALLEY PKWY

HIGHLAND ROAD WEST

See above inset

RYMAL ROAD EAST

GREEN MOUNTAIN ROAD W

FIRST ROAD EAST

MUD STREET EAST

UPPER CENTENNIAL PKWY

SECOND ROAD EAST

HIGHLAND ROAD E

REGIONAL ROAD 20

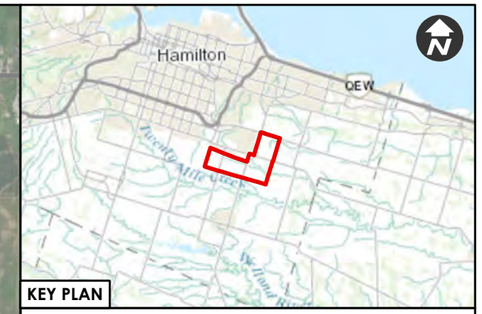
HENDERSHOT ROAD

FLETCHER ROAD

REGIONAL ROAD 56

GOLF CLUB ROAD

0 250 500 1,000 Metres



KEY PLAN

LEGEND

ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

LOCAL

COLLECTOR

ARTERIAL

HIGHWAY / PARKWAY

INTERSECTION

SIGNALIZED INTERSECTION

STOP CONTROLLED INTERSECTION

STOP CONTROLLED INTERSECTION (ALL-WAY)

Project:

ELFRIDA SECONDARY PLAN

Title:

2025 EXISTING STUDY ROAD NETWORK

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 4**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

1.5 Existing Automobile Analysis

This section summarizes the existing conditions of the study automobile network for the 2025 horizon year as well as provides details relating to the collected transportation data.

1.5.1 Transportation Data

A variety of transportation data was obtained and used to support the analysis in this study and is summarized in the section herein.

Turning movement counts (TMCs) were conducted by Spectrum Traffic at all of the study intersections on Wednesday, September 17, 2025. The TMCs were conducted between 6:00 a.m. to 10:00 a.m., and 3:00 p.m. to 7:00 p.m. to reflect typical commuter peak hours.

Signal timing plans for each of the existing signalized study intersections were provided by City of Hamilton Staff.

Table 3 summarizes the TMCs and signal timing plans data. Appendix B contains the traffic count data and signal timing plans.

Table 3: Turning Movement Count and Signal Timing Plan Data Summary

Intersection	TMCs		Signal Timing Plan	
	Date	Source	Date	Source
Upper Red Hill Valley Parkway & Rymal Road E	Wednesday, September 17, 2025	Spectrum	September 18, 2025	City
Trinity Church Road & Rymal Road E			September 18, 2025	City
Trinity Church Road & Golf Club Road			N/A	N/A
Fletcher Road & Golf Club Road			N/A	City
Fletcher Road & Rymal Road E			August 13, 2025	City
Second Road W/Kingsborough Drive & Rymal Road E			September 8, 2022	City
Highway 56 & Golf Club Road			February 27, 2023	City
Highway 56/Upper Centennial Parkway & Rymal Road E			September 5, 2025	City
Hendershot Road & Golf Club Road			N/A	N/A
First Road E & Regional Road 20			N/A	N/A
Hendershot Road/Second Road E & Regional Road 20			July 10, 2020	City
Upper Centennial Parkway & Highland Road E			May 29, 2015	City
First Road E & Highland Road E			N/A	N/A
Second Road E & Highland Road E			N/A	N/A
Upper Centennial Parkway & Mud Street E			August 17, 2023	City
First Road E & Mud Street E			January 22, 2018	City
Second Road E & Mud Street E			N/A	N/A
Upper Centennial Parkway & Green Mountain Road E			November 29, 2023	City
First Road E & Green Mountain Road E			N/A	N/A
Second Road E & Green Mountain Road E			N/A	N/A

1.5.2 Existing Traffic Volumes

The turning movement counts (TMCs) for nearly all study intersections were directly applied as the existing conditions volumes for the traffic operations assessment.

It was recognized that construction along Golf Club Road for the Dickenson Road Sanitary Trunk Sewer Project was ongoing when the TMCs were conducted. Specifically, based on observations during the data collection, turning movement restrictions were in place on September 17, 2025, at the intersections of Trinity Church Road and Golf Club Road as well as Fletcher Road and Golf Club Road. For the purposes of determining baseline traffic volumes at these intersections during typical operations, historical turning movement counts were provided by the City of Hamilton for both intersections.

Table 4 summarizes the historical TMC data that was received from the City of Hamilton. Appendix B contains the historic traffic count data.

Table 4: Historical Turning Movement Count Data Summary

Intersection	TMCs	
	Date	Source
Trinity Church Road & Golf Club Road	February 17, 2016	City of Hamilton
Fletcher Road & Golf Club Road	February 19, 2016	

When comparing Spectrum's 2025 TMCs with the City of Hamilton's 2016 TMCs for the intersections of Trinity Church Road and Golf Club Road as well as Fletcher Road and Golf Club Road, higher vehicle volumes were observed in the 2025 data for the through movements on Trinity Church Road and Fletcher Road. The increase in traffic between 2016 and 2025 can be attributed to the additional vehicle volumes generated by the growing community of Binbrook as well as other general corridor growth. As expected due to the existing construction, higher traffic volumes were generally observed in the 2016 data for all turning movements as well as the through movements on Golf Club Road at the two noted intersections.

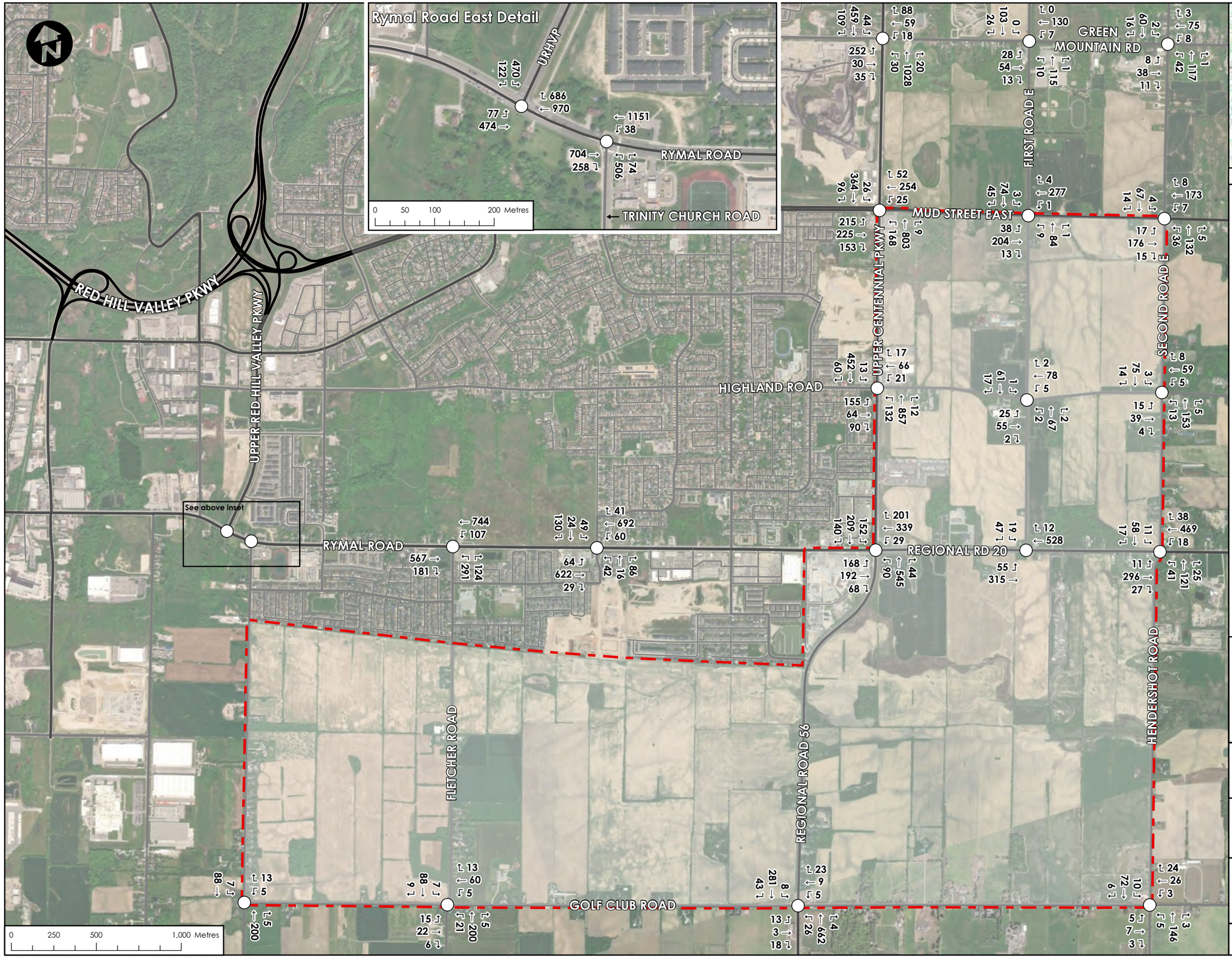
The 2025 vehicle counts for the through movements on Trinity Church Road and Fletcher Road were directly applied as the existing conditions volumes for the traffic operations assessment. The 2016 vehicle counts for all other movements at the intersections of Trinity Church Road and Golf Club Road as well as Fletcher Road and Golf Club Road were grown to the base year of 2025. A standard growth rate of 1.5% compounded annually was applied to these movements.

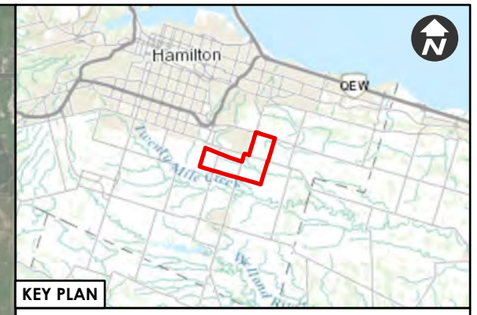
Traffic volume adjustments were made at the intersections of Highway 56 and Golf Club Road as well as Hendershot Road and Golf Club Road to balance the vehicle volumes on Golf Club Road between Fletcher Road and Hendershot Road.

Overall, the outlined methodology used to account for the existing construction on Golf Club Road is considered conservative. The assumptions made to determine the existing conditions volumes for the traffic operations assessment are reasonable given the traffic data available at the time of this Study.

Additional balancing was carried out on the study road network where appropriate. This included road segments where the difference in 2025 base volumes between intersections was greater than 10% and the presence of local accesses and major driveways could not reasonably account for the difference in volumes. Vehicle volumes were ultimately balanced along First Road E, Second Road E, and Mud Street E. For the roadway segments that were adjusted, the 2025 base volumes were balanced based on the upper threshold between the two adjacent study intersections.

Figure 5 outlines the adjusted 2025 existing traffic volumes that were applied to the intersection operations analysis.





LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

NOTES

URHVP: Upper Red Hill Valley Parkway

Project:

ELFRIDA SECONDARY PLAN

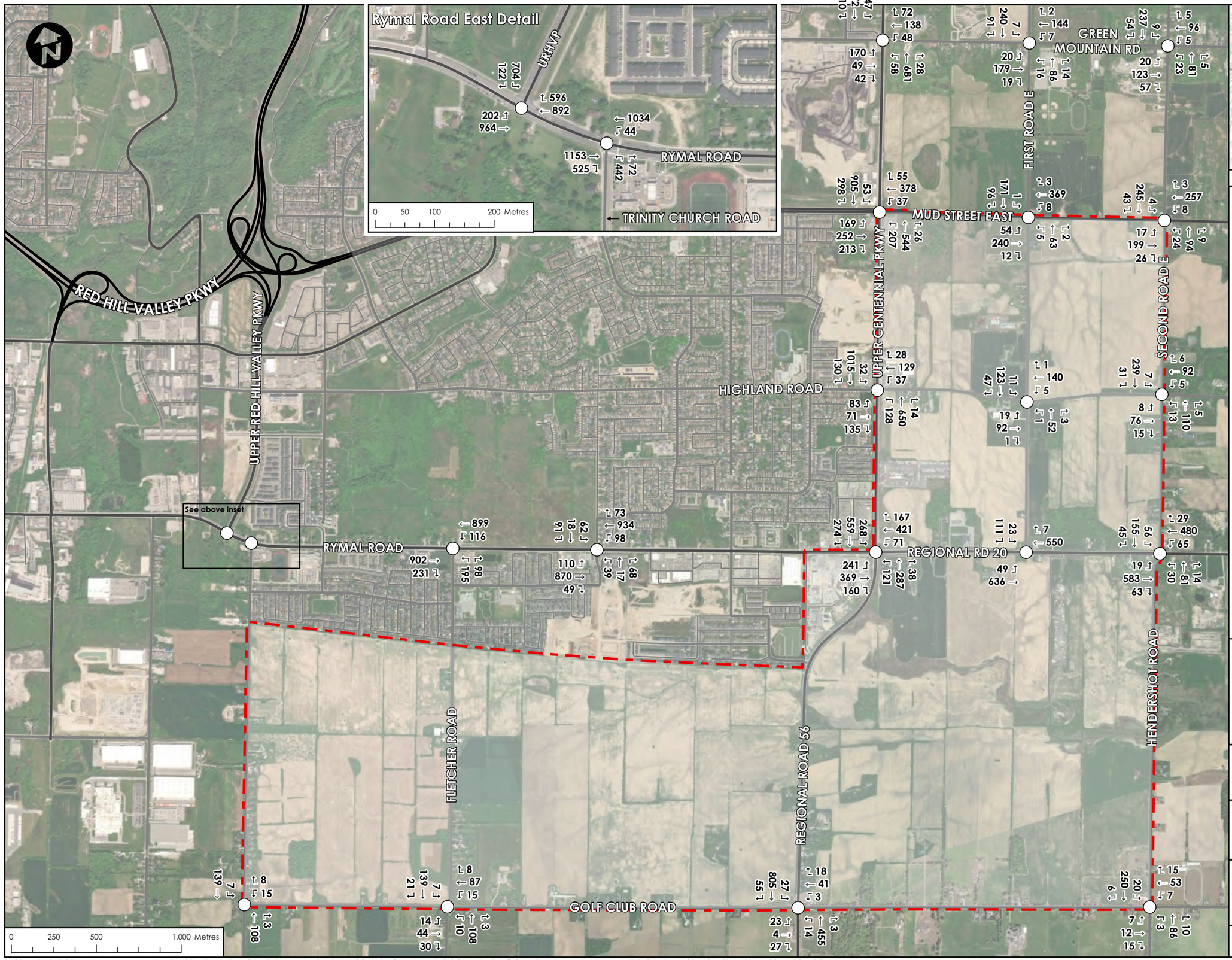
Title:

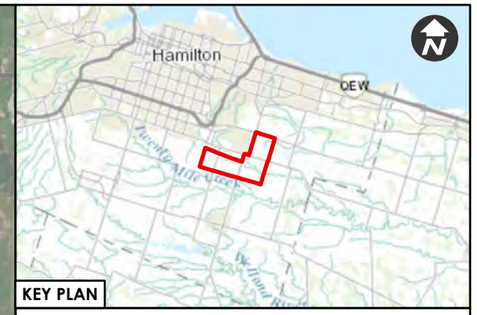
EXISTING TRAFFIC VOLUMES
A.M. PEAK HOUR

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 5A**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan





LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

NOTES

URHVP: Upper Red Hill Valley Parkway

Project:

ELFRIDA SECONDARY PLAN

Title:

EXISTING TRAFFIC VOLUMES
P.M. PEAK HOUR

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 5B**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

1.5.3 Traffic Modelling and Assumptions

Basis of Assessment

The automobile intersection operations were reviewed using PTV Vissim (Vissim) software and evaluated based on the results of 5 simulations with 30 min seeding and 60 min recording, as outlined in the Transportation Assessment Guidelines (City of Hamilton, 2024).

The level of service (LOS) and control delay for intersection and movements were based on the control delay, and corresponding LOS, for the intersection/movement over the 60 min recording period, averaged for the 5 simulations.

Furthermore, the 50th and 95th percentile queues were calculated based on the average queue observed for the movement over 15 s intervals, averaged for the 5 simulations. Queues were defined using the following parameters:

- Queue Start Speed Threshold: 5 km/h
- Queue End Speed Threshold: 10 km/h
- Maximum Queue Clearance: 20 m
- Maximum Queue Length: 500 m

Modelling Parameters

The study road network was modelled in Vissim based on the existing roadway geometric configurations, traffic volumes, and traffic control.

As per the City of Hamilton's Transportation Assessment Guidelines (2024), the heavy vehicle percentages as well as the pedestrian and cycling volumes were modelled in Vissim based on the existing turning movement count data.

Model Calibration

To ensure the Vissim simulation model accurately reflects the existing traffic conditions across the study road network, the turning movement counts produced at each of the study intersections within the model was compared to the traffic volumes observed during the turning movement count survey.

The resulting average traffic volumes were compared to the observed turning movement counts based on the GEH, which is a metric to evaluate the fit between the modelled and observed volumes. Overall, the Vissim model outputs were comparable to the observed vehicle traffic, with a resulting GEH for all movements of less than 5.0, which is the typical threshold for an acceptable match between modelled and observed data.

Appendix C includes further details related to the model calibration, including the volume comparison, and resulting GEH.

1.5.4 Intersection Operations

The following section outlines the existing intersection operations at the study intersections based on the adjusted traffic volumes illustrated in Figure 5.

Table 5 summarizes the existing intersection operations. Appendix D includes the Vissim model outputs for the intersection operations.

Table 5: 2025 Existing Levels of Service

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Upper Red Hill Valley Parkway & Rymal Road E	Signalized	Overall	B	C	17.9	32.4
		EBL	B	C	13.1	24.6
		EBT	A	B	8.2	20.6
		WBT	B	C	14.2	26.9
		WBR	B	B	12.3	18.2
		SBL	D	E	44.3	74.5
		SBR	A	A	6.9	7.9
Trinity Church Road & Rymal Road E	Signalized	Overall	B	C	14.9	22.7
		EBT	A	C	6.5	22.9
		EBR	A	C	6.0	24.4
		WBL	C	D	21.0	53.0
		WBT	A	B	10.3	12.7
		NBL	D	D	45.6	47.0
		NBR	A	A	5.3	5.9
Trinity Church Road & Golf Club Road	Two-Way Stop Controlled	Overall	A	A	1.8	2.7
		WBL	B	C	11.9	16.2
		WBR	B	B	10.3	11.4
		NBT	A	A	0.7	0.8
		NBR	A	A	0.4	0.4
		SBL	A	A	4.3	3.4
		SBR	A	A	0.8	1.8
Fletcher Road & Golf Club Road	All-Way Stop-Controlled	Overall	B	B	10.9	11.3
		EBL	A	A	7.0	8.5
		EBT	A	B	9.5	10.1
		EBR	A	A	4.3	5.6
		WBL	A	A	9.2	8.4
		WBT	B	B	11.7	12.2
		WBR	A	A	6.8	6.3
		NBL	A	A	8.5	9.5
		NBT	B	B	11.7	10.6
		NBR	A	A	8.0	6.4
		SBL	A	B	7.5	9.8
		SBT	B	B	12.0	14.2
		SBR	A	B	7.9	10.3

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Fletcher Road & Rymal Road E	Signalized	Overall	B	B	15.1	17.0
		EBT	B	B	14.8	18.4
		EBR	B	B	12.2	16.4
		WBL	C	D	23.9	37.2
		WBT	B	B	12.1	12.5
		NBL	C	C	26.7	25.7
		NBR	A	A	5.0	5.5
Kingsborough Drive/Second Road W and Rymal Road E	Signalized	Overall	B	B	11.4	12.6
		EBL	B	B	10.6	16.2
		EBT	A	A	6.4	9.4
		EBR	A	A	4.7	6.7
		WBL	B	B	13.7	14.6
		WBT	B	B	11.0	12.0
		WBR	A	B	7.9	10.9
		NBL	D	C	39.6	34.1
		NBT	D	C	43.2	31.8
		NBR	B	B	11.3	11.0
		SBL	D	D	40.1	39.6
		SBT	D	D	41.3	41.6
		SBR	B	B	14.0	14.9
Highway 56 & Golf Club Road	Signalized	Overall	C	C	20.6	23.0
		EBL	B	B	15.0	13.1
		EBT	A	A	5.7	6.0
		EBR	A	A	6.3	9.8
		WBL	B	A	9.9	4.2
		WBT	B	B	15.7	13.5
		WBR	A	A	8.2	6.2
		NBL	C	C	30.0	31.5
		NBT	C	B	23.5	17.3
		NBR	C	B	21.2	10.3
		SBL	C	D	36.0	35.0
		SBT	B	C	16.8	28.8
		SBR	A	B	10.9	18.5

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Hendershot Road & Golf Club Road	All-Way Stop Controlled	Overall	A	B	9.8	13.0
		EBL	A	A	5.1	5.9
		EBT	A	A	9.2	9.7
		EBR	A	A	5.9	7.8
		WBL	A	A	6.6	7.3
		WBT	A	B	9.7	10.2
		WBR	A	A	5.8	5.4
		NBL	A	A	6.6	6.5
		NBT	B	B	10.6	10.1
		NBR	A	A	4.9	5.2
		SBL	A	B	6.9	12.4
		SBT	B	C	10.6	15.9
		SBR	A	B	6.8	14.2
Highway 56/ Upper Centennial Parkway & Rymal Road E	Signalized	Overall	C	C	24.8	24.6
		EBL	B	C	20.0	22.7
		EBT	B	B	15.0	18.4
		EBR	A	A	4.3	6.0
		WBL	C	C	19.0	21.0
		WBT	C	C	23.4	26.0
		WBR	B	A	10.0	6.9
		NBL	C	C	25.7	30.4
		NBT	D	C	37.4	33.0
		NBR	A	A	8.3	5.3
		SBL	D	D	40.5	40.0
		SBT	C	C	30.0	32.8
		SBR	A	B	9.0	15.0
First Road E & Regional Road 20	Two-Way Stop Controlled	Overall	A	A	1.1	1.6
		EBL	A	A	2.3	2.9
		EBT	A	A	0.4	0.9
		WBT	A	A	0.4	0.3
		WBR	A	A	0.4	0.5
		SBL	B	B	12.2	13.7
		SBR	A	B	9.2	10.5

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Hendershot Road/Second Road E & Regional Road 20	Signalized	Overall	A	B	7.2	13.2
		EBL	A	A	7.3	10.8
		EBT	A	B	9.0	12.9
		EBR	A	A	4.7	8.4
		WBL	B	C	11.2	32.2
		WBT	A	A	1.0	2.1
		WBR	A	A	2.7	2.6
		NBL	B	C	20.3	36.3
		NBT	C	C	19.3	25.6
		NBR	B	B	13.2	19.2
		SBL	C	C	19.8	26.7
		SBT	B	C	16.8	26.6
		SBR	A	C	9.5	20.4
Upper Centennial Parkway & Highland Road E	Signalized	Overall	B	B	14.9	16.2
		EBL	C	C	28.1	30.4
		EBT	C	C	23.9	25.3
		EBR	A	A	4.8	7.9
		WBL	C	C	25.6	28.1
		WBT	C	C	22.5	28.3
		WBR	B	B	9.2	14.2
		NBL	B	C	12.5	20.6
		NBT	B	B	13.3	12.4
		NBR	B	B	10.4	9.6
		SBL	B	B	19.8	17.3
		SBT	B	B	15.2	17.0
		SBR	A	A	5.1	8.6
First Road E & Highland Road E	All-Way Stop Controlled	Overall	A	B	9.4	11.5
		EBL	A	A	6.6	8.4
		EBT	A	B	9.9	11.1
		EBR	B	A	9.9	5.2
		WBL	A	A	6.6	8.1
		WBT	A	B	9.6	10.4
		WBR	A	A	6.3	5.0
		NBL	A	A	6.3	5.7
		NBT	A	A	9.6	9.7
		NBR	A	A	5.2	4.7
		SBL	B	B	9.9	12.5
		SBT	B	B	11.1	14.8
		SBR	A	A	6.5	10.4

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Second Road E & Highland Road E	All-Way Stop Controlled	Overall	A	B	9.8	10.8
		EBL	A	A	5.7	7.2
		EBT	A	B	9.4	10.7
		EBR	A	A	4.9	5.8
		WBL	A	A	5.5	6.6
		WBT	A	A	9.5	10.0
		WBR	A	A	6.8	7.0
		NBL	A	A	8.9	8.2
		NBT	B	B	11.7	10.8
		NBR	A	A	7.6	6.2
		SBL	A	A	5.8	8.2
		SBT	A	B	9.3	12.3
		SBR	A	A	5.9	8.7
Upper Centennial Parkway & Mud Street E	Signalized	Overall	D	D	46.5	52.3
		EBL	D	D	46.8	50.8
		EBT	E	E	55.6	63.0
		EBR	D	D	41.2	51.6
		WBL	D	D	35.9	42.4
		WBT	D	E	48.5	56.2
		WBR	C	C	25.9	31.5
		NBL	F	F	97.4	122.1
		NBT	D	D	37.7	40.7
		NBR	C	C	35.7	33.7
		SBL	E	E	77.0	74.9
		SBT	D	D	47.2	52.0
		SBR	A	B	4.9	10.9
First Road E & Mud Street E	Signalized	Overall	B	B	13.6	15.8
		EBL	A	B	9.6	12.4
		EBT	B	B	11.0	13.3
		EBR	A	A	7.4	9.7
		WBL	B	B	15.2	16.0
		WBT	B	B	15.3	16.7
		WBR	C	B	20.9	14.4
		NBL	B	C	19.0	28.8
		NBT	B	B	17.3	18.1
		NBR	B	B	7.8	15.3
		SBL	B	C	16.7	25.7
		SBT	B	C	17.4	20.9
		SBR	A	B	7.1	12.3

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Second Road E & Mud Street E	All-Way Stop Controlled	Overall	C	C	17.4	22.8
		EBL	C	D	22.6	32.2
		EBT	D	D	27.7	35.5
		EBR	C	D	20.8	30.7
		WBL	B	C	11.8	17.6
		WBT	C	C	15.4	18.2
		WBR	B	B	13.5	11.5
		NBL	A	B	7.3	11.6
		NBT	B	B	11.5	13.1
		NBR	A	A	6.4	6.9
		SBL	A	B	6.3	12.9
		SBT	B	C	10.6	21.1
		SBR	A	B	5.7	14.9
Upper Centennial Parkway & Green Mountain Road E	Signalized	Overall	C	C	20.5	21.4
		EBL	D	D	39.2	37.2
		EBT	C	C	34.8	30.3
		EBR	B	B	11.0	14.8
		WBL	D	C	38.2	33.9
		WBT	D	D	35.4	41.9
		WBR	D	D	36.5	42.2
		NBL	B	C	19.5	31.8
		NBT	B	C	18.5	20.8
		NBR	B	C	15.5	19.7
		SBL	C	B	24.8	19.6
		SBT	B	B	13.7	18.1
		SBR	A	B	3.0	9.5
First Road E & Green Mountain Road E	All-Way Stop Controlled	Overall	A	B	10.2	14.6
		EBL	A	B	7.3	12.0
		EBT	B	B	10.5	15.4
		EBR	A	A	6.8	10.1
		WBL	A	A	5.7	10.9
		WBT	B	B	10.5	12.3
		WBR	A	A	0.0	7.3
		NBL	A	B	8.2	9.8
		NBT	B	B	11.8	11.9
		NBR	A	A	4.3	8.0
		SBL	A	B	0.0	11.8
		SBT	B	C	10.8	18.4
		SBR	A	B	6.1	13.8

Intersection	Control	Movement	LOS[1]		Delay (s)[1,2]	
			A.M.	P.M.	A.M.	P.M
Second Road E & Green Mountain Road E	All-Way Stop Controlled	Overall	A	B	9.0	12.3
		EBL	A	A	6.3	9.1
		EBT	A	B	9.2	12.7
		EBR	A	A	6.0	8.4
		WBL	A	A	7.8	6.9
		WBT	A	B	9.9	10.6
		WBR	A	A	5.3	5.2
		NBL	A	A	5.9	8.7
		NBT	B	B	10.5	11.9
		NBR	A	A	5.2	7.2
		SBL	A	A	6.1	9.5
		SBT	A	C	9.4	15.0
		SBR	A	B	6.8	11.9

Note 1: The movement LOS and delay is calculated by subtracting the theoretical (ideal) free-flow travel time from the actual vehicle travel time (Vissim). The intersection LOS and control delay is calculated by combining the average vehicle LOS and delay for each movement weighted by the number of vehicles per movement.

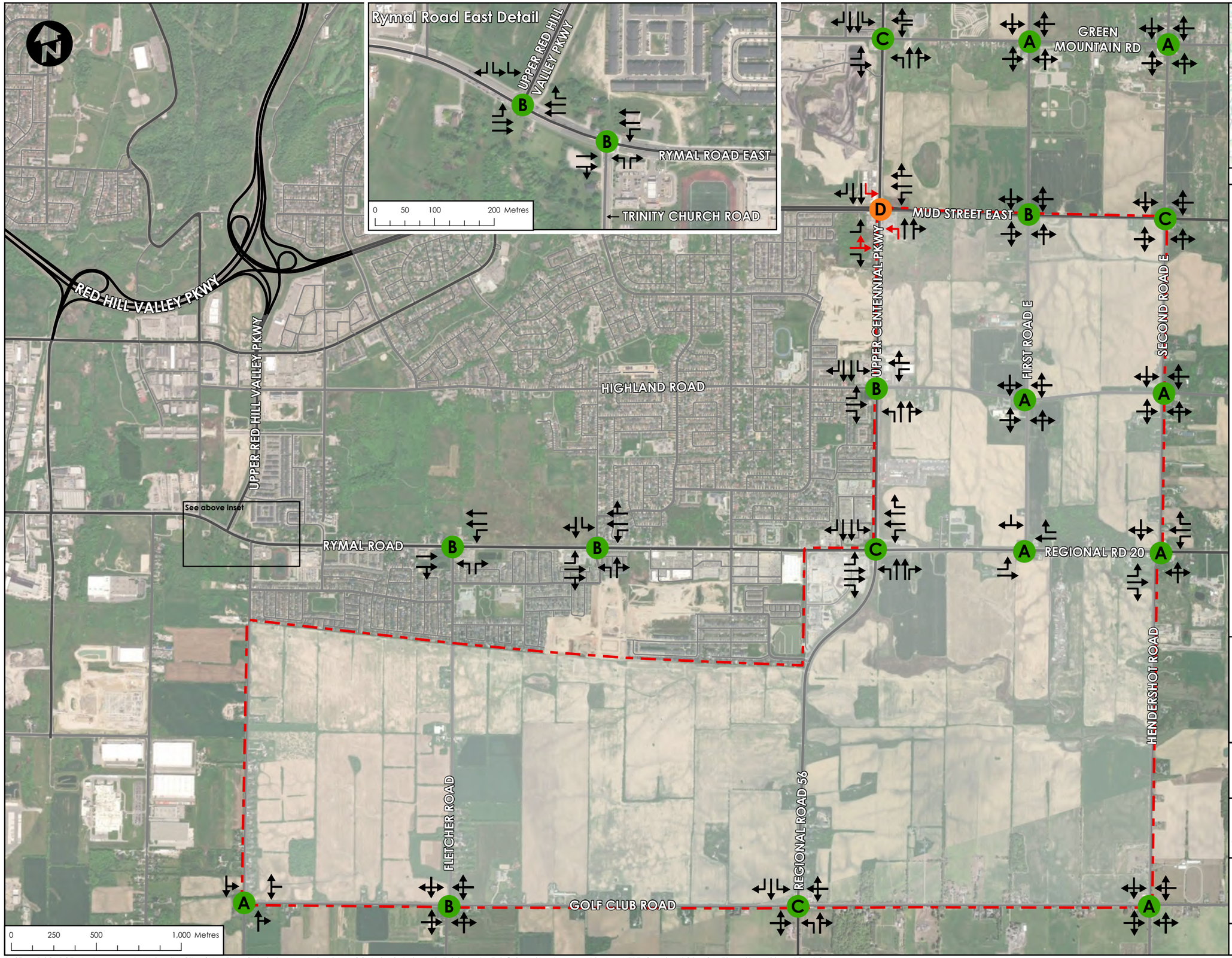
Note 2: Movements at signalized intersections with a control delay that are greater than one cycle length are outlined in red. Movements at unsignalized intersections with a control delay corresponding to a LOS "E" or worse have been bolded and outlined in red.

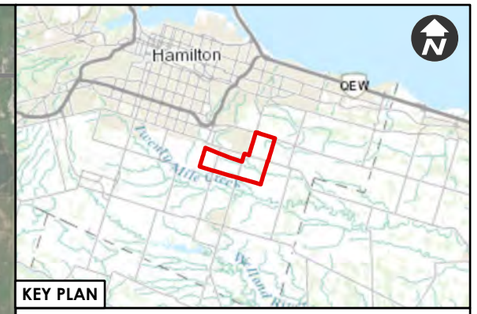
As outlined in Table 5, most intersections within the study road network operate acceptably with all movements undercapacity and an LOS "D" or better in both peak hours.

Existing constraints are observed at Upper Red Hill Valley Parkway and Rymal Road E where the southbound left-turn movement operates with a LOS "D" and "E" in the weekday morning and weekday afternoon peak hour, respectively. Based on the existing study road network, this movement would be heavily utilized by inbound traffic to the Subject Lands. As a result, alternative routes to connect traffic from the Red Hill Valley Parkway to the southern portion of the Subject Lands will be needed to support the Subject Lands.

Additionally, several movements at the intersection of Upper Centennial Parkway and Mud Street E currently operate at a LOS "E" or "F" in both peak hours. Notably, the northbound left-turn movement has delays of 97.4 s and 122.1 s in the weekday morning and weekday afternoon peak hour, respectively. This intersection is a critical connection between the eastern portion of the Subject Lands and the major north–south transportation corridors in southeastern Hamilton, namely the Red Hill Valley Parkway and Upper Centennial Parkway. As traffic demands increase over time, long-term improvements may be necessary to maintain efficient and safe operations.

Figure 6 illustrates the 2025 existing intersection operations.





LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

OVERALL INTERSECTION LEVEL OF SERVICE

- A, B, C
- D, E
- F
- MOVEMENT OPERATING ACCEPTABLY
- MOVEMENT WITH OPERATIONAL CONSTRAINT (SEE NOTE 1)

NOTES

1. A movement with an operational constraint indicates that the movement is either operating at LOS "E" or LOS "F"

Project:

ELFRIDA SECONDARY PLAN

Title:

2025 EXISTING INTERSECTION OPERATIONS (A.M. PEAK HOUR)

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 6A**

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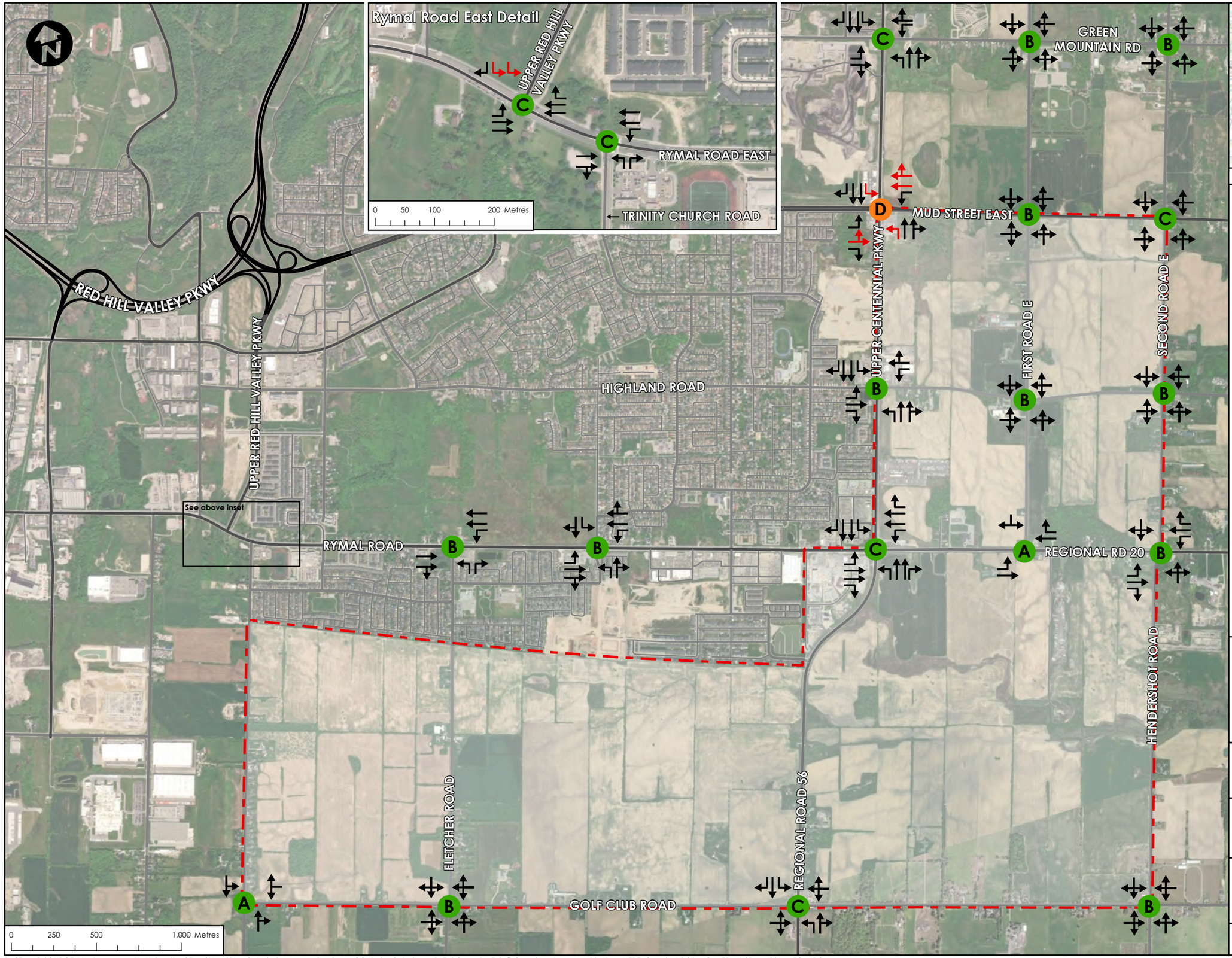

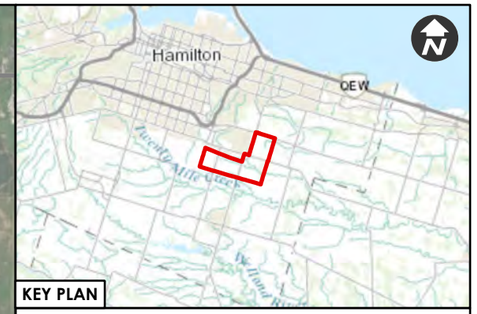

LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

OVERALL INTERSECTION LEVEL OF SERVICE

- A, B, C
- D, E
- F
- MOVEMENT OPERATING ACCEPTABLY
- MOVEMENT WITH OPERATIONAL CONSTRAINT (SEE NOTE 1)

NOTES

1. A movement with an operational constraint indicates that the movement is either operating at LOS "E" or LOS "F"

Project:

ELFRIDA SECONDARY PLAN

Title:

2025 EXISTING INTERSECTION OPERATIONS (P.M. PEAK HOUR)

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 6B**

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1.5.5 Queuing Analysis

As per the City of Hamilton Transportation Assessment Guidelines (2024), a queuing analysis was conducted for all dedicated turning lanes in the study network to compare the existing storage capacities to the 95th percentile queues. The 95th percentile queues were modelled and calculated as outlined in Section 1.5.3.

Table 6 summarizes the existing queueing analysis. Appendix D includes the Vissim model outputs for the queueing analysis.

Table 6: 2025 Existing Queueing Analysis

Intersection	Control	Movement	95th Percentile Queue Length (m) [50th Percentile Queue Length (m)]		Storage Length (m)
			AM[1]	PM[1]	
Upper Red Hill Valley Parkway & Rymal Road E	Signalized	EBL	5 [0]	25 [5]	55
		WBR	30 [5]	55 [15]	55
		SBL	55 [25]	105 [70]	85
Trinity Church Road & Rymal Road E	Signalized	WBL	5 [0]	10 [5]	25
		NBL	85 [45]	75 [35]	20
Fletcher Road & Rymal Road E	Signalized	WBL	10 [5]	15 [5]	30
		NBL	40 [15]	25 [10]	45
Kingsborough Drive/Second Street W & Rymal Road E	Signalized	EBL	5 [0]	10 [5]	45
		WBL	5 [5]	10 [5]	45
		NBL	10 [5]	10 [5]	15
		SBL	10 [5]	15 [5]	15
Highway 56 & Golf Club Road	Signalized	NBL	5 [0]	5 [0]	20
		SBL	5 [0]	5 [0]	25
		SBR	5 [0]	5 [0]	15
Highway 56/Upper Centennial Parkway & Rymal Road E	Signalized	EBL	25 [5]	30 [10]	65
		EBR	5 [0]	5 [5]	55
		WBL	5 [0]	10 [5]	100
		WBR	10 [5]	5 [5]	125
		NBL	15 [5]	25 [10]	85
		NBR	0 [0]	5 [0]	50
		SBL	35 [15]	50 [20]	60
		SBR	10 [5]	20 [5]	40
Hendershot Road/Second Road E & Regional Road 20	Signalized	EBL	5 [0]	5 [0]	50
		EBR	5 [0]	5 [0]	15
		WBL	5 [0]	10 [5]	70
		WBR	5 [0]	5 [0]	20
Upper Centennial Parkway & Highland Road E	Signalized	EBL	20 [10]	10 [5]	30
		EBR	5 [5]	5 [5]	30
		WBL	5 [5]	5 [5]	55
		NBL	10 [5]	10 [5]	35
		SBL	5 [0]	5 [0]	35
		SBR	5 [0]	5 [5]	45

Intersection	Control	Movement	95th Percentile Queue Length (m) [50th Percentile Queue Length (m)]		Storage Length (m)
			AM[1]	PM[1]	
Upper Centennial Parkway & Mud Street E	Signalized	EBL	45 [20]	30 [20]	230
		WBL	10 [5]	10 [5]	70
		NBL	70 [45]	120 [80]	140
		SBL	10 [5]	20 [10]	105
Upper Centennial Parkway & Green Mountain Road E	Signalized	EBL	45 [20]	30 [10]	30
		WBL	5 [5]	10 [5]	20
		NBL	5 [0]	10 [5]	35
		SBL	5 [5]	15 [5]	30
		SBR	5 [5]	10 [5]	30

Note 1: Rounded up to the nearest 5 m.

The following 95th percentile queues are modelled to extend beyond the available auxiliary turn lane storage length:

- Upper Red Hill Valley Parkway & Rymal Road E (SBL)
- Trinity Church Road & Rymal Road E (NBL)
- Upper Centennial Parkway & Green Mountain Road E (EBL)

Macro-modelling traffic analysis is being developed in coordination with the City of Hamilton which will examine the study road network and the impact of the growth of the study area and the Subject Lands. This assessment will determine if similar results in the movements where the 95th percentile queue is expected to extend beyond the storage length covered in this report are confirmed. If significant queueing concerns are observed, this may warrant intersection improvements such as signal timing plans or auxiliary turn lane extensions. Furthermore, given the anticipated development within the study area, improvements may be warranted to support future traffic growth in the long-term future.

1.6 Existing Multi-Modal Analysis

Per Section 6.0 of the City's 2024 Transportation Assessment Guidelines, a multi-modal level of service (LOS) assessment was completed for the existing conditions following the Ontario Traffic Council (OTC) Multi-Modal LOS Guidelines (February 2022). The following sections provide an overview of the existing Levels of Service for trucks and cars on each of the study roadways.

The OTC Multi-Modal LOS Guidelines require an intersection analysis and a segment analysis. Accordingly, all study intersections as well as all roadway segments located between any two study intersections were included in the multi-modal analysis. Roadway segments for each roadway were sometimes grouped together or divided up based on the consistency of roadway infrastructure provided along the corridor. For example, in terms of the active transportation facilities provided, the urban section of Fletcher Road between Rymal Road E and just south of Blue Mountain Road greatly differs from the rural section of Fletcher Road between just south of Blue Mountain Road and Golf Club Road. As a result, these two sections were split into two different roadway segments for the purposes of the segment analysis.

The OTC Multi-Modal LOS Guidelines assign different target LOS for each standard road typology defined within the OTC's guidelines. However, the standard street typologies included within the OTC guidelines differ from the street typologies outlined in the City of Hamilton Complete Street Guidelines (2022). Additionally, the road classifications for the existing roadways included in the

City's Urban and Rural Official Plans (2022) are not yet harmonized with the street typologies included in the City of Hamilton Complete Street Guidelines.

Therefore, to determine the target levels of service for each of the study roadways, the equivalent Complete Streets road typology for each study roadway was determined using Table 15 in the Draft Road Classification and Right-of-Way Width Review (R.J. Burnside & Associates Limited, August 2024). These Complete Street road typologies were then compared to the equivalent street typologies outlined in the OTC Multi-Modal LOS Guidelines using Table 6.1 in the City's Transportation Assessment Guidelines (2024).

Table 7 summarizes the Ontario Traffic Council street typologies assumed for each study roadway.

Table 7: Equivalent Ontario Traffic Council Street Typologies

Study Roadway	Roadway Classification (Official Plan)[1]	Equivalent Street Typology (Hamilton Complete Streets)[2]	Equivalent Street Typology (OTC)[3]
Upper Red Hill Valley Parkway	Urban Major Arterial	Transitioning Avenue	Urban Boulevard
Rymal Road E	Urban Major Arterial	Transitioning Avenue	Urban Boulevard
Trinity Church Road	Urban/Rural Collector	Connector/Rural Road	Neighbourhood Boulevard/Rural Connector
Golf Club Road	Rural Collector	Rural Road	Rural Connector
Fletcher Road	Urban/Rural Collector	Connector/Rural Road	Neighbourhood Boulevard/Rural Connector
Kingsborough Drive	Urban Collector	Connector	Neighbourhood Boulevard
Second Road W	Urban Collector	Connector	Neighbourhood Boulevard
Highway 56	Rural Arterial	Rural Road	Rural Connector
Regional Road 20	Rural Arterial	Rural Road	Rural Connector
Upper Centennial Parkway	Urban Major Arterial	Transitioning Avenue	Urban Boulevard
Hendershot Road	Rural Collector	Rural Road	Rural Connector
First Road E	Rural Collector	Rural Road	Rural Connector
Second Road E	Rural Collector	Rural Road	Rural Connector
Highland Road E	Rural Collector	Rural Road	Rural Connector
Mud Street E	Rural Arterial	Rural Road	Rural Connector
Green Mountain Road E	Rural Collector	Rural Road	Rural Connector

Note 1: Per the Urban Hamilton Official Plan (2022) and the Rural Hamilton Official Plan (2022).
Note 2: Per the City of Hamilton Complete Street Guidelines (June 2022).
Note 3: Per the Ontario Traffic Council Multi-Modal LOS Guidelines (February 2022).

The existing LOS for each study roadway was compared to the corresponding target LOS outlined in the multi-modal LOS guidelines for each OTC street typology. For example, the target LOS for Urban Boulevards were used when assessing all intersections along the Upper Red Hill Valley Parkway, Rymal Road E, and Upper Centennial Parkway corridors.

Appendix E includes the OTC's multi-modal LOS definitions. Appendix F includes excerpts from the Draft Road Classification and Right-of-Way Width Review (R.J. Burnside & Associates Limited, August 2024).

Section 1.6.1 and 1.6.2 summarize the multi-modal LOS analysis for the existing car and truck networks respectively while the multi-modal LOS analysis for the pedestrian, cyclist and transit networks can be found in Sections 3.1, 4.1, and 5.1 respectively.

1.6.1 Existing Car Network

The car levels of service (LOS) were reviewed for the existing conditions based on the Ontario Traffic Council (OTC) Multi-Modal LOS Guidelines (February 2022).

Table 8, Table 9 and Table 10 summarize the existing car LOS for the signalized study intersections, unsignalized study intersections, and road segments, respectively.

Table 8: 2025 Existing Car LOS – Signalized Intersections

Study Intersection	Measure		Existing LOS	Target LOS
	% of Turn Movements with Dedicated Turn Lanes	Intersection Delay		
Upper Red Hill Valley Parkway & Rymal Road E	A	C	B	E
Trinity Church Road & Rymal Road E	B	C	B	E
Fletcher Road & Rymal Road E	B	B	B	E
Second Road W/Kingsborough Drive & Rymal Road E	C	B	B	E
Highway 56 & Golf Club Road	C	C	C	D
Highway 56/Upper Centennial Parkway & Rymal Road E	A	C	B	E
Hendershot Road/Second Road E & Regional Road 20	C	B	B	D
Upper Centennial Parkway & Highland Road E	B	B	B	E
Upper Centennial Parkway & Mud Street E	B	D	C	E
First Road E & Mud Street E	F	B	D	D
Upper Centennial Parkway & Green Mountain Road E	B	C	B	E

Table 9: 2025 Existing Car LOS – Unsignalized Intersections

Study Intersection	Measure	Existing LOS	Target LOS
	Intersection Delay		
Trinity Church Road & Golf Club Road	A	D	D
Fletcher Road & Golf Club Road	B	D	D
Hendershot Road & Golf Club Road	B	D	D
First Road E & Regional Road 20	A	D	D
First Road E & Highland Road E	B	D	D
Second Road E & Highland Road E	B	D	D
Second Road E & Mud Street E	C	E	D
First Road E & Green Mountain Road E	B	D	D
Second Road E & Green Mountain Road E	B	D	D

Table 10: 2025 Existing Car LOS – Segment

Segment		Measure		Existing LOS	Target LOS
Roadway	Between	Mid-Block V/C Ratio	Curb Lane Conflicts		
Rymal Road E	Upper Red Hill Valley Pkwy to Trinity Church Rd	F	E	E	E
	Trinity Church Rd to 140 m east of Fletcher Rd	D	F	E	E
	140 m east of Fletcher Rd to Kingsborough Dr	C	D	C	E
	Kingsborough Dr to Upper Centennial Pkwy	C	E	D	E
Trinity Church Road	Rymal Rd E to 190 m south of Pinehill Dr	D	F	E	E
	190 m south of Pinehill Dr to Golf Club Rd	A	F	C	D
Golf Club Road	Trinity Church Rd to Highway 56	A	E	C	D
Fletcher Road	Rymal Rd E to Blue Mountain Rd	A	F	C	E
Fletcher Road	Blue Mountain Rd to Golf Club Rd	A	D	B	D
Highway 56	Golf Club Rd to Dalgleish Trl	D	E	D	D
	Dalgleish Trl to Rymal Rd E	A	B	A	D
Upper Centennial Parkway	Rymal Rd E to Highland Rd E	D	C	C	E
	Highland Rd E to Mud St E	D	D	D	E
	Mud St E to 200 m north of Mud St E	E	C	D	E
	200 m north of Mud St E to Green Mountain Rd E	E	D	D	E
Regional Road 20	Upper Centennial Pkwy to Second Rd E	A	D	B	D
Hendershot Road	Golf Club Rd to Regional Road 20	A	D	B	D
First Road E	Regional Road 20 to Green Mountain Rd E	A	B	A	D
Second Road E	Regional Road 20 to Green Mountain Rd E	A	E	C	D
Highland Road E	Upper Centennial Pkwy to Second Rd E	A	C	B	D
Mud Street E	Upper Centennial Pkwy to Second Rd E	A	B	A	D
Green Mountain Road E	Upper Centennial Pkwy to Second Rd E	A	F	C	D
Kingsborough Drive	Rymal Rd E to Bellagio Ave	A	F	C	E

Overall, the study road network generally meets the target car LOS for signalized intersections, unsignalized intersections, and segments. The intersection of Second Road E and Mud Street E has a car LOS below target; however, this is due to the current rural nature of the intersection. It is expected that the intersection would be urbanized as part of the future development of the

Subject Lands including the addition of dedicated turning lanes which would increase the car LOS.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

1.6.2 Existing Truck Network

Per the latest City of Hamilton Truck Route Master Plan ratified on April 13, 2022, Upper Red Hill Valley Parkway, Rymal Road E, Highway 56, Upper Centennial Parkway, Regional Road 20, and Mud Street E are designated as truck routes within the study area.

The truck levels of service (LOS) were reviewed for the existing conditions based on the Ontario Traffic Council (OTC) Multi-Modal LOS Guidelines (February 2022). Levels of service were only assigned on the streets designated as a truck route given the other study roadways are not expected to carry considerable truck traffic.

Table 11, Table 12 and Table 13 summarize the existing truck LOS for the signalized study intersections, unsignalized study intersections, and roadway segment, respectively.

Table 11: 2025 Existing Truck LOS – Signalized Intersections

Study Intersection	Measure		Existing LOS	Target LOS
	Average Effective Turn Radius	Car LOS		
Upper Red Hill Valley Parkway & Rymal Road E	C	B	B	N/A[2]
Trinity Church Road & Rymal Road E	C	B	B	N/A[2]
Fletcher Road & Rymal Road E	C	B	B	N/A[2]
Second Road W/Kingsborough Drive & Rymal Road E	A	B	A	N/A[2]
Highway 56 & Golf Club Road	D	C	C	N/A[2]
Highway 56/Upper Centennial Parkway & Rymal Road E	A	B	A	N/A[2]
Hendershot Road/Second Road E & Regional Road 20	A	B	A	N/A[2]
Upper Centennial Parkway & Highland Road E	C	B	B	N/A[2]
Upper Centennial Parkway & Mud Street E	C	C	B	N/A[2]
First Road E & Mud Street E	F	D	E	D
Upper Centennial Parkway & Green Mountain Road E	C	B	B	N/A[2]

Note 1: Intersection does not currently serve any designated truck routes.
Note 2: OTC guidelines do not provide a target LOS for trucks on urban boulevards.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

Table 12: 2025 Existing Truck LOS – Unsignalized Intersections

Study Intersection	Measure		Existing LOS	Target LOS
	Average Effective Turning Radius	Car LOS		
Trinity Church Road & Golf Club Road	N/A[1]			
Fletcher Road & Golf Club Road	N/A[1]			
Hendershot Road & Golf Club Road	N/A[1]			
First Road E & Regional Road 20	C	D	C	D
First Road E & Highland Road E	N/A[1]			
Second Road E & Highland Road E	N/A[1]			
Second Road E & Mud Street E	F	E	E	D
First Road E & Green Mountain Road E	N/A[1]			
Second Road E & Green Mountain Road E	N/A[1]			

Note 1: Intersection does not currently serve any designated truck routes.
Note 2: OTC guidelines do not provide a target LOS for trucks on urban boulevards.

Table 13: 2025 Existing Truck LOS – Segment

Segment		Measure		Existing LOS	Target LOS
Roadway	Between	Width of Curb Lane	Car LOS		
Rymal Road E	Upper Red Hill Valley Pkwy to Trinity Church Rd	D	E	D	N/A[2]
	Trinity Church Rd to 140 m east of Fletcher Rd	D	E	D	N/A[2]
	140 m east of Fletcher Rd to Kingsborough Dr	D	C	C	N/A[2]
	Kingsborough Dr to Upper Centennial Pkwy	D	D	D	N/A[2]
Trinity Church Road	Rymal Rd E to 190 m south of Pinehill Dr	N/A[1]			
	190 m south of Pinehill Dr to Golf Club Rd	N/A[1]			
Golf Club Road	Trinity Church Rd to Highway 56	N/A[1]			
Fletcher Road	Rymal Rd E to Blue Mountain Rd	N/A[1]			
	Blue Mountain Rd to Golf Club Rd	N/A[1]			
Highway 56	Golf Club Rd to Dalgleish Trl	F	D	E	D
	Dalgleish Trl to Rymal Rd E	F	A	C	D
Upper Centennial Parkway	Rymal Rd E to Highland Rd E	C	C	C	N/A[2]
	Highland Rd E to Mud St E	F	D	E	N/A[2]
	Mud St E to 200 m north of Mud St E	C	D	C	N/A[2]
	200 m north of Mud St E to Green Mountain Rd E	C	D	C	N/A[2]
Regional Road 20	Upper Centennial Pkwy to Second Rd E	D	B	C	D
Hendershot Road	Golf Club Rd to Regional Road 20	N/A[1]			
First Road E	Regional Road 20 to Green Mountain Rd E	N/A[1]			
Second Road E	Regional Road 20 to Green Mountain Rd E	N/A[1]			
Highland Road E	Upper Centennial Pkwy to Second Rd E	N/A[1]			
Mud Street E	Upper Centennial Pkwy to Second Rd E	F	A	C	D
Green Mountain Road E	Upper Centennial Pkwy to Second Rd E	N/A[1]			
Kingsborough Drive	Rymal Rd E to Bellagio Ave	N/A[1]			

Note 1: Roadway segment is not currently designated as a truck route.
Note 2: OTC guidelines do not provide a target LOS for trucks on urban boulevards.

Generally, the study road network meets the target truck LOS for signalized intersections, unsignalized intersections, and segments. A few rural intersections and road segments have LOS

that do not meet the OTC's targets, however the future urbanization of these roadways as part of the development of the Subject Lands is expected to improve the truck LOS.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

2.0 Secondary Plan Roadway Considerations

The Secondary Plan considers a number of geometric information for its roadways and intersections in order to provide effective transportation options for residents and visitors. This information helps develop the Secondary Plan by providing information regarding the area required to be allocated for the roadways and intersections. This information includes the right-of-way requirements for the different road types and the daylighting triangle requirements at the different intersections.

2.1 Right of Way Considerations

The conceptual rights-of-way (ROW)for the arterial, major collector, minor collector, and local roads within the project area (abutting the Subject Lands) as well as within the Subject Lands are outlined herein. These ROWs have been developed to support the anticipated transportation function and servicing requirements of the Secondary Plan. The proposed ROWs will also be verified as part of the final transportation analysis. Moreover, final confirmation of the proposed ROWs within the Secondary Plan lands will occur through future Tertiary Plan and Draft Plan applications in consultation with the City.

Figure 7 illustrates the proposed road network hierarchy for the internal Subject Lands.

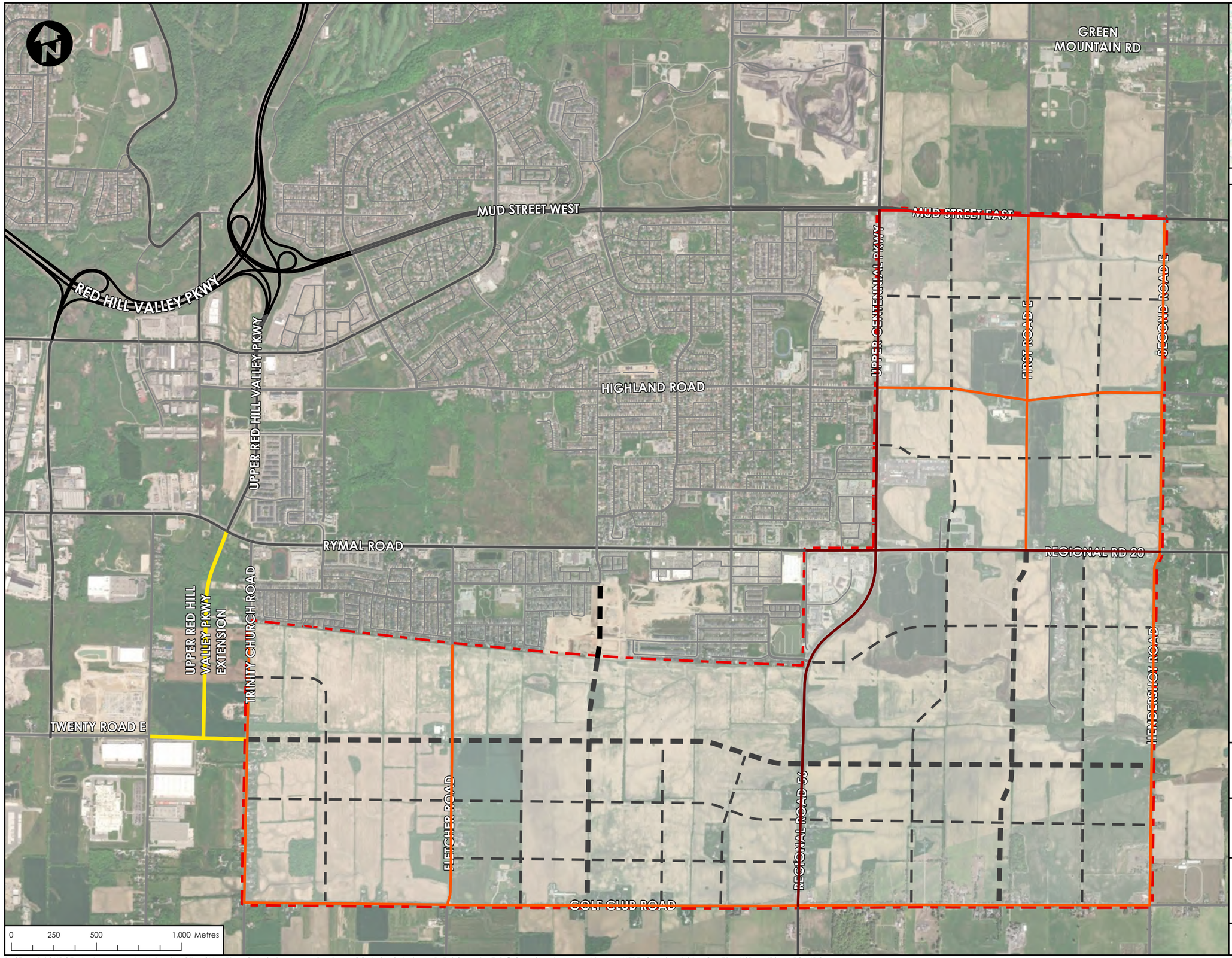
2.1.1 Boundary/External Road Network Considerations

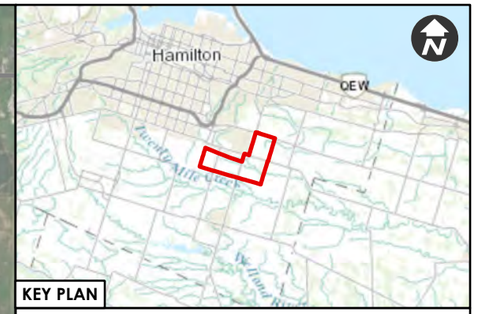
The following sections discuss the conceptual cross-sections associated with external roadways intended to service the Secondary Plan and wider community. We note that these are intended to illustrate that appropriate programming including dedicated active transportation facilities can be accommodated in the ROWs envisioned within the Official Plan for roadways outside of the Secondary Plan limits. Future Environmental Assessments will also confirm preferred cross-sections for roads that have been identified for future widening.

<u>Mud Street E</u>

The existing ROW currently ranges from approximately 20 to 45 m between Upper Centennial Parkway and 305 m east thereof, and between approximately 20 and 27 m further east.

As identified in the UHOP Schedule C-2 – Future Right-of-Way Dedications (February 2021), Mud Street E is planned to accommodate an ultimate ROW width of 60.96 m from Winterberry Drive to 305 m east of Upper Centennial Parkway. Additional ROW dedications are anticipated by the City of Hamilton to achieve the planned ultimate condition.





LEGEND

- ELFRIDA BOUNDARY

EXISTING EXTERNAL ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

EXISTING ROAD RIGHT-OF-WAY

- COLLECTOR
- MAJOR ARTERIAL (MAX. 45.72M)
- MAJOR ARTERIAL (MAX. 36.576M)

FUTURE EXTERNAL ROAD

- FUTURE ROAD

ELFRIDA PROPOSED COLLECTOR

- MAJOR COLLECTOR - 26.5M ROW
- MINOR COLLECTOR - 22.0M ROW

Project:

ELFRIDA SECONDARY PLAN

Title:

PROPOSED ROAD NETWORK HIERARCHY

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-24	D.M.	I.L.	**Figure 7**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

Rymal Road E (Regional Road 20)

The existing ROW on Rymal Road E, between Swayze Drive and Upper Centennial Parkway, ranges from approximately 33 m to 50 m, the remaining existing ROW along Regional Road 20 is 36 m.

As identified in the UHOP Schedule C-2 – Future Right-of-Way Dedications (February 2021), Rymal Road E is planned to have a ROW of 36.5 m between Glancaster Road and Upper Centennial Parkway and between Regional Road 56 and Westbrook Road. No additional ROW dedications are required along the south side of Rymal Road E within the Secondary Plan Area.

Upper Centennial Parkway (Highway 56)

The existing ROW for Upper Centennial Parkway (Highway 56) currently ranges from approximately 36 m to 47 m.

As identified in the UHOP Schedule C-2 – Future Right-of-Way Dedications (February 2021), Upper Centennial Parkway is planned to have a ROW of 36.5 m from King Street E to Rymal Road, and no additional ROW dedications are required at this time. Despite this, additional ROW may be required in the future to accommodate long-term transportation needs and ensure sufficient capacity within this corridor.

Second Road E/Hendershot Road

The existing ROW is approximately 20 m, and Second Road E is currently classified as a collector road in the rural area. As identified in the Rural Hamilton Official Plan (RHOP) Chapter C – City Wide Systems and Designations, Section 4.5.2 (January 2025), collector roads are planned to have a ROW of 36.0 m, requiring approximately 8 m to be dedicated.

To support the transportation function and anticipated traffic demands of the Secondary Plan Area, the City has stated their intention to reclassify Second Road E as a Minor Arterial roadway if incorporated into the Urban Boundary, with an ultimate ROW of 36.5 m. Approximately 8 m would be required for dedication to achieve this ultimate condition.

Similarly, south of Regional Road 20, Hendershot Road will support a consistent ROW along the limits of the Secondary Plan Area. The existing ROW is approximately 20 m. To support the transportation function and anticipated traffic demands of the Secondary Plan Area, the City has stated their intention to reclassify Hendershot Road as a Minor Arterial roadway if incorporated into the Urban Boundary, with an ultimate ROW of 36.5 m. Approximately 8 m would be required for dedication to achieve this ultimate condition.

2.1.2 Major Arterial Roads

The Urban Hamilton Official Plan (UHOP) Schedule C - Functional Road Classification (December 2023), outlines Mud Street E, Rymal Road E (Regional Road 20) and Upper Centennial Parkway as Major Arterial Roads. To ensure adequate urbanization and to accommodate anticipated traffic volumes, active transportation facilities, utilities, and streetscape elements, the proposed ROW for most of the Arterial Roads within the study area is 36.5 m. Mud Street E is proposed to have a ROW of 45.7 m. This proposed ROW is consistent with the City's future right-of-way designations and planned cross-sectional standards.

Mud Street E

Mud Street E within the Secondary Plan Area is anticipated to be classified as a Major Arterial roadway with a planned ROW of 45.7 m. The specific limits and extent of required ROW dedications will be confirmed in collaboration with the City through future planning and design stages.

Rymal Road E (Regional Road 20)

Regional Road 20, within the Secondary Plan Area, is anticipated to be classified as a Major Arterial roadway with a ROW of 36.5 m. The specific limits and any future adjustments to ROWs will be confirmed in collaboration with the City through detailed planning and design stages.

Upper Centennial Parkway (Highway 56)

Upper Centennial Parkway (Highway 56), within the Secondary Plan Area, is anticipated to be classified as a Major Arterial roadway with a ROW of 36.5 m. The specific limits and any future adjustments to ROWs will be confirmed in collaboration with the City through detailed planning and design stages.

Summary

Figure 8, Figure 9 and Figure 10 outline the conceptual 45.7 m and 36.5 m cross-sections for major arterials, which include sidewalks, bike lanes and BRT lanes per the Hamilton Complete Streets Design Guidelines (2022).

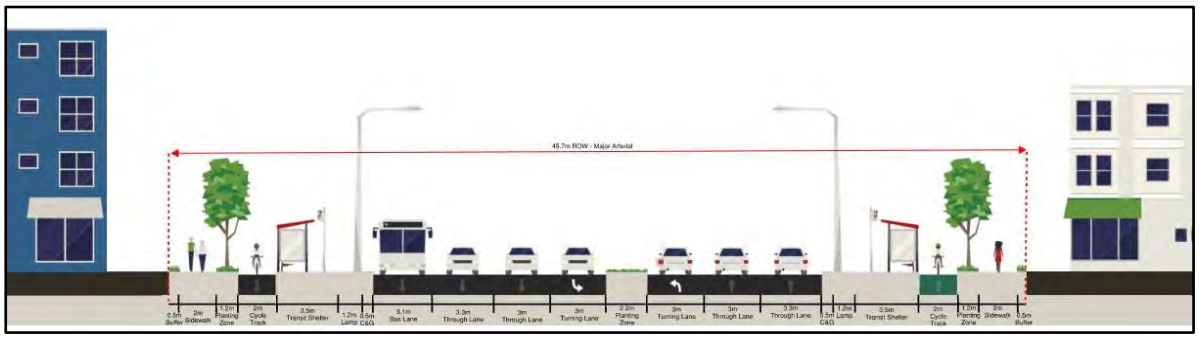


Figure 8: Conceptual 45.7 m Major Arterial Cross-Section

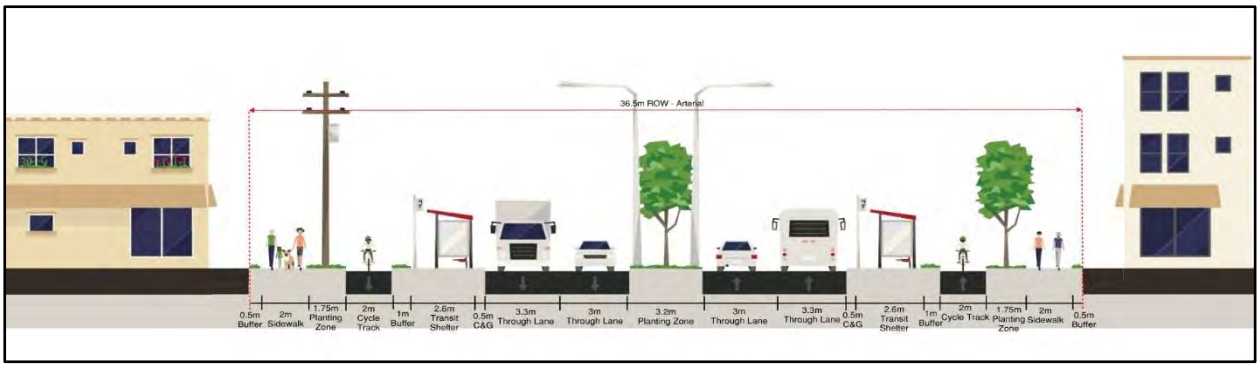


Figure 9: Conceptual 36.5 m Major Arterial Cross-Section (Alternative 1)

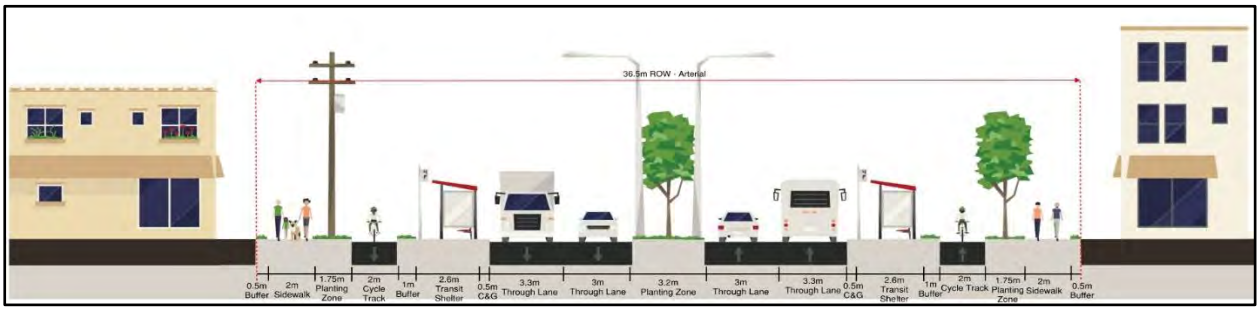


Figure 10: Conceptual 36.5 m Major Arterial Cross-Section (Alternative 2)

2.1.3 Major Collector Roads

To support the planned urban expansion associated with the Secondary Plan area, and to ensure an appropriate and connected road hierarchy, Fletcher Road and the First Road E extension in addition to the following roads will be classified as Major Collector Roads. This classification will facilitate the distribution of traffic between the arterial network and local streets, while supporting anticipated growth, accessibility, and overall network efficiency within the expansion area. Within the study area, Major Collector Roads will be planned with a 26.5 m ROW to accommodate the required travel lanes, active transportation facilities, utilities, and streetscape elements consistent with municipal standards.

Trinity Church Road

The existing ROW on Trinity Church Road ranges from approximately 20 to 28 m. In accordance with the UHOP Schedule C-2 – Future Right-of-Way Dedications (February 2021), Trinity Church Road is identified to have a planned ROW of 26.2 m. Based on the City's future ROW designations, additional right-of-way dedications are not required along the east side of Trinity Church Road adjacent to the proposed Secondary Plan Area.

Golf Club Road

The existing ROW on Golf Club Road between Trinity Church Road and Hendershot Road varies from approximately 18 to 23 m. In accordance with the RHOP Schedule C-1 – Future Right-of-Way Dedications (October 2018), Golf Club Road is identified to have a planned ROW of 26.2 m. To achieve this planned width and align with the City's future ROW designations, additional right-of-way dedications of approximately 1.5 to 4.0 m will be required.

Second Road E/Hendershot Road

To support the transportation function and anticipated traffic demands of the Secondary Plan Area, Second Road E is expected to be reclassified as a Major Collector roadway if incorporated into the Urban Boundary, with an ultimate ROW of 26.2 m.

Similarly, south of Regional Road 20, Hendershot Road will support a consistent ROW along the limits of the Secondary Plan Area. The existing ROW is approximately 20 m. To support the transportation function and anticipated traffic demands of the Secondary Plan Area, Hendershot Road is expected to be reclassified as a Major Collector roadway if incorporated into the Urban Boundary, with an ultimate ROW of 26.2 m.

Subject Lands Internal Major Collector Roads

Cross-sections for major collector roadways, which depicts varying degrees of cycling infrastructure are proposed. It is noted that the specific cross-section will be dependent on abutting land uses, implementation of on-street parking and continuity to connecting active transportation facilities. The internal Major Collector roads for the Subject Lands are envisioned as the roads shown in the conceptual plan as First Road East, the First Road East extension, Fletcher Road, Highland Road E and Street 3.

Figure 11 outlines the proposed 26.5 m cross section for major collectors, inclusive of a cycle track and sidewalks per the Hamilton Complete Streets Design Guidelines (2022).

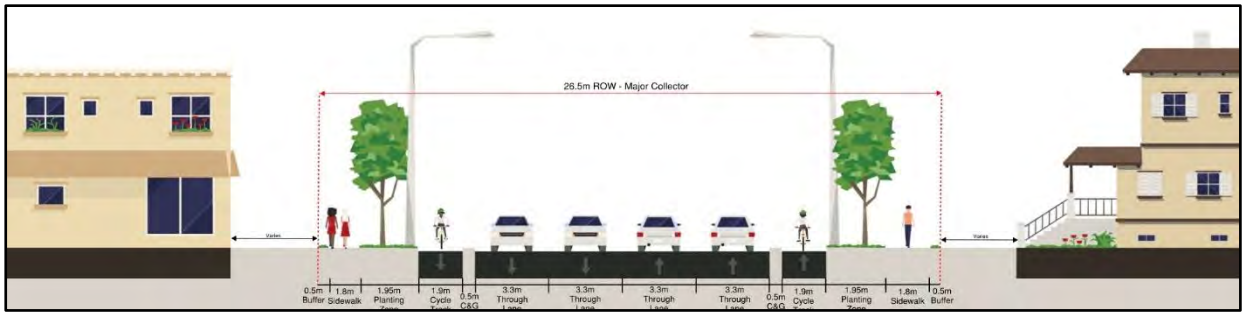


Figure 11: Proposed Major Collector Cross-Section (26.5 m)

2.1.4 Minor Collector Roads

Minor Collector Roads will facilitate the movement of traffic between the Major Collector and local street networks, while supporting anticipated growth, accessibility, and overall connectivity within the study area. Within the expansion area, Minor Collector Roads will be planned with a 22 m ROW to accommodate travel lanes, active transportation facilities, utilities, and streetscape elements in accordance with the City's future ROW designations and municipal standards.

Figure 12 outlines the proposed 22 m cross-sections for minor collectors, which include multi-use paths, and parking lanes, per the Hamilton Complete Streets Design Guidelines (2022).

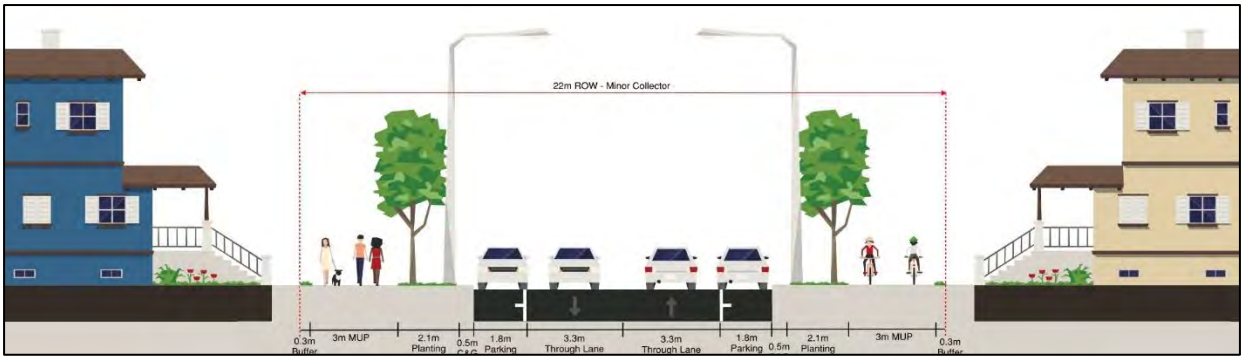


Figure 12: Proposed Minor Collector Cross-Section (22 m)

2.1.5 Local Roads

Local Roads will primarily serve to provide direct access to residential and other low-traffic areas while connecting to Minor and Major Collector Roads. Within the expansion area, Local Roads will be planned with an 18.5 m ROW to accommodate travel lanes, active transportation facilities, utilities, and streetscape elements consistent with the City's future ROW designations and municipal standards.

Figure 13 outlines the proposed 18.5 m cross-section for local roads which include active transportation facilities and a parking lane, per the Hamilton Complete Streets Design Guidelines (2022).

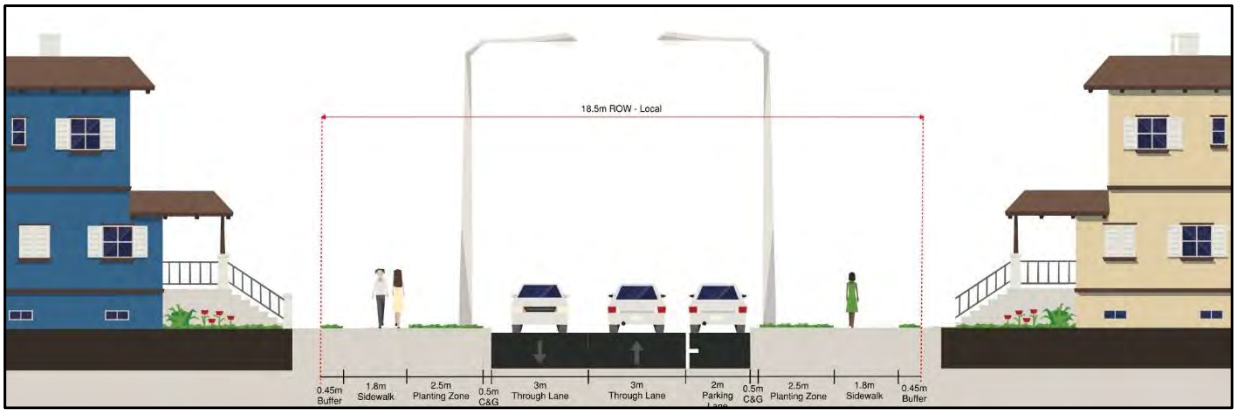


Figure 13: Proposed Local Cross-Section (18.5 m)

2.2 Daylight Triangle Considerations

Daylight triangles are a fundamental requirement in intersection and access design, ensuring that sufficient sight distance is provided at intersections to support safe and efficient movement for all road users. In the City of Hamilton, these requirements are established through the Urban Hamilton Official Plan (UHOP) (November 2022) which define the visibility standards applicable to various roadway classifications and cross sections. As this Secondary Plan will inform future development and infrastructure within the Plan area, it is necessary to clearly identify the daylight triangle requirements associated with each proposed roadway type. The following sections set out the required sight triangle dimensions and related provisions for each cross section to ensure conformity with the City's policy framework.

Daylight triangle requirements are outlined in the City's UHOP Chapter C Section 4.5.7. Table 14 summarizes the City's daylight triangle requirements and the proposed daylight triangles for the Secondary Plan area.

Table 14: Daylighting Requirements

Road Network Connection	City of Hamiton Daylight Triangle Requirements	Proposed Daylight Triangle Requirements
Arterial Road to Arterial Road	12.19 m x 12.19 m	15 m x 15 m
Arterial Road to Major Collector Road	12.19 m x 12.19 m	12.19 m x 12.19 m
Arterial Road to Minor Collector Road	12.19 m x 12.19 m	12.19 m x 12.19 m
Arterial Road to Local Road	12.19 m x 12.19 m	12.19 m x 12.19 m
Major Collector Road to Major Collector Road	9.14 m x 9.14 m	12.19 m x 12.19 m
Major Collector Road to Minor Collector Road	9.14 m x 9.14 m	9.14 m x 9.14 m
Major Collector Road to Local Road	9.14 m x 9.14 m	9.14 m x 9.14 m
Minor Collector to Minor Collector	9.14 m x 9.14 m	7.5 m x 7.5 m
Minor Collector Road to Local Road	9.14 m x 9.14 m	5 m x 5 m
Local Road to Local Road	4.57 m x 4.57 m	4.57 m x 4.57 m

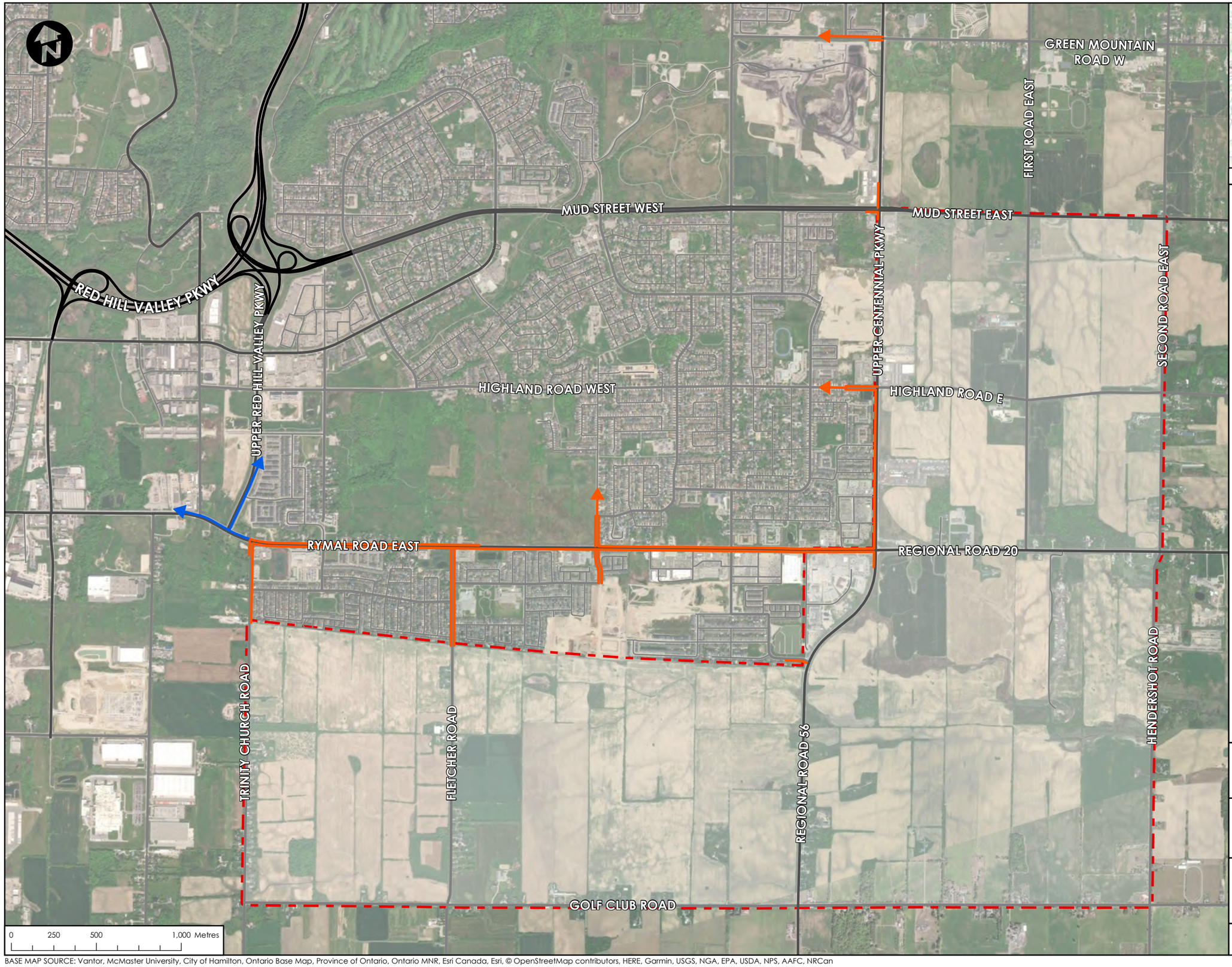
3.0 Pedestrian Route and Sidewalk Analysis

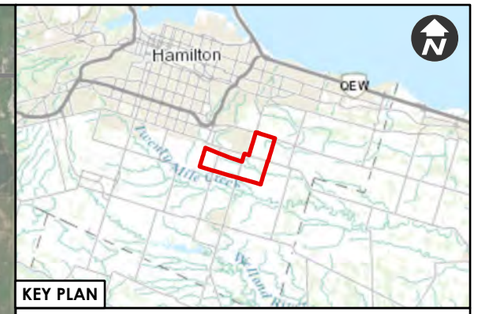
The pedestrian network in the Elfrida Secondary Plan is essential to promote active transportation and for providing people with alternative means of moving throughout the Subject Lands compared to the automobile while connecting to the existing and planned pedestrian network. Providing these opportunities in addition to complete communities with complimentary land uses will encourage the use of more sustainable modes for everyday travel and assist in reducing peak hour congestion on the road network.

3.1 Existing Pedestrian Network

As outlined in Table 1 and Table 2, pedestrian facilities such as sidewalks and multi-use paths are typically provided on study roadways within the existing urban boundary of the City of Hamilton. A few segments of Rymal Road E and Upper Centennial Parkway do not provide pedestrian facilities on at least one side of the road. Given the rural context of the study roadways outside of the current urban boundary, minimal pedestrian infrastructure is currently provided within the Subject Lands.

Figure 14 illustrates the existing pedestrian transportation network.





LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

EXISTING PEDESTRIAN NETWORK

- MULTI-USE PATH
- SIDEWALK

Project:

ELFRIDA SECONDARY PLAN

Title:

2025 EXISTING PEDESTRIAN NETWORK

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 14**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

The pedestrian level of service (LOS) was reviewed for existing conditions based on the Ontario Traffic Council (OTC) Multi-Modal LOS Guidelines (February 2022).

Table 15, Table 16, and Table 17 summarize the existing pedestrian LOS for the signalized study intersections, unsignalized study intersections, and roadway segments, respectively.

Table 15: 2025 Existing Pedestrian LOS – Signalized Intersections

Study Intersection	Measure				Existing LOS	Target LOS
	Enhanced Pedestrian Measures	Average Effective Turning Radius	Signal Cycle Length	Number of Uncontrolled Conflicts		
Upper Centennial Parkway & Rymal Road E	F	E	E	C	E	C
Trinity Church Road & Rymal Road E	F	E	E	C	E	C
Fletcher Road & Rymal Road E	F	E	C	C	D	C
Second Road W/Kingsborough Drive & Rymal Road E	F	F	E	E	E	C
Highway 56 & Golf Club Road	-	-	-	-	F[1]	E
Highway 56/Upper Centennial Parkway & Rymal Road E	F	F	E	E	E	C
Hendershot Road/Second Road E & Regional Road 20	-	-	-	-	F[1]	E
Upper Centennial Parkway & Highland Road E	F	E	F	E	E	C
Upper Centennial Parkway & Mud Street E	F	E	F	D	E	C
First Road E & Mud Street E	-	-	-	-	F[1]	E
Upper Centennial Parkway & Green Mountain Road E	F	E	E	E	E	C

Note 1: Intersection did not pass the Active Transportation Design Check for pedestrian infrastructure as per Section 6.1 in the OTC Multi-Modal LOS Guidelines. This indicates that service is not adequately provided for the pedestrian mode at the corresponding intersection.

Table 16: 2025 Existing Pedestrian LOS – Unsignalized Intersections

Study Intersection	Measure			Existing LOS	Target LOS
	Average Crossing Distance	Marked Crossings	Average Effective Turning Radius		
Trinity Church Road & Golf Club Road	-	-	-	F[1]	E
Fletcher Road & Golf Club Road	-	-	-	F[1]	E
Hendershot Road & Golf Club Road	-	-	-	F[1]	E
First Road E & Regional Road 20	-	-	-	F[1]	E
First Road E & Highland Road E	-	-	-	F[1]	E
Second Road E & Highland Road E	-	-	-	F[1]	E
Second Road E & Mud Street E	-	-	-	F[1]	E
First Road E & Green Mountain Road E	-	-	-	F[1]	E
Second Road E & Green Mountain Road E	-	-	-	F[1]	E

Note 1: Intersection did not pass the Active Transportation Design Check for pedestrian infrastructure as per Section 6.1 in the OTC Multi-Modal LOS Guidelines. This indicates that service is not adequately provided for the pedestrian mode at the corresponding intersection.

Table 17: 2025 Existing Pedestrian LOS – Segment

Segment		Measure			Existing LOS	Target LOS
Roadway	Between	Facility Width	Buffer Width	Max Controlled Crossing Distance		
Rymal Road E	Upper Red Hill Valley Pkwy to Trinity Church Rd	-	-	-	F[1]	C
	Trinity Church Rd to 140 m east of Fletcher Rd	C	D	F	D	C
	140 m east of Fletcher Rd to Kingsborough Dr	-	-	-	F[1]	C
	Kingsborough Dr to Upper Centennial Pkwy	D	A	F	D	C
Trinity Church Road	Rymal Rd E to 190 m south of Pinehill Dr	-	-	-	F[1]	D
	190 m south of Pinehill Dr to Golf Club Rd	-	-	-	F[1]	E
Golf Club Road	Trinity Church Rd to Highway 56	-	-	-	F[1]	E
Fletcher Road	Rymal Rd E to Blue Mountain Rd	E	C	E	D	D
	Blue Mountain Rd to Golf Club Rd	-	-	-	F[1]	E
Kingsborough Drive	Rymal Rd E to Bellagio Ave	E	C	A	C	D
Highway 56	Golf Club Rd to Dalgleish Trl	-	-	-	F[1]	E
	Dalgleish Trl to Rymal Rd E	-	-	-	F[1]	E
Upper Centennial Parkway	Rymal Rd E to Highland Rd E	-	-	-	F[1]	C
	Highland Rd E to Mud St E	-	-	-	F[1]	C
	Mud St E to 200 m north of Mud St E	-	-	-	F[1]	C
	200 m north of Mud St E to Green Mountain Rd E	-	-	-	F[1]	C
Regional Road 20	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E
Hendershot Road	Golf Club Rd to Regional Road 20	-	-	-	F[1]	E
First Road E	Regional Road 20 to Green Mountain Rd E	-	-	-	F[1]	E
Second Road E	Regional Road 20 to Green Mountain Rd E	-	-	-	F[1]	E
Highland Road E	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E
Mud Street E	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E
Green Mountain Road E	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E

Note 1: Road segment did not pass the Active Transportation Design Check for pedestrian infrastructure as per Section 6.1 in the OTC Multi-Modal LOS Guidelines. This indicates that service is not adequately provided for the pedestrian mode at the corresponding segment.

As outlined in Table 15 and Table 16, none of the intersections within the study network currently meet the OTC's target LOS. Notably, all the study intersections outside of the City's existing urban boundary do not provide any pedestrian facilities. As a result, they do not pass the Active Transportation Design Check included within the OTC Multi-Modal LOS Guidelines, which indicates that these intersections are not considered to provide service to pedestrians.

All existing study intersections along the Rymal Road E or Upper Centennial Parkway corridors currently operate with a pedestrian LOS "D" or worse compared to a target LOS "C". All of these intersections lack enhanced pedestrian measures and generally have long signal cycle lengths.

Per Table 1 and Table 2, many of the road segments within the study road network currently do not provide pedestrian facilities on both sides of the roadway. As a result, they do not provide adequate service to pedestrians as per the OTC's guidelines. Additionally, two road segments along Rymal Road E currently operate with a pedestrian LOS "D" compared to a target LOS "C".

Overall, these results indicate that there is an opportunity to upgrade existing pedestrian facilities and build new pedestrian infrastructure as the study area develops.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

3.2 Future Background Pedestrian Network

As further discussed in Section 6.2, the City of Hamilton is planning on extending Upper Red Hill Valley Parkway and Twenty Road E. The two extensions are proposed to intersect at a new roundabout between Glover Road and Trinity Church Road. Based on the materials provided as part of the Public Information Centre #2 for the Class EA process for the project, the Red Hill Valley Parkway extension is proposed to include a 4.0 m multi-use path on the east side of the roadway, and a 2.0 m sidewalk on the west side of the roadway. The Twenty Road E extension is proposed to include a 3.0 m multi-use path on the north side of the roadway and a 2.0 m sidewalk on the south side of the roadway. A 4.0 m multi-use path is proposed to connect the intersection of the Upper Red Hill Valley Parkway extension and the Twenty Road E extension to Trinity Church Road. This connection serves as important east-west active transportation link between the Subject Lands and the employment lands to the west of the study area.

Additionally, as identified in the City of Hamilton's Cycling Master Plan Review and Update (2018), a multi-use trail is proposed on Highway 56 between Dalgliesh Trail and Cemetery Road. A multi-use trail is also proposed within the hydro corridor south of Rymal Road E between Highway 52 and Highway 56. These improvements are expected to improve the pedestrian connectivity in the study area.

3.3 Development Lands Pedestrian Network and Pedestrian Crossing Considerations

Pedestrian network gaps should be minimized where feasible to ensure continuous and connected pedestrian routes across the roadway network. Signalized crossings, all-way stop control, or yield-controlled approaches should be considered at key intersections and road network connections in the study area to facilitate safe and controlled pedestrian movements. Sidewalks or multi-use paths are proposed along all roadways within the network, each designed with a minimum sidewalk width of 1.8 m or a multi-use path width of 3.0 m, in accordance with the City of Hamilton Complete Streets Guidelines (June 2022).

Additionally, the hydro corridor trail within the Elfrida Secondary Plan presents an opportunity to enhance pedestrian connectivity, as it can link to the Chippewa Trail to the west and extend to the proposed Natural Heritage System areas within the Subject Lands. The incorporation of a future pedestrian trail within this corridor is recommended, as it would support continuous pedestrian connections while promoting accessibility to key open space and recreational areas.

In addition, mid-block pedestrian crossings (PXOs) should be considered in areas with higher pedestrian activity, including locations near schools, parks, trail connections, community facilities, and commercial or mixed-use areas. Pedestrian crossing warrant analyses should be undertaken as part of future Draft Plan submissions to confirm the need, type, and placement of appropriate crossing treatments.

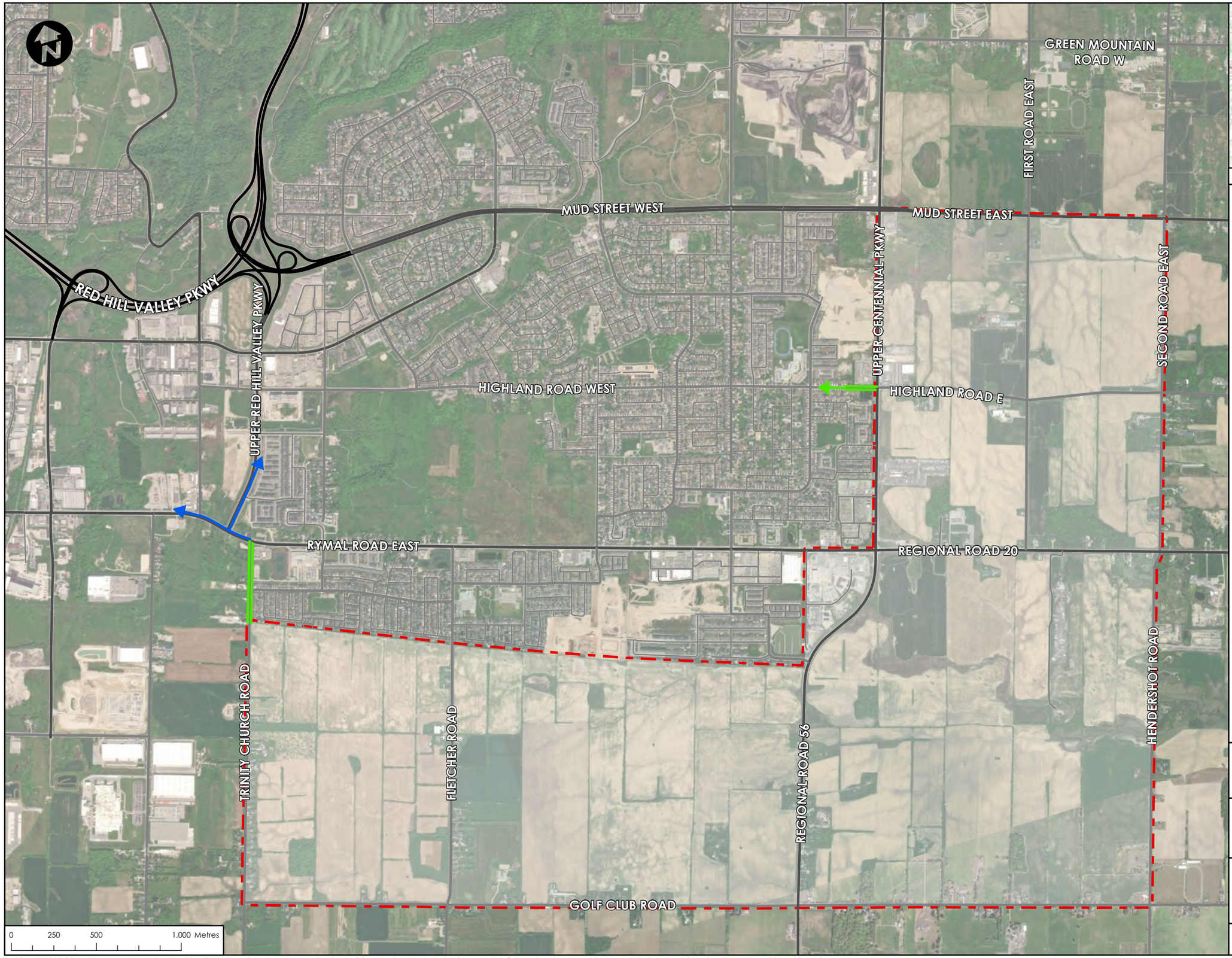
Within the Secondary Plan Area, a grid network of collector-collector and collector-local road intersections are envisioned to provide direct connectivity to key pedestrian generating areas such as schools, parks, commercial nodes and transit stops. While a future Tertiary Plan will detail the multi-modal level of service (LOS) associated with the internal networks in greater detail, based on the community plan, the Segment LOS for pedestrians will aim to achieve the recommended LOS as outlined in the Ontario Traffic Council Multi-Modal LOS Guideline (February 2022).

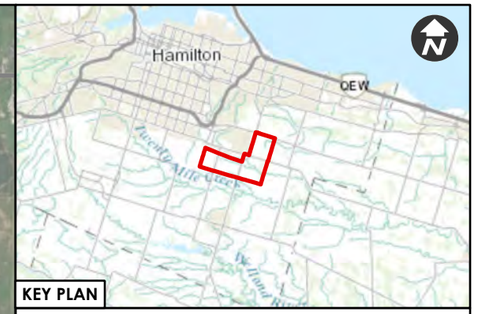
4.0 Cycling Route Analysis

The cycling network in the Elfrida Secondary Plan is essential to promote active transportation and for providing people with alternative means of moving throughout the Subject Lands compared to the automobile while connecting to the existing and planned cycling network. Providing these opportunities in addition to complete communities with complimentary land uses will encourage the use of more sustainable modes for everyday travel and assist in reducing peak hour congestion on the road network.

4.1 Existing Cycling Network

As outlined in Table 1 and Table 2, there are few existing cycling facilities in the study area. Multi-use paths are provided on the east side of Upper Red Hill Valley Parkway and on the north side of Rymal Road E between Upper Red Hill Valley Parkway and Trinity Church Road. Additionally, bike lanes are provided on both sides of Highland Road west of Upper Centennial Parkway as well as Trinity Church Road between Rymal Road E and 190 m south of Pinehill Drive.
Figure 15 illustrates the existing cycling transportation network.





LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

EXISTING CYCLING NETWORK

- MULTI-USE PATH
- BIKE LANE

Project:

ELFRIDA SECONDARY PLAN

Title:

2025 EXISTING CYCLING NETWORK

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 15**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

The cycling level of service (LOS) was reviewed for existing conditions based on the Ontario Traffic Council (OTC) Multi-Modal LOS Guidelines (February 2022).

Table 18, Table 19 and Table 20 summarize the existing cycling LOS for the signalized study intersections, unsignalized study intersections, and roadway segments, respectively.

Table 18: 2025 Existing Cycling LOS – Signalized Intersections

Study Intersection	Measure				Existing LOS	Target LOS
	Enhanced Bicycle Facilities	Average Effective Turning Radius	Signal Cycle Length	Number of Uncontrolled Conflicts		
Upper Centennial Parkway & Rymal Road E	-	-	-	-	F[1]	B
Trinity Church Road & Rymal Road E	-	-	-	-	F[1]	B
Fletcher Road & Rymal Road E	-	-	-	-	F[1]	B
Highway 56 & Golf Club Road	-	-	-	-	F[1]	E
Highway 56/Upper Centennial Parkway & Rymal Road E	-	-	-	-	F[1]	B
Hendershot Road/Second Road E & Regional Road 20	-	-	-	-	F[1]	E
Upper Centennial Parkway & Highland Road E	-	-	-	-	F[1]	B
Upper Centennial Parkway & Mud Street E	-	-	-	-	F[1]	B
First Road East & Mud Street E	-	-	-	-	F[1]	E
Upper Centennial Parkway & Green Mountain Road E	-	-	-	-	F[1]	B
Second Road W/Kingsborough Drive & Rymal Road E	-	-	-	-	F[1]	B
Highway 56 & Dalgleish Trail	-	-	-	-	F[1]	E

Note 1: Intersection did not pass the Active Transportation Design Check for cycling infrastructure as per Section 6.1 in the OTC Multi-Modal Level of Service Guidelines. This indicates that service is not adequately provided for the cycling mode at the corresponding intersection.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

Table 19: 2025 Existing Cycling LOS – Unsignalized Intersections

Study Intersection	Measure			Existing LOS	Target LOS
	Presence of Bicycle Facilities	Requirement to Stop	Average Effective Turning Radius		
Trinity Church Road & Golf Club Road	-	-	-	F[1]	E
Fletcher Road & Golf Club Road	-	-	-	F[1]	E
Hendershot Road & Golf Club Road	-	-	-	F[1]	E
First Road E & Regional Road 20	-	-	-	F[1]	E
First Road E & Highland Road E	-	-	-	F[1]	E
Second Road E & Highland Road E	-	-	-	F[1]	E
Second Road E & Mud Street E	-	-	-	F[1]	E
First Road E & Green Mountain Road E	-	-	-	F[1]	E
Second Road E & Green Mountain Road E	-	-	-	F[1]	E
Upper Centennial Parkway & Highgate Drive	-	-	-	F[1]	B

Note 1: Intersection did not pass the Active Transportation Design Check for cycling infrastructure as per Section 6.1 in the OTC Multi-Modal LOS Guidelines. This indicates that service is not adequately provided for the cycling mode at the corresponding intersection.

Table 20: 2025 Existing Cycling LOS – Segment

Segment		Measure			Existing LOS	Target LOS
Roadway	Between	Facility Width per Direction	Buffer Width	Conflicts with Other Modes		
Rymal Road E	Upper Red Hill Valley Pkwy to Trinity Church Rd	D	D	D	D	B
	Trinity Church Rd to 140 m east of Fletcher Rd	-	-	-	F[1]	B
	140 m east of Fletcher Rd to Kingsborough Dr	-	-	-	F[1]	B
	Kingsborough Dr to Upper Centennial Pkwy	-	-	-	F[1]	B
Trinity Church Road	Rymal Rd E to 190 m south of Pinehill Dr	E	F	F	F	B
	190 m south of Pinehill Dr to Golf Club Rd	-	-	-	F[1]	E
Golf Club Road	Trinity Church Rd to Highway 56	-	-	-	F[1]	E
Fletcher Road	Rymal Rd E to Blue Mountain Rd	-	-	-	F[1]	B
	Blue Mountain Rd to Golf Club Rd	-	-	-	F[1]	E
Kingsborough Drive	Rymal Rd E to Bellagio Ave	-	-	-	F[1]	B
Highway 56	Golf Club Rd to Dalgleish Trl	-	-	-	F[1]	E
	Dalgleish Trl to Rymal Rd E	-	-	-	F[1]	E
Upper Centennial Parkway	Rymal Rd E to Highland Rd E	-	-	-	F[1]	B
	Highland Rd E to Mud St E	-	-	-	F[1]	B
	Mud St E to 200 m north of Mud St E	-	-	-	F[1]	B
	200 m north of Mud St E to Green Mountain Rd E	-	-	-	F[1]	B
Regional Road 20	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E
Hendershot Road	Golf Club Rd to Regional Road 20	-	-	-	F[1]	E
First Road E	Regional Road 20 to Green Mountain Rd E	-	-	-	F[1]	E
Second Road E	Regional Road 20 to Green Mountain Rd E	-	-	-	F[1]	E
Highland Road E	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E
Mud Street E	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E
Green Mountain Road E	Upper Centennial Pkwy to Second Rd E	-	-	-	F[1]	E

Note 1: Road segment did not pass the Active Transportation Design Check for cycling infrastructure as per Section 6.1 in the OTC Multi-Modal LOS Guidelines. This indicates that service is not adequately provided for the cycling mode at the corresponding segment.

As shown in Table 18 and Table 19, all study intersections do not adequately service the cycling mode of transportation as per the OTC guidelines. Similarly, as per Table 20, nearly all roadway segments within the study network do not meet the minimum guidance measures included in the OTC guidelines. These results indicate that there are opportunities to implement shared or dedicated bicycle facilities to improve the quality of the cycling experience as well as the cycling connectivity within the study area.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

4.2 Future Background Cycling Network

As part of the City of Hamilton's Cycling Master Plan Review and Update (2018), the City of Hamilton proposed several improvements to the cycling network within the study area. Table 21 summarizes the proposed cycling network improvements in the study area.

Table 21: Planned Cycling Network Improvements

Roadway	Span	Improvement
Trinty Church Road	Pinehill Drive to Golf Club Road	Planned Paved Shoulder
Fletcher Road	Rymal Road E to Bellagio Avenue	Planned Paved Shoulder
Highway 56	Dalgleish Trail to Cemetery Road	Planned Multi-use Trail
Highland Road E	Upper Centennial Parkway to First Road E	Planned Bike Lane
	First Road E to Niagara Region Border	Planned Paved Shoulder
First Road E	Ridge Road to Highland Road E	Planned Paved Shoulder
Hydro Corridor	Highway 52 to Highway 56	Planned Multi-use Trail

As mentioned in Section 3.2, multi-use paths are proposed on the east side of the Upper Red Hill Valley Parkway Extension and the north side of the Twenty Road E extension. Additionally, a 4.0 m multi-use path is proposed to connect Trinity Church Road to the future intersection of Upper Red Hill Valley Parkway and Twenty Road E. Overall, these proposed improvements to the cycling network will provide new north-south and east-west connections in the study area, promoting cycling as a viable transportation mode in the vicinity of the Subject Lands.

As the timing for these improvements is currently unknown it was assumed that these cycling improvements will be implemented by the 2051 ultimate horizon year. The active transportation facilities proposed within the Subject Lands should tie into the future planned cycling infrastructure to enhance the connectivity of the cycling network in the study area.

Excerpts from the Cycling Master Plan Review and Update are included in Appendix H.

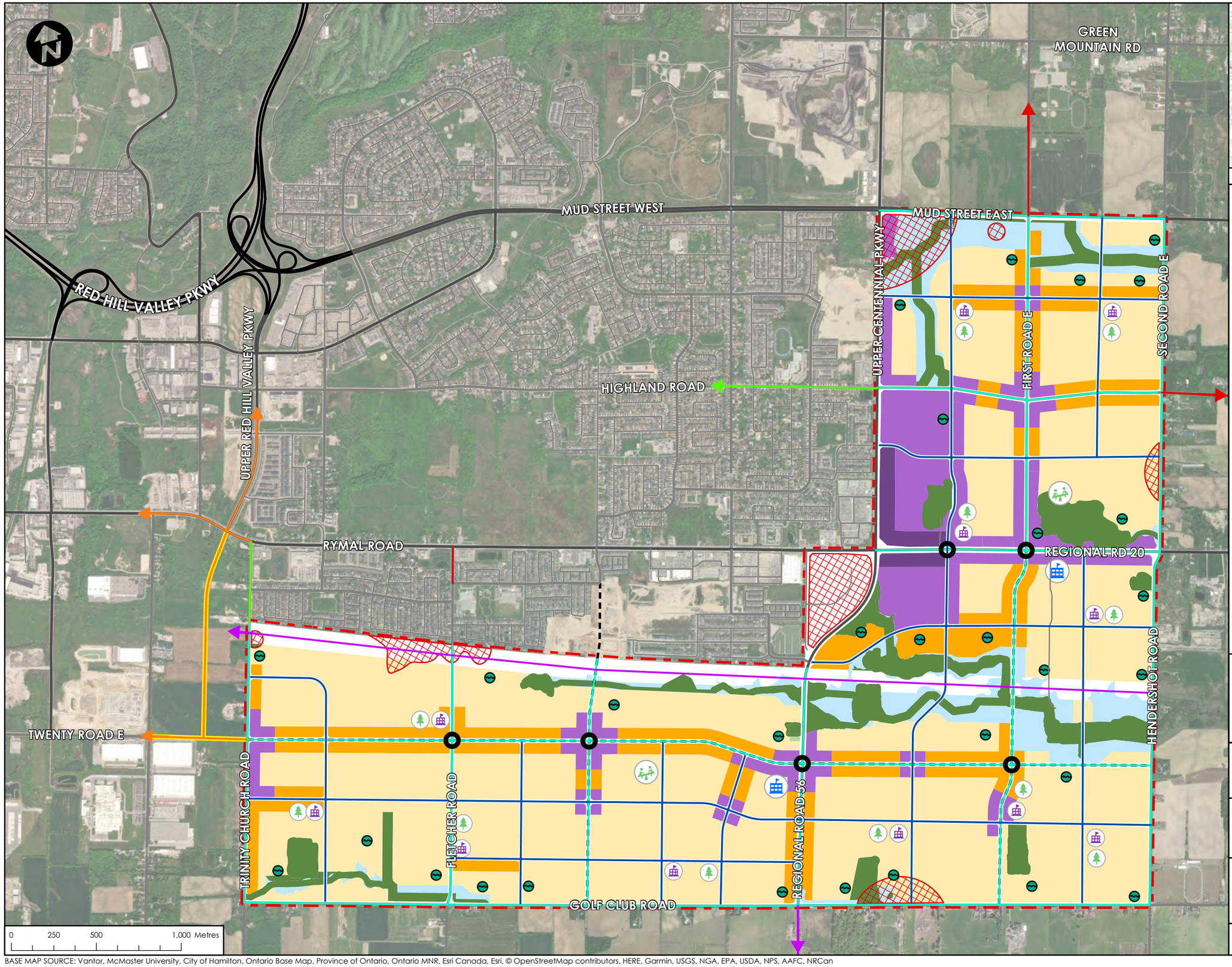
4.3 Future Total Cycling Network

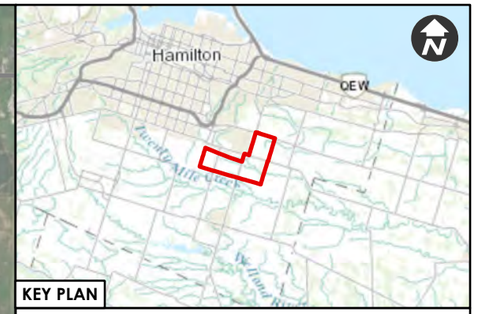
As outlined in Section 2.1, new cycling facilities are proposed as part of the Elfrida Secondary Plan. New and upgraded arterial and collector roadways are proposed to include dedicated cycling facilities on both sides of the street, which will greatly improve the cycling network in the study area. Additionally, the planned multi-use trail along the hydro corridor is proposed to be extended through the eastern Subject Lands from Highway 56 to Hendershot Road.

The proposed cycling infrastructure is expected to generate cycling traffic within the Subject Lands, notably near the planned schools, parks, trail connections as well as the Elfrida Gateway transit hub. Protected intersections are recommended near these active transportation trip generators to promote safety and reduce collisions. As per the City of Hamilton's Complete Streets Design Guidelines (2022), protected intersections can include leading pedestrian and bicycle intervals, bicycle signals, and corner islands that physically separate active transportation facilities from turning motor vehicles.

Figure 16 illustrates the future total cycling network. It indicates potential locations where protected intersections could be implemented. These intersections are along arterial and major collector roadways where cycle tracks are proposed. Additionally, these intersections are in relatively close proximity to a proposed school or transit hub.

It is recommended that the planned improvements for the boundary road network be built out in conjunction with the development of the Subject Lands to ensure that the capital improvements are in place to support the new community. While some of the proposed projects are currently low on the City's priority list per Hamilton's Cycling Master Plan Review and Update (2018), they serve as important connections from the Subject Lands to key external destinations. It is recommended that the proposed active transportation network proposed within the Elfrida Secondary Plan be built out in line with the phasing of the Subject Lands. Coordination with City Staff will be carried out to ensure that the implementation of the external active transportation network aligns with the development of the Subject Lands and the internal active transportation network.





KEY PLAN

LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY
- FUTURE ROAD

ELFRIDA PROPOSED COLLECTOR

- MAJOR COLLECTOR
- MINOR COLLECTOR

LAND USE (CITY OF HAMILTON, APRIL 2026)

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- MIXED USE - MEDIUM DENSITY
- MIXED USE - HIGH DENSITY
- PROPOSED FLOODPLAIN
- NATURAL HERITAGE SYSTEM
- OPEN SPACE
- AREA OR SITE SPECIFIC POLICY

FUTURE ELFRIDA CYCLING NETWORK

- CYCLE TRACKS (BOTH SIDES)
- BIKE LANE (BOTH SIDES)
- MULTI-USE PATH (BOTH SIDES)
- MULTI-USE PATH (ONE SIDE)
- MULTI-USE TRAIL
- PAVED SHOULDERS
- PROPOSED PROTECTED INTERSECTION

POINTS OF INTEREST

- COMMUNITY PARK
- NEIGHBOURHOOD PARK
- ELEMENTARY SCHOOL
- SECONDARY SCHOOL
- SWM POND

NOTES

1. Future cycling network based on proposed cross-sections.
2. Some local roads proposed to have multi-use path on one side of the roadway.
3. Proposed cycling network to be confirmed with City Staff.

Project:

ELFRIDA SECONDARY PLAN

Title:

FUTURE TOTAL CYCLING NETWORK

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-24	D.M.	I.L.	**Figure 16**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

5.0 Transit Assessment

The transit network in the Elfrida Secondary Plan is important for providing people with alternative means of moving throughout the Subject Lands and connecting to the existing and planned transit network. Providing these opportunities will encourage the alternative mode of transportation and help ease congestion on the road network.

5.1 Existing Transit Network

Hamilton Street Railway (HSR), the public transport agency for the City of Hamilton, operates bus service within the study area. Table 22 outlines the existing transit routes, direction, days of operation, peak hour headways, and the location of bus stops in the study area as of April 2026.

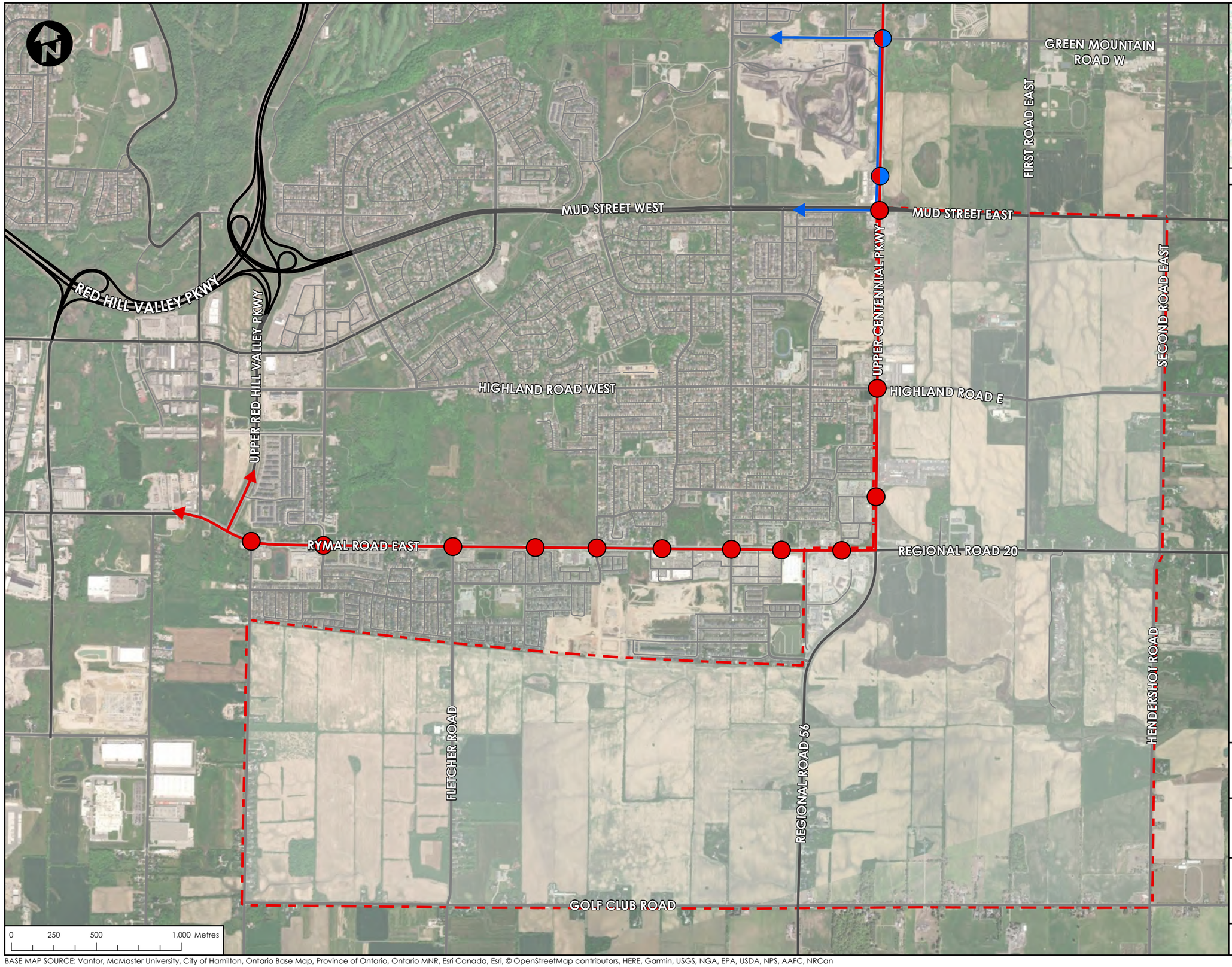
Table 22: Existing Transit Services

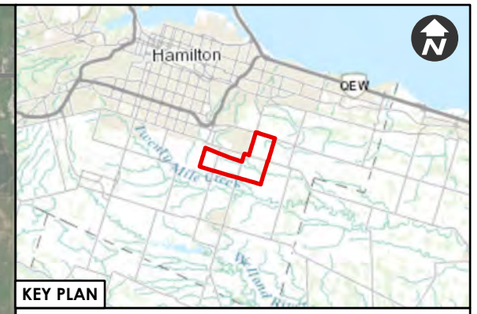
Route	Direction	Limits	Days of Operation	Peak Hour Headway[1]	Study Intersections with Transit Stops
43 Stone Church	East-West	Meadowlands Terminal to Upper Centennial Pkwy	Monday - Sunday	15 min	Upper Centennial Parkway & Green Mountain Road E
44 Rymal	East-West	Ancaster Business Park to Confederation GO Station	Monday - Sunday	15 min	Upper Centennial Parkway & Green Mountain Road E Upper Centennial Parkway & Mud Street E Upper Centennial Parkway & Highland Road E Highway 56/Upper Centennial Parkway & Rymal Road E Second Road W/Kingsborough Drive & Rymal Road E Fletcher Road & Rymal Road E Trinity Church Road & Rymal Road E

Note 1: Frequency and operations may have changed due to change in travel demands.

As summarized in Table 22, the Upper Centennial Parkway and Rymal Road E corridors are well served by Route 44 in the existing condition. The bus route operates at relatively frequent headways and provides access to several key destinations including the Ancaster Business Park, Redeemer University, the Heritage Greene Commercial Area, Eastgate Square and Confederation GO.

Figure 17 illustrates the existing transit network on the study roadway. Appendix I contains the relevant transit information.





LEGEND

- ELFRIDA BOUNDARY

EXISTING TRANSIT STOP

- HSR ROUTE 43 STONE CHURCH
- HSR ROUTE 44 RYMAL

EXISTING TRANSIT NETWORK

- HSR ROUTE 43 STONE CHURCH
- HSR ROUTE 44 RYMAL

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

Project:
ELFRIDA SECONDARY PLAN

Title:
2025 EXISTING TRANSIT NETWORK

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-23	D.M.	I.L.	**Figure 17**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

The bus level of service (LOS) was reviewed for the existing conditions based on the Ontario Traffic Council (OTC) Multi-Modal LOS Guidelines (February 2022).

The boundary road intersections of Highway 56 & Golf Club Road, Hendershot Road/Second Road E & Regional Road 20, First Road E & Mud Street E and all of the unsignalized intersections currently do not serve any bus routes. As a result, the intersection does not have any rating.

Table 23 and Table 24 summarize the existing bus LOS for the signalized study intersections and roadway segments, respectively.

Table 23: 2025 Existing Bus LOS – Signalized Intersections

Study Intersection	Measure			Existing LOS	Target LOS
	Transit Priority Measures	Transit Movement Delay (s)	Pedestrian LOS		
Upper Red Hill Valley Parkway & Rymal Road E	F	C	E	E	D
Trinity Church Road & Rymal Road E	F	B	E	D	D
Fletcher Road & Rymal Road E	F	B	D	D	D
Second Road W/Kingsborough Drive & Rymal Road E	F	A	E	D	D
Highway 56 & Golf Club Road	N/A[1]				
Highway 56/Upper Centennial Parkway & Rymal Road E	F	B	E	D	D
Hendershot Road/Second Road E & Regional Road 20	N/A[1]				
Upper Centennial Parkway & Highland Road E	F	B	E	D	D
Upper Centennial Parkway & Mud Street E	F	D	E	E	D
First Road E & Mud Street E	N/A[1]				
Upper Centennial Parkway & Green Mountain Road E	F	C	E	E	D

Note 1: Intersection does not currently serve any bus routes. As a result, the intersection does not provide service for the bus mode.

Table 24: 2025 Existing Bus LOS – Segment

Segment		Measure			Existing LOS	Target LOS
Roadway	Between	Transit Facility Type	Transit Passenger Amenities	Pedestrian LOS		
Rymal Road	Upper Red Hill Valley Pkwy to Trinity Church Rd	D	F	F	E	D
	Trinity Church Rd to 140 m east of Fletcher Rd	D	B	D	C	D
	140 m east of Fletcher Rd to Kingsborough Dr	D	B	F	D	D
	Kingsborough Dr to Upper Centennial Pkwy	D	D	D	D	D
Trinity Church Road	Rymal Rd E to 190 m south of Pinehill Dr	N/A[1]				
	190 m south of Pinehill Dr to Golf Club Rd	N/A[1]				
Golf Club Road	Trinity Church Rd to Highway 56	N/A[1]				
Fletcher Road	Rymal Rd E to Blue Mountain Rd	N/A[1]				
	Blue Mountain Rd to Golf Club Rd	N/A[1]				
Kingsborough Drive	Rymal Rd E to Bellagio Ave	N/A[1]				
Highway 56	Golf Club Rd to Dalgleish Trl	N/A[1]				
	Dalgleish Trl to Rymal Rd E	N/A[1]				
Upper Centennial Parkway	Rymal Rd E to Highland Rd E	D	B	F	D	D
	Highland Rd E to Mud St E	D	D	F	E	D
	Mud St E to 200 m north of Mud St E	D	F	F	E	D
	200 m north of Mud St E to Green Mountain Rd E	D	D	F	E	D
Regional Road 20	Upper Centennial Pkwy to Second Rd E	N/A[1]				
Hendershot Road	Golf Club Rd to Regional Road 20	N/A[1]				
First Road E	Regional Road 20 to Green Mountain Rd E	N/A[1]				
Second Road E	Regional Road 20 to Green Mountain Rd E	N/A[1]				
Highland Road E	Upper Centennial Pkwy to Second Rd E	N/A[1]				
Mud Street E	Upper Centennial Pkwy to Second Rd E	N/A[1]				
Green Mountain Road E	Upper Centennial Pkwy to Second Rd E	N/A[1]				

Note 1: Roadway segment does not currently serve any bus routes. As a result, the segment does not provide service for the bus mode.

As shown in the multi-modal LOS analysis included in the tables above, the majority of the Rymal Road E corridor currently meets the target bus LOS. Numerous intersections and road segments along the Upper Centennial Parkway corridor falls below the target bus LOS due to the discontinuous pedestrian network along the arterial roadway as well as the lack of transit priority measures. Additionally, no transit service is provided in the rural portions of the existing study road network.

Since Route 44 only stops along Upper Centennial Parkway and Rymal Road E, the transit route is not accessible to large portions of the Secondary Plan area. As a result, additional improvements to the transit network are required within the Elfrida community to improve transit access within the Subject Lands.

Appendix G includes the detailed OTC worksheets for each of the intersections and road segments in the MMLOS analysis.

5.2 Future Background Bus Network

In September 2025, Hamilton City Council approved the HSR Next Network Plan which aims to greatly improve transit service across the City. The HSR Next: Moving Hamilton Forward Final Report prepared by Arcadis and dated February 2025 includes a phased 7-year plan with implementation beginning in Fall 2026.

As part of the HSR Next Network Plan, Route 44 Rymal will be discontinued. Additionally, Route 43 Stone Church will be truncated to operate between Meadowlands Terminal and Heritage Greene Terminal.

Several new transit infrastructure and services are proposed within the vicinity of the Subject Lands including:

Elfrida Gateway: New transit hub located within the Subject Lands on the northeast corner of Highway 56/Upper Centennial Parkway and Rymal Road E intersection. Based on preliminary concept designs, the station is proposed to include 4 off-street bus bays and a two-unit public washroom.

Route 40 E Line: New bus rapid transit route that operates between Heritage Greene Terminal and Confederation GO via Upper Centennial Parkway with connections to the Elfrida Gateway. Headways of 10 minutes during weekday peak hours are proposed by 2032.

Route 34 Mohawk: New local bus transit route that operates between Meadowlands Terminal and Eastgate Terminal via Mohawk Road and Upper Centennial Parkway, with connections to the Heritage Greene Terminal. While this new bus route is expected to serve the existing residential neighbourhoods west of Upper Centennial Parkway, the route is not planned to operate within walking distance of the Subject Lands. Headways of 20 minutes during weekday mid-day hours are proposed by 2032.

Route 36 Rymal: New local bus transit route that operates between Meadowlands Terminal and the Elfrida Gateway via Rymal Road with connections to the proposed Red Hill Loop and the Heritage Greene Terminal. Headways of 20 minutes during weekday mid-day hours are proposed by 2032.

Heritage Greene myRide: New on-demand bus service that operates in the Heritage Greene area. MyRide operates as a "stop-to-stop" service that dynamically adjusts its route as customers

request to be picked up. The proposed service area, which includes the Elfrida Gateway and the Heritage Greene Terminal, is generally bounded by Upper Centennial Parkway in the east, the current Urban Boundary to the south, Winterberry Drive to the west, and the escarpment to the north. The service will operate between 5 a.m. – 2 a.m. on weekdays and Saturdays as well as 6 a.m. – 1 a.m. on Sundays. The service will be run with 3 30-foot vehicles by 2032.

It is noted that the FC document requested that this study considers the impacts of the proposed Route 14 Stoney Creek Gray. This route is planned to operate between Eastgate Terminal and South Service Road at Green Road in Stoney Creek. Residents and visitors of the future Elfrida Secondary Plan area can connect to the proposed route via the Route 40 E Line at the Eastgate Terminal.

Appendix J includes excerpts from the HSR Next Plan. The planned bus network improvements included in HSR Next are expected to greatly improve transit service in the study area, with additional transit routes and reduced headways. However, these future transit routes do not serve the Subject Lands directly. Many residents and commercial destinations, notably in the southern portion of the Subject Lands, would not be within walking distance of a transit stop. As a result, additional transit improvements are needed to serve the proposed Elfrida Secondary Plan.

5.3 Proposed Elfrida Transit Plan

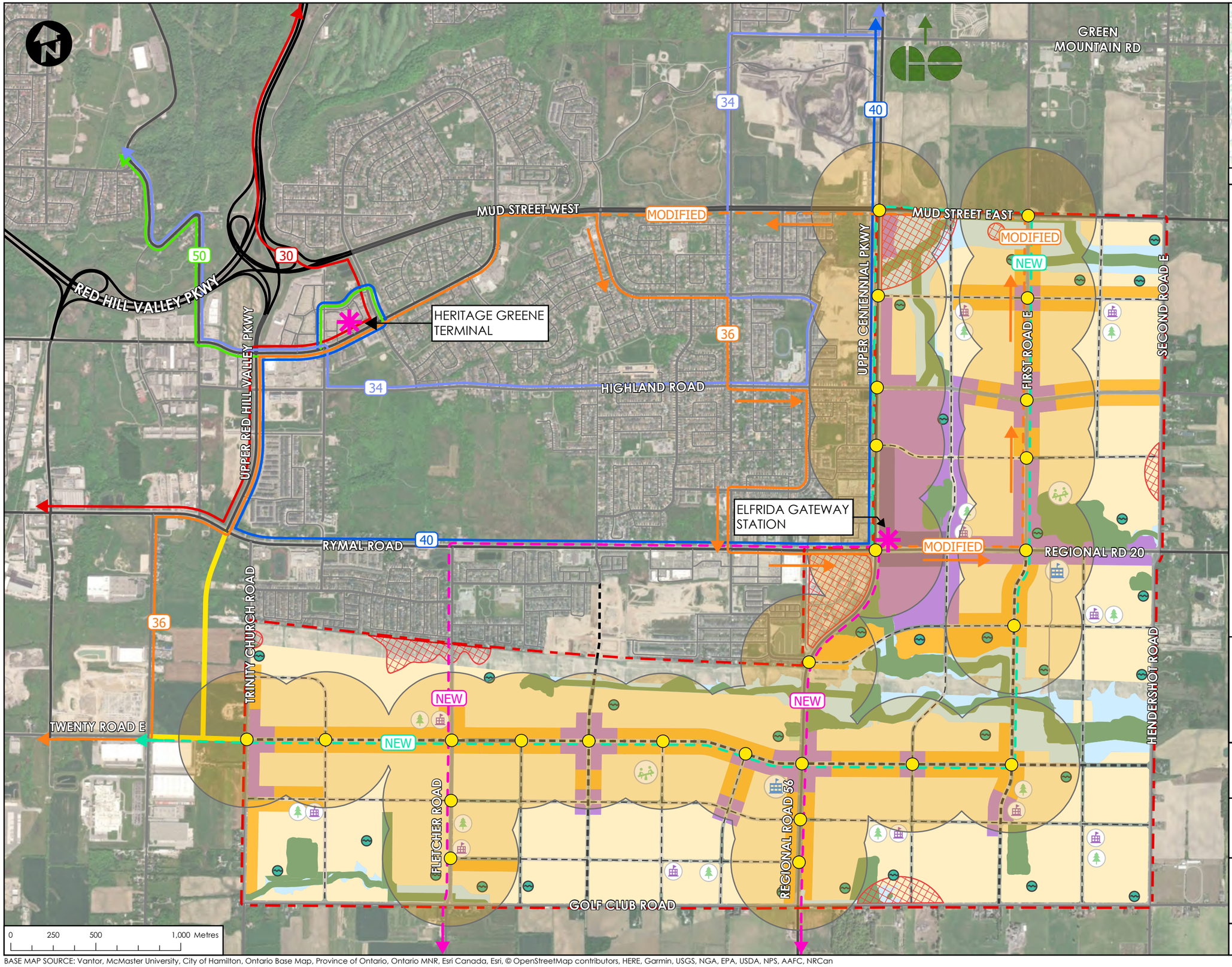
The City of Hamilton Transit Oriented Development Guidelines (2010) identifies Elfrida as a future node area of the city where transit serves as a key component of new development. In accordance with the Guidelines, the Elfrida Secondary Plan aims to increase ridership of local/conventional transit and make transit more accessible and attractive to residents as well as businesses within the Subject Lands.

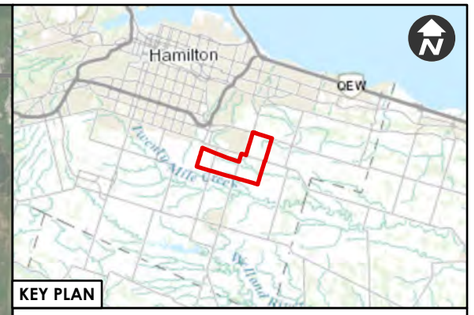
The planned Elfrida Gateway would be the central hub for the community. The E Line bus rapid transit route, which will stop at the gateway station, can connect Elfrida residents and visitors to key destinations across the City of Hamilton. This includes Confederation GO, Eastgate Square, and the Heritage Greene Terminal.

As noted previously, there is no existing or HSR-planned transit service within the Subject Lands as there currently is no need. Therefore, improvements to the local transit network are recommended as part of the Elfrida Secondary Plan to make transit more accessible for residents and visitors. A key consideration for the local transit improvements is to connect passengers to the planned Elfrida Gateway Hub and specifically, the E Line bus rapid transit route.

Transit stops should be designed in consultation with HSR but can include features that accommodate all users by increasing the accessibility at the stop. These stops could be sheltered stops to help provide shelter to those waiting for the buses or could be more enhanced stops at the major locations such as the Elfrida Gateway or along arterial roads and could feature larger shelters with more seating, route maps or schedule information. Safety features such as improved lighting can help increase the feeling of security for users while stops should be designed for bike users to access the bike storage on the front of the HSR buses. These stops could include improved audio and visual information for riders with ability impairments and be designed for riders with ability or mobility impairments so that it is clear how they can access the transit network.

Figure 18 illustrates the proposed Elfrida Transit Plan.





LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)
- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY
- FUTURE ROAD

ELFRIDA PROPOSED COLLECTOR
- MAJOR COLLECTOR
- MINOR COLLECTOR

LAND USE (CITY OF HAMILTON, FEBRUARY 2026)
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- MIXED USE - MEDIUM DENSITY
- MIXED USE - HIGH DENSITY
- PROPOSED FLOODPLAIN
- NATURAL HERITAGE SYSTEM
- OPEN SPACE
- AREA OR SITE SPECIFIC POLICY
- TRANSIT HUB STATION

POINTS OF INTEREST
- COMMUNITY PARK
- NEIGHBOURHOOD PARK
- ELEMENTARY SCHOOL
- SECONDARY SCHOOL
- SWM POND
- ELFRIDA FUTURE TRANSIT STOP
- TRANSIT STOP WALKSHED (400M)

PLANNED TRANSIT ROUTE
- ROUTE 30 S LINE (RAPID)
- ROUTE 40 E LINE (RAPID)
- ROUTE 50 T LINE (RAPID)
- ROUTE 34 MOHAWK (LOCAL)
- ROUTE 36 RYMAL (LOCAL)

PROPOSED TRANSIT ROUTE
- NEW ELFRIDA - AIRPORT LANDS ROUTE
- NEW BINBROOK ROUTE
- ROUTE 36 RYMAL EXTENSION
- UNIDIRECTIONAL TRANSIT LOOP

NOTES

1. It is proposed to expand the Heritage Greene myRide zone to include the Elfrida Lands.
2. 63.5% of Developable Area covered by fixed bus service.
3. 100% of Developable Area covered by fixed bus service and/or myRide service.
4. Proposed transit network will be confirmed in coordination with HSR.

Project:

ELFRIDA SECONDARY PLAN

Title:

ELFRIDA PROPOSED TRANSIT NETWORK

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-24	D.M.	I.L.	**Figure 18**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

It is proposed to implement a new local transit route that operates between Elfrida Gateway and the Airport Employment Growth District primarily via Twenty Road E. The proposed route can accommodate commuter traffic between the Subject Lands and the employment areas to the west of the Elfrida Secondary Plan. The local route also connects passengers along the First Road E and Major Collector Road 'D' corridors to the Elfrida Gateway Hub.

As mentioned in the FC Document, another new local route is proposed to provide transit service to the community of Binbrook. The proposed route is a bidirectional loop that runs between the Elfrida Gateway Hub and Binbrook via Highway 56 and returns to the gateway transit station via Fletcher Road and Rymal Road E.

It is proposed to extend the planned Route 36 Rymal, as identified in the HSR Next Plan, to provide direct transit access between the internal Subject Lands and the Heritage Greene Terminal. To achieve this, the route would be modified to operate as a unidirectional counterclockwise loop through the Leckie Park and Elfrida neighbourhoods. Following arrival at the Elfrida Gateway, all Route 36 buses would continue east along Regional Road 20, proceed north at First Road E, and then travel west on Mud Street E before rejoining the original planned alignment at the intersection of Mud Street W and Isaac Brock Drive.

Finally, it is proposed to expand the area of the Heritage Greene myRide service to include the Subject Lands. This will allow passengers in the Subject Lands who are not within walking distance of the proposed fixed bus routes to connect to the Elfrida Gateway Hub or the Heritage Greene Terminal.

The proposed transit plan integrates well with the proposed Elfrida Secondary Plan. Proposed high-density mixed-use areas surround the central Elfrida Gateway Hub which would be accessible by a rapid transit route, 3 local transit routes, and an on-demand bus service. The Elfrida Gateway should be designed to accommodate the transit vehicles and pedestrian traffic generated by these routes.

Most of the arterial and major collector roadways within the Subject Lands, which are proposed to be fronted primarily by medium-density residential and mixed-use development, would be served by fixed transit routes. As discussed in Section 2.1, the cross-sections for these road typologies were designed with at least two lanes in each direction to accommodate transit traffic. It is also noted that the proposed transit plan aligns with the considerations included in the FC document.

The development of high-density land uses around the Elfrida Gateway Hub is expected to increase ridership on the Route 40 E Line as passengers travel to and from the Confederation GO Station. The implementation of new local bus routes that connect passengers throughout southeastern Hamilton to the transit station will create further demand for the rapid transit line. Given the strong integration between the extensive proposed transit network and the higher density land uses within the Elfrida community, it is expected that the Lands will have a higher transit mode share than many existing Hamilton neighbourhoods. As per the City's Transportation Master Plan Review and Update (2018), the City's target transit mode share is 12% by 2031. However, the design of the Elfrida Secondary Plan is more transit-oriented than existing neighbourhoods. As a result, the target transit mode share for the Subject Lands is 15%. This target should contribute to the City's goals of increasing its City-wide transit mode share.

6.0 Future Mobility Context & Transportation Demand Management

The City of Hamilton and other associated agencies such as Metrolinx and HSR have done a number of studies and planning exercises that explore the possibility of developing the Subject Lands. It is important to understand the steps that have already been envisioned and/or taken to prepare for this growth in the City of Hamilton area in order to accommodate the development of these Lands.

6.1 Planning Context

The relevant transportation planning policies were reviewed to determine the planning improvements proposed by the City of Hamilton. The following documents were reviewed and outlined herein:

- City of Hamilton Transportation Master Plan Review and Update (August 2018)
- City of Hamilton Strategic Transportation Network Review (May 2024)
- Proposed Accelerated Active Transportation Implementation Plan 2024 – 2028 (November 2023)
- Metrolinx 2041 Regional Transportation Plan (March 2018)
- HSR Next: Moving Hamilton Forward (February 2025)
- Growth-Related Integrated Development Strategy (October 2021

The City's Transportation Master Plan (TMP) Review and Update (August 2018) identifies 2031 as the ultimate planning horizon. The City's Strategic Transportation Network Review (May 2024) identifies 2041 as the ultimate planning horizon, and consideration of population and employment growth from 2041 to 2051 in the City's expanded urban area. Similarly, the Metrolinx RTP considers an ultimate horizon year of 2041.

6.1.1 City of Hamilton TMP Review and Update (August 2018)

The City of Hamilton Transportation Master Plan Review and Update (August 2018) outlines a number of improvements to the road network that could have impacts on the Elfrida Secondary Plan and how the road network handles the additional traffic volumes generated by the development of the Subject Lands.

Firstly, there are planned improvements along Upper Centennial Parkway and Highland Road East including urbanization and the addition of bike lanes or a multi-use trail.

Secondly, the portion of the Rapid Transit Blast Network known at the time of the report as the "S Line" goes along Rymal Road and then goes up Upper Centennial Parkway with a stop at the planned Elfrida Gateway terminal.

Thirdly, there is the planned Red Hill Valley Parkway extension to Twenty Road East and the concept Airport to Red Hill Valley Parkway Link. Both of these improvements would increase the accessibility from the highways to the Subject Lands.

6.1.2 City of Hamilton Strategic Transportation Network Review (May 2024)

The City of Hamilton Strategic Transportation Network Review (May 2024) discusses the urbanization and widening of a number of the roadways in the Elfrida Area that are envisioned by the City of Hamilton to be completed with the development of the Subject Lands. This review envisions the estimated costs of these improvements as well as an estimate for the timeline for these improvements.

These improvements, along with the development of the Subject Lands, are envisioned for a time period beyond 2041, but are expected to be constructed either alongside or prior to the development of the Elfrida Secondary Plan.

6.1.3 Proposed Accelerated Active Transportation Implementation Plan 2024 – 2028 (November 2023)

The Proposed Accelerated Active Transportation Implementation Plan 2024 – 2028 (November 2023) discusses the goals of the City of Hamilton in improving the connectivity of City's cycling infrastructure and plans for growing it further.

The accelerated plan focuses on building upon the existing infrastructure and building new infrastructure where growth in the City is currently targeted.

Near the Subject Lands, Highland Road E is targeted for dedicated cycling facilities which connects into the existing facilities on Stone Church Road E and can carry on to both Downtown Hamilton and towards McMaster University.

6.1.4 Metrolinx 2041 Regional Transportation Plan (March 2018)

The Metrolinx 2041 Regional Transportation Plan (March 2018) discusses the planned Transit improvements in the Greater Toronto and Hamilton Area (GTHA) including the planned GO transit improvements, LRT lines and BRT lines.

At the time of the report, the improvements in the Hamilton Area included the Confederation GO Station, the Hamilton LRT (B-Line) and the Hamilton BRT Lines (LAST Lines).

The Confederation GO Station went into operation on October 27, 2025, with the extension of the Lakeshore West Line to this station. This GO Station is north of the Subject Lands and would be reachable via the planned BRT line along Upper Centennial Parkway.

The Hamilton LRT (B-Line) operates from McMaster University to Eastgate Terminal and is currently primarily in the procurement phase of the project as they attain properties and land to facilitate the construction of the LRT. The project has also gone through the RFP process and is in the process of determining which of the four teams will be moving forward with the design and construction.

In the HSR Next: Moving Hamilton Forward (February 2025), the "S Line" of the BRT was split into the "S Line" and "E" Lines with the "S Line" servicing the west side of the City operating from the Ancaster Gateway to the Heritage Green Transit Hub while the "E Line" operates from the Heritage Green Transit Hub east to the Elfrida Gateway and then goes north to the Eastgate Terminal.

6.1.5 HSR Next: Moving Hamilton Forward (February 2025)

In the HSR Next: Moving Hamilton Forward (February 2025), a path is set forth for the redevelopment of the Hamilton transit network to better integrate with the new BRT and LRT lines while providing the projected costs and benefits of this redevelopment.

The plan involves the creation of 13 new or expanded hubs across the City of Hamilton, the two (2) end terminals of the LRT, more buses, new on-demand transit zones and the estimated 18 LRT stops. This is also the discussion of the improvements to the GO Stations in the area though it is noted that these will require Metrolinx's approval.

The expansions are projected to increase the number of service-hours by over 500,000 and have a ridership that is up to 50% higher by the final year of the plan.

6.1.6 Growth-Related Integrated Development Strategy (October 2021)

The City of Hamilton produced the Growth-Related Integrated Development Strategy (GRIDS 2) in October 2021. In the GRIDS2 report, the City of Hamilton defined the Elfrida area as the "largest potential urban boundary expansion" with an estimated $200M in road infrastructure improvements envisioned. From this report, the Elfrida Community was expected to require over 38.5 centreline km of road infrastructure to support the Elfrida expansion area.

Specifically, the GRIDS 2 report explored the Elfrida Community and concluded that, with the possibility for more than 16,000 - 20,000 new units in the Elfrida Area and with estimated minimum target densities of 77 person and jobs per hectare, the Elfrida Community would support the investments in the S-Line. In addition, ridership on the S-Line could further be maximized by providing efficient feeder services and cycling walking corridors from the core of the Elfrida Community, or conversely, creating a branch of the S-Line to extend into the new Elfrida Community. These improvements could mean that future communities could have higher transit mode share targets than the goal of 12% of daily trips due to the investment in the infrastructure. By having these communities have higher targets, they can be used to bring up the average usage for the City to the transit mode share goal of 12% trips. These improvements can also be timed to be implemented at the same time as the Elfrida Community buildout.

The GRIDS 2 report explored specific connections for the Elfrida Community that could be made to the existing bike lanes on Stone Church Road as well as the Red Hill Valley trail and Paramount Road links. Several existing links would need to be upgraded to make existing/planned facilities more accessible for all ages and abilities.

According to the GRIDS 2 report, improved cycling infrastructure on Rymal Road would be desirable to maximize active transportation shares from Elfrida and other new growth areas. One major opportunity outlined in GRIDS 2 that could support greater levels of active transportation under the ambitious density scenario is the development of a major east-west spine pathway system. The major east-west spine would follow the hydro corridor between Rymal Road and Twenty Road, as envisioned in the Recreational Trails Master Plan.

6.2 Future Background Improvements

As indicated in the Transportation Master Plan Review and Update (2018), the City of Hamilton is planning on extending Upper Red Hill Valley Parkway and Twenty Road E. The two extensions are proposed to intersect at a new roundabout between Glover Road and Trinity Church Road approximately 1.25 km south of Rymal Road E. The proposed extensions are currently

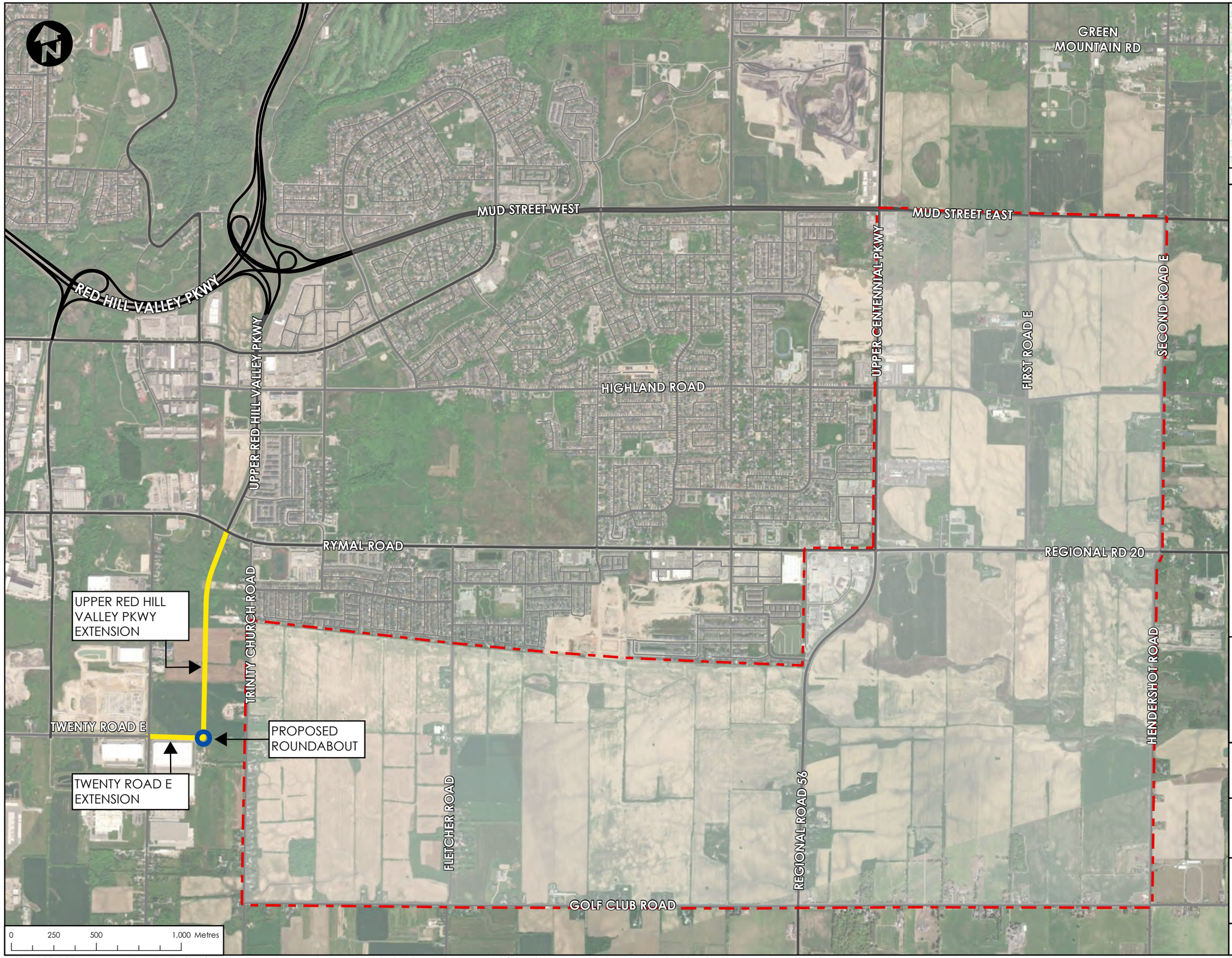
undergoing a Municipal Class EA process. The Environmental Study Report is currently being finalized and is expected to be completed by the summer of 2026.

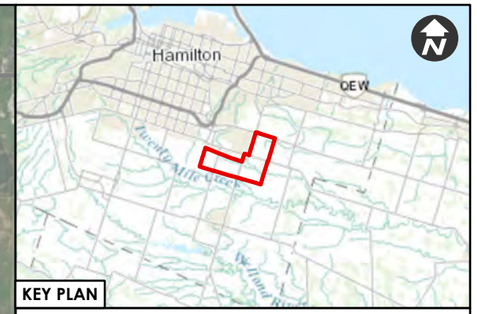
It is noted that the Transportation Master Plan Review and Update (2018) includes a conceptual link that extends Upper Red Hill Valley Parkway beyond Twenty Road E to Highway 6. As this connection is conceptual and no timeline has been provided regarding this extension, this additional link has not been considered in this Study.

Appendix K includes excerpts from the Transportation Master Plan Review and Update as well as the materials provided for the Municipal Class EA process regarding the Upper Red Hill Valley Parkway and Twenty Road E extensions.

Figure 19 illustrates the future planned road improvements.

Given the existing constraints along Rymal Road E, a new east-west corridor will be needed to support the Elfrida Secondary Plan. It is recommended that Twenty Road E. is further extended from Red Hill Valley Parkway to Trinity Church Road. Road D, a major collector road proposed within the Subject Lands, would intersect with Trinity Church Road directly across from Twenty Road E to create a four-legged intersection. This new corridor would connect the Subject Lands to the employment lands west of the Secondary Plan and provide additional capacity to the roadway network in the east-west direction.





KEY PLAN

LEGEND

- ELFRIDA BOUNDARY

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY
- FUTURE ROAD
- PROPOSED ROUNDABOUT

NOTES

1. Future road alignment based on Municipal Class EA materials for the extensions of Twenty Road East and Upper Red Hill Valley Parkway prepared by the City of Hamilton.

Project:

ELFRIDA SECONDARY PLAN

Title: FUTURE BACKGROUND ROAD IMPROVEMENTS

CROZIER

Date:	Drawn By:	Approved By:	
2026-04-24	D.M.	I.L.	**Figure 19**

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

6.3 Traffic Calming Measures

Table 25 outlines the traffic calming measures recommended for consideration by the City.

Table 25: Potential Traffic Calming Measures

Traffic Calming Measure	Implementation Summary
Speed Humps	Elevated bumps along the full width of a road, which causes discomfort for passengers of vehicles that drive over them at higher speeds. Preferable for implementation along local roads given the higher order road class of collector roads should be maintained.
Speed Cushions	Elevated bumps on a road, but not over its full width. Similar effects that lead to traffic calming exist between speed humps and speed cushions. A key difference between the two, however, include larger vehicles as well as bicycles being less affected due to the positioning of the bumps.
Vertical Centreline Treatment	Bollards, planters or post mounted signs can be implemented on the centreline and/or edge lines to perceptibly, but also physically narrow the roadway for drivers. Applicable for implementation in most location apart from near accesses.
Fixed Speed Enforcement	Speed radars with a live speed display sign for drivers, and/or cameras that can record speeding vehicles for enforcement purposes. This measure should be implemented at gateway locations into the community.
Flashing Community School Zone Signs	To be implemented before the stretch of roadway which has frontage to a School or an adjacent community park within the Secondary Plan. The flashing sign along collector roads will result in a speed limit change to 40 km/h during school hours.
On-Street Parking	On-street parking may result in some traffic calming due to physical reduction of roadway width and/or horizontal deflection of roadway in some locations within the Secondary Plan, further contributing to traffic calming.
Traffic Circles	Installed at local–local intersections to slow turning speeds, reduce stop-start conflict points, and calm traffic along long residential blocks, improving overall safety and neighbourhood traffic conditions.

Traffic Calming Measure	Implementation Summary
Curb Extension (Bulb-outs)	Curb extensions can be installed at intersections, mid-block crossings, and transit stops to reduce pedestrian crossing distances, visually narrow the roadway, lower turning speeds, and improve sightlines for all road users.
Curb Radius Reduction	To be implemented with small curb radii (approximately 4 to 6 m in neighbourhoods) to slow turning vehicles and encourage safer speeds at conflict points. The design may require occasional encroachment by larger vehicles while maintaining lower turning speeds for typical traffic.

These measures will be discussed with the City and should be aimed to be implemented in areas where the City expresses concerns about traffic interactions and/or operating speeds. These areas can include, but are not limited to, school zones, residential areas and areas with people of limited mobility.

6.4 Transportation Demand Management Strategy

The traditional approach to addressing transportation demand was to continue increasing automobile capacity (e.g., lane widenings, building new arterial roads). However, this is not a sustainable long-term practice to support the development of new communities. Sustainable mobility planning aims to take advantage of planned transportation infrastructure by efficiently managing the demand, as opposed to the traditional solution of simply increasing roadway capacity to address transportation needs.

The City of Hamilton's Transportation Master Plan Review and Update (August 2018) identifies 2031 as the ultimate planning horizon for the transportation network and outlines a transit mode share target of 12% by 2031. More recently, the City's Strategic Transportation Network Review (May 2024) identifies a transit mode share target of 11.3% for the same horizon year.

In order to realize these sustainable mode share targets, future development within the Secondary Plan should implement and follow a TDM strategy applicable to each land use category, that enhances the viability of alternate modes to the automobile.

Key components in developing effective TDM framework applicable to all land uses include the following:

- Creating Complete Communities
    - Ensuring that complimentary uses necessary for day-today living are located within a walkable or cyclable distance from residential uses. When elements such as schools, day care facilities, convenience stores/grocery stores are located in close proximity to residential uses, it permits short trips and day-to-day trips to be taken via active transportation, instead of driving. Complete communities also allow for synergies among land uses that allow for trip chaining where multiple sites can be visited in one trip.

- Establishing Local Transit
    - The creation of reliable transit service is an important component in reducing single-occupant vehicle (SOV) trips, particularly in suburban environments. Reliable transit service provides confidence for commuters to make trips during peak periods by transit instead of by automobile. Unreliable transit service, particularly with long headways and inconsistent travel times, can discourage transit use and reinforce dependence on private vehicles.

Table 26 identifies potential land use specific TDM strategies that should be considered and refined further as part of more detailed site-specific applications.

Table 26: Potential Transportation Demand Management Strategies

Land Use	Potential TDM Strategy
Residential	• Provide secure bicycle parking spaces. • Provide on-site bicycle maintenance equipment. • Safe and direct walkways for pedestrians linking buildings entrances with public sidewalks. • Real-time transit information screens. • Consider incentives such as active transportation maps and complimentary Presto cards for new residents. • Consider reduced parking requirements in mixed-use and higher-density developments. • Consider carshare spaces in higher density developments. • Provide pickup/drop off areas.
School	• Provide secure bicycle parking spaces. • Safe and direct walkways for pedestrians linking buildings entrances with public sidewalks. • Locating pick-up and drop-off area away from main building entrances. • Establish a "Safe Route to School" program to promote active transportation. • Consider TDM coordinator roles. • Provide support for School Travel Planning for students. • Support ride matching for school trips. • Encourage cycling programs and skills training. • Promote carpooling.
Employment	• Encourage employers to join Smart Commute. • Support carpool matching programs. • Consider Shuttle Service to nearby transit hubs. • Provide Carpool/Vanpool opportunities. • Provide priority carpool parking spaces nearby entrances. • Provide priority rideshare and pickup/drop off areas. • Consider off-peak shift changes. • Implement wayfinding signage. • Real-time transit information screens.
Commercial	• Consider reduced parking supply for mixed-use commercial areas. • Provide bicycle parking. • Provide car share opportunities. • Provide pick-up/drop-off areas. • Promote off-peak customer engagement strategies.

In order to realize these sustainable mode share targets, future development within the Secondary Plan should implement and follow a TDM strategy applicable to each land use category, that enhances the viability of alternate modes to the automobile.

6.5 Parking Review

6.5.1 Off-Street Parking

Off-street parking requirements for individual developments will be governed by the latest version of the City of Hamilton's Zoning By-Law 24-52. It is recommended that reduced off-street parking rates be considered for future development applications within the Secondary Plan Area. In particular, areas fronting transit corridors and mixed-use developments are candidates for reduced parking.

Developments that propose TDM implementation strategies should also be considered as candidates for consideration of reduced parking rates. Reduced parking supply contributes to reduced vehicle ownership rates, and in turn helps to reduce single occupant vehicle trips on the road network. Accordingly, as future development applications advance, the City should review opportunities to avoid the oversupply of parking for higher-density and mixed-use developments by considering parking requirements below the current Zoning By-Law requirements.

6.5.2 On-Street Parking

On-street parking should be permitted on most street typologies within the Secondary Plan area, as long as other mobility objectives are not compromised. On-street parking is a form of traffic calming and helps to reduce speeds along long segments of roadways. Moreover, from a land use integration perspective, it is recognized that parking on one or both side of the street may be required to support key commercial areas, and community uses such as parks and trail entrances. Details regarding on-street parking plans including areas of restricted parking should therefore accompany future Draft Plan applications for the City to review. However, it is anticipated that parking would be permitted on at least one-side of all collector and local roadways, depending on the segment.

7.0 Next Steps

This Transportation Report has been prepared in support of the Elfrida Secondary Plan Application based on the information available at the time of writing. Further coordinated efforts with the City of Hamilton, including the Macro model incorporating the study area and the Subject Lands, will be required. Certain elements of the transportation analysis will require refinement as additional inputs, agency direction, and development details become available.

Accordingly, this report is intended to provide a high-level, policy-supportive assessment of the transportation network and establish a framework for future, more detailed transportation analyses. As the planning process advances, additional studies will be required to support subsequent applications, including Tertiary Plans, Draft Plans of Subdivision, and Site Plan applications.

7.1 Terms of Reference and Scope Confirmation

This report reflects the proposed Terms of Reference encompassing existing and future background conditions outside of the Secondary Plan area. The consultant team had initial discussions with City staff on the approach to the proposed Terms of Reference. The details of the Terms of Reference for any future study will be further refined through consultation with the City. This will include confirmation of:

- Ultimate Study Horizon Year
- Background Traffic Assumptions and Growth Rates
- Development Phasing Assumptions
- Modelling Approach and Software Parameters
- Detailed Scope and Requirements for Future Transportation Impact Studies

Confirmation of these items will ensure that future studies are aligned with City expectations and applicable guidelines. Moreover, the consultant team has engaged with the City on macro-modelling expectations for the Secondary Plan area to build on work previously completed by staff in support of the Study Area. Following the submission of this foundational report, the consultant team will continue engaging with City staff to complete the macro-modelling exercise of an ultimate study horizon to support the population and employment proposed for the Secondary Plan Area

7.2 Transportation Impact Studies

As development proceeds, comprehensive Transportation Impact Studies (TIS) will be required to support future development applications within the Secondary Plan area. These studies will build upon the findings of this report and incorporate more detailed inputs and updated assumptions. Future TIS submissions are expected to include updated land use assumptions, development phasing, as well as refined internal road network and access configurations. They will also incorporate updated background growth projections and detailed operational analysis of future background and future total conditions.

Through this work, the studies will identify and confirm key transportation requirements, including appropriate intersection control strategies such as signalization and, where suitable, roundabout feasibility. They will also determine auxiliary turn lane and storage requirements, geometric design needs, as well as site access and internal circulation requirements. In addition, the studies will recommend mitigation measures necessary to ensure the transportation network can adequately support future traffic demands.

7.3 Road Network and Geometric Design Development

As the Secondary Plan progresses, the proposed road network and cross-sections will be further refined through subsequent planning and design stages. This will include:

- Confirmation of Proposed Right-of-Way Designs
- Refinement of Arterial, Collector and Local Road Cross-Sections
- Intersection Spacing and Access Management Considerations
- Incorporation of Traffic Calming Measures Where Appropriate

These refinements will be undertaken in coordination with the City to ensure consistency with applicable standards and long-term transportation objectives.

7.4 Multi-Modal Network Refinement

The pedestrian, cycling and transit networks proposed in this report represent a foundational framework for the Secondary Plan area. Further refinement will be required as the development process proceeds, including:

- Confirmation of Active Transportation Connections and Crossing Treatments
- Refinement of Cycling Facility Types and Alignments
- Integration with Existing and Planned Municipal Active Transportation Networks
- Advancement of the Proposed Elfrida Transit Plan, Including Route Structure, Stop Locations, and Service Phasing

Ongoing coordination with City staff and the Hamilton Street Railway (HSR) will be required to support implementation.

7.5 Transportation Demand Management

The foundational transportation demand management strategies identified in Section 6.4 of this report will be further developed and refined through future studies to reflect site-specific conditions and phasing. Additional opportunities to reduce auto dependency and support sustainable travel modes will be explored in coordination with the City.

7.6 Ongoing Coordination

Ongoing coordination with the City of Hamilton will be required to address comments on the Transportation Report to advance transportation planning for the Elfrida Secondary Plan area. Subsequent submissions will incorporate updated assumptions and provide the detailed analysis needed to support development approvals as the area progresses toward buildout.

8.0 Conclusions and Recommendations

8.1 Conclusions

Existing constraints in the road network from a traffic operations perspective were noted at the intersections of Upper Red Hill Valley Parkway and Rymal Road E as well as Upper Centennial Parkway and Mud Street E. These intersections are critical connections between the Subject Lands and the major north–south transportation corridors in southeastern Hamilton, namely the Red Hill Valley Parkway and Upper Centennial Parkway. As traffic demands increase over time, long-term improvements may be necessary to maintain efficient and safe operations.

The following 95th percentile queues are modelled to extend beyond the available auxiliary turn lane storage length:

- Upper Red Hill Valley Parkway & Rymal Road E (SBL)
- Trinity Church Road & Rymal Road E (NBL)
- Upper Centennial Parkway & Green Mountain Road E (EBL)

The proposed Elfrida Secondary Plan includes road, pedestrian, cycling and transit networks as part of the development of the Subject Lands. These networks provide choice for mode of transportation by creating connections across the Secondary Plan area and to the external transportation network. The proposed mobility networks, as well as the connections between the proposed mobility infrastructure, should be planned in conjunction with the relevant authorities including municipal partners and HSR. This cooperation will help ensure that the users of these networks have modal choice and efficient transportation options.

8.2 Recommendations

It is recommended that further transportation assessment based on a macro model developed with the City of Hamilton which examines the study road network and the impact of the growth of the area and the Elfrida Lands development should be prepared. It should pay particular attention to determine if similar results in the turning movements where the 95th percentile queue is expected to extend beyond the storage length covered in this report are confirmed. If significant queueing concerns are observed, this may warrant intersection improvements such as signal timing plans or auxiliary turn lane extensions. Furthermore, given the anticipated development within the study area, improvements may be warranted to support future traffic growth in the long-term future.

This report serves as a foundational examination of the operations of the existing network from a multi-modal perspective and identifies possible constraints of the future planned mobility network to accommodate the Elfrida Secondary Plan. This study also provides a review of the proposed transportation network for the internal Subject Lands.

The analysis contained within this report was prepared using the Secondary Plan provided by Bousfields Inc. as included in this report. Should you have any questions or require any further information, please do not hesitate to contact the project team.

/ADR/SA/MI/MY

https://cfcrozier.sharepoint.com/sites/ElfridaDevelopmentArea/Shared Documents/General Discussion/Secondary Plan/2026.04.24 Elfrida Secondary Plan TMS & TA.docx

APPENDIX A:

Terms of Reference Correspondence

MARCH 2, 2026

PROJECT NO: 2545-6847

SENT VIA: EMAIL
TPLANNING@HAMILTON.CA

City of Hamilton
71 Main St West
Hamilton, ON L8P 1P9Address

Attention: City of Hamilton Transportation Planning Department
RE: TERMS OF REFERENCE
ELFRIDA LANDS SECONDARY PLAN AREA (FC-25-071)

Dear City of Hamilton Transportation Planning Staff,

C.F. Crozier & Associates Inc. (Crozier) has been retained to prepare a Transportation Master Plan (TMP) in support of the Elfrida Lands Secondary Plan Area. This Secondary plan area has been designated the FC-25-71 file number for the City of Hamilton as well as the Urban Boundary Expansion applications (UHOPA-25-007/RHOPA-25-008).

The Secondary Plan Area is 'L' shaped and approximately 1,200 gross hectares in size and bounded by Centennial Parkway, Mud Street East, 2nd Road East/Hendershot Road, Golf Club Road, Trinity Church Road and the Hydro Corridor. The lands are predominantly being used for agricultural purposes with clusters of rural residential dwellings, limited commercial and light industrial uses along Upper Centennial and institutional uses (elementary school and church) along Rymal Road/Regional Road 20.

The Elfrida Secondary Plan proposes a mixed-use community comprising about 129,266 people and jobs in low, medium, and high-density residential uses, in addition to commercial, institutional, and recreational uses.

In addition to the existing road network and planned capital works by the City of Hamilton (City), the Secondary Plan also proposes an internal network of collector roads, intended to support multi-modal connectivity within the Secondary Plan area and to the external study road network.

1.0 Required Transportation Materials

Per the Formal Consultation Document provided by the City of Hamilton on December 5th, 2025, a number of materials will be required to form the TMP in support of the Secondary Plan

As such, the TMP will consist of the following components:

- Specific Secondary Plan Requirements which include:
    - Transportation network information
    - Specific Transportation network policies and requirements

- Transportation Assessment
- Cycling Route Analysis
- Pedestrian Route & Sidewalk Analysis
- Transit Assessment
- Transportation Demand Management
- Right-of-way Dedications
- Daylighting Triangle Dedications

The scope of each of these elements will be expanded in the following section for review by the City of Hamilton. It is noted that these elements will be included in the Transportation Master Plan.

2.0 Proposed Scope for Required Elements

2.1 Specific Secondary Plan Requirement

Specific requirements for the Elfrida Secondary Plan Area have been expressed as part of the Formal Consultation document. These requirements will be included as part of the Transportation Master Plan and include:

- Transportation Network information such as:
    - Road Layout
    - Right-of-way requirements
    - Daylighting triangle requirements
    - Functional Road Classifications
- Specific transportation network policies based on the road classifications.

This information will be included as part of the Transportation Master Plan for the Secondary Plan Area.

2.2 Transportation Assessment

The Transportation Assessment will be conducted based on the requirements of the 2024 City of Hamilton Transportation Assessment Guidelines,

The scope of this Transportation Assessment will include the following assumptions:

- The following intersections are proposed to be analyzed as part of the scope of the study:
    - Upper Hill Red Valley Parkway & Rymal Road E
    - Trinity Church Road & Rymal Road E
    - Trinity Church Road & Golf Club Road
    - Fletcher Road & Golf Club Road
    - Fletcher Road & Rymal Road E
    - Highway 56 & Golf Club Road
    - Highway 56/Upper Centennial Parkway & Rymal Road E
    - Hendershot Road & Golf Club Road
    - First Road E & Regional Road 20
    - Hendershot Road/Second Road E & Regional Road 20
    - Upper Centennial Parkway & Highland Road E
    - First Road E & Highland Road E
    - Second Road E & Highland Road E
    - Upper Centennial Parkway & Mud Street E
    - First Road E & Mud Street E
    - Second Road E & Mud Street E
    - Upper Centennial Parkway & Green Mountain Road E
    - First Road E & Green Mountain Road E
    - Second Road E & Green Mountain Road E
    - Second Road W/Kingsborough Drive & Rymal Road E
    - Proposed Main Road intersections within Secondary Plan
- Twenty Road and Upper Red Hill Valley Parkway extensions will be considered within the assessment.
- The following peak hours will be examined as part of the study analysis:

  - A.M. Weekday Peak hour
  - P.M. Weekday Peak hour
- The following horizon years will be examined as part of the study analysis:
  - 2026 (Existing)
  - 2051
- A growth rate of 1.5% percent was used to bring historical data to the current year and then 0.5% was used for future growth. This growth rate was primarily applied to the through movements primarily as applicable.
- Traffic data was collected in September 2025 outside of intersections along Golf Club Road that were affected by on-going construction that had serious impacts on travel patterns. These intersections had historical data that was grown to the current year.
- Peak hour factors will be derived from these traffic counts.
- Standard measures of effectiveness such as control delay, volume-to-capacity ratios and queue lengths will be included for review.
- Signal timing data was provided by City staff and is not expected to change between the provided date and the study's submission.
- Active background developments which are expected to generate traffic that will impact the study intersections will be included in our analysis. These generated trips were distributed using the same distribution as the trips from the Secondary Plan Area if a TIS or similar study was not available. These background developments are listed in the following table.

Background Development	Background Development Address	Known Details used in the analysis
1	1866 Rymal Road East	8-storey mixed use seniors home, day-care, commercial retail development
2	2070 Rymal Road East	10-storey mixed-use building (227 units and 1,020m^2 commercial)
3	505 Highland Rd W	4 8-storey rental developments
4	1809-1843 Rymal Road East	4 12-storey mixed-use buildings, two blocks of townhouses
5	1865 Rymal Road East	8-storey mixed use apartment
6	2080 Rymal Road East	226 townhouse units and 1 6-storey residential building
7	157 Upper Centennial Parkway	82 townhouse units, mixed-use component
8	City View Estates	25 single detached units and 80 townhouse units
9	1933 Rymal Road East	4-storey mixed use building, 873 m^2 ground floor commercial, 63 dwelling units
10	216 Trinity Church Road	2 industrial buildings
11	136 Upper Mount Albion Rd	6-storey residential building (145 units)
12	481 First Road West	21 single detached units and 350 townhouse units
13	Nash Neighbourhood Phases 2 and 3	66 single detached units and 264 townhouse units

- The AEGD and NGIBP Employment Areas are expected to have impact on the Red Hill Valley Parkway once the extension is complete. This impact should have been captured by the Environmental Assessment done for the Red Hill Valley Parkway extension.

As part of this Transportation Assessment there is some information requested to be provided by the City of Hamilton. Currently, this includes:

- Traffic volume Information used for the Twenty Road and Upper Red Hill Valley Parkway Extension.

- Notice of any other roadway improvements within the study area

As part of the methodology for this Transportation Assessment, we will:

- Analyze the existing traffic operations of the intersections during critical peak hours. We will use Synchro modelling software for this analysis as well as PTV VISSIM.

- Forecast the future traffic volumes for the study horizons. Traffic growth will be calculated from historical growth or determined in consultation with the City.

- Analyze the future background traffic operations of the study intersections during critical peak hours. We will use Synchro modelling software for this analysis as well as PTV VISSIM.

- Forecast the trip generation characteristics of the development and apply to the boundary road system using Institute of Transportation Engineers' data. Trip distribution will be based on Transportation Tomorrow Survey (TTS) data, existing travel patterns, proximity of major traffic generators, land use synergies or a combination of these methods.

- Analyze the operations of the study intersections under total future traffic volumes. These operations are compared to future background traffic operations to identify if capacity issues are forecast to occur and if mitigation measures are required.

- Analyze the operations of the major site accesses under total future traffic volumes. The assessment will primarily be based on standard traffic metrics of assessment, including vehicle delay and queue length.

- Conduct Multi-modal Level of Service (MMLOS) for the segments and intersections in the study area as appropriate.

- Identify truck routes to/through the study area,

- Provide a road phasing plan for the road improvement implementations as required.

- A Meso transportation model will be developed to look at the changes in travel patterns due to the secondary plan and other planned developments. The transportation model will need to be scoped with the City through consultation as City provided information and scoping will need to be discussed based on time constraints.

- Document all analysis and recommendations in the Transportation Master Plan for submission to the City to support the Secondary Plan.

2.3 Cycling Route Analysis

The Transportation Master Plan will evaluate the requirements for Cyclists in the Secondary Plan Area as well as the surrounding study area. For this portion of the Transportation Master Plan, we will:

- Review the City of Hamilton's Cycling Master Plan and the planned improvements recommended by the plan.
- Review the connections between the Secondary Plan Area and the surrounding cyclist network.
- Review any planned improvements to the pedestrian network in the study area.
- Explore the requirements for protected intersections and potential implementation criteria within the Secondary Plan Area.
- Identify the cycling infrastructure proposed within the Secondary Plan Area.
- Include the above information within the Transportation Master Plan.

2.4 Pedestrian Route & Sidewalk Analysis

The Transportation Master Plan will evaluate the requirements for Pedestrians in the Secondary Plan Area as well as the surrounding study area. For this portion of the Transportation Master Plan, we will:

- Review the City of Hamilton's Official Plan and Complete Streets sidewalk provisions for the different roadway classifications. These classifications will include:
    - Major Arterial
    - Minor Arterial
    - Major Collector
    - Minor Collector
    - Local
- Review the connections between Secondary Plan Area and the surrounding pedestrian network.
- Review any planned improvements to the pedestrian network in the study area

- Explore the requirements for controlled pedestrian crossings and potential implementation criteria within the Secondary Plan Area.

- Identify the active transportation facilities and opportunities within the Secondary Plan Area.

- Include the above information within the Transportation Master Plan.

2.5 Transit Assessment

The Transit assessment will examine the existing and currently planned transit infrastructure and service in the study area as well as examine the opportunities in the Secondary Plan Area to enhance this service. As part of the Transit Assessment, we will:

- Review documents for their implementation in the Secondary Plan Area. These will include, but are not limited to:

    - City of Hamilton's Transit Oriented Development (TOD) Guidelines.

    - Hamilton Street Railway's HSR Next: Moving Hamilton Forward implementation plan.

- Discuss the implementation of TOD Guidelines.

- Review the existing transit infrastructure and operations in the study area.

- Review the City's planned improvements to the existing transit infrastructure in the study area.

- Outline the connections between existing/planned transit infrastructure and the Secondary Plan Area.

- Provide recommendations for the existing/planned transit service as they would relate to the Secondary Plan Area.

- Identify potential Transit opportunities within the Secondary Plan Area.

- Identify the projected mode share of the Secondary Plan Area and how it will contribute to the City's overall mode share.

- Include the above information as part of the Transit Assessment within the Transportation Master Plan.

2.6 Transportation Demand Management

A traffic calming strategy will be developed, and recommendations made to address conflicts and potential safety concerns that may be identified as part of the preceding analysis.

A Transportation Demand Management (TDM) Strategy will be developed to support reduced automobile use consistent with the long-term sustainability goals of the City. This TDM strategy will provide a framework for future development within the subject lands.

2.7 Right-of-way Dedications

The Transportation Master Plan will evaluate the planned right-of-way requirements both for the existing or planned roadways from the City of Hamilton and of those proposed as part of the Secondary Plan Area's development. For this portion of the Transportation Master Plan, we will:

- Review the City of Hamilton's Urban Official Plan Schedule C-2 – Future Right-of-Way Dedications for the existing roads that interact with the Secondary Plan Area.
- Review any planned roadway improvements and their effects on the right-of-way for the roadways.
- Review the changes to the existing roadways that will be incorporated into the Secondary Plan Area such as the change of designation from Rural to Urban requirements.
- Provide information on the required right-of-way dedications for the new roadways to be added as part of the development of the Secondary Plan Area.
- Include the above information within the Transportation Master Plan.

2.8 Daylighting Triangle Dedications

The Transportation Master Plan will evaluate the planned daylighting triangle requirements as roadways develop and new roadways are added that will create intersections with a variety of daylighting triangle requirements. For this portion of the Transportation Master Plan, we will:

- Review the City of Hamilton's daylighting triangle requirements for the different intersection types based on the road classifications.
- Include the above information within the Transportation Master Plan

As part of this Transportation Master Plan for the Secondary Plan, we request the following to be provided by the City of Hamilton. At this time, this includes:

- Traffic Volume for the Environmental Assessment for the Twenty Road and URHVP extension
- Confirmation of the latest plans for the Twenty Road and URHVP extension
- Latest updates regarding the Rymal Road BRT
- Latest population data for the following Wards
    - Ward 6
    - Ward 7
    - Ward 8
    - Ward 9
    - Ward 14
- Meeting date to facilitate a discussion regarding the Meso Transportation Model

We hope that the above serves as the terms of reference part of this Transportation Master Plan for the Elfrida Lands.

Please reach out to the undersigned if you have any questions.

C.F. CROZIER & ASSOCIATES INC.

R. Aaron Wignall, Associate
Senior Project Manager, Transportation

APPENDIX B:

Transportation Data

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (1 . UPPER HILL RED VALLEY PKWY & RYMAL RD E)

Start Time	N Approach UPPER RED HILL VALLEY PARKWAY					E Approach RYMAL RD E					W Approach RYMAL RD E					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	22	38	0	0	60	123	91	0	0	214	30	6	0	0	36	310	
2025-09-17 06:15:00	33	52	0	1	85	152	97	0	0	249	28	13	0	0	41	375	
2025-09-17 06:30:00	53	78	0	2	131	163	114	0	0	277	53	7	0	0	60	468	
2025-09-17 06:45:00	35	82	0	1	117	167	142	0	0	309	74	18	0	0	92	518	1671
2025-09-17 07:00:00	31	73	0	0	104	185	149	0	0	334	71	9	0	0	80	518	1879
2025-09-17 07:15:00	43	98	0	1	141	194	187	0	0	381	91	13	0	0	104	626	2130
2025-09-17 07:30:00	28	118	0	4	146	189	236	0	0	425	102	14	0	0	116	687	2349
2025-09-17 07:45:00	25	144	0	0	169	206	272	0	0	478	124	22	0	0	146	793	2624
2025-09-17 08:00:00	31	105	0	2	136	161	239	0	0	400	123	19	0	0	142	678	2784
2025-09-17 08:15:00	38	103	0	2	141	130	223	0	0	353	125	22	0	0	147	641	2799
2025-09-17 08:30:00	40	80	0	0	120	158	235	0	0	393	128	27	0	0	155	668	2780
2025-09-17 08:45:00	38	100	0	2	138	145	236	1	0	382	141	27	0	0	168	688	2675
2025-09-17 09:00:00	35	93	1	1	129	166	197	0	0	363	142	18	0	0	160	652	2649
2025-09-17 09:15:00	31	102	0	0	133	148	215	0	0	363	95	21	0	0	116	612	2620
2025-09-17 09:30:00	28	103	0	0	131	139	220	0	0	359	123	24	0	0	147	637	2589
2025-09-17 09:45:00	29	98	0	0	127	103	162	0	0	265	134	23	0	0	157	549	2450
BREAK																	
2025-09-17 15:00:00	47	170	0	1	217	116	209	0	0	325	187	44	0	0	231	773	
2025-09-17 15:15:00	28	179	0	0	207	122	171	0	0	293	194	29	0	0	223	723	
2025-09-17 15:30:00	34	178	0	3	212	111	176	0	0	287	233	59	0	0	292	791	
2025-09-17 15:45:00	38	168	0	0	206	109	209	0	0	318	216	50	0	0	266	790	3077
2025-09-17 16:00:00	41	191	0	2	232	133	218	0	0	351	230	61	0	0	291	874	3178
2025-09-17 16:15:00	36	175	0	4	211	133	197	0	0	330	219	48	0	0	267	808	3263
2025-09-17 16:30:00	25	176	0	2	201	158	181	0	1	339	232	59	0	0	291	831	3303
2025-09-17 16:45:00	32	160	0	1	192	161	235	0	0	396	251	47	0	0	298	886	3399
2025-09-17 17:00:00	43	171	0	5	214	144	240	0	0	384	261	56	0	0	317	915	3440
2025-09-17 17:15:00	22	197	0	1	219	133	236	0	0	369	220	40	0	0	260	848	3480
2025-09-17 17:30:00	28	154	0	1	182	159	207	0	0	366	216	48	0	0	264	812	3461
2025-09-17 17:45:00	35	167	0	3	202	100	221	0	0	321	168	35	0	0	203	726	3301
2025-09-17 18:00:00	31	157	0	0	188	120	211	0	0	331	209	31	0	0	240	759	3145
2025-09-17 18:15:00	25	153	0	0	178	125	169	0	0	294	169	43	0	0	212	684	2981
2025-09-17 18:30:00	31	168	0	1	199	121	170	0	0	291	156	30	0	0	186	676	2845
2025-09-17 18:45:00	29	183	0	2	212	94	178	1	0	273	158	33	0	0	191	676	2795

Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Grand Total	1065	4214	1	42	5280	4568	6243	2	1	10813	4903	996	0	0	5899	**21992**	-
Approach%	20.2%	79.8%	0%		-	42.2%	57.7%	0%		-	83.1%	16.9%	0%		-	**-**	-
Totals %	4.8%	19.2%	0%		24%	20.8%	28.4%	0%		49.2%	22.3%	4.5%	0%		26.8%	**-**	-
Heavy	107	121	0		-	115	227	0		-	209	88	0		-	**-**	-
Heavy %	10%	2.9%	0%		-	2.5%	3.6%	0%		-	4.3%	8.8%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach UPPER RED HILL VALLEY PARKWAY					E Approach RYMAL RD E					W Approach RYMAL RD E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	28	118	0	4	146	189	236	0	0	425	102	14	0	0	116	687
2025-09-17 07:45:00	25	144	0	0	169	206	272	0	0	478	124	22	0	0	146	793
2025-09-17 08:00:00	31	105	0	2	136	161	239	0	0	400	123	19	0	0	142	678
2025-09-17 08:15:00	38	103	0	2	141	130	223	0	0	353	125	22	0	0	147	641
Grand Total	122	470	0	8	592	686	970	0	0	1656	474	77	0	0	551	**2799**
Approach%	20.6%	79.4%	0%		-	41.4%	58.6%	0%		-	86%	14%	0%		-	**-**
Totals %	4.4%	16.8%	0%		21.2%	24.5%	34.7%	0%		59.2%	16.9%	2.8%	0%		19.7%	**-**
PHF	0.8	0.82	0		0.88	0.83	0.89	0		0.87	0.95	0.88	0		0.94	0.88
Heavy	10	30	0		40	26	35	0		61	41	11	0		52	153
Heavy %	8.2%	6.4%	0%		6.8%	3.8%	3.6%	0%		3.7%	8.6%	14.3%	0%		9.4%	5.5%
Lights	112	440	0		552	660	935	0		1595	431	66	0		497	2644
Lights %	91.8%	93.6%	0%		93.2%	96.2%	96.4%	0%		96.3%	90.9%	85.7%	0%		90.2%	94.5%
Single-Unit Trucks	2	10	0		12	9	18	0		27	25	2	0		27	66
Single-Unit Trucks %	1.6%	2.1%	0%		2%	1.3%	1.9%	0%		1.6%	5.3%	2.6%	0%		4.9%	2.4%
Buses	4	17	0		21	17	13	0		30	7	6	0		13	64
Buses %	3.3%	3.6%	0%		3.5%	2.5%	1.3%	0%		1.8%	1.5%	7.8%	0%		2.4%	2.3%
Articulated Trucks	4	3	0		7	0	4	0		4	9	3	0		12	23
Articulated Trucks %	3.3%	0.6%	0%		1.2%	0%	0.4%	0%		0.2%	1.9%	3.9%	0%		2.2%	0.8%
Bicycles on Road	0	0	0		0	0	0	0		0	2	0	0		2	2
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0.4%	0%	0%		0.4%	0.1%
Pedestrians	-	-	-	7	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	87.5%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	12.5%		-	-	-	0%		-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach UPPER RED HILL VALLEY PARKWAY					E Approach RYMAL RD E					W Approach RYMAL RD E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	25	176	0	2	201	158	181	0	1	339	232	59	0	0	291	831
2025-09-17 16:45:00	32	160	0	1	192	161	235	0	0	396	251	47	0	0	298	886
2025-09-17 17:00:00	43	171	0	5	214	144	240	0	0	384	261	56	0	0	317	915
2025-09-17 17:15:00	22	197	0	1	219	133	236	0	0	369	220	40	0	0	260	848
Grand Total	122	704	0	9	826	596	892	0	1	1488	964	202	0	0	1166	**3480**
Approach%	14.8%	85.2%	0%		-	40.1%	59.9%	0%		-	82.7%	17.3%	0%		-	**-**
Totals %	3.5%	20.2%	0%		23.7%	17.1%	25.6%	0%		42.8%	27.7%	5.8%	0%		33.5%	**-**
PHF	0.71	0.89	0		0.94	0.93	0.93	0		0.94	0.92	0.86	0		0.92	0.95
Heavy	6	11	0		17	13	12	0		25	19	9	0		28	70
Heavy %	4.9%	1.6%	0%		2.1%	2.2%	1.3%	0%		1.7%	2%	4.5%	0%		2.4%	2%
Lights	115	693	0		808	582	880	0		1462	945	193	0		1138	3408
Lights %	94.3%	98.4%	0%		97.8%	97.7%	98.7%	0%		98.3%	98%	95.5%	0%		97.6%	97.9%
Single-Unit Trucks	0	6	0		6	8	8	0		16	10	2	0		12	34
Single-Unit Trucks %	0%	0.9%	0%		0.7%	1.3%	0.9%	0%		1.1%	1%	1%	0%		1%	1%
Buses	4	4	0		8	5	3	0		8	5	4	0		9	25
Buses %	3.3%	0.6%	0%		1%	0.8%	0.3%	0%		0.5%	0.5%	2%	0%		0.8%	0.7%
Articulated Trucks	2	1	0		3	0	1	0		1	4	3	0		7	11
Articulated Trucks %	1.6%	0.1%	0%		0.4%	0%	0.1%	0%		0.1%	0.4%	1.5%	0%		0.6%	0.3%
Bicycles on Road	1	0	0		1	1	0	0		1	0	0	0		0	2
Bicycles on Road %	0.8%	0%	0%		0.1%	0.2%	0%	0%		0.1%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	6	-	-	-	-	1	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	60%		-	-	-	10%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	30%		-	-	-	0%		-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
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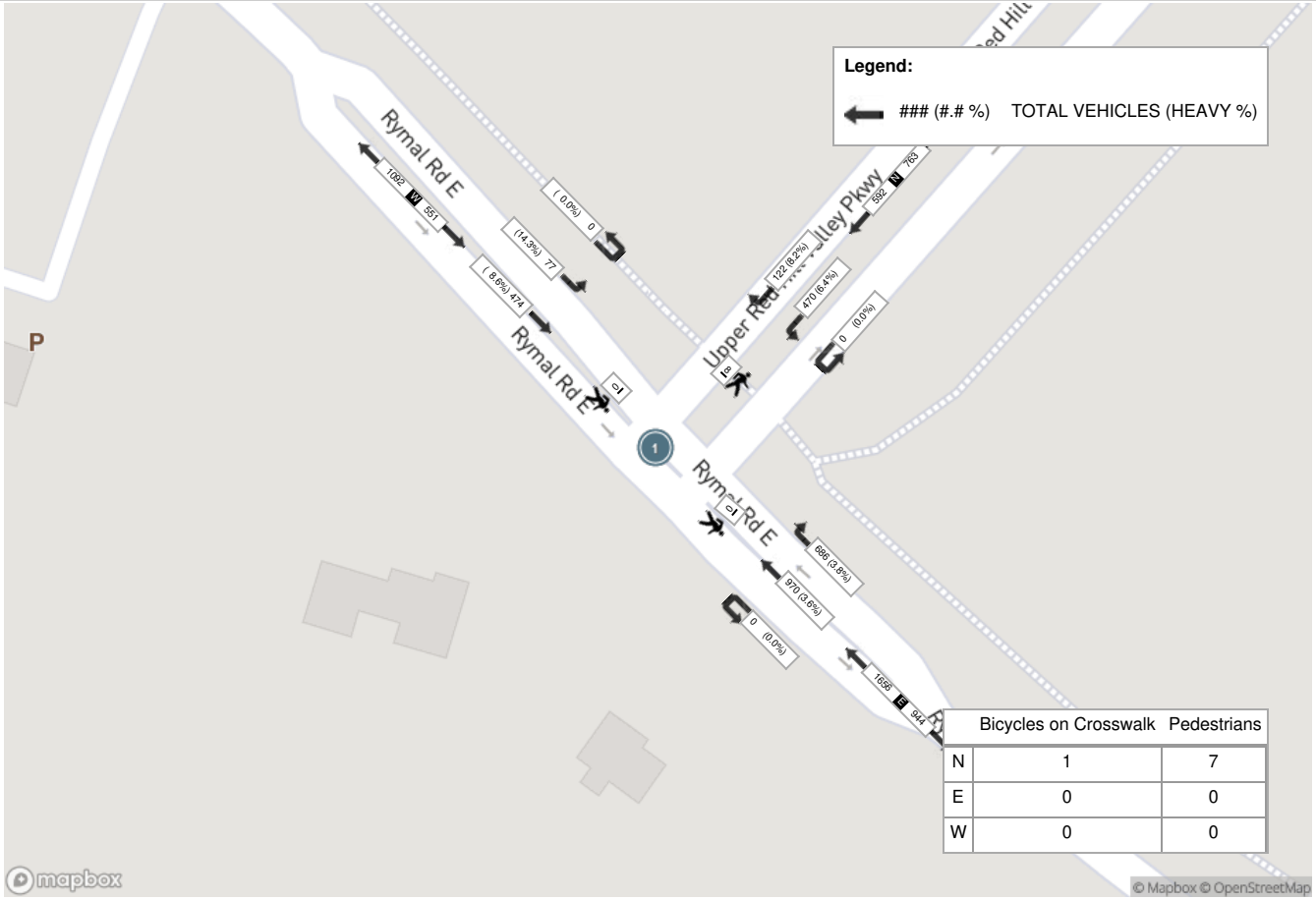
TORONTO ONTARIO, M5B 1M4
CANADA

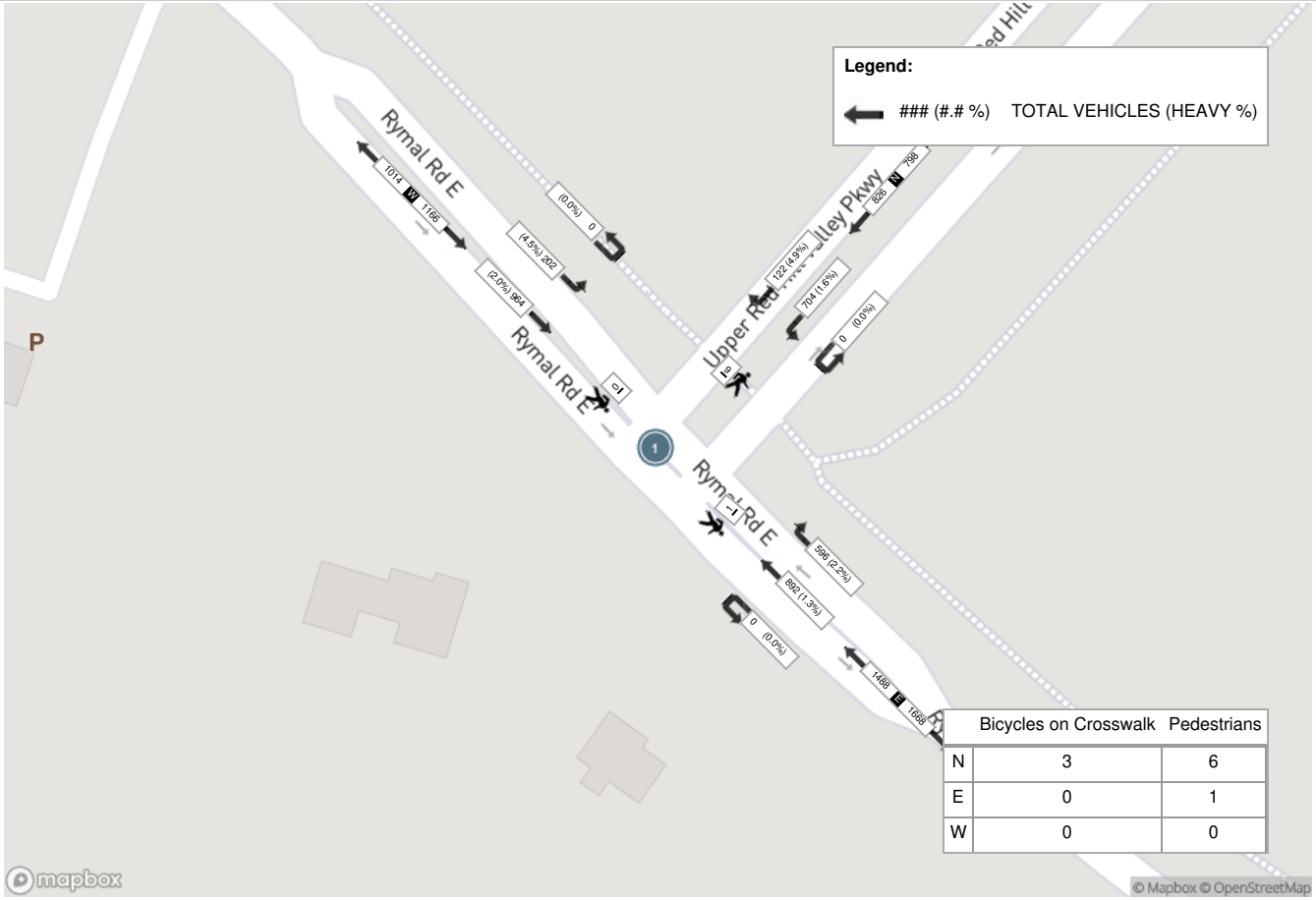
Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	7
E	0	0
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)



	Bicycles on Crosswalk	Pedestrians
N	3	6
E	0	1
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (2 . TRINITY CHURCH RD & RYMAL RD E)

Start Time	E Approach RYMAL ROAD E					S Approach TRINITY CHURCH RD					W Approach RYMAL RD E					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	131	5	0	0	136	2	81	0	0	83	22	44	0	0	66	285	
2025-09-17 06:15:00	158	3	0	1	161	7	91	0	0	98	25	58	0	0	83	342	
2025-09-17 06:30:00	166	3	0	1	169	6	114	0	0	120	37	84	0	0	121	410	
2025-09-17 06:45:00	213	4	0	1	217	3	96	0	0	99	53	108	0	0	161	477	1514
2025-09-17 07:00:00	227	3	0	0	230	4	106	0	0	110	53	91	0	0	144	484	1713
2025-09-17 07:15:00	249	3	0	3	252	5	131	0	0	136	60	120	0	0	180	568	1939
2025-09-17 07:30:00	283	11	0	2	294	27	142	0	0	169	67	156	0	0	223	686	2215
2025-09-17 07:45:00	339	11	0	11	350	35	138	0	0	173	77	195	0	0	272	795	2533
2025-09-17 08:00:00	278	8	0	2	286	5	126	0	0	131	56	175	0	0	231	648	2697
2025-09-17 08:15:00	251	8	0	0	259	7	100	0	0	107	58	178	0	0	236	602	2731
2025-09-17 08:30:00	287	5	0	1	292	10	114	0	0	124	50	151	0	0	201	617	2662
2025-09-17 08:45:00	261	6	0	2	267	13	112	0	0	125	48	191	0	0	239	631	2498
2025-09-17 09:00:00	260	3	0	0	263	13	100	0	0	113	57	183	0	0	240	616	2466
2025-09-17 09:15:00	258	5	0	3	263	10	109	0	0	119	43	143	0	0	186	568	2432
2025-09-17 09:30:00	247	2	0	2	249	9	111	0	0	120	54	187	0	0	241	610	2425
2025-09-17 09:45:00	189	3	0	2	192	10	73	0	0	83	49	175	0	0	224	499	2293
BREAK																	
2025-09-17 15:00:00	232	6	0	0	238	9	92	0	0	101	114	238	0	0	352	691	
2025-09-17 15:15:00	208	4	0	1	212	11	90	0	0	101	125	264	0	0	389	702	
2025-09-17 15:30:00	201	6	0	4	207	18	74	0	0	92	129	272	0	0	401	700	
2025-09-17 15:45:00	237	7	0	3	244	15	82	0	2	97	97	275	0	0	372	713	2806
2025-09-17 16:00:00	263	11	0	1	274	18	89	0	0	107	138	287	0	0	425	806	2921
2025-09-17 16:15:00	240	13	0	3	253	15	98	0	1	113	113	275	0	0	388	754	2973
2025-09-17 16:30:00	242	11	0	1	253	16	96	0	3	112	142	266	0	0	408	773	3046
2025-09-17 16:45:00	277	11	0	0	288	20	115	0	0	135	128	285	0	0	413	836	3169
2025-09-17 17:00:00	260	10	1	1	271	20	119	0	1	139	131	291	0	2	422	832	3195
2025-09-17 17:15:00	255	11	0	2	266	16	112	0	0	128	124	311	0	0	435	829	3270
2025-09-17 17:30:00	266	14	0	0	280	13	104	0	0	117	111	255	0	0	366	763	3260
2025-09-17 17:45:00	241	11	0	2	252	12	81	0	0	93	101	231	0	0	332	677	3101
2025-09-17 18:00:00	222	3	0	0	225	7	104	0	0	111	110	258	0	0	368	704	2973
2025-09-17 18:15:00	228	8	0	2	236	12	79	0	0	91	98	230	0	0	328	655	2799
2025-09-17 18:30:00	209	6	0	1	215	7	72	0	0	79	104	222	0	0	326	620	2656
2025-09-17 18:45:00	183	6	0	1	189	9	84	0	0	93	107	229	0	0	336	618	2597

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Grand Total	7561	221	1	53	7783	384	3235	0	7	3619	2681	6428	0	2	9109	**20511**	-
Approach%	97.1%	2.8%	0%		-	10.6%	89.4%	0%		-	29.4%	70.6%	0%		-	**-**	-
Totals %	36.9%	1.1%	0%		37.9%	1.9%	15.8%	0%		17.6%	13.1%	31.3%	0%		44.4%	**-**	-
Heavy	293	3	0		-	11	51	0		-	55	271	0		-	**-**	-
Heavy %	3.9%	1.4%	0%		-	2.9%	1.6%	0%		-	2.1%	4.2%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	E Approach RYMAL ROAD E					S Approach TRINITY CHURCH RD					W Approach RYMAL RD E					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	283	11	0	2	294	27	142	0	0	169	67	156	0	0	223	686
2025-09-17 07:45:00	339	11	0	11	350	35	138	0	0	173	77	195	0	0	272	795
2025-09-17 08:00:00	278	8	0	2	286	5	126	0	0	131	56	175	0	0	231	648
2025-09-17 08:15:00	251	8	0	0	259	7	100	0	0	107	58	178	0	0	236	602
Grand Total	1151	38	0	15	1189	74	506	0	0	580	258	704	0	0	962	**2731**
Approach%	96.8%	3.2%	0%		-	12.8%	87.2%	0%		-	26.8%	73.2%	0%		-	**-**
Totals %	42.1%	1.4%	0%		43.5%	2.7%	18.5%	0%		21.2%	9.4%	25.8%	0%		35.2%	**-**
PHF	0.85	0.86	0		0.85	0.53	0.89	0		0.84	0.84	0.9	0		0.88	0.86
Heavy	56	1	0		57	4	5	0		9	15	58	0		73	139
Heavy %	4.9%	2.6%	0%		4.8%	5.4%	1%	0%		1.6%	5.8%	8.2%	0%		7.6%	5.1%
Lights	1094	37	0		1131	70	501	0		571	242	645	0		887	2589
Lights %	95%	97.4%	0%		95.1%	94.6%	99%	0%		98.4%	93.8%	91.6%	0%		92.2%	94.8%
Single-Unit Trucks	24	0	0		24	2	3	0		5	10	27	0		37	66
Single-Unit Trucks %	2.1%	0%	0%		2%	2.7%	0.6%	0%		0.9%	3.9%	3.8%	0%		3.8%	2.4%
Buses	28	1	0		29	2	2	0		4	5	19	0		24	57
Buses %	2.4%	2.6%	0%		2.4%	2.7%	0.4%	0%		0.7%	1.9%	2.7%	0%		2.5%	2.1%
Articulated Trucks	4	0	0		4	0	0	0		0	0	12	0		12	16
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	1.7%	0%		1.2%	0.6%
Bicycles on Road	1	0	0		1	0	0	0		0	1	1	0		2	3
Bicycles on Road %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0.4%	0.1%	0%		0.2%	0.1%
Pedestrians	-	-	-	13	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	86.7%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	13.3%		-	-	-	0%		-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	E Approach RYMAL ROAD E					S Approach TRINITY CHURCH RD					W Approach RYMAL RD E					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	242	11	0	1	253	16	96	0	3	112	142	266	0	0	408	773
2025-09-17 16:45:00	277	11	0	0	288	20	115	0	0	135	128	285	0	0	413	836
2025-09-17 17:00:00	260	10	1	1	271	20	119	0	1	139	131	291	0	2	422	832
2025-09-17 17:15:00	255	11	0	2	266	16	112	0	0	128	124	311	0	0	435	829
Grand Total	1034	43	1	4	1078	72	442	0	4	514	525	1153	0	2	1678	**3270**
Approach%	95.9%	4%	0.1%		-	14%	86%	0%		-	31.3%	68.7%	0%		-	**-**
Totals %	31.6%	1.3%	0%		33%	2.2%	13.5%	0%		15.7%	16.1%	35.3%	0%		51.3%	**-**
PHF	0.93	0.98	0.25		0.94	0.9	0.93	0		0.92	0.92	0.93	0		0.96	0.98
Heavy	22	0	0		22	3	3	0		6	7	25	0		32	60
Heavy %	2.1%	0%	0%		2%	4.2%	0.7%	0%		1.2%	1.3%	2.2%	0%		1.9%	1.8%
Lights	1012	43	1		1056	69	438	0		507	518	1128	0		1646	3209
Lights %	97.9%	100%	100%		98%	95.8%	99.1%	0%		98.6%	98.7%	97.8%	0%		98.1%	98.1%
Single-Unit Trucks	13	0	0		13	3	3	0		6	7	11	0		18	37
Single-Unit Trucks %	1.3%	0%	0%		1.2%	4.2%	0.7%	0%		1.2%	1.3%	1%	0%		1.1%	1.1%
Buses	8	0	0		8	0	0	0		0	0	9	0		9	17
Buses %	0.8%	0%	0%		0.7%	0%	0%	0%		0%	0%	0.8%	0%		0.5%	0.5%
Articulated Trucks	1	0	0		1	0	0	0		0	0	5	0		5	6
Articulated Trucks %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0.4%	0%		0.3%	0.2%
Bicycles on Road	0	0	0		0	0	1	0		1	0	0	0		0	1
Bicycles on Road %	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	3	-	-	-	-	4	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	30%		-	-	-	40%		-	-	-	20%		**-**
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	10%		-	-	-	0%		-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
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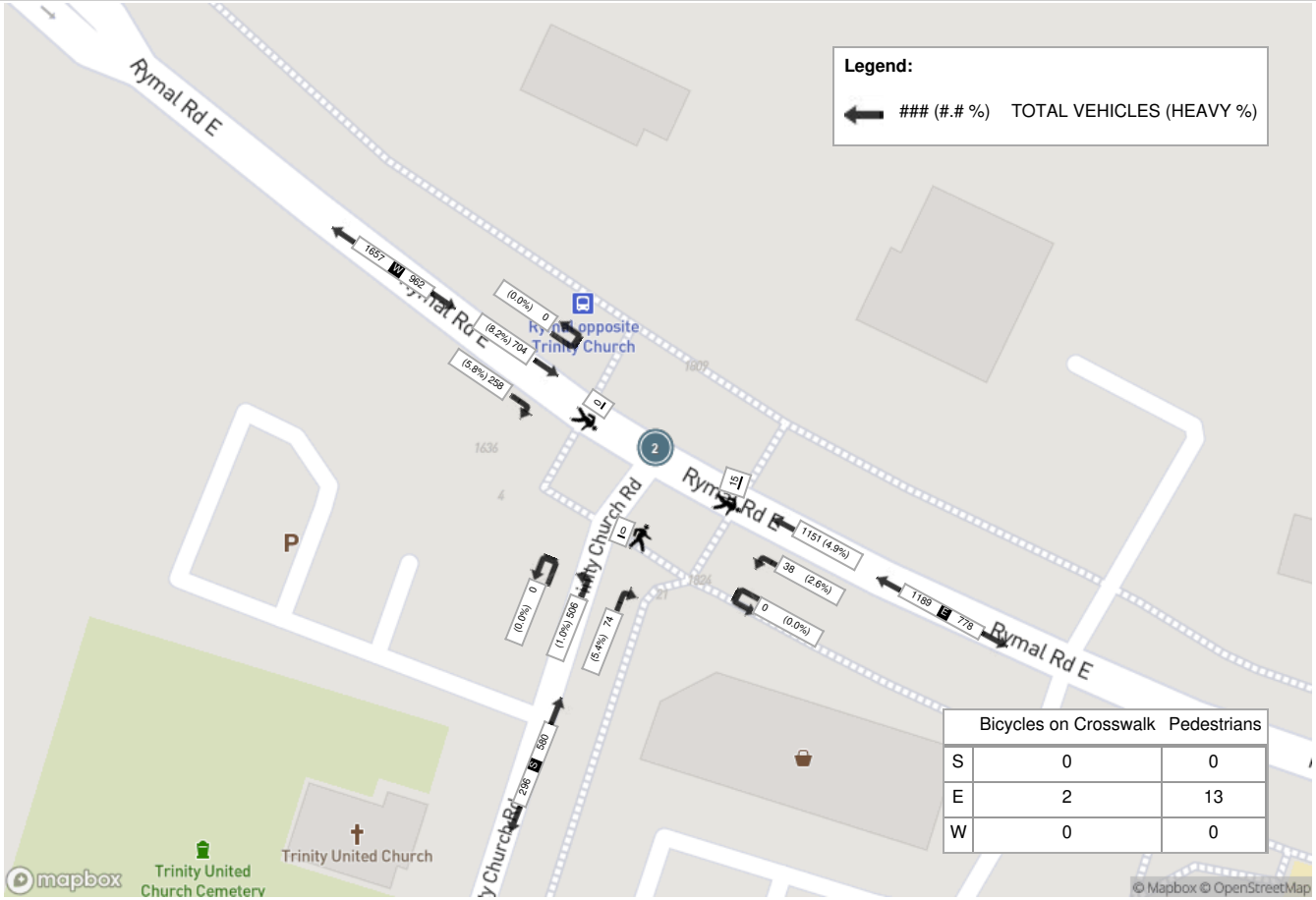
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)



	Bicycles on Crosswalk	Pedestrians
S	0	0
E	2	13
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
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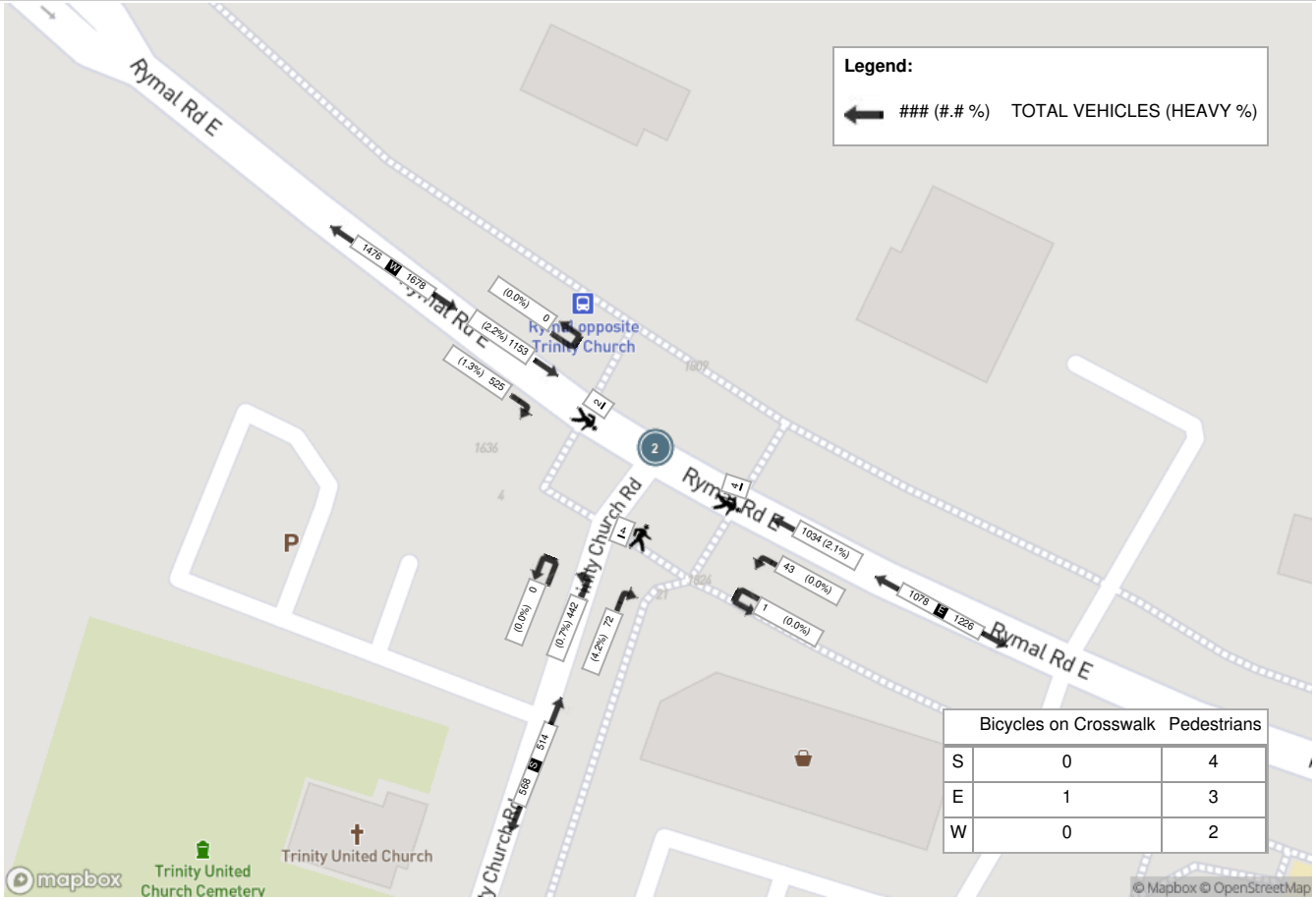
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)



	Bicycles on Crosswalk	Pedestrians
S	0	4
E	1	3
W	0	2

Spectrum

Turning Movement Count
Location Name: TRINITY CHURCH RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (3 . TRINITY CHURCH RD & GOLF CLUB RD)

Start Time	N Approach TRINITY CHURCH RD						E Approach GOLF CLUB RD						S Approach TRINITY CHURCH RD						W Approach PRIVATE DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	23	0	0	0	23	0	0	0	0	0	0	0	89	0	0	0	89	0	0	0	0	0	0	112	
2025-09-17 06:15:00	0	21	0	0	0	21	0	0	0	0	0	0	0	83	0	0	0	83	0	0	0	0	0	0	104	
2025-09-17 06:30:00	0	41	0	0	0	41	0	0	0	0	0	0	0	111	0	0	0	111	0	0	0	0	0	0	152	
2025-09-17 06:45:00	0	53	0	0	0	53	0	0	0	0	0	0	0	86	0	0	0	86	0	0	0	0	0	0	139	507
2025-09-17 07:00:00	0	50	0	0	0	50	0	0	0	0	0	0	0	98	0	0	0	98	0	0	0	0	0	0	148	543
2025-09-17 07:15:00	0	49	0	0	0	49	0	0	0	0	0	0	0	127	0	0	0	127	0	0	0	0	0	0	176	615
2025-09-17 07:30:00	0	53	0	0	0	53	0	0	0	0	0	0	0	138	0	0	0	138	0	0	0	0	0	0	191	654
2025-09-17 07:45:00	0	61	0	0	0	61	0	0	0	0	0	0	0	129	0	0	0	129	0	0	0	0	0	0	190	705
2025-09-17 08:00:00	0	59	0	0	0	59	0	0	0	0	0	0	0	85	0	0	0	85	0	0	0	0	0	0	144	701
2025-09-17 08:15:00	0	66	0	0	0	66	0	0	0	0	0	0	0	100	0	0	0	100	0	0	1	0	0	1	167	692
2025-09-17 08:30:00	0	41	0	0	0	41	0	0	0	0	0	0	0	94	0	0	0	94	0	0	0	0	0	0	135	636
2025-09-17 08:45:00	0	61	0	0	0	61	0	0	0	0	0	0	0	99	0	0	0	99	0	0	0	0	0	0	160	606
2025-09-17 09:00:00	0	48	0	0	0	48	0	0	0	0	0	0	0	108	0	0	0	108	0	0	0	0	0	0	156	618
2025-09-17 09:15:00	0	42	0	0	0	42	0	0	0	0	0	0	0	93	0	0	0	93	0	0	0	0	0	0	135	586
2025-09-17 09:30:00	0	42	0	0	0	42	0	0	0	0	0	0	0	86	0	0	0	86	0	0	0	0	0	0	128	579
2025-09-17 09:45:00	0	39	0	0	0	39	0	0	0	0	0	0	0	65	0	0	0	65	0	0	0	0	0	0	104	523
BREAK																										
2025-09-17 15:00:00	0	98	0	0	0	98	0	0	0	0	0	0	0	68	0	0	0	68	0	0	0	0	0	0	166	
2025-09-17 15:15:00	1	109	0	0	0	110	0	0	0	0	0	0	0	80	0	0	0	80	0	0	0	0	0	0	190	
2025-09-17 15:30:00	0	112	0	0	0	112	0	0	0	0	0	0	0	73	0	0	0	73	0	0	0	0	0	0	185	
2025-09-17 15:45:00	0	95	0	0	0	95	0	0	0	0	0	0	0	86	0	0	0	86	0	0	0	0	0	0	181	722
2025-09-17 16:00:00	0	131	0	0	0	131	0	0	0	0	0	0	0	88	0	0	0	88	0	0	0	0	0	0	219	775
2025-09-17 16:15:00	0	114	0	0	0	114	0	0	0	0	0	0	0	87	0	0	0	87	0	0	0	0	0	0	201	786
2025-09-17 16:30:00	0	130	0	0	0	130	0	0	0	0	0	0	0	101	0	0	0	101	0	0	0	0	0	0	231	832
2025-09-17 16:45:00	1	127	0	0	0	128	0	0	0	0	0	0	0	117	0	0	0	117	1	0	0	0	0	1	246	897
2025-09-17 17:00:00	0	109	0	0	0	109	0	0	0	0	0	0	0	120	0	0	0	120	0	0	1	0	0	1	230	908
2025-09-17 17:15:00	0	123	0	0	0	123	0	0	0	0	0	0	0	108	0	0	0	108	0	0	0	0	0	0	231	938
2025-09-17 17:30:00	1	99	0	0	0	100	0	0	0	0	0	0	0	108	0	0	0	108	0	0	0	0	0	0	208	915
2025-09-17 17:45:00	0	101	0	0	0	101	0	0	0	0	0	0	0	87	0	0	0	87	0	0	0	0	0	0	188	857
2025-09-17 18:00:00	0	92	0	0	0	92	0	0	0	0	0	0	0	81	0	0	0	81	0	0	0	0	0	0	173	800
2025-09-17 18:15:00	1	96	0	0	0	97	0	0	0	0	0	0	0	78	0	0	0	78	0	0	0	0	0	0	175	744
2025-09-17 18:30:00	0	78	0	0	0	78	0	0	0	0	0	0	0	66	0	0	0	66	0	0	0	0	0	0	144	680
2025-09-17 18:45:00	0	92	0	0	0	92	0	0	0	0	0	0	0	67	0	0	0	67	0	0	0	0	0	0	159	651
Grand Total	4	2455	0	0	0	2459	0	0	0	0	0	0	0	3006	0	0	0	3006	1	0	2	0	0	3	**5468**	-
Approach%	0.2%	99.8%	0%	0%		-	0%	0%	0%	0%		-	0%	100%	0%	0%		-	33.3%	0%	66.7%	0%		-	-	-
Totals %	0.1%	44.9%	0%	0%		45%	0%	0%	0%	0%		0%	0%	55%	0%	0%		55%	0%	0%	0%	0%		0.1%	-	-
Heavy	0	46	0	0		-	0	0	0	0		-	0	49	0	0		-	0	0	0	0		-	-	-
Heavy %	0%	1.9%	0%	0%		-	0%	0%	0%	0%		-	0%	1.6%	0%	0%		-	0%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: TRINITY CHURCH RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:00 AM - 08:00 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach TRINITY CHURCH RD						E Approach GOLF CLUB RD						S Approach TRINITY CHURCH RD						W Approach PRIVATE DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:00:00	0	50	0	0	0	50	0	0	0	0	0	0	0	98	0	0	0	98	0	0	0	0	0	0	148
2025-09-17 07:15:00	0	49	0	0	0	49	0	0	0	0	0	0	0	127	0	0	0	127	0	0	0	0	0	0	176
2025-09-17 07:30:00	0	53	0	0	0	53	0	0	0	0	0	0	0	138	0	0	0	138	0	0	0	0	0	0	191
2025-09-17 07:45:00	0	61	0	0	0	61	0	0	0	0	0	0	0	129	0	0	0	129	0	0	0	0	0	0	190
Grand Total	0	213	0	0	0	213	0	0	0	0	0	0	0	492	0	0	0	492	0	0	0	0	0	0	**705**
Approach%	0%	100%	0%	0%		-	0%	0%	0%	0%		-	0%	100%	0%	0%		-	0%	0%	0%	0%		-	**-**
Totals %	0%	30.2%	0%	0%		30.2%	0%	0%	0%	0%		0%	0%	69.8%	0%	0%		69.8%	0%	0%	0%	0%		0%	**-**
PHF	0	0.87	0	0		0.87	0	0	0	0		0	0	0.89	0	0		0.89	0	0	0	0		0	0.92
Heavy	0	7	0	0		7	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	15
Heavy %	0%	3.3%	0%	0%		3.3%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.6%	0%	0%	0%	0%		0%	2.1%
Lights	0	205	0	0		205	0	0	0	0		0	0	484	0	0		484	0	0	0	0		0	689
Lights %	0%	96.2%	0%	0%		96.2%	0%	0%	0%	0%		0%	0%	98.4%	0%	0%		98.4%	0%	0%	0%	0%		0%	97.7%
Single-Unit Trucks	0	5	0	0		5	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	8
Single-Unit Trucks %	0%	2.3%	0%	0%		2.3%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	1.1%
Buses	0	2	0	0		2	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	7
Buses %	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	1%	0%	0%		1%	0%	0%	0%	0%		0%	1%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%

Spectrum

Turning Movement Count
Location Name: TRINITY CHURCH RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

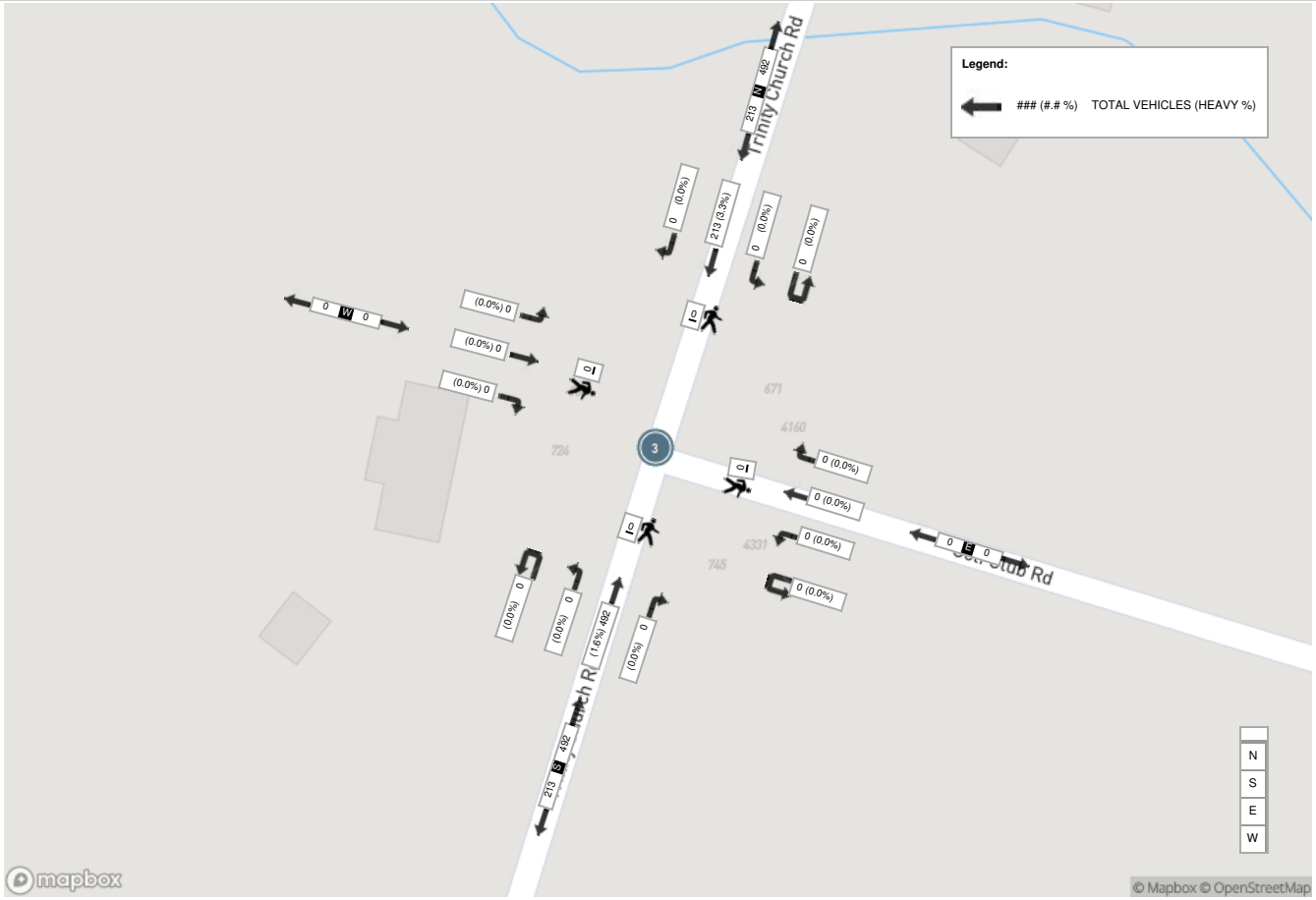
Start Time	N Approach TRINITY CHURCH RD						E Approach GOLF CLUB RD						S Approach TRINITY CHURCH RD						W Approach PRIVATE DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	0	130	0	0	0	130	0	0	0	0	0	0	0	101	0	0	0	101	0	0	0	0	0	0	231
2025-09-17 16:45:00	1	127	0	0	0	128	0	0	0	0	0	0	0	117	0	0	0	117	1	0	0	0	0	1	246
2025-09-17 17:00:00	0	109	0	0	0	109	0	0	0	0	0	0	0	120	0	0	0	120	0	0	1	0	0	1	230
2025-09-17 17:15:00	0	123	0	0	0	123	0	0	0	0	0	0	0	108	0	0	0	108	0	0	0	0	0	0	231
Grand Total	1	489	0	0	0	490	0	0	0	0	0	0	0	446	0	0	0	446	1	0	1	0	0	2	**938**
Approach%	0.2%	99.8%	0%	0%		-	0%	0%	0%	0%		-	0%	100%	0%	0%		-	50%	0%	50%	0%		-	**-**
Totals %	0.1%	52.1%	0%	0%		52.2%	0%	0%	0%	0%		0%	0%	47.5%	0%	0%		47.5%	0.1%	0%	0.1%	0%		0.2%	**-**
PHF	0.25	0.94	0	0		0.94	0	0	0	0		0	0	0.93	0	0		0.93	0.25	0	0.25	0		0.5	0.95
Heavy	0	4	0	0		4	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	9
Heavy %	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1.1%	0%	0%	0%	0%		0%	1%
Lights	1	485	0	0		486	0	0	0	0		0	0	440	0	0		440	1	0	1	0		2	928
Lights %	100%	99.2%	0%	0%		99.2%	0%	0%	0%	0%		0%	0%	98.7%	0%	0%		98.7%	100%	0%	100%	0%		100%	98.9%
Single-Unit Trucks	0	4	0	0		4	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	9
Single-Unit Trucks %	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1.1%	0%	0%	0%	0%		0%	1%
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0.1%

Spectrum

Turning Movement Count
Location Name: TRINITY CHURCH RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

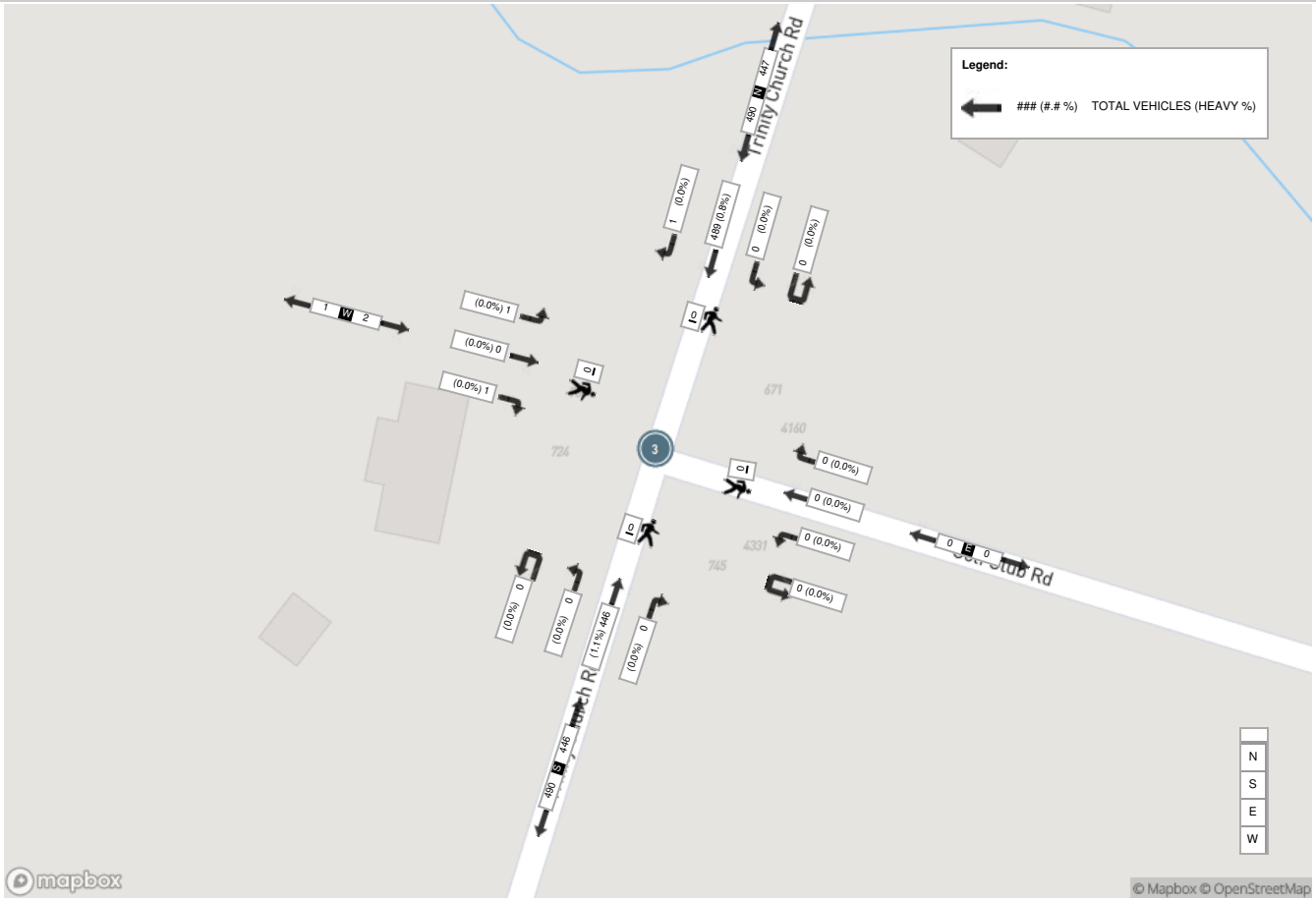
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:00 AM - 08:00 AM **Weather: Few Clouds (14 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: FLETCHER RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (4 . FLETCHER RD & GOLF CLUB RD)

Start Time	N Approach FLETCHER RD						E Approach GOLF CLUB RD						S Approach FLETCHER RD						W Approach GOLF CLUB RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	10	
2025-09-17 06:15:00	1	4	0	0	0	5	3	0	2	0	0	5	0	8	1	0	0	9	0	0	0	0	0	0	19	
2025-09-17 06:30:00	2	7	1	0	0	10	1	0	0	0	0	1	0	8	1	0	0	9	1	0	0	0	0	1	21	
2025-09-17 06:45:00	3	8	0	0	0	11	2	0	0	0	0	2	0	8	1	0	0	9	0	0	1	0	0	1	23	73
2025-09-17 07:00:00	2	2	0	0	0	4	1	2	0	0	0	3	0	14	0	0	0	14	1	0	1	0	0	2	23	86
2025-09-17 07:15:00	1	5	1	0	0	7	1	0	2	0	0	3	2	24	0	0	0	26	1	0	0	0	0	1	37	104
2025-09-17 07:30:00	1	22	0	0	0	23	0	0	0	0	0	0	2	65	0	0	0	67	0	0	0	0	0	0	90	173
2025-09-17 07:45:00	0	31	1	0	0	32	0	0	2	0	0	2	0	67	0	0	0	67	0	0	0	0	0	0	101	251
2025-09-17 08:00:00	4	22	0	0	0	26	1	0	1	0	0	2	0	36	0	0	0	36	1	0	2	0	0	3	67	295
2025-09-17 08:15:00	0	13	0	0	1	13	1	0	0	0	2	1	2	32	1	0	1	35	1	1	0	0	0	2	51	309
2025-09-17 08:30:00	0	28	3	0	0	31	0	1	0	0	0	1	0	29	0	0	0	29	0	1	0	0	0	1	62	281
2025-09-17 08:45:00	0	18	0	0	0	18	0	0	0	0	0	0	0	28	1	0	0	29	0	0	2	0	0	2	49	229
2025-09-17 09:00:00	2	10	3	0	0	15	0	2	2	0	0	4	1	33	0	0	0	34	1	1	0	0	0	2	55	217
2025-09-17 09:15:00	0	18	0	0	0	18	0	0	2	0	0	2	0	42	0	0	0	42	0	0	1	0	0	1	63	229
2025-09-17 09:30:00	0	22	0	0	0	22	0	0	0	0	0	0	0	18	2	0	0	20	1	1	0	0	1	2	44	211
2025-09-17 09:45:00	0	13	2	0	1	15	3	0	0	0	1	3	0	18	0	0	0	18	0	1	1	0	0	2	38	200
BREAK																										
2025-09-17 15:00:00	0	40	0	0	0	40	0	3	1	0	0	4	1	23	1	0	0	25	2	0	0	0	0	2	71	
2025-09-17 15:15:00	2	33	0	0	0	35	1	0	1	0	0	2	2	16	0	0	0	18	2	0	1	0	0	3	58	
2025-09-17 15:30:00	1	15	0	0	0	16	0	0	0	0	0	0	3	27	0	0	0	30	1	0	1	0	0	2	48	
2025-09-17 15:45:00	1	37	1	0	0	39	0	2	0	1	0	3	0	38	1	0	0	39	2	0	1	0	0	3	84	261
2025-09-17 16:00:00	0	36	4	0	0	40	2	0	1	0	0	3	1	26	0	0	0	27	0	0	0	0	0	0	70	260
2025-09-17 16:15:00	1	36	1	0	0	38	0	0	0	0	0	0	0	31	0	0	0	31	0	1	3	0	0	4	73	275
2025-09-17 16:30:00	0	30	2	0	0	32	0	1	1	0	0	2	0	13	0	0	0	13	0	1	0	0	0	1	48	275
2025-09-17 16:45:00	1	28	2	0	0	31	0	1	2	0	0	3	1	29	0	0	0	30	0	0	0	0	0	0	64	255
2025-09-17 17:00:00	1	29	2	0	0	32	0	0	0	0	0	0	0	31	2	0	0	33	0	0	0	0	0	0	65	250
2025-09-17 17:15:00	0	25	2	0	0	27	4	0	0	0	0	4	0	21	0	0	0	21	0	0	1	0	0	1	53	230
2025-09-17 17:30:00	0	33	3	0	0	36	4	0	1	0	0	5	1	24	1	0	0	26	2	0	3	0	0	5	72	254
2025-09-17 17:45:00	0	23	4	0	0	27	6	0	2	0	0	8	3	19	0	0	0	22	0	0	0	0	0	0	57	247
2025-09-17 18:00:00	0	16	0	0	0	16	1	0	0	0	0	1	1	20	0	0	0	21	0	0	0	0	0	0	38	220
2025-09-17 18:15:00	0	14	0	0	0	14	1	0	0	0	0	1	0	14	0	0	0	14	0	0	0	0	0	0	29	196
2025-09-17 18:30:00	0	16	0	0	0	16	0	0	1	0	0	1	1	13	0	0	2	14	0	0	1	0	0	1	32	156
2025-09-17 18:45:00	1	14	0	0	2	15	0	0	0	0	0	0	0	15	0	0	0	15	0	1	2	0	0	3	33	132
Grand Total	24	648	32	0	4	704	32	12	21	1	3	66	21	800	12	0	3	833	16	8	21	0	1	45	**1648**	-
Approach%	3.4%	92%	4.5%	0%		-	48.5%	18.2%	31.8%	1.5%		-	2.5%	96%	1.4%	0%		-	35.6%	17.8%	46.7%	0%		-	-	-
Totals %	1.5%	39.3%	1.9%	0%		42.7%	1.9%	0.7%	1.3%	0.1%		4%	1.3%	48.5%	0.7%	0%		50.5%	1%	0.5%	1.3%	0%		2.7%	-	-
Heavy	2	31	1	0		-	0	2	2	0		-	2	36	0	0		-	3	2	0	0		-	-	-
Heavy %	8.3%	4.8%	3.1%	0%		-	0%	16.7%	9.5%	0%		-	9.5%	4.5%	0%	0%		-	18.8%	25%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: FLETCHER RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach FLETCHER RD						E Approach GOLF CLUB RD						S Approach FLETCHER RD						W Approach GOLF CLUB RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	1	22	0	0	0	23	0	0	0	0	0	0	2	65	0	0	0	67	0	0	0	0	0	0	90
2025-09-17 07:45:00	0	31	1	0	0	32	0	0	2	0	0	2	0	67	0	0	0	67	0	0	0	0	0	0	101
2025-09-17 08:00:00	4	22	0	0	0	26	1	0	1	0	0	2	0	36	0	0	0	36	1	0	2	0	0	3	67
2025-09-17 08:15:00	0	13	0	0	1	13	1	0	0	0	2	1	2	32	1	0	1	35	1	1	0	0	0	2	51
Grand Total	5	88	1	0	1	94	2	0	3	0	2	5	4	200	1	0	1	205	2	1	2	0	0	5	**309**
Approach%	5.3%	93.6%	1.1%	0%		-	40%	0%	60%	0%		-	2%	97.6%	0.5%	0%		-	40%	20%	40%	0%		-	**-**
Totals %	1.6%	28.5%	0.3%	0%		30.4%	0.6%	0%	1%	0%		1.6%	1.3%	64.7%	0.3%	0%		66.3%	0.6%	0.3%	0.6%	0%		1.6%	**-**
PHF	0.31	0.71	0.25	0		0.73	0.5	0	0.38	0		0.63	0.5	0.75	0.25	0		0.76	0.5	0.25	0.25	0		0.42	0.76
Heavy	1	4	0	0		5	0	0	1	0		1	0	18	0	0		18	1	1	0	0		2	26
Heavy %	20%	4.5%	0%	0%		5.3%	0%	0%	33.3%	0%		20%	0%	9%	0%	0%		8.8%	50%	100%	0%	0%		40%	8.4%
Lights	4	84	1	0		89	2	0	2	0		4	4	181	1	0		186	1	0	2	0		3	282
Lights %	80%	95.5%	100%	0%		94.7%	100%	0%	66.7%	0%		80%	100%	90.5%	100%	0%		90.7%	50%	0%	100%	0%		60%	91.3%
Single-Unit Trucks	1	2	0	0		3	0	0	1	0		1	0	2	0	0		2	1	1	0	0		2	8
Single-Unit Trucks %	20%	2.3%	0%	0%		3.2%	0%	0%	33.3%	0%		20%	0%	1%	0%	0%		1%	50%	100%	0%	0%		40%	2.6%
Buses	0	2	0	0		2	0	0	0	0		0	0	16	0	0		16	0	0	0	0		0	18
Buses %	0%	2.3%	0%	0%		2.1%	0%	0%	0%	0%		0%	0%	8%	0%	0%		7.8%	0%	0%	0%	0%		0%	5.8%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0.3%
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	25%		-	-	-	-	50%		-	-	-	-	25%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: FLETCHER RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

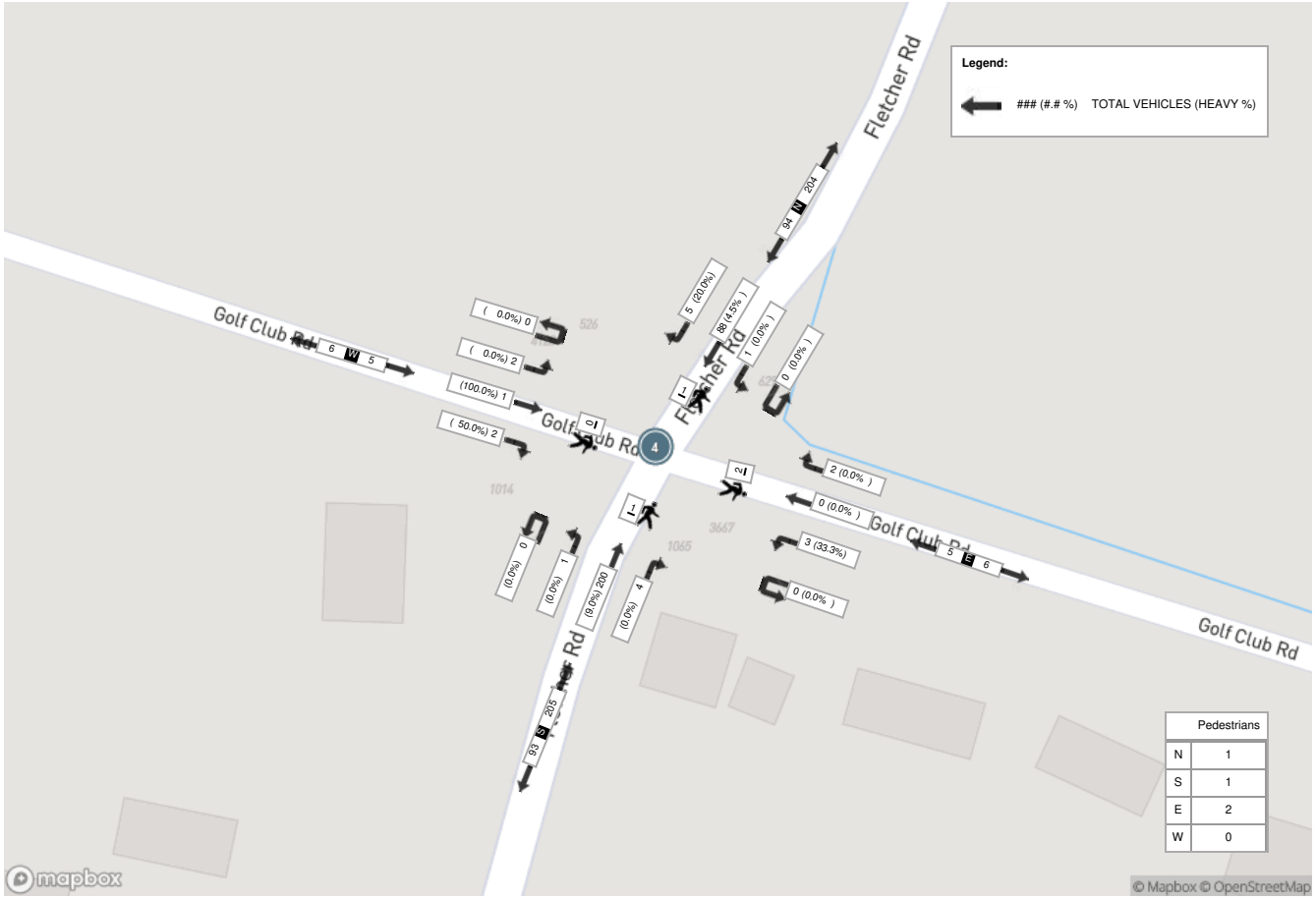
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:45 PM - 04:45 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach FLETCHER RD						E Approach GOLF CLUB RD						S Approach FLETCHER RD						W Approach GOLF CLUB RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 15:45:00	1	37	1	0	0	39	0	2	0	1	0	3	0	38	1	0	0	39	2	0	1	0	0	3	84
2025-09-17 16:00:00	0	36	4	0	0	40	2	0	1	0	0	3	1	26	0	0	0	27	0	0	0	0	0	0	70
2025-09-17 16:15:00	1	36	1	0	0	38	0	0	0	0	0	0	0	31	0	0	0	31	0	1	3	0	0	4	73
2025-09-17 16:30:00	0	30	2	0	0	32	0	1	1	0	0	2	0	13	0	0	0	13	0	1	0	0	0	1	48
Grand Total	2	139	8	0	0	149	2	3	2	1	0	8	1	108	1	0	0	110	2	2	4	0	0	8	**275**
Approach%	1.3%	93.3%	5.4%	0%		-	25%	37.5%	25%	12.5%		-	0.9%	98.2%	0.9%	0%		-	25%	25%	50%	0%		-	**-**
Totals %	0.7%	50.5%	2.9%	0%		54.2%	0.7%	1.1%	0.7%	0.4%		2.9%	0.4%	39.3%	0.4%	0%		40%	0.7%	0.7%	1.5%	0%		2.9%	**-**
PHF	0.5	0.94	0.5	0		0.93	0.25	0.38	0.5	0.25		0.67	0.25	0.71	0.25	0		0.71	0.25	0.5	0.33	0		0.5	0.82
Heavy	0	6	0	0		6	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	9
Heavy %	0%	4.3%	0%	0%		4%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.7%	0%	0%	0%	0%		0%	3.3%
Lights	2	133	8	0		143	2	3	2	1		8	1	105	1	0		107	1	2	4	0		7	265
Lights %	100%	95.7%	100%	0%		96%	100%	100%	100%	100%		100%	100%	97.2%	100%	0%		97.3%	50%	100%	100%	0%		87.5%	96.4%
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Buses	0	6	0	0		6	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	9
Buses %	0%	4.3%	0%	0%		4%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.7%	0%	0%	0%	0%		0%	3.3%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	50%	0%	0%	0%		12.5%	0.4%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

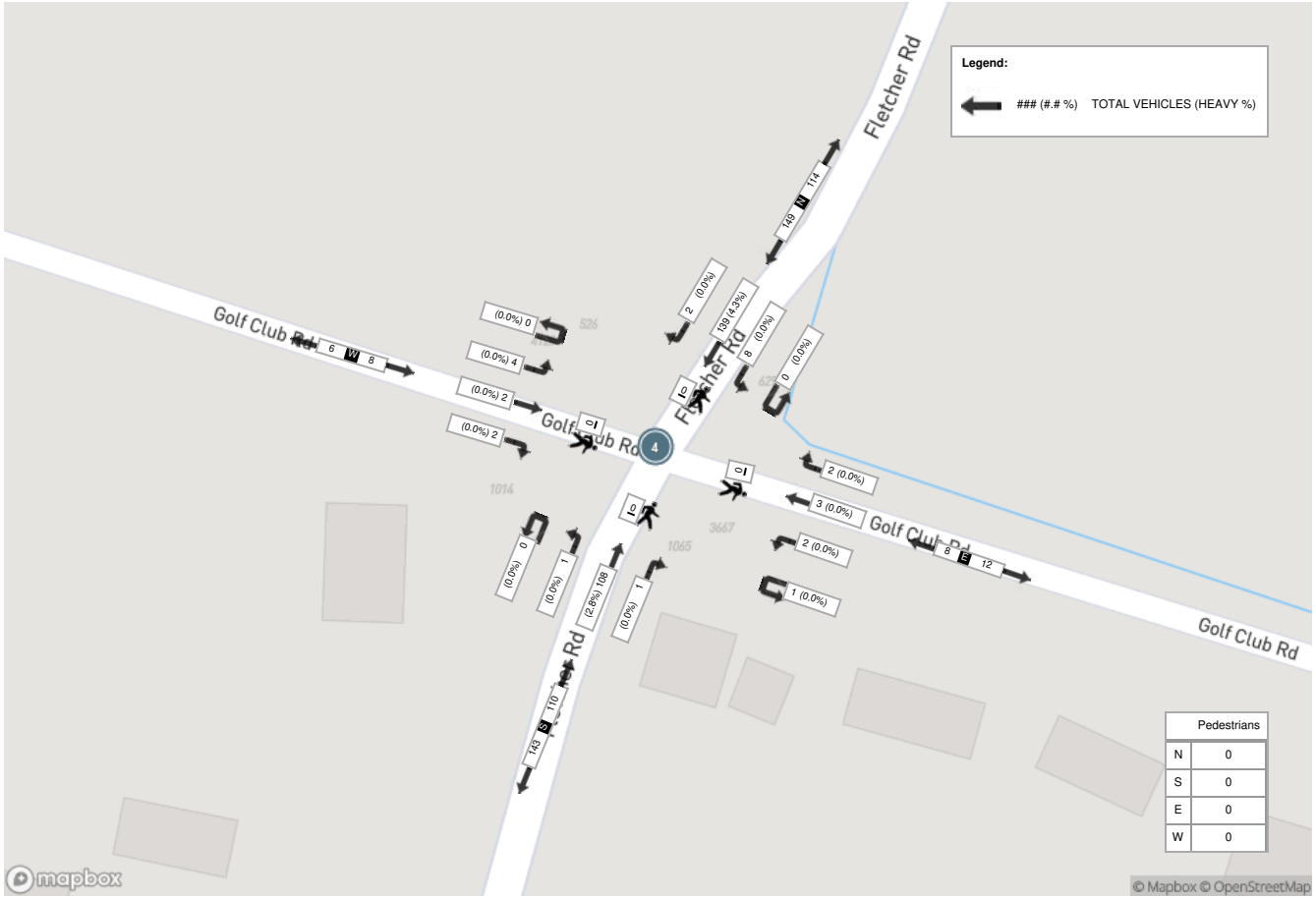


Spectrum

Turning Movement Count
Location Name: FLETCHER RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:45 PM - 04:45 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: FLETCHER RD & RYMAL RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (5 . FLETCHER RD & RYMAL RD E)

Start Time	N Approach NORTH PRIVATE DRIVEWAY						E Approach RYMAL RD E						S Approach FLETCHER RD						W Approach RYMAL RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	0	0	0	0	0	0	93	0	0	0	93	7	0	14	0	0	21	5	38	0	0	0	43	157	
2025-09-17 06:15:00	0	0	0	0	0	0	0	94	0	0	0	94	6	0	30	0	1	36	4	49	0	1	0	54	184	
2025-09-17 06:30:00	0	0	0	0	0	0	0	94	4	0	2	98	6	0	39	0	0	45	8	64	0	0	0	72	215	
2025-09-17 06:45:00	0	0	0	0	0	0	0	121	8	0	1	129	6	0	44	0	2	50	21	90	0	0	0	111	290	846
2025-09-17 07:00:00	0	0	0	0	0	0	0	143	7	0	0	150	7	0	45	0	1	52	13	71	0	0	0	84	286	975
2025-09-17 07:15:00	0	0	0	0	1	0	0	190	7	0	0	197	14	0	42	0	1	56	13	94	0	0	1	107	360	1151
2025-09-17 07:30:00	0	0	0	0	1	0	0	218	16	0	0	234	24	0	66	0	2	90	28	120	0	0	1	148	472	1408
2025-09-17 07:45:00	0	0	0	0	6	0	0	256	22	0	0	278	25	0	64	0	4	89	44	162	0	0	0	206	573	1691
2025-09-17 08:00:00	1	0	0	0	0	1	0	178	18	0	0	196	24	0	58	0	2	82	35	147	0	0	0	182	461	1866
2025-09-17 08:15:00	0	0	0	0	0	0	0	146	39	0	2	185	24	0	64	0	7	88	60	125	0	0	0	185	458	1964
2025-09-17 08:30:00	0	0	0	0	7	0	0	164	28	0	3	192	51	0	105	0	6	156	42	133	0	0	0	175	523	2015
2025-09-17 08:45:00	0	0	0	0	5	0	0	194	14	0	0	208	13	0	70	0	1	83	32	168	0	0	0	200	491	1933
2025-09-17 09:00:00	0	0	0	0	2	0	0	201	9	0	2	210	25	0	46	0	0	71	33	159	0	0	0	192	473	1945
2025-09-17 09:15:00	0	0	0	0	0	0	0	210	11	0	1	221	13	0	57	0	2	70	26	144	0	0	0	170	461	1948
2025-09-17 09:30:00	0	0	0	0	0	0	0	147	6	0	0	153	21	0	68	0	3	89	35	147	0	0	0	182	424	1849
2025-09-17 09:45:00	1	0	0	0	0	1	0	152	10	0	1	162	17	0	28	0	2	45	30	156	0	0	0	186	394	1752
BREAK																										
2025-09-17 15:00:00	0	0	0	0	0	0	0	176	27	0	3	203	49	0	42	0	8	91	36	219	0	0	0	255	549	
2025-09-17 15:15:00	0	0	0	0	3	0	0	165	29	0	1	194	17	0	35	0	4	52	47	213	0	0	0	260	506	
2025-09-17 15:30:00	0	0	0	0	0	0	0	190	24	0	0	214	24	0	30	0	3	54	56	217	1	0	0	274	542	
2025-09-17 15:45:00	0	0	0	0	2	0	0	192	30	0	1	222	38	0	46	0	4	84	46	219	0	0	0	265	571	2168
2025-09-17 16:00:00	0	0	0	0	1	0	0	225	27	0	3	252	31	0	51	0	1	82	42	216	1	0	0	259	593	2212
2025-09-17 16:15:00	0	0	0	0	0	0	0	190	17	0	2	207	21	0	40	0	3	61	51	208	0	0	0	259	527	2233
2025-09-17 16:30:00	0	0	0	0	0	0	0	224	24	0	0	248	17	0	29	0	1	46	44	214	0	0	0	258	552	2243
2025-09-17 16:45:00	0	0	0	0	3	0	0	232	28	0	6	260	30	0	40	0	8	70	56	233	0	0	0	289	619	2291
2025-09-17 17:00:00	0	0	0	0	0	0	0	223	18	0	2	241	25	0	38	0	4	63	69	221	0	0	0	290	594	2292
2025-09-17 17:15:00	0	0	0	0	0	0	0	234	37	0	0	271	11	0	59	0	2	70	36	243	0	0	0	279	620	2385
2025-09-17 17:30:00	0	0	0	0	0	0	0	210	33	0	2	243	32	0	58	0	6	90	70	205	0	0	0	275	608	2441
2025-09-17 17:45:00	0	0	0	0	0	0	0	182	14	0	0	196	23	0	38	0	1	61	45	198	0	0	0	243	500	2322
2025-09-17 18:00:00	0	0	0	0	0	0	0	178	19	0	1	197	24	0	47	0	1	71	42	183	0	0	0	225	493	2221
2025-09-17 18:15:00	0	0	0	0	0	0	0	190	19	0	0	209	19	0	37	0	3	56	30	203	0	0	0	233	498	2099
2025-09-17 18:30:00	0	0	0	0	0	0	0	179	16	0	1	195	16	0	30	0	5	46	39	168	1	0	0	208	449	1940
2025-09-17 18:45:00	0	0	0	0	2	0	0	171	16	0	0	187	20	0	25	0	2	45	39	181	0	0	0	220	452	1892
Grand Total	2	0	0	0	33	2	0	5762	577	0	34	6339	680	0	1485	0	90	2165	1177	5208	3	1	2	6389	**14895**	-
Approach%	100%	0%	0%	0%		-	0%	90.9%	9.1%	0%		-	31.4%	0%	68.6%	0%		-	18.4%	81.5%	0%	0%		-	-	-
Totals %	0%	0%	0%	0%		0%	0%	38.7%	3.9%	0%		42.6%	4.6%	0%	10%	0%		14.5%	7.9%	35%	0%	0%		42.9%	-	-
Heavy	0	0	0	0		-	0	267	13	0		-	21	0	26	0		-	26	266	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	4.6%	2.3%	0%		-	3.1%	0%	1.8%	0%		-	2.2%	5.1%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach NORTH PRIVATE DRIVEWAY						E Approach RYMAL RD E						S Approach FLETCHER RD						W Approach RYMAL RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:45:00	0	0	0	0	6	0	0	256	22	0	0	278	25	0	64	0	4	89	44	162	0	0	0	206	573
2025-09-17 08:00:00	1	0	0	0	0	1	0	178	18	0	0	196	24	0	58	0	2	82	35	147	0	0	0	182	461
2025-09-17 08:15:00	0	0	0	0	0	0	0	146	39	0	2	185	24	0	64	0	7	88	60	125	0	0	0	185	458
2025-09-17 08:30:00	0	0	0	0	7	0	0	164	28	0	3	192	51	0	105	0	6	156	42	133	0	0	0	175	523
Grand Total	1	0	0	0	13	1	0	744	107	0	5	851	124	0	291	0	19	415	181	567	0	0	0	748	**2015**
Approach%	100%	0%	0%	0%		-	0%	87.4%	12.6%	0%		-	29.9%	0%	70.1%	0%		-	24.2%	75.8%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	36.9%	5.3%	0%		42.2%	6.2%	0%	14.4%	0%		20.6%	9%	28.1%	0%	0%		37.1%	**-**
PHF	0.25	0	0	0		0.25	0	0.73	0.69	0		0.77	0.61	0	0.69	0		0.67	0.75	0.88	0	0		0.91	0.88
Heavy	0	0	0	0		0	0	50	5	0		55	4	0	7	0		11	6	50	0	0		56	122
Heavy %	0%	0%	0%	0%		0%	0%	6.7%	4.7%	0%		6.5%	3.2%	0%	2.4%	0%		2.7%	3.3%	8.8%	0%	0%		7.5%	6.1%
Lights	1	0	0	0		1	0	694	102	0		796	120	0	283	0		403	175	516	0	0		691	1891
Lights %	100%	0%	0%	0%		100%	0%	93.3%	95.3%	0%		93.5%	96.8%	0%	97.3%	0%		97.1%	96.7%	91%	0%	0%		92.4%	93.8%
Single-Unit Trucks	0	0	0	0		0	0	32	0	0		32	2	0	0	0		2	4	21	0	0		25	59
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	4.3%	0%	0%		3.8%	1.6%	0%	0%	0%		0.5%	2.2%	3.7%	0%	0%		3.3%	2.9%
Buses	0	0	0	0		0	0	13	5	0		18	2	0	7	0		9	2	19	0	0		21	48
Buses %	0%	0%	0%	0%		0%	0%	1.7%	4.7%	0%		2.1%	1.6%	0%	2.4%	0%		2.2%	1.1%	3.4%	0%	0%		2.8%	2.4%
Articulated Trucks	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	10	0	0		10	15
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.3%	0.7%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	1	0	0		1	2
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.3%	0%		0.2%	0%	0.2%	0%	0%		0.1%	0.1%
Pedestrians	-	-	-	-	13	-	-	-	-	-	5	-	-	-	-	-	17	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	35.1%		-	-	-	-	13.5%		-	-	-	-	45.9%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	5.4%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: FLETCHER RD & RYMAL RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

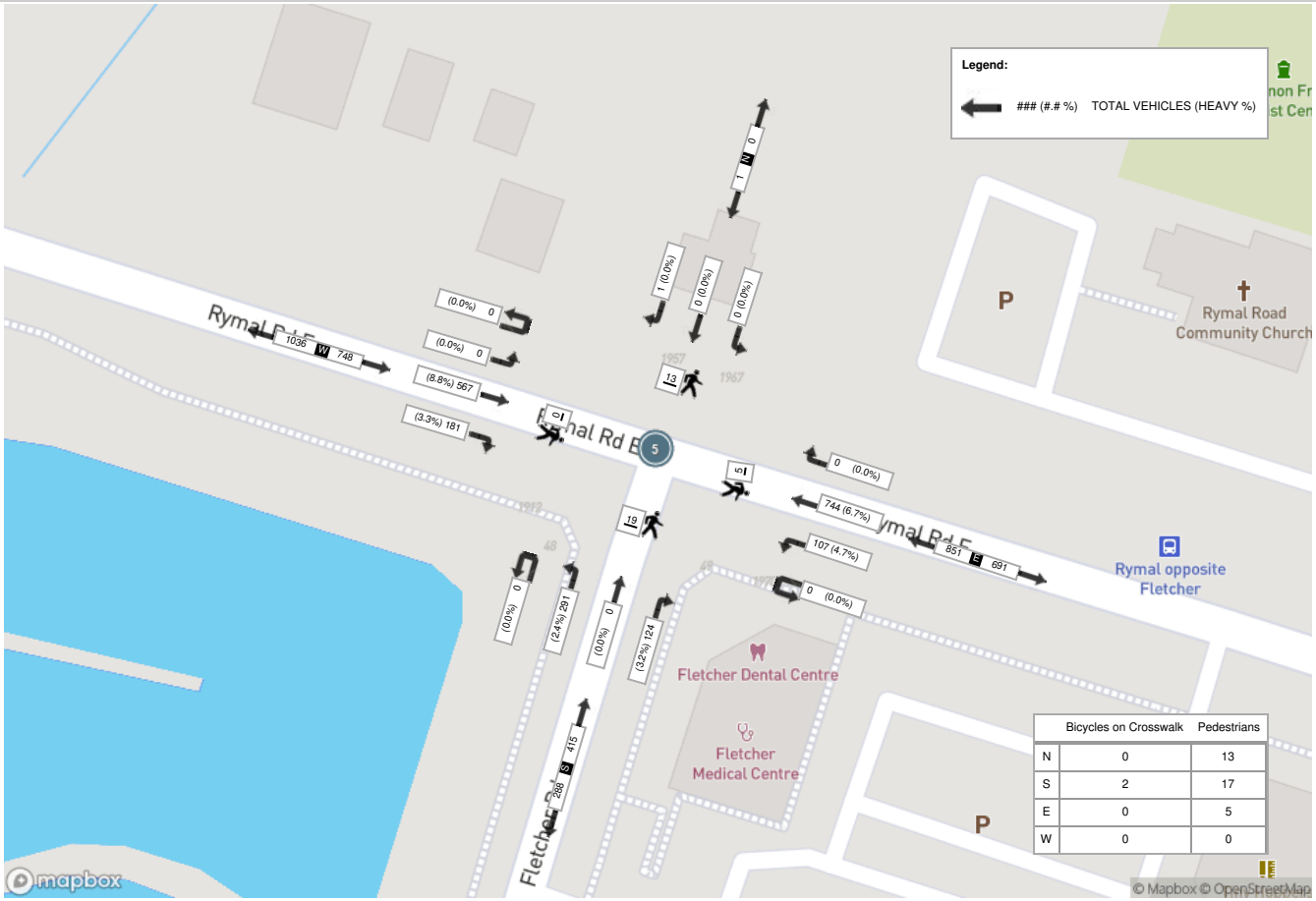
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach NORTH PRIVATE DRIVEWAY						E Approach RYMAL RD E						S Approach FLETCHER RD						W Approach RYMAL RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:45:00	0	0	0	0	3	0	0	232	28	0	6	260	30	0	40	0	8	70	56	233	0	0	0	289	619
2025-09-17 17:00:00	0	0	0	0	0	0	0	223	18	0	2	241	25	0	38	0	4	63	69	221	0	0	0	290	594
2025-09-17 17:15:00	0	0	0	0	0	0	0	234	37	0	0	271	11	0	59	0	2	70	36	243	0	0	0	279	620
2025-09-17 17:30:00	0	0	0	0	0	0	0	210	33	0	2	243	32	0	58	0	6	90	70	205	0	0	0	275	608
Grand Total	0	0	0	0	3	0	0	899	116	0	10	1015	98	0	195	0	20	293	231	902	0	0	0	1133	**2441**
Approach%	0%	0%	0%	0%		-	0%	88.6%	11.4%	0%		-	33.4%	0%	66.6%	0%		-	20.4%	79.6%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	36.8%	4.8%	0%		41.6%	4%	0%	8%	0%		12%	9.5%	37%	0%	0%		46.4%	**-**
PHF	0	0	0	0		0	0	0.96	0.78	0		0.94	0.77	0	0.83	0		0.81	0.83	0.93	0	0		0.98	0.98
Heavy	0	0	0	0		0	0	17	0	0		17	1	0	0	0		1	3	23	0	0		26	44
Heavy %	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.7%	1%	0%	0%	0%		0.3%	1.3%	2.5%	0%	0%		2.3%	1.8%
Lights	0	0	0	0		0	0	882	116	0		998	97	0	195	0		292	228	879	0	0		1107	2397
Lights %	0%	0%	0%	0%		0%	0%	98.1%	100%	0%		98.3%	99%	0%	100%	0%		99.7%	98.7%	97.5%	0%	0%		97.7%	98.2%
Single-Unit Trucks	0	0	0	0		0	0	9	0	0		9	1	0	0	0		1	2	12	0	0		14	24
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1%	0%	0%		0.9%	1%	0%	0%	0%		0.3%	0.9%	1.3%	0%	0%		1.2%	1%
Buses	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	1	5	0	0		6	14
Buses %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.8%	0%	0%	0%	0%		0%	0.4%	0.6%	0%	0%		0.5%	0.6%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	6	0	0		6	6
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.5%	0.2%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	3	-	-	-	-	-	10	-	-	-	-	-	18	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	9.1%		-	-	-	-	30.3%		-	-	-	-	54.5%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	6.1%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

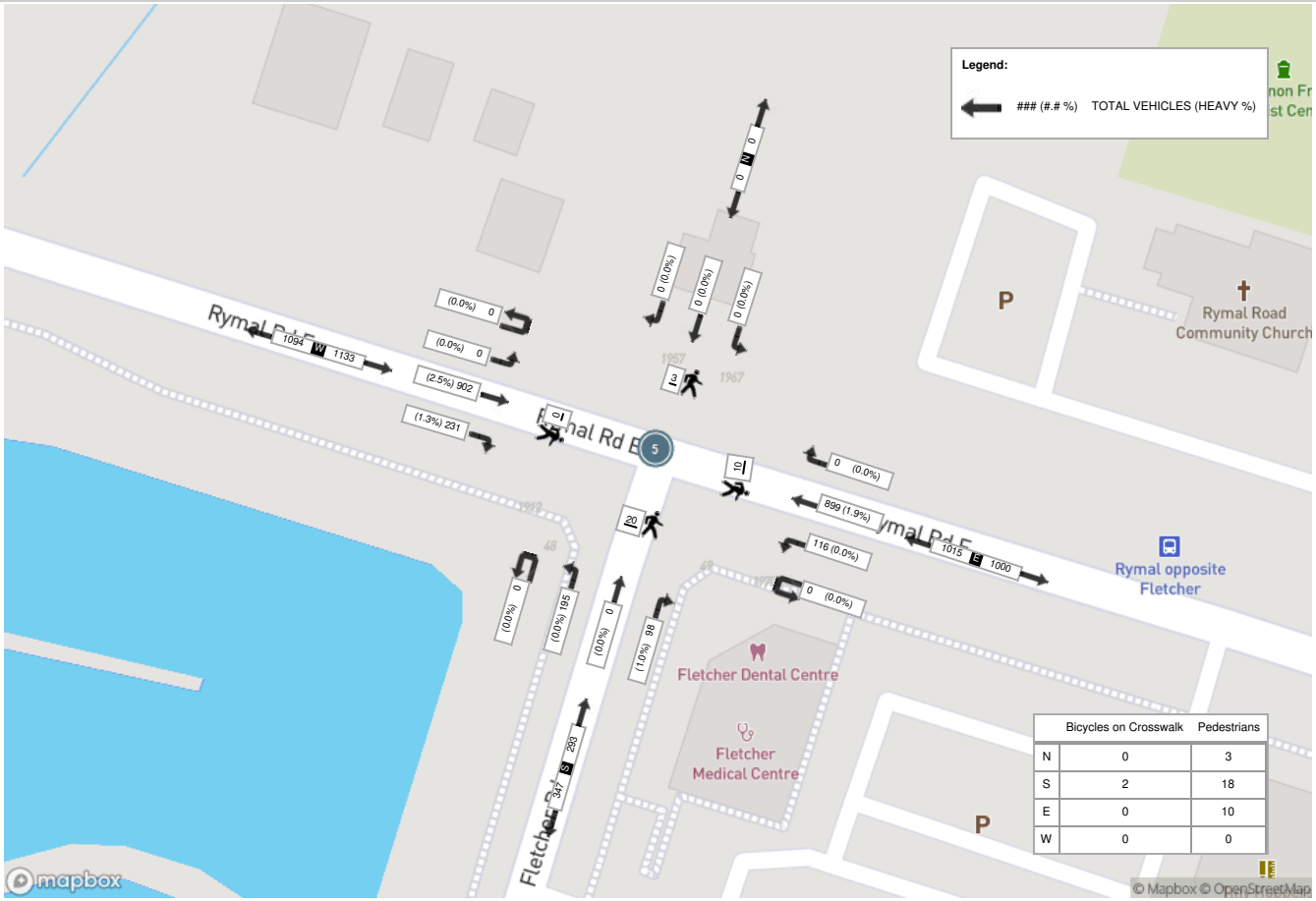
Peak Hour: 07:45 AM - 08:45 AM **Weather: Few Clouds (14 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	13
S	2	17
E	0	5
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Broken Clouds (23 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	3
S	2	18
E	0	10
W	0	0

Spectrum

Turning Movement Count
Location Name: RYMAL RD E R & SECOND ROAD W / KINGSBOROUGH D
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (20 . RYMAL RD E R & SECOND ROAD W / KINGSBOROUGH D)

Start Time	N Approach SECOND RD W						E Approach RYMAL RD						S Approach SECOND RD W						W Approach RYMAL RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	16	0	4	0	0	20	2	62	1	0	0	65	4	1	12	0	0	17	1	44	1	0	0	46	148	
2025-09-17 06:15:00	15	0	2	0	0	17	2	74	3	0	0	79	3	4	5	0	0	12	0	50	1	0	0	51	159	
2025-09-17 06:30:00	18	3	1	0	0	22	1	89	2	0	1	92	4	0	4	0	1	8	2	55	7	0	2	64	186	
2025-09-17 06:45:00	22	4	8	0	0	34	2	93	5	0	0	100	8	1	11	0	0	20	3	92	4	0	1	99	253	746
2025-09-17 07:00:00	18	0	0	0	0	18	2	125	4	0	0	131	8	1	6	0	0	15	4	74	4	0	0	82	246	844
2025-09-17 07:15:00	44	2	9	0	0	55	0	140	3	0	2	143	9	4	14	0	0	27	3	95	4	0	1	102	327	1012
2025-09-17 07:30:00	61	1	7	0	2	69	6	179	3	0	2	188	15	5	9	0	0	29	6	121	15	0	3	142	428	1254
2025-09-17 07:45:00	61	10	9	0	1	80	7	206	12	0	2	225	22	6	15	0	1	43	7	143	24	0	1	174	522	1523
2025-09-17 08:00:00	36	9	9	0	0	54	8	151	9	0	5	168	18	10	9	0	0	37	11	157	21	0	0	189	448	1725
2025-09-17 08:15:00	33	5	13	0	1	51	10	133	19	0	1	162	20	11	15	0	0	46	8	121	9	0	2	138	397	1795
2025-09-17 08:30:00	31	8	10	0	0	49	6	166	17	0	1	189	31	4	8	0	2	43	6	151	29	0	2	186	467	1834
2025-09-17 08:45:00	32	5	8	0	1	45	8	167	12	0	1	187	17	7	15	0	4	39	9	156	4	0	1	169	440	1752
2025-09-17 09:00:00	32	4	12	0	0	48	14	188	14	0	0	216	20	3	12	0	1	35	7	178	24	0	0	209	508	1812
2025-09-17 09:15:00	35	7	19	0	0	61	13	171	17	0	1	201	18	2	7	0	1	27	7	137	7	0	0	151	440	1855
2025-09-17 09:30:00	15	2	9	0	2	26	6	146	8	0	1	160	24	6	13	0	3	43	9	151	13	0	1	173	402	1790
2025-09-17 09:45:00	25	3	16	0	0	44	15	117	10	0	1	142	11	2	8	0	2	21	7	152	12	0	2	171	378	1728
BREAK																										
2025-09-17 15:00:00	22	6	25	0	0	53	23	171	26	0	3	220	28	7	9	0	12	44	12	237	31	0	8	280	597	
2025-09-17 15:15:00	18	7	15	0	0	40	32	154	25	0	1	211	13	5	9	0	1	27	11	193	22	0	0	226	504	
2025-09-17 15:30:00	20	7	21	0	1	48	27	197	24	0	0	248	9	3	4	0	2	16	6	225	29	0	2	260	572	
2025-09-17 15:45:00	23	10	14	0	0	47	26	200	19	0	0	245	24	9	9	0	3	42	13	195	27	0	3	235	569	2242
2025-09-17 16:00:00	25	5	24	0	1	54	23	213	18	0	1	254	19	3	5	0	2	27	12	227	32	0	2	271	606	2251
2025-09-17 16:15:00	21	6	19	0	3	46	20	188	16	0	0	224	14	6	9	0	2	29	13	197	33	0	4	243	542	2289
2025-09-17 16:30:00	27	6	20	0	1	53	16	223	26	0	2	265	21	3	7	0	0	31	13	205	15	0	0	233	582	2299
2025-09-17 16:45:00	29	4	11	0	0	44	24	236	21	0	0	281	19	5	11	0	0	35	13	217	31	0	0	261	621	2351
2025-09-17 17:00:00	21	7	19	0	0	47	22	227	18	0	1	267	16	4	10	0	4	30	10	221	26	0	1	257	601	2346
2025-09-17 17:15:00	22	6	17	0	2	45	13	246	30	0	2	289	13	3	9	0	2	25	11	209	27	0	5	247	606	2410
2025-09-17 17:30:00	19	1	15	0	0	35	14	225	29	0	0	268	20	5	9	0	6	34	15	223	26	1	0	265	602	2430
2025-09-17 17:45:00	31	6	19	0	0	56	21	164	12	0	4	197	20	8	8	0	0	36	7	185	29	0	2	221	510	2319
2025-09-17 18:00:00	24	4	22	0	0	50	21	181	26	0	4	228	26	4	8	0	4	38	16	196	25	0	1	237	553	2271
2025-09-17 18:15:00	27	6	21	0	0	54	14	163	21	0	2	198	14	5	9	0	3	28	15	179	20	0	3	214	494	2159
2025-09-17 18:30:00	26	7	22	0	1	55	20	178	13	0	1	211	15	4	8	0	5	27	13	153	16	0	6	182	475	2032
2025-09-17 18:45:00	8	8	16	0	2	32	22	163	18	0	0	203	10	3	12	0	0	25	23	169	18	0	3	210	470	1992
Grand Total	857	159	436	0	18	1452	440	5336	481	0	39	6257	513	144	299	0	61	956	293	5108	586	1	56	5988	**14653**	-
Approach%	59%	11%	30%	0%		-	7%	85.3%	7.7%	0%		-	53.7%	15.1%	31.3%	0%		-	4.9%	85.3%	9.8%	0%		-	-	-
Totals %	5.8%	1.1%	3%	0%		9.9%	3%	36.4%	3.3%	0%		42.7%	3.5%	1%	2%	0%		6.5%	2%	34.9%	4%	0%		40.9%	-	-
Heavy	21	4	2	0		-	3	259	17	0		-	14	7	5	0		-	6	273	13	0		-	-	-
Heavy %	2.5%	2.5%	0.5%	0%		-	0.7%	4.9%	3.5%	0%		-	2.7%	4.9%	1.7%	0%		-	2%	5.3%	2.2%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: RYMAL RD E R & SECOND ROAD W / KINGSBOROUGH D
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach SECOND RD W						E Approach RYMAL RD						S Approach SECOND RD W						W Approach RYMAL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 08:30:00	31	8	10	0	0	49	6	166	17	0	1	189	31	4	8	0	2	43	6	151	29	0	2	186	467
2025-09-17 08:45:00	32	5	8	0	1	45	8	167	12	0	1	187	17	7	15	0	4	39	9	156	4	0	1	169	440
2025-09-17 09:00:00	32	4	12	0	0	48	14	188	14	0	0	216	20	3	12	0	1	35	7	178	24	0	0	209	508
2025-09-17 09:15:00	35	7	19	0	0	61	13	171	17	0	1	201	18	2	7	0	1	27	7	137	7	0	0	151	440
Grand Total	130	24	49	0	1	203	41	692	60	0	3	793	86	16	42	0	8	144	29	622	64	0	3	715	**1855**
Approach%	64%	11.8%	24.1%	0%		-	5.2%	87.3%	7.6%	0%		-	59.7%	11.1%	29.2%	0%		-	4.1%	87%	9%	0%		-	**-**
Totals %	7%	1.3%	2.6%	0%		10.9%	2.2%	37.3%	3.2%	0%		42.7%	4.6%	0.9%	2.3%	0%		7.8%	1.6%	33.5%	3.5%	0%		38.5%	**-**
PHF	0.93	0.75	0.64	0		0.83	0.73	0.92	0.88	0		0.92	0.69	0.57	0.7	0		0.84	0.81	0.87	0.55	0		0.86	0.91
Heavy	5	1	1	0		7	0	59	4	0		63	5	2	1	0		8	1	49	1	0		51	129
Heavy %	3.8%	4.2%	2%	0%		3.4%	0%	8.5%	6.7%	0%		7.9%	5.8%	12.5%	2.4%	0%		5.6%	3.4%	7.9%	1.6%	0%		7.1%	7%
Lights	125	23	48	0		196	41	633	56	0		730	81	14	41	0		136	28	573	63	0		664	1726
Lights %	96.2%	95.8%	98%	0%		96.6%	100%	91.5%	93.3%	0%		92.1%	94.2%	87.5%	97.6%	0%		94.4%	96.6%	92.1%	98.4%	0%		92.9%	93%
Single-Unit Trucks	1	0	1	0		2	0	27	0	0		27	1	0	1	0		2	1	25	0	0		26	57
Single-Unit Trucks %	0.8%	0%	2%	0%		1%	0%	3.9%	0%	0%		3.4%	1.2%	0%	2.4%	0%		1.4%	3.4%	4%	0%	0%		3.6%	3.1%
Buses	4	1	0	0		5	0	17	2	0		19	2	2	0	0		4	0	15	0	0		15	43
Buses %	3.1%	4.2%	0%	0%		2.5%	0%	2.5%	3.3%	0%		2.4%	2.3%	12.5%	0%	0%		2.8%	0%	2.4%	0%	0%		2.1%	2.3%
Articulated Trucks	0	0	0	0		0	0	15	2	0		17	2	0	0	0		2	0	9	1	0		10	29
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2.2%	3.3%	0%		2.1%	2.3%	0%	0%	0%		1.4%	0%	1.4%	1.6%	0%		1.4%	1.6%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	6	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	6.7%		-	-	-	-	20%		-	-	-	-	40%		-	-	-	-	20%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	13.3%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: RYMAL RD E R & SECOND ROAD W / KINGSBOROUGH D
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach SECOND RD W						E Approach RYMAL RD						S Approach SECOND RD W						W Approach RYMAL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:45:00	29	4	11	0	0	44	24	236	21	0	0	281	19	5	11	0	0	35	13	217	31	0	0	261	621
2025-09-17 17:00:00	21	7	19	0	0	47	22	227	18	0	1	267	16	4	10	0	4	30	10	221	26	0	1	257	601
2025-09-17 17:15:00	22	6	17	0	2	45	13	246	30	0	2	289	13	3	9	0	2	25	11	209	27	0	5	247	606
2025-09-17 17:30:00	19	1	15	0	0	35	14	225	29	0	0	268	20	5	9	0	6	34	15	223	26	1	0	265	602
Grand Total	91	18	62	0	2	171	73	934	98	0	3	1105	68	17	39	0	12	124	49	870	110	1	6	1030	**2430**
Approach%	53.2%	10.5%	36.3%	0%		-	6.6%	84.5%	8.9%	0%		-	54.8%	13.7%	31.5%	0%		-	4.8%	84.5%	10.7%	0.1%		-	**-**
Totals %	3.7%	0.7%	2.6%	0%		7%	3%	38.4%	4%	0%		45.5%	2.8%	0.7%	1.6%	0%		5.1%	2%	35.8%	4.5%	0%		42.4%	**-**
PHF	0.78	0.64	0.82	0		0.91	0.76	0.95	0.82	0		0.96	0.85	0.85	0.89	0		0.89	0.82	0.98	0.89	0.25		0.97	0.98
Heavy	1	0	0	0		1	0	16	0	0		16	0	1	0	0		1	0	22	1	0		23	41
Heavy %	1.1%	0%	0%	0%		0.6%	0%	1.7%	0%	0%		1.4%	0%	5.9%	0%	0%		0.8%	0%	2.5%	0.9%	0%		2.2%	1.7%
Lights	90	18	62	0		170	73	918	97	0		1088	68	16	39	0		123	49	848	109	1		1007	2388
Lights %	98.9%	100%	100%	0%		99.4%	100%	98.3%	99%	0%		98.5%	100%	94.1%	100%	0%		99.2%	100%	97.5%	99.1%	100%		97.8%	98.3%
Single-Unit Trucks	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	0	12	1	0		13	23
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	1.4%	0.9%	0%		1.3%	0.9%
Buses	1	0	0	0		1	0	6	0	0		6	0	1	0	0		1	0	5	0	0		5	13
Buses %	1.1%	0%	0%	0%		0.6%	0%	0.6%	0%	0%		0.5%	0%	5.9%	0%	0%		0.8%	0%	0.6%	0%	0%		0.5%	0.5%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	5	0	0		5	5
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	0.2%
Bicycles on Road	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	1%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	8	-	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	-	8.7%		-	-	-	-	13%		-	-	-	-	34.8%		-	-	-	-	21.7%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	17.4%		-	-	-	-	4.3%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM **Weather: Few Clouds (14 °C)**

	Bicycles on Crosswalk	Pedestrians
N	0	1
S	2	6
E	0	3
W	0	3

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Broken Clouds (23 °C)**

	Bicycles on Crosswalk	Pedestrians
N	0	2
S	4	8
E	0	3
W	1	5

Spectrum

Turning Movement Count
Location Name: HIGHWAY 56 & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (6 . HIGHWAY 56 & GOLF CLUB RD)

Start Time	N Approach HIGHWAY 56						E Approach GOLF CLUB RD						S Approach HIGHWAY 56						W Approach GOLF CLUB RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	29	0	0	0	29	1	0	0	0	0	1	0	63	0	0	0	63	1	0	0	0	0	1	94	
2025-09-17 06:15:00	1	26	1	0	0	28	2	0	0	0	0	2	0	59	0	0	0	59	0	0	0	0	0	0	89	
2025-09-17 06:30:00	0	42	0	0	0	42	0	0	0	0	0	0	0	80	0	0	0	80	0	1	2	0	0	3	125	
2025-09-17 06:45:00	8	56	3	0	0	67	2	1	1	0	0	4	0	93	5	0	0	98	1	0	1	0	0	2	171	479
2025-09-17 07:00:00	3	33	0	0	0	36	1	0	0	0	0	1	0	111	1	0	0	112	1	0	2	0	0	3	152	537
2025-09-17 07:15:00	2	58	0	0	0	60	4	0	2	0	0	6	0	155	2	0	0	157	3	0	3	0	0	6	229	677
2025-09-17 07:30:00	2	57	1	0	0	60	5	0	1	0	0	6	0	169	0	0	0	169	2	0	2	0	0	4	239	791
2025-09-17 07:45:00	0	70	3	0	0	73	10	0	2	0	0	12	1	194	0	0	0	195	3	0	1	0	0	4	284	904
2025-09-17 08:00:00	1	68	3	0	0	72	2	1	2	0	0	5	3	144	1	0	0	148	1	1	1	0	0	3	228	980
2025-09-17 08:15:00	2	86	1	0	0	89	6	0	0	0	0	6	0	155	2	0	0	157	1	0	1	0	0	2	254	1005
2025-09-17 08:30:00	2	98	0	0	0	100	8	0	1	0	0	9	2	122	0	0	0	124	1	2	0	0	0	3	236	1002
2025-09-17 08:45:00	1	78	3	0	0	82	7	0	1	0	0	8	1	118	1	0	0	120	2	1	0	0	0	3	213	931
2025-09-17 09:00:00	1	79	0	0	0	80	3	0	1	0	0	4	2	110	1	0	0	113	0	0	2	0	0	2	199	902
2025-09-17 09:15:00	0	73	7	0	0	80	3	0	0	0	0	3	0	132	2	0	0	134	1	1	2	0	0	4	221	869
2025-09-17 09:30:00	2	87	1	0	0	90	4	0	0	0	0	4	3	104	2	0	0	109	2	0	1	0	0	3	206	839
2025-09-17 09:45:00	1	81	1	0	0	83	4	0	0	0	0	4	0	91	0	0	0	91	0	0	2	0	0	2	180	806
BREAK																										
2025-09-17 15:00:00	1	151	5	0	0	157	2	1	4	0	0	7	1	85	3	0	0	89	3	0	1	0	0	4	257	
2025-09-17 15:15:00	5	150	9	0	0	164	4	0	2	0	0	6	1	100	0	0	0	101	1	0	2	0	0	3	274	
2025-09-17 15:30:00	5	133	2	0	0	140	4	0	3	0	0	7	2	86	0	0	0	88	2	1	3	0	0	6	241	
2025-09-17 15:45:00	4	154	4	0	0	162	5	1	1	0	0	7	1	87	3	0	0	91	1	0	0	0	0	1	261	1033
2025-09-17 16:00:00	6	186	7	0	0	199	4	0	2	0	0	6	1	100	2	0	0	103	1	0	3	0	0	4	312	1088
2025-09-17 16:15:00	0	211	2	0	0	213	3	1	0	0	0	4	0	109	1	0	0	110	1	0	4	0	0	5	332	1146
2025-09-17 16:30:00	3	209	5	0	0	217	4	0	0	0	0	4	0	112	0	0	0	112	1	1	1	0	0	3	336	1241
2025-09-17 16:45:00	0	183	4	0	0	187	6	0	3	0	0	9	1	105	0	0	0	106	2	0	1	0	0	3	305	1285
2025-09-17 17:00:00	1	202	7	0	0	210	5	2	0	0	0	7	1	129	0	0	0	130	3	0	0	0	0	3	350	1323
2025-09-17 17:15:00	4	174	6	0	0	184	2	2	0	0	0	4	1	95	1	0	0	97	0	0	2	0	0	2	287	1278
2025-09-17 17:30:00	1	147	6	0	0	154	1	0	1	0	0	2	0	113	0	0	0	113	0	0	1	0	0	1	270	1212
2025-09-17 17:45:00	3	164	5	0	0	172	5	0	1	0	0	6	0	92	1	0	0	93	1	0	3	0	0	4	275	1182
2025-09-17 18:00:00	0	144	4	0	0	148	1	1	2	0	0	4	1	96	1	0	0	98	2	2	2	0	0	6	256	1088
2025-09-17 18:15:00	3	133	1	0	0	137	4	1	0	0	0	5	0	113	0	0	0	113	0	0	2	0	0	2	257	1058
2025-09-17 18:30:00	1	121	1	0	0	123	1	0	0	0	0	1	1	80	2	1	0	84	0	1	1	0	0	2	210	998
2025-09-17 18:45:00	4	129	2	0	0	135	3	0	0	0	0	3	0	92	2	0	0	94	3	0	7	0	0	10	242	965
Grand Total	67	3612	94	0	0	3773	116	11	30	0	0	157	23	3494	33	1	0	3551	40	11	53	0	0	104	**7585**	-
Approach%	1.8%	95.7%	2.5%	0%		-	73.9%	7%	19.1%	0%		-	0.6%	98.4%	0.9%	0%		-	38.5%	10.6%	51%	0%		-	-	-
Totals %	0.9%	47.6%	1.2%	0%		49.7%	1.5%	0.1%	0.4%	0%		2.1%	0.3%	46.1%	0.4%	0%		46.8%	0.5%	0.1%	0.7%	0%		1.4%	-	-
Heavy	8	265	3	0		-	6	0	1	0		-	3	274	2	0		-	4	3	2	0		-	-	-
Heavy %	11.9%	7.3%	3.2%	0%		-	5.2%	0%	3.3%	0%		-	13%	7.8%	6.1%	0%		-	10%	27.3%	3.8%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: HIGHWAY 56 & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
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TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach HIGHWAY 56						E Approach GOLF CLUB RD						S Approach HIGHWAY 56						W Approach GOLF CLUB RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	2	57	1	0	0	60	5	0	1	0	0	6	0	169	0	0	0	169	2	0	2	0	0	4	239
2025-09-17 07:45:00	0	70	3	0	0	73	10	0	2	0	0	12	1	194	0	0	0	195	3	0	1	0	0	4	284
2025-09-17 08:00:00	1	68	3	0	0	72	2	1	2	0	0	5	3	144	1	0	0	148	1	1	1	0	0	3	228
2025-09-17 08:15:00	2	86	1	0	0	89	6	0	0	0	0	6	0	155	2	0	0	157	1	0	1	0	0	2	254
Grand Total	5	281	8	0	0	294	23	1	5	0	0	29	4	662	3	0	0	669	7	1	5	0	0	13	**1005**
Approach%	1.7%	95.6%	2.7%	0%		-	79.3%	3.4%	17.2%	0%		-	0.6%	99%	0.4%	0%		-	53.8%	7.7%	38.5%	0%		-	**-**
Totals %	0.5%	28%	0.8%	0%		29.3%	2.3%	0.1%	0.5%	0%		2.9%	0.4%	65.9%	0.3%	0%		66.6%	0.7%	0.1%	0.5%	0%		1.3%	**-**
PHF	0.63	0.82	0.67	0		0.83	0.58	0.25	0.63	0		0.6	0.33	0.85	0.38	0		0.86	0.58	0.25	0.63	0		0.81	0.88
Heavy	0	54	0	0		54	2	0	0	0		2	0	46	1	0		47	0	0	0	0		0	103
Heavy %	0%	19.2%	0%	0%		18.4%	8.7%	0%	0%	0%		6.9%	0%	6.9%	33.3%	0%		7%	0%	0%	0%	0%		0%	10.2%
Lights	5	227	8	0		240	21	1	5	0		27	3	616	2	0		621	7	1	5	0		13	901
Lights %	100%	80.8%	100%	0%		81.6%	91.3%	100%	100%	0%		93.1%	75%	93.1%	66.7%	0%		92.8%	100%	100%	100%	0%		100%	89.7%
Single-Unit Trucks	0	34	0	0		34	0	0	0	0		0	0	28	1	0		29	0	0	0	0		0	63
Single-Unit Trucks %	0%	12.1%	0%	0%		11.6%	0%	0%	0%	0%		0%	0%	4.2%	33.3%	0%		4.3%	0%	0%	0%	0%		0%	6.3%
Buses	0	7	0	0		7	2	0	0	0		2	0	7	0	0		7	0	0	0	0		0	16
Buses %	0%	2.5%	0%	0%		2.4%	8.7%	0%	0%	0%		6.9%	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	1.6%
Articulated Trucks	0	13	0	0		13	0	0	0	0		0	0	11	0	0		11	0	0	0	0		0	24
Articulated Trucks %	0%	4.6%	0%	0%		4.4%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.6%	0%	0%	0%	0%		0%	2.4%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	25%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0.1%

Spectrum

Turning Movement Count
Location Name: HIGHWAY 56 & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

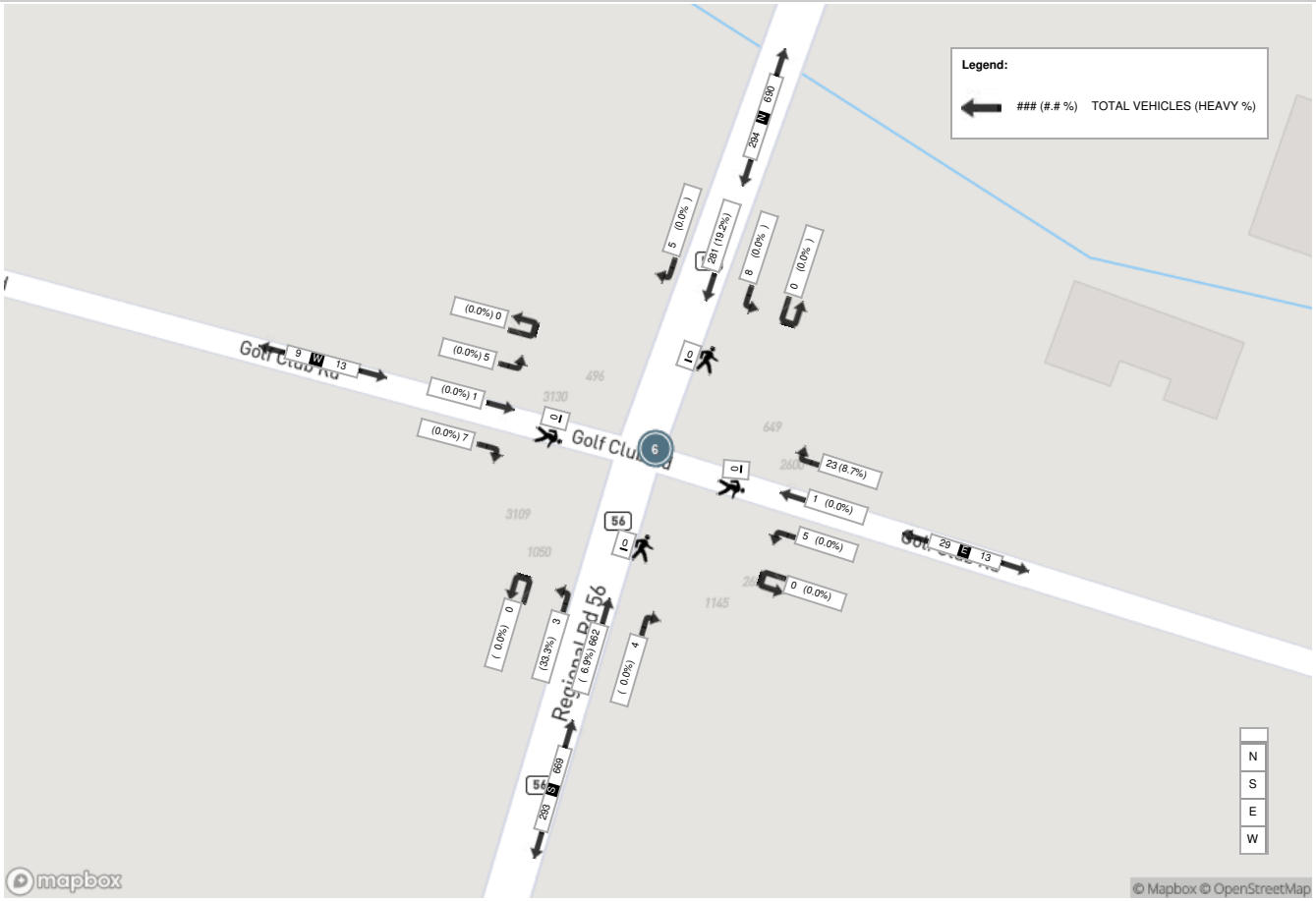
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach HIGHWAY 56						E Approach GOLF CLUB RD						S Approach HIGHWAY 56						W Approach GOLF CLUB RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:15:00	0	211	2	0	0	213	3	1	0	0	0	4	0	109	1	0	0	110	1	0	4	0	0	5	332
2025-09-17 16:30:00	3	209	5	0	0	217	4	0	0	0	0	4	0	112	0	0	0	112	1	1	1	0	0	3	336
2025-09-17 16:45:00	0	183	4	0	0	187	6	0	3	0	0	9	1	105	0	0	0	106	2	0	1	0	0	3	305
2025-09-17 17:00:00	1	202	7	0	0	210	5	2	0	0	0	7	1	129	0	0	0	130	3	0	0	0	0	3	350
Grand Total	4	805	18	0	0	827	18	3	3	0	0	24	2	455	1	0	0	458	7	1	6	0	0	14	**1323**
Approach%	0.5%	97.3%	2.2%	0%		-	75%	12.5%	12.5%	0%		-	0.4%	99.3%	0.2%	0%		-	50%	7.1%	42.9%	0%		-	**-**
Totals %	0.3%	60.8%	1.4%	0%		62.5%	1.4%	0.2%	0.2%	0%		1.8%	0.2%	34.4%	0.1%	0%		34.6%	0.5%	0.1%	0.5%	0%		1.1%	**-**
PHF	0.33	0.95	0.64	0		0.95	0.75	0.38	0.25	0		0.67	0.5	0.88	0.25	0		0.88	0.58	0.25	0.38	0		0.7	0.95
Heavy	0	31	0	0		31	1	0	0	0		1	0	46	0	0		46	0	0	0	0		0	78
Heavy %	0%	3.9%	0%	0%		3.7%	5.6%	0%	0%	0%		4.2%	0%	10.1%	0%	0%		10%	0%	0%	0%	0%		0%	5.9%
Lights	4	774	18	0		796	17	3	3	0		23	2	409	1	0		412	7	1	6	0		14	1245
Lights %	100%	96.1%	100%	0%		96.3%	94.4%	100%	100%	0%		95.8%	100%	89.9%	100%	0%		90%	100%	100%	100%	0%		100%	94.1%
Single-Unit Trucks	0	24	0	0		24	0	0	0	0		0	0	26	0	0		26	0	0	0	0		0	50
Single-Unit Trucks %	0%	3%	0%	0%		2.9%	0%	0%	0%	0%		0%	0%	5.7%	0%	0%		5.7%	0%	0%	0%	0%		0%	3.8%
Buses	0	3	0	0		3	1	0	0	0		1	0	3	0	0		3	0	0	0	0		0	7
Buses %	0%	0.4%	0%	0%		0.4%	5.6%	0%	0%	0%		4.2%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0.5%
Articulated Trucks	0	4	0	0		4	0	0	0	0		0	0	17	0	0		17	0	0	0	0		0	21
Articulated Trucks %	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	3.7%	0%	0%		3.7%	0%	0%	0%	0%		0%	1.6%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



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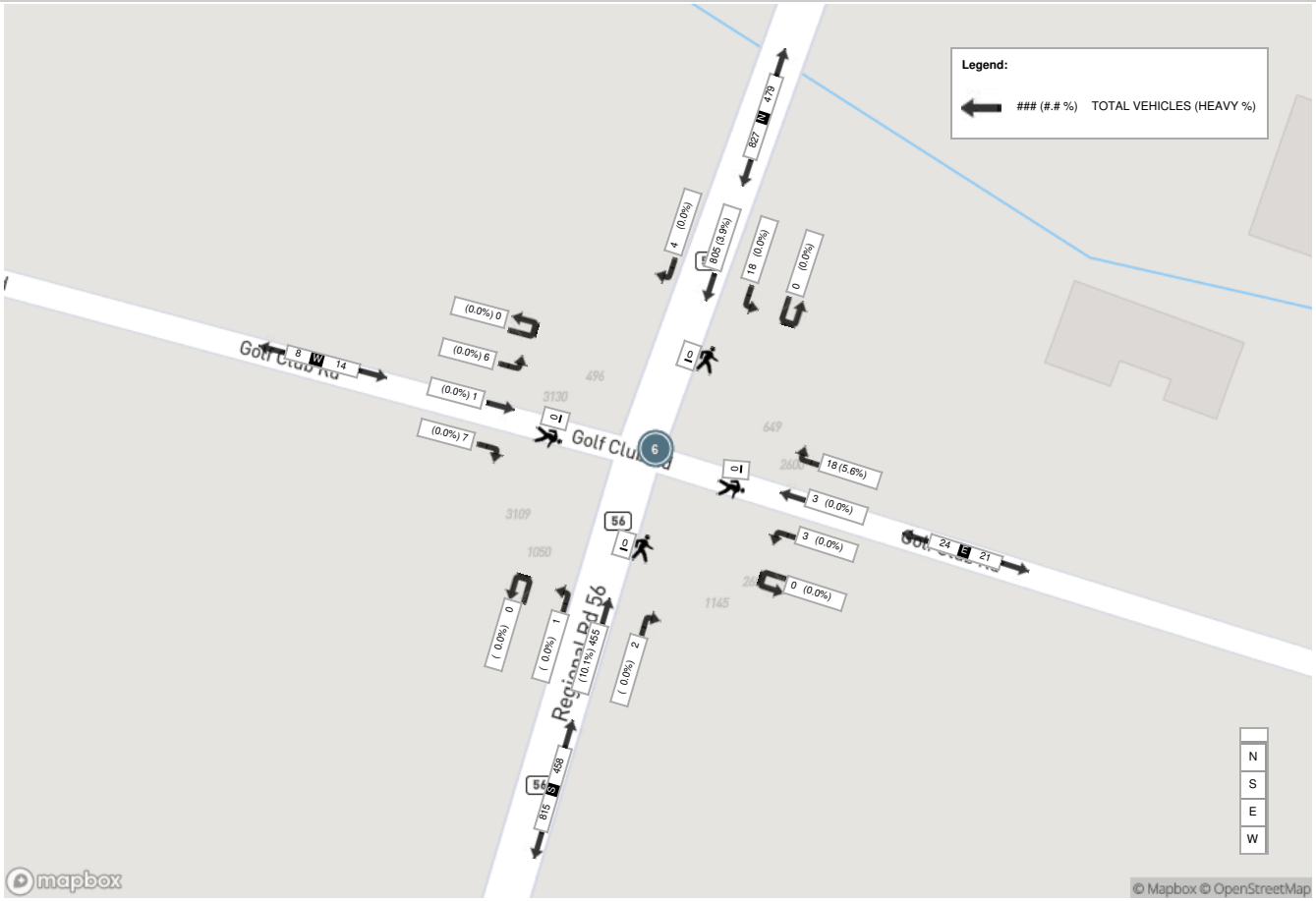
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:15 PM - 05:15 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: HENDERSHOT RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (8 . HENDERSHOT RD & GOLF CLUB RD)

Start Time	N Approach HENDERSHOT RD						E Approach GOLF CLUB RD						S Approach HENDERSHOT RD						W Approach GOLF CLUB RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	3	0	0	0	3	0	1	0	0	0	1	0	12	0	0	0	12	0	1	0	0	0	1	17	
2025-09-17 06:15:00	0	5	0	0	0	5	3	1	1	0	0	5	0	27	0	0	0	27	0	0	0	0	0	0	37	
2025-09-17 06:30:00	0	10	1	0	0	11	2	0	1	0	0	3	0	23	1	0	0	24	0	1	1	0	0	2	40	
2025-09-17 06:45:00	1	14	1	0	0	16	4	2	0	0	0	6	0	26	0	0	0	26	0	2	1	0	0	3	51	145
2025-09-17 07:00:00	0	18	1	0	0	19	8	0	0	0	0	8	1	19	0	0	0	20	1	0	1	0	0	2	49	177
2025-09-17 07:15:00	1	18	0	0	0	19	8	1	0	0	0	9	1	34	0	0	0	35	0	0	1	0	0	1	64	204
2025-09-17 07:30:00	1	21	6	0	0	28	7	3	1	0	0	11	1	53	2	0	0	56	0	0	1	0	0	1	96	260
2025-09-17 07:45:00	2	11	1	0	0	14	7	1	0	0	0	8	1	36	1	0	0	38	1	3	2	0	0	6	66	275
2025-09-17 08:00:00	3	18	1	0	0	22	6	1	2	0	0	9	1	29	0	0	0	30	1	0	1	0	0	2	63	289
2025-09-17 08:15:00	0	22	2	0	0	24	4	3	0	0	0	7	0	28	2	0	0	30	1	1	1	0	0	3	64	289
2025-09-17 08:30:00	2	20	1	0	0	23	8	4	3	0	0	15	0	29	3	0	0	32	0	2	1	0	2	3	73	266
2025-09-17 08:45:00	0	19	2	0	0	21	4	2	0	0	0	6	2	17	2	0	0	21	0	2	0	0	0	2	50	250
2025-09-17 09:00:00	0	17	4	0	0	21	3	2	1	0	0	6	1	30	0	0	0	31	0	4	2	0	0	6	64	251
2025-09-17 09:15:00	0	9	1	0	0	10	2	2	0	0	0	4	3	25	0	0	0	28	1	1	1	0	0	3	45	232
2025-09-17 09:30:00	0	11	3	0	0	14	4	1	0	0	0	5	1	20	1	0	0	22	0	2	2	0	0	4	45	204
2025-09-17 09:45:00	2	14	2	0	0	18	4	2	0	0	0	6	2	8	0	0	0	10	0	0	3	0	0	3	37	191
BREAK																										
2025-09-17 15:00:00	2	35	6	0	0	43	2	4	2	0	0	8	2	11	0	0	0	13	2	4	2	0	0	8	72	
2025-09-17 15:15:00	2	29	3	0	0	34	3	2	2	0	0	7	2	21	0	0	0	23	3	2	2	0	0	7	71	
2025-09-17 15:30:00	2	47	6	0	0	55	3	3	0	0	0	6	0	21	1	0	0	22	3	3	0	0	0	6	89	
2025-09-17 15:45:00	0	50	8	0	0	58	3	5	0	0	0	8	1	19	0	0	0	20	3	5	0	0	0	8	94	326
2025-09-17 16:00:00	2	55	7	0	0	64	3	2	1	0	0	6	1	22	1	0	0	24	3	2	1	0	0	6	100	354
2025-09-17 16:15:00	0	48	3	0	0	51	3	4	0	0	0	7	0	22	1	0	0	23	3	4	0	0	0	7	88	371
2025-09-17 16:30:00	2	46	8	0	0	56	5	0	1	0	0	6	2	26	0	0	0	28	5	0	1	0	0	6	96	378
2025-09-17 16:45:00	2	84	3	0	0	89	2	7	2	0	0	11	1	16	2	0	0	19	2	7	2	0	0	11	130	414
2025-09-17 17:00:00	1	58	3	0	0	62	4	3	2	0	0	9	3	28	0	0	0	31	4	3	2	0	0	9	111	425
2025-09-17 17:15:00	1	62	6	0	0	69	4	2	2	0	0	8	4	16	1	0	0	21	4	2	2	0	0	8	106	443
2025-09-17 17:30:00	0	40	6	0	0	46	4	4	0	0	1	8	1	27	1	0	0	29	4	4	0	0	1	8	91	438
2025-09-17 17:45:00	1	36	5	0	0	42	2	2	1	0	0	5	1	22	2	0	0	25	2	2	1	0	0	5	77	385
2025-09-17 18:00:00	1	38	1	0	0	40	5	3	4	0	0	12	0	16	0	0	0	16	5	3	4	0	0	12	80	354
2025-09-17 18:15:00	0	25	2	0	0	27	4	1	1	0	0	6	3	20	1	0	0	24	4	1	1	0	0	6	63	311
2025-09-17 18:30:00	1	16	2	0	0	19	2	2	2	0	0	6	0	13	0	0	0	13	2	2	2	0	0	6	44	264
2025-09-17 18:45:00	0	19	2	0	0	21	3	3	1	0	0	7	0	12	0	0	0	12	3	3	1	0	0	7	47	234
Grand Total	29	918	97	0	0	1044	126	73	30	0	1	229	35	728	22	0	0	785	57	66	39	0	3	162	**2220**	-
Approach%	2.8%	87.9%	9.3%	0%		-	55%	31.9%	13.1%	0%		-	4.5%	92.7%	2.8%	0%		-	35.2%	40.7%	24.1%	0%		-	-	-
Totals %	1.3%	41.4%	4.4%	0%		47%	5.7%	3.3%	1.4%	0%		10.3%	1.6%	32.8%	1%	0%		35.4%	2.6%	3%	1.8%	0%		7.3%	-	-
Heavy	1	11	3	0		-	5	5	2	0		-	2	11	1	0		-	2	5	2	0		-	-	-
Heavy %	3.4%	1.2%	3.1%	0%		-	4%	6.8%	6.7%	0%		-	5.7%	1.5%	4.5%	0%		-	3.5%	7.6%	5.1%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: HENDERSHOT RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach HENDERSHOT RD						E Approach GOLF CLUB RD						S Approach HENDERSHOT RD						W Approach GOLF CLUB RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	1	21	6	0	0	28	7	3	1	0	0	11	1	53	2	0	0	56	0	0	1	0	0	1	96
2025-09-17 07:45:00	2	11	1	0	0	14	7	1	0	0	0	8	1	36	1	0	0	38	1	3	2	0	0	6	66
2025-09-17 08:00:00	3	18	1	0	0	22	6	1	2	0	0	9	1	29	0	0	0	30	1	0	1	0	0	2	63
2025-09-17 08:15:00	0	22	2	0	0	24	4	3	0	0	0	7	0	28	2	0	0	30	1	1	1	0	0	3	64
Grand Total	6	72	10	0	0	88	24	8	3	0	0	35	3	146	5	0	0	154	3	4	5	0	0	12	**289**
Approach%	6.8%	81.8%	11.4%	0%		-	68.6%	22.9%	8.6%	0%		-	1.9%	94.8%	3.2%	0%		-	25%	33.3%	41.7%	0%		-	**-**
Totals %	2.1%	24.9%	3.5%	0%		30.4%	8.3%	2.8%	1%	0%		12.1%	1%	50.5%	1.7%	0%		53.3%	1%	1.4%	1.7%	0%		4.2%	**-**
PHF	0.5	0.82	0.42	0		0.79	0.86	0.67	0.38	0		0.8	0.75	0.69	0.63	0		0.69	0.75	0.33	0.63	0		0.5	0.75
Heavy	1	2	0	0		3	0	1	1	0		2	0	1	0	0		1	0	0	0	0		0	6
Heavy %	16.7%	2.8%	0%	0%		3.4%	0%	12.5%	33.3%	0%		5.7%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	2.1%
Lights	5	70	10	0		85	24	7	2	0		33	3	145	5	0		153	3	3	5	0		11	282
Lights %	83.3%	97.2%	100%	0%		96.6%	100%	87.5%	66.7%	0%		94.3%	100%	99.3%	100%	0%		99.4%	100%	75%	100%	0%		91.7%	97.6%
Single-Unit Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
Single-Unit Trucks %	0%	1.4%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.3%
Buses	1	1	0	0		2	0	1	1	0		2	0	1	0	0		1	0	0	0	0		0	5
Buses %	16.7%	1.4%	0%	0%		2.3%	0%	12.5%	33.3%	0%		5.7%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	1.7%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	25%	0%	0%		8.3%	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: HENDERSHOT RD & GOLF CLUB RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

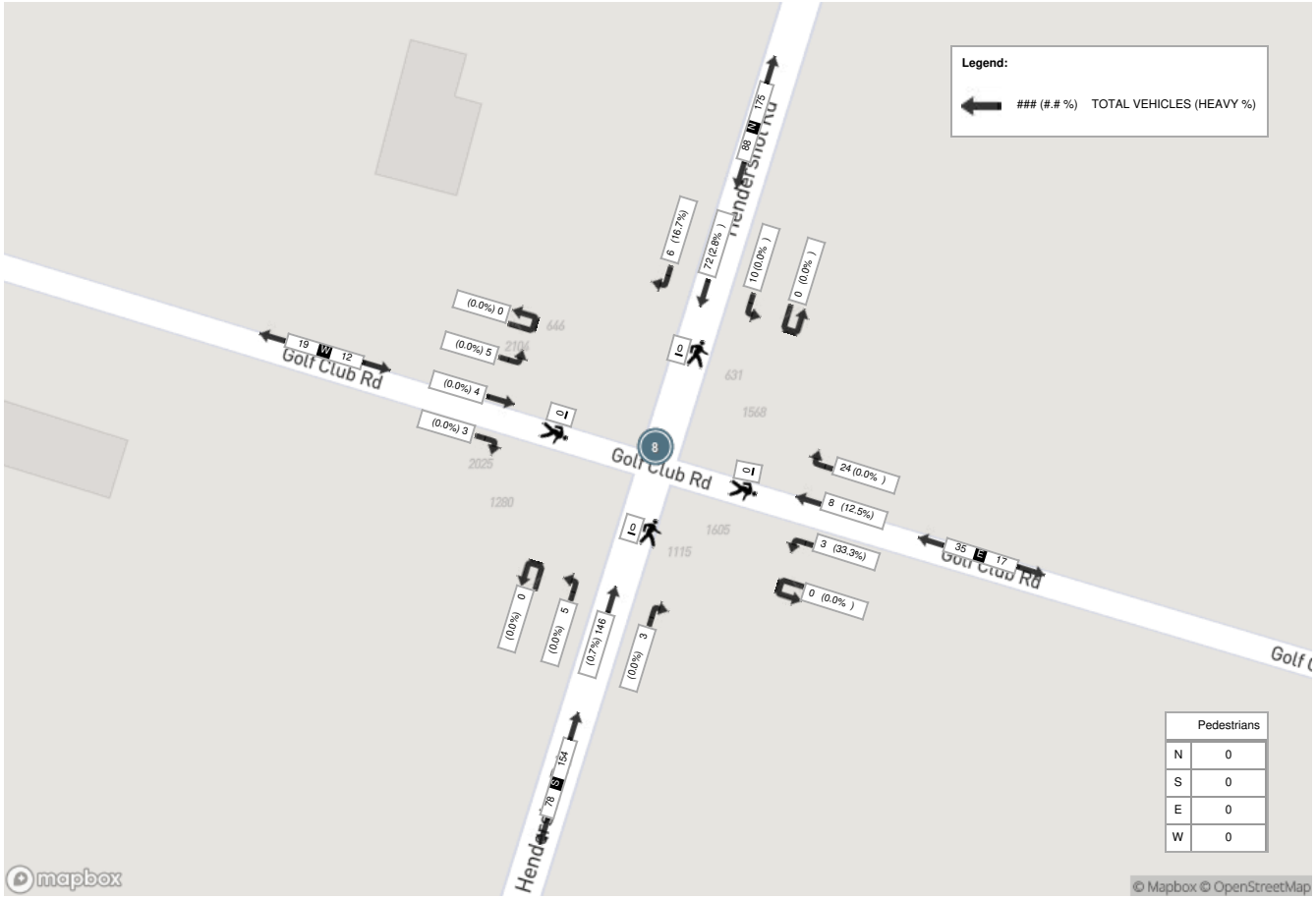
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach HENDERSHOT RD						E Approach GOLF CLUB RD						S Approach HENDERSHOT RD						W Approach GOLF CLUB RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	2	46	8	0	0	56	5	0	1	0	0	6	2	26	0	0	0	28	5	0	1	0	0	6	96
2025-09-17 16:45:00	2	84	3	0	0	89	2	7	2	0	0	11	1	16	2	0	0	19	2	7	2	0	0	11	130
2025-09-17 17:00:00	1	58	3	0	0	62	4	3	2	0	0	9	3	28	0	0	0	31	4	3	2	0	0	9	111
2025-09-17 17:15:00	1	62	6	0	0	69	4	2	2	0	0	8	4	16	1	0	0	21	4	2	2	0	0	8	106
Grand Total	6	250	20	0	0	276	15	12	7	0	0	34	10	86	3	0	0	99	15	12	7	0	0	34	**443**
Approach%	2.2%	90.6%	7.2%	0%		-	44.1%	35.3%	20.6%	0%		-	10.1%	86.9%	3%	0%		-	44.1%	35.3%	20.6%	0%		-	**-**
Totals %	1.4%	56.4%	4.5%	0%		62.3%	3.4%	2.7%	1.6%	0%		7.7%	2.3%	19.4%	0.7%	0%		22.3%	3.4%	2.7%	1.6%	0%		7.7%	**-**
PHF	0.75	0.74	0.63	0		0.78	0.75	0.43	0.88	0		0.77	0.63	0.77	0.38	0		0.8	0.75	0.43	0.88	0		0.77	0.85
Heavy	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	2
Heavy %	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.5%
Lights	6	248	20	0		274	15	12	6	0		33	10	86	3	0		99	15	12	6	0		33	439
Lights %	100%	99.2%	100%	0%		99.3%	100%	100%	85.7%	0%		97.1%	100%	100%	100%	0%		100%	100%	100%	85.7%	0%		97.1%	99.1%
Single-Unit Trucks	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	2
Single-Unit Trucks %	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.5%
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	0	0	1	0		1	2
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	14.3%	0%		2.9%	0%	0%	0%	0%		0%	0%	0%	14.3%	0%		2.9%	0.5%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



Crozier & Associates
SUITE 301 211 YONGE
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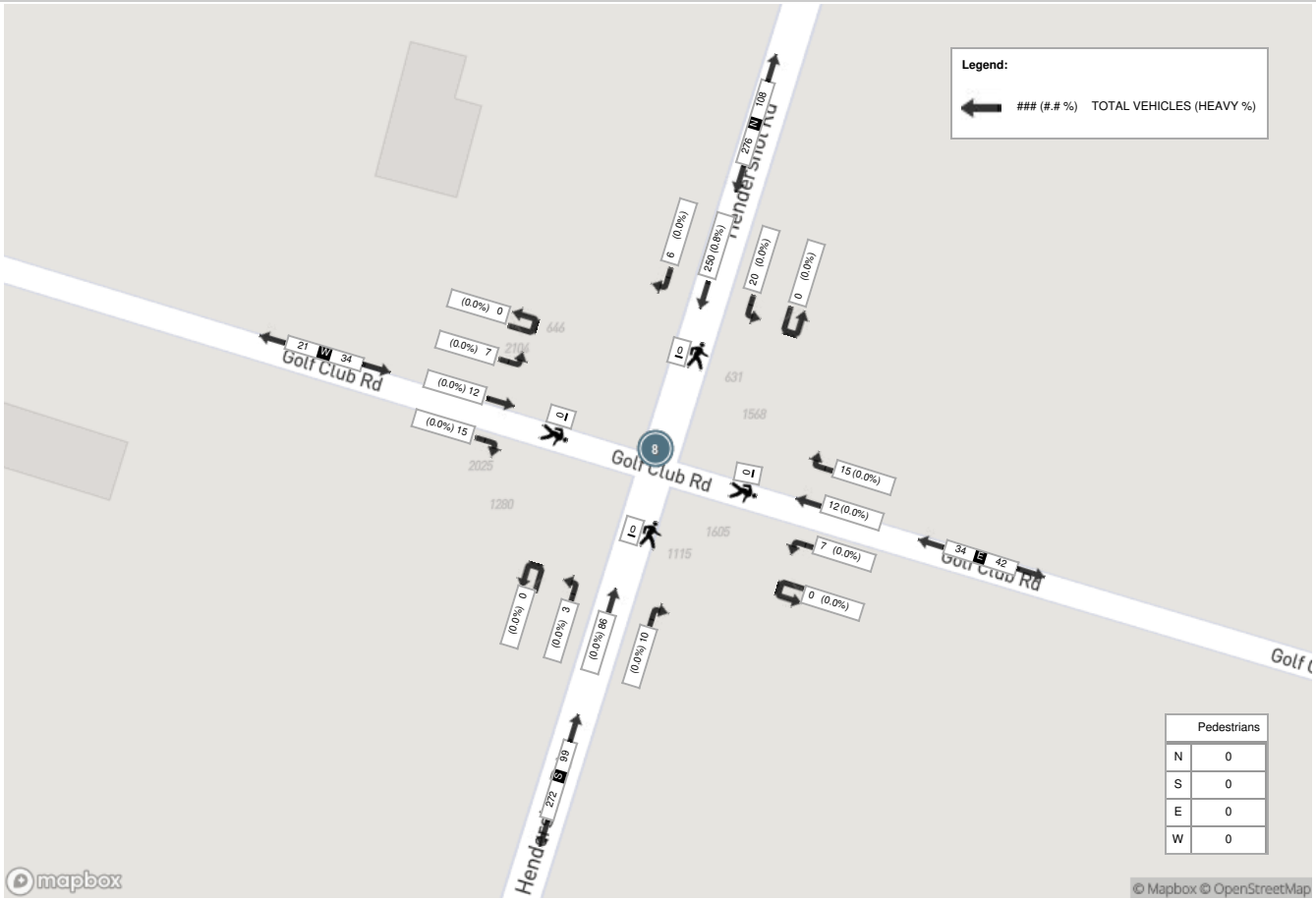
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: HIGHWAY 56 / UPPER CENTENNIAL PKWY & RYMAL RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (7 . HIGHWAY 56 / UPPER CENTENNIAL PKWY & RYMAL RD E)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach RYMAL RD						S Approach UPPER CENTENNIAL PKWY						W Approach RYMAL RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	10	22	22	0	0	54	41	28	4	0	0	73	3	58	4	0	0	65	4	19	14	0	0	37	229	
2025-09-17 06:15:00	11	21	20	0	0	52	42	33	3	0	0	78	6	49	13	0	0	68	4	24	12	0	0	40	238	
2025-09-17 06:30:00	22	37	32	0	0	91	47	48	3	0	0	98	4	70	10	0	0	84	7	16	19	0	0	42	315	
2025-09-17 06:45:00	20	40	32	0	0	92	40	43	2	0	0	85	3	87	12	0	0	102	17	33	18	0	0	68	347	1129
2025-09-17 07:00:00	20	25	32	0	0	77	44	59	5	0	0	108	9	80	13	0	0	102	8	27	32	0	0	67	354	1254
2025-09-17 07:15:00	35	48	32	0	0	115	46	66	4	0	0	116	10	139	23	0	0	172	11	43	31	0	0	85	488	1504
2025-09-17 07:30:00	33	40	48	0	0	121	51	101	7	0	0	159	13	130	18	0	0	161	21	52	41	0	0	114	555	1744
2025-09-17 07:45:00	35	43	29	0	1	107	51	90	8	0	0	149	10	186	27	0	1	223	17	43	52	0	0	112	591	1988
2025-09-17 08:00:00	32	60	31	0	0	123	49	78	6	0	0	133	14	114	17	0	0	145	17	53	55	0	0	125	526	2160
2025-09-17 08:15:00	40	66	44	0	0	150	50	70	8	0	0	128	7	115	28	0	0	150	13	44	20	0	0	77	505	2177
2025-09-17 08:30:00	32	54	23	0	0	109	64	86	10	0	0	160	7	84	26	0	0	117	31	56	49	0	0	136	522	2144
2025-09-17 08:45:00	51	54	31	0	0	136	43	77	13	0	0	133	7	109	35	0	0	151	12	50	44	0	0	106	526	2079
2025-09-17 09:00:00	42	58	38	0	0	138	31	82	8	0	0	121	4	81	21	0	0	106	21	49	55	0	0	125	490	2043
2025-09-17 09:15:00	51	65	32	0	0	148	33	76	6	0	0	115	8	75	33	0	0	116	25	51	37	0	0	113	492	2030
2025-09-17 09:30:00	43	62	22	0	0	127	40	64	4	0	0	108	7	70	21	0	0	98	21	42	69	0	0	132	465	1973
2025-09-17 09:45:00	55	47	44	1	0	147	27	55	6	0	0	88	6	74	29	0	0	109	26	49	37	0	0	112	456	1903
BREAK																										
2025-09-17 15:00:00	46	109	39	1	0	195	34	53	16	0	0	103	10	49	13	0	0	72	33	76	70	0	1	179	549	
2025-09-17 15:15:00	58	108	58	0	0	224	43	57	11	0	0	111	7	68	28	0	0	103	31	80	52	0	0	163	601	
2025-09-17 15:30:00	71	105	62	0	0	238	37	72	15	0	0	124	11	48	24	0	0	83	41	86	58	0	0	185	630	
2025-09-17 15:45:00	58	108	47	0	1	213	36	112	11	0	0	159	6	67	35	0	0	108	35	85	55	0	0	175	655	2435
2025-09-17 16:00:00	66	143	60	0	0	269	42	71	21	0	0	134	9	58	23	0	0	90	37	77	60	1	0	175	668	2554
2025-09-17 16:15:00	59	137	56	0	0	252	34	89	27	0	0	150	15	60	26	0	0	101	43	85	44	0	0	172	675	2628
2025-09-17 16:30:00	72	164	77	0	1	313	33	113	16	0	0	162	12	66	39	0	0	117	39	90	55	0	1	184	776	2774
2025-09-17 16:45:00	79	127	56	0	0	262	37	108	19	0	0	164	13	72	31	0	0	116	47	97	53	0	0	197	739	2858
2025-09-17 17:00:00	59	153	70	0	0	282	50	100	23	0	0	173	7	74	28	0	0	109	35	89	80	0	0	204	768	2958
2025-09-17 17:15:00	64	115	65	0	2	244	47	100	13	0	0	160	6	75	23	0	0	104	39	93	53	0	0	185	693	2976
2025-09-17 17:30:00	56	134	52	2	0	244	62	104	17	0	0	183	6	77	23	0	1	106	20	79	50	0	0	149	682	2882
2025-09-17 17:45:00	68	115	54	0	0	237	35	50	15	0	0	100	4	65	32	0	0	101	24	82	57	0	0	163	601	2744
2025-09-17 18:00:00	54	108	46	1	1	209	34	72	13	0	0	119	3	56	31	0	0	90	25	72	46	0	0	143	561	2537
2025-09-17 18:15:00	60	95	39	0	0	194	28	63	9	0	0	100	8	81	29	0	0	118	27	62	44	0	0	133	545	2389
2025-09-17 18:30:00	61	97	32	0	0	190	31	55	1	0	0	87	2	51	23	0	0	76	26	45	54	0	0	125	478	2185
2025-09-17 18:45:00	61	106	39	0	0	206	40	42	5	0	0	87	4	47	31	0	0	82	31	51	50	0	0	132	507	2091
Grand Total	1524	2666	1364	5	6	5559	1322	2317	329	0	0	3968	241	2535	769	0	2	3545	788	1900	1466	1	2	4155	**17227**	-
Approach%	27.4%	48%	24.5%	0.1%		-	33.3%	58.4%	8.3%	0%		-	6.8%	71.5%	21.7%	0%		-	19%	45.7%	35.3%	0%		-	-	-
Totals %	8.8%	15.5%	7.9%	0%		32.3%	7.7%	13.4%	1.9%	0%		23%	1.4%	14.7%	4.5%	0%		20.6%	4.6%	11%	8.5%	0%		24.1%	-	-
Heavy	74	189	144	0		-	159	116	19	0		-	22	198	66	0		-	68	109	93	0		-	-	-
Heavy %	4.9%	7.1%	10.6%	0%		-	12%	5%	5.8%	0%		-	9.1%	7.8%	8.6%	0%		-	8.6%	5.7%	6.3%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: HIGHWAY 56 / UPPER CENTENNIAL PKWY & RYMAL RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
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TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach RYMAL RD						S Approach UPPER CENTENNIAL PKWY						W Approach RYMAL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	33	40	48	0	0	121	51	101	7	0	0	159	13	130	18	0	0	161	21	52	41	0	0	114	555
2025-09-17 07:45:00	35	43	29	0	1	107	51	90	8	0	0	149	10	186	27	0	1	223	17	43	52	0	0	112	591
2025-09-17 08:00:00	32	60	31	0	0	123	49	78	6	0	0	133	14	114	17	0	0	145	17	53	55	0	0	125	526
2025-09-17 08:15:00	40	66	44	0	0	150	50	70	8	0	0	128	7	115	28	0	0	150	13	44	20	0	0	77	505
Grand Total	140	209	152	0	1	501	201	339	29	0	0	569	44	545	90	0	1	679	68	192	168	0	0	428	**2177**
Approach%	27.9%	41.7%	30.3%	0%		-	35.3%	59.6%	5.1%	0%		-	6.5%	80.3%	13.3%	0%		-	15.9%	44.9%	39.3%	0%		-	**-**
Totals %	6.4%	9.6%	7%	0%		23%	9.2%	15.6%	1.3%	0%		26.1%	2%	25%	4.1%	0%		31.2%	3.1%	8.8%	7.7%	0%		19.7%	**-**
PHF	0.88	0.79	0.79	0		0.84	0.99	0.84	0.91	0		0.89	0.79	0.73	0.8	0		0.76	0.81	0.91	0.76	0		0.86	0.92
Heavy	13	37	25	0		75	21	25	3	0		49	1	41	7	0		49	14	15	18	0		47	220
Heavy %	9.3%	17.7%	16.4%	0%		15%	10.4%	7.4%	10.3%	0%		8.6%	2.3%	7.5%	7.8%	0%		7.2%	20.6%	7.8%	10.7%	0%		11%	10.1%
Lights	127	172	127	0		426	180	314	26	0		520	43	504	83	0		630	54	177	150	0		381	1957
Lights %	90.7%	82.3%	83.6%	0%		85%	89.6%	92.6%	89.7%	0%		91.4%	97.7%	92.5%	92.2%	0%		92.8%	79.4%	92.2%	89.3%	0%		89%	89.9%
Single-Unit Trucks	4	21	10	0		35	9	19	1	0		29	0	24	6	0		30	10	9	7	0		26	120
Single-Unit Trucks %	2.9%	10%	6.6%	0%		7%	4.5%	5.6%	3.4%	0%		5.1%	0%	4.4%	6.7%	0%		4.4%	14.7%	4.7%	4.2%	0%		6.1%	5.5%
Buses	7	7	2	0		16	4	3	2	0		9	0	9	0	0		9	0	3	10	0		13	47
Buses %	5%	3.3%	1.3%	0%		3.2%	2%	0.9%	6.9%	0%		1.6%	0%	1.7%	0%	0%		1.3%	0%	1.6%	6%	0%		3%	2.2%
Articulated Trucks	2	9	13	0		24	8	3	0	0		11	1	8	1	0		10	4	3	1	0		8	53
Articulated Trucks %	1.4%	4.3%	8.6%	0%		4.8%	4%	0.9%	0%	0%		1.9%	2.3%	1.5%	1.1%	0%		1.5%	5.9%	1.6%	0.6%	0%		1.9%	2.4%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	50%		-	-	-	-	0%		-	-	-	-	50%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: HIGHWAY 56 / UPPER CENTENNIAL PKWY & RYMAL RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
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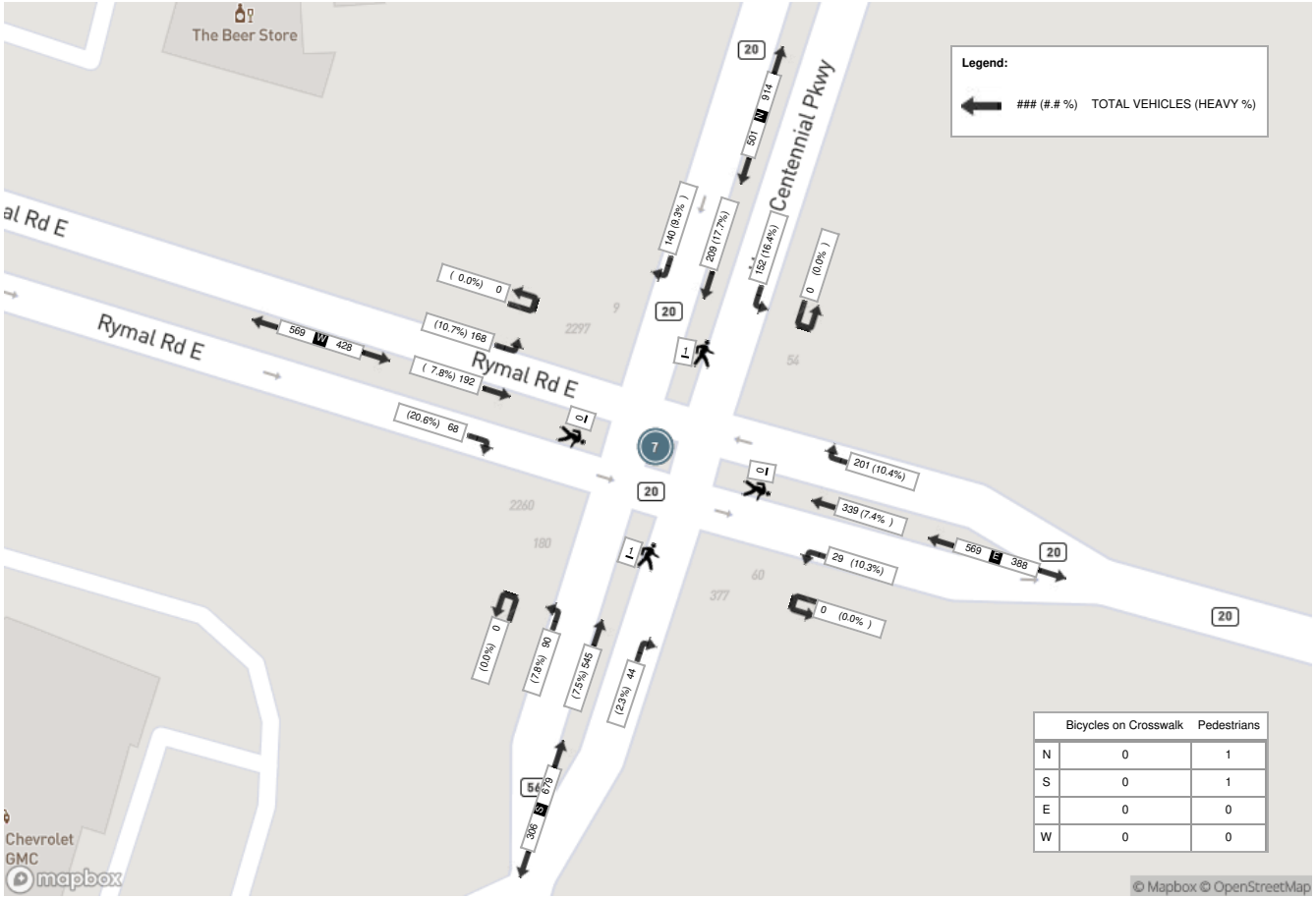
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach RYMAL RD						S Approach UPPER CENTENNIAL PKWY						W Approach RYMAL RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	72	164	77	0	1	313	33	113	16	0	0	162	12	66	39	0	0	117	39	90	55	0	1	184	776
2025-09-17 16:45:00	79	127	56	0	0	262	37	108	19	0	0	164	13	72	31	0	0	116	47	97	53	0	0	197	739
2025-09-17 17:00:00	59	153	70	0	0	282	50	100	23	0	0	173	7	74	28	0	0	109	35	89	80	0	0	204	768
2025-09-17 17:15:00	64	115	65	0	2	244	47	100	13	0	0	160	6	75	23	0	0	104	39	93	53	0	0	185	693
Grand Total	274	559	268	0	3	1101	167	421	71	0	0	659	38	287	121	0	0	446	160	369	241	0	1	770	**2976**
Approach%	24.9%	50.8%	24.3%	0%		-	25.3%	63.9%	10.8%	0%		-	8.5%	64.3%	27.1%	0%		-	20.8%	47.9%	31.3%	0%		-	**-**
Totals %	9.2%	18.8%	9%	0%		37%	5.6%	14.1%	2.4%	0%		22.1%	1.3%	9.6%	4.1%	0%		15%	5.4%	12.4%	8.1%	0%		25.9%	**-**
PHF	0.87	0.85	0.87	0		0.88	0.84	0.93	0.77	0		0.95	0.73	0.96	0.78	0		0.95	0.85	0.95	0.75	0		0.94	0.96
Heavy	5	17	17	0		39	11	8	3	0		22	4	25	6	0		35	4	11	9	0		24	120
Heavy %	1.8%	3%	6.3%	0%		3.5%	6.6%	1.9%	4.2%	0%		3.3%	10.5%	8.7%	5%	0%		7.8%	2.5%	3%	3.7%	0%		3.1%	4%
Lights	269	542	251	0		1062	156	413	67	0		636	34	262	115	0		411	156	358	232	0		746	2855
Lights %	98.2%	97%	93.7%	0%		96.5%	93.4%	98.1%	94.4%	0%		96.5%	89.5%	91.3%	95%	0%		92.2%	97.5%	97%	96.3%	0%		96.9%	95.9%
Single-Unit Trucks	1	13	13	0		27	0	6	2	0		8	2	13	5	0		20	4	5	3	0		12	67
Single-Unit Trucks %	0.4%	2.3%	4.9%	0%		2.5%	0%	1.4%	2.8%	0%		1.2%	5.3%	4.5%	4.1%	0%		4.5%	2.5%	1.4%	1.2%	0%		1.6%	2.3%
Buses	4	1	1	0		6	2	2	0	0		4	2	2	0	0		4	0	2	6	0		8	22
Buses %	1.5%	0.2%	0.4%	0%		0.5%	1.2%	0.5%	0%	0%		0.6%	5.3%	0.7%	0%	0%		0.9%	0%	0.5%	2.5%	0%		1%	0.7%
Articulated Trucks	0	3	3	0		6	9	0	1	0		10	0	10	1	0		11	0	4	0	0		4	31
Articulated Trucks %	0%	0.5%	1.1%	0%		0.5%	5.4%	0%	1.4%	0%		1.5%	0%	3.5%	0.8%	0%		2.5%	0%	1.1%	0%	0%		0.5%	1%
Bicycles on Road	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	1.4%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	-	75%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	25%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	1
E	0	0
W	0	0

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SUITE 301 211 YONGE
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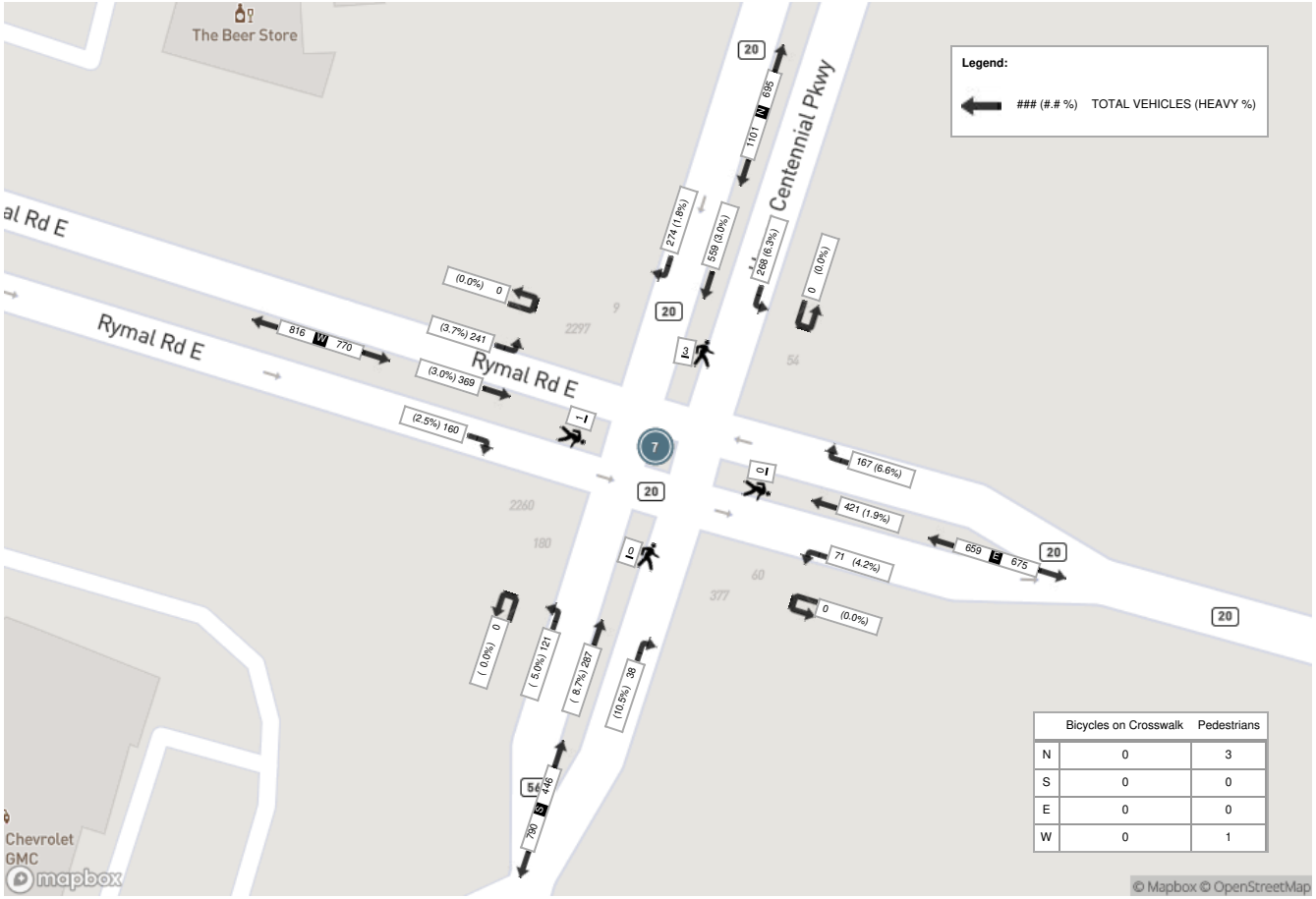
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	3
S	0	0
E	0	0
W	0	1

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (9 . FIRST RD E & REGIONAL RD 20)

Start Time	N Approach FIRST RD E					E Approach REGIONAL RD 20					W Approach REGIONAL RD 20					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	1	0	0	0	1	2	65	0	0	67	38	3	0	0	41	109	
2025-09-17 06:15:00	2	0	0	0	2	2	80	0	0	82	49	3	0	0	52	136	
2025-09-17 06:30:00	8	0	0	0	8	1	84	0	0	85	46	5	0	0	51	144	
2025-09-17 06:45:00	3	4	0	0	7	1	87	0	0	88	59	8	0	0	67	162	551
2025-09-17 07:00:00	5	0	0	0	5	1	107	0	0	108	65	4	0	0	69	182	624
2025-09-17 07:15:00	2	2	0	0	4	3	121	0	0	124	72	13	0	0	85	213	701
2025-09-17 07:30:00	10	6	0	0	16	0	141	0	0	141	90	20	0	0	110	267	824
2025-09-17 07:45:00	18	3	0	0	21	3	147	0	0	150	59	13	0	0	72	243	905
2025-09-17 08:00:00	7	4	0	0	11	3	115	0	0	118	78	12	0	0	90	219	942
2025-09-17 08:15:00	12	6	0	0	18	6	125	0	0	131	88	10	0	0	98	247	976
2025-09-17 08:30:00	12	0	0	0	12	3	134	0	0	137	81	7	0	0	88	237	946
2025-09-17 08:45:00	16	10	0	0	26	2	110	0	0	112	83	7	0	0	90	228	931
2025-09-17 09:00:00	11	3	0	0	14	1	111	0	0	112	76	9	0	0	85	211	923
2025-09-17 09:15:00	9	5	0	0	14	2	108	0	0	110	81	10	0	0	91	215	891
2025-09-17 09:30:00	8	3	0	0	11	1	96	0	0	97	66	9	0	0	75	183	837
2025-09-17 09:45:00	10	2	0	0	12	4	85	0	0	89	96	4	0	0	100	201	810
BREAK																	
2025-09-17 15:00:00	20	3	0	0	23	7	78	0	0	85	103	16	0	0	119	227	
2025-09-17 15:15:00	17	5	0	0	22	8	95	0	0	103	131	14	0	0	145	270	
2025-09-17 15:30:00	17	5	0	0	22	8	109	0	0	117	152	7	0	0	159	298	
2025-09-17 15:45:00	17	2	0	0	19	1	142	0	0	143	124	13	0	0	137	299	1094
2025-09-17 16:00:00	27	7	0	0	34	4	102	0	0	106	132	11	0	0	143	283	1150
2025-09-17 16:15:00	22	8	0	0	30	3	139	0	0	142	143	12	0	0	155	327	1207
2025-09-17 16:30:00	28	3	0	0	31	1	127	0	0	128	167	8	0	0	175	334	1243
2025-09-17 16:45:00	28	5	0	0	33	0	146	0	0	146	158	15	0	0	173	352	1296
2025-09-17 17:00:00	20	10	0	0	30	1	146	0	0	147	160	7	0	0	167	344	1357
2025-09-17 17:15:00	35	5	0	0	40	3	131	0	0	134	151	8	0	0	159	333	1363
2025-09-17 17:30:00	18	6	0	1	24	4	151	0	0	155	123	9	0	0	132	311	1340
2025-09-17 17:45:00	14	6	0	0	20	2	93	0	0	95	127	10	0	0	137	252	1240
2025-09-17 18:00:00	9	3	0	0	12	2	95	0	0	97	104	17	0	0	121	230	1126
2025-09-17 18:15:00	11	7	0	0	18	2	92	0	0	94	93	14	0	0	107	219	1012
2025-09-17 18:30:00	9	4	0	0	13	1	74	0	0	75	72	7	0	0	79	167	868
2025-09-17 18:45:00	8	1	0	0	9	0	80	0	0	80	80	0	0	0	80	169	785

Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Grand Total	434	128	0	1	562	82	3516	0	0	3598	3147	305	0	0	3452	**7612**	-
Approach%	77.2%	22.8%	0%		-	2.3%	97.7%	0%		-	91.2%	8.8%	0%		-	**-**	-
Totals %	5.7%	1.7%	0%		7.4%	1.1%	46.2%	0%		47.3%	41.3%	4%	0%		45.3%	**-**	-
Heavy	7	4	0		-	1	277	0		-	263	10	0		-	**-**	-
Heavy %	1.6%	3.1%	0%		-	1.2%	7.9%	0%		-	8.4%	3.3%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach FIRST RD E					E Approach REGIONAL RD 20					W Approach REGIONAL RD 20					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	10	6	0	0	16	0	141	0	0	141	90	20	0	0	110	267
2025-09-17 07:45:00	18	3	0	0	21	3	147	0	0	150	59	13	0	0	72	243
2025-09-17 08:00:00	7	4	0	0	11	3	115	0	0	118	78	12	0	0	90	219
2025-09-17 08:15:00	12	6	0	0	18	6	125	0	0	131	88	10	0	0	98	247
Grand Total	47	19	0	0	66	12	528	0	0	540	315	55	0	0	370	**976**
Approach%	71.2%	28.8%	0%		-	2.2%	97.8%	0%		-	85.1%	14.9%	0%		-	**-**
Totals %	4.8%	1.9%	0%		6.8%	1.2%	54.1%	0%		55.3%	32.3%	5.6%	0%		37.9%	**-**
PHF	0.65	0.79	0		0.79	0.5	0.9	0		0.9	0.88	0.69	0		0.84	0.91
Heavy	2	1	0		3	0	46	0		46	42	0	0		42	91
Heavy %	4.3%	5.3%	0%		4.5%	0%	8.7%	0%		8.5%	13.3%	0%	0%		11.4%	9.3%
Lights	45	18	0		63	12	481	0		493	273	55	0		328	884
Lights %	95.7%	94.7%	0%		95.5%	100%	91.1%	0%		91.3%	86.7%	100%	0%		88.6%	90.6%
Single-Unit Trucks	2	1	0		3	0	27	0		27	20	0	0		20	50
Single-Unit Trucks %	4.3%	5.3%	0%		4.5%	0%	5.1%	0%		5%	6.3%	0%	0%		5.4%	5.1%
Buses	0	0	0		0	0	10	0		10	5	0	0		5	15
Buses %	0%	0%	0%		0%	0%	1.9%	0%		1.9%	1.6%	0%	0%		1.4%	1.5%
Articulated Trucks	0	0	0		0	0	9	0		9	17	0	0		17	26
Articulated Trucks %	0%	0%	0%		0%	0%	1.7%	0%		1.7%	5.4%	0%	0%		4.6%	2.7%
Bicycles on Road	0	0	0		0	0	1	0		1	0	0	0		0	1
Bicycles on Road %	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

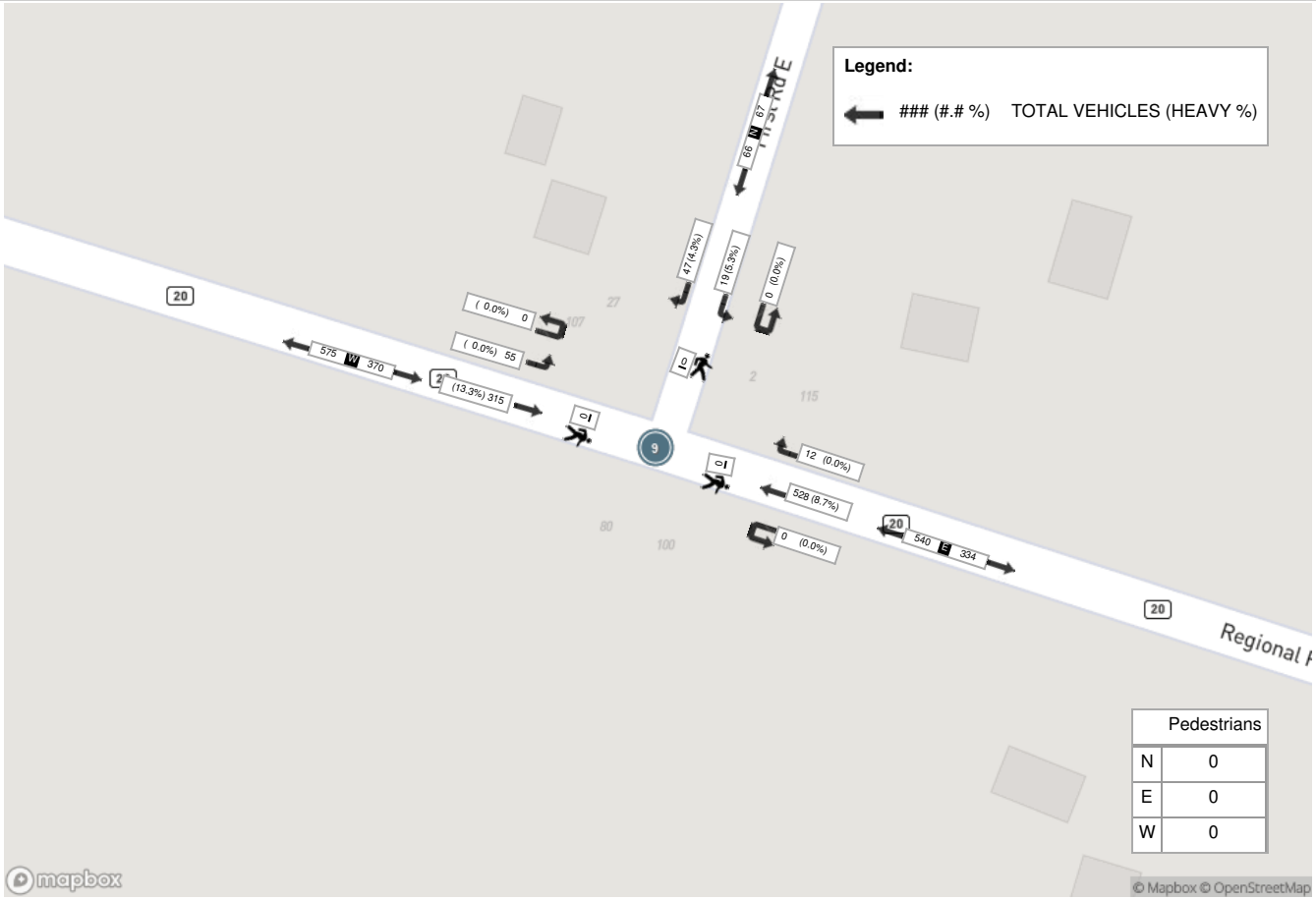
Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach FIRST RD E					E Approach REGIONAL RD 20					W Approach REGIONAL RD 20					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	28	3	0	0	31	1	127	0	0	128	167	8	0	0	175	334
2025-09-17 16:45:00	28	5	0	0	33	0	146	0	0	146	158	15	0	0	173	352
2025-09-17 17:00:00	20	10	0	0	30	1	146	0	0	147	160	7	0	0	167	344
2025-09-17 17:15:00	35	5	0	0	40	3	131	0	0	134	151	8	0	0	159	333
Grand Total	111	23	0	0	134	5	550	0	0	555	636	38	0	0	674	**1363**
Approach%	82.8%	17.2%	0%		-	0.9%	99.1%	0%		-	94.4%	5.6%	0%		-	**-**
Totals %	8.1%	1.7%	0%		9.8%	0.4%	40.4%	0%		40.7%	46.7%	2.8%	0%		49.4%	**-**
PHF	0.79	0.58	0		0.84	0.42	0.94	0		0.94	0.95	0.63	0		0.96	0.97
Heavy	0	0	0		0	0	21	0		21	30	1	0		31	52
Heavy %	0%	0%	0%		0%	0%	3.8%	0%		3.8%	4.7%	2.6%	0%		4.6%	3.8%
Lights	111	23	0		134	5	529	0		534	606	37	0		643	1311
Lights %	100%	100%	0%		100%	100%	96.2%	0%		96.2%	95.3%	97.4%	0%		95.4%	96.2%
Single-Unit Trucks	0	0	0		0	0	7	0		7	19	0	0		19	26
Single-Unit Trucks %	0%	0%	0%		0%	0%	1.3%	0%		1.3%	3%	0%	0%		2.8%	1.9%
Buses	0	0	0		0	0	4	0		4	4	1	0		5	9
Buses %	0%	0%	0%		0%	0%	0.7%	0%		0.7%	0.6%	2.6%	0%		0.7%	0.7%
Articulated Trucks	0	0	0		0	0	10	0		10	7	0	0		7	17
Articulated Trucks %	0%	0%	0%		0%	0%	1.8%	0%		1.8%	1.1%	0%	0%		1%	1.2%
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

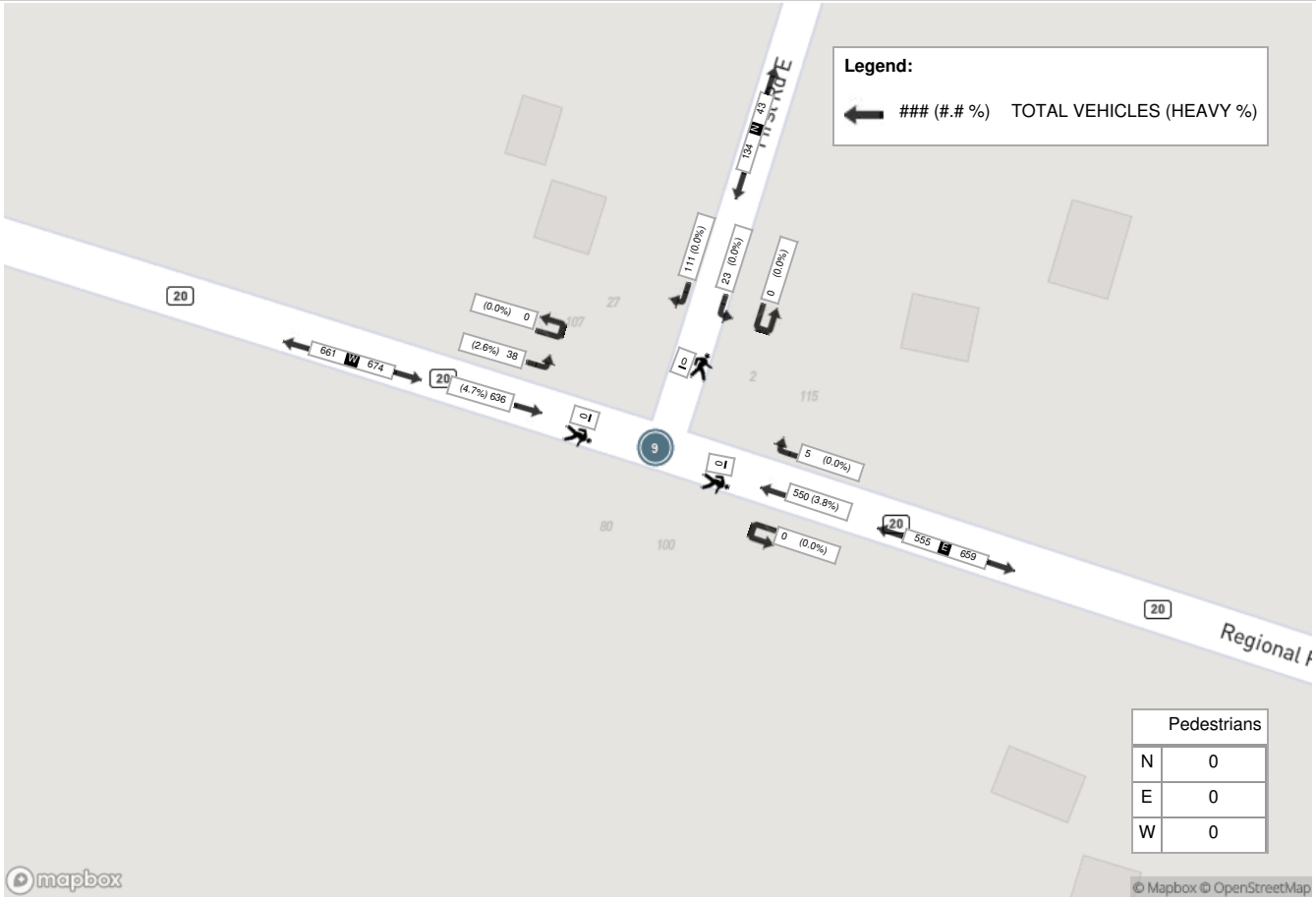
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)



Spectrum

Turning Movement Count
Location Name: HENDERSHOT RD / SECOND RD E & REGIONAL RD 20
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
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CANADA

Turning Movement Count (10 . HENDERSHOT RD / SECOND RD E & REGIONAL RD 20)

Start Time	N Approach SECOND RD E						E Approach REGIONAL RD 20						S Approach HENDERSHOT RD						W Approach REGIONAL RD 20						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	1	1	2	0	0	4	4	69	1	0	0	74	3	3	2	0	0	8	1	36	1	0	0	38	124	
2025-09-17 06:15:00	2	5	0	0	0	7	6	70	1	0	0	77	6	19	6	0	0	31	0	49	0	0	0	49	164	
2025-09-17 06:30:00	0	9	1	0	0	10	11	80	2	0	0	93	6	17	6	0	0	29	0	44	2	0	0	46	178	
2025-09-17 06:45:00	1	8	2	0	0	11	7	77	4	0	0	88	6	16	8	0	0	30	5	57	0	0	0	62	191	657
2025-09-17 07:00:00	3	11	2	0	0	16	5	96	4	0	0	105	3	19	7	0	0	29	4	56	3	0	0	63	213	746
2025-09-17 07:15:00	6	13	1	0	0	20	10	112	5	0	0	127	4	25	10	0	0	39	8	63	5	0	0	76	262	844
2025-09-17 07:30:00	2	19	3	0	0	24	11	126	4	0	0	141	2	41	11	0	1	54	8	83	5	0	0	96	315	981
2025-09-17 07:45:00	8	8	2	0	0	18	12	124	6	0	0	142	8	36	15	0	0	59	6	54	1	0	0	61	280	1070
2025-09-17 08:00:00	1	12	2	0	0	15	5	106	6	0	0	117	7	20	7	0	0	34	8	74	3	0	0	85	251	1108
2025-09-17 08:15:00	6	19	4	0	0	29	10	113	2	0	0	125	8	24	8	0	0	40	5	85	2	0	0	92	286	1132
2025-09-17 08:30:00	7	12	1	0	0	20	8	112	6	0	0	126	4	17	10	0	0	31	5	74	4	0	0	83	260	1077
2025-09-17 08:45:00	3	12	2	0	0	17	7	111	10	0	0	128	4	13	9	0	0	26	8	75	7	0	0	90	261	1058
2025-09-17 09:00:00	4	9	3	0	0	16	6	91	2	0	0	99	8	18	11	0	0	37	4	68	5	0	0	77	229	1036
2025-09-17 09:15:00	8	8	5	0	0	21	3	95	1	0	0	99	6	13	10	0	0	29	4	75	4	0	0	83	232	982
2025-09-17 09:30:00	4	6	5	0	0	15	4	81	5	0	0	90	5	19	8	0	0	32	5	65	5	0	0	75	212	934
2025-09-17 09:45:00	2	6	2	0	0	10	1	75	3	0	0	79	2	7	6	0	0	15	13	80	3	0	0	96	200	873
BREAK																										
2025-09-17 15:00:00	4	22	7	0	0	33	4	81	13	0	0	98	5	7	4	0	0	16	8	96	6	0	0	110	257	
2025-09-17 15:15:00	6	23	4	0	0	33	2	75	9	0	0	86	1	16	8	0	0	25	13	114	4	0	0	131	275	
2025-09-17 15:30:00	6	21	8	0	0	35	3	114	14	0	0	131	6	18	8	0	0	32	13	128	6	0	0	147	345	
2025-09-17 15:45:00	10	47	6	0	0	63	3	122	12	0	0	137	6	12	7	0	0	25	10	116	3	0	0	129	354	1231
2025-09-17 16:00:00	2	41	7	0	0	50	4	92	9	0	0	105	5	15	12	0	0	32	13	125	4	0	0	142	329	1303
2025-09-17 16:15:00	9	36	5	0	0	50	5	123	12	0	0	140	4	16	10	0	0	30	9	132	4	0	0	145	365	1393
2025-09-17 16:30:00	10	24	13	0	0	47	6	103	7	0	0	116	6	25	9	0	0	40	21	147	5	0	0	173	376	1424
2025-09-17 16:45:00	14	55	17	0	0	86	4	126	30	0	0	160	1	14	4	0	0	19	13	146	5	0	0	164	429	1499
2025-09-17 17:00:00	10	33	7	0	0	50	9	124	15	0	0	148	2	28	10	0	0	40	12	147	6	0	0	165	403	1573
2025-09-17 17:15:00	11	43	19	0	0	73	10	127	13	0	0	150	5	14	7	0	0	26	17	143	3	0	0	163	412	1620
2025-09-17 17:30:00	6	28	4	0	0	38	4	123	13	0	0	140	4	20	11	0	0	35	11	116	2	0	0	129	342	1586
2025-09-17 17:45:00	8	24	5	0	1	37	9	90	8	0	0	107	1	23	4	0	0	28	12	109	7	0	0	128	300	1457
2025-09-17 18:00:00	3	21	9	0	0	33	2	60	10	0	0	72	1	13	6	0	0	20	8	93	10	0	0	111	236	1290
2025-09-17 18:15:00	3	14	4	0	0	21	2	80	7	0	0	89	3	18	6	0	1	27	5	83	6	0	0	94	231	1109
2025-09-17 18:30:00	3	11	5	0	0	19	3	70	4	0	0	77	2	11	4	0	0	17	9	68	4	0	0	81	194	961
2025-09-17 18:45:00	2	14	2	0	0	18	1	63	1	0	0	65	3	8	9	0	0	20	4	72	6	0	0	82	185	846
Grand Total	165	615	159	0	1	939	181	3111	239	0	0	3531	137	565	253	0	2	955	262	2873	131	0	0	3266	**8691**	-
Approach%	17.6%	65.5%	16.9%	0%		-	5.1%	88.1%	6.8%	0%		-	14.3%	59.2%	26.5%	0%		-	8%	88%	4%	0%		-	-	-
Totals %	1.9%	7.1%	1.8%	0%		10.8%	2.1%	35.8%	2.7%	0%		40.6%	1.6%	6.5%	2.9%	0%		11%	3%	33.1%	1.5%	0%		37.6%	-	-
Heavy	7	7	4	0		-	5	258	6	0		-	8	8	12	0		-	8	256	7	0		-	-	-
Heavy %	4.2%	1.1%	2.5%	0%		-	2.8%	8.3%	2.5%	0%		-	5.8%	1.4%	4.7%	0%		-	3.1%	8.9%	5.3%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: HENDERSHOT RD / SECOND RD E & REGIONAL RD 20
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach SECOND RD E						E Approach REGIONAL RD 20						S Approach HENDERSHOT RD						W Approach REGIONAL RD 20						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	2	19	3	0	0	24	11	126	4	0	0	141	2	41	11	0	1	54	8	83	5	0	0	96	315
2025-09-17 07:45:00	8	8	2	0	0	18	12	124	6	0	0	142	8	36	15	0	0	59	6	54	1	0	0	61	280
2025-09-17 08:00:00	1	12	2	0	0	15	5	106	6	0	0	117	7	20	7	0	0	34	8	74	3	0	0	85	251
2025-09-17 08:15:00	6	19	4	0	0	29	10	113	2	0	0	125	8	24	8	0	0	40	5	85	2	0	0	92	286
Grand Total	17	58	11	0	0	86	38	469	18	0	0	525	25	121	41	0	1	187	27	296	11	0	0	334	**1132**
Approach%	19.8%	67.4%	12.8%	0%		-	7.2%	89.3%	3.4%	0%		-	13.4%	64.7%	21.9%	0%		-	8.1%	88.6%	3.3%	0%		-	**-**
Totals %	1.5%	5.1%	1%	0%		7.6%	3.4%	41.4%	1.6%	0%		46.4%	2.2%	10.7%	3.6%	0%		16.5%	2.4%	26.1%	1%	0%		29.5%	**-**
PHF	0.53	0.76	0.69	0		0.74	0.79	0.93	0.75	0		0.92	0.78	0.74	0.68	0		0.79	0.84	0.87	0.55	0		0.87	0.9
Heavy	1	2	1	0		4	3	43	0	0		46	0	0	2	0		2	0	40	0	0		40	92
Heavy %	5.9%	3.4%	9.1%	0%		4.7%	7.9%	9.2%	0%	0%		8.8%	0%	0%	4.9%	0%		1.1%	0%	13.5%	0%	0%		12%	8.1%
Lights	16	56	10	0		82	35	426	18	0		479	25	121	39	0		185	27	256	11	0		294	1040
Lights %	94.1%	96.6%	90.9%	0%		95.3%	92.1%	90.8%	100%	0%		91.2%	100%	100%	95.1%	0%		98.9%	100%	86.5%	100%	0%		88%	91.9%
Single-Unit Trucks	0	1	1	0		2	0	27	0	0		27	0	0	1	0		1	0	19	0	0		19	49
Single-Unit Trucks %	0%	1.7%	9.1%	0%		2.3%	0%	5.8%	0%	0%		5.1%	0%	0%	2.4%	0%		0.5%	0%	6.4%	0%	0%		5.7%	4.3%
Buses	1	1	0	0		2	3	6	0	0		9	0	0	1	0		1	0	5	0	0		5	17
Buses %	5.9%	1.7%	0%	0%		2.3%	7.9%	1.3%	0%	0%		1.7%	0%	0%	2.4%	0%		0.5%	0%	1.7%	0%	0%		1.5%	1.5%
Articulated Trucks	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	0	16	0	0		16	26
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2.1%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	5.4%	0%	0%		4.8%	2.3%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		**-**

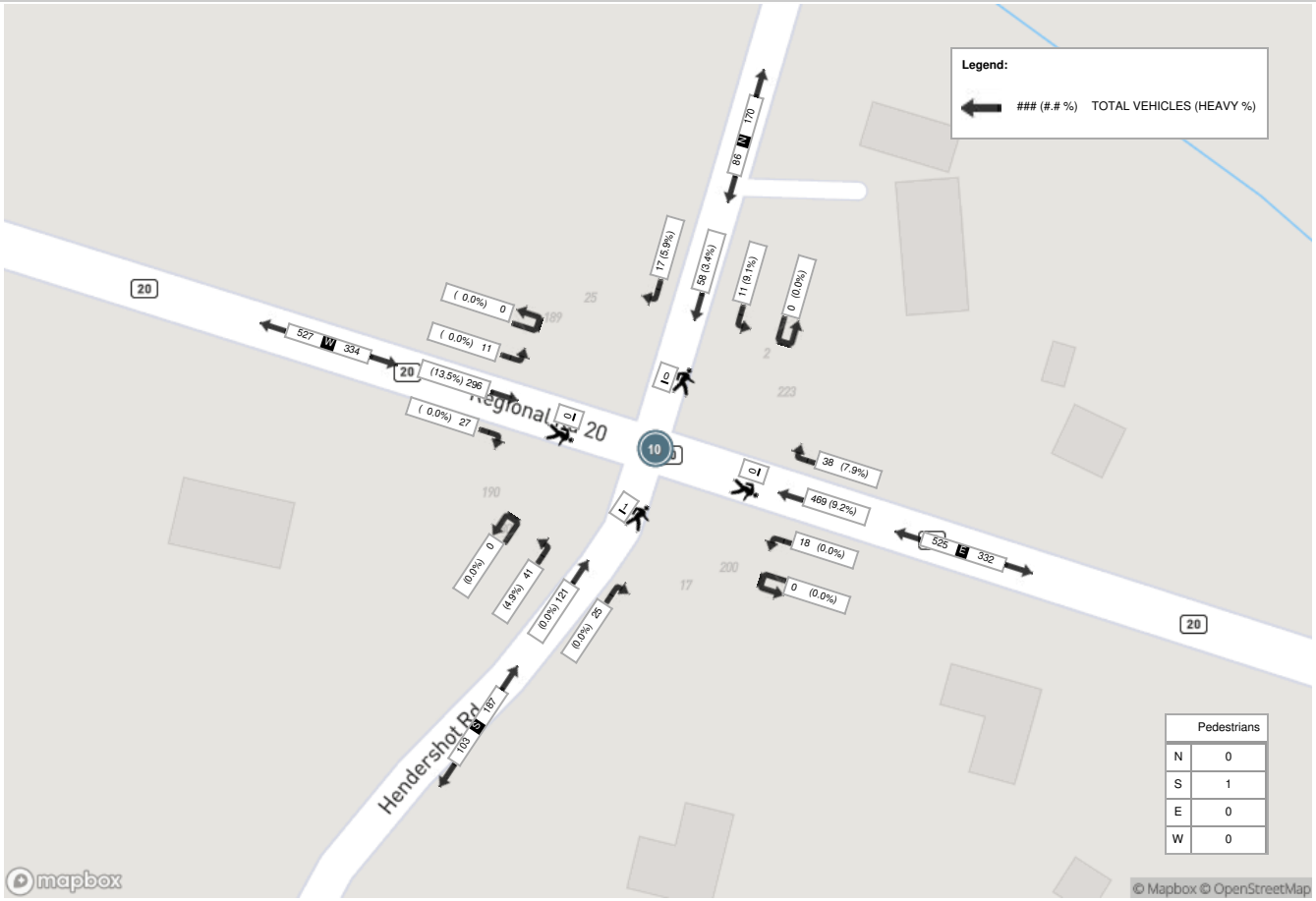
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach SECOND RD E						E Approach REGIONAL RD 20						S Approach HENDERSHOT RD						W Approach REGIONAL RD 20						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	10	24	13	0	0	47	6	103	7	0	0	116	6	25	9	0	0	40	21	147	5	0	0	173	376
2025-09-17 16:45:00	14	55	17	0	0	86	4	126	30	0	0	160	1	14	4	0	0	19	13	146	5	0	0	164	429
2025-09-17 17:00:00	10	33	7	0	0	50	9	124	15	0	0	148	2	28	10	0	0	40	12	147	6	0	0	165	403
2025-09-17 17:15:00	11	43	19	0	0	73	10	127	13	0	0	150	5	14	7	0	0	26	17	143	3	0	0	163	412
Grand Total	45	155	56	0	0	256	29	480	65	0	0	574	14	81	30	0	0	125	63	583	19	0	0	665	**1620**
Approach%	17.6%	60.5%	21.9%	0%		-	5.1%	83.6%	11.3%	0%		-	11.2%	64.8%	24%	0%		-	9.5%	87.7%	2.9%	0%		-	**-**
Totals %	2.8%	9.6%	3.5%	0%		15.8%	1.8%	29.6%	4%	0%		35.4%	0.9%	5%	1.9%	0%		7.7%	3.9%	36%	1.2%	0%		41%	**-**
PHF	0.8	0.7	0.74	0		0.74	0.73	0.94	0.54	0		0.9	0.58	0.72	0.75	0		0.78	0.75	0.99	0.79	0		0.96	0.94
Heavy	1	0	1	0		2	0	17	1	0		18	0	1	1	0		2	3	30	0	0		33	55
Heavy %	2.2%	0%	1.8%	0%		0.8%	0%	3.5%	1.5%	0%		3.1%	0%	1.2%	3.3%	0%		1.6%	4.8%	5.1%	0%	0%		5%	3.4%
Lights	44	155	55	0		254	29	463	64	0		556	14	80	29	0		123	60	553	19	0		632	1565
Lights %	97.8%	100%	98.2%	0%		99.2%	100%	96.5%	98.5%	0%		96.9%	100%	98.8%	96.7%	0%		98.4%	95.2%	94.9%	100%	0%		95%	96.6%
Single-Unit Trucks	0	0	1	0		1	0	7	1	0		8	0	1	0	0		1	2	17	0	0		19	29
Single-Unit Trucks %	0%	0%	1.8%	0%		0.4%	0%	1.5%	1.5%	0%		1.4%	0%	1.2%	0%	0%		0.8%	3.2%	2.9%	0%	0%		2.9%	1.8%
Buses	1	0	0	0		1	0	2	0	0		2	0	0	1	0		1	1	3	0	0		4	8
Buses %	2.2%	0%	0%	0%		0.4%	0%	0.4%	0%	0%		0.3%	0%	0%	3.3%	0%		0.8%	1.6%	0.5%	0%	0%		0.6%	0.5%
Articulated Trucks	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	0	10	0	0		10	18
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.5%	1.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

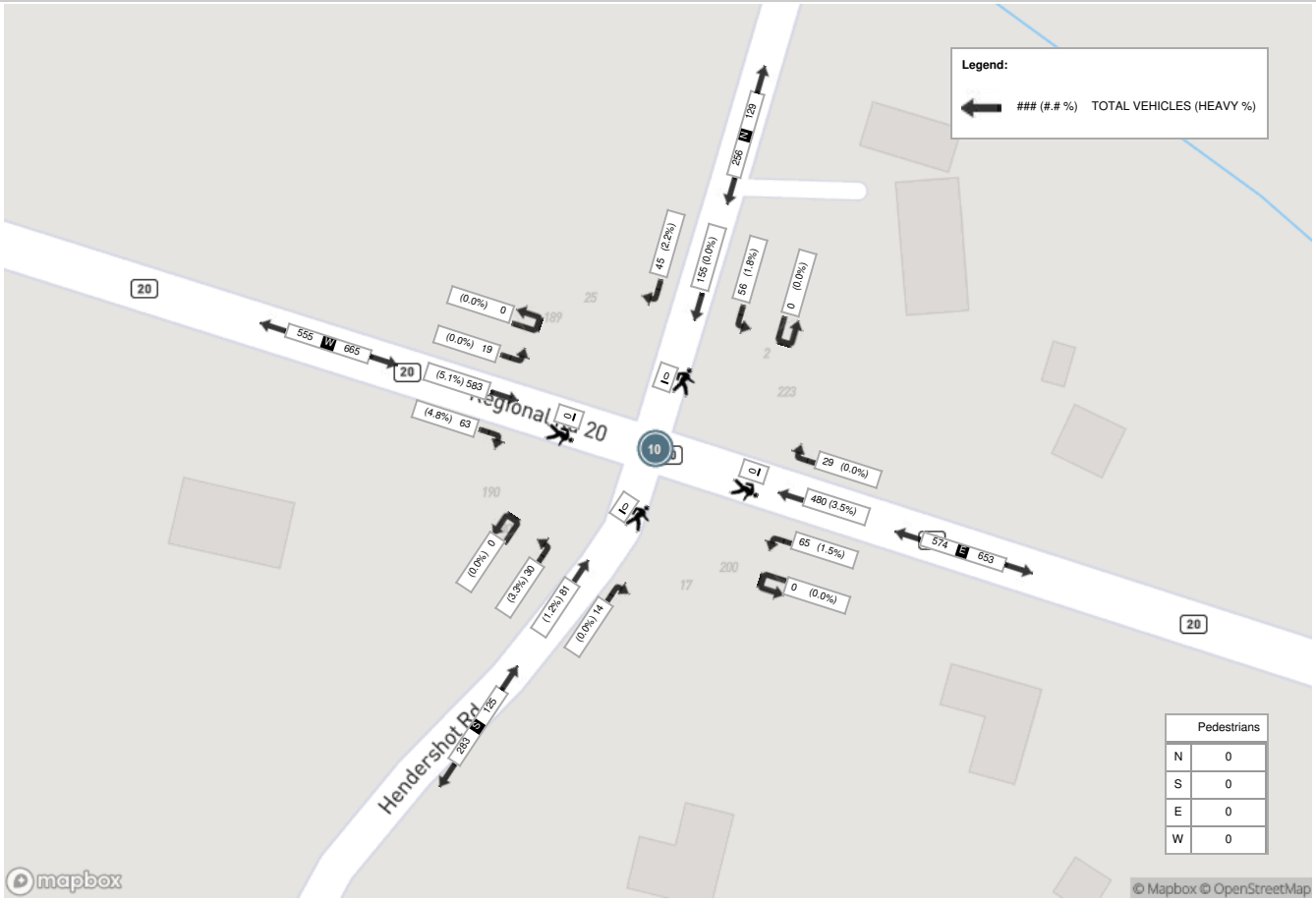
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (11 . UPPER CENTENNIAL PKWY & HIGHLAND RD)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach HIGHLAND RD						S Approach UPPER CENTENNIAL PKWY						W Approach HIGHLAND RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	2	52	6	0	0	60	6	1	1	0	0	8	2	114	3	0	3	119	3	6	10	0	0	19	206	
2025-09-17 06:15:00	7	51	2	0	0	60	6	4	1	0	0	11	2	116	2	0	0	120	7	6	18	0	0	31	222	
2025-09-17 06:30:00	5	79	4	0	0	88	4	5	4	0	0	13	1	139	7	0	4	147	11	4	17	0	1	32	280	
2025-09-17 06:45:00	11	85	5	0	0	101	3	11	1	0	0	15	2	121	9	0	0	132	16	11	21	0	0	48	296	1004
2025-09-17 07:00:00	11	79	4	0	0	94	2	6	2	0	0	10	2	153	10	0	2	165	13	14	33	0	0	60	329	1127
2025-09-17 07:15:00	9	106	5	0	0	120	6	10	4	0	0	20	0	200	12	0	0	212	15	13	31	0	2	59	411	1316
2025-09-17 07:30:00	19	97	4	0	1	120	2	17	4	0	1	23	2	214	34	0	0	250	18	12	37	0	0	67	460	1496
2025-09-17 07:45:00	22	102	4	0	1	128	5	18	8	0	0	31	4	235	53	0	1	292	23	20	41	0	0	84	535	1735
2025-09-17 08:00:00	13	130	2	1	1	146	4	12	5	0	1	21	3	208	28	0	2	239	18	14	38	0	1	70	476	1882
2025-09-17 08:15:00	6	123	2	0	0	131	6	19	4	0	0	29	3	200	17	0	0	220	31	18	39	0	0	88	468	1939
2025-09-17 08:30:00	15	115	4	0	0	134	2	11	4	0	0	17	2	190	18	0	0	210	17	16	32	0	1	65	426	1905
2025-09-17 08:45:00	21	137	8	0	1	166	4	13	3	0	1	20	2	170	22	0	0	194	20	11	24	0	0	55	435	1805
2025-09-17 09:00:00	14	147	6	0	1	167	10	15	5	0	1	30	2	134	25	0	0	161	32	18	25	0	0	75	433	1762
2025-09-17 09:15:00	9	140	10	0	0	159	4	7	5	0	0	16	2	140	13	0	0	155	31	17	20	0	0	68	398	1692
2025-09-17 09:30:00	9	128	7	0	0	144	2	4	3	0	0	9	5	188	30	0	0	223	12	11	15	0	3	38	414	1680
2025-09-17 09:45:00	15	139	10	0	0	164	6	15	3	0	0	24	8	127	18	0	0	153	27	9	20	0	1	56	397	1642
BREAK																										
2025-09-17 15:00:00	29	161	5	0	0	195	5	24	5	0	0	34	5	149	29	0	2	183	39	19	19	0	1	77	489	
2025-09-17 15:15:00	37	226	13	0	0	276	9	25	7	0	1	41	8	164	27	0	1	199	34	12	26	0	0	72	588	
2025-09-17 15:30:00	30	192	3	0	0	225	2	29	11	0	0	42	6	153	32	0	4	191	31	28	30	0	0	89	547	
2025-09-17 15:45:00	42	218	11	0	0	271	2	25	9	0	0	36	6	153	28	0	1	187	35	20	16	0	1	71	565	2189
2025-09-17 16:00:00	30	225	11	0	2	266	7	26	7	0	2	40	4	172	26	0	3	202	39	12	18	0	1	69	577	2277
2025-09-17 16:15:00	26	242	4	0	1	272	8	34	8	0	1	50	3	147	34	0	0	184	42	17	22	0	0	81	587	2276
2025-09-17 16:30:00	25	275	10	0	1	310	13	31	10	0	1	54	5	149	29	0	2	183	44	20	21	0	1	85	632	2361
2025-09-17 16:45:00	37	257	4	0	2	298	4	30	10	0	1	44	3	140	34	0	1	177	26	23	23	0	1	72	591	2387
2025-09-17 17:00:00	38	248	9	0	1	295	4	30	8	0	1	42	2	193	25	0	1	220	42	14	22	0	4	78	635	2445
2025-09-17 17:15:00	30	235	9	0	0	274	7	38	9	0	0	54	4	168	40	0	0	212	23	14	17	0	0	54	594	2452
2025-09-17 17:30:00	49	236	8	0	1	293	7	21	12	0	1	40	5	183	39	0	0	227	33	13	18	0	5	64	624	2444
2025-09-17 17:45:00	38	207	5	0	0	250	7	18	7	0	0	32	1	154	24	0	1	179	40	17	23	0	1	80	541	2394
2025-09-17 18:00:00	24	185	3	0	0	212	5	16	4	0	0	25	2	146	33	0	4	181	21	13	21	0	3	55	473	2232
2025-09-17 18:15:00	27	186	4	0	0	217	4	20	4	0	0	28	3	159	26	0	0	188	26	11	17	0	0	54	487	2125
2025-09-17 18:30:00	32	168	8	0	0	208	3	17	5	0	0	25	3	126	35	0	2	164	23	19	19	0	0	61	458	1959
2025-09-17 18:45:00	26	188	6	0	0	220	4	12	5	0	0	21	3	119	33	0	0	155	31	6	21	0	1	58	454	1872
Grand Total	708	5159	196	1	13	6064	163	564	178	0	12	905	105	5124	795	0	34	6024	823	458	754	0	28	2035	**15028**	-
Approach%	11.7%	85.1%	3.2%	0%		-	18%	62.3%	19.7%	0%		-	1.7%	85.1%	13.2%	0%		-	40.4%	22.5%	37.1%	0%		-	-	-
Totals %	4.7%	34.3%	1.3%	0%		40.4%	1.1%	3.8%	1.2%	0%		6%	0.7%	34.1%	5.3%	0%		40.1%	5.5%	3%	5%	0%		13.5%	-	-
Heavy	12	346	11	0		-	10	6	5	0		-	8	392	66	0		-	77	5	12	0		-	-	-
Heavy %	1.7%	6.7%	5.6%	0%		-	6.1%	1.1%	2.8%	0%		-	7.6%	7.7%	8.3%	0%		-	9.4%	1.1%	1.6%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach HIGHLAND RD						S Approach UPPER CENTENNIAL PKWY						W Approach HIGHLAND RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	19	97	4	0	1	120	2	17	4	0	1	23	2	214	34	0	0	250	18	12	37	0	0	67	460
2025-09-17 07:45:00	22	102	4	0	1	128	5	18	8	0	0	31	4	235	53	0	1	292	23	20	41	0	0	84	535
2025-09-17 08:00:00	13	130	2	1	1	146	4	12	5	0	1	21	3	208	28	0	2	239	18	14	38	0	1	70	476
2025-09-17 08:15:00	6	123	2	0	0	131	6	19	4	0	0	29	3	200	17	0	0	220	31	18	39	0	0	88	468
Grand Total	60	452	12	1	3	525	17	66	21	0	2	104	12	857	132	0	3	1001	90	64	155	0	1	309	**1939**
Approach%	11.4%	86.1%	2.3%	0.2%		-	16.3%	63.5%	20.2%	0%		-	1.2%	85.6%	13.2%	0%		-	29.1%	20.7%	50.2%	0%		-	**-**
Totals %	3.1%	23.3%	0.6%	0.1%		27.1%	0.9%	3.4%	1.1%	0%		5.4%	0.6%	44.2%	6.8%	0%		51.6%	4.6%	3.3%	8%	0%		15.9%	**-**
PHF	0.68	0.87	0.75	0.25		0.9	0.71	0.87	0.66	0		0.84	0.75	0.91	0.62	0		0.86	0.73	0.8	0.95	0		0.88	0.91
Heavy	1	51	2	0		54	2	2	2	0		6	0	63	19	0		82	20	1	3	0		24	166
Heavy %	1.7%	11.3%	16.7%	0%		10.3%	11.8%	3%	9.5%	0%		5.8%	0%	7.4%	14.4%	0%		8.2%	22.2%	1.6%	1.9%	0%		7.8%	8.6%
Lights	59	401	10	1		471	15	63	19	0		97	12	794	113	0		919	70	63	152	0		285	1772
Lights %	98.3%	88.7%	83.3%	100%		89.7%	88.2%	95.5%	90.5%	0%		93.3%	100%	92.6%	85.6%	0%		91.8%	77.8%	98.4%	98.1%	0%		92.2%	91.4%
Single-Unit Trucks	0	22	1	0		23	2	1	0	0		3	0	31	10	0		41	12	0	1	0		13	80
Single-Unit Trucks %	0%	4.9%	8.3%	0%		4.4%	11.8%	1.5%	0%	0%		2.9%	0%	3.6%	7.6%	0%		4.1%	13.3%	0%	0.6%	0%		4.2%	4.1%
Buses	1	9	0	0		10	0	1	1	0		2	0	15	9	0		24	8	1	2	0		11	47
Buses %	1.7%	2%	0%	0%		1.9%	0%	1.5%	4.8%	0%		1.9%	0%	1.8%	6.8%	0%		2.4%	8.9%	1.6%	1.3%	0%		3.6%	2.4%
Articulated Trucks	0	20	1	0		21	0	0	1	0		1	0	17	0	0		17	0	0	0	0		0	39
Articulated Trucks %	0%	4.4%	8.3%	0%		4%	0%	0%	4.8%	0%		1%	0%	2%	0%	0%		1.7%	0%	0%	0%	0%		0%	2%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	-	22.2%		-	-	-	-	11.1%		-	-	-	-	33.3%		-	-	-	-	11.1%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	11.1%		-	-	-	-	11.1%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach HIGHLAND RD						S Approach UPPER CENTENNIAL PKWY						W Approach HIGHLAND RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	25	275	10	0	1	310	13	31	10	0	1	54	5	149	29	0	2	183	44	20	21	0	1	85	632
2025-09-17 16:45:00	37	257	4	0	2	298	4	30	10	0	1	44	3	140	34	0	1	177	26	23	23	0	1	72	591
2025-09-17 17:00:00	38	248	9	0	1	295	4	30	8	0	1	42	2	193	25	0	1	220	42	14	22	0	4	78	635
2025-09-17 17:15:00	30	235	9	0	0	274	7	38	9	0	0	54	4	168	40	0	0	212	23	14	17	0	0	54	594
Grand Total	130	1015	32	0	4	1177	28	129	37	0	3	194	14	650	128	0	4	792	135	71	83	0	6	289	**2452**
Approach%	11%	86.2%	2.7%	0%		-	14.4%	66.5%	19.1%	0%		-	1.8%	82.1%	16.2%	0%		-	46.7%	24.6%	28.7%	0%		-	**-**
Totals %	5.3%	41.4%	1.3%	0%		48%	1.1%	5.3%	1.5%	0%		7.9%	0.6%	26.5%	5.2%	0%		32.3%	5.5%	2.9%	3.4%	0%		11.8%	**-**
PHF	0.86	0.92	0.8	0		0.95	0.54	0.85	0.93	0		0.9	0.7	0.84	0.8	0		0.9	0.77	0.77	0.9	0		0.85	0.97
Heavy	0	34	0	0		34	3	0	0	0		3	2	42	2	0		46	6	2	1	0		9	92
Heavy %	0%	3.3%	0%	0%		2.9%	10.7%	0%	0%	0%		1.5%	14.3%	6.5%	1.6%	0%		5.8%	4.4%	2.8%	1.2%	0%		3.1%	3.8%
Lights	129	981	32	0		1142	25	129	37	0		191	12	608	126	0		746	129	68	82	0		279	2358
Lights %	99.2%	96.7%	100%	0%		97%	89.3%	100%	100%	0%		98.5%	85.7%	93.5%	98.4%	0%		94.2%	95.6%	95.8%	98.8%	0%		96.5%	96.2%
Single-Unit Trucks	0	19	0	0		19	3	0	0	0		3	2	13	2	0		17	5	2	1	0		8	47
Single-Unit Trucks %	0%	1.9%	0%	0%		1.6%	10.7%	0%	0%	0%		1.5%	14.3%	2%	1.6%	0%		2.1%	3.7%	2.8%	1.2%	0%		2.8%	1.9%
Buses	0	5	0	0		5	0	0	0	0		0	0	10	0	0		10	1	0	0	0		1	16
Buses %	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.3%	0.7%	0%	0%	0%		0.3%	0.7%
Articulated Trucks	0	10	0	0		10	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	29
Articulated Trucks %	0%	1%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.4%	0%	0%	0%	0%		0%	1.2%
Bicycles on Road	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	2
Bicycles on Road %	0.8%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		0.3%	0.1%
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	-	11.8%		-	-	-	-	17.6%		-	-	-	-	23.5%		-	-	-	-	29.4%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	11.8%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	5.9%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
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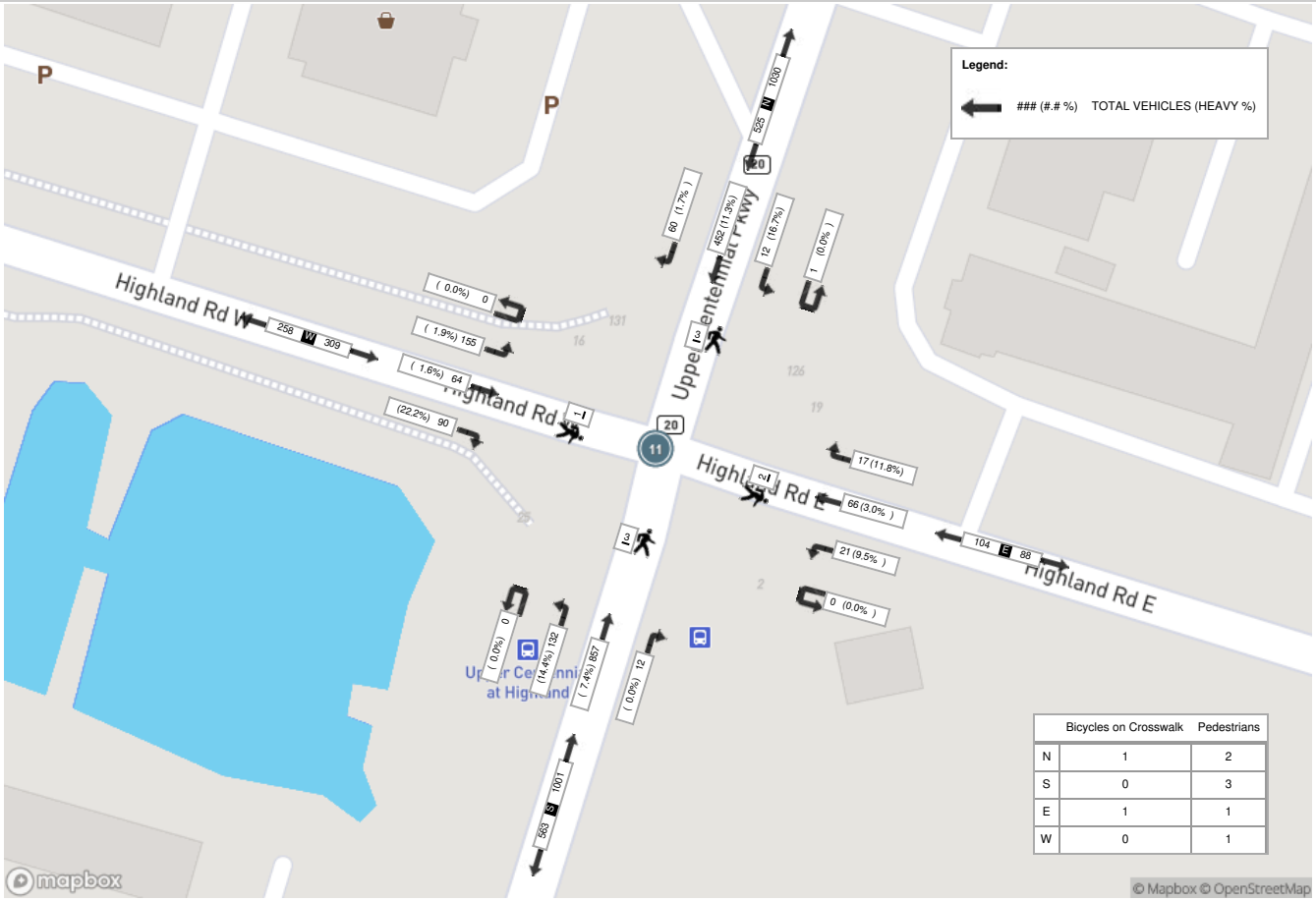
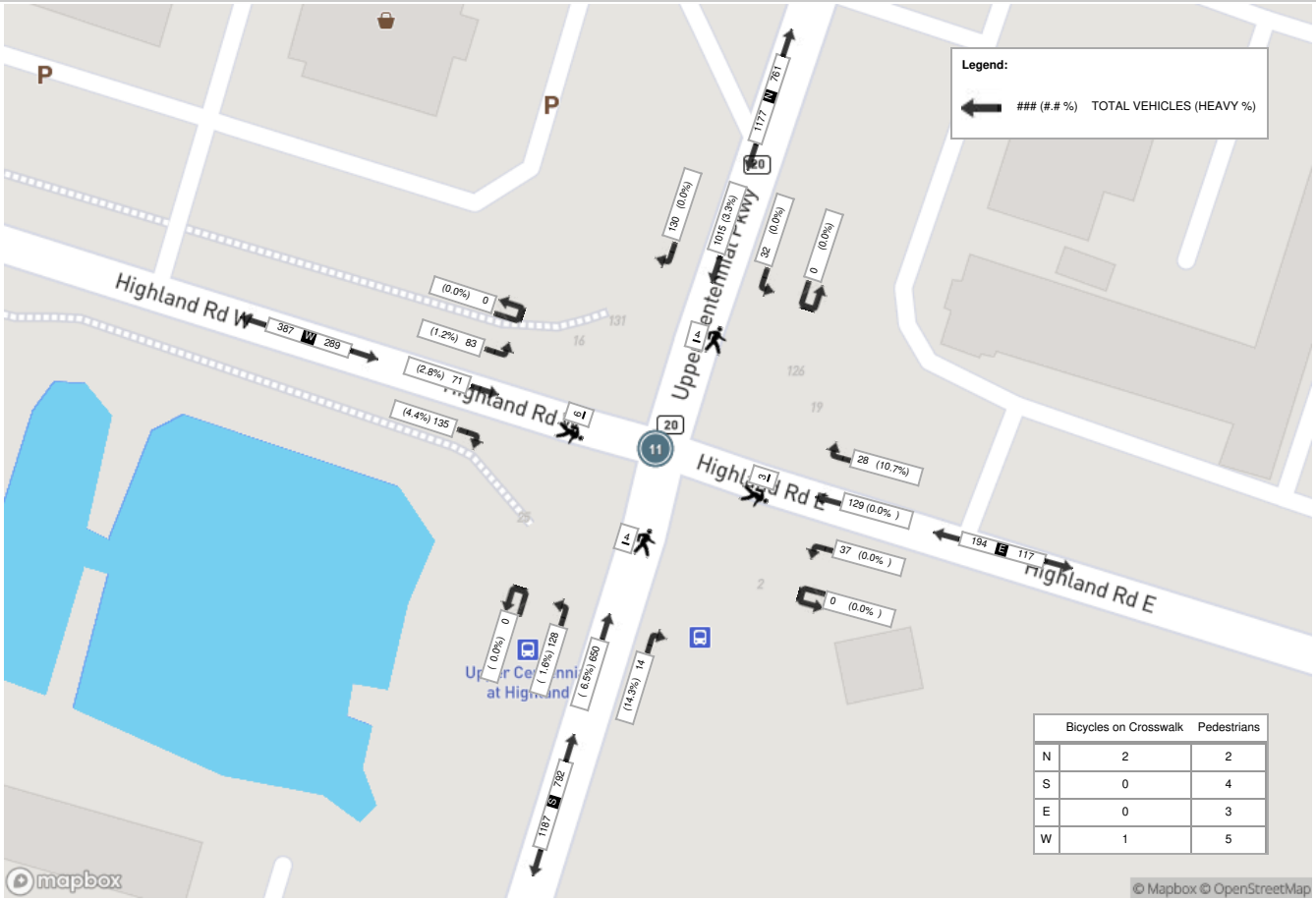
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



	Bicycles on Crosswalk	Pedestrians
N	2	2
S	0	4
E	0	3
W	1	5

Spectrum

Turning Movement Count
Location Name: FIRST RD E & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (12 . FIRST RD E & HIGHLAND RD)

Start Time	N Approach FIRST RD E						E Approach HIGHLAND RD						S Approach FIRST RD E						W Approach HIGHLAND RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	1	0	0	0	0	1	0	6	0	0	0	6	0	4	0	0	0	4	0	8	5	0	0	13	24	
2025-09-17 06:15:00	2	1	0	0	0	3	0	5	0	0	0	5	0	6	0	0	0	6	0	6	5	0	0	11	25	
2025-09-17 06:30:00	2	6	2	0	0	10	0	8	0	0	0	8	0	5	1	0	0	6	1	6	4	0	0	11	35	
2025-09-17 06:45:00	6	6	0	0	0	12	0	10	0	0	0	10	0	4	1	0	0	5	1	10	6	0	0	17	44	128
2025-09-17 07:00:00	3	6	0	1	0	10	0	7	0	0	0	7	0	7	0	0	0	7	0	12	4	0	0	16	40	144
2025-09-17 07:15:00	4	3	0	0	0	7	0	16	0	0	0	16	1	13	0	0	0	14	0	13	6	0	0	19	56	175
2025-09-17 07:30:00	3	15	1	0	0	19	0	19	1	0	0	20	0	22	0	0	1	22	0	12	6	0	0	18	79	219
2025-09-17 07:45:00	2	22	0	0	0	24	2	28	1	0	0	31	1	14	1	0	0	16	2	15	8	0	0	25	96	271
2025-09-17 08:00:00	5	8	0	0	0	13	0	15	1	0	0	16	1	15	0	0	0	16	0	15	4	0	0	19	64	295
2025-09-17 08:15:00	7	16	0	0	0	23	0	16	2	0	0	18	0	16	1	0	0	17	0	13	7	0	0	20	78	317
2025-09-17 08:30:00	2	13	0	0	0	15	1	15	0	0	0	16	0	12	0	0	0	12	0	13	8	0	0	21	64	302
2025-09-17 08:45:00	7	24	0	0	0	31	1	12	2	0	0	15	1	7	0	0	0	8	0	15	8	0	0	23	77	283
2025-09-17 09:00:00	4	11	1	0	0	16	0	21	1	0	0	22	1	9	1	0	0	11	0	18	6	0	0	24	73	292
2025-09-17 09:15:00	4	16	1	0	0	21	1	9	0	0	0	10	2	9	0	0	0	11	0	21	6	0	0	27	69	283
2025-09-17 09:30:00	2	10	0	0	0	12	2	6	0	0	0	8	0	8	0	0	0	8	1	12	4	0	0	17	45	264
2025-09-17 09:45:00	8	10	3	0	0	21	1	13	1	0	0	15	0	7	0	0	0	7	1	24	5	0	0	30	73	260
BREAK																										
2025-09-17 15:00:00	11	20	4	0	0	35	2	20	1	0	0	23	4	18	1	0	0	23	2	20	3	0	0	25	106	
2025-09-17 15:15:00	15	21	2	0	0	38	2	27	1	0	0	30	2	21	0	0	0	23	2	30	5	0	0	37	128	
2025-09-17 15:30:00	13	15	3	0	0	31	0	26	3	0	0	29	0	15	0	0	0	15	2	22	7	0	0	31	106	
2025-09-17 15:45:00	10	19	1	0	0	30	1	27	2	0	0	30	0	13	0	0	0	13	0	34	5	0	0	39	112	452
2025-09-17 16:00:00	13	30	2	0	0	45	0	28	3	0	0	31	1	16	0	0	0	17	1	24	2	0	0	27	120	466
2025-09-17 16:15:00	8	30	2	0	0	40	0	44	1	0	0	45	1	11	1	0	0	13	0	21	4	0	0	25	123	461
2025-09-17 16:30:00	12	27	5	0	0	44	1	39	0	0	0	40	0	12	0	0	0	12	0	27	4	0	0	31	127	482
2025-09-17 16:45:00	14	36	2	0	0	52	0	29	1	0	0	30	1	13	0	0	0	14	0	20	9	0	0	29	125	495
2025-09-17 17:00:00	15	29	1	0	0	45	2	25	1	0	0	28	0	7	0	0	0	7	2	18	5	0	0	25	105	480
2025-09-17 17:15:00	12	33	1	0	1	46	0	38	2	0	0	40	1	10	0	0	0	11	0	24	1	0	0	25	122	479
2025-09-17 17:30:00	9	24	3	0	0	36	1	31	0	0	0	32	1	12	1	0	0	14	1	16	6	0	0	23	105	457
2025-09-17 17:45:00	5	20	1	0	0	26	0	22	0	0	0	22	0	10	2	0	0	12	0	15	7	0	0	22	82	414
2025-09-17 18:00:00	5	12	0	0	0	17	2	21	1	0	0	24	1	17	0	0	1	18	1	12	8	0	0	21	80	389
2025-09-17 18:15:00	10	13	1	0	0	24	2	14	1	0	0	17	1	13	0	0	0	14	0	15	5	0	0	20	75	342
2025-09-17 18:30:00	5	12	1	0	0	18	0	17	0	0	0	17	0	10	0	0	0	10	1	14	9	0	0	24	69	306
2025-09-17 18:45:00	9	8	0	0	0	17	0	11	1	0	0	12	0	1	0	0	0	1	0	13	3	0	0	16	46	270
Grand Total	228	516	37	1	1	782	21	625	27	0	0	673	20	357	10	0	2	387	18	538	175	0	0	731	**2573**	-
Approach%	29.2%	66%	4.7%	0.1%		-	3.1%	92.9%	4%	0%		-	5.2%	92.2%	2.6%	0%		-	2.5%	73.6%	23.9%	0%		-	-	-
Totals %	8.9%	20.1%	1.4%	0%		30.4%	0.8%	24.3%	1%	0%		26.2%	0.8%	13.9%	0.4%	0%		15%	0.7%	20.9%	6.8%	0%		28.4%	-	-
Heavy	2	9	2	0		-	0	11	0	0		-	1	7	0	0		-	2	11	4	0		-	-	-
Heavy %	0.9%	1.7%	5.4%	0%		-	0%	1.8%	0%	0%		-	5%	2%	0%	0%		-	11.1%	2%	2.3%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach FIRST RD E						E Approach HIGHLAND RD						S Approach FIRST RD E						W Approach HIGHLAND RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	3	15	1	0	0	19	0	19	1	0	0	20	0	22	0	0	1	22	0	12	6	0	0	18	79
2025-09-17 07:45:00	2	22	0	0	0	24	2	28	1	0	0	31	1	14	1	0	0	16	2	15	8	0	0	25	96
2025-09-17 08:00:00	5	8	0	0	0	13	0	15	1	0	0	16	1	15	0	0	0	16	0	15	4	0	0	19	64
2025-09-17 08:15:00	7	16	0	0	0	23	0	16	2	0	0	18	0	16	1	0	0	17	0	13	7	0	0	20	78
Grand Total	17	61	1	0	0	79	2	78	5	0	0	85	2	67	2	0	1	71	2	55	25	0	0	82	**317**
Approach%	21.5%	77.2%	1.3%	0%		-	2.4%	91.8%	5.9%	0%		-	2.8%	94.4%	2.8%	0%		-	2.4%	67.1%	30.5%	0%		-	**-**
Totals %	5.4%	19.2%	0.3%	0%		24.9%	0.6%	24.6%	1.6%	0%		26.8%	0.6%	21.1%	0.6%	0%		22.4%	0.6%	17.4%	7.9%	0%		25.9%	**-**
PHF	0.61	0.69	0.25	0		0.82	0.25	0.7	0.63	0		0.69	0.5	0.76	0.5	0		0.81	0.25	0.92	0.78	0		0.82	0.83
Heavy	0	4	0	0		4	0	4	0	0		4	1	0	0	0		1	0	2	1	0		3	12
Heavy %	0%	6.6%	0%	0%		5.1%	0%	5.1%	0%	0%		4.7%	50%	0%	0%	0%		1.4%	0%	3.6%	4%	0%		3.7%	3.8%
Lights	17	57	1	0		75	2	72	5	0		79	1	67	2	0		70	2	52	24	0		78	302
Lights %	100%	93.4%	100%	0%		94.9%	100%	92.3%	100%	0%		92.9%	50%	100%	100%	0%		98.6%	100%	94.5%	96%	0%		95.1%	95.3%
Single-Unit Trucks	0	4	0	0		4	0	1	0	0		1	1	0	0	0		1	0	1	0	0		1	7
Single-Unit Trucks %	0%	6.6%	0%	0%		5.1%	0%	1.3%	0%	0%		1.2%	50%	0%	0%	0%		1.4%	0%	1.8%	0%	0%		1.2%	2.2%
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	3
Buses %	0%	0%	0%	0%		0%	0%	2.6%	0%	0%		2.4%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.2%	0.9%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	1	0		1	2
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	0%	4%	0%		1.2%	0.6%
Bicycles on Road	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	3
Bicycles on Road %	0%	0%	0%	0%		0%	0%	2.6%	0%	0%		2.4%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.2%	0.9%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: FIRST RD E & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

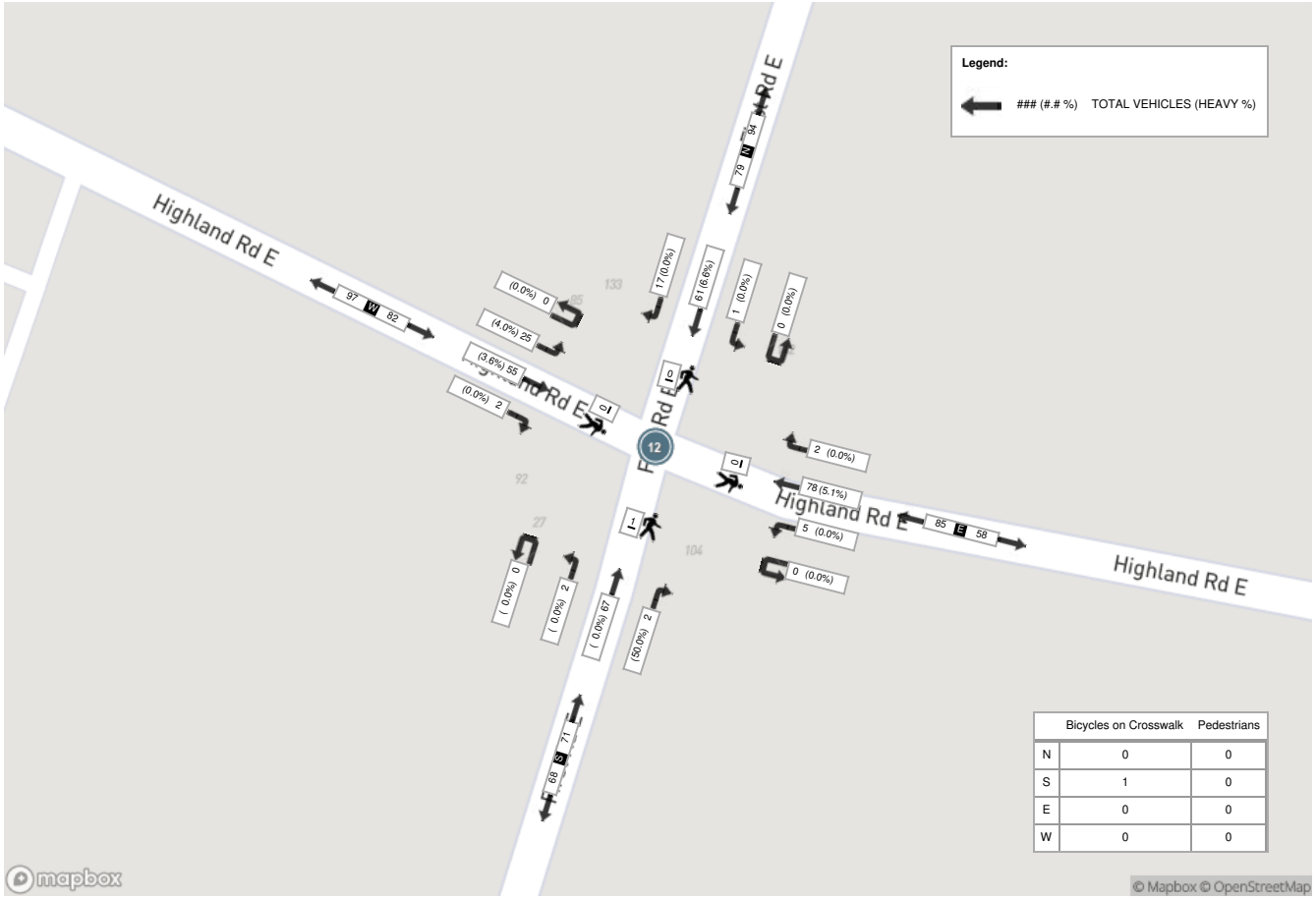
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach FIRST RD E						E Approach HIGHLAND RD						S Approach FIRST RD E						W Approach HIGHLAND RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:00:00	13	30	2	0	0	45	0	28	3	0	0	31	1	16	0	0	0	17	1	24	2	0	0	27	120
2025-09-17 16:15:00	8	30	2	0	0	40	0	44	1	0	0	45	1	11	1	0	0	13	0	21	4	0	0	25	123
2025-09-17 16:30:00	12	27	5	0	0	44	1	39	0	0	0	40	0	12	0	0	0	12	0	27	4	0	0	31	127
2025-09-17 16:45:00	14	36	2	0	0	52	0	29	1	0	0	30	1	13	0	0	0	14	0	20	9	0	0	29	125
Grand Total	47	123	11	0	0	181	1	140	5	0	0	146	3	52	1	0	0	56	1	92	19	0	0	112	**495**
Approach%	26%	68%	6.1%	0%		-	0.7%	95.9%	3.4%	0%		-	5.4%	92.9%	1.8%	0%		-	0.9%	82.1%	17%	0%		-	**-**
Totals %	9.5%	24.8%	2.2%	0%		36.6%	0.2%	28.3%	1%	0%		29.5%	0.6%	10.5%	0.2%	0%		11.3%	0.2%	18.6%	3.8%	0%		22.6%	**-**
PHF	0.84	0.85	0.55	0		0.87	0.25	0.8	0.42	0		0.81	0.75	0.81	0.25	0		0.82	0.25	0.85	0.53	0		0.9	0.97
Heavy	1	0	1	0		2	0	1	0	0		1	0	2	0	0		2	0	1	1	0		2	7
Heavy %	2.1%	0%	9.1%	0%		1.1%	0%	0.7%	0%	0%		0.7%	0%	3.8%	0%	0%		3.6%	0%	1.1%	5.3%	0%		1.8%	1.4%
Lights	45	123	10	0		178	1	139	5	0		145	3	50	1	0		54	1	90	18	0		109	486
Lights %	95.7%	100%	90.9%	0%		98.3%	100%	99.3%	100%	0%		99.3%	100%	96.2%	100%	0%		96.4%	100%	97.8%	94.7%	0%		97.3%	98.2%
Single-Unit Trucks	1	0	1	0		2	0	1	0	0		1	0	1	0	0		1	0	1	1	0		2	6
Single-Unit Trucks %	2.1%	0%	9.1%	0%		1.1%	0%	0.7%	0%	0%		0.7%	0%	1.9%	0%	0%		1.8%	0%	1.1%	5.3%	0%		1.8%	1.2%
Buses	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.8%	0%	0%	0%	0%		0%	0.2%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	2
Bicycles on Road %	2.1%	0%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		0.9%	0.4%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

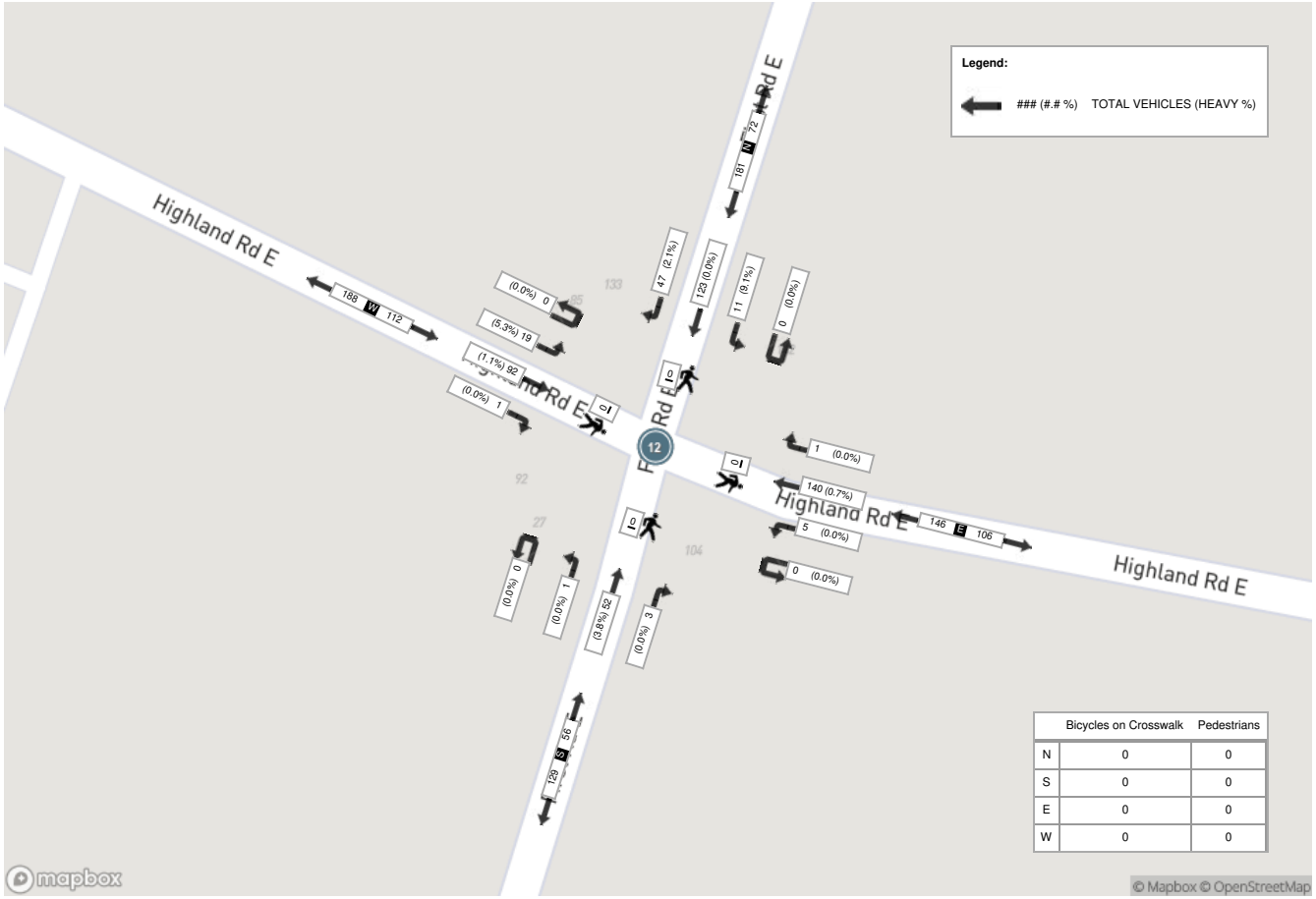
Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	1	0
E	0	0
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:00 PM - 05:00 PM **Weather: Broken Clouds (23 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	0	0
W	0	0

Spectrum

Turning Movement Count
Location Name: SECOND RD E & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (13 . SECOND RD E & HIGHLAND RD)

Start Time	N Approach SECOND RD E						E Approach HIGHLAND RD						S Approach SECOND RD E						W Approach HIGHLAND RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	3	0	0	0	3	1	6	2	0	0	9	0	7	1	0	0	8	1	6	1	0	0	8	28	
2025-09-17 06:15:00	0	5	0	0	0	5	0	4	0	0	0	4	0	25	1	0	0	26	1	5	0	0	0	6	41	
2025-09-17 06:30:00	1	9	1	0	0	11	1	8	0	0	0	9	0	27	3	0	0	30	1	6	1	0	0	8	58	
2025-09-17 06:45:00	0	11	1	0	0	12	3	6	1	0	0	10	0	21	2	0	0	23	0	10	0	0	0	10	55	182
2025-09-17 07:00:00	1	16	2	0	0	19	1	4	1	0	0	6	0	26	1	0	0	27	0	11	1	0	0	12	64	218
2025-09-17 07:15:00	3	18	1	0	0	22	0	11	0	0	0	11	0	37	3	0	0	40	1	12	1	0	0	14	87	264
2025-09-17 07:30:00	4	22	1	0	0	27	2	15	2	0	0	19	2	53	3	0	0	58	1	7	5	0	0	13	117	323
2025-09-17 07:45:00	3	15	1	0	0	19	1	20	0	0	0	21	1	43	5	0	0	49	0	13	3	0	0	16	105	373
2025-09-17 08:00:00	3	14	0	0	0	17	1	8	2	0	0	11	2	22	3	0	0	27	2	10	3	0	0	15	70	379
2025-09-17 08:15:00	4	24	1	0	0	29	4	16	1	0	0	21	0	35	2	0	0	37	1	9	4	0	0	14	101	393
2025-09-17 08:30:00	1	20	0	0	0	21	1	11	0	0	0	12	0	30	1	0	0	31	2	7	4	0	0	13	77	353
2025-09-17 08:45:00	6	15	2	0	0	23	0	9	0	0	0	9	1	25	1	0	0	27	0	14	2	0	0	16	75	323
2025-09-17 09:00:00	2	18	1	0	0	21	2	14	0	0	0	16	1	21	4	0	0	26	1	15	3	0	0	19	82	335
2025-09-17 09:15:00	0	17	2	0	0	19	1	9	0	0	0	10	1	19	2	0	0	22	1	22	2	0	0	25	76	310
2025-09-17 09:30:00	2	10	1	0	0	13	1	5	0	0	0	6	2	24	2	0	0	28	2	9	1	0	0	12	59	292
2025-09-17 09:45:00	1	12	1	0	0	14	4	12	1	0	0	17	1	6	1	0	0	8	1	23	3	0	0	27	66	283
BREAK																										
2025-09-17 15:00:00	7	31	0	0	0	38	3	17	2	0	0	22	0	16	2	0	0	18	4	18	6	0	0	28	106	
2025-09-17 15:15:00	9	24	4	0	0	37	0	22	0	0	0	22	3	19	0	0	0	22	4	25	5	0	0	34	115	
2025-09-17 15:30:00	7	38	3	0	0	48	0	19	3	0	0	22	2	22	3	0	0	27	2	19	3	0	0	24	121	
2025-09-17 15:45:00	8	48	3	0	0	59	0	19	4	0	0	23	1	16	1	0	0	18	6	26	4	0	0	36	136	478
2025-09-17 16:00:00	3	45	1	0	0	49	0	28	4	0	0	32	1	19	3	0	0	23	0	23	4	0	0	27	131	503
2025-09-17 16:15:00	6	45	1	0	0	52	1	35	4	0	0	40	0	25	4	0	0	29	4	16	4	0	0	24	145	533
2025-09-17 16:30:00	9	47	3	0	0	59	1	24	2	0	0	27	2	27	6	0	0	35	4	25	2	0	0	31	152	564
2025-09-17 16:45:00	6	74	2	0	0	82	2	20	1	0	0	23	0	22	1	0	0	23	4	18	2	0	0	24	152	580
2025-09-17 17:00:00	4	52	0	0	0	56	2	23	1	0	0	26	3	36	3	0	0	42	2	15	2	0	0	19	143	592
2025-09-17 17:15:00	12	66	2	0	0	80	1	25	1	0	0	27	0	25	3	0	0	28	5	18	2	0	0	25	160	607
2025-09-17 17:30:00	3	32	2	0	0	37	1	23	1	0	0	25	2	20	3	0	0	25	2	17	1	0	0	20	107	562
2025-09-17 17:45:00	2	34	1	0	0	37	2	21	0	0	0	23	4	36	1	0	0	41	3	12	1	0	0	16	117	527
2025-09-17 18:00:00	2	31	0	0	0	33	2	20	2	0	0	24	1	23	1	0	1	25	3	9	1	0	0	13	95	479
2025-09-17 18:15:00	3	15	2	0	0	20	1	11	0	0	0	12	0	25	2	0	0	27	6	9	2	0	0	17	76	395
2025-09-17 18:30:00	4	16	1	0	0	21	0	13	0	0	0	13	1	16	0	0	0	17	2	9	4	0	0	15	66	354
2025-09-17 18:45:00	3	19	1	0	0	23	1	8	0	0	0	9	3	12	1	0	0	16	1	11	1	0	0	13	61	298
Grand Total	119	846	41	0	0	1006	40	486	35	0	0	561	34	780	69	0	1	883	67	449	78	0	0	594	**3044**	-
Approach%	11.8%	84.1%	4.1%	0%		-	7.1%	86.6%	6.2%	0%		-	3.9%	88.3%	7.8%	0%		-	11.3%	75.6%	13.1%	0%		-	-	-
Totals %	3.9%	27.8%	1.3%	0%		33%	1.3%	16%	1.1%	0%		18.4%	1.1%	25.6%	2.3%	0%		29%	2.2%	14.8%	2.6%	0%		19.5%	-	-
Heavy	3	14	3	0		-	0	7	3	0		-	3	15	1	0		-	1	10	3	0		-	-	-
Heavy %	2.5%	1.7%	7.3%	0%		-	0%	1.4%	8.6%	0%		-	8.8%	1.9%	1.4%	0%		-	1.5%	2.2%	3.8%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: SECOND RD E & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach SECOND RD E						E Approach HIGHLAND RD						S Approach SECOND RD E						W Approach HIGHLAND RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	4	22	1	0	0	27	2	15	2	0	0	19	2	53	3	0	0	58	1	7	5	0	0	13	117
2025-09-17 07:45:00	3	15	1	0	0	19	1	20	0	0	0	21	1	43	5	0	0	49	0	13	3	0	0	16	105
2025-09-17 08:00:00	3	14	0	0	0	17	1	8	2	0	0	11	2	22	3	0	0	27	2	10	3	0	0	15	70
2025-09-17 08:15:00	4	24	1	0	0	29	4	16	1	0	0	21	0	35	2	0	0	37	1	9	4	0	0	14	101
Grand Total	14	75	3	0	0	92	8	59	5	0	0	72	5	153	13	0	0	171	4	39	15	0	0	58	**393**
Approach%	15.2%	81.5%	3.3%	0%		-	11.1%	81.9%	6.9%	0%		-	2.9%	89.5%	7.6%	0%		-	6.9%	67.2%	25.9%	0%		-	**-**
Totals %	3.6%	19.1%	0.8%	0%		23.4%	2%	15%	1.3%	0%		18.3%	1.3%	38.9%	3.3%	0%		43.5%	1%	9.9%	3.8%	0%		14.8%	**-**
PHF	0.88	0.78	0.75	0		0.79	0.5	0.74	0.63	0		0.86	0.63	0.72	0.65	0		0.74	0.5	0.75	0.75	0		0.91	0.84
Heavy	2	4	0	0		6	0	2	0	0		2	1	2	0	0		3	0	2	1	0		3	14
Heavy %	14.3%	5.3%	0%	0%		6.5%	0%	3.4%	0%	0%		2.8%	20%	1.3%	0%	0%		1.8%	0%	5.1%	6.7%	0%		5.2%	3.6%
Lights	12	71	3	0		86	8	56	5	0		69	4	151	13	0		168	4	36	14	0		54	377
Lights %	85.7%	94.7%	100%	0%		93.5%	100%	94.9%	100%	0%		95.8%	80%	98.7%	100%	0%		98.2%	100%	92.3%	93.3%	0%		93.1%	95.9%
Single-Unit Trucks	1	2	0	0		3	0	0	0	0		0	0	0	0	0		0	0	2	0	0		2	5
Single-Unit Trucks %	7.1%	2.7%	0%	0%		3.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	5.1%	0%	0%		3.4%	1.3%
Buses	1	2	0	0		3	0	1	0	0		1	1	2	0	0		3	0	0	1	0		1	8
Buses %	7.1%	2.7%	0%	0%		3.3%	0%	1.7%	0%	0%		1.4%	20%	1.3%	0%	0%		1.8%	0%	0%	6.7%	0%		1.7%	2%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.3%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	2
Bicycles on Road %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	2.6%	0%	0%		1.7%	0.5%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: SECOND RD E & HIGHLAND RD
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

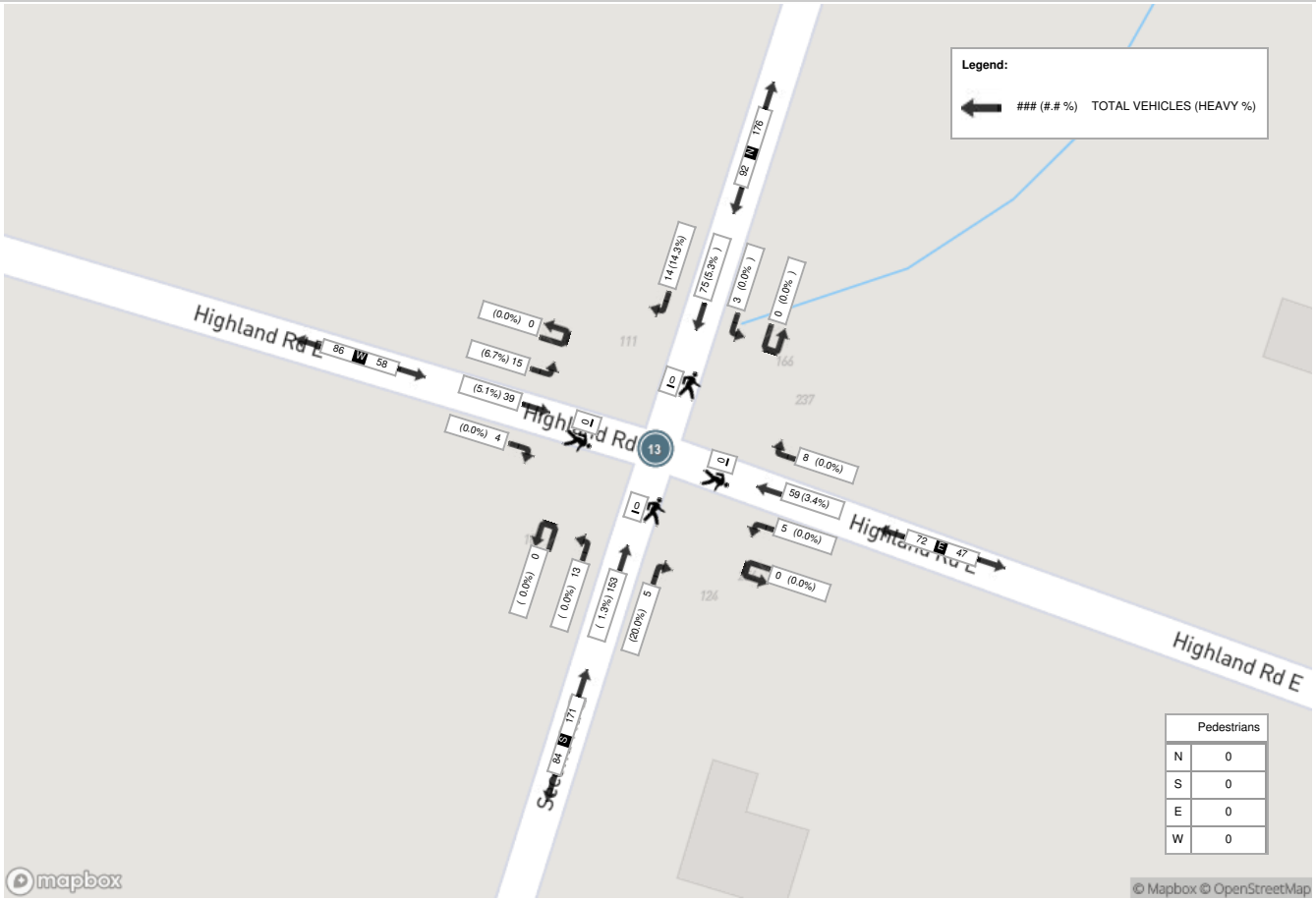
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach SECOND RD E						E Approach HIGHLAND RD						S Approach SECOND RD E						W Approach HIGHLAND RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	9	47	3	0	0	59	1	24	2	0	0	27	2	27	6	0	0	35	4	25	2	0	0	31	152
2025-09-17 16:45:00	6	74	2	0	0	82	2	20	1	0	0	23	0	22	1	0	0	23	4	18	2	0	0	24	152
2025-09-17 17:00:00	4	52	0	0	0	56	2	23	1	0	0	26	3	36	3	0	0	42	2	15	2	0	0	19	143
2025-09-17 17:15:00	12	66	2	0	0	80	1	25	1	0	0	27	0	25	3	0	0	28	5	18	2	0	0	25	160
Grand Total	31	239	7	0	0	277	6	92	5	0	0	103	5	110	13	0	0	128	15	76	8	0	0	99	**607**
Approach%	11.2%	86.3%	2.5%	0%		-	5.8%	89.3%	4.9%	0%		-	3.9%	85.9%	10.2%	0%		-	15.2%	76.8%	8.1%	0%		-	**-**
Totals %	5.1%	39.4%	1.2%	0%		45.6%	1%	15.2%	0.8%	0%		17%	0.8%	18.1%	2.1%	0%		21.1%	2.5%	12.5%	1.3%	0%		16.3%	**-**
PHF	0.65	0.81	0.58	0		0.84	0.75	0.92	0.63	0		0.95	0.42	0.76	0.54	0		0.76	0.75	0.76	1	0		0.8	0.95
Heavy	0	0	1	0		1	0	0	1	0		1	0	0	1	0		1	1	2	1	0		4	7
Heavy %	0%	0%	14.3%	0%		0.4%	0%	0%	20%	0%		1%	0%	0%	7.7%	0%		0.8%	6.7%	2.6%	12.5%	0%		4%	1.2%
Lights	31	239	6	0		276	6	92	4	0		102	5	110	12	0		127	14	73	7	0		94	599
Lights %	100%	100%	85.7%	0%		99.6%	100%	100%	80%	0%		99%	100%	100%	92.3%	0%		99.2%	93.3%	96.1%	87.5%	0%		94.9%	98.7%
Single-Unit Trucks	0	0	1	0		1	0	0	0	0		0	0	0	1	0		1	1	2	1	0		4	6
Single-Unit Trucks %	0%	0%	14.3%	0%		0.4%	0%	0%	0%	0%		0%	0%	0%	7.7%	0%		0.8%	6.7%	2.6%	12.5%	0%		4%	1%
Buses	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	1
Buses %	0%	0%	0%	0%		0%	0%	0%	20%	0%		1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.2%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1%	0.2%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



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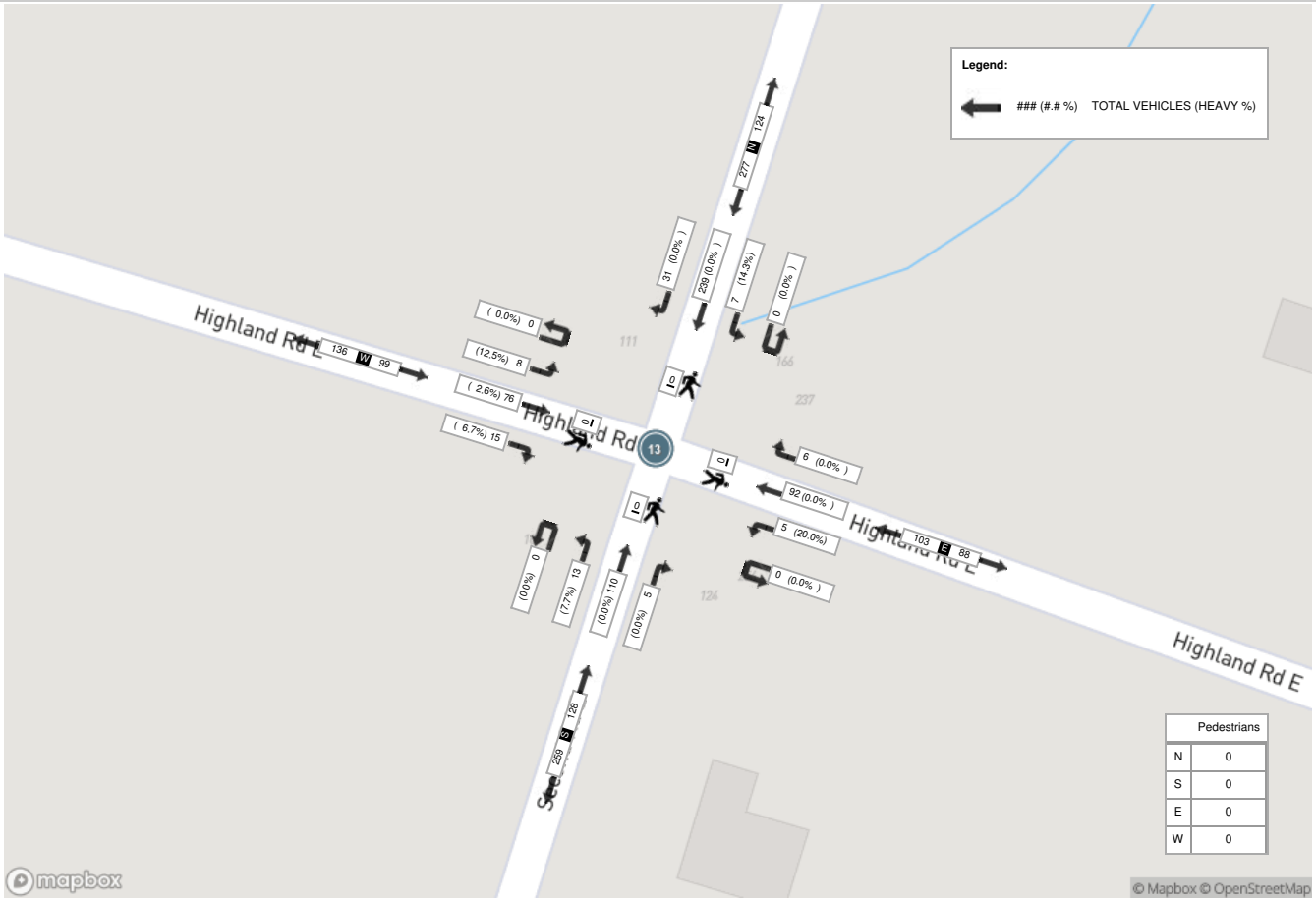
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

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CANADA

Turning Movement Count (14 . UPPER CENTENNIAL PKWY & MUD ST E)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach MUD ST						S Approach UPPER CENTENNIAL PKWY						W Approach MUD ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	7	42	3	0	0	52	15	22	0	0	0	37	1	72	17	0	0	90	18	23	13	2	0	56	235	
2025-09-17 06:15:00	12	40	5	0	0	57	17	28	7	0	0	52	1	122	30	0	0	153	22	22	14	0	0	58	320	
2025-09-17 06:30:00	10	55	6	0	0	71	12	25	3	0	0	40	1	116	22	0	1	139	21	31	23	0	0	75	325	
2025-09-17 06:45:00	4	73	12	0	0	89	14	32	4	0	0	50	1	127	18	0	0	146	22	19	14	1	0	56	341	1221
2025-09-17 07:00:00	14	60	7	0	0	81	11	31	5	0	0	47	2	134	28	0	3	164	30	29	30	1	1	90	382	1368
2025-09-17 07:15:00	21	72	10	0	0	103	16	52	5	0	0	73	2	183	29	0	1	214	40	29	26	0	0	95	485	1533
2025-09-17 07:30:00	21	82	12	0	0	115	19	58	5	0	0	82	1	182	39	0	2	222	34	49	49	0	0	132	551	1759
2025-09-17 07:45:00	22	98	8	0	0	128	18	60	8	0	0	86	2	217	46	0	1	265	34	59	53	2	0	148	627	2045
2025-09-17 08:00:00	26	82	7	0	0	115	10	67	5	0	0	82	3	215	33	0	2	251	35	48	57	1	0	141	589	2252
2025-09-17 08:15:00	17	102	4	0	1	123	7	57	6	0	1	70	1	202	44	0	0	247	47	56	55	0	0	158	598	2365
2025-09-17 08:30:00	31	82	7	0	0	120	17	70	6	0	0	93	3	169	45	0	2	217	37	62	46	1	0	146	576	2390
2025-09-17 08:45:00	30	115	9	0	0	154	10	50	6	0	0	66	2	158	42	0	1	202	52	54	52	0	0	158	580	2343
2025-09-17 09:00:00	24	96	12	0	0	132	15	77	10	0	0	102	6	115	34	0	2	155	58	46	30	0	1	134	523	2277
2025-09-17 09:15:00	17	110	17	0	0	144	21	52	10	0	0	83	2	122	41	0	0	165	51	47	42	0	0	140	532	2211
2025-09-17 09:30:00	22	73	9	0	0	104	17	53	6	0	0	76	4	143	42	0	1	189	51	55	30	1	1	137	506	2141
2025-09-17 09:45:00	27	97	8	0	0	132	14	51	7	0	0	72	4	102	38	0	1	144	49	49	37	0	0	135	483	2044
BREAK																										
2025-09-17 15:00:00	42	153	21	0	0	216	14	78	13	0	0	105	2	130	48	0	0	180	51	47	38	1	0	137	638	
2025-09-17 15:15:00	51	166	12	0	1	229	15	69	7	0	1	91	3	125	53	0	1	181	73	57	37	1	0	168	669	
2025-09-17 15:30:00	51	176	12	0	0	239	16	81	10	0	0	107	6	130	53	0	0	189	55	60	43	0	1	158	693	
2025-09-17 15:45:00	75	201	16	0	0	292	10	92	13	0	0	115	4	130	43	0	0	177	59	60	43	0	1	162	746	2746
2025-09-17 16:00:00	80	205	14	0	1	299	11	74	5	0	1	90	2	136	45	0	0	183	62	49	36	0	2	147	719	2827
2025-09-17 16:15:00	71	232	8	0	0	311	9	86	12	0	0	107	1	119	51	0	1	171	52	49	39	0	0	140	729	2887
2025-09-17 16:30:00	70	228	21	0	0	319	12	95	9	0	0	116	2	97	45	0	1	144	51	62	36	1	3	150	729	2923
2025-09-17 16:45:00	76	228	17	0	0	321	13	95	10	0	0	118	8	108	56	0	0	172	55	68	42	0	0	165	776	2953
2025-09-17 17:00:00	63	233	7	0	0	303	13	83	10	0	0	106	4	152	46	0	3	202	51	57	49	0	2	157	768	3002
2025-09-17 17:15:00	85	223	11	0	0	319	8	97	6	0	0	111	5	145	57	0	0	207	53	70	42	1	0	166	803	3076
2025-09-17 17:30:00	74	221	18	0	0	313	21	103	11	0	0	135	9	139	48	0	2	196	54	57	34	1	1	146	790	3137
2025-09-17 17:45:00	55	206	11	0	0	272	9	61	13	0	0	83	2	125	55	0	0	182	35	50	43	0	0	128	665	3026
2025-09-17 18:00:00	50	189	13	0	0	252	10	67	9	0	0	86	1	136	47	0	0	184	53	46	42	0	1	141	663	2921
2025-09-17 18:15:00	61	132	12	0	0	205	6	66	6	0	0	78	6	111	47	0	0	164	41	57	36	0	0	134	581	2699
2025-09-17 18:30:00	71	188	19	0	1	278	9	46	6	0	1	61	0	114	42	0	1	156	40	44	22	0	1	106	601	2510
2025-09-17 18:45:00	36	152	9	0	1	197	12	46	6	0	1	64	1	106	34	0	0	141	54	40	38	3	0	135	537	2382
Grand Total	1316	4412	357	0	5	6085	421	2024	239	0	5	2684	92	4382	1318	0	26	5792	1440	1551	1191	17	15	4199	**18760**	-
Approach%	21.6%	72.5%	5.9%	0%		-	15.7%	75.4%	8.9%	0%		-	1.6%	75.7%	22.8%	0%		-	34.3%	36.9%	28.4%	0.4%		-	-	-
Totals %	7%	23.5%	1.9%	0%		32.4%	2.2%	10.8%	1.3%	0%		14.3%	0.5%	23.4%	7%	0%		30.9%	7.7%	8.3%	6.3%	0.1%		22.4%	-	-
Heavy	25	235	46	0		-	79	94	9	0		-	8	258	138	0		-	117	102	59	0		-	-	-
Heavy %	1.9%	5.3%	12.9%	0%		-	18.8%	4.6%	3.8%	0%		-	8.7%	5.9%	10.5%	0%		-	8.1%	6.6%	5%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Few Clouds (14 °C)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach MUD ST						S Approach UPPER CENTENNIAL PKWY						W Approach MUD ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:45:00	22	98	8	0	0	128	18	60	8	0	0	86	2	217	46	0	1	265	34	59	53	2	0	148	627
2025-09-17 08:00:00	26	82	7	0	0	115	10	67	5	0	0	82	3	215	33	0	2	251	35	48	57	1	0	141	589
2025-09-17 08:15:00	17	102	4	0	1	123	7	57	6	0	1	70	1	202	44	0	0	247	47	56	55	0	0	158	598
2025-09-17 08:30:00	31	82	7	0	0	120	17	70	6	0	0	93	3	169	45	0	2	217	37	62	46	1	0	146	576
Grand Total	96	364	26	0	1	486	52	254	25	0	1	331	9	803	168	0	5	980	153	225	211	4	0	593	**2390**
Approach%	19.8%	74.9%	5.3%	0%		-	15.7%	76.7%	7.6%	0%		-	0.9%	81.9%	17.1%	0%		-	25.8%	37.9%	35.6%	0.7%		-	**-**
Totals %	4%	15.2%	1.1%	0%		20.3%	2.2%	10.6%	1%	0%		13.8%	0.4%	33.6%	7%	0%		41%	6.4%	9.4%	8.8%	0.2%		24.8%	**-**
PHF	0.77	0.89	0.81	0		0.95	0.72	0.91	0.78	0		0.89	0.75	0.93	0.91	0		0.92	0.81	0.91	0.93	0.5		0.94	0.95
Heavy	5	39	2	0		46	10	15	4	0		29	1	49	19	0		69	17	23	8	0		48	192
Heavy %	5.2%	10.7%	7.7%	0%		9.5%	19.2%	5.9%	16%	0%		8.8%	11.1%	6.1%	11.3%	0%		7%	11.1%	10.2%	3.8%	0%		8.1%	8%
Lights	91	325	24	0		440	42	239	21	0		302	8	754	149	0		911	136	202	203	4		545	2198
Lights %	94.8%	89.3%	92.3%	0%		90.5%	80.8%	94.1%	84%	0%		91.2%	88.9%	93.9%	88.7%	0%		93%	88.9%	89.8%	96.2%	100%		91.9%	92%
Single-Unit Trucks	1	19	2	0		22	10	11	3	0		24	1	28	7	0		36	4	18	4	0		26	108
Single-Unit Trucks %	1%	5.2%	7.7%	0%		4.5%	19.2%	4.3%	12%	0%		7.3%	11.1%	3.5%	4.2%	0%		3.7%	2.6%	8%	1.9%	0%		4.4%	4.5%
Buses	4	8	0	0		12	0	2	1	0		3	0	8	5	0		13	1	2	3	0		6	34
Buses %	4.2%	2.2%	0%	0%		2.5%	0%	0.8%	4%	0%		0.9%	0%	1%	3%	0%		1.3%	0.7%	0.9%	1.4%	0%		1%	1.4%
Articulated Trucks	0	12	0	0		12	0	2	0	0		2	0	13	7	0		20	12	3	1	0		16	50
Articulated Trucks %	0%	3.3%	0%	0%		2.5%	0%	0.8%	0%	0%		0.6%	0%	1.6%	4.2%	0%		2%	7.8%	1.3%	0.5%	0%		2.7%	2.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	14.3%		-	-	-	-	14.3%		-	-	-	-	71.4%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

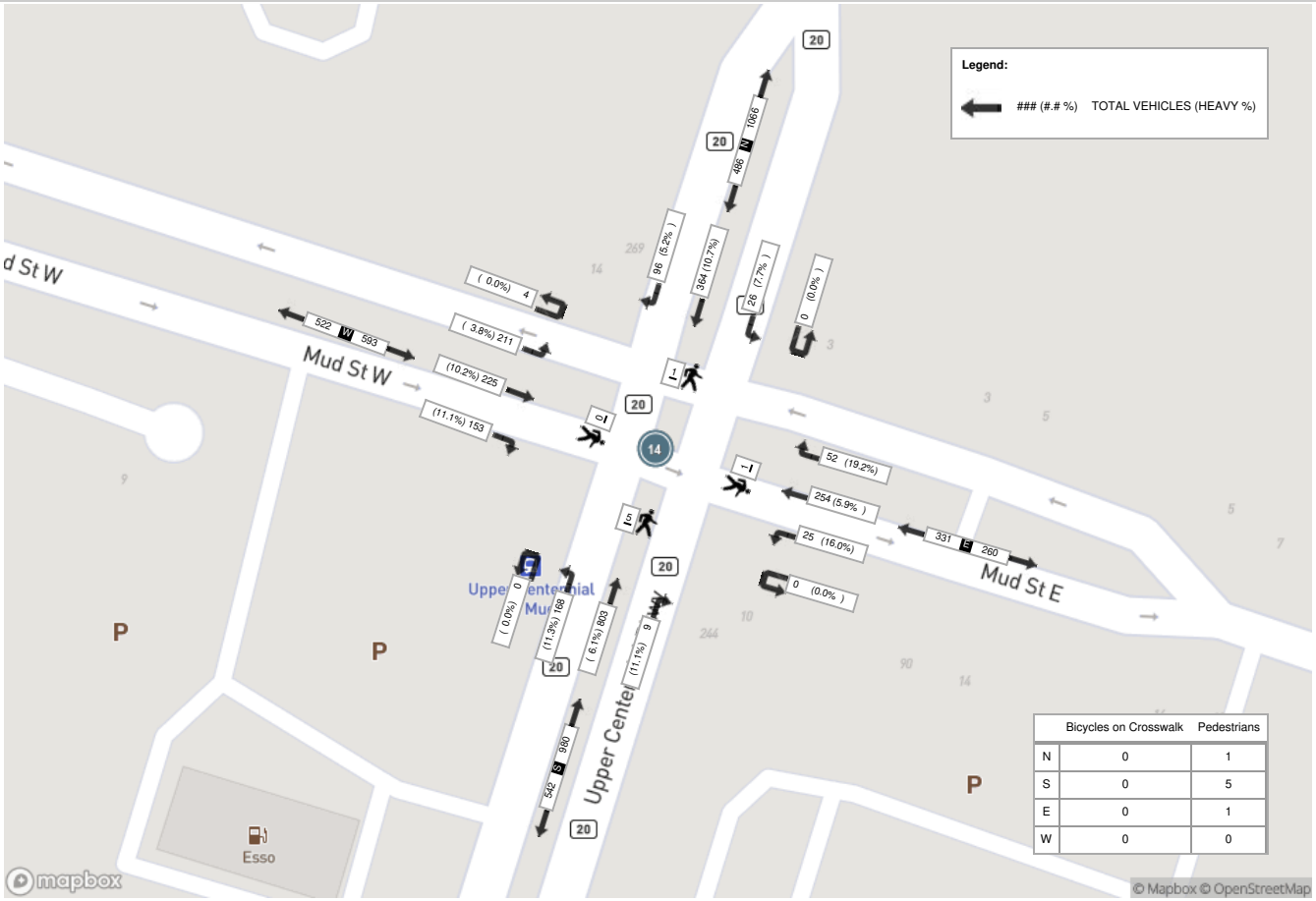
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach UPPER CENTENNIAL PKWY						E Approach MUD ST						S Approach UPPER CENTENNIAL PKWY						W Approach MUD ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:45:00	76	228	17	0	0	321	13	95	10	0	0	118	8	108	56	0	0	172	55	68	42	0	0	165	776
2025-09-17 17:00:00	63	233	7	0	0	303	13	83	10	0	0	106	4	152	46	0	3	202	51	57	49	0	2	157	768
2025-09-17 17:15:00	85	223	11	0	0	319	8	97	6	0	0	111	5	145	57	0	0	207	53	70	42	1	0	166	803
2025-09-17 17:30:00	74	221	18	0	0	313	21	103	11	0	0	135	9	139	48	0	2	196	54	57	34	1	1	146	790
Grand Total	298	905	53	0	0	1256	55	378	37	0	0	470	26	544	207	0	5	777	213	252	167	2	3	634	**3137**
Approach%	23.7%	72.1%	4.2%	0%		-	11.7%	80.4%	7.9%	0%		-	3.3%	70%	26.6%	0%		-	33.6%	39.7%	26.3%	0.3%		-	**-**
Totals %	9.5%	28.8%	1.7%	0%		40%	1.8%	12%	1.2%	0%		15%	0.8%	17.3%	6.6%	0%		24.8%	6.8%	8%	5.3%	0.1%		20.2%	**-**
PHF	0.88	0.97	0.74	0		0.98	0.65	0.92	0.84	0		0.87	0.72	0.89	0.91	0		0.94	0.97	0.9	0.85	0.5		0.95	0.98
Heavy	3	21	5	0		29	3	1	0	0		4	1	28	14	0		43	9	7	6	0		22	98
Heavy %	1%	2.3%	9.4%	0%		2.3%	5.5%	0.3%	0%	0%		0.9%	3.8%	5.1%	6.8%	0%		5.5%	4.2%	2.8%	3.6%	0%		3.5%	3.1%
Lights	295	884	48	0		1227	52	377	37	0		466	25	515	193	0		733	204	245	161	2		612	3038
Lights %	99%	97.7%	90.6%	0%		97.7%	94.5%	99.7%	100%	0%		99.1%	96.2%	94.7%	93.2%	0%		94.3%	95.8%	97.2%	96.4%	100%		96.5%	96.8%
Single-Unit Trucks	2	10	4	0		16	1	1	0	0		2	0	11	4	0		15	4	6	2	0		12	45
Single-Unit Trucks %	0.7%	1.1%	7.5%	0%		1.3%	1.8%	0.3%	0%	0%		0.4%	0%	2%	1.9%	0%		1.9%	1.9%	2.4%	1.2%	0%		1.9%	1.4%
Buses	1	4	0	0		5	0	0	0	0		0	1	9	0	0		10	0	1	4	0		5	20
Buses %	0.3%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	3.8%	1.7%	0%	0%		1.3%	0%	0.4%	2.4%	0%		0.8%	0.6%
Articulated Trucks	0	7	1	0		8	2	0	0	0		2	0	8	10	0		18	5	0	0	0		5	33
Articulated Trucks %	0%	0.8%	1.9%	0%		0.6%	3.6%	0%	0%	0%		0.4%	0%	1.5%	4.8%	0%		2.3%	2.3%	0%	0%	0%		0.8%	1.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	62.5%		-	-	-	-	37.5%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM **Weather: Few Clouds (14 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	5
E	0	1
W	0	0

Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Broken Clouds (23 °C)**

Spectrum

Turning Movement Count
Location Name: FIRST ROAD E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
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TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (15 . FIRST ROAD E & MUD ST E)

Start Time	N Approach FIRST ROAD E						E Approach MUD ST E						S Approach FIRST ROAD E						W Approach MUD ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	3	3	0	0	0	6	0	23	0	0	0	23	0	8	0	0	0	8	1	15	4	0	0	20	57	
2025-09-17 06:15:00	3	5	0	0	0	8	0	31	0	0	0	31	0	7	2	0	0	9	0	19	8	0	0	27	75	
2025-09-17 06:30:00	1	9	0	0	0	10	0	23	0	0	0	23	0	9	1	0	0	10	2	25	8	0	0	35	78	
2025-09-17 06:45:00	4	12	2	0	0	18	0	31	0	0	0	31	0	11	0	0	0	11	2	21	1	0	0	24	84	294
2025-09-17 07:00:00	7	8	0	0	0	15	0	33	0	0	0	33	0	9	2	0	0	11	2	20	8	0	0	30	89	326
2025-09-17 07:15:00	8	7	0	0	0	15	1	52	0	0	0	53	0	19	2	0	0	21	1	34	11	0	0	46	135	386
2025-09-17 07:30:00	16	19	1	0	0	36	0	59	0	0	0	59	1	28	1	0	0	30	1	48	6	0	0	55	180	488
2025-09-17 07:45:00	12	18	1	0	0	31	1	54	1	0	0	56	0	20	3	0	0	23	1	46	13	0	0	60	170	574
2025-09-17 08:00:00	12	12	0	0	0	24	0	50	1	0	0	51	0	14	2	0	0	16	2	43	12	0	0	57	148	633
2025-09-17 08:15:00	14	17	1	0	0	32	2	57	0	0	0	59	1	21	1	0	0	23	3	42	9	0	0	54	168	666
2025-09-17 08:30:00	9	17	0	0	0	26	1	45	0	0	0	46	1	15	5	0	0	21	1	56	17	0	0	74	167	653
2025-09-17 08:45:00	14	25	1	0	0	40	0	56	0	0	0	56	0	15	2	0	0	17	7	46	7	0	0	60	173	656
2025-09-17 09:00:00	9	15	1	0	0	25	1	66	1	0	0	68	0	13	0	0	0	13	1	50	7	0	0	58	164	672
2025-09-17 09:15:00	13	17	1	0	0	31	2	65	0	0	0	67	0	15	2	0	0	17	4	52	7	0	0	63	178	682
2025-09-17 09:30:00	9	10	0	0	0	19	0	46	2	0	0	48	1	11	2	0	0	14	2	49	10	0	0	61	142	657
2025-09-17 09:45:00	8	18	1	0	0	27	0	45	1	0	0	46	1	10	4	0	0	15	1	47	10	0	0	58	146	630
BREAK																										
2025-09-17 15:00:00	19	33	2	0	0	54	0	66	1	0	0	67	0	22	4	0	0	26	1	53	6	0	0	60	207	
2025-09-17 15:15:00	18	27	0	0	0	45	1	55	2	0	0	58	0	22	6	0	0	28	6	58	5	0	0	69	200	
2025-09-17 15:30:00	21	27	0	0	0	48	0	77	2	0	0	79	0	21	3	0	0	24	4	56	14	0	0	74	225	
2025-09-17 15:45:00	26	30	3	0	0	59	1	72	1	0	0	74	1	19	3	0	0	23	0	55	19	0	0	74	230	862
2025-09-17 16:00:00	24	40	3	0	0	67	3	55	2	0	0	60	2	16	1	0	0	19	2	48	13	0	0	63	209	864
2025-09-17 16:15:00	22	37	1	0	0	60	1	93	1	0	0	95	1	11	0	0	0	12	5	41	7	0	0	53	220	884
2025-09-17 16:30:00	21	42	0	0	0	63	1	77	2	0	0	80	2	17	2	0	0	21	2	54	17	0	0	73	237	896
2025-09-17 16:45:00	31	44	0	0	1	75	0	70	2	0	0	72	0	23	0	0	0	23	0	66	14	0	0	80	250	916
2025-09-17 17:00:00	22	43	0	0	0	65	1	82	0	0	0	83	0	12	2	0	0	14	5	65	8	0	0	78	240	947
2025-09-17 17:15:00	22	42	1	0	0	65	1	82	4	0	0	87	0	11	1	0	1	12	5	55	15	0	0	75	239	966
2025-09-17 17:30:00	22	24	0	0	0	46	1	83	0	0	0	84	1	16	2	0	0	19	4	64	16	0	0	84	233	962
2025-09-17 17:45:00	13	19	0	0	0	32	0	60	1	0	0	61	0	14	0	0	0	14	3	49	12	0	0	64	171	883
2025-09-17 18:00:00	23	18	1	0	0	42	3	38	0	0	0	41	0	24	2	0	0	26	0	42	11	0	0	53	162	805
2025-09-17 18:15:00	21	21	0	0	0	42	0	51	0	0	0	51	0	19	2	0	0	21	2	41	20	0	0	63	177	743
2025-09-17 18:30:00	19	13	0	0	0	32	0	30	0	0	0	30	0	18	2	0	0	20	4	43	15	0	0	62	144	654
2025-09-17 18:45:00	10	17	1	0	0	28	0	32	2	0	0	34	0	4	1	0	0	5	1	20	21	0	0	42	109	592
Grand Total	476	689	21	0	1	1186	21	1759	26	0	0	1806	12	494	60	0	1	566	75	1423	351	0	0	1849	**5407**	-
Approach%	40.1%	58.1%	1.8%	0%		-	1.2%	97.4%	1.4%	0%		-	2.1%	87.3%	10.6%	0%		-	4.1%	77%	19%	0%		-	-	-
Totals %	8.8%	12.7%	0.4%	0%		21.9%	0.4%	32.5%	0.5%	0%		33.4%	0.2%	9.1%	1.1%	0%		10.5%	1.4%	26.3%	6.5%	0%		34.2%	-	-
Heavy	3	7	1	0		-	1	161	2	0		-	0	2	5	0		-	2	150	2	0		-	-	-
Heavy %	0.6%	1%	4.8%	0%		-	4.8%	9.2%	7.7%	0%		-	0%	0.4%	8.3%	0%		-	2.7%	10.5%	0.6%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: FIRST ROAD E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach FIRST ROAD E						E Approach MUD ST E						S Approach FIRST ROAD E						W Approach MUD ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 08:30:00	9	17	0	0	0	26	1	45	0	0	0	46	1	15	5	0	0	21	1	56	17	0	0	74	167
2025-09-17 08:45:00	14	25	1	0	0	40	0	56	0	0	0	56	0	15	2	0	0	17	7	46	7	0	0	60	173
2025-09-17 09:00:00	9	15	1	0	0	25	1	66	1	0	0	68	0	13	0	0	0	13	1	50	7	0	0	58	164
2025-09-17 09:15:00	13	17	1	0	0	31	2	65	0	0	0	67	0	15	2	0	0	17	4	52	7	0	0	63	178
Grand Total	45	74	3	0	0	122	4	232	1	0	0	237	1	58	9	0	0	68	13	204	38	0	0	255	**682**
Approach%	36.9%	60.7%	2.5%	0%		-	1.7%	97.9%	0.4%	0%		-	1.5%	85.3%	13.2%	0%		-	5.1%	80%	14.9%	0%		-	**-**
Totals %	6.6%	10.9%	0.4%	0%		17.9%	0.6%	34%	0.1%	0%		34.8%	0.1%	8.5%	1.3%	0%		10%	1.9%	29.9%	5.6%	0%		37.4%	**-**
PHF	0.8	0.74	0.75	0		0.76	0.5	0.88	0.25	0		0.87	0.25	0.97	0.45	0		0.81	0.46	0.91	0.56	0		0.86	0.96
Heavy	1	2	0	0		3	0	33	1	0		34	0	1	2	0		3	1	28	0	0		29	69
Heavy %	2.2%	2.7%	0%	0%		2.5%	0%	14.2%	100%	0%		14.3%	0%	1.7%	22.2%	0%		4.4%	7.7%	13.7%	0%	0%		11.4%	10.1%
Lights	44	72	3	0		119	4	199	0	0		203	1	57	7	0		65	12	176	38	0		226	613
Lights %	97.8%	97.3%	100%	0%		97.5%	100%	85.8%	0%	0%		85.7%	100%	98.3%	77.8%	0%		95.6%	92.3%	86.3%	100%	0%		88.6%	89.9%
Single-Unit Trucks	1	2	0	0		3	0	25	0	0		25	0	0	1	0		1	1	23	0	0		24	53
Single-Unit Trucks %	2.2%	2.7%	0%	0%		2.5%	0%	10.8%	0%	0%		10.5%	0%	0%	11.1%	0%		1.5%	7.7%	11.3%	0%	0%		9.4%	7.8%
Buses	0	0	0	0		0	0	4	1	0		5	0	1	1	0		2	0	3	0	0		3	10
Buses %	0%	0%	0%	0%		0%	0%	1.7%	100%	0%		2.1%	0%	1.7%	11.1%	0%		2.9%	0%	1.5%	0%	0%		1.2%	1.5%
Articulated Trucks	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	2	0	0		2	6
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.7%	0%	0%	0%	0%		0%	0%	1%	0%	0%		0.8%	0.9%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: FIRST ROAD E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

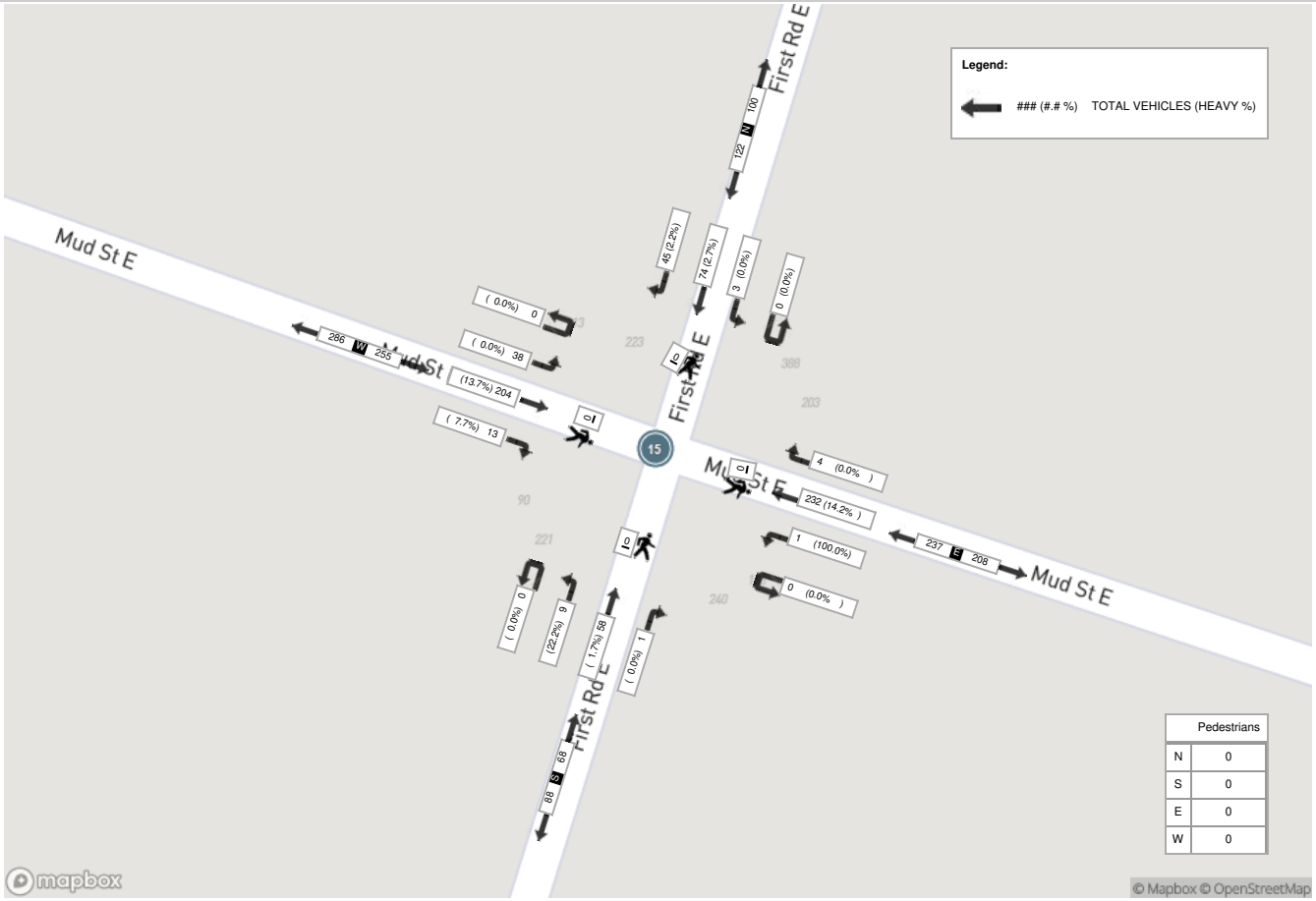
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach FIRST ROAD E						E Approach MUD ST E						S Approach FIRST ROAD E						W Approach MUD ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	21	42	0	0	0	63	1	77	2	0	0	80	2	17	2	0	0	21	2	54	17	0	0	73	237
2025-09-17 16:45:00	31	44	0	0	1	75	0	70	2	0	0	72	0	23	0	0	0	23	0	66	14	0	0	80	250
2025-09-17 17:00:00	22	43	0	0	0	65	1	82	0	0	0	83	0	12	2	0	0	14	5	65	8	0	0	78	240
2025-09-17 17:15:00	22	42	1	0	0	65	1	82	4	0	0	87	0	11	1	0	1	12	5	55	15	0	0	75	239
Grand Total	96	171	1	0	1	268	3	311	8	0	0	322	2	63	5	0	1	70	12	240	54	0	0	306	**966**
Approach%	35.8%	63.8%	0.4%	0%		-	0.9%	96.6%	2.5%	0%		-	2.9%	90%	7.1%	0%		-	3.9%	78.4%	17.6%	0%		-	**-**
Totals %	9.9%	17.7%	0.1%	0%		27.7%	0.3%	32.2%	0.8%	0%		33.3%	0.2%	6.5%	0.5%	0%		7.2%	1.2%	24.8%	5.6%	0%		31.7%	**-**
PHF	0.77	0.97	0.25	0		0.89	0.75	0.95	0.5	0		0.93	0.25	0.68	0.63	0		0.76	0.6	0.91	0.79	0		0.96	0.97
Heavy	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	0	12	0	0		12	18
Heavy %	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	5%	0%	0%		3.9%	1.9%
Lights	96	171	1	0		268	3	304	8	0		315	2	63	5	0		70	12	228	54	0		294	947
Lights %	100%	100%	100%	0%		100%	100%	97.7%	100%	0%		97.8%	100%	100%	100%	0%		100%	100%	95%	100%	0%		96.1%	98%
Single-Unit Trucks	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	7	0	0		7	12
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.6%	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.3%	1.2%
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	2	0	0		2	2
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	0.2%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	3	0	0		3	4
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1%	0.4%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	50%		-	-	-	-	0%		-	-	-	-	50%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM **Weather: Few Clouds (14 °C)**

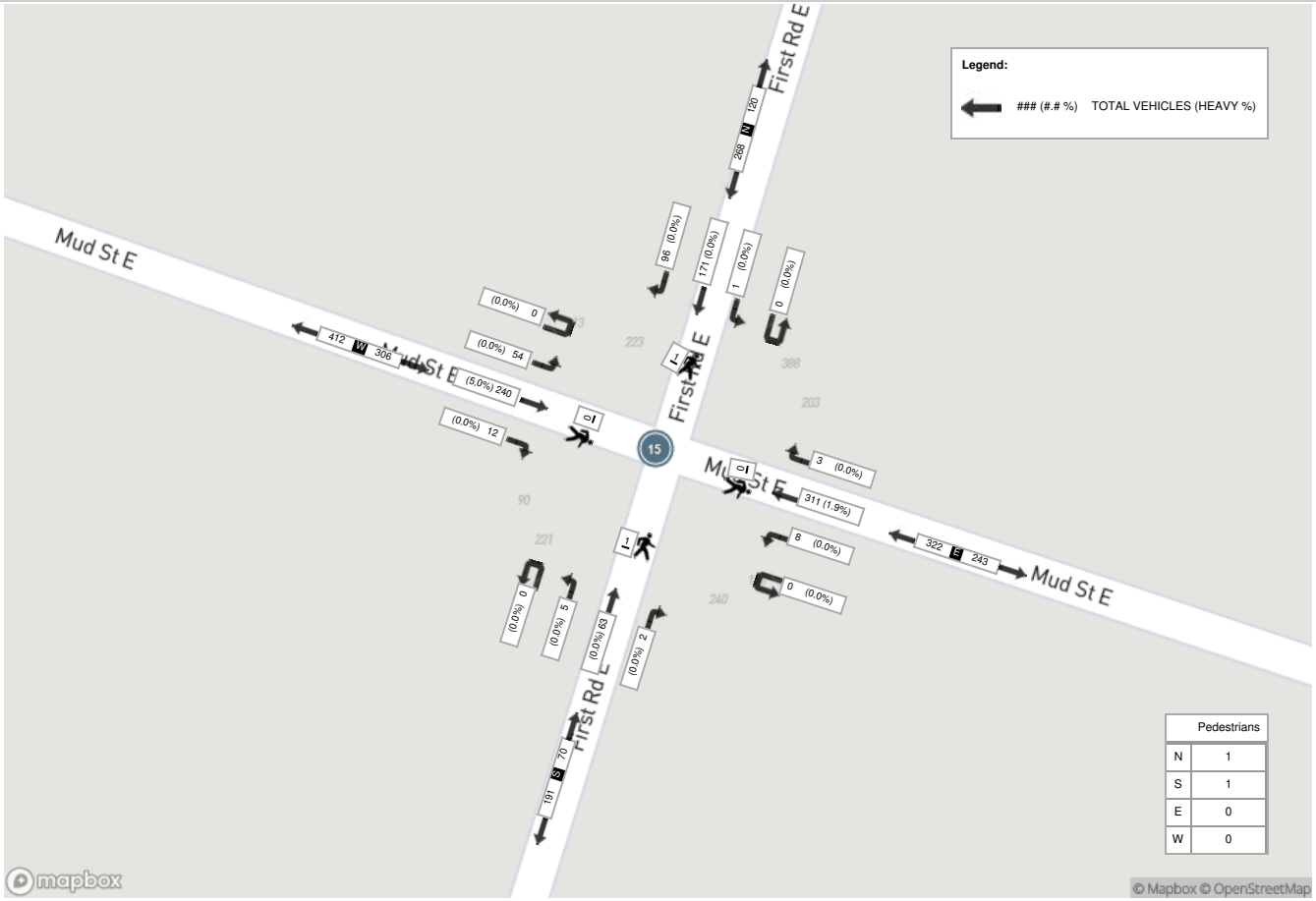


Spectrum

Turning Movement Count
Location Name: FIRST ROAD E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: SECOND ST E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (16 . SECOND ST E & MUD ST E)

Start Time	N Approach SECOND ST E						E Approach MUD ST E						S Approach SECOND ST E						W Approach MUD ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	3	0	0	0	3	1	22	0	0	0	23	0	9	1	0	0	10	0	12	1	0	0	13	49	
2025-09-17 06:15:00	2	4	0	0	0	6	0	23	0	0	0	23	0	18	5	0	0	23	1	15	3	0	0	19	71	
2025-09-17 06:30:00	3	9	0	0	0	12	0	19	2	0	0	21	1	27	2	0	0	30	2	16	2	0	0	20	83	
2025-09-17 06:45:00	1	9	1	0	0	11	0	29	1	0	0	30	0	22	3	0	0	25	1	25	3	0	0	29	95	298
2025-09-17 07:00:00	1	18	0	0	0	19	1	25	1	0	0	27	0	19	7	0	0	26	1	12	4	0	0	17	89	338
2025-09-17 07:15:00	2	16	1	0	0	19	1	44	1	0	0	46	2	32	6	0	0	40	4	30	1	0	0	35	140	407
2025-09-17 07:30:00	8	16	1	0	0	25	3	45	4	0	0	52	2	49	9	0	0	60	8	39	6	0	0	53	190	514
2025-09-17 07:45:00	1	15	0	0	0	16	4	48	1	0	0	53	2	35	11	0	0	48	2	33	5	0	0	40	157	576
2025-09-17 08:00:00	4	17	1	0	0	22	0	30	1	0	0	31	1	17	8	0	0	26	2	44	3	0	0	49	128	615
2025-09-17 08:15:00	1	19	2	0	0	22	1	50	1	0	0	52	0	31	8	0	0	39	3	35	3	0	0	41	154	629
2025-09-17 08:30:00	7	20	0	0	0	27	1	36	0	0	0	37	1	27	8	0	0	36	3	52	5	0	0	60	160	599
2025-09-17 08:45:00	6	19	2	0	0	27	0	48	3	0	0	51	0	25	4	0	0	29	0	40	3	0	0	43	150	592
2025-09-17 09:00:00	10	17	8	0	0	35	0	47	1	0	0	48	5	13	5	0	0	23	4	40	6	0	0	50	156	620
2025-09-17 09:15:00	4	9	0	0	0	13	4	53	6	0	0	63	2	17	9	0	0	28	4	50	1	0	0	55	159	625
2025-09-17 09:30:00	2	13	1	0	1	16	5	43	0	0	1	48	3	19	5	0	0	27	2	39	7	0	0	48	139	604
2025-09-17 09:45:00	6	8	0	0	0	14	0	35	0	0	0	35	3	8	3	0	0	14	7	44	0	0	0	51	114	568
BREAK																										
2025-09-17 15:00:00	6	29	2	0	0	37	0	56	3	0	0	59	4	15	6	0	0	25	5	48	2	0	0	55	176	
2025-09-17 15:15:00	4	28	2	0	0	34	2	51	2	0	0	55	6	21	1	0	0	28	8	46	4	0	0	58	175	
2025-09-17 15:30:00	8	38	2	0	0	48	3	67	2	0	0	72	2	18	3	0	0	23	7	39	6	0	0	52	195	
2025-09-17 15:45:00	7	45	1	0	0	53	4	69	5	0	0	78	2	18	2	0	0	22	8	43	9	0	0	60	213	759
2025-09-17 16:00:00	10	43	1	0	0	54	1	52	1	0	0	54	4	16	0	0	0	20	4	49	2	0	0	55	183	766
2025-09-17 16:15:00	13	46	1	0	0	60	1	73	5	0	0	79	1	22	5	0	0	28	3	40	3	0	0	46	213	804
2025-09-17 16:30:00	8	52	0	0	1	60	0	66	1	0	0	67	2	24	4	0	0	30	6	44	1	0	0	51	208	817
2025-09-17 16:45:00	12	72	1	0	0	85	1	59	3	0	0	63	0	16	5	0	0	21	6	57	3	0	0	66	235	839
2025-09-17 17:00:00	11	49	2	0	0	62	1	61	3	0	0	65	3	34	9	0	0	46	7	50	7	0	0	64	237	893
2025-09-17 17:15:00	12	72	1	0	0	85	1	71	1	0	0	73	4	20	6	0	0	30	7	48	6	0	0	61	249	929
2025-09-17 17:30:00	12	32	0	0	0	44	1	66	1	0	0	68	0	17	4	0	1	21	4	56	8	0	0	68	201	922
2025-09-17 17:45:00	3	30	1	0	0	34	2	52	4	0	0	58	0	27	9	0	0	36	4	41	3	0	0	48	176	863
2025-09-17 18:00:00	8	24	0	0	0	32	1	31	1	0	0	33	2	22	2	0	0	26	9	31	0	0	0	40	131	757
2025-09-17 18:15:00	7	15	0	0	0	22	0	32	1	0	0	33	3	17	8	0	0	28	3	38	3	0	0	44	127	635
2025-09-17 18:30:00	4	15	2	0	0	21	1	26	1	0	0	28	0	16	3	0	0	19	6	32	3	0	0	41	109	543
2025-09-17 18:45:00	5	19	1	0	0	25	0	21	2	0	0	23	1	11	5	0	0	17	3	22	0	0	0	25	90	457
Grand Total	188	821	34	0	2	1043	40	1450	58	0	1	1548	56	682	166	0	1	904	134	1210	113	0	0	1457	**4952**	-
Approach%	18%	78.7%	3.3%	0%		-	2.6%	93.7%	3.7%	0%		-	6.2%	75.4%	18.4%	0%		-	9.2%	83%	7.8%	0%		-	-	-
Totals %	3.8%	16.6%	0.7%	0%		21.1%	0.8%	29.3%	1.2%	0%		31.3%	1.1%	13.8%	3.4%	0%		18.3%	2.7%	24.4%	2.3%	0%		29.4%	-	-
Heavy	6	8	6	0		-	4	154	10	0		-	8	8	3	0		-	1	143	9	0		-	-	-
Heavy %	3.2%	1%	17.6%	0%		-	10%	10.6%	17.2%	0%		-	14.3%	1.2%	1.8%	0%		-	0.7%	11.8%	8%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: SECOND ST E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Few Clouds (14 °C)

Start Time	N Approach SECOND ST E						E Approach MUD ST E						S Approach SECOND ST E						W Approach MUD ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	8	16	1	0	0	25	3	45	4	0	0	52	2	49	9	0	0	60	8	39	6	0	0	53	190
2025-09-17 07:45:00	1	15	0	0	0	16	4	48	1	0	0	53	2	35	11	0	0	48	2	33	5	0	0	40	157
2025-09-17 08:00:00	4	17	1	0	0	22	0	30	1	0	0	31	1	17	8	0	0	26	2	44	3	0	0	49	128
2025-09-17 08:15:00	1	19	2	0	0	22	1	50	1	0	0	52	0	31	8	0	0	39	3	35	3	0	0	41	154
Grand Total	14	67	4	0	0	85	8	173	7	0	0	188	5	132	36	0	0	173	15	151	17	0	0	183	**629**
Approach%	16.5%	78.8%	4.7%	0%		-	4.3%	92%	3.7%	0%		-	2.9%	76.3%	20.8%	0%		-	8.2%	82.5%	9.3%	0%		-	**-**
Totals %	2.2%	10.7%	0.6%	0%		13.5%	1.3%	27.5%	1.1%	0%		29.9%	0.8%	21%	5.7%	0%		27.5%	2.4%	24%	2.7%	0%		29.1%	**-**
PHF	0.44	0.88	0.5	0		0.85	0.5	0.87	0.44	0		0.89	0.63	0.67	0.82	0		0.72	0.47	0.86	0.71	0		0.86	0.83
Heavy	1	3	0	0		4	1	30	3	0		34	1	0	1	0		2	0	21	1	0		22	62
Heavy %	7.1%	4.5%	0%	0%		4.7%	12.5%	17.3%	42.9%	0%		18.1%	20%	0%	2.8%	0%		1.2%	0%	13.9%	5.9%	0%		12%	9.9%
Lights	13	64	4	0		81	7	143	4	0		154	4	132	35	0		171	15	130	16	0		161	567
Lights %	92.9%	95.5%	100%	0%		95.3%	87.5%	82.7%	57.1%	0%		81.9%	80%	100%	97.2%	0%		98.8%	100%	86.1%	94.1%	0%		88%	90.1%
Single-Unit Trucks	0	2	0	0		2	0	26	1	0		27	0	0	0	0		0	0	19	0	0		19	48
Single-Unit Trucks %	0%	3%	0%	0%		2.4%	0%	15%	14.3%	0%		14.4%	0%	0%	0%	0%		0%	0%	12.6%	0%	0%		10.4%	7.6%
Buses	0	1	0	0		1	1	3	2	0		6	1	0	1	0		2	0	1	1	0		2	11
Buses %	0%	1.5%	0%	0%		1.2%	12.5%	1.7%	28.6%	0%		3.2%	20%	0%	2.8%	0%		1.2%	0%	0.7%	5.9%	0%		1.1%	1.7%
Articulated Trucks	1	0	0	0		1	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	3
Articulated Trucks %	7.1%	0%	0%	0%		1.2%	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.5%	0.5%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

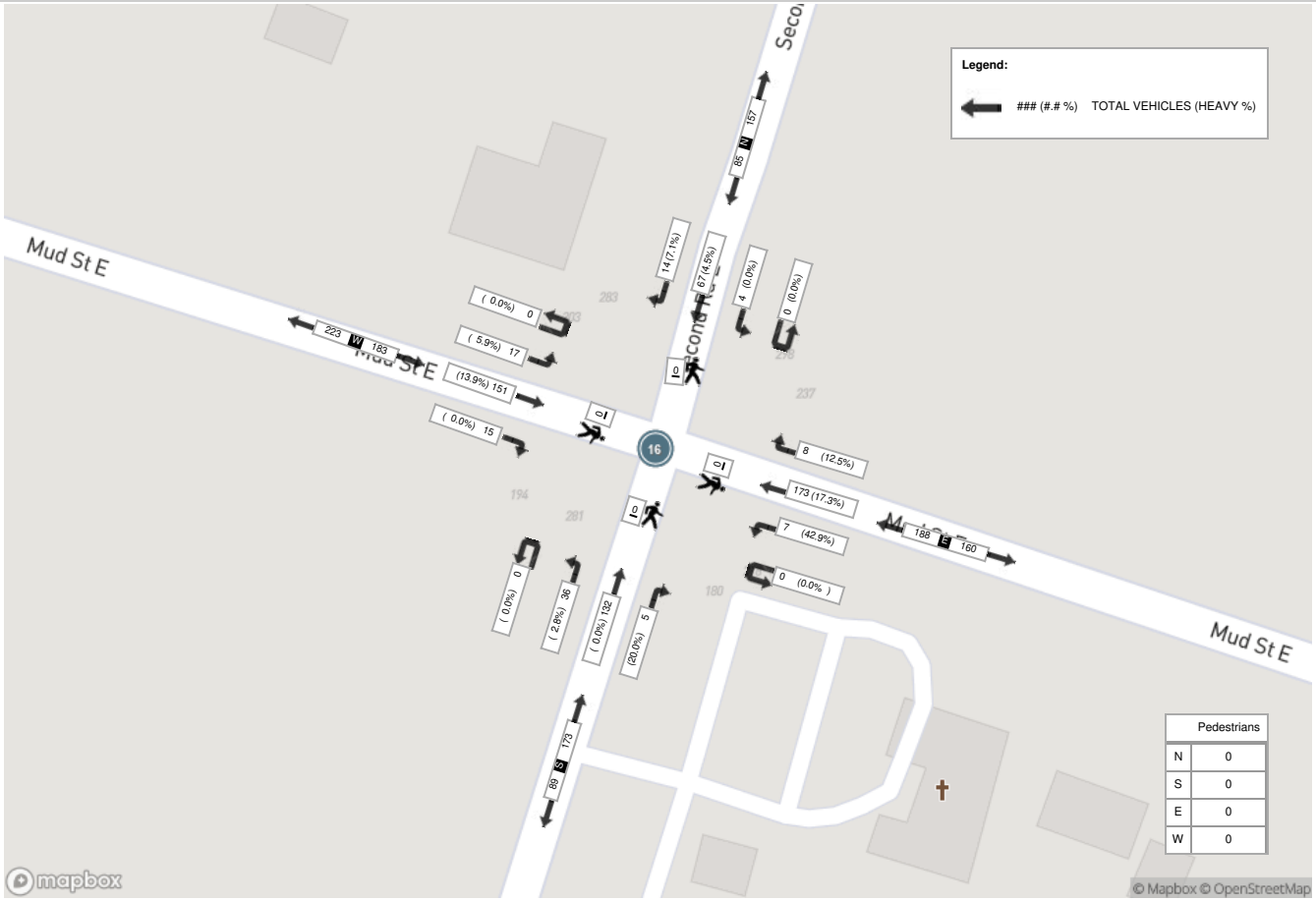
Turning Movement Count
Location Name: SECOND ST E & MUD ST E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

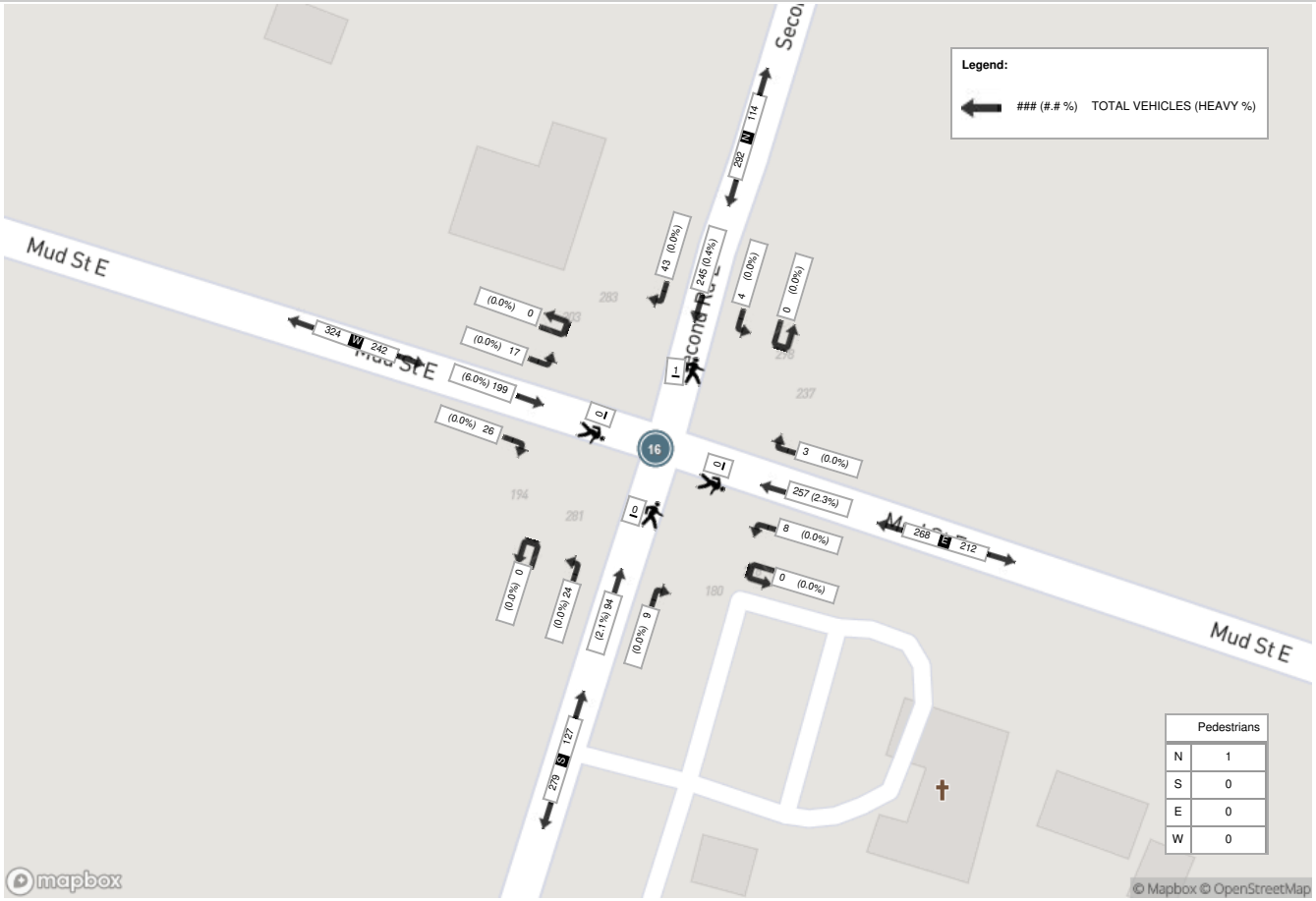
Start Time	N Approach SECOND ST E						E Approach MUD ST E						S Approach SECOND ST E						W Approach MUD ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	8	52	0	0	1	60	0	66	1	0	0	67	2	24	4	0	0	30	6	44	1	0	0	51	208
2025-09-17 16:45:00	12	72	1	0	0	85	1	59	3	0	0	63	0	16	5	0	0	21	6	57	3	0	0	66	235
2025-09-17 17:00:00	11	49	2	0	0	62	1	61	3	0	0	65	3	34	9	0	0	46	7	50	7	0	0	64	237
2025-09-17 17:15:00	12	72	1	0	0	85	1	71	1	0	0	73	4	20	6	0	0	30	7	48	6	0	0	61	249
Grand Total	43	245	4	0	1	292	3	257	8	0	0	268	9	94	24	0	0	127	26	199	17	0	0	242	**929**
Approach%	14.7%	83.9%	1.4%	0%		-	1.1%	95.9%	3%	0%		-	7.1%	74%	18.9%	0%		-	10.7%	82.2%	7%	0%		-	**-**
Totals %	4.6%	26.4%	0.4%	0%		31.4%	0.3%	27.7%	0.9%	0%		28.8%	1%	10.1%	2.6%	0%		13.7%	2.8%	21.4%	1.8%	0%		26%	**-**
PHF	0.9	0.85	0.5	0		0.86	0.75	0.9	0.67	0		0.92	0.56	0.69	0.67	0		0.69	0.93	0.87	0.61	0		0.92	0.93
Heavy	0	1	0	0		1	0	6	0	0		6	0	2	0	0		2	0	12	0	0		12	21
Heavy %	0%	0.4%	0%	0%		0.3%	0%	2.3%	0%	0%		2.2%	0%	2.1%	0%	0%		1.6%	0%	6%	0%	0%		5%	2.3%
Lights	43	244	4	0		291	3	250	8	0		261	8	92	24	0		124	26	187	17	0		230	906
Lights %	100%	99.6%	100%	0%		99.7%	100%	97.3%	100%	0%		97.4%	88.9%	97.9%	100%	0%		97.6%	100%	94%	100%	0%		95%	97.5%
Single-Unit Trucks	0	1	0	0		1	0	5	0	0		5	0	2	0	0		2	0	7	0	0		7	15
Single-Unit Trucks %	0%	0.4%	0%	0%		0.3%	0%	1.9%	0%	0%		1.9%	0%	2.1%	0%	0%		1.6%	0%	3.5%	0%	0%		2.9%	1.6%
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	2	0	0		2	2
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	1%	0%	0%		0.8%	0.2%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	3	0	0		3	4
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.2%	0.4%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	1	0	0	0		1	0	0	0	0		0	2
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	11.1%	0%	0%	0%		0.8%	0%	0%	0%	0%		0%	0.2%
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (17 . UPPER CENTENNIAL PKWY & GREEN MOUNTAIN RD E)

Start Time	N Approach UPPER CENTENNIAL PARKWAY						E Approach GREEN MOUNTAIN ROAD						S Approach UPPER CENTENNIAL PARKWA						W Approach GREEN MOUNTAIN ROAD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	4	49	6	0	0	59	9	2	2	0	0	13	0	98	3	0	3	101	2	6	38	0	2	46	219	
2025-09-17 06:15:00	8	53	8	0	0	69	17	5	2	0	0	24	1	150	3	0	1	154	1	1	37	0	0	39	286	
2025-09-17 06:30:00	18	82	4	0	1	104	18	3	1	0	1	22	1	148	3	0	1	152	4	4	48	0	2	56	334	
2025-09-17 06:45:00	9	71	9	0	0	89	17	4	3	0	0	24	1	147	3	0	1	151	7	5	49	0	3	61	325	1164
2025-09-17 07:00:00	18	70	14	0	0	102	33	5	6	0	0	44	1	170	3	0	3	174	2	6	38	0	3	46	366	1311
2025-09-17 07:15:00	19	93	13	0	0	125	24	9	6	0	0	39	2	214	1	1	3	218	12	4	36	0	1	52	434	1459
2025-09-17 07:30:00	16	105	10	0	0	131	33	5	4	0	0	42	3	241	5	0	1	249	10	12	53	0	0	75	497	1622
2025-09-17 07:45:00	23	105	8	0	0	136	29	13	5	0	0	47	5	275	9	0	2	289	13	8	65	0	0	86	558	1855
2025-09-17 08:00:00	30	120	11	0	0	161	18	11	5	0	0	34	7	277	9	0	1	293	8	10	63	0	0	81	569	2058
2025-09-17 08:15:00	25	104	12	0	0	141	20	21	2	0	0	43	5	237	5	0	3	247	8	9	63	0	2	80	511	2135
2025-09-17 08:30:00	31	130	13	0	0	174	21	14	6	0	0	41	3	239	7	0	0	249	6	3	61	0	1	70	534	2172
2025-09-17 08:45:00	26	124	23	0	1	173	15	11	7	0	1	33	4	202	7	0	2	213	8	11	63	0	1	82	501	2115
2025-09-17 09:00:00	20	130	13	0	0	163	11	12	6	0	0	29	4	160	8	0	3	172	7	13	46	0	0	66	430	1976
2025-09-17 09:15:00	21	123	14	0	0	158	16	14	0	0	0	30	8	170	9	0	1	187	5	10	50	0	0	65	440	1905
2025-09-17 09:30:00	26	103	18	0	0	147	17	12	6	0	0	35	1	152	13	0	0	166	10	5	36	0	0	51	399	1770
2025-09-17 09:45:00	27	126	16	0	0	169	19	9	4	0	1	32	3	162	9	0	3	174	10	3	37	0	0	50	425	1694
BREAK																										
2025-09-17 15:00:00	49	199	18	0	0	266	19	17	6	0	0	42	9	166	17	0	1	192	9	14	37	0	1	60	560	
2025-09-17 15:15:00	57	221	20	0	0	298	23	24	10	0	0	57	7	161	12	0	3	180	7	13	29	0	2	49	584	
2025-09-17 15:30:00	64	242	21	0	0	327	15	15	4	0	0	34	7	179	12	0	1	198	5	5	41	0	2	51	610	
2025-09-17 15:45:00	75	243	33	0	1	351	25	34	13	0	0	72	4	161	11	0	2	176	6	12	41	0	1	59	658	2412
2025-09-17 16:00:00	65	294	25	0	5	384	19	31	13	0	5	63	9	163	4	0	0	176	6	12	31	0	0	49	672	2524
2025-09-17 16:15:00	80	268	22	0	0	370	23	36	10	0	0	69	3	151	12	0	0	166	7	14	39	0	0	60	665	2605
2025-09-17 16:30:00	82	330	31	0	1	443	15	24	5	0	1	44	10	139	13	0	1	162	12	15	25	0	0	52	701	2696
2025-09-17 16:45:00	77	287	32	0	0	396	11	44	17	0	0	72	8	156	11	0	0	175	11	14	45	0	0	70	713	2751
2025-09-17 17:00:00	80	299	42	0	0	421	26	32	5	0	0	63	5	191	16	0	3	212	10	9	39	0	2	58	754	2833
2025-09-17 17:15:00	68	282	53	0	2	403	19	41	15	0	1	75	6	171	13	0	0	190	11	13	45	0	0	69	737	2905
2025-09-17 17:30:00	85	304	20	0	0	409	16	21	11	0	0	48	9	163	18	0	0	190	10	13	41	0	0	64	711	2915
2025-09-17 17:45:00	62	222	30	0	0	314	18	28	8	0	1	54	17	166	14	0	0	197	6	6	42	0	0	54	619	2821
2025-09-17 18:00:00	71	227	35	0	1	333	12	20	10	0	1	42	4	150	15	0	0	169	11	8	37	0	0	56	600	2667
2025-09-17 18:15:00	64	216	22	0	0	302	19	9	12	0	0	40	7	146	21	0	0	174	7	13	28	0	0	48	564	2494
2025-09-17 18:30:00	68	228	20	0	2	316	18	26	11	0	2	55	4	126	14	0	1	144	9	4	49	0	1	62	577	2360
2025-09-17 18:45:00	64	185	17	0	0	266	12	10	9	0	0	31	6	147	12	0	0	165	5	8	30	0	0	43	505	2246
Grand Total	1432	5635	633	0	14	7700	607	562	224	0	14	1393	164	5578	312	1	40	6055	245	283	1382	0	24	1910	**17058**	-
Approach%	18.6%	73.2%	8.2%	0%		-	43.6%	40.3%	16.1%	0%		-	2.7%	92.1%	5.2%	0%		-	12.8%	14.8%	72.4%	0%		-	-	-
Totals %	8.4%	33%	3.7%	0%		45.1%	3.6%	3.3%	1.3%	0%		8.2%	1%	32.7%	1.8%	0%		35.5%	1.4%	1.7%	8.1%	0%		11.2%	-	-
Heavy	16	340	16	0		-	16	15	7	0		-	4	336	36	0		-	6	11	14	0		-	-	-
Heavy %	1.1%	6%	2.5%	0%		-	2.6%	2.7%	3.1%	0%		-	2.4%	6%	11.5%	0%		-	2.4%	3.9%	1%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: UPPER CENTENNIAL PKWY & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Few Clouds (14 °C)

Start Time	N Approach UPPER CENTENNIAL PARKWAY						E Approach GREEN MOUNTAIN ROAD						S Approach UPPER CENTENNIAL PARKWA						W Approach GREEN MOUNTAIN ROAD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:45:00	23	105	8	0	0	136	29	13	5	0	0	47	5	275	9	0	2	289	13	8	65	0	0	86	558
2025-09-17 08:00:00	30	120	11	0	0	161	18	11	5	0	0	34	7	277	9	0	1	293	8	10	63	0	0	81	569
2025-09-17 08:15:00	25	104	12	0	0	141	20	21	2	0	0	43	5	237	5	0	3	247	8	9	63	0	2	80	511
2025-09-17 08:30:00	31	130	13	0	0	174	21	14	6	0	0	41	3	239	7	0	0	249	6	3	61	0	1	70	534
Grand Total	109	459	44	0	0	612	88	59	18	0	0	165	20	1028	30	0	6	1078	35	30	252	0	3	317	**2172**
Approach%	17.8%	75%	7.2%	0%		-	53.3%	35.8%	10.9%	0%		-	1.9%	95.4%	2.8%	0%		-	11%	9.5%	79.5%	0%		-	**-**
Totals %	5%	21.1%	2%	0%		28.2%	4.1%	2.7%	0.8%	0%		7.6%	0.9%	47.3%	1.4%	0%		49.6%	1.6%	1.4%	11.6%	0%		14.6%	**-**
PHF	0.88	0.88	0.85	0		0.88	0.76	0.7	0.75	0		0.88	0.71	0.93	0.83	0		0.92	0.67	0.75	0.97	0		0.92	0.95
Heavy	4	53	2	0		59	2	6	2	0		10	1	53	6	0		60	3	0	2	0		5	134
Heavy %	3.7%	11.5%	4.5%	0%		9.6%	2.3%	10.2%	11.1%	0%		6.1%	5%	5.2%	20%	0%		5.6%	8.6%	0%	0.8%	0%		1.6%	6.2%
Lights	105	406	42	0		553	86	53	16	0		155	19	975	24	0		1018	32	30	250	0		312	2038
Lights %	96.3%	88.5%	95.5%	0%		90.4%	97.7%	89.8%	88.9%	0%		93.9%	95%	94.8%	80%	0%		94.4%	91.4%	100%	99.2%	0%		98.4%	93.8%
Single-Unit Trucks	4	29	0	0		33	2	1	1	0		4	0	34	1	0		35	1	0	1	0		2	74
Single-Unit Trucks %	3.7%	6.3%	0%	0%		5.4%	2.3%	1.7%	5.6%	0%		2.4%	0%	3.3%	3.3%	0%		3.2%	2.9%	0%	0.4%	0%		0.6%	3.4%
Buses	0	9	1	0		10	0	5	1	0		6	1	5	5	0		11	2	0	1	0		3	30
Buses %	0%	2%	2.3%	0%		1.6%	0%	8.5%	5.6%	0%		3.6%	5%	0.5%	16.7%	0%		1%	5.7%	0%	0.4%	0%		0.9%	1.4%
Articulated Trucks	0	15	1	0		16	0	0	0	0		0	0	14	0	0		14	0	0	0	0		0	30
Articulated Trucks %	0%	3.3%	2.3%	0%		2.6%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	1.4%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	66.7%		-	-	-	-	33.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

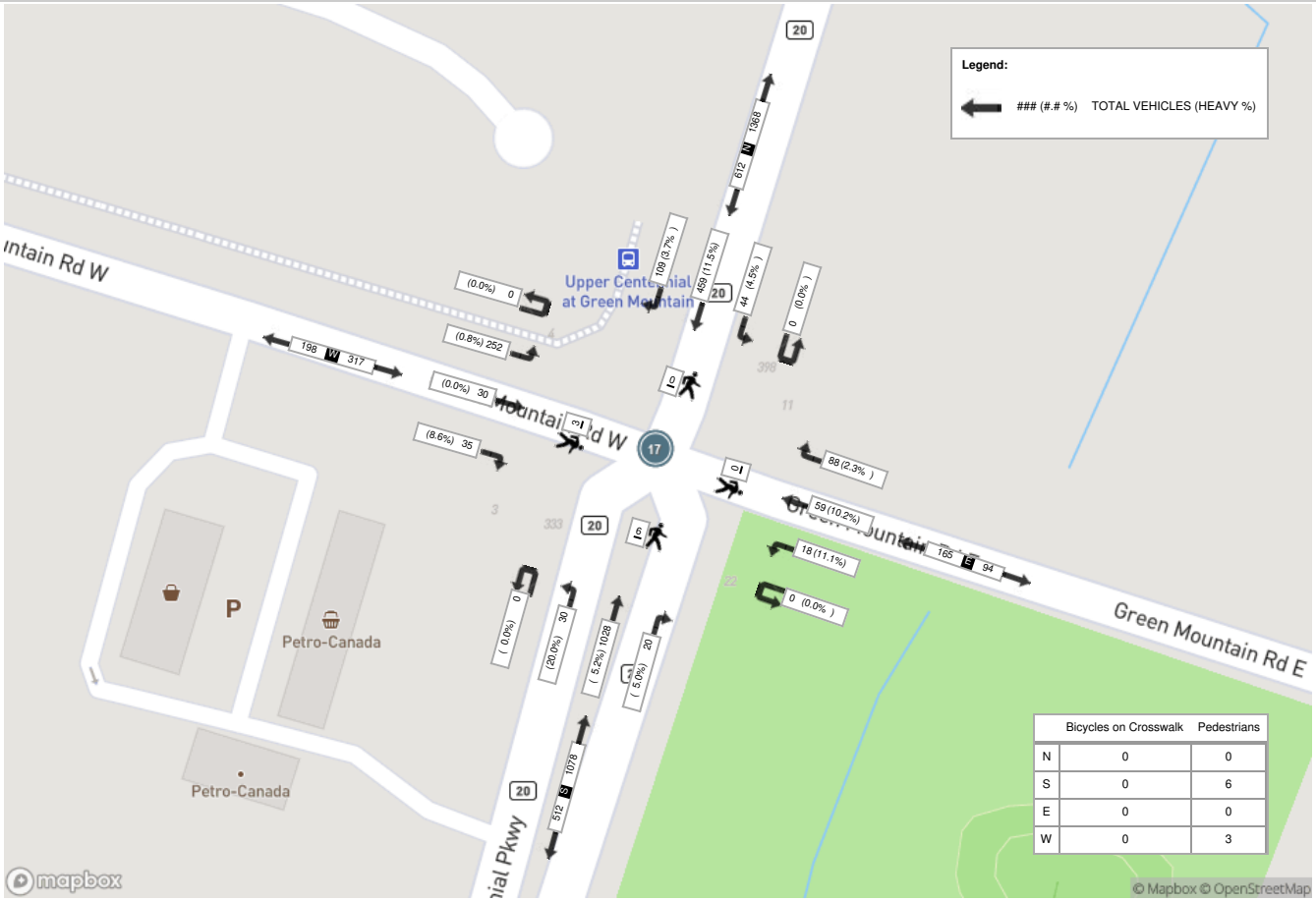
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach UPPER CENTENNIAL PARKWAY						E Approach GREEN MOUNTAIN ROAD						S Approach UPPER CENTENNIAL PARKWA						W Approach GREEN MOUNTAIN ROAD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:45:00	77	287	32	0	0	396	11	44	17	0	0	72	8	156	11	0	0	175	11	14	45	0	0	70	713
2025-09-17 17:00:00	80	299	42	0	0	421	26	32	5	0	0	63	5	191	16	0	3	212	10	9	39	0	2	58	754
2025-09-17 17:15:00	68	282	53	0	2	403	19	41	15	0	1	75	6	171	13	0	0	190	11	13	45	0	0	69	737
2025-09-17 17:30:00	85	304	20	0	0	409	16	21	11	0	0	48	9	163	18	0	0	190	10	13	41	0	0	64	711
Grand Total	310	1172	147	0	2	1629	72	138	48	0	1	258	28	681	58	0	3	767	42	49	170	0	2	261	**2915**
Approach%	19%	71.9%	9%	0%		-	27.9%	53.5%	18.6%	0%		-	3.7%	88.8%	7.6%	0%		-	16.1%	18.8%	65.1%	0%		-	**-**
Totals %	10.6%	40.2%	5%	0%		55.9%	2.5%	4.7%	1.6%	0%		8.9%	1%	23.4%	2%	0%		26.3%	1.4%	1.7%	5.8%	0%		9%	**-**
PHF	0.91	0.96	0.69	0		0.97	0.69	0.78	0.71	0		0.86	0.78	0.89	0.81	0		0.9	0.95	0.88	0.94	0		0.93	0.97
Heavy	0	27	2	0		29	1	0	0	0		1	0	37	5	0		42	0	0	3	0		3	75
Heavy %	0%	2.3%	1.4%	0%		1.8%	1.4%	0%	0%	0%		0.4%	0%	5.4%	8.6%	0%		5.5%	0%	0%	1.8%	0%		1.1%	2.6%
Lights	310	1145	145	0		1600	71	138	48	0		257	28	643	53	0		724	42	49	167	0		258	2839
Lights %	100%	97.7%	98.6%	0%		98.2%	98.6%	100%	100%	0%		99.6%	100%	94.4%	91.4%	0%		94.4%	100%	100%	98.2%	0%		98.9%	97.4%
Single-Unit Trucks	0	15	2	0		17	1	0	0	0		1	0	16	0	0		16	0	0	3	0		3	37
Single-Unit Trucks %	0%	1.3%	1.4%	0%		1%	1.4%	0%	0%	0%		0.4%	0%	2.3%	0%	0%		2.1%	0%	0%	1.8%	0%		1.1%	1.3%
Buses	0	4	0	0		4	0	0	0	0		0	0	9	5	0		14	0	0	0	0		0	18
Buses %	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	1.3%	8.6%	0%		1.8%	0%	0%	0%	0%		0%	0.6%
Articulated Trucks	0	8	0	0		8	0	0	0	0		0	0	12	0	0		12	0	0	0	0		0	20
Articulated Trucks %	0%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.6%	0%	0%	0%	0%		0%	0.7%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	25%		-	-	-	-	12.5%		-	-	-	-	37.5%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	25%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

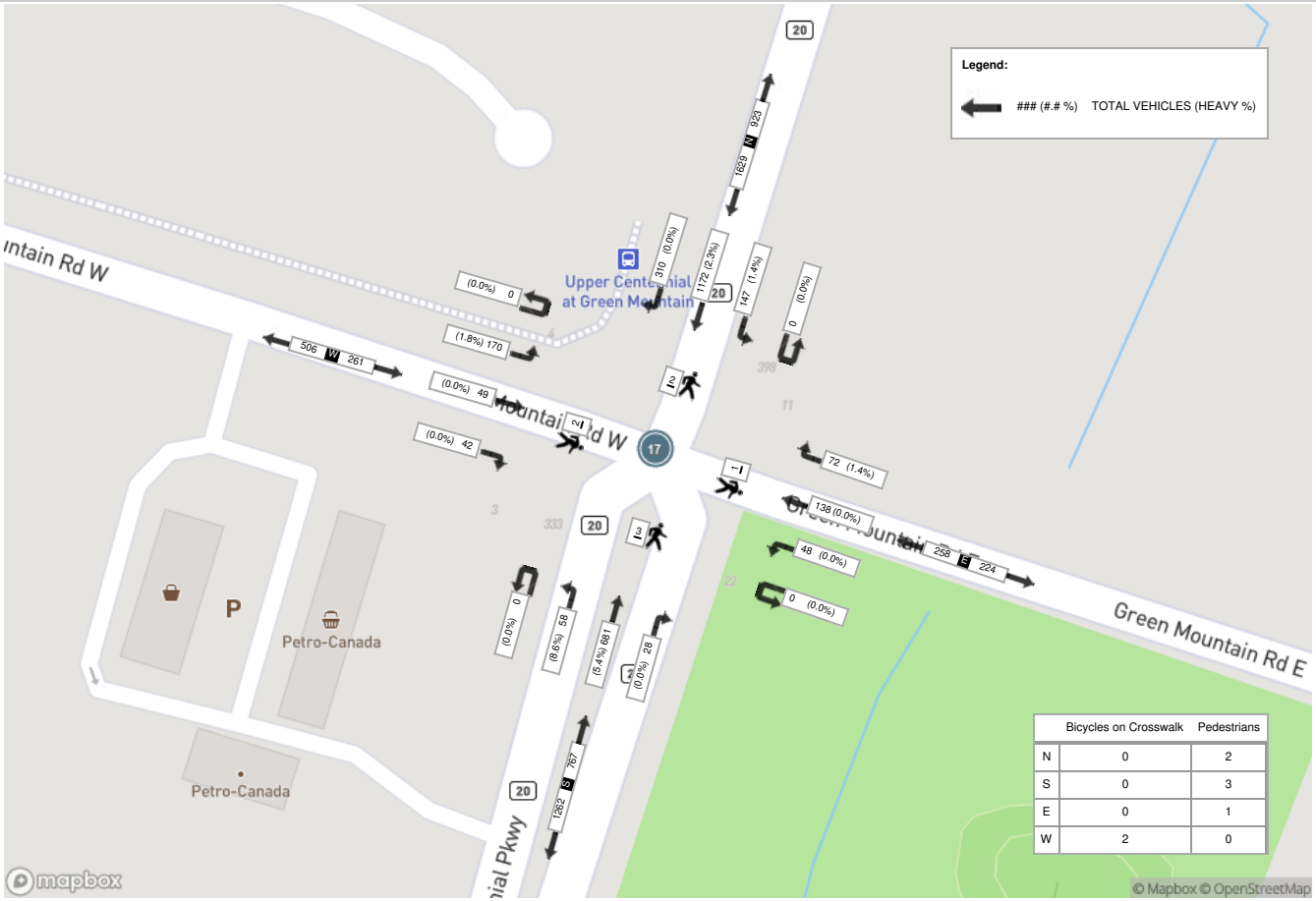
Peak Hour: 07:45 AM - 08:45 AM Weather: Few Clouds (14 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	6
E	0	0
W	0	3

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Broken Clouds (23 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	2
S	0	3
E	0	1
W	2	0

Spectrum

Turning Movement Count
Location Name: FIRST RD E & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (18 . FIRST RD E & GREEN MOUNTAIN RD E)

Start Time	N Approach FIRST ROAD						E Approach GREEN MOUNTAIN ROAD						S Approach FIRST ROAD						W Approach GREEN MOUNTAIN RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	4	3	0	0	0	7	0	7	2	0	0	9	0	12	2	0	0	14	0	10	0	0	0	10	40	
2025-09-17 06:15:00	1	7	0	0	0	8	0	20	0	0	0	20	0	13	1	0	0	14	3	6	1	0	0	10	52	
2025-09-17 06:30:00	0	8	0	0	0	8	0	22	0	0	0	22	1	14	1	0	0	16	1	8	0	0	0	9	55	
2025-09-17 06:45:00	3	15	1	0	0	19	0	25	0	0	0	25	1	10	1	0	0	12	4	10	2	0	0	16	72	219
2025-09-17 07:00:00	5	13	0	0	0	18	0	33	1	0	0	34	1	15	2	0	0	18	3	15	4	0	0	22	92	271
2025-09-17 07:15:00	7	17	1	0	0	25	0	32	0	0	0	32	3	24	1	0	0	28	3	13	3	0	0	19	104	323
2025-09-17 07:30:00	1	31	0	0	0	32	0	40	2	0	0	42	1	32	1	0	0	34	4	8	11	0	0	23	131	399
2025-09-17 07:45:00	4	22	0	0	0	26	0	39	3	0	0	42	0	31	2	0	0	33	3	14	4	0	0	21	122	449
2025-09-17 08:00:00	11	26	0	0	0	37	0	22	1	0	0	23	0	26	1	0	0	27	4	18	8	0	0	30	117	474
2025-09-17 08:15:00	10	24	0	0	0	34	0	29	1	0	0	30	0	26	6	0	0	32	2	14	5	0	0	21	117	487
2025-09-17 08:30:00	12	27	0	0	0	39	0	21	0	0	0	21	2	28	3	0	0	33	1	13	5	0	0	19	112	468
2025-09-17 08:45:00	10	32	0	0	0	42	0	20	2	0	0	22	0	21	1	0	0	22	5	24	4	0	0	33	119	465
2025-09-17 09:00:00	9	19	0	0	0	28	1	20	0	0	0	21	1	17	3	0	0	21	3	27	1	0	0	31	101	449
2025-09-17 09:15:00	4	28	0	0	0	32	0	22	0	0	0	22	2	15	5	0	0	22	6	16	4	0	0	26	102	434
2025-09-17 09:30:00	7	14	1	0	0	22	0	25	1	0	0	26	0	18	1	0	0	19	3	14	3	0	0	20	87	409
2025-09-17 09:45:00	9	22	0	0	0	31	0	19	1	0	0	20	0	18	3	0	0	21	5	16	1	0	0	22	94	384
BREAK																										
2025-09-17 15:00:00	14	48	0	0	0	62	0	25	2	0	0	27	0	26	3	0	0	29	2	24	9	0	0	35	153	
2025-09-17 15:15:00	21	42	0	0	0	63	0	19	0	0	0	19	2	17	12	0	0	31	3	31	2	0	0	36	149	
2025-09-17 15:30:00	17	45	1	0	1	63	1	22	0	0	0	23	4	20	6	0	0	30	4	28	3	0	0	35	151	
2025-09-17 15:45:00	21	54	0	0	0	75	0	35	0	0	0	35	1	30	6	0	0	37	9	32	6	0	0	47	194	647
2025-09-17 16:00:00	31	50	1	0	0	82	0	32	3	0	0	35	3	23	9	0	0	35	5	30	5	0	0	40	192	686
2025-09-17 16:15:00	21	59	1	0	0	81	1	31	0	0	0	32	2	15	3	0	0	20	8	21	7	0	0	36	169	706
2025-09-17 16:30:00	14	54	1	0	0	69	0	30	1	0	0	31	3	27	3	0	0	33	4	41	5	0	0	50	183	738
2025-09-17 16:45:00	32	70	1	0	0	103	1	33	0	0	0	34	1	34	1	0	0	36	5	42	5	1	0	53	226	770
2025-09-17 17:00:00	25	60	3	0	0	88	0	45	4	0	0	49	6	16	5	0	0	27	6	37	5	0	0	48	212	790
2025-09-17 17:15:00	20	56	2	0	0	78	1	36	2	0	0	39	4	9	7	0	0	20	4	59	4	0	1	67	204	825
2025-09-17 17:30:00	17	40	0	0	0	57	0	27	1	0	0	28	3	23	6	0	1	32	7	20	14	0	0	41	158	800
2025-09-17 17:45:00	16	24	4	0	1	44	0	23	2	0	0	25	2	15	1	0	0	18	10	26	8	0	0	44	131	705
2025-09-17 18:00:00	17	27	2	0	0	46	0	15	3	0	0	18	10	18	2	0	0	30	7	28	3	0	0	38	132	625
2025-09-17 18:15:00	9	31	4	0	0	44	0	26	6	0	0	32	11	14	3	0	0	28	4	34	5	0	0	43	147	568
2025-09-17 18:30:00	7	19	0	0	0	26	2	40	7	0	0	49	5	20	0	0	0	25	5	18	2	0	1	25	125	535
2025-09-17 18:45:00	7	19	2	0	0	28	1	16	3	0	0	20	3	10	0	0	0	13	3	19	6	0	0	28	89	493
Grand Total	386	1006	25	0	2	1417	8	851	48	0	0	907	72	637	101	0	1	810	136	716	145	1	2	998	**4132**	-
Approach%	27.2%	71%	1.8%	0%		-	0.9%	93.8%	5.3%	0%		-	8.9%	78.6%	12.5%	0%		-	13.6%	71.7%	14.5%	0.1%		-	-	-
Totals %	9.3%	24.3%	0.6%	0%		34.3%	0.2%	20.6%	1.2%	0%		22%	1.7%	15.4%	2.4%	0%		19.6%	3.3%	17.3%	3.5%	0%		24.2%	-	-
Heavy	7	4	0	0		-	1	28	1	0		-	1	1	2	0		-	5	25	1	0		-	-	-
Heavy %	1.8%	0.4%	0%	0%		-	12.5%	3.3%	2.1%	0%		-	1.4%	0.2%	2%	0%		-	3.7%	3.5%	0.7%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: FIRST RD E & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

Start Time	N Approach FIRST ROAD						E Approach GREEN MOUNTAIN ROAD						S Approach FIRST ROAD						W Approach GREEN MOUNTAIN RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:30:00	1	31	0	0	0	32	0	40	2	0	0	42	1	32	1	0	0	34	4	8	11	0	0	23	131
2025-09-17 07:45:00	4	22	0	0	0	26	0	39	3	0	0	42	0	31	2	0	0	33	3	14	4	0	0	21	122
2025-09-17 08:00:00	11	26	0	0	0	37	0	22	1	0	0	23	0	26	1	0	0	27	4	18	8	0	0	30	117
2025-09-17 08:15:00	10	24	0	0	0	34	0	29	1	0	0	30	0	26	6	0	0	32	2	14	5	0	0	21	117
Grand Total	26	103	0	0	0	129	0	130	7	0	0	137	1	115	10	0	0	126	13	54	28	0	0	95	**487**
Approach%	20.2%	79.8%	0%	0%		-	0%	94.9%	5.1%	0%		-	0.8%	91.3%	7.9%	0%		-	13.7%	56.8%	29.5%	0%		-	**-**
Totals %	5.3%	21.1%	0%	0%		26.5%	0%	26.7%	1.4%	0%		28.1%	0.2%	23.6%	2.1%	0%		25.9%	2.7%	11.1%	5.7%	0%		19.5%	**-**
PHF	0.59	0.83	0	0		0.87	0	0.81	0.58	0		0.82	0.25	0.9	0.42	0		0.93	0.81	0.75	0.64	0		0.79	0.93
Heavy	2	1	0	0		3	0	3	1	0		4	0	0	1	0		1	0	2	1	0		3	11
Heavy %	7.7%	1%	0%	0%		2.3%	0%	2.3%	14.3%	0%		2.9%	0%	0%	10%	0%		0.8%	0%	3.7%	3.6%	0%		3.2%	2.3%
Lights	24	102	0	0		126	0	127	6	0		133	1	115	9	0		125	13	52	27	0		92	476
Lights %	92.3%	99%	0%	0%		97.7%	0%	97.7%	85.7%	0%		97.1%	100%	100%	90%	0%		99.2%	100%	96.3%	96.4%	0%		96.8%	97.7%
Single-Unit Trucks	1	1	0	0		2	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	3
Single-Unit Trucks %	3.8%	1%	0%	0%		1.6%	0%	0%	14.3%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.6%
Buses	1	0	0	0		1	0	2	0	0		2	0	0	1	0		1	0	1	1	0		2	6
Buses %	3.8%	0%	0%	0%		0.8%	0%	1.5%	0%	0%		1.5%	0%	0%	10%	0%		0.8%	0%	1.9%	3.6%	0%		2.1%	1.2%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	2
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.1%	0.4%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: FIRST RD E & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach FIRST ROAD						E Approach GREEN MOUNTAIN ROAD						S Approach FIRST ROAD						W Approach GREEN MOUNTAIN RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	14	54	1	0	0	69	0	30	1	0	0	31	3	27	3	0	0	33	4	41	5	0	0	50	183
2025-09-17 16:45:00	32	70	1	0	0	103	1	33	0	0	0	34	1	34	1	0	0	36	5	42	5	1	0	53	226
2025-09-17 17:00:00	25	60	3	0	0	88	0	45	4	0	0	49	6	16	5	0	0	27	6	37	5	0	0	48	212
2025-09-17 17:15:00	20	56	2	0	0	78	1	36	2	0	0	39	4	9	7	0	0	20	4	59	4	0	1	67	204
Grand Total	91	240	7	0	0	338	2	144	7	0	0	153	14	86	16	0	0	116	19	179	19	1	1	218	**825**
Approach%	26.9%	71%	2.1%	0%		-	1.3%	94.1%	4.6%	0%		-	12.1%	74.1%	13.8%	0%		-	8.7%	82.1%	8.7%	0.5%		-	**-**
Totals %	11%	29.1%	0.8%	0%		41%	0.2%	17.5%	0.8%	0%		18.5%	1.7%	10.4%	1.9%	0%		14.1%	2.3%	21.7%	2.3%	0.1%		26.4%	**-**
PHF	0.71	0.86	0.58	0		0.82	0.5	0.8	0.44	0		0.78	0.58	0.63	0.57	0		0.81	0.79	0.76	0.95	0.25		0.81	0.91
Heavy	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	5
Heavy %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.4%	0.6%
Lights	90	240	7	0		337	2	142	7	0		151	14	86	16	0		116	19	176	18	1		214	818
Lights %	98.9%	100%	100%	0%		99.7%	100%	98.6%	100%	0%		98.7%	100%	100%	100%	0%		100%	100%	98.3%	94.7%	100%		98.2%	99.2%
Single-Unit Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	3	0	0		3	4
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.4%	0.5%
Buses	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Buses %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	2
Bicycles on Road %	1.1%	0%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	5.3%	0%		0.5%	0.2%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Few Clouds (14 °C)**

Crozier & Associates
SUITE 301 211 YONGE
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TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**

Spectrum

Turning Movement Count
Location Name: SECOND RD E & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (19 . SECOND RD E & GREEN MOUNTAIN RD E)

Start Time	N Approach SECOND RD E						E Approach GREEN MOUNTAIN RD E						S Approach SECOND RD E						W Approach GREEN MOUNTAIN RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-17 06:00:00	0	4	0	0	0	4	0	4	0	0	0	4	0	5	5	0	0	10	0	6	3	0	0	9	27	
2025-09-17 06:15:00	2	3	0	0	0	5	2	9	0	0	0	11	1	13	7	0	0	21	1	5	0	0	0	6	43	
2025-09-17 06:30:00	2	8	0	0	0	10	0	8	2	0	0	10	0	19	13	0	0	32	1	5	2	0	0	8	60	
2025-09-17 06:45:00	1	8	0	0	0	9	0	6	0	0	0	6	0	9	16	0	0	25	4	8	1	0	0	13	53	183
2025-09-17 07:00:00	4	17	0	0	0	21	0	16	0	0	0	16	0	11	11	0	0	22	4	11	2	0	0	17	76	232
2025-09-17 07:15:00	2	10	0	0	0	12	1	15	3	0	0	19	0	23	15	0	0	38	4	10	3	0	0	17	86	275
2025-09-17 07:30:00	5	20	0	0	0	25	1	22	2	0	0	25	0	43	13	0	0	56	1	5	2	0	0	8	114	329
2025-09-17 07:45:00	5	13	1	0	0	19	1	24	0	0	0	25	1	31	13	0	0	45	2	11	1	0	0	14	103	379
2025-09-17 08:00:00	4	17	1	0	0	22	0	14	3	0	0	17	0	20	1	0	0	21	4	12	2	0	0	18	78	381
2025-09-17 08:15:00	2	14	0	0	0	16	1	18	1	0	0	20	2	20	10	0	0	32	5	8	3	0	0	16	84	379
2025-09-17 08:30:00	0	21	1	0	0	22	3	14	1	0	0	18	2	24	7	0	0	33	3	10	2	0	0	15	88	353
2025-09-17 08:45:00	3	19	1	0	0	23	1	18	4	0	0	23	1	27	3	0	0	31	4	17	2	0	0	23	100	350
2025-09-17 09:00:00	3	22	0	0	0	25	1	9	2	0	0	12	3	10	4	0	0	17	8	21	1	0	0	30	84	356
2025-09-17 09:15:00	6	8	1	0	0	15	0	10	2	0	0	12	1	15	6	0	0	22	3	12	2	0	0	17	66	338
2025-09-17 09:30:00	4	13	1	0	0	18	4	20	2	0	0	26	2	20	5	0	0	27	4	9	2	0	0	15	86	336
2025-09-17 09:45:00	2	8	0	0	0	10	0	12	1	0	0	13	0	5	4	0	0	9	2	12	0	0	0	14	46	282
BREAK																										
2025-09-17 15:00:00	3	29	1	0	0	33	0	19	1	0	0	20	2	10	6	0	0	18	7	11	4	0	0	22	93	
2025-09-17 15:15:00	1	33	3	0	0	37	0	15	0	0	0	15	2	18	4	0	0	24	7	25	3	0	0	35	111	
2025-09-17 15:30:00	1	34	2	0	1	37	1	17	4	0	0	22	1	18	3	0	0	22	8	19	2	0	0	29	110	
2025-09-17 15:45:00	7	46	6	0	0	59	4	21	2	0	0	27	2	20	8	0	0	30	7	20	3	0	0	30	146	460
2025-09-17 16:00:00	8	41	3	0	0	52	2	23	1	0	0	26	1	18	4	0	0	23	8	22	6	0	0	36	137	504
2025-09-17 16:15:00	7	47	3	0	0	57	3	23	3	0	0	29	0	20	2	0	0	22	7	12	2	0	0	21	129	522
2025-09-17 16:30:00	8	54	4	0	0	66	3	18	3	0	0	24	1	25	3	0	0	29	11	25	6	0	0	42	161	573
2025-09-17 16:45:00	15	66	2	0	0	83	1	21	1	0	0	23	1	11	4	0	0	16	14	18	5	0	0	37	159	586
2025-09-17 17:00:00	17	50	1	0	0	68	1	31	1	0	0	33	3	28	12	0	0	43	11	16	4	0	0	31	175	624
2025-09-17 17:15:00	14	67	2	0	0	83	0	26	0	0	0	26	0	17	4	0	0	21	21	22	5	0	0	48	178	673
2025-09-17 17:30:00	3	31	0	0	0	34	5	21	2	0	0	28	0	24	5	0	0	29	6	14	3	0	0	23	114	626
2025-09-17 17:45:00	4	23	4	0	0	31	2	19	1	0	0	22	1	25	6	0	0	32	8	14	1	0	0	23	108	575
2025-09-17 18:00:00	8	22	2	0	0	32	1	13	2	0	0	16	1	18	4	0	0	23	6	15	4	0	0	25	96	496
2025-09-17 18:15:00	24	18	2	0	0	44	1	18	0	0	0	19	2	12	7	0	0	21	4	11	5	0	0	20	104	422
2025-09-17 18:30:00	8	16	1	0	0	25	2	14	1	0	0	17	1	19	2	0	0	22	5	15	6	0	0	26	90	398
2025-09-17 18:45:00	9	18	1	0	0	28	1	11	1	0	0	13	1	8	1	0	0	10	9	10	5	0	0	24	75	365
Grand Total	182	800	43	0	1	1025	42	529	46	0	0	617	32	586	208	0	0	826	189	431	92	0	0	712	**3180**	-
Approach%	17.8%	78%	4.2%	0%		-	6.8%	85.7%	7.5%	0%		-	3.9%	70.9%	25.2%	0%		-	26.5%	60.5%	12.9%	0%		-	-	-
Totals %	5.7%	25.2%	1.4%	0%		32.2%	1.3%	16.6%	1.4%	0%		19.4%	1%	18.4%	6.5%	0%		26%	5.9%	13.6%	2.9%	0%		22.4%	-	-
Heavy	3	6	0	0		-	2	21	2	0		-	3	8	6	0		-	11	11	1	0		-	-	-
Heavy %	1.6%	0.8%	0%	0%		-	4.8%	4%	4.3%	0%		-	9.4%	1.4%	2.9%	0%		-	5.8%	2.6%	1.1%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:15 AM - 08:15 AM Weather: Few Clouds (14 °C)

Start Time	N Approach SECOND RD E						E Approach GREEN MOUNTAIN RD E						S Approach SECOND RD E						W Approach GREEN MOUNTAIN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 07:15:00	2	10	0	0	0	12	1	15	3	0	0	19	0	23	15	0	0	38	4	10	3	0	0	17	86
2025-09-17 07:30:00	5	20	0	0	0	25	1	22	2	0	0	25	0	43	13	0	0	56	1	5	2	0	0	8	114
2025-09-17 07:45:00	5	13	1	0	0	19	1	24	0	0	0	25	1	31	13	0	0	45	2	11	1	0	0	14	103
2025-09-17 08:00:00	4	17	1	0	0	22	0	14	3	0	0	17	0	20	1	0	0	21	4	12	2	0	0	18	78
Grand Total	16	60	2	0	0	78	3	75	8	0	0	86	1	117	42	0	0	160	11	38	8	0	0	57	**381**
Approach%	20.5%	76.9%	2.6%	0%		-	3.5%	87.2%	9.3%	0%		-	0.6%	73.1%	26.3%	0%		-	19.3%	66.7%	14%	0%		-	**-**
Totals %	4.2%	15.7%	0.5%	0%		20.5%	0.8%	19.7%	2.1%	0%		22.6%	0.3%	30.7%	11%	0%		42%	2.9%	10%	2.1%	0%		15%	**-**
PHF	0.8	0.75	0.5	0		0.78	0.75	0.78	0.67	0		0.86	0.25	0.68	0.7	0		0.71	0.69	0.79	0.67	0		0.79	0.84
Heavy	2	1	0	0		3	1	2	1	0		4	0	4	1	0		5	2	0	0	0		2	14
Heavy %	12.5%	1.7%	0%	0%		3.8%	33.3%	2.7%	12.5%	0%		4.7%	0%	3.4%	2.4%	0%		3.1%	18.2%	0%	0%	0%		3.5%	3.7%
Lights	14	59	2	0		75	2	72	7	0		81	1	113	41	0		155	9	38	8	0		55	366
Lights %	87.5%	98.3%	100%	0%		96.2%	66.7%	96%	87.5%	0%		94.2%	100%	96.6%	97.6%	0%		96.9%	81.8%	100%	100%	0%		96.5%	96.1%
Single-Unit Trucks	1	1	0	0		2	0	0	0	0		0	0	0	1	0		1	1	0	0	0		1	4
Single-Unit Trucks %	6.3%	1.7%	0%	0%		2.6%	0%	0%	0%	0%		0%	0%	0%	2.4%	0%		0.6%	9.1%	0%	0%	0%		1.8%	1%
Buses	1	0	0	0		1	1	1	1	0		3	0	4	0	0		4	1	0	0	0		1	9
Buses %	6.3%	0%	0%	0%		1.3%	33.3%	1.3%	12.5%	0%		3.5%	0%	3.4%	0%	0%		2.5%	9.1%	0%	0%	0%		1.8%	2.4%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.3%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: SECOND RD E & GREEN MOUNTAIN RD E
Date: Wed, Sep 17, 2025 Deployment Lead: Rey Fernandez

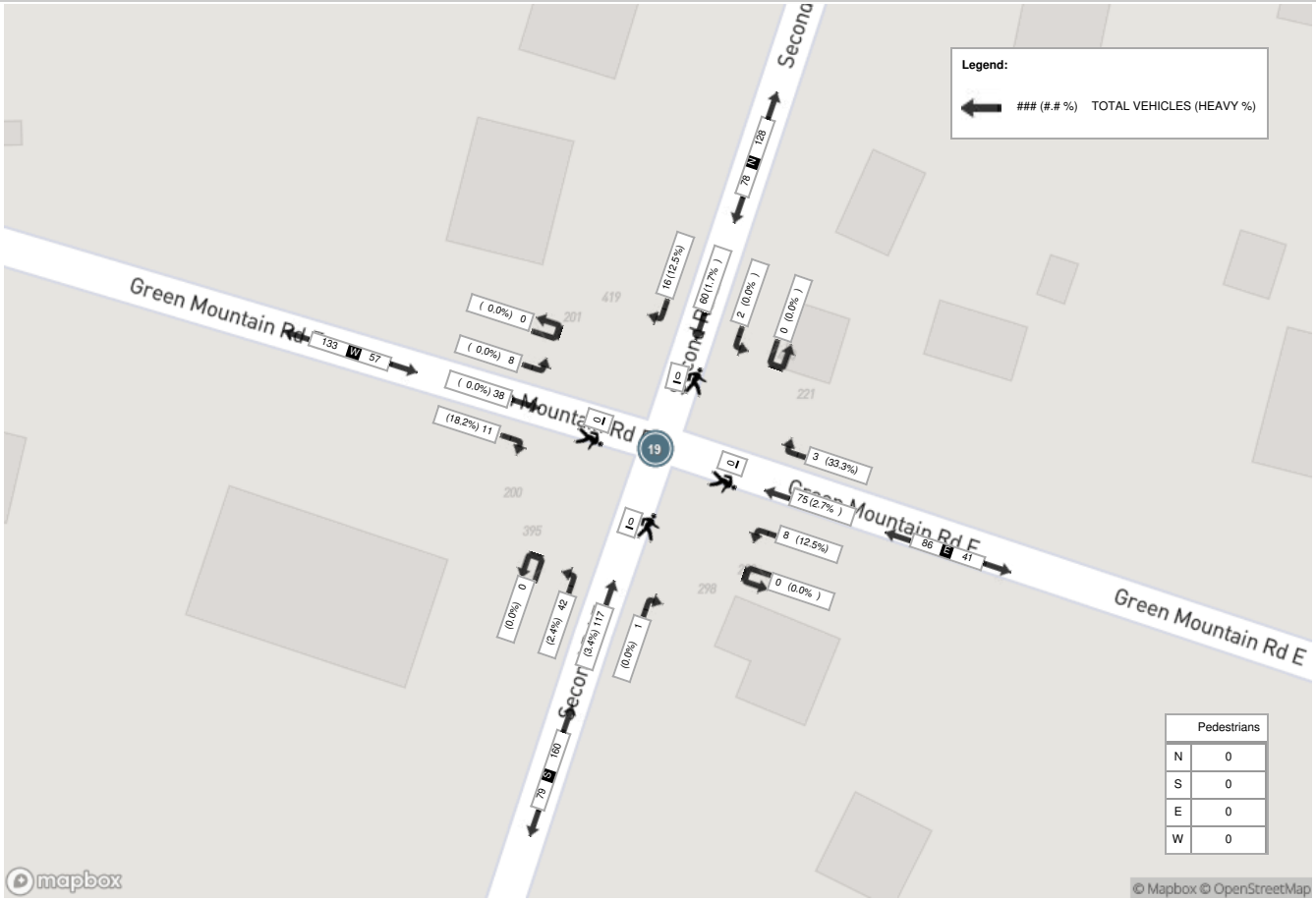
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (23 °C)

Start Time	N Approach SECOND RD E						E Approach GREEN MOUNTAIN RD E						S Approach SECOND RD E						W Approach GREEN MOUNTAIN RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-17 16:30:00	8	54	4	0	0	66	3	18	3	0	0	24	1	25	3	0	0	29	11	25	6	0	0	42	161
2025-09-17 16:45:00	15	66	2	0	0	83	1	21	1	0	0	23	1	11	4	0	0	16	14	18	5	0	0	37	159
2025-09-17 17:00:00	17	50	1	0	0	68	1	31	1	0	0	33	3	28	12	0	0	43	11	16	4	0	0	31	175
2025-09-17 17:15:00	14	67	2	0	0	83	0	26	0	0	0	26	0	17	4	0	0	21	21	22	5	0	0	48	178
Grand Total	54	237	9	0	0	300	5	96	5	0	0	106	5	81	23	0	0	109	57	81	20	0	0	158	**673**
Approach%	18%	79%	3%	0%		-	4.7%	90.6%	4.7%	0%		-	4.6%	74.3%	21.1%	0%		-	36.1%	51.3%	12.7%	0%		-	**-**
Totals %	8%	35.2%	1.3%	0%		44.6%	0.7%	14.3%	0.7%	0%		15.8%	0.7%	12%	3.4%	0%		16.2%	8.5%	12%	3%	0%		23.5%	**-**
PHF	0.79	0.88	0.56	0		0.9	0.42	0.77	0.42	0		0.8	0.42	0.72	0.48	0		0.63	0.68	0.81	0.83	0		0.82	0.95
Heavy	0	0	0	0		0	0	1	1	0		2	0	0	0	0		0	2	1	0	0		3	5
Heavy %	0%	0%	0%	0%		0%	0%	1%	20%	0%		1.9%	0%	0%	0%	0%		0%	3.5%	1.2%	0%	0%		1.9%	0.7%
Lights	54	237	9	0		300	5	95	4	0		104	5	81	23	0		109	55	80	20	0		155	668
Lights %	100%	100%	100%	0%		100%	100%	99%	80%	0%		98.1%	100%	100%	100%	0%		100%	96.5%	98.8%	100%	0%		98.1%	99.3%
Single-Unit Trucks	0	0	0	0		0	0	1	1	0		2	0	0	0	0		0	2	1	0	0		3	5
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1%	20%	0%		1.9%	0%	0%	0%	0%		0%	3.5%	1.2%	0%	0%		1.9%	0.7%
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

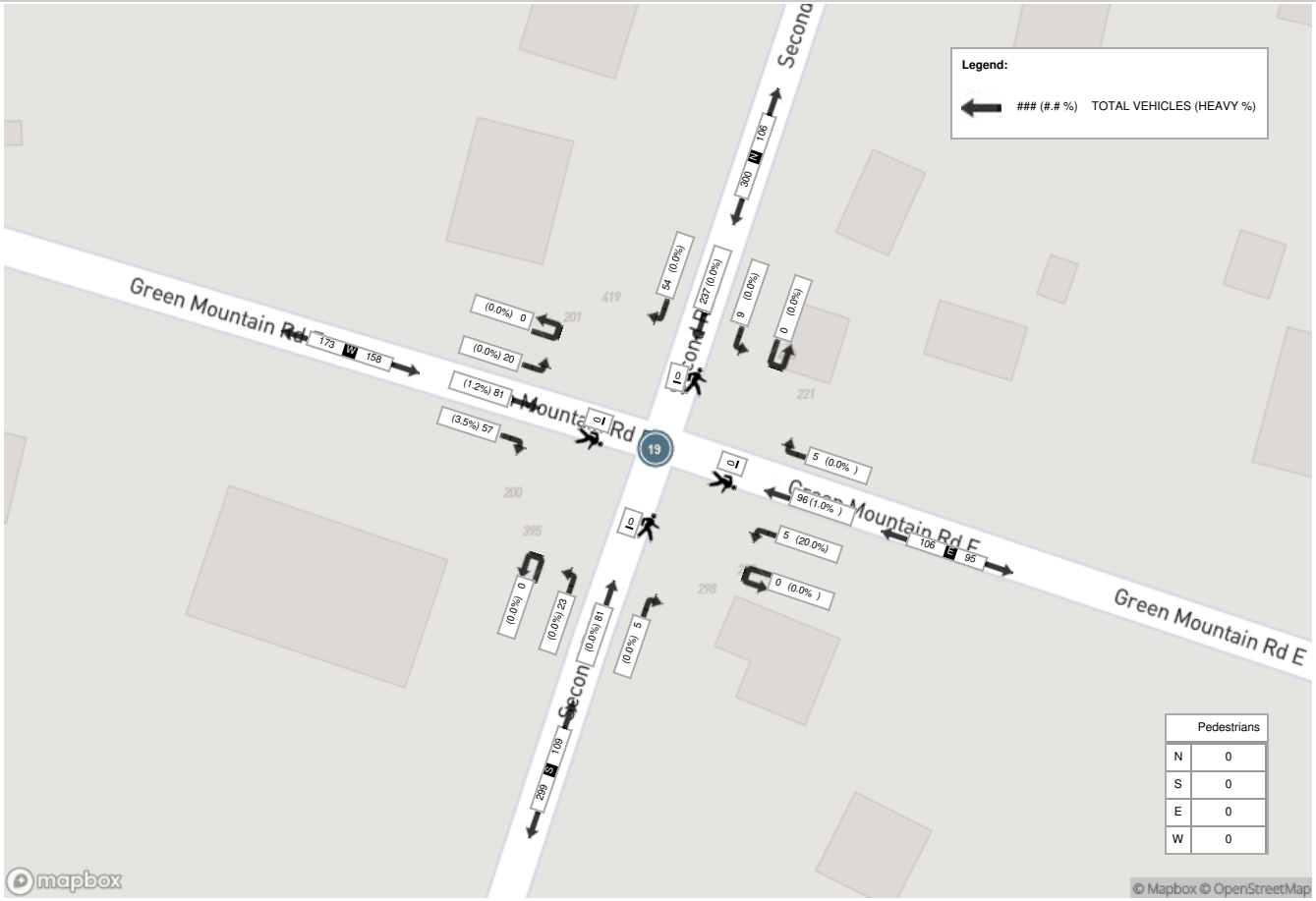
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 07:15 AM - 08:15 AM **Weather: Few Clouds (14 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Broken Clouds (23 °C)**



CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Thursday, September 18, 2025		Prepared Date:	Thursday, November 20, 2025
			Completed By:	JC
			Checked By:	EM
Location:	**Rymal Road E @ Upper Red Hill Valley Pkwy**			

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) SPLITS = G+A+R		
				WALK	PED CLR			AM SPLITS	OFF SPLITS	PM MAX
1										
2	Rymal Road E - EB		35			3.7	2.9	80	56	64
3										
4										
5	Rymal Road E - EB LT & SB RT Overlap	2	5			3		15	10	14
6	Rymal Road E - WB (North X-Walk)		35	12	20	3.7	2.9	65	46	50
7										
8	Upper Red Hill Valley Pkwy - SB & WB RT Overlap	3	20			3.3	3	40	44	56

Notes/Remarks
Signal operation type - Semi Actuated + Left Turn Actuated.

Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:30 - 9:30	COORD	AM	120	83
9:30 - 15:30, 18:00 - 23:00	COORD	OFF	100	25
15:30 - 18:00	COORD	PM	120	20
23:00 - 6:30	FREE	OVERNIGHT		

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Thursday, September 18, 2025	Hamilton	Prepared Date:	Thursday, November 20, 2025
			Completed By:	JC
			Checked By:	EM
Location:	**Rymal Road E @ Trinity Church Road**			

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) MAX = Green only, SPLITS = G+A+R		
				WALK	PED CLR			AM SPLITS	OFF SPLITS	PM SPLITS
1	Rymal Road E - WB LT	1	5			3	0			9
2	Rymal Road E - EB (South X-Walk)		10	12	17	3.7	2.5	69	60	70
3										
4	Trinity Church Road - NB (East X-Walk)	3	10	7	17	3.3	2.5	51	40	41
5										
6	Rymal Road E - WB		10			3.7	2.5	69	60	79
7										
8	Trinity Church Road - (West X-Walk)	3	10	7	17	3.3	2.5	51	40	41

Notes/Remarks
Signal operation type - Semi Actuated + Left Turn Actuated.
Phase 1 only operate during the PM Peak (15:30 - 18:00)

Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:30 - 9:30	COORD	AM	120	70
9:30-15:30, 18:00-23:00	COORD	OFF	100	20
15:30 - 18:00	COORD	PM	120	95
23:00 - 6:30	FREE	OVERNIGHT		

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Wednesday, August 13, 2025	Hamilton	Prepared Date:	Tuesday, September 2, 2025
			Completed By:	JC
			Checked By:	MF
Location:	**Rymal Road E @ Fletcher Road**			

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) MAX = Green only, SPLITS = G+A+R		
				WALK	PED CLR			AM SPLITS	OFF SPLITS	PM SPLITS
1	Rymal Road E - WB LT	1	5			3		10	9	12
2	Rymal Road E - EB (South X-Walk)		25	12	12	3.7	2.7	40	36	43
3										
4	Fletcher Road - NB (East X-Walk)	3	10	7	19	3.3	2.8	40	35	35
5										
6	Rymal Road E - WB		25			3.7	2.7	50	45	55
7										
8	Fletcher Road - SB (West X-Walk)	3	10	7	19	3.3	2.8	40	35	35

Notes/Remarks
Signal operation type - Semi Actuated.
Phase 1 omit overnight (22:00 - 6:30)

Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:30 - 9:30	COORD	AM	90	21
9:30-14:30, 18:00-23:00	COORD	OFF	80	21
14:30 - 18:00	COORD	PM	90	89
23:00 - 6:30	FREE	OVERNIGHT		

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	September 8, 2022	Prepared Date:	September 11, 2025
		Completed By:	JC
		Checked By:	MF
Location:	**Rymal Road E @ Second Street W / Kingsborough Drive**		

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) MAX = Green only, SPLITS = G+A+R		
				WALK	PED CLR			AM SPLITS	OFF SPLITS	PM SPLITS
1	Rymal Road E - WB LT	1	5			3		15	10	15
2	Rymal Road E - EB (South X-Walk)		30	7	14	3.7	2.4	69	54	69
3										
4	Kingsborough Drive - NB (East X-Walk)	2	10	12	15	3.3	3.7	36	36	36
5	Rymal Road E - EB LT	1	5			3		15	10	15
6	Rymal Road E - WB (North X-Walk)		30	7	14	3.7	2.4	69	54	69
7										
8	Second Street W - SB (West X-Walk)	3	10	12	15	3.3	3.7	36	36	36

Notes/Remarks
Signal operation type - Semi Actuated + Left Turn Actuated.
Phase 1 & 5 - Phase Omit (21:00 - 6:30)

Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:30 - 10:00	COORD	AM	120	1
10:00-14:30, 18:30-22:00	COORD	OFF	100	1
14:30 - 18:30	COORD	PM	120	1
22:00 - 6:30	FREE	OVERNIGHT		

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Monday, February 27, 2023	Hamilton	Prepared Date:	Thursday, September 4, 2025
			Completed By:	JC
			Checked By:	NY
Location:	**Regional Road 56 @ Golf Club Road**			

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Max Time Green Only (s)	
				WALK	PED CLR			AM/PM	OFF
1									
2	Regional Road 56 - NB	3	30			3.7	1.5	30	20
3									
4	Golf Club Road - WB (North X-Walk)	3	10	10	20	3.7	2.4	30	30
5									
6	Regional Road 56 - SB (West X-Walk)	3	30	20	7	3.7	1.5	30	20
7									
8	Golf Club Road - EB	3	10			3.7	2.4	30	30

Notes/Remarks
Signal operation type - Fully Actuated.

Time (Weekdays)	Operation	Peak
6:00 - 10:00	FREE	AM
All Other Time	FREE	OFF
14:30 - 18:30	FREE	PM

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Thursday, April 1, 2021		Prepared Date:	Friday, September 5, 2025
		Hamilton	Completed By:	JC
			Checked By:	MF
Location:	**Rymal Rd E / Regional Rd 20 @ Upper Centennial Pkwy / Regional Rd 56**			

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) SPLITS = G+A+R		
				WALK	PED CLR			AM SPLITS	OFF SPLITS	PM SPLITS
1	Regional Rd 20 - WB LT & NB RT Overlap	1	5			3		10	10	15
2	Rymal Rd E - EB (South X-Walk)		32	7	25	3.7	2.9	50	45	45
3	Upper Centennial Pkwy - SB LT & WB RT Overlap	2	5			3		15	12	17
4	Regional Rd 56 - NB (East X-Walk)		35	7	28	3.7	3	45	43	43
5	Rymal Rd E - EB LT & SB RT Overlap	2	5			3		20	15	15
6	Regional Rd 20 - WB (North X-Walk)		32	7	25	3.7	2.9	40	40	45
7	Regional Rd 56 - NB LT & EB RT Overlap	1	5			3		15	10	10
8	Upper Centennial Pkwy - SB (West X-Walk)		35	7	28	3.7	3	45	45	50

Notes/Remarks
Signal operation type - Fixed Time with all LT Actuated.

Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:00 - 10:00	COORD	AM	120	1
All Other Time	COORD	OFF	110	1
14:30 - 18:30	COORD	PM	120	1

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Friday, July 10, 2020		Prepared Date:	Thursday, September 4, 2025
		Hamilton	Completed By:	JC
			Checked By:	MF
Location:	**Regional Road 20 @ Hendershot Road / Second Road E**			

Phase #	**Street Name - Direction**	**Vehicle Extension** (s)	**Vehicle Minimum** (s)		**Amber** (s)	**All Red** (s)	**Max Time** Green Only (s)	
			AM/PM	**OFF**			**AM/PM**	**OFF**
1								
2	Regional Road 20 - EB	3	30	25	4.6	1.6	40	35
3								
4	Hendershot Road - NB	3	15	15	3.7	1.9	30	20
5								
6	Regional Road 20 - WB	3	30	25	4.6	1.6	40	35
7								
8	Second Road E - SB	3	15	15	3.7	1.9	30	20

Notes/Remarks
Signal operation type - Fully Actuated.

Time (Weekdays)	**Operation**	**Peak**
6:00 - 10:00	FREE	AM
All Other Time	FREE	OFF
14:30 - 18:30	FREE	PM

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Friday, May 29, 2015	Prepared Date:	Wednesday, September 3, 2025
		Completed By:	JC
		Checked By:	MF
Location:	**Upper Centennial Pkwy @ Highland Road**		

Phase #	**Street Name - Direction**	**Vehicle Extension** (s)	**Vehicle Minimum** (s)		**Pedestrian Minimum** (s)		**Amber** (s)	**All Red** (s)	**Max Time** Green Only (s)		
			AM/PM	**OFF**	**WALK**	**PED CLR**			**AM**	**OFF**	**PM**
1											
2	Upper Centennial Pkwy - NB (East X-Walk)	3	40	35	12	23	4.6	1.8	60	40	60
3											
4	Highland Road E - WB (North X-Walk)	2.5	15	15	7	23	3.3	3.1	40	30	30
5	Upper Centennial Pkwy - NB LT	2	5	5			3		15	10	15
6	Upper Centennial Pkwy - SB (West X-Walk)	3	40	35	12	23	4.6	1.8	60	40	60
7											
8	Highland Road W - EB (South X-Walk)	2.5	15	15	7	23	3.3	3.1	40	30	30

Notes/Remarks
Signal operation type - Fully Actuated.
Phase 5 - 1s Vehicle Extension (18:00 - 23:00)
Phase 2 & 6 - 50s Max time (18:00 - 23:00)

Time (Weekdays)	**Operation**	**Peak**
6:30 - 9:30	FREE	AM
All Other Time	FREE	OFF
16:30 - 19:00	FREE	PM

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Thursday, August 17, 2023	Hamilton	Prepared Date:	Wednesday, September 3, 2025
			Completed By:	JC
			Checked By:	MF

Location: **Upper Centennial Pkwy @ Mud Street**

Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Max Time Green Only (s)
				WALK	PED CLR			
1	Upper Centennial Pkwy - SB Prot LT	3	5			3	1.5	25
2	Upper Centennial Pkwy - NB (East X-Walk)	3	20	7	24	4.2	2.6	60
3	Mud Street E - WB LT	3	15			4.2	2.6	45
4	Mud Street W - EB (South X-Walk)	3	15	7	21	4.2	2.6	45
5	Upper Centennial Pkwy - NB Prot LT	3	10			3	1.5	25
6	Upper Centennial Pkwy - SB (West X-Walk)	4	20	7	29	4.2	2.6	60
7	Mud Street W - EB LT	3	15			4.2	2.6	45
8	Mud Street E - WB (North X-Walk)	3	15	7	26	4.2	2.6	45

Notes/Remarks
Signal operation type - Fully Actuated.
East / West Split Phasing.

Time (Weekdays)	Operation	Peak
6:30 - 9:30	FREE	AM
All Other Time	FREE	OFF
15:00 - 19:00	FREE	PM

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Monday, January 22, 2018	Prepared Date:	Wednesday, September 3, 2025
		Completed By:	JC
		Checked By:	MF
Location:	**Mud Street E @ First Road E**		

Phase #	Street Name - Direction	**Vehicle Extension** (s)			**Vehicle Minimum** (s)		**Amber** (s)	**All Red** (s)	**Max Time** Green Only (s)	
		AM	**OFF**	**PM**	**AM**	**OFF/PM**			**AM/PM**	**OFF**
1										
2	Mud Street E - EB	3	3	3	20	20	4.2	1.3	40	40
3										
4	First Road E - NB	3	3	3	20	15	3.7	1.4	30	30
5	Mud Street E - EB LT	3	2	3	5	5	3		20	15
6	Mud Street E - WB	3	3	3	20	20	4.2	1.3	40	40
7										
8	First Road E - SB	3	3	5	15	15	3.7	1.4	20	30

Notes/Remarks
Signal operation type - Semi Actuated.

Time (Weekdays)	Operation	Peak
6:30 - 10:00	FREE	AM
All Other Time	FREE	OFF
15:30 - 18:00	FREE	PM

CITY OF HAMILTON

Traffic Signal Timing Plan

Database Date:	Wednesday, November 29, 2023	Prepared Date:	Friday, September 5, 2025
		Completed By:	JC
		Checked By:	MF
Location:	**Upper Centennial Pkwy @ Green Mountain Rd**		

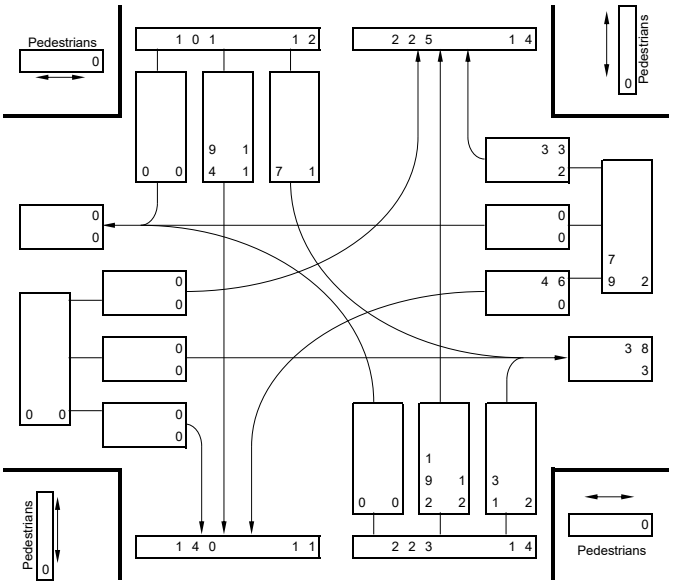
Phase #	Street Name - Direction	Vehicle Extension (s)	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	Time Period (s) SPLITS = G+A+R		
				WALK	PED CLR			AM SPLITS	OFF SPLITS	PM MAX
1	Upper Centennial Pkwy - SB LT	1	5			3		10	10	15
2	Upper Centennial Pkwy - NB (East X-Walk)		10	10	16	4.6	1.6	63	44	58
3	Green Mountain Rd - EB LT	1	5			3		10	9	10
4	Green Mountain Rd - WB (North X-Walk)	1	10	7	23	3.7	2.6	37	37	37
5	Upper Centennial Pkwy - NB Prot LT	2	7			3	1.5	12	12	12
6	Upper Centennial Pkwy - SB (West X-Walk)		10	10	16	4.6	1.6	61	42	61
7										
8	Green Mountain Rd - EB (South X-Walk)	1	10	7	23	3.7	2.6	47	46	47

Notes/Remarks
Signal operation type - Semi Actuated.

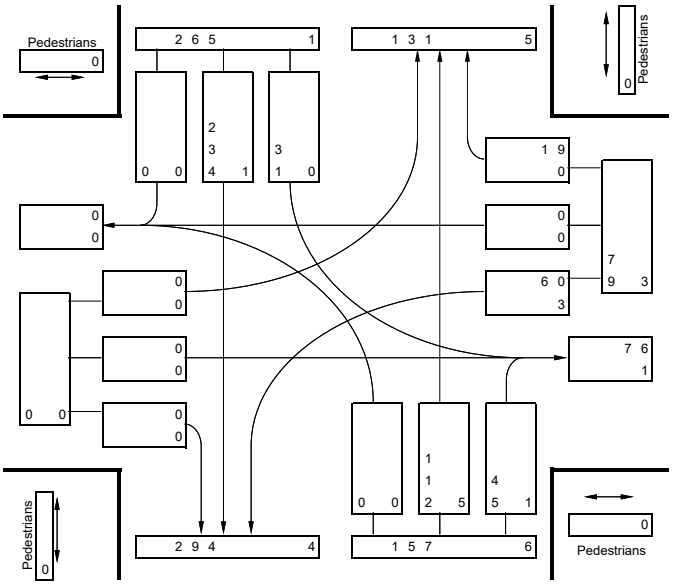
Time (Weekdays)	Operation	Peak	Cycle (s)	Offset (s)
6:00 - 9:30	COORD	AM	120	0
9:30 - 15:30, 18:00 - 20:00	COORD	OFF	100	0
15:30 - 18:00	COORD	PM	120	0
20:00 - 6:00	FREE	OVERNIGHT		

City of Hamilton **TURNING MOVEMENT FLOW CHART** Loc. Code: 58

Intersection: **Golf Club Rd** **at** **Trinity Church Rd** Total Vehicles: 2,367 Date: Wednesday
Direction: (East/West) (North/South) M.V.E./Year: 1.851 Feb 17, 2016
Road Condition: Wet Weather: Cloudy AWDT Factor: 2.3 Period: 7 hours
Comments:

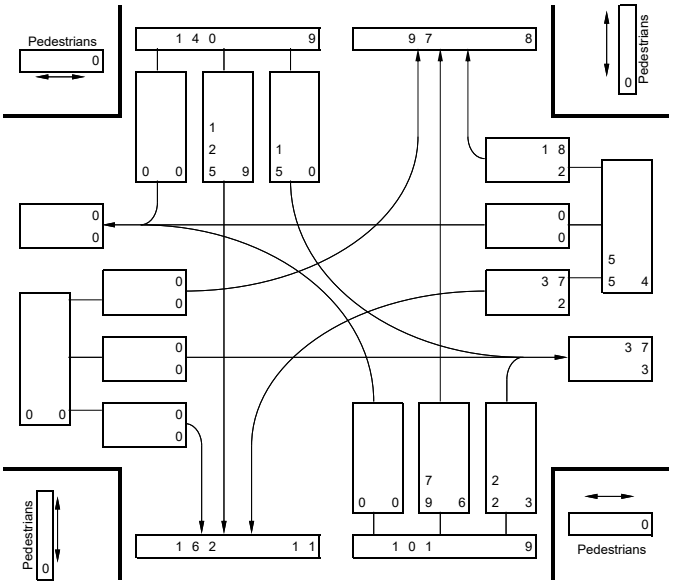


A.M. PEAK HOUR = 7:15 AM - 8:15 AM

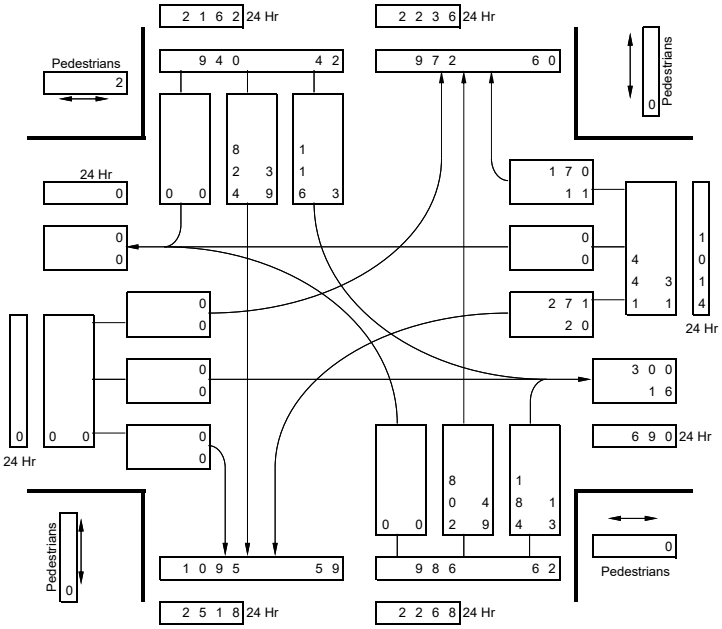


P.M. PEAK HOUR = 4:30 PM - 5:30 PM

N



NORMAL HOUR = 2:30 PM - 3:30 PM



7 Hr & 24 Hr TOTAL VOLUMES

City of Hamilton **TURNING MOVEMENT COUNT** Loc. Code: 58

Intersection: **Golf Club Rd** **at** **Trinity Church Rd** Total Vehicles: 2,367 Date: Wednesday
Direction: (East/West) (North/South) M.V.E./Year: 1.851 Feb 17, 2016
Road Condition: Wet Weather: Cloudy AWDT Factor: 2.3 Period: 7 hours
Comments:

TOTAL VEHICLES

15 mins. Ending	North Bd. on N/S			East Bd. on E/W			South Bd. on N/S			West Bd. on E/W			Total	Pedestrians			
(Pk.Hr.*)	L	S	R	L	S	R	L	S	R	L	S	R	Veh's	N side	E side	S side	W side
7:15	0	38	2	0	0	0	1	11	0	5	0	8	65	0	0	0	0
7:30 *	0	46	4	0	0	0	3	15	0	5	0	5	78	0	0	0	0
7:45 *	0	44	7	0	0	0	1	23	0	14	0	5	94	0	0	0	0
8:00 *	0	64	13	0	0	0	2	23	0	13	0	13	128	0	0	0	0
8:15 *	0	38	7	0	0	0	1	33	0	14	0	10	103	0	0	0	0
8:30	0	27	4	0	0	0	4	19	0	8	0	8	70	0	0	0	0
8:45	0	37	4	0	0	0	2	16	0	10	0	13	82	0	0	0	0
9:00	0	21	8	0	0	0	4	10	0	6	0	7	56	0	0	0	0
9:15	0	30	3	0	0	0	5	15	0	10	0	7	70	0	0	0	0
9:30	0	28	7	0	0	0	0	13	0	4	0	9	61	0	0	0	0
9:45	0	27	4	0	0	0	1	11	0	6	0	5	54	0	0	0	0
10:00	0	20	2	0	0	0	2	14	0	4	0	1	43	0	0	0	0
13:45	0	23	1	0	0	0	3	13	0	1	0	6	47	0	0	0	0
14:00	0	22	5	0	0	0	4	9	0	11	0	6	57	0	0	0	0
14:15	0	13	5	0	0	0	1	22	0	5	0	5	51	2	0	0	0
14:30	0	26	7	0	0	0	3	17	0	6	0	9	68	0	0	0	0
14:45 *	0	15	3	0	0	0	2	23	0	8	0	5	56	0	0	0	0
15:00 *	0	25	5	0	0	0	4	46	0	8	0	4	92	0	0	0	0
15:15 *	0	15	4	0	0	0	4	26	0	8	0	3	60	0	0	0	0
15:30 *	0	24	10	0	0	0	5	30	0	13	0	6	88	0	0	0	0
16:15	0	28	10	0	0	0	7	60	0	14	0	3	122	0	0	0	0
16:30	0	25	14	0	0	0	6	43	0	14	0	3	105	0	0	0	0
16:45 *	0	25	21	0	0	0	4	43	0	12	0	2	107	0	0	0	0
17:00 *	0	31	7	0	0	0	9	71	0	18	0	4	140	0	0	0	0
17:15 *	0	28	9	0	0	0	12	56	0	14	0	5	124	0	0	0	0
17:30 *	0	28	8	0	0	0	6	64	0	16	0	8	130	0	0	0	0
17:45	0	22	5	0	0	0	8	49	0	16	0	3	103	0	0	0	0
18:00	0	32	5	0	0	0	12	49	0	8	0	7	113	0	0	0	0
TOTAL	0	802	184	0	0	0	116	824	0	271	0	170		2	0	0	0
APPR.		986			0			940			441		2,367			2	

TRUCKS & BUSES

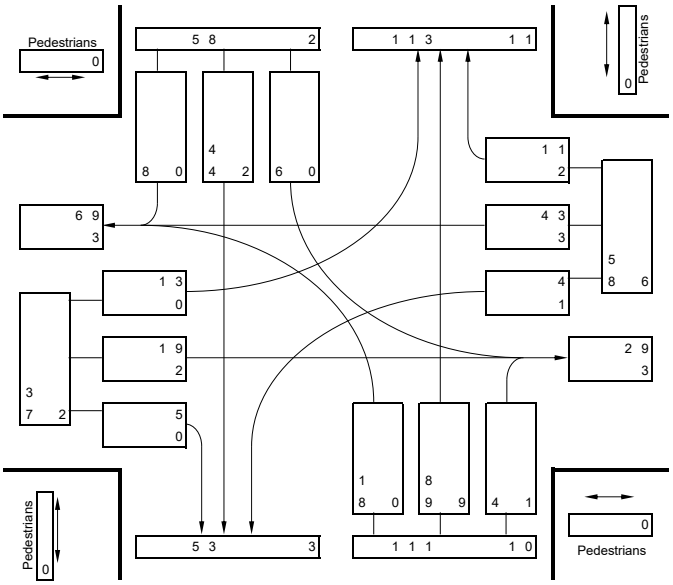
15 mins. Ending	North Bd. on N/S			East Bd. on E/W			South Bd. on N/S			West Bd. on E/W			
(Pk.Hr.*)	L	S	R	L	S	R	L	S	R	L	S	R	Total
7:15	0	2	1	0	0	0	0	2	0	1	0	0	6
7:30 *	0	2	1	0	0	0	1	3	0	0	0	0	7
7:45 *	0	3	0	0	0	0	0	3	0	0	0	0	6
8:00 *	0	7	1	0	0	0	0	5	0	0	0	2	15
8:15 *	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	1	0	0	0	0	0	0	0	0	0	1	2
8:45	0	1	2	0	0	0	0	1	0	2	0	0	6
9:00	0	2	0	0	0	0	1	1	0	1	0	1	6
9:15	0	0	0	0	0	0	1	2	0	3	0	0	6
9:30	0	0	0	0	0	0	0	1	0	0	0	0	1
9:45	0	1	0	0	0	0	0	3	0	0	0	0	4
10:00	0	3	1	0	0	0	0	2	0	1	0	0	7
13:45	0	1	0	0	0	0	0	1	0	0	0	0	2
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	1	0	0	0	0	0	0	0	0	0	1	2
14:30	0	6	1	0	0	0	0	1	0	2	0	4	14
14:45 *	0	1	1	0	0	0	0	1	0	2	0	1	6
15:00 *	0	1	0	0	0	0	0	6	0	0	0	0	7
15:15 *	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 *	0	4	2	0	0	0	0	2	0	0	0	1	9
16:15	0	6	1	0	0	0	0	2	0	3	0	0	12
16:30	0	1	1	0	0	0	0	1	0	2	0	0	5
16:45 *	0	2	1	0	0	0	0	0	0	1	0	0	4
17:00 *	0	1	0	0	0	0	0	1	0	1	0	0	3
17:15 *	0	1	0	0	0	0	0	0	0	0	0	0	1
17:30 *	0	1	0	0	0	0	0	0	0	1	0	0	2
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1
18:00	0	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL	0	49	13	0	0	0	3	39	0	20	0	11	
APPR.		62			0			42			31		135

TRUCKS

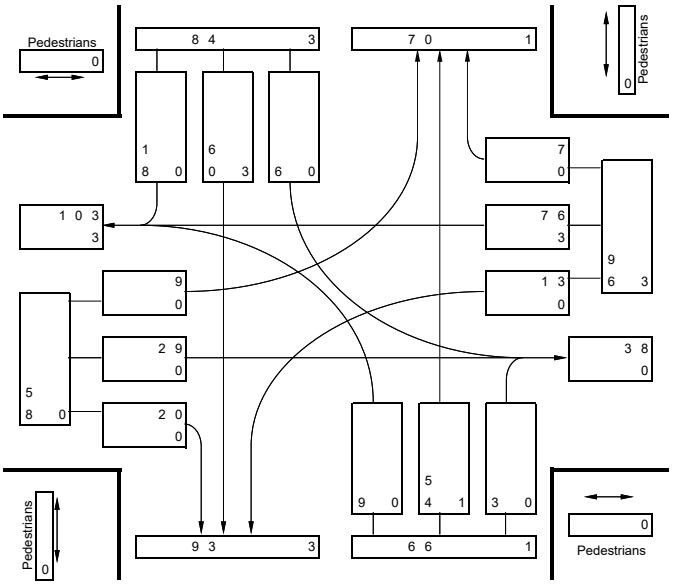
7:15	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 *	0	1	0	0	0	0	0	2	0	0	0	0	3
7:45 *	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 *	0	3	0	0	0	0	0	1	0	0	0	0	4
8:15 *	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	1	0	0	0	0	0	0	0	0	0	1	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	0	2	0	0	0	0	0	0	0	1	0	0	3
9:15	0	0	0	0	0	0	0	1	0	0	0	0	1
9:30	0	0	0	0	0	0	0	1	0	0	0	0	1
9:45	0	1	0	0	0	0	0	3	0	0	0	0	4
10:00	0	3	1	0	0	0	0	2	0	1	0	0	7
13:45	0	0	0	0	0	0	0	1	0	0	0	0	1
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	1	0	0	0	0	0	1	0	0	0	0	2
14:45 *	0	1	1	0	0	0	0	1	0	1	0	0	4
15:00 *	0	1	0	0	0	0	0	2	0	0	0	0	3
15:15 *	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 *	0	1	0	0	0	0	0	1	0	0	0	0	2
16:15	0	2	0	0	0	0	0	1	0	0	0	0	3
16:30	0	1	0	0	0	0	0	0	0	0	0	0	1
16:45 *	0	1	0	0	0	0	0	0	0	0	0	0	1
17:00 *	0	1	0	0	0	0	0	1	0	0	0	0	2
17:15 *	0	1	0	0	0	0	0	0	0	0	0	0	1
17:30 *	0	0	0	0	0	0	0	0	0	1	0	0	1
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1
18:00	0	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL	0	22	2	0	0	0	0	21	0	4	0	1	
APPR.		24			0			21			5		50

City of Hamilton **TURNING MOVEMENT FLOW CHART** Loc. Code: 61

Intersection: **Golf Club Rd** **at** **Fletcher Rd** Total Vehicles: 1,516 Date: Friday
Direction: (East/West) (North/South) M.V.E./Year: 1.077 Feb 19, 2016
Road Condition: Dry Weather: Overcast AWDT Factor: 2.09 Period: 7 hours
Comments:

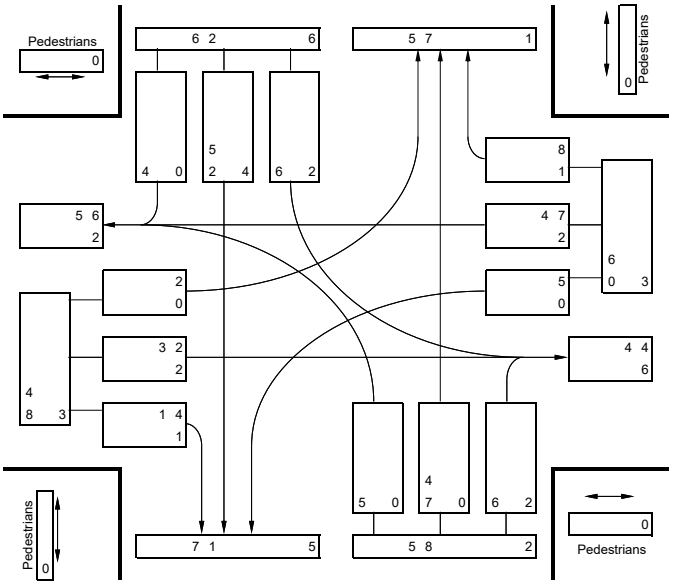


A.M. PEAK HOUR = 7:30 AM - 8:30 AM

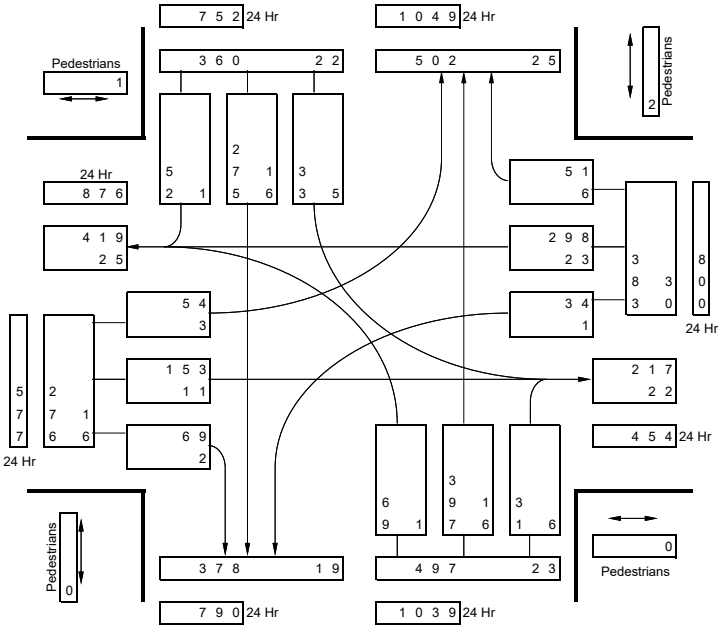


P.M. PEAK HOUR = 4:45 PM - 5:45 PM

N



NORMAL HOUR = 2:30 PM - 3:30 PM



7 Hr & 24 Hr TOTAL VOLUMES

City of Hamilton **TURNING MOVEMENT COUNT** Loc. Code: 61

Intersection: **Golf Club Rd** **at** **Fletcher Rd** Total Vehicles: 1,516 Date: Friday
Direction: (East/West) (North/South) M.V.E./Year: 1.077 Feb 19, 2016
Road Condition: Dry Weather: Overcast AWDT Factor: 2.09 Period: 7 hours
Comments:

TOTAL VEHICLES

15 mins. Ending	North Bd. on N/S			East Bd. on E/W			South Bd. on N/S			West Bd. on E/W			Total	Pedestrians			
(Pk.Hr.*)	L	S	R	L	S	R	L	S	R	L	S	R	Veh's	N side	E side	S side	W side
7:15	4	14	0	0	3	0	0	1	2	0	4	0	28	0	0	0	0
7:30	3	18	3	3	4	0	0	6	3	0	7	1	48	1	1	0	0
7:45 *	1	23	1	3	6	0	0	12	0	1	6	3	56	0	0	0	0
8:00 *	6	33	1	2	5	0	3	13	4	1	16	4	88	0	0	0	0
8:15 *	4	18	2	2	3	5	1	10	4	0	13	3	65	0	0	0	0
8:30 *	7	15	0	6	5	0	2	9	0	2	8	1	55	0	0	0	0
8:45	1	13	1	3	2	0	2	8	1	0	10	1	42	0	0	0	0
9:00	5	13	0	1	7	0	1	2	0	0	9	1	39	0	0	0	0
9:15	0	14	1	5	1	2	1	6	1	0	13	5	49	0	0	0	0
9:30	1	11	1	1	3	1	1	11	1	1	5	2	39	0	0	0	0
9:45	5	10	1	0	5	1	2	6	3	1	7	1	42	0	1	0	0
10:00	2	10	3	1	1	2	1	8	0	1	9	1	39	0	0	0	0
13:45	2	10	1	0	9	0	0	6	1	3	4	3	39	0	0	0	0
14:00	1	14	0	3	6	0	1	6	1	0	6	0	38	0	0	0	0
14:15	1	11	1	3	5	3	1	5	3	0	2	0	35	0	0	0	0
14:30	1	17	1	2	2	1	1	4	2	1	10	2	44	0	0	0	0
14:45 *	2	13	0	1	6	2	3	12	0	0	11	4	54	0	0	0	0
15:00 *	1	10	2	1	12	3	0	11	2	3	13	2	60	0	0	0	0
15:15 *	0	11	2	0	6	3	2	15	1	2	11	0	53	0	0	0	0
15:30 *	2	13	2	0	8	6	1	14	1	0	12	2	61	0	0	0	0
16:15	1	14	2	1	6	7	2	11	3	0	5	3	55	0	0	0	0
16:30	6	13	1	3	11	5	1	11	1	1	10	3	66	0	0	0	0
16:45	3	12	1	2	5	3	1	17	0	2	21	1	68	0	0	0	0
17:00 *	3	9	1	1	2	6	2	13	5	3	14	1	60	0	0	0	0
17:15 *	3	14	1	1	10	6	0	19	6	5	14	1	80	0	0	0	0
17:30 *	1	14	0	4	11	4	0	9	4	3	30	3	83	0	0	0	0
17:45 *	2	17	1	3	6	4	4	19	3	2	18	2	81	0	0	0	0
18:00	1	13	1	2	3	5	0	11	0	2	10	1	49	0	0	0	0
TOTAL	69	397	31	54	153	69	33	275	52	34	298	51		1	2	0	0
APPR.		497			276			360			383		1,516			3	

TRUCKS & BUSES

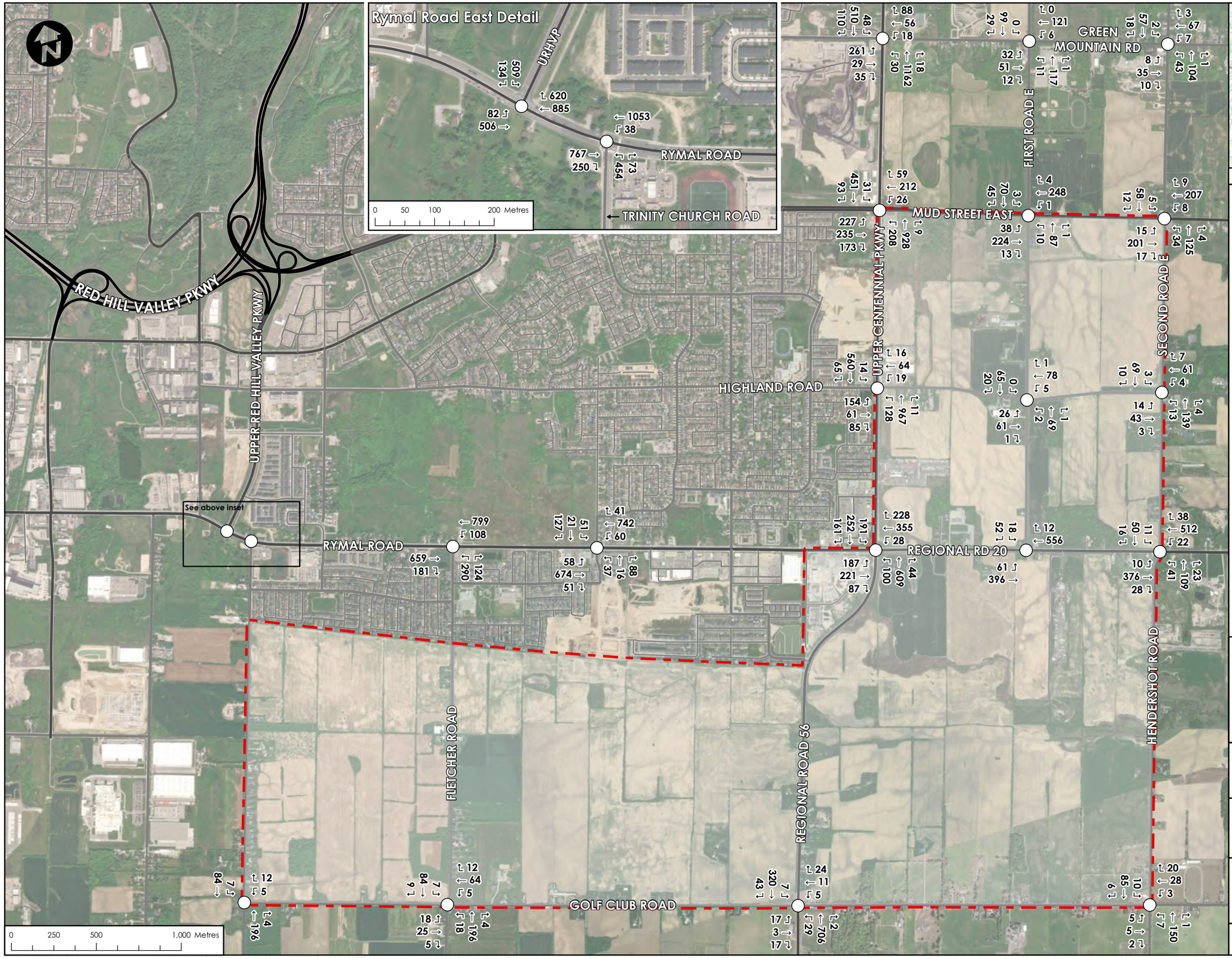
15 mins. Ending	North Bd. on N/S			East Bd. on E/W			South Bd. on N/S			West Bd. on E/W			
(Pk.Hr.*)	L	S	R	L	S	R	L	S	R	L	S	R	Total
7:15	0	0	0	0	1	0	0	1	0	0	1	0	3
7:30	0	1	1	0	2	0	0	0	0	0	0	0	4
7:45 *	0	4	0	0	0	0	0	0	0	1	0	1	6
8:00 *	0	2	1	0	1	0	0	2	0	0	3	0	9
8:15 *	0	2	0	0	0	0	0	0	0	0	0	1	3
8:30 *	0	1	0	0	1	0	0	0	0	0	0	0	2
8:45	0	1	0	1	0	0	2	2	0	0	1	1	8
9:00	1	0	0	1	1	0	0	0	0	0	0	0	3
9:15	0	0	0	0	0	0	0	0	0	0	4	0	4
9:30	0	1	0	0	1	0	0	1	0	0	0	0	3
9:45	0	1	0	0	0	0	0	1	0	0	0	0	2
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	1	0	1	0	0	0	0	0	0	4	1	7
14:45 *	0	0	0	0	0	0	0	0	0	0	1	1	2
15:00 *	0	0	0	0	0	0	0	1	0	0	0	0	1
15:15 *	0	0	1	0	1	0	1	1	0	0	0	0	4
15:30 *	0	0	1	0	1	1	1	2	0	0	1	0	7
16:15	0	0	2	0	0	1	1	0	1	0	1	1	7
16:30	0	1	0	0	0	0	0	2	0	0	2	0	5
16:45	0	0	0	0	1	0	0	0	0	0	2	0	3
17:00 *	0	0	0	0	0	0	0	0	0	0	1	0	1
17:15 *	0	0	0	0	0	0	0	3	0	0	0	0	3
17:30 *	0	0	0	0	0	0	0	0	0	0	1	0	1
17:45 *	0	1	0	0	0	0	0	0	0	0	1	0	2
18:00	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL	1	16	6	3	11	2	5	16	1	1	23	6	
APPR.		23			16			22			30		91

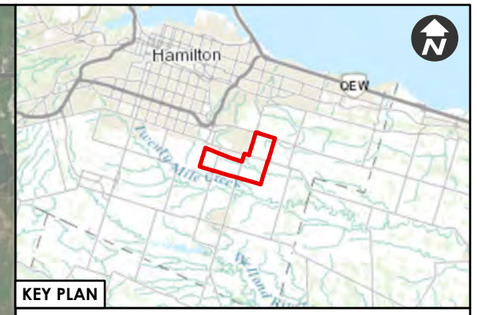
TRUCKS

7:15	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 *	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 *	0	0	0	0	0	0	0	1	0	0	2	0	3
8:15 *	0	2	0	0	0	0	0	0	0	0	0	0	2
8:30 *	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45	0	1	0	0	0	0	0	2	0	0	0	0	3
9:00	0	0	0	0	1	0	0	0	0	0	0	0	1
9:15	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	0	1	0	0	1	0	0	1	0	0	0	0	3
9:45	0	1	0	0	0	0	0	0	0	0	0	0	1
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	1	0	0	0	0	0	0	0	0	0	0	1
14:45 *	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 *	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 *	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 *	0	0	0	0	1	0	1	1	0	0	0	0	3
16:15	0	0	0	0	0	1	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 *	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 *	0	0	0	0	0	0	0	3	0	0	0	0	3
17:30 *	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 *	0	1	0	0	0	0	0	0	0	0	1	0	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	7	0	0	4	1	1	8	0	0	3	0	
APPR.		7			5			9			3		24

APPENDIX C:

Vissim Model Calibration Results





LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

NOTES

URHVP: Upper Red Hill Valley Parkway

Project:

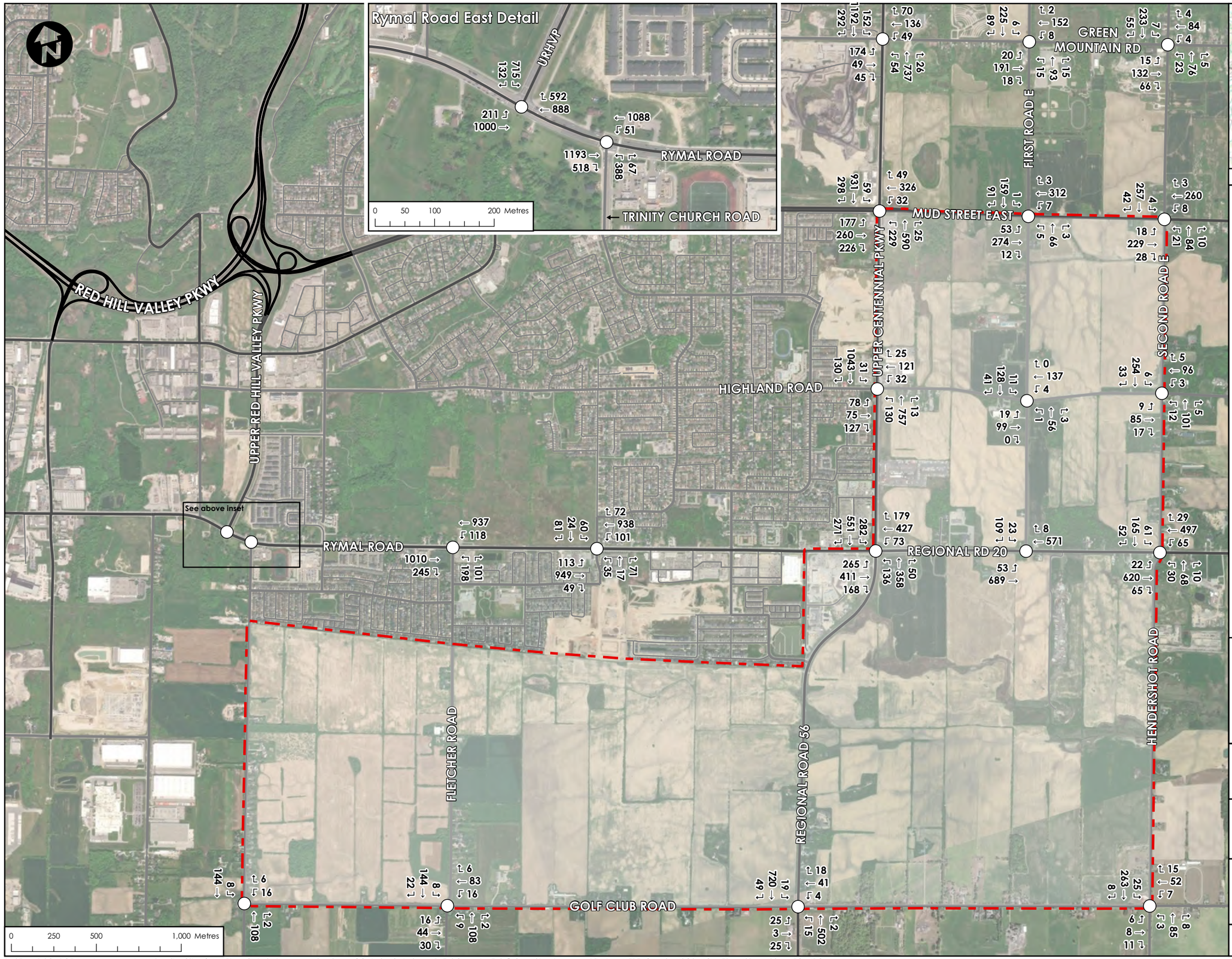
ELFRIDA SECONDARY PLAN

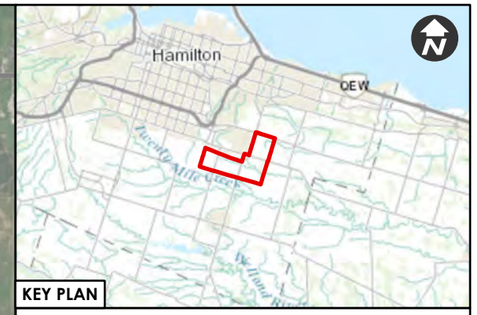
Title: MODELLED EXISTING TURNING MOVEMENT COUNTS A.M. PEAK HOUR

CROZIER

Date:	Drawn By:	Approved By:	Appendix
2026-04-23	D.M.	I.L.	C1

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan





LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

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NOTES

URHVP: Upper Red Hill Valley Parkway

Project:

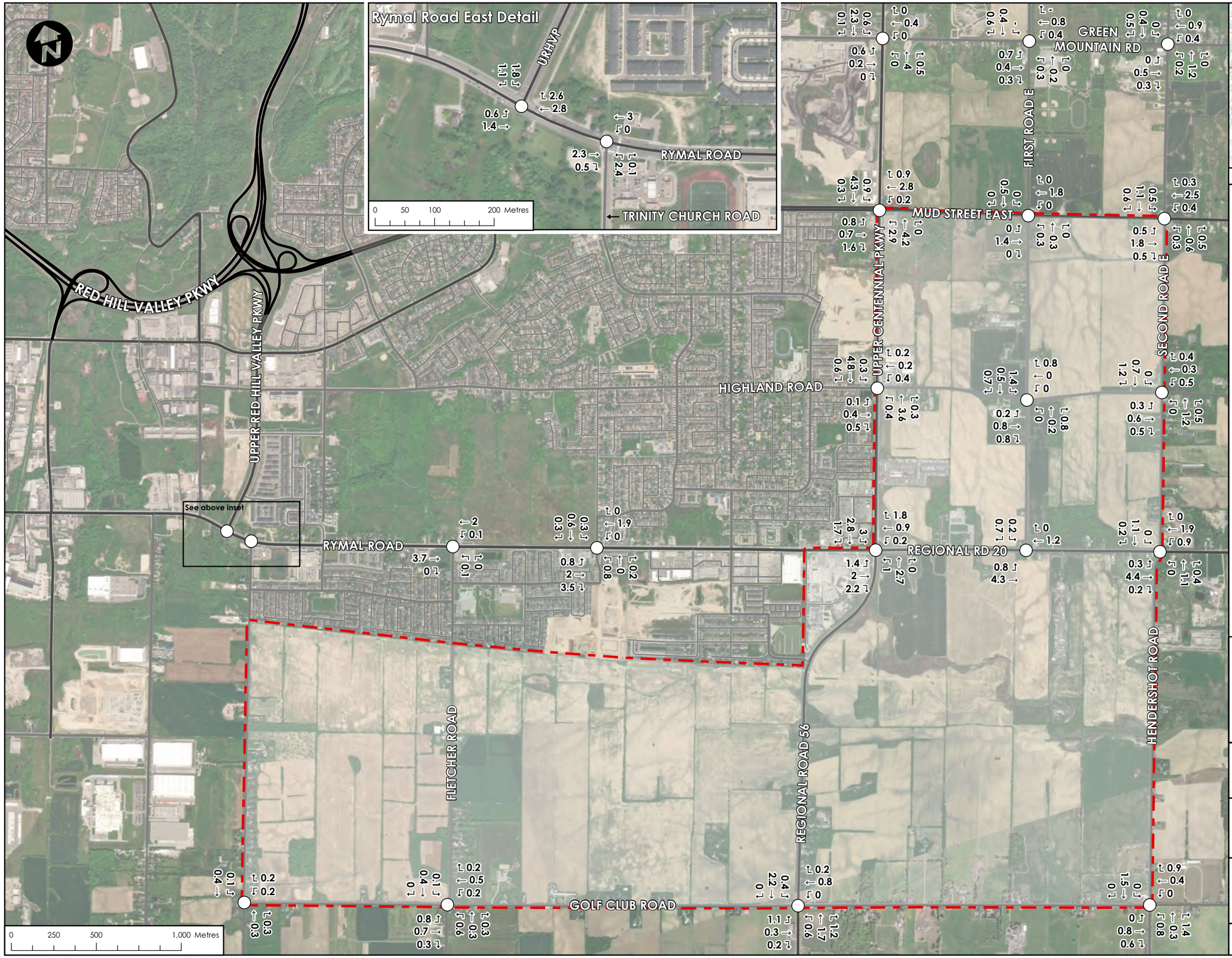
ELFRIDA SECONDARY PLAN

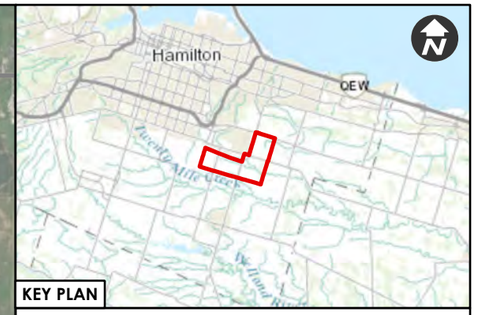
Title: MODELLED EXISTING TURNING MOVEMENT COUNTS P.M. PEAK HOUR

CROZIER

Date:	Drawn By:	Approved By:	Appendix
2026-04-23	D.M.	I.L.	C2

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan





LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
- ARTERIAL
- HIGHWAY / PARKWAY

NOTES

URHVP: Upper Red Hill Valley Parkway

$$GEH = \sqrt{\frac{2(M-C)^2}{M+C}}$$

Where:
M = Vissim Model Output Volume
C = Observed Turning Movement Count Volume

Project:

ELFRIDA SECONDARY PLAN

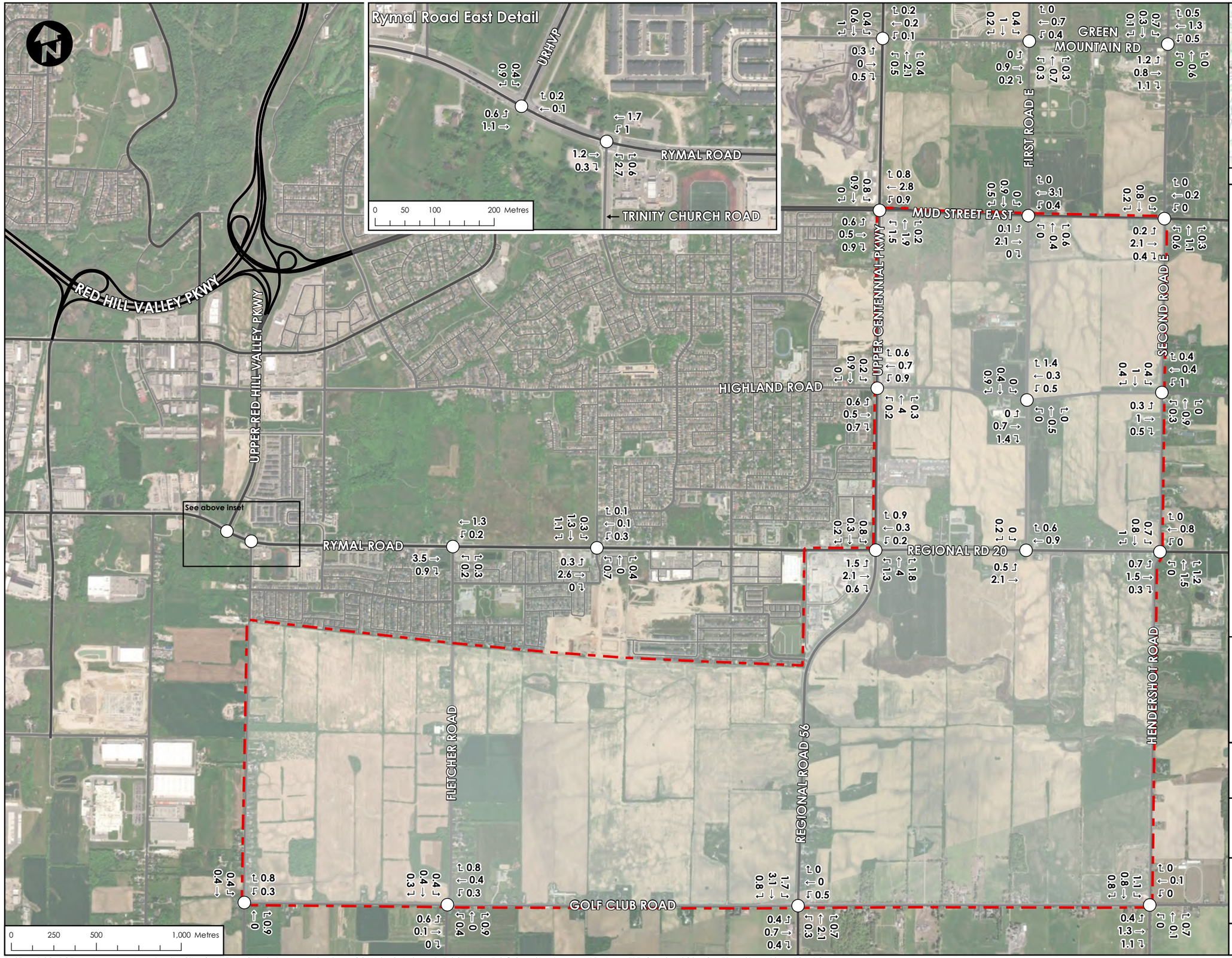
Title:

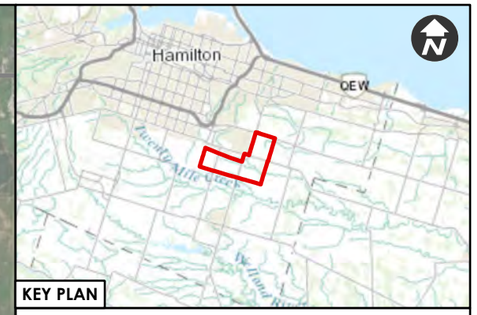
VISSIM MODEL GEH
A.M. PEAK HOUR

CROZIER

Date:	Drawn By:	Approved By:	Appendix
2026-04-23	D.M.	I.L.	C3

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan





LEGEND

- ELFRIDA BOUNDARY
- STUDY INTERSECTION

EXISTING ROAD (HAMILTON, 2024)

- LOCAL
- COLLECTOR
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NOTES

URHVP: Upper Red Hill Valley Parkway

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Where:
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Project:

ELFRIDA SECONDARY PLAN

Title:

VISSIM MODEL GEH
P.M. PEAK HOUR

CROZIER

Date:	Drawn By:	Approved By:	Appendix
2026-04-23	D.M.	I.L.	C4

BASE MAP SOURCE: Vantor, McMaster University, City of Hamilton, Ontario Base Map, Province of Ontario, Ontario MNR, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan

APPENDIX D:

Vissim Model Outputs

Vissim Outputs (AM Peak Hour)

230 / 2530	SimRun	TimeInt	Movement	QLen	QLenMax	Vehs(All)	Pers(All)	LOS(All)	LOSVal(All)	VehDelay(All)	PersDelay(All)	StopDelay(All)	Stops(All)	Movement\Direction
1	Average	1800-5400	1: Upper Red	3.83	57.20	506	506		1	8.19	8.19	4.43	0.29	NW-SE
2	Average	1800-5400	1: Upper Red	0.90	26.76	82	82		2	13.09	13.09	7.72	0.67	NW-NE
3	Average	1800-5400	1: Upper Red	23.89	100.83	509	509		4	44.34	44.34	35.50	0.82	NE-SE
4	Average	1800-5400	1: Upper Red	12.02	147.32	885	885		2	14.15	14.15	7.42	0.49	SE-NW
5	Average	1800-5400	1: Upper Red	7.50	130.42	620	620		2	12.32	12.32	1.14	0.64	SE-NE
6	Average	1800-5400	1: Upper Red	1.38	32.48	134	134		1	6.89	6.89	1.25	1.21	NE-NW
7	Average	1800-5400	1: Upper Red	8.25	153.21	2737	2737		2	17.87	17.87	10.37	0.59	Total
8	Average	1800-5400	2: Trinity Chu	5.20	77.16	767	767		1	6.49	6.49	3.03	0.18	NW-SE
9	Average	1800-5400	2: Trinity Chu	5.20	77.16	250	250		1	6.05	6.05	1.88	0.20	NW-S
10	Average	1800-5400	2: Trinity Chu	9.42	103.52	1053	1053		1	10.26	10.26	5.51	0.32	SE-NW
11	Average	1800-5400	2: Trinity Chu	42.46	180.13	454	454		4	45.55	45.55	37.52	0.87	S-NW
12	Average	1800-5400	2: Trinity Chu	0.39	16.66	73	73		1	5.26	5.26	0.76	1.03	S-SE
13	Average	1800-5400	2: Trinity Chu	0.65	18.57	38	38		3	20.98	20.98	15.07	1.28	SE-S
14	Average	1800-5400	2: Trinity Chu	11.62	180.13	2637	2637		2	14.87	14.87	9.97	0.40	Total
15	Average	1800-5400	3: Trinity Chu	0.01	3.41	280	280		1	0.85	0.85	0.14	0.03	N-S
16	Average	1800-5400	3: Trinity Chu	0.23	31.45	10	10		1	4.29	4.29	2.28	0.45	N-E
17	Average	1800-5400	3: Trinity Chu	0.00	0.00	490	490		1	0.65	0.65	0.00	0.00	S-N
18	Average	1800-5400	3: Trinity Chu	0.00	0.00	37	37		1	0.37	0.37	0.00	0.00	S-E
19	Average	1800-5400	3: Trinity Chu	1.86	29.84	40	40		2	10.31	10.31	1.85	1.47	E-N
20	Average	1800-5400	3: Trinity Chu	1.77	28.80	50	50		2	11.89	11.89	3.52	1.70	E-S
21	Average	1800-5400	3: Trinity Chu	0.77	33.22	909	909		1	1.79	1.79	0.34	0.18	Total
22	Average	1800-5400	4: Fletcher Rc	0.00	0.00	5	5		1	4.28	4.28	0.23	1.03	W-S
23	Average	1800-5400	4: Fletcher Rc	0.65	20.98	25	25		1	9.54	9.54	0.18	1.06	W-E
24	Average	1800-5400	4: Fletcher Rc	0.42	16.58	18	18		1	7.00	7.00	0.21	1.10	W-NE
25	Average	1800-5400	4: Fletcher Rc	2.74	38.05	18	18		1	8.46	8.46	0.52	1.37	S-W
26	Average	1800-5400	4: Fletcher Rc	0.22	23.40	4	4		1	7.99	7.99	0.36	1.32	S-E
27	Average	1800-5400	4: Fletcher Rc	4.61	44.70	196	196		2	11.69	11.69	0.27	1.17	S-NE
28	Average	1800-5400	4: Fletcher Rc	1.29	28.91	64	64		2	11.68	11.68	0.56	1.56	E-W
29	Average	1800-5400	4: Fletcher Rc	0.97	26.77	5	5		1	9.16	9.16	0.73	1.51	E-S
30	Average	1800-5400	4: Fletcher Rc	0.02	7.41	12	12		1	6.82	6.82	0.36	1.32	E-NE
31	Average	1800-5400	4: Fletcher Rc	0.05	12.79	9	9		1	7.91	7.91	0.34	1.67	NE-W
32	Average	1800-5400	4: Fletcher Rc	1.73	32.03	84	84		2	11.99	11.99	0.28	1.56	NE-S
33	Average	1800-5400	4: Fletcher Rc	1.64	31.58	7	7		1	7.53	7.53	0.47	1.70	NE-E
34	Average	1800-5400	4: Fletcher Rc	1.19	46.79	451	451		2	10.86	10.86	0.32	1.33	Total
35	Average	1800-5400	5: Fletcher Rc	12.25	106.22	181	181		2	12.17	12.17	5.98	0.57	W-S
36	Average	1800-5400	5: Fletcher Rc	12.39	106.00	659	659		2	14.83	14.83	8.41	0.51	W-E
37	Average	1800-5400	5: Fletcher Rc	13.40	81.52	290	290		3	26.66	26.66	20.00	0.74	S-W
38	Average	1800-5400	5: Fletcher Rc	9.52	107.86	799	799		2	12.07	12.07	7.12	0.46	E-W
39	Average	1800-5400	5: Fletcher Rc	2.63	29.29	108	108		3	23.88	23.88	16.30	1.14	E-S
40	Average	1800-5400	5: Fletcher Rc	0.67	20.83	124	124		1	5.02	5.02	0.45	0.85	S-E
41	Average	1800-5400	5: Fletcher Rc	8.48	115.34	2164	2164		2	15.07	15.07	9.23	0.58	Total
42	Average	1800-5400	6: Kingsborou	4.46	67.46	51	51		1	4.72	4.72	2.29	0.28	W-S
43	Average	1800-5400	6: Kingsborou	4.52	67.70	674	674		1	6.38	6.38	3.35	0.23	W-E
44	Average	1800-5400	6: Kingsborou	2.49	42.39	88	88		2	11.32	11.32	5.91	0.93	S-E
45	Average	1800-5400	6: Kingsborou	2.37	42.65	16	16		4	43.18	43.18	36.34	0.87	S-N
46	Average	1800-5400	6: Kingsborou	3.43	55.57	127	127		2	13.96	13.96	6.72	0.98	N-W
47	Average	1800-5400	6: Kingsborou	3.40	55.76	21	21		4	41.33	41.33	33.15	0.82	N-S
48	Average	1800-5400	6: Kingsborou	0.52	17.65	58	58		2	10.63	10.63	6.41	0.68	W-N
49	Average	1800-5400	6: Kingsborou	0.89	26.30	60	60		2	13.68	13.68	8.82	0.81	E-S
50	Average	1800-5400	6: Kingsborou	2.38	36.12	37	37		4	39.62	39.62	32.50	1.10	S-W
51	Average	1800-5400	6: Kingsborou	3.16	51.51	51	51		4	40.12	40.12	32.01	1.04	N-E
52	Average	1800-5400	6: Kingsborou	8.06	90.60	742	742		2	11.00	11.00	5.62	0.46	E-W
53	Average	1800-5400	6: Kingsborou	8.15	90.89	41	41		1	7.88	7.88	3.55	0.52	E-N
54	Average	1800-5400	6: Kingsborou	3.65	92.08	1971	1971		2	11.38	11.38	6.69	0.48	Total
55	Average	1800-5400	7: Hwy 56 & C	0.44	14.51	17	17		1	6.25	6.25	2.25	0.70	W-S
56	Average	1800-5400	7: Hwy 56 & C	0.42	14.33	3	3		1	5.75	5.75	3.16	0.17	W-E
57	Average	1800-5400	7: Hwy 56 & C	0.42	14.33	17	17		2	15.03	15.03	10.05	0.68	W-N
58	Average	1800-5400	7: Hwy 56 & C	44.61	235.17	2	2		3	21.16	21.16	14.08	0.93	S-E
59	Average	1800-5400	7: Hwy 56 & C	44.77	235.41	706	706		3	23.45	23.45	15.03	0.78	S-N
60	Average	1800-5400	7: Hwy 56 & C	0.70	15.05	29	29		3	30.02	30.02	21.51	1.39	S-W
61	Average	1800-5400	7: Hwy 56 & C	0.33	14.48	11	11		2	15.72	15.72	9.54	0.58	E-W
62	Average	1800-5400	7: Hwy 56 & C	0.33	14.48	5	5		2	9.91	9.91	6.45	0.48	E-S
63	Average	1800-5400	7: Hwy 56 & C	0.35	14.48	24	24		1	8.18	8.18	3.51	0.87	E-N
64	Average	1800-5400	7: Hwy 56 & C	11.45	153.18	320	320		2	16.76	16.76	9.84	0.59	N-S
65	Average	1800-5400	7: Hwy 56 & C	0.18	9.32	7	7		3	36.04	36.04	28.60	1.87	N-E
66	Average	1800-5400	7: Hwy 56 & C	0.07	12.45	43	43		1	10.86	10.86	5.32	0.72	N-W
67	Average	1800-5400	7: Hwy 56 & C	10.33	242.75	1187	1187		3	20.55	20.55	12.90	0.74	Total
68	Average	1800-5400	9: Hendersho	0.00	0.00	2	2		1	5.94	5.94	0.15	1.00	W-S
69	Average	1800-5400	9: Hendersho	0.18	19.38	5	5		1	9.18	9.18	0.14	1.00	W-E
70	Average	1800-5400	9: Hendersho	0.10	12.96	5	5		1	5.05	5.05	0.27	1.03	W-N
71	Average	1800-5400	9: Hendersho	1.76	29.48	7	7		1	6.58	6.58	0.45	1.24	S-W

72	Average	1800-5400	9: Hendersho	0.05	15.19	1	1	1	4.86	4.86	0.20	1.08	S-E
73	Average	1800-5400	9: Hendersho	1.86	29.89	150	150	2	10.57	10.57	0.24	1.11	S-N
74	Average	1800-5400	9: Hendersho	0.43	19.29	28	28	1	9.74	9.74	0.25	1.09	E-W
75	Average	1800-5400	9: Hendersho	0.41	19.19	3	3	1	6.65	6.65	0.22	1.09	E-S
76	Average	1800-5400	9: Hendersho	0.00	1.35	20	20	1	5.79	5.79	0.27	1.15	E-N
77	Average	1800-5400	9: Hendersho	0.21	20.44	6	6	1	6.76	6.76	0.18	1.05	N-W
78	Average	1800-5400	9: Hendersho	1.30	29.15	85	85	2	10.64	10.64	0.23	1.16	N-S
79	Average	1800-5400	9: Hendersho	1.12	27.84	10	10	1	6.94	6.94	0.20	1.11	N-E
80	Average	1800-5400	9: Hendersho	0.62	30.86	325	325	1	9.75	9.75	0.24	1.12	Total
81	Average	1800-5400	10: Hwy 56/U	25.23	109.91	609	609	4	37.36	37.36	29.19	0.79	S-N
82	Average	1800-5400	10: Hwy 56/U	4.15	41.07	100	100	3	25.74	25.74	19.55	0.66	S-W
83	Average	1800-5400	10: Hwy 56/U	0.05	17.19	44	44	1	8.25	8.25	2.08	0.72	S-E
84	Average	1800-5400	10: Hwy 56/U	8.52	53.66	355	355	3	23.41	23.41	17.12	0.70	E-W
85	Average	1800-5400	10: Hwy 56/U	0.34	27.78	87	87	1	4.27	4.27	0.29	0.57	W-S
86	Average	1800-5400	10: Hwy 56/U	6.81	66.39	187	187	2	20.01	20.01	13.69	0.63	W-N
87	Average	1800-5400	10: Hwy 56/U	8.79	56.04	252	252	3	29.98	29.98	22.92	0.64	N-S
88	Average	1800-5400	10: Hwy 56/U	14.96	87.03	191	191	4	40.50	40.50	29.80	1.19	N-E
89	Average	1800-5400	10: Hwy 56/U	1.86	60.63	161	161	1	9.03	9.03	0.60	1.10	N-W
90	Average	1800-5400	10: Hwy 56/U	0.87	20.37	28	28	3	19.00	19.00	14.49	0.57	E-S
91	Average	1800-5400	10: Hwy 56/U	2.68	59.84	228	228	2	10.04	10.04	1.72	1.13	E-N
92	Average	1800-5400	10: Hwy 56/U	3.66	37.49	221	221	2	15.00	15.00	10.37	0.40	W-E
93	Average	1800-5400	10: Hwy 56/U	6.49	110.07	2467	2467	3	24.78	24.78	17.52	0.78	Total
94	Average	1800-5400	11: Regional I	0.00	0.00	396	396	1	0.42	0.42	0.00	0.00	W-E
95	Average	1800-5400	11: Regional I	0.17	14.44	61	61	1	2.30	2.30	0.76	0.25	W-N
96	Average	1800-5400	11: Regional I	0.00	0.00	556	556	1	0.37	0.37	0.00	0.00	E-W
97	Average	1800-5400	11: Regional I	0.00	0.00	12	12	1	0.39	0.39	0.07	0.03	E-N
98	Average	1800-5400	11: Regional I	1.39	24.31	52	52	1	9.16	9.16	1.23	1.35	N-W
99	Average	1800-5400	11: Regional I	1.23	23.73	18	18	2	12.19	12.19	2.23	1.43	N-E
100	Average	1800-5400	11: Regional I	0.47	24.31	1099	1099	1	1.12	1.12	0.14	0.10	Total
101	Average	1800-5400	12: Hendersh	4.51	47.63	41	41	2	20.34	20.34	14.26	1.19	SW-W
102	Average	1800-5400	12: Hendersh	3.64	47.21	23	23	2	13.16	13.16	6.30	1.10	SW-E
103	Average	1800-5400	12: Hendersh	4.51	47.63	109	109	3	19.28	19.28	10.55	0.82	SW-N
104	Average	1800-5400	12: Hendersh	5.19	91.40	376	376	1	9.01	9.01	3.76	0.40	W-E
105	Average	1800-5400	12: Hendersh	0.07	24.50	512	512	1	1.02	1.02	0.08	0.03	E-W
106	Average	1800-5400	12: Hendersh	0.07	10.35	38	38	1	2.70	2.70	0.08	0.41	E-N
107	Average	1800-5400	12: Hendersh	0.16	9.02	22	22	2	11.24	11.24	6.85	0.85	E-SW
108	Average	1800-5400	12: Hendersh	1.47	24.45	50	50	2	16.83	16.83	9.97	0.75	N-SW
109	Average	1800-5400	12: Hendersh	1.44	24.28	16	16	1	9.55	9.55	3.24	1.09	N-W
110	Average	1800-5400	12: Hendersh	1.47	24.45	11	11	3	19.85	19.85	12.31	1.15	N-E
111	Average	1800-5400	12: Hendersh	0.08	9.40	10	10	1	7.33	7.33	3.85	0.51	W-N
112	Average	1800-5400	12: Hendersh	0.04	12.40	28	28	1	4.68	4.68	0.83	0.48	W-SW
113	Average	1800-5400	12: Hendersh	1.67	91.40	1240	1240	1	7.25	7.25	3.45	0.37	Total
114	Average	1800-5400	14: Upper Cer	13.19	123.26	11	11	2	10.39	10.39	5.39	0.60	S-E
115	Average	1800-5400	14: Upper Cer	13.69	123.49	967	967	2	13.30	13.30	7.76	0.47	S-N
116	Average	1800-5400	14: Upper Cer	2.09	39.61	128	128	2	12.52	12.52	8.05	0.62	S-W
117	Average	1800-5400	14: Upper Cer	2.19	27.37	61	61	3	23.85	23.85	19.26	0.65	W-E
118	Average	1800-5400	14: Upper Cer	0.24	17.63	85	85	1	4.84	4.84	1.10	0.88	W-S
119	Average	1800-5400	14: Upper Cer	7.37	59.48	154	154	3	28.11	28.11	20.43	1.06	W-N
120	Average	1800-5400	14: Upper Cer	8.95	100.99	560	560	2	15.21	15.21	8.76	0.48	N-S
121	Average	1800-5400	14: Upper Cer	0.26	12.37	14	14	2	19.81	19.81	13.68	1.17	N-E
122	Average	1800-5400	14: Upper Cer	0.16	21.59	65	65	1	5.06	5.06	0.51	0.50	N-W
123	Average	1800-5400	14: Upper Cer	2.35	27.65	64	64	3	22.51	22.51	17.16	0.59	E-W
124	Average	1800-5400	14: Upper Cer	1.41	27.57	16	16	2	9.23	9.23	6.16	0.65	E-N
125	Average	1800-5400	14: Upper Cer	0.70	15.67	19	19	3	25.61	25.61	19.94	1.04	E-S
126	Average	1800-5400	14: Upper Cer	4.38	125.98	2148	2148	2	14.89	14.89	9.18	0.56	Total
127	Average	1800-5400	15: First Rd E	0.63	22.77	2	2	1	6.28	6.28	0.31	1.25	S-NW
128	Average	1800-5400	15: First Rd E	0.17	19.79	1	1	1	5.24	5.24	0.14	1.00	S-E
129	Average	1800-5400	15: First Rd E	0.69	23.35	69	69	1	9.58	9.58	0.20	1.09	S-N
130	Average	1800-5400	15: First Rd E	0.20	19.22	1	1	2	9.94	9.94	0.37	1.61	NW-S
131	Average	1800-5400	15: First Rd E	1.16	28.56	61	61	1	9.92	9.92	0.24	1.15	NW-E
132	Average	1800-5400	15: First Rd E	1.06	27.69	26	26	1	6.56	6.56	0.25	1.18	NW-N
133	Average	1800-5400	15: First Rd E	0.91	22.26	5	5	1	6.57	6.57	0.26	1.03	E-S
134	Average	1800-5400	15: First Rd E	1.32	26.46	78	78	1	9.58	9.58	0.20	1.05	E-NW
135	Average	1800-5400	15: First Rd E	0.02	8.52	1	1	1	6.29	6.29	0.14	1.00	E-N
136	Average	1800-5400	15: First Rd E	1.27	30.62	65	65	2	11.10	11.10	0.46	1.25	N-S
137	Average	1800-5400	15: First Rd E	0.21	19.86	20	20	1	6.45	6.45	0.38	1.29	N-NW
138	Average	1800-5400	15: First Rd E	1.21	30.62	0	0	2	9.86	9.86	1.97	1.50	N-E
139	Average	1800-5400	15: First Rd E	0.74	34.27	334	334	1	9.43	9.43	0.28	1.15	Total
140	Average	1800-5400	16: Second R	2.20	37.99	13	13	1	8.91	8.91	0.43	1.31	S-W
141	Average	1800-5400	16: Second R	4.09	47.86	4	4	1	7.63	7.63	0.29	1.23	S-E
142	Average	1800-5400	16: Second R	2.40	38.79	139	139	2	11.69	11.69	0.29	1.24	S-N
143	Average	1800-5400	16: Second R	0.02	9.98	3	3	1	4.89	4.89	0.18	1.10	W-S
144	Average	1800-5400	16: Second R	0.52	19.66	43	43	1	9.42	9.42	0.17	1.03	W-E
145	Average	1800-5400	16: Second R	0.49	19.50	14	14	1	5.69	5.69	0.32	1.15	W-N

146	Average	1800-5400	16: Second R	0.45	19.01	4	4	1	5.48	5.48	0.17	1.03	E-S
147	Average	1800-5400	16: Second R	0.45	19.01	61	61	1	9.54	9.54	0.22	1.11	E-W
148	Average	1800-5400	16: Second R	0.45	19.01	7	7	1	6.81	6.81	0.51	1.25	E-N
149	Average	1800-5400	16: Second R	0.62	20.40	69	69	1	9.34	9.34	0.18	1.05	N-S
150	Average	1800-5400	16: Second R	0.05	13.00	10	10	1	5.93	5.93	0.28	1.11	N-W
151	Average	1800-5400	16: Second R	0.80	22.84	3	3	1	5.84	5.84	0.28	1.05	N-E
152	Average	1800-5400	16: Second R	1.16	47.86	376	376	1	9.80	9.80	0.25	1.15	Total
153	Average	1800-5400	17: Upper Cer	42.66	200.15	9	9	3	35.66	35.66	29.05	0.75	S-E
154	Average	1800-5400	17: Upper Cer	42.76	200.31	928	928	4	37.71	37.71	29.84	0.64	S-N
155	Average	1800-5400	17: Upper Cer	45.66	154.53	208	208	6	97.40	97.40	85.76	1.11	S-W
156	Average	1800-5400	17: Upper Cer	24.27	105.89	173	173	4	41.21	41.21	31.56	0.91	W-S
157	Average	1800-5400	17: Upper Cer	24.48	106.09	235	235	5	55.58	55.58	45.21	0.84	W-E
158	Average	1800-5400	17: Upper Cer	20.08	104.48	227	227	4	46.80	46.80	39.71	0.77	W-N
159	Average	1800-5400	17: Upper Cer	23.41	94.52	451	451	4	47.22	47.22	38.35	0.74	N-S
160	Average	1800-5400	17: Upper Cer	13.52	74.52	212	212	4	48.46	48.46	38.44	0.79	E-W
161	Average	1800-5400	17: Upper Cer	12.65	74.34	59	59	3	25.89	25.89	17.58	1.06	E-N
162	Average	1800-5400	17: Upper Cer	1.94	25.28	26	26	4	35.92	35.92	30.21	0.67	E-S
163	Average	1800-5400	17: Upper Cer	0.42	21.09	93	93	1	4.93	4.93	0.21	0.75	N-W
164	Average	1800-5400	17: Upper Cer	4.12	31.37	31	31	5	77.01	77.01	69.28	0.94	N-E
165	Average	1800-5400	17: Upper Cer	21.33	203.59	2655	2655	4	46.47	46.47	37.82	0.77	Total
166	Average	1800-5400	18: First Rd E	2.30	30.93	10	10	2	18.97	18.97	13.62	1.22	S-W
167	Average	1800-5400	18: First Rd E	2.19	30.67	1	1	2	7.80	7.80	3.97	0.63	S-E
168	Average	1800-5400	18: First Rd E	2.30	30.93	87	87	2	17.33	17.33	11.16	0.65	S-N
169	Average	1800-5400	18: First Rd E	3.95	99.82	13	13	1	7.40	7.40	3.17	0.37	W-S
170	Average	1800-5400	18: First Rd E	4.05	99.94	224	224	2	11.03	11.03	4.02	0.42	W-E
171	Average	1800-5400	18: First Rd E	3.95	99.89	38	38	1	9.55	9.55	4.50	0.46	W-N
172	Average	1800-5400	18: First Rd E	6.23	65.23	1	1	2	15.24	15.24	10.32	0.80	E-S
173	Average	1800-5400	18: First Rd E	6.23	65.23	248	248	2	15.35	15.35	8.50	0.52	E-W
174	Average	1800-5400	18: First Rd E	5.62	65.21	4	4	3	20.93	20.93	16.06	0.73	E-N
175	Average	1800-5400	18: First Rd E	2.12	36.12	70	70	2	17.38	17.38	10.91	0.64	N-S
176	Average	1800-5400	18: First Rd E	2.09	35.93	45	45	1	7.08	7.08	2.99	0.88	N-W
177	Average	1800-5400	18: First Rd E	2.12	36.12	3	3	2	16.67	16.67	11.77	0.81	N-E
178	Average	1800-5400	18: First Rd E	3.61	99.94	747	747	2	13.65	13.65	7.20	0.55	Total
179	Average	1800-5400	19: Second R	1.89	27.57	34	34	1	7.32	7.32	0.47	1.15	S-W
180	Average	1800-5400	19: Second R	0.25	17.65	4	4	1	6.37	6.37	0.36	1.20	S-E
181	Average	1800-5400	19: Second R	2.07	27.87	125	125	2	11.53	11.53	0.64	1.92	S-N
182	Average	1800-5400	19: Second R	8.15	93.53	17	17	3	20.79	20.79	0.91	2.01	W-S
183	Average	1800-5400	19: Second R	12.88	104.61	201	201	4	27.67	27.67	1.46	2.35	W-E
184	Average	1800-5400	19: Second R	12.43	103.68	15	15	3	22.62	22.62	1.56	2.36	W-N
185	Average	1800-5400	19: Second R	5.31	61.60	8	8	2	11.77	11.77	0.44	1.56	E-S
186	Average	1800-5400	19: Second R	5.56	62.03	207	207	3	15.36	15.36	0.67	1.83	E-W
187	Average	1800-5400	19: Second R	1.78	49.29	9	9	2	13.49	13.49	1.37	5.85	E-N
188	Average	1800-5400	19: Second R	1.16	27.07	58	58	2	10.57	10.57	0.48	2.07	N-S
189	Average	1800-5400	19: Second R	0.02	12.25	12	12	1	5.73	5.73	0.32	1.53	N-W
190	Average	1800-5400	19: Second R	0.84	24.34	5	5	1	6.27	6.27	0.44	1.21	N-E
191	Average	1800-5400	19: Second R	4.36	104.61	698	698	3	17.36	17.36	0.89	2.04	Total
192	Average	1800-5400	20: Upper Cer	28.54	218.20	1162	1162	2	18.55	18.55	12.17	0.51	S-N
193	Average	1800-5400	20: Upper Cer	27.91	217.88	18	18	2	15.50	15.50	10.51	0.58	S-E
194	Average	1800-5400	20: Upper Cer	1.02	30.64	35	35	2	11.03	11.03	5.28	0.84	W-S
195	Average	1800-5400	20: Upper Cer	1.61	30.83	29	29	3	34.84	34.84	26.62	0.75	W-E
196	Average	1800-5400	20: Upper Cer	18.31	102.80	261	261	4	39.21	39.21	29.65	0.98	W-N
197	Average	1800-5400	20: Upper Cer	0.40	15.58	30	30	2	19.48	19.48	13.42	0.84	S-W
198	Average	1800-5400	20: Upper Cer	7.23	64.97	510	510	2	13.67	13.67	8.83	0.41	N-S
199	Average	1800-5400	20: Upper Cer	0.25	18.33	110	110	1	2.96	2.96	0.15	0.44	N-W
200	Average	1800-5400	20: Upper Cer	1.28	25.28	48	48	3	24.79	24.79	18.74	1.06	N-E
201	Average	1800-5400	20: Upper Cer	8.57	56.74	88	88	4	36.54	36.54	31.20	0.77	E-N
202	Average	1800-5400	20: Upper Cer	7.98	56.55	56	56	4	35.36	35.36	26.69	0.73	E-W
203	Average	1800-5400	20: Upper Cer	1.02	14.32	18	18	4	38.25	38.25	32.49	0.76	E-S
204	Average	1800-5400	20: Upper Cer	8.68	218.20	2369	2369	3	20.50	20.50	14.26	0.58	Total
205	Average	1800-5400	21: First Rd E	1.59	30.03	11	11	1	8.24	8.24	0.44	1.28	S-W
206	Average	1800-5400	21: First Rd E	1.59	30.03	1	1	1	4.25	4.25	0.23	1.10	S-E
207	Average	1800-5400	21: First Rd E	1.59	30.03	117	117	2	11.84	11.84	0.69	1.67	S-N
208	Average	1800-5400	21: First Rd E	0.91	25.42	12	12	1	6.82	6.82	0.56	1.75	W-S
209	Average	1800-5400	21: First Rd E	0.91	25.42	51	51	2	10.51	10.51	0.32	1.19	W-E
210	Average	1800-5400	21: First Rd E	0.91	25.42	32	32	1	7.32	7.32	0.49	2.00	W-N
211	Average	1800-5400	21: First Rd E	1.24	22.90	6	6	1	5.66	5.66	0.85	2.74	E-S
212	Average	1800-5400	21: First Rd E	1.75	25.17	121	121	2	10.55	10.55	0.46	1.36	E-W
213	Average	1800-5400	21: First Rd E	0.06	11.94	0	0						E-N
214	Average	1800-5400	21: First Rd E	1.17	24.51	99	99	2	10.79	10.79	0.64	1.63	N-S
215	Average	1800-5400	21: First Rd E	1.17	24.51	29	29	1	6.10	6.10	0.41	1.31	N-W
216	Average	1800-5400	21: First Rd E	1.17	24.51	0	0						N-E
217	Average	1800-5400	21: First Rd E	1.12	32.18	482	482	1	10.20	10.20	0.54	1.55	Total
218	Average	1800-5400	22: Second R	1.19	25.60	43	43	1	5.91	5.91	0.27	1.14	S-W
219	Average	1800-5400	22: Second R	1.19	25.60	1	1	1	5.16	5.16	0.16	1.00	S-E

220	Average	1800-5400	22: Second R	1.19	25.60	104	104		2	10.54	10.54	0.32	1.25	S-N
221	Average	1800-5400	22: Second R	0.81	25.68	10	10		1	6.01	6.01	0.30	1.79	W-S
222	Average	1800-5400	22: Second R	0.67	22.99	35	35		1	9.24	9.24	0.18	1.05	W-E
223	Average	1800-5400	22: Second R	0.57	21.31	8	8		1	6.30	6.30	0.51	1.13	W-N
224	Average	1800-5400	22: Second R	0.77	22.09	7	7		1	7.84	7.84	1.37	2.77	E-S
225	Average	1800-5400	22: Second R	1.00	24.42	67	67		1	9.94	9.94	0.35	1.50	E-W
226	Average	1800-5400	22: Second R	0.05	10.42	3	3		1	5.30	5.30	0.22	1.04	E-N
227	Average	1800-5400	22: Second R	1.07	24.59	57	57		1	9.42	9.42	0.29	1.23	N-S
228	Average	1800-5400	22: Second R	0.04	11.16	18	18		1	6.83	6.83	0.98	2.06	N-W
229	Average	1800-5400	22: Second R	1.00	23.97	2	2		1	6.10	6.10	0.20	1.07	N-E
230	Average	1800-5400	22: Second R	0.72	29.43	357	357		1	9.02	9.02	0.36	1.35	Total

Vissim Outputs (PM Peak Hour)

230 / 2530	SimRun	TimeInt	Movement	QLen	QLenMax	Vehs(All)	Pers(All)	LOS(All)	LOSVal(All)	VehDelay(All)	PersDelay(All)	StopDelay(All)	Stops(All)	Movement\Direction
1	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E - 1: Rymal Rd E@379.2 - 6: Rymal Rd E@28.6	15.54	97.86	1000	1000		2	20.62	20.62	11.52	0.63	NW-SE
2	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E - 2: Rymal Road E@16.4 - 9: Upper Red Hill Valley Pkwy@26.3	7.07	73.10	211	211		3	24.62	24.62	16.53	0.99	NW-NE
3	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E - 5: Upper Red Hill Valley Pkwy@67.3 - 6: Rymal Rd E@28.6	66.58	248.33	715	715		5	74.50	74.50	56.69	1.86	NE-SE
4	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E - 7: Rymall Rd E@92.7 - 3: Rymal Rd E@38.5	31.11	170.46	888	888		3	26.86	26.86	17.96	0.73	SE-NW
5	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E - 8: Rymal Rd E@38.2 - 9: Upper Red Hill Valley Pkwy@26.3	15.20	168.36	592	592		2	18.15	18.15	2.65	1.03	SE-NE
6	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E - 224: Upper Red Hill Valley Pkwy@67.0 - 3: Rymal Rd E@38.5	1.71	50.98	132	132		1	7.94	7.94	2.06	1.13	NE-NW
7	Average	1800-5400	1: Upper Red Hill Valley Pkwy & Rymal Rd E	22.87	263.54	3540	3540		3	32.44	32.44	20.73	1.01	Total
8	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E - 6: Rymal Rd E@120.0 - 11: Rymal Rd E@5.8	56.18	177.12	1193	1193		3	22.93	22.93	10.90	0.69	NW-SE
9	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E - 6: Rymal Rd E@120.0 - 13: Trinity Church Rd@10.7	56.18	177.12	518	518		3	24.38	24.38	10.65	0.83	NW-S
10	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E - 10: Rymal Rd E@1129.1 - 7: Rymall Rd E@3.4	11.40	106.12	1088	1088		2	12.71	12.71	7.19	0.42	SE-NW
11	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E - 12: Trinity Church Rd@242.2 - 7: Rymall Rd E@3.4	35.86	147.65	388	388		4	47.03	47.03	37.56	0.97	S-NW
12	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E - 15: Trinity Church Rd@241.4 - 11: Rymal Rd E@5.8	0.38	17.71	67	67		1	5.87	5.87	1.16	1.22	S-SE
13	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E - 45: Rymal Rd E@337.0 - 13: Trinity Church Rd@10.7	3.07	28.98	51	51		4	53.04	53.04	43.81	2.64	SE-S
14	Average	1800-5400	2: Trinity Church Rd & Rymal Rd E	21.38	177.12	3306	3306		3	22.74	22.74	13.08	0.69	Total
15	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd - 13: Trinity Church Rd@2074.2 - 17: Trinity Church Rd@18.9	0.17	26.88	526	526		1	1.77	1.77	0.21	0.03	N-S
16	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd - 13: Trinity Church Rd@2074.2 - 18: Golf Club Rd@26.4	0.81	58.78	42	42		1	3.37	3.37	1.12	0.30	N-E
17	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd - 16: Trinity Church Rd@86.8 - 14: Trinity Church Rd@27.4	0.00	0.00	435	435		1	0.78	0.78	0.00	0.00	S-N
18	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd - 16: Trinity Church Rd@86.8 - 18: Golf Club Rd@26.4	0.00	0.00	50	50		1	0.38	0.38	0.00	0.00	S-E
19	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd - 19: Golf Club Rd@1149.1 - 14: Trinity Church Rd@27.4	2.85	31.85	26	26		2	11.39	11.39	2.62	1.56	E-N
20	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd - 19: Golf Club Rd@1149.1 - 17: Trinity Church Rd@18.9	3.11	30.99	87	87		3	16.21	16.21	7.03	1.98	E-S
21	Average	1800-5400	3: Trinity Church Rd & Golf Club Rd	1.39	58.78	1168	1168		1	2.69	2.69	0.72	0.21	Total
22	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 18: Golf Club Rd@1158.5 - 21: Fletcher Rd@13.6	0.01	3.62	30	30		1	5.59	5.59	0.72	2.17	W-S
23	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 18: Golf Club Rd@1158.5 - 22: Golf Club Rd@19.2	1.40	25.91	44	44		2	10.10	10.10	0.22	1.11	W-E
24	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 18: Golf Club Rd@1158.5 - 25: Fletcher Rd@18.9	0.93	21.50	16	16		1	8.51	8.51	0.99	3.41	W-NE
25	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 20: Fletcher Rd@306.1 - 19: Golf Club Rd@16.8	1.22	27.05	9	9		1	9.48	9.48	1.35	2.74	S-W
26	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 20: Fletcher Rd@306.1 - 22: Golf Club Rd@19.2	0.03	11.30	2	2		1	6.41	6.41	0.25	1.18	S-E
27	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 20: Fletcher Rd@306.1 - 25: Fletcher Rd@18.9	2.22	33.70	108	108		2	10.56	10.56	0.30	1.29	S-NE
28	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 23: Golf Club Rd@2015.3 - 19: Golf Club Rd@16.8	1.81	27.68	83	83		2	12.19	12.19	0.93	1.91	E-W
29	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 23: Golf Club Rd@2015.3 - 21: Fletcher Rd@13.6	1.36	25.54	16	16		1	8.44	8.44	0.80	2.18	E-S
30	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 23: Golf Club Rd@2015.3 - 25: Fletcher Rd@18.9	0.01	6.18	6	6		1	6.26	6.26	0.24	1.28	E-NE
31	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 24: Fletcher Rd@2067.3 - 19: Golf Club Rd@16.8	0.24	21.04	22	22		2	10.31	10.31	0.88	2.25	NE-W
32	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 24: Fletcher Rd@2067.3 - 21: Fletcher Rd@13.6	3.90	40.28	144	144		2	14.20	14.20	0.72	2.36	NE-S
33	Average	1800-5400	4: Fletcher Rd & Golf Club Rd - 24: Fletcher Rd@2067.3 - 22: Golf Club Rd@19.2	3.74	39.83	8	8		2	9.75	9.75	0.48	1.71	NE-E
34	Average	1800-5400	4: Fletcher Rd & Golf Club Rd	1.41	42.54	492	492		2	11.31	11.31	0.64	1.93	Total
35	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E - 11: Rymal Rd E@1123.9 - 24: Fletcher Rd@11.7	25.94	196.26	245	245		2	16.36	16.36	8.79	0.65	W-S
36	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E - 11: Rymal Rd E@1123.9 - 27: Rymal Rd E@17.1	25.93	196.04	1010	1010		2	18.40	18.40	10.87	0.59	W-E
37	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E - 26: Fletcher Rd@55.1 - 10: Rymal Rd E@14.5	8.56	59.82	198	198		3	25.69	25.69	19.38	0.72	S-W
38	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E - 29: Rymal Rd E@795.5 - 10: Rymal Rd E@14.5	11.67	117.28	937	937		2	12.51	12.51	7.35	0.48	E-W
39	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E - 44: Rymal Rd E@385.8 - 24: Fletcher Rd@11.7	4.93	43.08	118	118		4	37.24	37.24	27.58	1.53	E-S
40	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E - 221: Fletcher Rd@123.8 - 27: Rymal Rd E@17.1	0.62	20.49	101	101		1	5.52	5.52	1.04	0.95	S-E
41	Average	1800-5400	5: Fletcher Rd E & Rymal Rd E	12.94	196.26	2611	2611		2	17.00	17.00	10.43	0.62	Total
42	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 27: Rymal Rd E@799.7 - 30: Kingsborough Dr@10.1	9.08	112.82	49	49		1	6.71	6.71	3.85	0.31	W-S
43	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 27: Rymal Rd E@799.7 - 31: Rymal Rd E@11.7	9.17	113.05	949	949		1	9.38	9.38	5.73	0.30	W-E
44	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 28: Kingsborough Dr@157.5 - 31: Rymal Rd E@11.7	1.71	33.51	71	71		2	10.99	10.99	5.47	0.94	S-E
45	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 28: Kingsborough Dr@157.5 - 34: Second Rd W@6.8	1.67	33.74	17	17		3	31.79	31.79	27.04	0.59	S-N
46	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 33: Second Rd W@82.4 - 29: Rymal Rd E@12.5	2.99	54.14	81	81		2	14.90	14.90	7.97	0.95	N-W
47	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 33: Second Rd W@82.4 - 30: Kingsborough Dr@10.1	3.02	54.33	24	24		4	41.62	41.62	33.44	0.81	N-S
48	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 46: Rymal Rd E@388.6 - 34: Second Rd W@6.8	2.10	45.83	113	113		2	16.18	16.18	10.15	0.91	W-N
49	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 62: Rymal Rd E@703.9 - 30: Kingsborough Dr@10.1	1.79	31.80	101	101		2	14.61	14.61	9.53	0.78	E-S
50	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 154: Kingsborough Dr@4.8 - 29: Rymal Rd E@12.5	1.80	25.80	35	35		3	34.12	34.12	28.14	0.93	S-W
51	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 155: Second Rd W@10.5 - 31: Rymal Rd E@11.7	3.90	51.88	60	60		4	39.60	39.60	31.44	0.97	N-E
52	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 226: Rymal Rd E@810.2 - 29: Rymal Rd E@12.5	12.10	110.45	938	938		2	11.99	11.99	6.38	0.48	E-W
53	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E - 226: Rymal Rd E@810.2 - 34: Second Rd W@6.8	12.21	110.74	72	72		2	10.90	10.90	5.79	0.60	E-N
54	Average	1800-5400	6: Kingsborough Dr/Second Rd W & Rymal Rd E	5.13	122.74	2514	2514		2	12.61	12.61	7.68	0.49	Total
55	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 22: Golf Club Rd@2023.9 - 36: Hwy 56@8.8	0.57	17.64	25	25		1	9.78	9.78	4.79	0.96	W-S
56	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 22: Golf Club Rd@2023.9 - 37: Golf Club Rd@5.8	0.54	17.45	3	3		1	6.02	6.02	2.95	0.27	W-E
57	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 22: Golf Club Rd@2023.9 - 40: Hwy 56@4.5	0.54	17.45	25	25		2	13.15	13.15	8.04	0.63	W-N
58	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 35: Hwy 56@506.9 - 37: Golf Club Rd@5.8	15.99	118.35	2	2		2	10.30	10.30	6.76	0.57	S-E
59	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 35: Hwy 56@506.9 - 40: Hwy 56@4.5	16.12	118.59	502	502		2	17.26	17.26	10.30	0.62	S-N
60	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 38: Hwy 56@10.9 - 23: Golf Club Rd@10.8	0.32	11.18	15	15		3	31.53	31.53	23.20	1.64	S-W
61	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 39: Golf Club Rd@2028.9 - 23: Golf Club Rd@10.8	0.77	20.31	41	41		2	13.54	13.54	8.23	0.48	E-W
62	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 39: Golf Club Rd@2028.9 - 36: Hwy 56@8.8	0.77	20.31	4	4		1	4.17	4.17	2.73	0.15	E-S
63	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 39: Golf Club Rd@2028.9 - 40: Hwy 56@4.5	0.75	20.31	18	18		1	6.20	6.20	2.11	0.68	E-N
64	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 41: Hwy 56@1094.8 - 36: Hwy 56@8.8	87.80	365.45	720	720		3	28.77	28.77	20.17	0.86	N-S
65	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 42: Hwy 56@20.6 - 37: Golf Club Rd@5.8	0.43	12.68	19	19		4	34.98	34.98	25.44	1.64	N-E
66	Average	1800-5400	7: Hwy 56 & Golf Club Rd - 43: Hwy 56@10.8 - 23: Golf Club Rd@10.8	0.08	13.12	49	49		2	18.50	18.50	11.34	0.94	N-W
67	Average	1800-5400	7: Hwy 56 & Golf Club Rd	12.34	365.45	1428	1428		3	22.98	22.98	15.32	0.78	Total
68	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 37: Golf Club Rd@2023.2 - 71: Hendershot Rd@12.2	0.00	0.00	11	11		1	7.78	7.78	0.80	1.55	W-S
69	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 37: Golf Club Rd@2023.2 - 72: Golf Club Rd@13.5	0.41	21.53	8	8		1	9.74	9.74	0.17	1.02	W-E
70	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 37: Golf Club Rd@2023.2 - 74: Hendershot Rd@6.3	0.23	15.11	6	6		1	5.94	5.94	0.21	1.16	W-N
71	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 70: Hendershot Rd@416.3 - 39: Golf Club Rd@11.5	0.92	20.28	3	3		1	6.47	6.47	0.82	3.32	S-W
72	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 70: Hendershot Rd@416.3 - 72: Golf Club Rd@13.5	0.01	3.07	8	8		1	5.19	5.19	0.16	1.02	S-E
73	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 70: Hendershot Rd@416.3 - 74: Hendershot Rd@6.3	1.02	20.68	85	85		2	10.11	10.11	0.22	1.09	S-N
74	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 73: Golf Club Rd@1215.0 - 39: Golf Club Rd@11.5	0.68	21.31	52	52		2	10.21	10.21	0.25	1.10	E-W
75	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 73: Golf Club Rd@1215.0 - 71: Hendershot Rd@12.2	0.67	21.21	7	7		1	7.29	7.29	0.24	1.05	E-S
76	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 73: Golf Club Rd@1215.0 - 74: Hendershot Rd@6.3	0.01	4.25	15	15		1	5.41	5.41	0.16	1.03	E-N
77	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 75: Hendershot Rd@2048.0 - 39: Golf Club Rd@11.5	3.75	43.60	8	8		2	14.25	14.25	0.51	1.49	N-W
78	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 75: Hendershot Rd@2048.0 - 71: Hendershot Rd@12.2	7.88	52.26	263	263		3	15.95	15.95	0.44	1.48	N-S
79	Average	1800-5400	9: Hendershot Rd & Golf Club Rd - 75: Hendershot Rd@2048.0 - 72: Golf Club Rd@13.5	7.24	50.95	25	25		2	12.36	12.36	0.42	1.41	N-E
80	Average	1800-5400	9: Hendershot Rd & Golf Club Rd	1.90	52.26	494	494		2	12.99	12.99	0.37	1.35	Total
81	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 53: Hwy 56@745.6 - 63: Upper Centennial Pkwy@14.5	13.34	65.89	358	358		3	33.00	33.00	25.60	0.83	S-N
82	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 54: Hwy 56@58.0 - 32: Rymal Rd E@19.4	7.31	68.45	136	136		3	30.37	30.37	22.37	0.96	S-W
83	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 55: Hwy 56@18.0 - 58: Regional Rd 20@24.9	0.11	19.88	50	50		1	5.31	5.31	0.17	0.66	S-E
84	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 59: Regional Rd 20@831.1 - 32: Rymal Rd E@19.4	10.56	56.49	427	427		3	25.99	25.99	19.24	1.19	E-W
85	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 60: Rymal Rd E@41.8 - 56: Hwy 56@16.4	0.79	34.53	168	168		1	5.96	5.96	1.07	0.76	W-S
86	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 61: Rymal Rd E@32.3 - 63: Upper Centennial Pkwy@14.5	10.35	99.56	265	265		3	22.74	22.74	15.29	0.80	W-N
87	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 64: Upper Centennial Pkwy@567.9 - 56: Hwy 56@16.4	19.32	124.72	551	551		3	32.77	32.77	24.90	0.72	N-S
88	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 66: Upper Centennial Pkwy@46.3 - 58: Regional Rd 20@24.9	21.44	118.01	282	282		4	39.98	39.98	28.14	1.25	N-E
89	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 67: Upper Centennial Pkwy@25.7 - 32: Rymal Rd E@19.4	4.43	69.66	271	271		2	14.98	14.98	3.41	1.72	N-W
90	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 68: Regional Rd 20@75.3 - 56: Hwy 56@16.4	2.38	29.30	73	73		3	20.96	20.96	15.16	0.66	E-S
91	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 69: Regional Rd 20@100.2 - 63: Upper Centennial Pkwy@14.5	1.06	28.42	179	179		1	6.92	6.92	0.85	1.12	E-N
92	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20 - 227: Rymal Rd E@803.8 - 58: Regional Rd 20@24.9	7.65	72.58	411	411		2	18.44	18.44	13.20	0.46	W-E
93	Average	1800-5400	10: Hwy 56/Upper Centennial Pwky & Rymal Rd E/Regional Rd 20	8.23	137.11	3175	3175		3	24.64	24.64	17.01	0.94	Total
94	Average	1800-5400	11: Regional Rd 20 & First Rd E - 58: Regional Rd 20@842.2 - 76: Regional Rd 20@12.4	0.00	0.00	689	689		1	0.87	0.87	0.00	0.00	W-E
95	Average	1800-5400	11: Regional Rd 20 & First Rd E - 58: Regional Rd 20@842.2 - 80: First Rd E@11.0	0.18	14.43	53	53		1	2.91	2.91	0.92	0.29	W-N
96	Average	1800-5400	11: Regional Rd 20 & First Rd E - 77: Regional Rd 20@748.0 - 59: Regional Rd 20@13.7	0.00	0.00	571	571		1	0.28	0.28	0.00	0.00	E-W
97	Average	1800-5400	11: Regional Rd 20 & First Rd E - 78: Regional Rd 20@9.7 - 80: First Rd E@11.0	0.00	0.00	8	8		1	0.54	0.54	0.16	0.08	E-N
98	Average	1800-5400	11: Regional Rd 20 & First Rd E - 79: First Rd E@852.1 - 59: Regional Rd 20@13.7	3.13	28.38	109	109		2	10.53	10.53	1.71	1.50	N-W
99	Average	1800-5400	11: Regional Rd 20 & First Rd E - 79: First Rd E@852.1 - 76: Regional Rd 20@12.4	2.80	27.80	23	23		2	13.66	13.66	2.56	1.65	N-E
100	Average	1800-5400	11: Regional Rd 20 & First Rd E	1.02	28.38	1455	1455		1	1.64	1.64	0.20	0.15	Total
101	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 74: Hendershot Rd@2041.9 - 77: Regional Rd 20@7.9	4.47	42.63	30	30		3	36.32	36.32	27.04	3.98	SW-W
102	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 74: Hendershot Rd@2041.9 - 81: Regional Rd 20@8.5	3.57	42.21	10	10		2	19.22	19.22	11.31	1.65	SW-E
103	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 74: Hendershot Rd@2041.9 - 86: Second Rd E@9.7	4.47	42.63	68	68		3	25.60	25.60	16.54	0.98	SW-N
104	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 76: Regional Rd 20@752.0 - 81: Regional Rd 20@8.5	16.86	193.45	620	620		2	12.87	12.87	6.41	0.63	W-E
105	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 82: Regional Rd 20@417.0 - 77: Regional Rd 20@7.9	0.33	34.04	497	497		1	2.10	2.10	0.43	0.19	E-W
106	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 83: Regional Rd 20@13.7 - 86: Second Rd E@9.7	0.05	9.87	29	29		1	2.59	2.59	0.16	0.42	E-N
107	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 84: Regional Rd 20@64.4 - 75: Hendershot Rd@12.4	2.59	32.50	65	65		3	32.16	32.16	23.12	2.10	E-SW
108	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 85: Second Rd E@901.0 - 75: Hendershot Rd@12.4	11.19	68.32	165	165		3	26.62	26.62	16.13	1.13	N-SW

109	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 85: Second Rd E@901.0 - 77: Regional Rd 20@7.9	11.10	68.16	52	52		3	20.37	20.37	10.97	1.28	N-W
110	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 85: Second Rd E@901.0 - 81: Regional Rd 20@8.5	11.19	68.32	61	61		3	26.74	26.74	16.53	1.28	N-E
111	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 87: Regional Rd 20@41.8 - 86: Second Rd E@9.7	0.26	11.16	22	22		1	10.80	10.80	5.98	0.67	W-N
112	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20 - 88: Regional Rd 20@6.2 - 75: Hendershot Rd@12.4	0.08	12.36	65	65		1	8.41	8.41	2.86	0.70	W-SW
113	Average	1800-5400	12: Hendershot Rd/Second Rd E & Regional Rd 20	5.05	193.45	1688	1688		2	13.16	13.16	7.33	0.74	Total
114	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 92: Upper Centennial Pkwy@290.3 - 102: Highland Rd E@22.5	9.08	86.25	13	13		2	9.61	9.61	5.96	0.44	S-E
115	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 92: Upper Centennial Pkwy@290.3 - 105: Upper Centennial Pkwy@19.5	9.54	86.47	757	757		2	12.37	12.37	7.41	0.43	S-N
116	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 93: Upper Centennial Pkwy@241.9 - 96: Highland Rd E@14.7	3.83	44.57	130	130		3	20.60	20.60	14.67	0.86	S-W
117	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 95: Highland Rd E@994.1 - 102: Highland Rd E@22.5	3.10	32.10	75	75		3	25.32	25.32	20.85	0.64	W-E
118	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 97: Highland Rd E@17.2 - 94: Upper Centennial Pkwy@23.2	0.74	29.38	127	127		1	7.90	7.90	3.04	1.22	W-S
119	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 98: Highland Rd E@11.9 - 105: Upper Centennial Pkwy@19.5	3.78	34.34	78	78		3	30.42	30.42	22.69	1.31	W-N
120	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 99: Upper Centennial Pkwy@993.3 - 94: Upper Centennial Pkwy@23.2	21.97	200.95	1043	1043		2	16.97	16.97	10.35	0.53	N-S
121	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 100: Upper Centennial Pkwy@127.8 - 102: Highland Rd E@22.5	0.66	22.17	31	31		2	17.30	17.30	11.79	1.02	N-E
122	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 101: Upper Centennial Pkwy@25.4 - 96: Highland Rd E@14.7	0.41	24.18	130	130		1	8.61	8.61	2.74	0.61	N-W
123	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 103: Highland Rd E@834.0 - 96: Highland Rd E@14.7	6.02	56.14	121	121		3	28.26	28.26	21.74	0.72	E-W
124	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 103: Highland Rd E@834.0 - 105: Upper Centennial Pkwy@19.5	5.16	56.07	25	25		2	14.20	14.20	9.69	0.80	E-N
125	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E - 104: Highland Rd E@32.7 - 94: Upper Centennial Pkwy@23.2	1.30	18.20	32	32		3	28.10	28.10	21.77	1.08	E-S
126	Average	1800-5400	14: Upper Centennial Pkwy & Highland Rd E	5.46	200.95	2565	2565		2	16.18	16.18	10.30	0.61	Total
127	Average	1800-5400	15: First Rd E & Highland Rd E - 80: First Rd E@861.3 - 103: Highland Rd E@7.7	0.52	22.59	1	1		1	5.66	5.66	0.41	1.13	S-NW
128	Average	1800-5400	15: First Rd E & Highland Rd E - 80: First Rd E@861.3 - 106: Highland Rd E@6.9	0.13	19.62	3	3		1	4.75	4.75	0.14	1.00	S-E
129	Average	1800-5400	15: First Rd E & Highland Rd E - 80: First Rd E@861.3 - 109: First Rd E@7.5	0.58	23.17	56	56		1	9.71	9.71	0.20	1.08	S-N
130	Average	1800-5400	15: First Rd E & Highland Rd E - 102: Highland Rd E@848.8 - 79: First Rd E@1.7	0.46	26.95	0	0		1	5.18	5.18	0.16	1.00	NW-S
131	Average	1800-5400	15: First Rd E & Highland Rd E - 102: Highland Rd E@848.8 - 106: Highland Rd E@5.9	1.88	36.29	99	99		2	11.08	11.08	0.33	1.25	NW-E
132	Average	1800-5400	15: First Rd E & Highland Rd E - 102: Highland Rd E@848.8 - 109: First Rd E@7.5	1.71	35.41	19	19		1	8.38	8.38	0.43	1.30	NW-N
133	Average	1800-5400	15: First Rd E & Highland Rd E - 107: Highland Rd E@769.9 - 79: First Rd E@1.7	1.77	30.66	4	4		1	8.09	8.09	0.32	1.21	E-S
134	Average	1800-5400	15: First Rd E & Highland Rd E - 107: Highland Rd E@769.9 - 103: Highland Rd E@7.7	2.53	34.87	137	137		2	10.42	10.42	0.24	1.25	E-NW
135	Average	1800-5400	15: First Rd E & Highland Rd E - 107: Highland Rd E@769.9 - 109: First Rd E@7.5	0.18	19.48	0	0		1	5.03	5.03	0.18	1.00	E-N
136	Average	1800-5400	15: First Rd E & Highland Rd E - 108: First Rd E@1061.9 - 79: First Rd E@1.7	4.40	46.56	128	128		2	14.82	14.82	0.52	1.46	N-S
137	Average	1800-5400	15: First Rd E & Highland Rd E - 108: First Rd E@1061.9 - 103: Highland Rd E@7.7	1.70	36.70	41	41		1	10.42	10.42	0.67	2.06	N-NW
138	Average	1800-5400	15: First Rd E & Highland Rd E - 108: First Rd E@1061.9 - 106: Highland Rd E@5.9	4.34	46.56	11	11		2	12.49	12.49	0.94	1.61	N-E
139	Average	1800-5400	15: First Rd E & Highland Rd E	1.68	46.65	503	503		2	11.47	11.47	0.38	1.35	Total
140	Average	1800-5400	16: Second Rd & Highland Rd E - 86: Second Rd E@906.2 - 107: Highland Rd E@5.8	1.41	30.88	12	12		1	8.22	8.22	0.77	1.41	S-W
141	Average	1800-5400	16: Second Rd & Highland Rd E - 86: Second Rd E@906.2 - 110: Highland Rd E@6.4	2.83	40.74	5	5		1	6.22	6.22	0.31	1.40	S-E
142	Average	1800-5400	16: Second Rd & Highland Rd E - 86: Second Rd E@906.2 - 112: Second Rd E@7.4	1.57	31.67	101	101		2	10.80	10.80	0.31	1.29	S-N
143	Average	1800-5400	16: Second Rd & Highland Rd E - 106: Highland Rd E@770.1 - 85: Second Rd E@4.4	0.12	15.50	17	17		1	5.77	5.77	0.36	1.15	W-S
144	Average	1800-5400	16: Second Rd & Highland Rd E - 106: Highland Rd E@770.1 - 110: Highland Rd E@6.4	1.23	23.36	85	85		2	10.68	10.68	0.37	1.25	W-E
145	Average	1800-5400	16: Second Rd & Highland Rd E - 106: Highland Rd E@770.1 - 112: Second Rd E@7.4	1.10	23.19	9	9		1	7.24	7.24	0.59	1.40	W-N
146	Average	1800-5400	16: Second Rd & Highland Rd E - 111: Highland Rd E@947.2 - 85: Second Rd E@4.4	0.75	22.71	3	3		1	6.58	6.58	0.40	1.31	E-S
147	Average	1800-5400	16: Second Rd & Highland Rd E - 111: Highland Rd E@947.2 - 107: Highland Rd E@5.8	0.75	22.71	96	96		1	9.97	9.97	0.21	1.11	E-W
148	Average	1800-5400	16: Second Rd & Highland Rd E - 111: Highland Rd E@947.2 - 112: Second Rd E@7.4	0.75	22.71	5	5		1	7.03	7.03	0.45	1.32	E-N
149	Average	1800-5400	16: Second Rd & Highland Rd E - 113: Second Rd E@999.7 - 85: Second Rd E@4.4	4.01	33.14	254	254		2	12.26	12.26	0.30	1.23	N-S
150	Average	1800-5400	16: Second Rd & Highland Rd E - 113: Second Rd E@999.7 - 107: Highland Rd E@5.8	1.24	25.74	33	33		1	8.75	8.75	0.32	1.23	N-W
151	Average	1800-5400	16: Second Rd & Highland Rd E - 113: Second Rd E@999.7 - 110: Highland Rd E@6.4	4.86	35.58	6	6		1	8.20	8.20	0.50	1.40	N-E
152	Average	1800-5400	16: Second Rd & Highland Rd E	1.91	41.51	632	632		2	10.78	10.78	0.32	1.24	Total
153	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 105: Upper Centennial Pkwy@1005.3 - 118: Mud St E@17.9	26.76	128.01	25	25		3	33.67	33.67	27.04	0.78	S-E
154	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 105: Upper Centennial Pkwy@1005.3 - 120: Upper Centennial Pkwy@19.7	26.85	128.17	590	590		4	40.69	40.69	32.43	0.69	S-N
155	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 114: Upper Centennial Pkwy@132.7 - 119: Mud St E@23.8	80.20	203.80	229	229		6	122.15	122.15	109.90	1.16	S-W
156	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 115: Mud St E@500.9 - 99: Upper Centennial Pkwy@8.0	32.20	122.85	226	226		4	51.63	51.63	40.95	0.93	W-S
157	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 115: Mud St E@500.9 - 118: Mud St E@17.9	32.38	123.05	260	260		5	62.97	62.97	52.74	0.84	W-E
158	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 116: Mud St E@205.0 - 120: Upper Centennial Pkwy@19.7	16.23	90.13	177	177		4	50.81	50.81	44.12	0.79	W-N
159	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 121: Upper Centennial Pkwy@953.0 - 99: Upper Centennial Pkwy@8.0	56.31	217.76	931	931		4	51.99	51.99	43.57	0.74	N-S
160	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 122: Mud St E@35.9 - 119: Mud St E@23.8	20.18	87.52	326	326		5	56.20	56.20	46.34	0.80	E-W
161	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 122: Mud St E@35.9 - 120: Upper Centennial Pkwy@19.7	19.60	87.33	49	49		3	31.45	31.45	24.08	0.89	E-N
162	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 123: Mud St E@52.7 - 99: Upper Centennial Pkwy@8.0	2.16	23.78	32	32		4	42.39	42.39	36.18	0.78	E-S
163	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 125: Upper Centennial Pkwy@243.4 - 119: Mud St E@23.8	5.09	72.55	298	298		2	10.87	10.87	0.71	1.03	N-W
164	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E - 126: Upper Centennial Pkwy@102.8 - 118: Mud St E@17.9	8.45	52.70	59	59		5	74.95	74.95	66.57	0.92	N-E
165	Average	1800-5400	17: Upper Centennial Pkwy & Mud St E	27.20	238.84	3207	3207		4	52.26	52.26	43.13	0.82	Total
166	Average	1800-5400	18: First Rd E & Mud St E - 109: First Rd E@1065.9 - 124: Mud St E@5.0	1.95	22.87	5	5		3	28.77	28.77	22.20	2.76	S-W
167	Average	1800-5400	18: First Rd E & Mud St E - 109: First Rd E@1065.9 - 127: Mud St E@5.7	1.86	22.61	3	3		2	15.31	15.31	9.91	1.07	S-E
168	Average	1800-5400	18: First Rd E & Mud St E - 109: First Rd E@1065.9 - 129: First Rd E@5.6	1.95	22.87	66	66		2	18.11	18.11	12.22	0.63	S-N
169	Average	1800-5400	18: First Rd E & Mud St E - 117: Mud St E@656.4 - 108: First Rd E@3.4	6.53	115.21	12	12		1	9.70	9.70	4.21	0.58	W-S
170	Average	1800-5400	18: First Rd E & Mud St E - 117: Mud St E@656.4 - 127: Mud St E@5.7	6.66	115.33	274	274		2	13.26	13.26	5.35	0.53	W-E
171	Average	1800-5400	18: First Rd E & Mud St E - 117: Mud St E@656.4 - 129: First Rd E@5.6	6.56	115.28	53	53		2	12.38	12.38	6.21	0.68	W-N
172	Average	1800-5400	18: First Rd E & Mud St E - 128: Mud St E@775.5 - 108: First Rd E@3.4	7.86	66.83	7	7		2	16.05	16.05	10.03	0.89	E-S
173	Average	1800-5400	18: First Rd E & Mud St E - 128: Mud St E@775.5 - 124: Mud St E@5.0	7.86	66.83	312	312		2	16.71	16.71	9.82	0.57	E-W
174	Average	1800-5400	18: First Rd E & Mud St E - 128: Mud St E@775.5 - 129: First Rd E@5.6	7.26	66.81	3	3		2	14.38	14.38	10.68	0.62	E-N
175	Average	1800-5400	18: First Rd E & Mud St E - 130: First Rd E@1005.5 - 108: First Rd E@3.4	6.68	54.10	159	159		3	20.88	20.88	13.70	0.69	N-S
176	Average	1800-5400	18: First Rd E & Mud St E - 130: First Rd E@1005.5 - 124: Mud St E@5.0	6.67	53.92	91	91		2	12.27	12.27	6.93	0.87	N-W
177	Average	1800-5400	18: First Rd E & Mud St E - 130: First Rd E@1005.5 - 127: Mud St E@5.7	6.68	54.10	1	1		3	25.75	25.75	18.60	1.25	N-E
178	Average	1800-5400	18: First Rd E & Mud St E	5.78	115.33	990	990		2	15.85	15.85	8.92	0.63	Total
179	Average	1800-5400	19: Second Rd E & Mud St E - 112: Second Rd E@1000.3 - 128: Mud St E@8.3	1.75	33.32	21	21		2	11.60	11.60	2.79	6.28	S-W
180	Average	1800-5400	19: Second Rd E & Mud St E - 112: Second Rd E@1000.3 - 131: Mud St E@10.0	0.44	24.29	10	10		1	6.86	6.86	0.69	1.31	S-E
181	Average	1800-5400	19: Second Rd E & Mud St E - 112: Second Rd E@1000.3 - 133: Second Rd E@8.9	1.86	33.61	84	84		2	13.11	13.11	1.62	2.58	S-N
182	Average	1800-5400	19: Second Rd E & Mud St E - 127: Mud St E@773.0 - 113: Second Rd E@6.7	13.49	108.09	28	28		4	30.70	30.70	2.95	3.29	W-S
183	Average	1800-5400	19: Second Rd E & Mud St E - 127: Mud St E@773.0 - 131: Mud St E@10.0	19.69	119.17	229	229		4	35.51	35.51	3.78	3.41	W-E
184	Average	1800-5400	19: Second Rd E & Mud St E - 127: Mud St E@773.0 - 133: Second Rd E@8.9	19.08	118.25	18	18		4	32.17	32.17	6.27	7.02	W-N
185	Average	1800-5400	19: Second Rd E & Mud St E - 132: Mud St E@748.4 - 113: Second Rd E@6.7	7.65	70.32	8	8		3	17.61	17.61	3.75	9.78	E-S
186	Average	1800-5400	19: Second Rd E & Mud St E - 132: Mud St E@748.4 - 128: Mud St E@8.3	7.98	70.75	260	260		3	18.18	18.18	1.82	2.54	E-W
187	Average	1800-5400	19: Second Rd E & Mud St E - 132: Mud St E@748.4 - 133: Second Rd E@8.9	3.15	58.01	3	3		2	11.47	11.47	1.90	1.26	E-N
188	Average	1800-5400	19: Second Rd E & Mud St E - 134: Second Rd E@1001.1 - 113: Second Rd E@6.7	12.65	92.24	257	257		3	21.08	21.08	2.45	3.31	N-S
189	Average	1800-5400	19: Second Rd E & Mud St E - 134: Second Rd E@1001.1 - 128: Mud St E@8.3	5.31	77.42	42	42		2	14.85	14.85	1.86	2.25	N-W
190	Average	1800-5400	19: Second Rd E & Mud St E - 134: Second Rd E@1001.1 - 131: Mud St E@10.0	11.10	89.51	4	4		2	12.91	12.91	1.22	1.80	N-E
191	Average	1800-5400	19: Second Rd E & Mud St E	8.68	124.64	968	968		3	22.84	22.84	2.59	3.17	Total
192	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 120: Upper Centennial Pkwy@959.3 - 141: Upper Centennial Pkwy@11.4	17.18	135.15	737	737		3	20.81	20.81	14.31	0.54	S-N
193	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 120: Upper Centennial Pkwy@959.3 - 142: Green Mountain Rd E@11.1	16.64	134.84	26	26		3	19.73	19.73	13.91	0.81	S-E
194	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 135: Green Mountain Rd E@819.2 - 121: Upper Centennial Pkwy@12.9	2.36	34.62	45	45		2	14.79	14.79	9.75	0.90	W-S
195	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 135: Green Mountain Rd E@819.2 - 142: Green Mountain Rd E@11.1	3.01	34.81	49	49		3	30.32	30.32	22.92	0.73	W-E
196	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 136: Green Mountain Rd E@19.4 - 141: Upper Centennial Pkwy@11.4	10.82	67.97	174	174		4	37.15	37.15	28.97	1.02	W-N
197	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 137: Upper Centennial Pkwy@22.6 - 143: Green Mountain Rd E@11.6	1.82	26.05	54	54		3	31.84	31.84	24.18	1.32	S-W
198	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 138: Upper Centennial Pkwy@334.8 - 121: Upper Centennial Pkwy@12.9	27.50	181.21	1192	1192		2	18.10	18.10	11.90	0.53	N-S
199	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 139: Upper Centennial Pkwy@19.9 - 143: Green Mountain Rd E@11.6	1.31	39.89	292	292		2	9.50	9.50	3.12	0.78	N-W
200	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 140: Upper Centennial Pkwy@20.0 - 142: Green Mountain Rd E@11.1	3.63	48.26	152	152		2	19.56	19.56	12.77	0.84	N-E
201	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 144: Green Mountain Rd E@818.7 - 141: Upper Centennial Pkwy@11.4	15.36	88.23	70	70		4	42.16	42.16	36.02	0.83	E-N
202	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 144: Green Mountain Rd E@818.7 - 143: Green Mountain Rd E@11.6	15.21	88.03	136	136		4	41.86	41.86	32.15	0.82	E-W
203	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E - 145: Green Mountain Rd E@9.4 - 121: Upper Centennial Pkwy@12.9	2.15	27.59	49	49		3	33.94	33.94	27.27	0.75	E-S
204	Average	1800-5400	20: Upper Centennial Pkwy & Green Mountain Rd E	9.75	181.21	2982	2982		3	21.44	21.44	14.81	0.65	Total
205	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 129: First Rd E@1008.6 - 144: Green Mountain Rd E@6.1	1.46	35.71	15	15		2	9.80	9.80	1.57	3.35	S-W
206	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 129: First Rd E@1008.6 - 146: Green Mountain Rd E@7.6	1.46	35.71	15	15		1	7.95	7.95	0.55	1.50	S-E
207	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 129: First Rd E@1008.6 - 149: First Rd E@6.2	1.46	35.71	93	93		2	11.92	11.92	0.64	1.48	S-N
208	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 142: Green Mountain Rd E@823.9 - 130: First Rd E@2.5	4.47	50.96	18	18		1	10.13	10.13	0.67	1.55	W-S
209	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 142: Green Mountain Rd E@823.9 - 146: Green Mountain Rd E@7.6	4.47	50.96	191	191		2	15.36	15.36	1.11	1.80	W-E
210	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 142: Green Mountain Rd E@823.9 - 149: First Rd E@6.2	4.47	50.96	20	20		2	12.02	12.02	1.11	2.98	W-N
211	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 147: Green Mountain Rd E@789.8 - 130: First Rd E@2.5	2.06	31.03	8	8		1	10.86	10.86	2.82	5.05	E-S
212	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 147: Green Mountain Rd E@789.8 - 144: Green Mountain Rd E@6.1	2.86	33.30	152	152		2	12.30	12.30	0.88	1.70	E-W
213	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 147: Green Mountain Rd E@789.8 - 149: First Rd E@6.2	0.24	20.85	2	2		1	7.34	7.34	0.77	1.30	E-N
214	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 148: First Rd E@211.5 - 130: First Rd E@2.5	8.52	67.76	225	225		3	18.42	18.42	1.31	2.08	N-S
215	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 148: First Rd E@211.5 - 144: Green Mountain Rd E@6.1	8.52	67.76	89	89		2	13.82	13.82	1.15	1.91	N-W
216	Average	1800-5400	21: First Rd E & Green Mountain Rd E - 148: First Rd E@211.5 - 146: Green Mountain Rd E@7.6	8.52	67.76	6	6		2	11.77	11.77	0.82	2.37	N-E
217	Average	1800-5400	21: First Rd E & Green Mountain Rd E	3.27	68.99	839	839		2	14.58	14.58	1.08	1.92	Total
218	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 133: Second Rd E@1004.1 - 147: Green Mountain Rd E@7.6	0.98	24.76	23	23		1	8.73	8.73	1.57	1.59	S-W
219	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 133: Second Rd E@1004.1 - 150: Green Mountain Rd E@8.2	0.98	24.76	5	5		1	7.16	7.16	0.37	1.27	S-E

220	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 133: Second Rd E@1004.1 - 152: Second Rd E@8.9	0.98	24.76	76	76		2	11.86	11.86	0.68	1.75	S-N
221	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 146: Green Mountain Rd E@789.8 - 134: Second Rd E@5.8	4.75	34.34	66	66		1	8.40	8.40	0.52	1.73	W-S
222	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 146: Green Mountain Rd E@789.8 - 150: Green Mountain Rd E@8.2	4.11	31.64	132	132		2	12.72	12.72	0.89	1.53	W-E
223	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 146: Green Mountain Rd E@789.8 - 152: Second Rd E@8.9	3.50	29.96	15	15		1	9.11	9.11	0.86	1.44	W-N
224	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 151: Green Mountain Rd E@853.3 - 134: Second Rd E@5.8	0.99	22.70	4	4		1	6.93	6.93	0.47	1.45	E-S
225	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 151: Green Mountain Rd E@853.3 - 147: Green Mountain Rd E@7.6	1.36	25.03	84	84		2	10.56	10.56	0.42	1.40	E-W
226	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 151: Green Mountain Rd E@853.3 - 152: Second Rd E@8.9	0.06	12.09	4	4		1	5.15	5.15	0.16	1.02	E-N
227	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 153: Second Rd E@883.2 - 134: Second Rd E@5.8	8.52	58.31	233	233		3	14.97	14.97	0.82	1.73	N-S
228	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 153: Second Rd E@883.2 - 147: Green Mountain Rd E@7.6	3.17	47.01	55	55		2	11.93	11.93	0.89	1.47	N-W
229	Average	1800-5400	22: Second Rd E & Green Mountain Rd E - 153: Second Rd E@883.2 - 150: Green Mountain Rd E@8.2	8.15	57.69	7	7		1	9.50	9.50	0.48	1.53	N-E
230	Average	1800-5400	22: Second Rd E & Green Mountain Rd E	3.56	58.31	709	709		2	12.26	12.26	0.75	1.62	Total

APPENDIX E:

OTC Multi-Modal LOS Definitions

3.2 Method for Setting Targets

Targets are set through a three step process:

1. Identify the Street Type and Base LOS Targets based on existing conditions (*see Section 3.3*)
2. Identify and consider adjustment factors to the base LOS targets to reflect:
   a. Planning directions for the corridor (*see Section 3.4*)
   b. Relevant global municipal plans and strategies (*see Section 3.5*)
   c. Targets set through previous planning exercises
3. Set final LOS Targets

3.3 Description of Street Types

Nine of the most common street types found in municipalities (based on role and function) have been identified as the backbone for the MMLOS evaluation process. These street types are described below. Generic street types have been used because municipalities have their own unique histories with naming types of streets.

Downtown Avenue

- A street through a high-activity central business area or urban core
- Moves moderate volumes of cycling, transit and vehicular traffic
- Priority on enhanced pedestrian environment; balances priority of other modes
- Width of vehicle zone is minimized
- Urban design is highest quality

Urban Main Street

- A community “Main Street” or “High-street”; adjacent land use is primarily retail or mixed-use commercial
- Moves moderate volumes of pedestrian, cycling, transit and vehicular traffic; might have transit priority features or lanes
- Balances priority between all modes
- Public realm is typically pedestrian (people) oriented; key local community destination
- Street design typically emphasizes access over mobility

Urban Boulevard

- A multimodal corridor through an urban neighbourhood
- Moves moderate volumes of pedestrian, cycling, transit and vehicular traffic
- Balances priority between all modes
- Adjacent land uses vary including residential, light commercial, schools, parks and community centres

Neighbourhood Connector

- Major mobility corridor that connects neighbourhoods
- Moves high volumes of vehicles over moderate distances
- Priority on vehicles and trucks; balances service to other modes
- Street design ideally has dedicated facilities for Active Transportation modes

Neighbourhood Main Street

- A community “Main Street” or “High-street”; street balances mobility and access
- Moves moderate to high volumes of cycling, transit and vehicle movements
- Balances priority of all modes
- Traditionally “auto-oriented” land use, but often subject to intensification or redevelopment
- Likely to have mixed, but predominantly commercial land-use

Neighbourhood Boulevard

- A multimodal corridor through a suburban neighbourhood
- Moves low to moderate volumes of cycling and vehicle movements
- Priority on cycling and pedestrian modes, balances other modes
- Adjacent land uses vary including residential, light commercial, schools, parks and community centres

Industrial Connector

- Major mobility corridor that connects industry with the surrounding areas and regional highway/freeway network
- Moves high volumes of vehicles and trucks over moderate distances
- Priority on trucks with typically limited pedestrian accommodation; balances service to other modes
- Adjacent land uses are often industrial/manufacturing

Industrial Boulevard

- A multimodal corridor through an industrial area that connects employees to jobs
- Moves moderate volumes of trucks, transit, cyclists and pedestrians
- Priority on trucks, balances other modes
- Adjacent land uses are often industrial/manufacturing

Rural Connector

- Major mobility corridor connecting rural areas to nearby urban centres
- Moves high volumes of vehicles and trucks over moderate distances
- Priority on vehicles and trucks, typically not served by conventional transit, and generally low accommodation for pedestrians and cyclists
- Adjacent land uses are typically rural uses (which may include agricultural, residential, or commercial)

4.1 Establish the Base Level of Service Targets

Table 4.1 contains the level of service targets for the nine street types that are the foundation of the MMLOS Guidelines. The targets were established based on a combination of best practices from transportation planning and engineering and contemporary knowledge around land-use and public realm planning. As transportation does not occur in a vacuum, the targets reflect the land use and activities they adjoin. Note: a single street/corridor can have different classifications (and thus, MMLOS targets) along its length when the function and/or adjacent land use of the street changes.

While the street types in *Table 4.1* cover the most common street types in Ontario, it is impossible to capture all of the diverse contexts and street types in a short list. Municipalities may choose to review, update (if necessary), and adopt the performance targets that make sense for their specific contexts.

Table 4.1: Recommended MMLOS Targets

	LOS Target				
	Peds	Bikes	Transit	Trucks	Cars
Downtown avenue	B	C	D	D	D
Urban main street	C	C	D	D	D
Urban boulevard	C	B	D	n/a	E
Neighbourhood connector	E	D	B	D	D
Neighbourhood main street	C	C	D	D	D
Neighbourhood boulevard	D	B	D	n/a	E
Industrial connector	E	D	D	B	D
Industrial boulevard	D	D	D	B	E
Rural connector	E	E	n/a[1]	D	D
Custom	X	X	X	X	X

1 Rural roads typically do not serve as transit route corridors where buses stop, which is what the Transit LOS is based on

4.2 Make Adjustments for Planning Directions

Planning directions are provided in a range of municipal documents. In general, the analyst is directed to consider the following adjustments to the base LOS:

- Where the street is identified as a priority corridor for a mode (in a TMP or Mode Plan), the target LOS should be increased by one grade.
    - E.g. for an *Urban Main Street* that is identified to be a Primary Truck Route, the target for Trucks should be increased to LOS C rather than LOS D.
- Where a significant change in the role and function of the street or the adjacent land uses is planned (e.g., the street is identified as an intensification corridor in the municipality's growth plan), appropriate increases or decreases to the base LOS targets should be considered.

Overall, the planning direction adjustments to Levels of Service should be limited to an increase or decrease of no more than one grade from the base LOS. The analyst is directed to document all source documents referenced in making adjustments for planning directions.

6.1 Active Transportation Design Check

In order to pass the active transportation (AT) design check, practitioners must be able to answer YES to each of the checks laid out below. Facilities that do not meet the following checks should be demarcated with an X in the analysis which indicates that service is not provided for this mode.

Where facilities do not meet minimum guidance, mitigation measures to meet or exceed minimum guidance are required. If mitigation is not taken or the selected facilities continue to fall below current guidelines, the decision, accompanying rationale, along with any safety improvements to the existing condition should be recorded as part of the official project documentation.

6.1.1 Pedestrian Segments

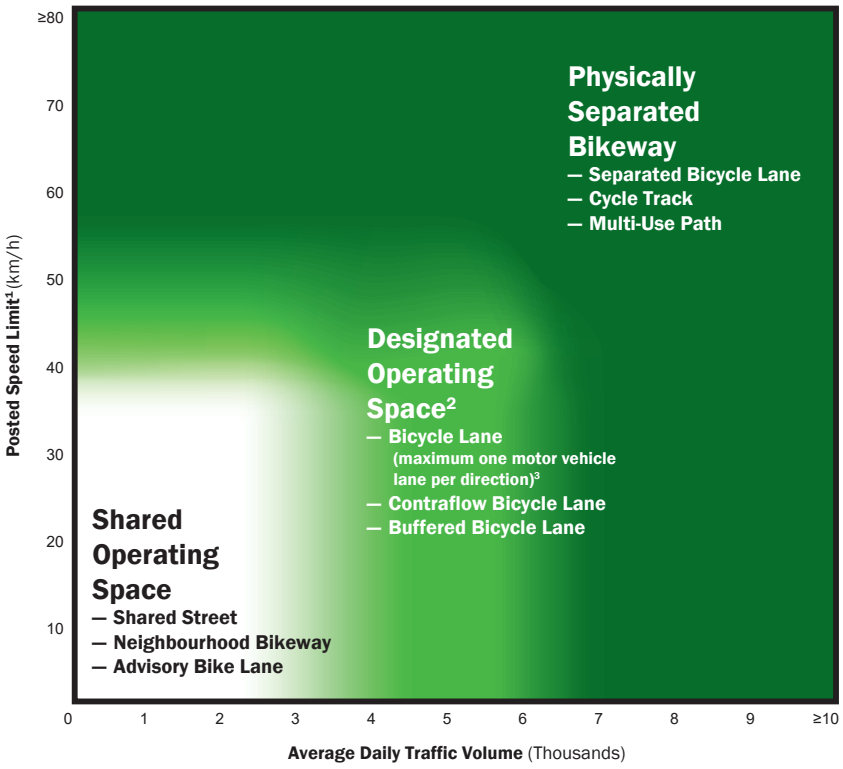
Access

Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)

6.1.2 Bicycle Segments

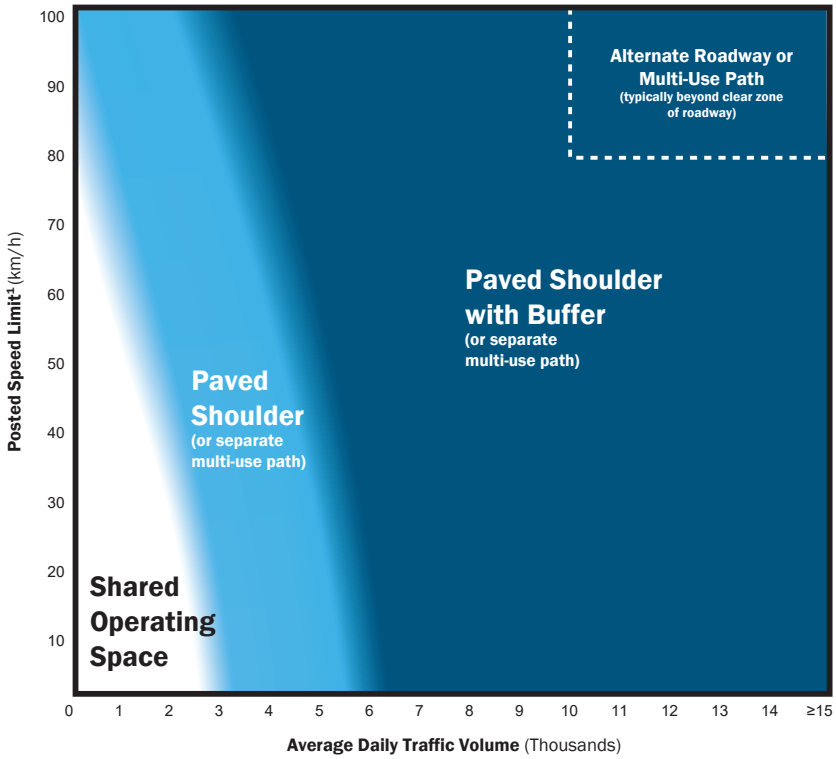
Separation

Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?



1 Operating speeds are assumed to be similar to posted speeds. If evidence suggests this is not the case, practitioners may consider using 85th percentile speeds or implementing measures to reduce operating speeds.
2 Physically separated bikeways may always be considered in the designated operating space area of the nomograph.
3 On roadways with two or more lanes per direction (including multi-lane one-way roadways), a buffered bicycle lane should be considered the minimum with a typical facility being a physically separated bikeway.

Figure 6.1: OTM Book 18 Urban/Suburban Bike Facility Selection Tool (2021)



1 In rural town/hamlet/village contexts, the urban/suburban nomograph may be used.
2 Operating speeds are assumed to be similar to posted speeds. If evidence suggests this is not the case, practitioners may consider using 85th percentile speeds or implementing measures to reduce operating speeds.

Figure 6.2: OTM Book 18 Rural Bike Facility Selection Tool (2021)

6.1.3 Pedestrian Intersections

Continuity

Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?

Accessibility

Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?

6.1.4 Bicycle Intersections

Consistency

Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?

Continuity

Is a continuous amount of space and accompanying pavement markings delineated for cyclists through the intersection?

Connectivity

Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?

6.2 Level of Service Evaluations

Tables 6.1, 6.2, and 6.3 present the gradation tables for the intersection and segment performance measures presented in *Chapter 5*. The tables organize the full range of possible inputs when analyzing MMLOS into regular intervals and assign an appropriate LOS grade, providing a meaningful differentiation between the LOS values for the purpose of comparison and analysis. The tables also present the weightings of each metric within each mode's analysis. More detailed descriptions of the measures and grades in the following tables can be found in the Annex and User Guide. Further, the Spreadsheet Analysis Tool discussed in Chapter 8 is designed based on the gradation tables below and can be used to assist practitioners in their analysis.

Table 6.1: Grades for Segment Measures

MODE	MEASURE	WEIGHT	LOS A	LOS B
PEDS[2]	Pedestrian Facility Width (m)	33%	> 3.0	2.6 - 3.0
	Pedestrian Buffer Width (m)	33%	> 2.5	2.1 - 2.5
	Max Distance between Controlled Crossings (m)	33%	200[3]	201 - 230
BIKES[2]	Bike Facility Width per Direction (m)	33%	> 2.4	2.2 - 2.4
	Bike Buffer Width (m)	33%	Has physical measures and buffer width > 1.0	Has physical measure and buffer width is 0.50 - 1.0
	Conflicts with Other Modes (In-lane conflicts and crossing point conflicts)	33%	Two "Low" conflict indicators	One "Low" conflict indicator and one "Moderate" conflict indicator
BUSES	Transit Facility Type	33%	Dedicated lanes	Intersection priority measures
	Transit Passenger Amenities	33%	Abundance of passenger amenities such as shelters, seating, shade trees, etc.	Moderate presence of passenger amenities such as shelters, seating, shade trees, etc.
	Pedestrian Level of Service	33%	A	B
TRUCKS	Width of the Curb Lane (m)	50%	> 4.0	3.9 - 4.0
	Car Level of Service	50%	A	B
CARS	Mid-Block V/C ratio	50%	< 0.60	0.60 - 0.69
	Curb Lane Conflicts (conflicts/km)	50%	None	1 - 2

1 For some measures, only a limited number of LOS scores are possible. The ones that cannot be obtained for that metric are marked as "n/a."

2 For mixed AT facilities where pedestrians and cyclists share the operating space (e.g. multi-use paths, etc.) the facility should be scored based on the PED and BIKE metrics independently and the resulting scores discounted by one grade (ex: B -> C). This reflects the negative impact to the pedestrian and cycling experience that results from sharing the same operating space. It is noted that in areas of high pedestrian and bicycle activity that mixed-facilities should be avoided when possible.

3 Note there are also disadvantages to controlled crossings that are too close to one another which can result in collisions between vehicles and pedestrians. Refer to OTM Book 15 for further information on this.

LOS C	LOS D	LOS E	LOS F
2.1 - 2.5	1.8 - 2.0	1.5 - 1.7	< 1.5
1.6 - 2.0	1.3 - 1.5	1.0 - 1.2	< 1.0
231 - 260	261 - 290	291 - 320	> 320
1.9 - 2.1	1.6 - 1.8	1.2 - 1.5	< 1.2
n/a[1]	Has physical measures and buffer width is 0.30 - 0.49 OR Has no physical measures and width is ≥ 0.50	n/a[1]	No physical measures and buffer width is < 0.50
Two "Moderate" conflict indicators	One "Low" conflict indicator and one "High" conflict indicator	One "Moderate" conflict indicator and one "High" conflict indicator	Two "High" conflict indicators
n/a[1]	Mixed traffic with >1 lane/ direction	n/a[1]	Mixed traffic with 1 lane
n/a[1]	Low presence of passenger amenities such as shelters, seating, shade trees, etc.	n/a[1]	No presence of passenger amenities such as shelters, seating, shade trees, etc.
C	D	E	F
3.7 - 3.8	3.4 - 3.6	n/a[1]	< 3.4
C	D	E	F
0.70 - 0.79	0.80 - 0.89	0.90 - 0.99	> 1.0
3 - 4	5 - 6	7 - 8	9 +

Table 6.2: Grades for Signalized Intersection Measures

MODE	MEASURE	WEIGHT	LOS A	LOS B
PEDS	Enhanced Pedestrian Measures	25%	> 1.0	0.76 - 1.0
	Average Effective Turning Radius (m)	25%	< 9.0	9.0 - 10.9
	Signal Cycle Length (s)	25%	< 60	61 - 75
	Number of Uncontrolled Conflicts (conflicts/approach)	25%	1.0	1.1 - 1.5
BIKES	Enhanced Bicycle Measures	25%	> 1.0	0.76 - 1.0
	Average Effective Turning Radius (m)	25%	< 9.0	9.0 - 10.9
	Signal Cycle Length (s)	25%	< 60	61 - 75
	Number of Uncontrolled Conflicts (conflicts/approach)	25%	1.0	1.1 - 1.5
BUSES	Transit Priority Measures	33%	Implementation of transit priority measures at all approaches for transit	n/a[1]
	Transit Movement Delay (s)	33%	0 - 10	11 - 20
	Pedestrian Level of Service	33%	A	B
TRUCKS	Average Effective Turning Radius (m)	50%	> 18	17 - 18
	Car Level of Service	50%	A	B
CARS	Percentage of Turning Movements with Dedicated Lanes	50%	85 - 100 %	60 - 84 %
	Intersection Delay (s)	50%	0 - 10	11 - 20

1 For some measures, only a limited number of LOS scores are possible. The ones that cannot be obtained for that metric are marked as "n/a."

LOS C	LOS D	LOS E	LOS F
0.51 - 0.75	0.26 - 0.50	0.01 - 0.25	0
11.0 - 12.9	13.0 - 14.9	15.0 - 17.9	≥ 18
76 - 90	91 - 105	106 - 120	> 120
1.6 - 2.0	2.1 - 2.5	2.6 - 3.0	> 3.0
0.51 - 0.75	0.26 - 0.50	0.01 - 0.25	0
11.0 - 12.9	13.0 - 14.9	15.0 - 17.9	≥ 18
76 - 90	91 - 105	106 - 120	> 120
1.6 - 2.0	2.1 - 2.5	2.6 - 3.0	> 3.0
Implementation of transit priority measures at a minimum of one but not all approaches for transit	n/a[1]	n/a[1]	No transit priority measures at any approaches for transit
21 - 35	36 - 55	56 - 80	> 80
C	D	E	F
15 - 16	13 - 14	11 - 12	< 11
C	D	E	F
35 - 59 %	10 - 34 %	n/a[1]	< 10 %
21 - 35	36 - 55	56 - 80	> 80

Table 6.3: Grades for Unsignalized Intersection Measures

MODE	MEASURE	WEIGHT	LOS A	LOS B
PEDS[1]	Average Crossing Distance (m)	33%	< 7.0	7.0 - 8.9
	Marked Controlled Crossings	33%	100% of movements	n/a[1]
	Average Effective Turning Radius (m)	33%	< 9.0	9.0 - 10.9
BIKES[1]	Presence of Bicycle Facilities	33%	Bike facility on all approaches	Bike facility on ¾ or ⅔ approaches
	Requirement to Stop	33%	0 - 15 %	16 - 30 %
	Average Effective Turning Radius (m)	33%	< 9.0	9.0 - 10.9
BUSES	Transit Movement Delay (s)	50%	0 - 10	11 - 20
	Pedestrian Level of Service	50%	A	B
TRUCKS	Average Effective Turning Radius (m)	50%	> 18	17 - 18
	Car Level of Service	50%	A	B
CARS	Intersection Delay (s)	100%	0 - 10	11 - 20

1 For some measures, only a limited number of LOS scores are possible. The ones that cannot be obtained for that metric are marked as "n/a."

LOS C	LOS D	LOS E	LOS F
n/a[1]	9.0 - 10.9	n/a[1]	> 11.0
n/a[1]	n/a[1]	50% of movement	<50% of movements
11.0 - 12.9	13.0 - 14.9	15.0 - 17.9	≥ 18
n/a[1]	Bike facility on ½ or ⅓ approaches	n/a[1]	No bike facility
31 - 50 %	51 - 70%	71 - 85 %	> 85 %
11.0 - 12.9	13.0 - 14.9	15.0 - 17.9	≥ 18
21 - 35	36 - 55	56 - 80	> 80
C	D	E	F
15 - 16	13 - 14	11 - 12	< 11
C	D	E	F
21 - 35	36 - 55	56 - 80	> 80

APPENDIX F:

Draft Road Classification and Right-of-Way Width Review Excerpts

road classifications by taking into consideration not just vehicle volumes and speed but function and context of the streets.

Harmonizing the right-of-way widths with Complete Streets typologies ensures that roads meet the traffic network needs, land-use and context. The basic road cross-section recommendations assist in determining the appropriate road classification and related right-of-way widths for roadways within the City.

Table 3: Harmonized Road Classification

Road Class	**Permitted Typologies**	**Complete Streets ROW (metres)**	**Typical ROW (metres)**	**Lanes**	**Primary Priority Function**
Urban Major Arterial	Transitioning Avenues	36	36 (36.576)	4	Mobility
Urban Minor Arterial	Transitioning Avenues Urban Avenue	36 20-26	20-36 (20.117-36.576)	2 to 4	Mobility and access
Urban Collector	Urban Avenue Connector Main Street Industrial Street	20-26 20-26 18-20 26-30	18-30 (18.000-30.000)	2 to 4	Placemaking and access
Urban Local	Neighbourhood Street	15-20	15-20 (15.000-20.117)	1 to 2	Access
Rural Arterial	Transitioning Avenues Rural Road Industrial Street	36 26-36 26-30	26-36 (26.213-36.576)	2 to 4	Mobility
Rural Collector	Connector Rural Road Rural Settlement Road	20-26 26-36 20-26	20-36 (20.117-36.576)	2 to 3	Mobility and access
Rural Local	Neighbourhood Street Rural Settlement Road	20-26	20-26 (20.117-26.213)	1 to 2	Access

APPENDIX G:

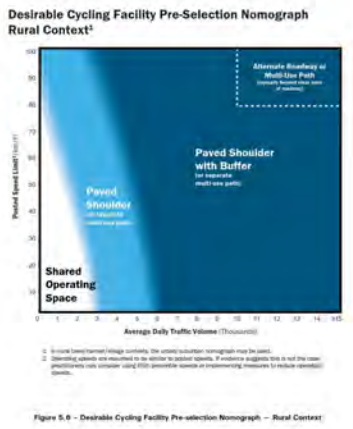
OTC MMLOS Worksheets

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	E	B	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Upper Red Hill Valley Parkway and Rymal Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	E	B	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	Yes
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	17 - 18	85 - 100%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	15.0 - 17.9	15.0 - 17.9	21 - 35	B	21 - 35
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	106 -120	106 - 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	1.6 - 2.0	2.6 - 3.0			



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	D	B	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Trinity Church Road and Rymal Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	D	B	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	Yes
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	Yes
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	17 - 18	60 - 84%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	15.0 - 17.9	15.0 - 17.9	11 - 20	B	21 - 35
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	106 -120	106 - 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	1.6 - 2.0	2.1 - 2.5			

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

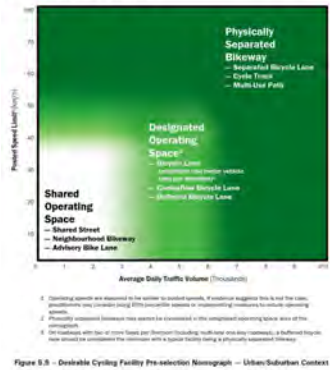


Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

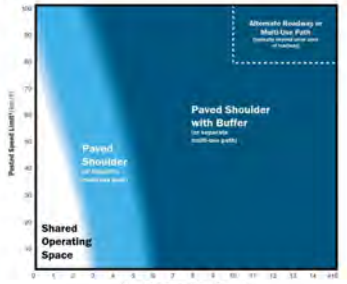


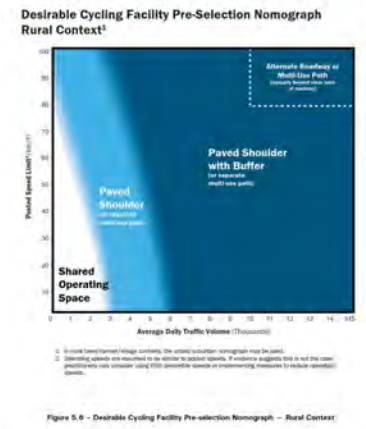
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	D	D	B	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Fletcher Road and Rymal Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	D	D	B	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	15 - 16	60 - 84%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	15.0 - 17.9	15.0 - 17.9	11 - 20	B	11 - 20
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	76 - 90	76 - 90	D		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	1.6 - 2.0	1.6 - 2.0			

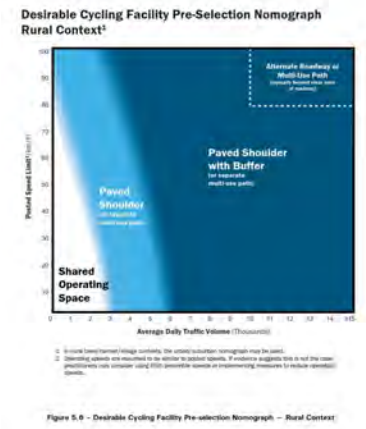


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	D	A	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Second Road W/Kingsborough Drive and Rymal Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	D	A	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	Greater than 18	35 - 59%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	Greater than or Equal to 18	Greater than or Equal to 18	0 - 10	B	11 - 20
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	106 -120	106 - 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.6 - 3.0	2.1 - 2.5			

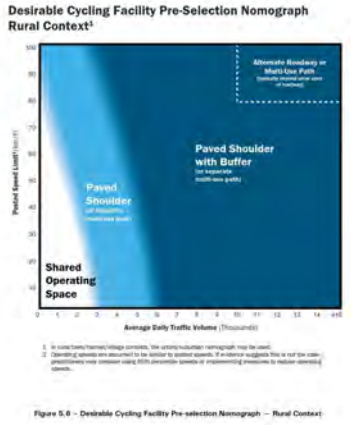


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	F	D	A	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Highway 56/Upper Centennial Parkway and Rymal Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	F	D	A	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	Greater than 18	85 - 100%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	Greater than or Equal to 18	Greater than or Equal to 18	11 - 20	B	21 - 35
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	106 -120	106 - 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.6 - 3.0	Greater than 3			



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	D	F	A	B
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Hendershot Road/Second Road E and Regional Road 20					
Type	**SIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	D	F	A	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	Greater than 18	35 - 59%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	Greater than or Equal to 18	Greater than or Equal to 18		B	11 - 20
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	76 - 90	76 - 90	F		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.6 - 3.0	1.6 - 2.0			

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

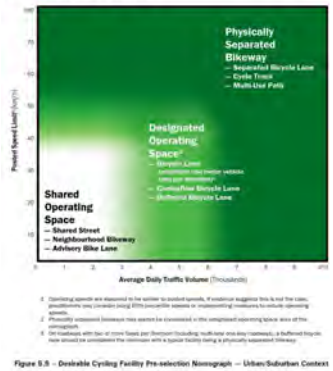


Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

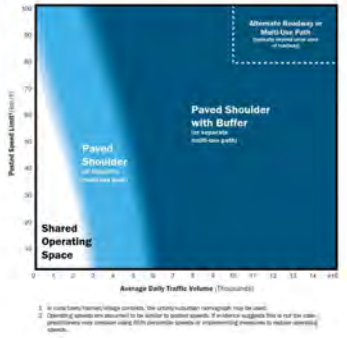


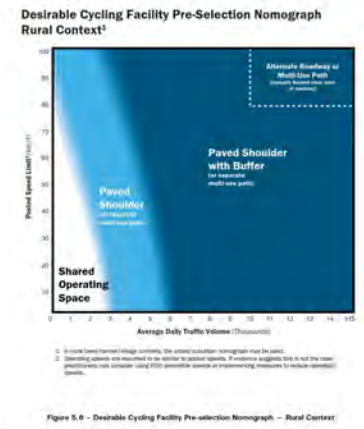
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	D	B	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Upper Centennial Parkway and Highland Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	D	B	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	17 - 18	60 - 84%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	15.0 - 17.9	15.0 - 17.9	11 - 20	B	11 - 20
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	Greater than 120	Greater than 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.6 - 3.0	2.6 - 3.0			

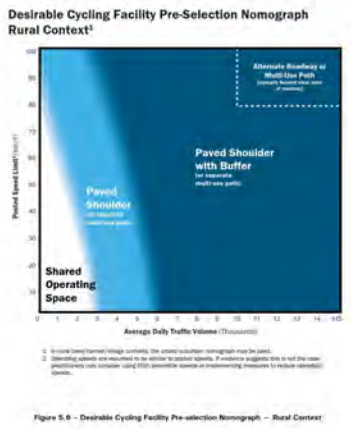


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	E	B	C
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Upper Centennial Parkway and Mud Street E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	E	B	C

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	17 - 18	60 - 84%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	15.0 - 17.9	15.0 - 17.9	36 - 55	C	36 - 55
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	Greater than 120	Greater than 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.1 - 2.5	2.6 - 3.0			



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	C	F	E	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
First Road E and Mud Street E					
Type	**SIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	C	F	E	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	Less than 11	Less than 10%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	9.0 - 10.9	9.0 - 10.9		D	11 - 20
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	91 -105	91 - 105	F		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.6 - 3.0	1.0			

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

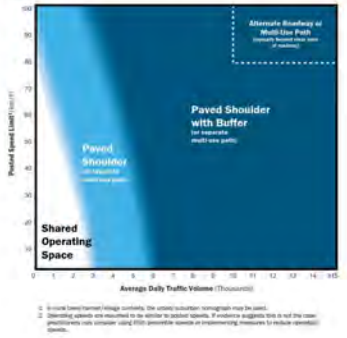


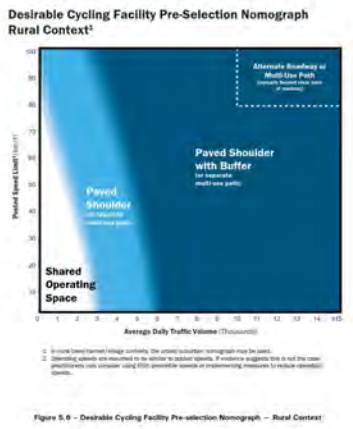
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	E	B	B
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Upper Centennial Parkway and Green Mountain Road E					
Type	SIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	E	B	B

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	Yes
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	Yes

MMLOS Evaluation

Measure 1	Enhanced Pedestrian Measures	Enhanced Bicycle Facilities	Transit Priority Measures	Average Effective Turning Radius (m)	% of Movements with Dedicated Turn Lanes
	0	0	No transit priority measures at any approaches for transit	17 - 18	60 - 84%
Measure 2	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	Transit Movement Delay (s)	Car Level of Service	Intersection Delay (s)
	15.0 - 17.9	15.0 - 17.9	21 - 35	B	21 - 35
Measure 3	Signal Cycle Length (s)	Signal Cycle Length (s)	Pedestrian Level of Service	-	-
	106 -120	106 - 120	E		
Measure 4	Number of Uncontrolled Conflicts (conflicts/approach)	Number of Uncontrolled Conflicts (conflicts/approach)	-	-	-
	2.6 - 3.0	2.1 - 2.5			

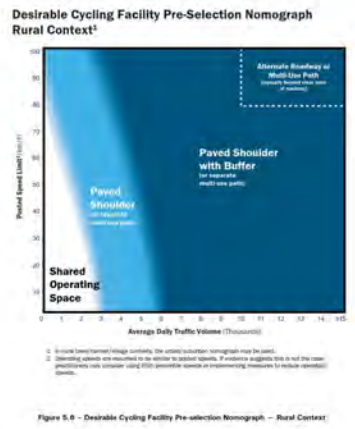


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	C	F	D	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Trinity Church Road and Golf Club Road					
Type	**UNSIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	C	F	D	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		13 - 14	0 - 10
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	0 - 15 %	E	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	11.0 - 12.9	11.0 - 12.9			
Measure 4		-	-	-	-

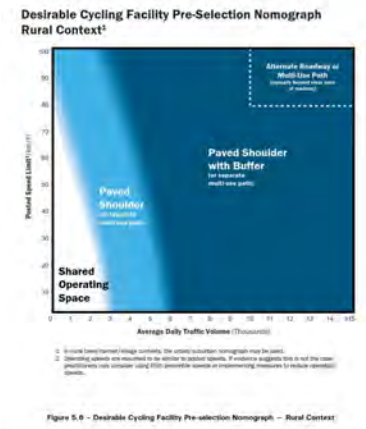


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	E	F	E	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Fletcher Road and Golf Club Road					
Type	**UNSIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	E	F	E	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	9.0 - 11.0	No bike facility		Less than 11	11 - 20
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	9.0 - 10.9	9.0 - 10.9			
Measure 4		-	-	-	-

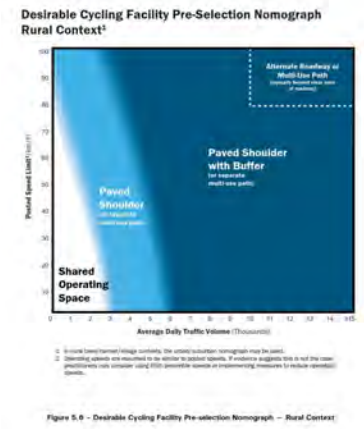


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	F	C	D
SCENARIO:	Existing 2025				
Area Type:	Rural Connector				
MODE					
Hendershot Road and Golf Club Road					
Type	UNSIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	F	C	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		15 - 16	11 - 20
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	13.0 - 14.9	13.0 - 14.9			
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	D	F	C	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
First Road E and Regional Road 20					
Type	**UNSIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	D	F	C	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation					
Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		17 - 18	0 - 10
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	0 - 15 %	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	15.0 - 17.9	15.0 - 17.9			
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

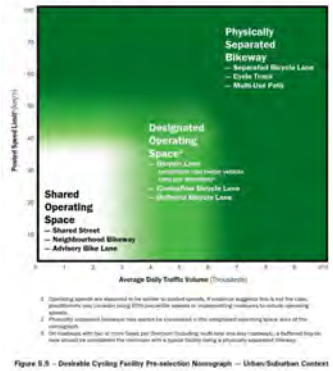


Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

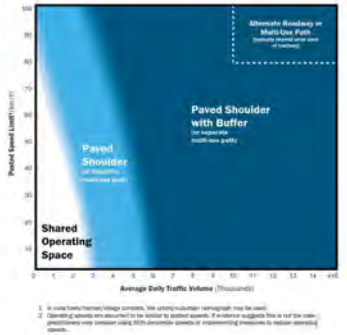


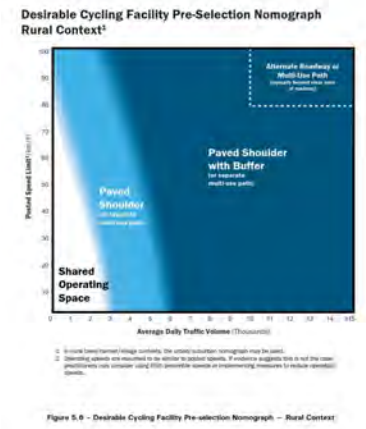
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	F	D	D
SCENARIO:	Existing 2025				
Area Type:	Rural Connector				
MODE					
First Road E and Highland Road E					
Type	UNSIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	F	D	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		13 - 14	11 - 20
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	11.0 - 12.9	11.0 - 12.9			
Measure 4		-	-	-	-

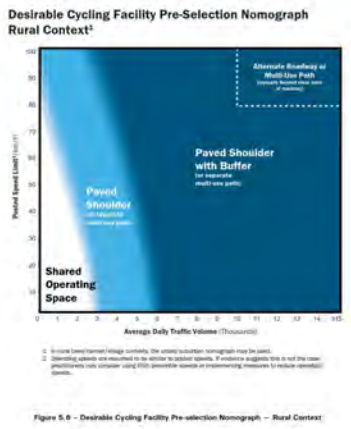


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	F	E	D
SCENARIO:	Existing 2025				
Area Type:	Rural Connector				
MODE					
Second Road E and Highland Road E					
Type	UNSIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	F	E	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		Less than 11	11 - 20
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	9.0 - 10.9	9.0 - 10.9			
Measure 4		-	-	-	-

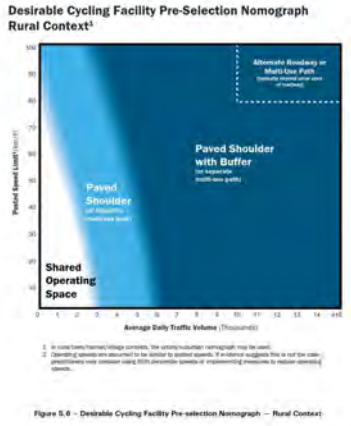


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	F	E	E
SCENARIO:	Existing 2025				
Area Type:	Rural Connector				
MODE					
Second Road E and Mud Street E					
Type	UNSIGNALIZED INTERSECTIONS				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	F	E	E

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		Less than 11	21 - 35
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	E	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	9.0 - 10.9	9.0 - 10.9			
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	F	E	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
First Road E and Green Mountain Road E					
Type	**UNSIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	F	E	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		Less than 11	11 - 20
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	9.0 - 10.9	9.0 - 10.9			
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

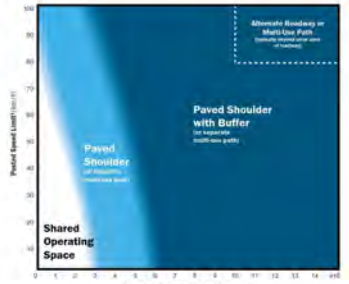


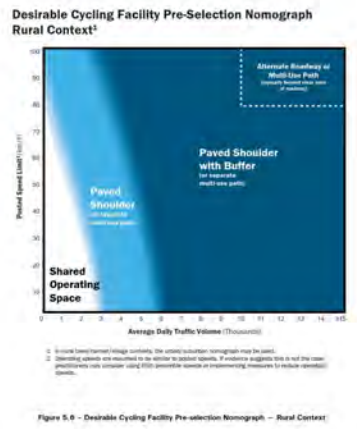
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	E	E	F	E	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Second Road E and Green Mountain Road E					
Type	**UNSIGNALIZED INTERSECTIONS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	E	E	F	E	D

Active Transportation Design Check	
Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?	No
Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?	No
Is a continuous amount of space and accompanying pavement makings delineated for cyclists through the intersection?	No
Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc)?	No
Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?	No

MMLOS Evaluation

Measure 1	Average Crossing Distance (m)	Presence of Bicycle Facilities	Transit Movement Delay (s)	Average Effective Turning Radius (m)	Intersection Delay (s)
	Greater than 11	No bike facility		Less than 11	11 - 20
Measure 2	Marked Crossings	Requirement to stop	Pedestrian Level of Service	Car Level of Service	-
	Less than 50% of movements	Greater than 85%	F	D	
Measure 3	Average Effective Turning Radius (m)	Average Effective Turning Radius (m)	-	-	-
	9.0 - 10.9	9.0 - 10.9			
Measure 4		-	-	-	-

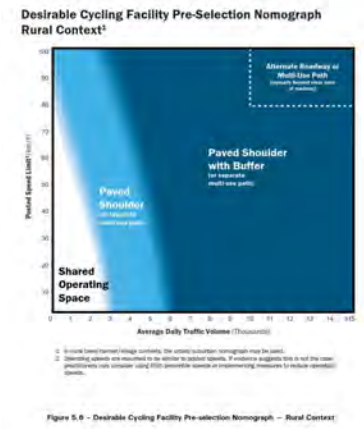


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	D	E	D	E
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Rymal Road E between Upper Red Hill Valley Parkway and Trinity Church Road					
Type	SEGMENTS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	D	E	D	E

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	Yes

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Greater than 3.0	1.6 - 1.8	Mixed traffic with > 1 lane per direction	3.4 - 3.6	Greater than 1.00
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has physical measures and buffer width is 0.3 - 0.5 OR Has no physical measures and buffer	No presence of passenger amenities such as shelters, seating, shade trees, etc.	E	7-8
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	One "low" conflict indicator and one "high" conflict indicator	F		
Measure 4		-	-	-	-

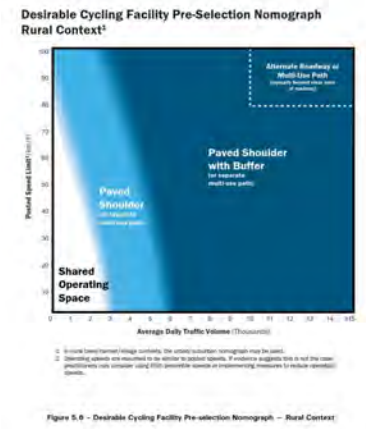


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	F	C	D	E
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Rymal Road E between Trinity Church Road and 140 metres east of Fletcher Road					
Type	SEGMENTS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	F	C	D	E

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	Yes
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	2.1 - 2.5	Less than 1.2	Mixed traffic with > 1 lane per direction	3.4 - 3.6	0.80 - 0.89
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	1.3 - 1.5	Has no physical measures and buffer width is < 0.5	Moderate presence of passenger amenities such as shelters, seating, shade trees, etc.	E	9+
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	D		
Measure 4		-	-	-	-



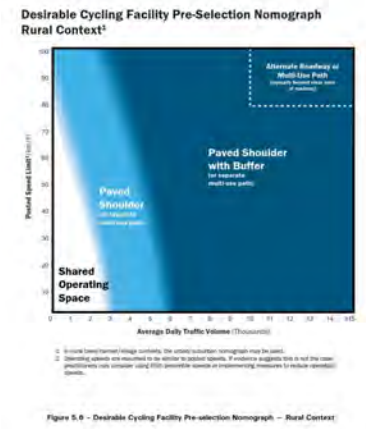
LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	D	F	D	C	C
SCENARIO:	***Existing 2025***				
Area Type:	***Urban Boulevard***				
MODE					
Rymal Road E between 140 metres east of Fletcher Road and Second Road W					
Type			**SEGMENTS**		
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	F	D	C	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	1.8 - 2.0	Less than 1.2	Mixed traffic with > 1 lane per direction	3.4 - 3.6	0.70 - 0.79
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	1.6 - 2.0	Has no physical measures and buffer width is < 0.5	Moderate presence of passenger amenities such as shelters, seating, shade trees, etc.	C	5-6
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	**D**	**F**	**D**	**D**	**D**
SCENARIO:	***Existing 2025***				
Area Type:	***Urban Boulevard***				
MODE					
Rymal Road E between Second Road W and Upper Centennial Parkway					
Type	**SEGMENTS**				
Target (Custom if necessary)	**C**	**B**	**D**		**E**
Adjustment for Planning Direction	**None**	**None**	**None**	**None**	**None**
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	**None**	**None**	**None**	**None**	**None**
Reasons for adjustment (if applicable)					
Actual	**D**	**F**	**D**	**D**	**D**

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	Yes
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	1.8 - 2.0	Less than 1.2	Mixed traffic with > 1 lane per direction	3.4 - 3.6	0.70 - 0.79
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Greater than 2.5	Has no physical measures and buffer width is < 0.5	Low presence of passenger amenities such as shelters, seating, shade trees, etc.	D	7-8
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	D		
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

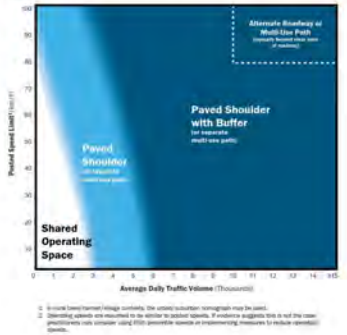


Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

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SCENARIO:	***Existing 2025***				
Area Type:	***Neighbourhood Boulevard***				
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Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

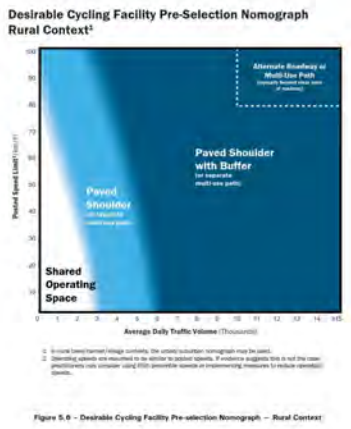


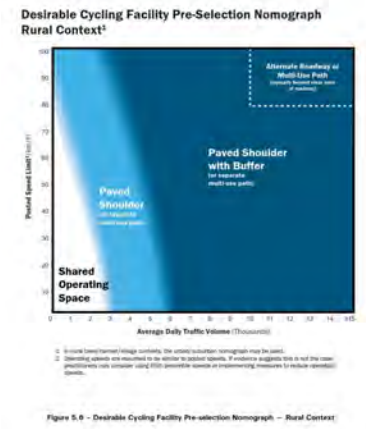
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	C
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Trinity Church Road between 190 metres south of Pinehill Drive and Golf Club Road					
Type			**SEGMENTS**		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	C	9+
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320		F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	C
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Golf Club between Trinity Church Road and Highway 56					
Type	**SEGMENTS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	C	7-8
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

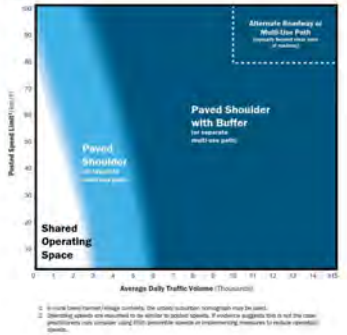


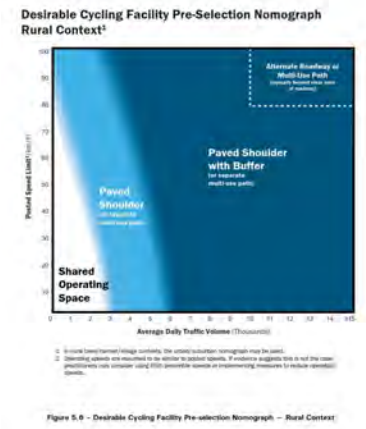
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	F	E	B	C
SCENARIO:	Existing 2025				
Area Type:	Neighbourhood Boulevard				
MODE					
Fletcher Road between Rymal Road E and Blue Mountain Road					
Type	SEGMENTS				
Target (Custom if necessary)	D	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	F	E	B	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	Yes
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	1.5 - 1.7	Less than 1.2	Mixed traffic with 1 lane per direction	Greater than 4.00	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	1.6 - 2.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	C	9+
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	291 - 320	Two "high" conflict indicators	D		
Measure 4		-	-	-	-

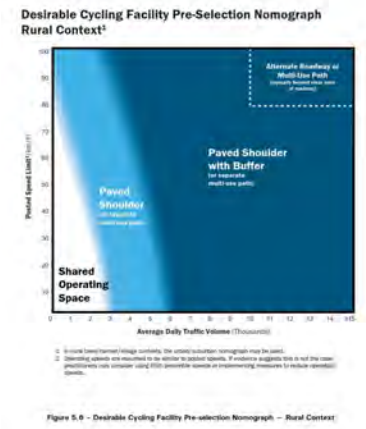


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	B
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Fletcher Road between Blue Mountain Road and Golf Club Road					
Type			**SEGMENTS**		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	B

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

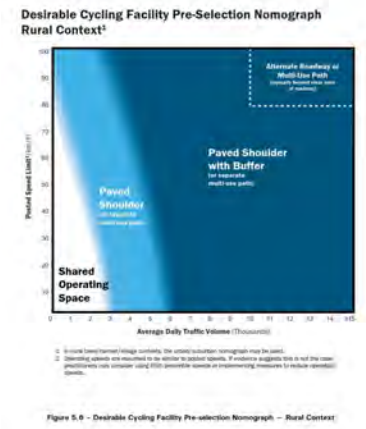
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	B	5-6
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	**C**	**F**	**E**	**B**	**C**
SCENARIO:	***Existing 2025***				
Area Type:	***Neighbourhood Boulevard***				
MODE					
Kingsborough Drive between Rymal Road E and Bellagio Avenue					
Type	**SEGMENTS**				
Target (Custom if necessary)	**D**	**B**	**D**		**E**
Adjustment for Planning Direction	**None**	**None**	**None**	**None**	**None**
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	**None**	**None**	**None**	**None**	**None**
Reasons for adjustment (if applicable)					
Actual	**C**	**F**	**E**	**B**	**C**

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	Yes
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation					
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	1.5 - 1.7	Less than 1.2	Mixed traffic with 1 lane per direction	Greater than 4.00	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	1.6 - 2.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	C	9+
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	200	Two "high" conflict indicators	C		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	E	D
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Highway 56 between Golf Club Road and Dalgleish Trail					
Type	**SEGMENTS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	E	D

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	0.80 - 0.89
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	D	7-8
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

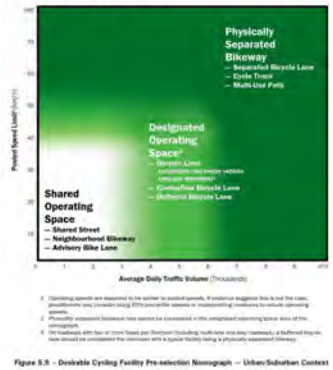


Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

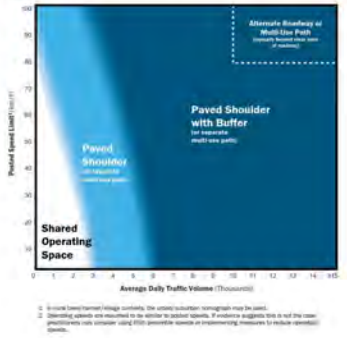


Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

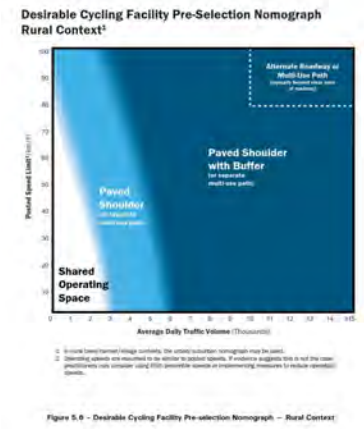
LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	F	F	E	C	A
SCENARIO:	***Existing 2025***				
Area Type:	***Urban Boulevard***				
MODE					
Highway 56 between Dalgleish Trail and Rymal Road E					
Type			**SEGMENTS**		
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	E	C	A

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

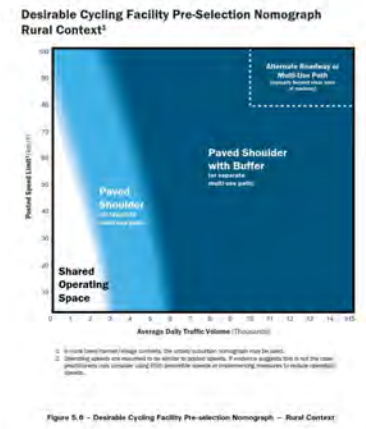
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with > 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	A	1-2
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	D	F	D	C	C
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Upper Centennial Parkway between Rymal Road E and Highland Road E					
Type	SEGMENTS				
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	F	D	C	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation					
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	2.1 - 2.5	Less than 1.2	Mixed traffic with > 1 lane per direction	3.7 - 3.8	0.80 - 0.89
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	2.1 - 2.5	Has no physical measures and buffer width is < 0.5	Moderate presence of passenger amenities such as shelters, seating, shade trees, etc.	C	3-4
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



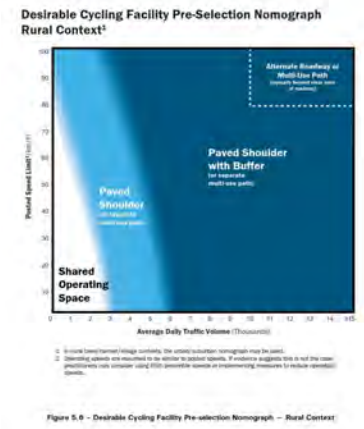
LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	F	F	E	E	D
SCENARIO:	***Existing 2025***				
Area Type:	***Urban Boulevard***				
MODE					
Upper Centennial Parkway between Highland Road E and Mud Street E					
Type			**SEGMENTS**		
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	E	E	D

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with > 1 lane per direction	Less than 3.4	0.80 - 0.89
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	Low presence of passenger amenities such as shelters, seating, shade trees, etc.	D	5-6
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



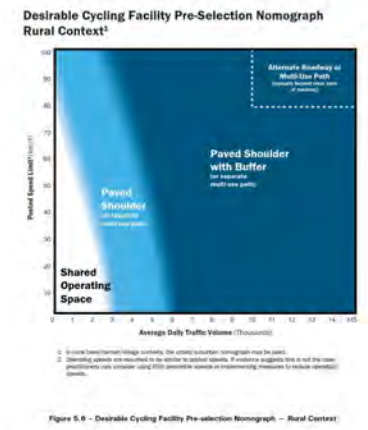
LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	D	F	E	C	D
SCENARIO:	***Existing 2025***				
Area Type:	***Urban Boulevard***				
MODE					
Upper Centennial Parkway between Mud Street E and 200 metres north of Mud Street E					
Type			**SEGMENTS**		
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	D	F	E	C	D

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	2.1 - 2.5	Less than 1.2	Mixed traffic with > 1 lane per direction	3.7 - 3.8	0.90 - 1.00
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	D	3-4
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	261 - 290	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

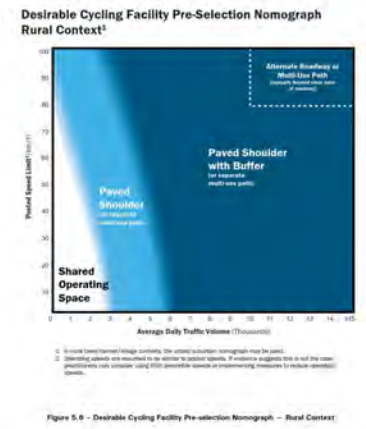


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	E	C	D
SCENARIO:	Existing 2025				
Area Type:	Urban Boulevard				
MODE					
Upper Centennial Parkway between 200 metres north of Mud Street E and Green Mountain Road E					
Type			SEGMENTS		
Target (Custom if necessary)	C	B	D		E
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	E	C	D

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with > 1 lane per direction	3.7 - 3.8	0.90 - 1.00
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	Low presence of passenger amenities such as shelters, seating, shade trees, etc.	D	5-6
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	E	C	B
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Regional Road 20 between Upper Centennial Parkway and Second Road E					
Type	**SEGMENTS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	E	C	B

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with > 1 lane per direction	3.4 - 3.6	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	B	5-6
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

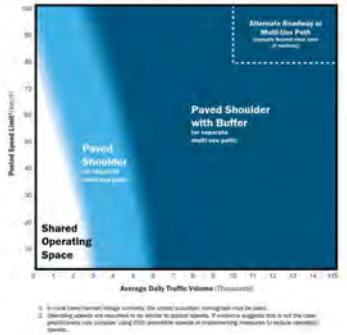


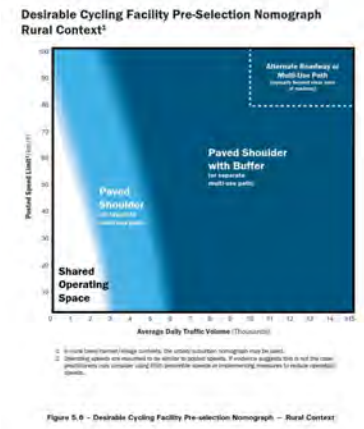
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	B
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Hendershot Road between Golf Club Road and Regional Road 20					
Type			**SEGMENTS**		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	B

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	B	5-6
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	C	A
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
First Road E between Regional Road 20 and Green Mountain Road E					
Type	**SEGMENTS**				
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	C	A

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	A	1-2
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph
Urban/Suburban Context

Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph
Rural Context[1]

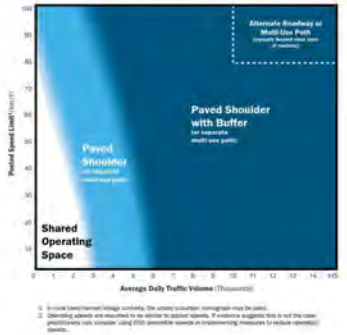


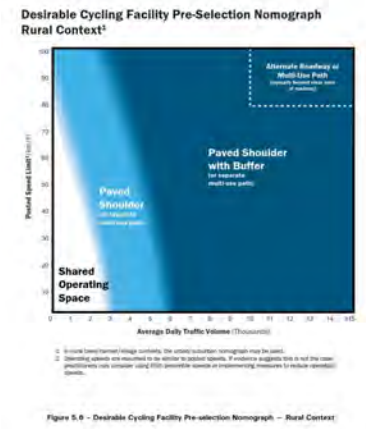
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	C
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Second Road E between Regional Road 20 and Green Mountain Road E					
Type			**SEGMENTS**		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	C	7-8
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

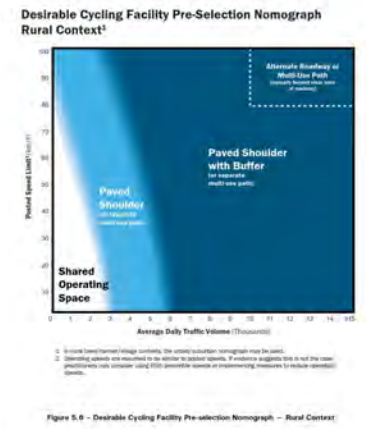


LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	B
SCENARIO:	Existing 2025				
Area Type:	Rural Connector				
MODE					
Highland Road E between Upper Centennial Parkway and Second Road E					
Type			SEGMENTS		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	B

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	B	3-4
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation

Actual	F	F	F	C	A
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Mud Street E between Upper Centennial Parkway and Second Road E					
Type			**SEGMENTS**		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	C	A

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	A	1-2
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-

Desirable Cycling Facility Pre-Selection Nomograph Urban/Suburban Context

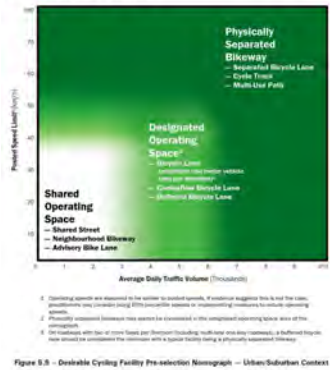


Figure 5.5 – Desirable Cycling Facility Pre-selection Nomograph – Urban/Suburban Context

Desirable Cycling Facility Pre-Selection Nomograph Rural Context[1]

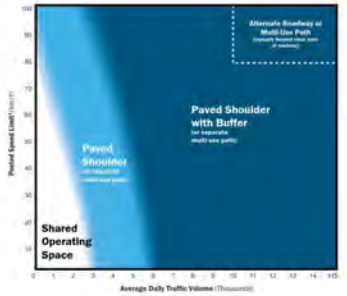


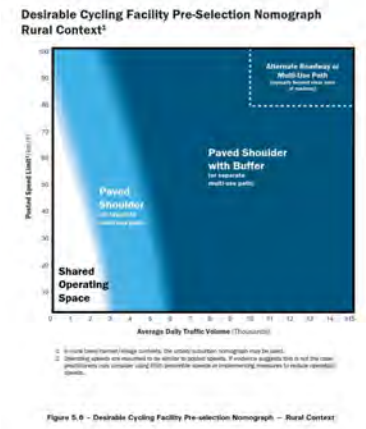
Figure 5.6 – Desirable Cycling Facility Pre-selection Nomograph – Rural Context

LOS AND DATA ENTRY - Use this to enter what you know and for detailed or summary results presentation					
Actual	F	F	F	D	C
SCENARIO:	***Existing 2025***				
Area Type:	***Rural Connector***				
MODE					
Green Mountain Road E between Upper Centennial Parkway and Second Road E					
Type			**SEGMENTS**		
Target (Custom if necessary)	E	E		D	D
Adjustment for Planning Direction	None	None	None	None	None
Reasons for adjustment (if applicable)					
Adjustment for Strategic Policy	None	None	None	None	None
Reasons for adjustment (if applicable)					
Actual	F	F	F	D	C

Active Transportation Design Check	
Do the pedestrian facilities provide direct access to all properties along the segment? (Direct access can be provided by an adjacent facility or designated crossing to the property in question)	No
Does the bicycle facility selected correspond with the minimum appropriate facility type identified in the context appropriate nomograph (Figure 6.1, 6.2)?	No

MMLOS Evaluation

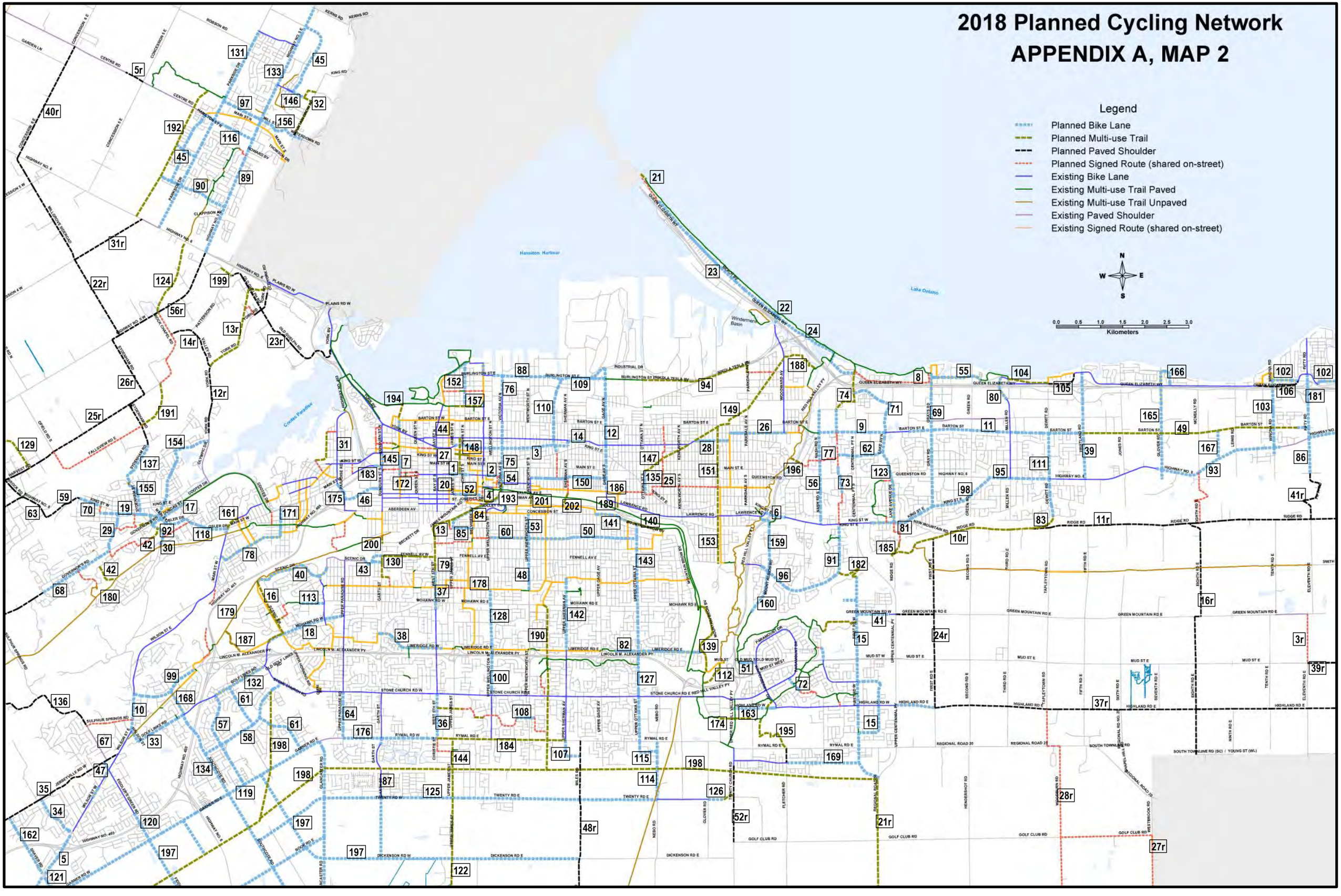
Measure 1	Pedestrian Facility Width (m)	Bike Facility Width per Direction (m)	Transit Facility Type	Width of Curb Lane (m)	Mid-block V/C Ratio
	Less than 1.5	Less than 1.2	Mixed traffic with 1 lane per direction	Less than 3.4	Less than 0.60
Measure 2	Pedestrian Buffer Width (m)	Bike Buffer Width (m)	Transit Passenger Amenities	Car Level of Service	Curb Lane Conflicts
	Less than 1.0	Has no physical measures and buffer width is < 0.5	No presence of passenger amenities such as shelters, seating, shade trees, etc.	C	9+
Measure 3	Max Distance Between Controlled Crossings (m)	Conflicts with Other Modes (in-lane conflicts and cross point conflicts)	Pedestrian Level of Service	-	-
	Greater than 320	Two "high" conflict indicators	F		
Measure 4		-	-	-	-



APPENDIX H:

Cycling Master Plan Review and Update Excerpts

2018 Planned Cycling Network
APPENDIX A, MAP 2



APPENDIX I:

Existing Transit Data

Hamilton Street Railway System Map 2025

Legend

- EXPRESSWAY
- ARTERIAL ROAD
- LOCAL ROAD
- LANE
- RAILWAY
- RECREATIONAL TRAIL
- ESCARPMENT
- MORE THAN 3 ROUTES

AREAS / ZONES

- COMMUNITY/DOWNTOWN
- INDUSTRIAL
- PARK
- CEMETERY
- WOODED AREA
- AIRPORT
- TRANS-CAB ZONE
- myRIDE SERVICE AREA

SYMBOLS

- Hospital
- Police Station
- Library
- Fire Hall
- Bus Stops (see inset maps)
- Indoor Pool
- Outdoor Pool
- Community Centre
- Arena
- Point of Interest
- Municipal Office
- Museum
- College or University
- Public Elementary School
- Catholic Elementary School
- Secondary School
- Trans-Cab Transfer Point
- Mountain Climber Boarding

Information subject to change.
Published by the Hamilton Street Railway
2200 Upper James St.
Mount Hope, ON L0R 1W0

0 1 2 km

McMASTER UNIVERSITY

MOHAWK COLLEGE TERMINAL

Terminals & Downtown

N - Northbound; S - Southbound; E - Eastbound; W - Westbound

CF LIME RIDGE MALL TERMINAL

EASTGATE SQUARE TERMINAL

FRANK A. COOKE TERMINAL AND DOWNTOWN

FRANK A. COOKE TERMINAL

Waterdown myRide Service Area

Burlington Bay

Hamilton Harbour

LAKE ONTARIO

Twenty Road West Trans-Cab

Mountain Transit Centre Park 'N Ride

Mount Hope & Airport Trans-Cab

Route Directory

N - Northbound; S - Southbound; E - Eastbound; W - Westbound

Route No.	Route Name	Direction	Destination Sign
1	KING	E	Eastgate Square
1		W	Hamilton GO Centre
1A		W	1A West Hamilton Loop
2	BARTON	E	Bell Manor Loop
2		W	Hamilton GO Centre
3	CANNON	E	Reid at Dunsmure
3		W	Hamilton GO Centre
4	BAYFRONT	E	Mount Albion Loop via Burlington Street
4		E	Downtown via Burlington Street
4		E	4r Mount Albion Loop via Burlington & Ferrie
4		W	4r Downtown via Burlington & Ferrie
5	DELAWARE	E	5 King at Highway 8
5		E	5A Greenhill at Cochrane
5		E	5B Mount Albion Loop
5		W	5 Head Street
5		W	5A Meadowlands
5		W	5B Governors at Pirie
6	ABERDEEN	E	Downtown
6		W	Princess Point Loop
7	LOCKE	E	Downtown
7		W	Hillcrest Loop
8	YORK	E	Downtown
8		W	Strathcona Loop
9	ROCK GARDENS (Seasonal)	E	Downtown
9		W	Cemeteries (Woodland & Sepulchre)
10	B LINE EXPRESS	E	Eastgate Square
10		W	University Plaza
11	PARKDALE	E	Burlington Terminal
11		S	Valley Park
12	WENTWORTH	N	Wentworth at Burton
12		S	Victoria at King
16	ANCASTER	E	Meadowlands
16		W	Garner at Wilson
16r		E	16r Meadowlands via Fiddlers Green
16r		W	16r Garner at Wilson via Fiddles Green
18	WATERDOWN	N	Waterdown Walmart
18		S	Aldershot GO Station
20	A LINE EXPRESS	N	Hamilton Waterfront at Pier 8
20		S	Hamilton Airport via Mohawk College
21	UPPER KENILWORTH	N	Frank A. Cooke Transit Terminal
21		S	Upper Mount Albion at Stone Church
22	UPPER OTTAWA	N	Frank A. Cooke Transit Terminal
22		S	Upper Ottawa at Rymal
23	UPPER GAGE	N	Frank A. Cooke Transit Terminal
23		S	Upper Gage at Rymal
24	UPPER SHERMAN	N	Frank A. Cooke Transit Terminal
24		S	Upper Gage at Rymal
25	UPPER WENTWORTH	N	Frank A. Cooke Transit Terminal
25		S	CF Lime Ridge Mall
26	UPPER WELLINGTON	N	Frank A. Cooke Transit Terminal
26		S	CF Lime Ridge Mall
27	UPPER JAMES	N	Downtown via Burlington Street
27		S	Mountain Transit Centre Park 'N Ride
33	SANATORIUM	N	Frank A.Cooke Transit Terminal
33		S	Scenic Loop
34	UPPER PARADISE	N	Downtown
34		S	Glancaster Loop
34		S	34A Upper Horning Loop
35	COLLEGE	N	Frank A. Cooke Transit Terminal
35		S	35 St. Elizabeth Village via Upper James
35		S	35c St. Elizabeth Village via Garth
41	MOHAWK	E	41x Industrial opposite Depew via Kenilworth
41		E	41o Industrial opposite Depew via Ottawa
41		W	Meadowlands
42	MOHAWK EAST	E	Mohawk 4 Ice Centre
42		W	CF Lime Ridge Mall
43	STONE CHURCH	E	Valley Park Loop Via Saltfleet School
43		W	CF Lime Ridge Mall
43		W	Meadowlands
44	RYMAL	E	Confederation Walmart
44		W	Glancaster Loop
44		W	Ancaster Business Park
51	UNIVERSITY	E	Hamilton GO Centre
51		W	West Hamilton Loop
52	DUNDAS LOCAL	N	York & Watsons Lane Loop
52		S	Orchard at Pheasant
52		S	Ogilvie at Governors
55	STONEY CREEK CENTRAL	E	55A Jones at Highway 8
55		E	Winona Crossing
55		W	Eastgate Square
56	CENTENNIAL (Seasonal/Limited)	N	Lakeland Loop
56		S	Eastgate Square
56		N	Lakeland Loop via Wild Waterworks
56		S	Eastgate Square via Wild Waterworks
99	WATERFRONT SHUTTLE (Summer)	N	Bayfront Park
99		S	Downtown
1	BURLINGTON TRANSIT ROUTES		Please contact Burlington Transit for route, schedule, and bus stop information.

Stone Church

Effective April 26, 2026

43

Website: hamilton.ca/hsr
Email: hsrserve@hamilton.ca
Social: @HSR @HamiltonStreetRailway

Last update: 3/26/2026

THIS SCHEDULE IS SUBJECT TO CHANGE.

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This document is available in alternate formats upon request. Please contact HSR Customer Service at hsrserve@hamilton.ca for assistance.

SUNDAY - Westbound

TIMEPOINTS	G	F	E	D	C	B	A	Interline
	VALLEY PARK BUS LOOP	STONECHURCH & UPPER OTTAWA	STONECHURCH & UPPER SHERMAN	LIME RIDGE MALL PLATFORM 2	STONE CHURCH & UPPER JAMES	STONE CHURCH & UPPER PARADISE	MEADOWLANDS TERMINAL PL. 3	
6 AM to 10 PM	Leave from 6:26 AM to 10:56 PM							
	:26	:39	:44	:50	:58	:04	:11	*
	:56	:09	:14	:20	:28	:34	:41	*
11 PM	11:26	11:39	11:44	11:50	11:58	12:04	12:11	
12 AM	12:05	12:18	12:23	12:29	12:37	12:43	12:50	

SATURDAY - Westbound

TIMEPOINTS	G	F	E	D	C	B	A	Interline
	VALLEY PARK BUS LOOP	STONECHURCH & UPPER OTTAWA	STONECHURCH & UPPER SHERMAN	LIME RIDGE MALL PLATFORM 2	STONE CHURCH & UPPER JAMES	STONE CHURCH & UPPER PARADISE	MEADOWLANDS TERMINAL PL. 3	
5 AM	5:00	5:13	5:18	5:24	5:32	5:38	5:45	*
	5:30	5:43	5:48	5:54	6:02	6:08	6:15	*
6 AM	6:00	6:13	6:18	6:24	6:32	6:38	6:45	*
	6:26	6:39	6:44	6:50	6:58	7:04	7:11	*
	6:56	7:09	7:14	7:20	7:28	7:34	7:41	*
7 AM to 12 AM	Leave from 7:26 AM to 12:56 AM							
	:26	:39	:44	:50	:58	:04	:11	*
	:56	:09	:14	:20	:28	:34	:41	*

SUNDAY - Eastbound

TIMEPOINTS	A	B	C	D	E	F	G	H	I	J	G
	MEADOWLANDS TERMINAL PL. 3	STONE CHURCH & UPPER PARADISE	STONE CHURCH & UPPER JAMES	LIME RIDGE MALL PLATFORM 2	STONECHURCH & UPPER SHERMAN	STONECHURCH & UPPER OTTAWA	OPPOSITE VALLEY PARK	GATESTONE & HIGHLAND	HIGHLAND & AUBREY	ISAAC BROCK & MUD	VALLEY PARK BUS LOOP
6 AM	---	---	---	---	---	---	---	---	6:04	6:16	6:21
	6:05	6:12	6:18	6:26	6:32	6:37	6:49	6:55	7:00	7:12	7:17
	6:35	6:42	6:48	6:56	7:02	7:07	7:19	7:25	7:30	7:42	7:47
7 AM to 9 AM	Leave from 7:05 AM to 9:35 AM										
	:05	:12	:18	:26	:32	:37	:49	:55	:00	:12	:17
	:35	:42	:48	:56	:02	:07	:19	:25	:30	:42	:47
10 AM to 6 PM	Leave from 10:05 AM to 6:35 PM										
	:05	:12	:18	:26	:32	:37	:49	:55	:00	:12	:17
	:35	:42	:48	:56	:02	:07	:19	:25	:30	:42	:47
7 PM to 9 PM	Leave from 7:05 PM to 9:35 PM										
	:05	:12	:18	:26	:32	:37	:49	:55	:00	:12	:17
	:35	:42	:48	:56	:02	:07	:19	:25	:30	:42	:47
10 PM to 11 PM	Leave from 10:07 PM to 11:37 PM										
	:07	:13	:19	:26	:32	:36	:48	:54	:59	:11	:16
	:37	:43	:49	:56	:02	:06	:18	:24	:29	:41	:46

SATURDAY - Eastbound

TIMEPOINTS	A	B	C	D	E	F	G	H	I	J	G
	MEADOWLANDS TERMINAL PL. 3	STONE CHURCH & UPPER PARADISE	STONE CHURCH & UPPER JAMES	LIME RIDGE MALL PLATFORM 2	STONECHURCH & UPPER SHERMAN	STONECHURCH & UPPER OTTAWA	OPPOSITE VALLEY PARK	GATESTONE & HIGHLAND	HIGHLAND & AUBREY	ISAAC BROCK & MUD	VALLEY PARK BUS LOOP
5 AM to 7 AM	Leave from 5:05 AM to 7:35 AM										
	:05	:12	:18	:26	:32	:37	:49	:55	:00	:12	:17
	:35	:42	:48	:56	:02	:07	:19	:25	:30	:42	:47
8 AM to 6 PM	Leave from 8:05 AM to 6:35 PM										
	:05	:12	:18	:26	:32	:37	:49	:55	:00	:12	:17
	:35	:42	:48	:56	:02	:07	:19	:25	:30	:42	:47
7 PM to 11 PM	Leave from 7:05 PM to 11:35 PM										
	:05	:12	:18	:26	:32	:37	:49	:55	:00	:12	:17
	:35	:42	:48	:56	:02	:07	:19	:25	:30	:42	:47
12 AM	12:00	12:07	12:13	12:21	12:27	12:32	12:44	12:50	12:55	1:07	1:12
	12:30	12:37	12:43	12:51	12:57	1:02	1:14	1:20	1:25	1:37	1:42

WEEKDAY - Westbound

TIMEPOINTS	A MEADOWLANDS TERMINAL PL. 3	B STONE CHURCH & UPPER PARADISE	C STONE CHURCH & UPPER JAMES	D LIME RIDGE MALL PLATFORM 2	E STONECHURCH & UPPER SHERMAN	F STONECHURCH & UPPER OTTAWA	G VALLEY PARK BUS LOOP	Interline
5 AM	5:52	5:47	5:41	5:33	5:28	5:23	5:10	*
	6:21	6:16	6:10	6:02	5:57	5:52	5:39	*
6 AM	6:51	6:46	6:40	6:32	6:27	6:22	6:09	*
	7:22	7:16	7:10	7:02	6:57	6:52	6:37	*
7 AM	7:52	7:46	7:40	7:32	7:27	7:22	7:07	*
	8:22	8:16	8:10	8:02	7:57	7:52	7:37	*
8 AM	8:42	8:36	8:30	8:22	8:17	8:12	7:57	*
	9:02	8:56	8:50	8:42	8:37	8:32	8:17	*
9 AM	9:22	9:16	9:10	9:02	8:57	8:52	8:37	*
	9:37	9:31	9:25	9:17	9:12	9:07	8:52	*
10 AM	9:52	9:46	9:40	9:32	9:27	9:22	9:07	*
	10:07	10:01	9:55	9:47	9:42	9:37	9:22	*
11 AM	10:23	10:17	10:11	10:02	9:56	9:51	9:37	*
	10:53	10:47	10:41	10:32	10:26	10:21	10:07	*
12 PM	11:23	11:17	11:11	11:02	10:56	10:51	10:37	*
	11:53	11:47	11:41	11:32	11:26	11:21	11:07	*
1 PM	12:23	12:17	12:11	12:02	11:56	11:51	11:37	*
	12:53	12:47	12:41	12:32	12:26	12:21	12:07	*
2 PM	1:23	1:17	1:11	1:02	12:56	12:51	12:37	*
	1:53	1:47	1:41	1:32	1:26	1:21	1:07	*
3 PM	2:24	2:17	2:11	2:02	1:56	1:51	1:34	*
	2:54	2:47	2:41	2:32	2:26	2:21	2:04	*
4 PM	3:24	3:17	3:11	3:02	2:56	2:51	2:34	*
	3:39	3:32	3:26	3:17	3:11	3:06	2:49	*
5 PM	3:54	3:47	3:41	3:32	3:26	3:21	3:04	*
	4:09	4:02	3:56	3:47	3:41	3:36	3:19	*
6 PM	4:24	4:17	4:11	4:02	3:56	3:51	3:34	*
	4:39	4:32	4:26	4:17	4:11	4:06	3:49	*
7 PM	4:54	4:47	4:41	4:32	4:26	4:21	4:04	*
	5:09	5:02	4:56	4:47	4:41	4:36	4:19	*
8 PM	5:24	5:17	5:11	5:02	4:56	4:51	4:34	*
	5:39	5:32	5:26	5:17	5:11	5:06	4:49	*
9 PM	5:54	5:47	5:41	5:32	5:26	5:21	5:04	*
	6:09	6:02	5:56	5:47	5:41	5:36	5:19	*
10 PM	6:24	6:17	6:11	6:02	5:56	5:51	5:34	*
	6:39	6:32	6:26	6:17	6:11	6:06	5:49	*
11 PM	6:54	6:47	6:41	6:32	6:26	6:21	6:04	*
	7:09	7:02	6:56	6:47	6:41	6:36	6:19	*
12 AM	7:21	7:16	7:10	7:02	6:57	6:52	6:39	*
	7:36	7:31	7:25	7:17	7:12	7:07	6:54	*
1 AM	7:56	7:51	7:45	7:37	7:32	7:27	7:14	*
	8:21	8:16	8:10	8:02	7:57	7:52	7:39	*
	8:51	8:46	8:40	8:32	8:27	8:22	8:09	*
	9:21	9:16	9:10	9:02	8:57	8:52	8:39	*
	9:51	9:46	9:40	9:32	9:27	9:22	9:09	*
	10:21	10:16	10:10	10:02	9:57	9:52	9:39	*
	10:51	10:46	10:40	10:32	10:27	10:22	10:09	*
	11:18	11:14	11:09	11:02	10:58	10:54	10:42	*
	11:48	11:44	11:39	11:32	11:28	11:24	11:12	*
	12:18	12:14	12:09	12:02	11:58	11:54	11:42	*
		12:44	12:39	12:32	12:28	12:24	12:12	
	1:18	1:14	1:09	1:02	12:58	12:54	12:42	
	1:55	1:51	1:46	1:39	1:35	1:31	1:19	

WEEKDAY - Eastbound

TIMEPOINTS	A MEADOWLANDS TERMINAL PL. 3	B STONE CHURCH & UPPER PARADISE	C STONE CHURCH & UPPER JAMES	D LIME RIDGE MALL PLATFORM 2	E STONECHURCH & UPPER SHERMAN	F STONECHURCH & UPPER OTTAWA	G VALLEY PARK BUS LOOP	H GATESTONE & HIGHLAND	I HIGHLAND & AUBREY	J ISAAC BROCK & MUD	Interline
4 AM	---	---	---	---	---	---	4:58	---	4:43	4:54	
	---	---	---	---	---	---	5:27	---	5:12	5:23	
	---	---	---	---	---	---	5:57	---	5:42	5:53	
5 AM	5:01	5:07	5:14	5:22	5:29	5:33	6:14	---	5:59	6:10	
	5:33	5:39	5:46	5:54	6:01	6:05	6:46	---	6:31	6:42	*
6 AM	6:03	6:09	6:16	6:24	6:31	6:35	7:16	---	7:01	7:12	*
	6:33	6:39	6:46	6:54	7:01	7:05	7:46	---	7:31	7:42	*
7 AM	6:58	7:04	7:11	7:19	7:26	7:30	8:09	---	7:55	8:09	
	7:18	7:24	7:31	7:39	7:46	7:50	8:29	---	8:15	8:29	*
	7:33	7:39	7:46	7:54	8:01	8:05	8:44	---	8:30	8:44	*
8 AM	7:48	7:54	8:01	8:09	8:16	8:20	8:59	---	8:45	8:59	*
	8:03	8:09	8:16	8:24	8:31	8:35	9:14	---	9:00	9:14	*
	8:18	8:24	8:31	8:39	8:46	8:50	9:29	---	9:15	9:29	
	8:33	8:39	8:46	8:54	9:01	9:05	9:44	---	9:30	9:44	*
9 AM	8:48	8:54	9:01	9:09	9:16	9:20	9:59	---	9:45	9:59	
	9:03	9:09	9:16	9:24	9:31	9:35	10:14	---	10:00	10:14	*
	9:18	9:24	9:31	9:39	9:46	9:50	10:29	---	10:15	10:29	*
	9:42	9:48	9:55	10:03	10:10	10:14	10:51	---	10:39	10:51	*
10 AM	10:12	10:18	10:25	10:33	10:40	10:44	11:21	---	11:09	11:21	*
	10:42	10:48	10:55	11:03	11:10	11:14	11:51	---	11:39	11:51	*
11 AM	11:12	11:18	11:25	11:33	11:40	11:44	12:21	---	12:09	12:21	*
	11:42	11:48	11:55	12:03	12:10	12:14	12:51	---	12:39	12:51	*
12 PM	12:12	12:18	12:25	12:33	12:40	12:44	1:21	---	1:09	1:21	
	12:42	12:48	12:55	1:03	1:10	1:14	1:55	---	1:39	1:51	*
1 PM	1:12	1:18	1:25	1:33	1:40	1:44	2:25	---	2:09	2:21	*
	1:39	1:46	1:53	2:02	2:10	2:14	2:55	---	2:41	2:55	*
2 PM	2:04	2:11	2:18	2:27	2:35	2:39	3:20	---	3:06	3:20	*
	2:29	2:36	2:43	2:52	3:00	3:04	3:45	---	3:31	3:45	*
	2:44	2:51	2:58	3:07	3:15	3:19	4:00	---	3:46	4:00	*
3 PM	2:59	3:06	3:13	3:22	3:30	3:34	4:15	---	4:01	4:15	
	3:14	3:21	3:28	3:37	3:45	3:49	4:30	---	4:16	4:30	*
	3:29	3:36	3:43	3:52	4:00	4:04	4:45	---	4:31	4:45	*
	3:44	3:51	3:58	4:07	4:15	4:19	5:00	---	4:46	5:00	*
	3:59	4:06	4:13	4:22	4:30	4:34	5:15	---	5:01	5:15	*
4 PM	4:14	4:21	4:28	4:37	4:45	4:49	5:30	---	5:16	5:30	
	4:29	4:36	4:43	4:52	5:00	5:04	5:45	---	5:31	5:45	*
	4:44	4:51	4:58	5:07	5:15	5:19	6:00	---	5:46	6:00	*
	4:59	5:06	5:13	5:22	5:30	5:34	6:15	---	6:01	6:15	*
5 PM	5:14	5:21	5:28	5:37	5:45	5:49	6:30	---	6:16	6:30	
	5:29	5:36	5:43	5:52	6:00	6:04	6:45	---	6:31	6:45	*
	5:44	5:51	5:58	6:07	6:15	6:19	7:00	---	6:46	7:00	*
6 PM	5:59	6:06	6:13	6:22	6:30	6:34	7:15	---	7:01	7:15	*
	6:09	6:16	6:23	6:32	6:40	6:44	7:25	---	7:11	7:25	*
7 PM	6:44	6:50	6:57	7:05	7:11	7:15	7:48	---	7:37	7:48	
	7:14	7:20	7:27	7:35	7:41	7:45	8:22	---	8:07	8:18	*
8 PM	7:44	7:50	7:57	8:05	8:11	8:15	8:52	---	8:37	8:48	*
	8:14	8:20	8:27	8:35	8:41	8:45	9:22	---	9:07	9:18	*
9 PM	8:44	8:50	8:57	9:05	9:11	9:15	9:52	---	9:37	9:48	*
	9:14	9:20	9:27	9:35	9:41	9:45	10:22	---	10:07	10:18	*
	9:44	9:50	9:57	10:05	10:11	10:15	10:52	---	10:37	10:48	*
10 PM	10:14	10:20	10:27	10:35	10:41	10:45	11:22	---	11:07	11:18	*
	10:45	10:51	10:57	11:05	11:11	11:15	11:51	---	11:36	11:47	*
11 PM	11:15	11:21	11:27	11:35	11:41	11:45	12:21	---	12:06	12:17	*
	11:45	11:51	11:57	12:05	12:11	12:15	12:51	---	12:36	12:47	*
12 AM	12:15	12:21	12:27	12:35	12:41	12:45	1:21	---	1:06	1:17	*
	12:45	12:51	12:57	1:05	1:11	1:15	1:51	---	1:36	1:47	*

Bus Stop Numbers

Eastbound Stops

Meadowlands Terminal
Platform 2 2402

Golf Links
Opposite Martindale 2399
At Cloverleaf 2399
At Stone Church 2399

Stone Church
At Harrogate 2867
At Stonehenge 2867
Opposite Omni 2868
At Upper Paradise 2868
At Courtland/At Garth 2398
Opposite Matthews 2397
Opp. 236 Stone Church 2397
Opposite Chesley 2396
At West 5th 2909
At Upper James 2909
At Dicenzo/At Pineridge 2395
At Upper Wellington 2395
At Brigade 2393

Upper Wentworth
At Stone Church 2291
At Southpark 2291

Limeridge Mall Terminal
Platform 2 1434
At 1024 Upper Wentworth 2238
At Pescara 2134

Stone Church
At Upper Wentworth 2151
At Ridgemount 2151
At Upper Sherman 2159
At Normajean 2190
At Upper Gage 2190
At Taymall 2820
At Upper Ottawa 2820
At Nebo 2803
At 1320 Stone Church 2119
At Dartnall/At Anchor 2119
At Pritchard 2120
At RHVP Ramp 5166
Oppostie Heritage Mall 2126
At Upper Mount Albion 2126

Winterberry
At Paramount/At Mud 2456

Paramount
At Old Mud 2459
At Kingsview/At Astra 2459
At Amberwood 2459
Opposite Ackland 2460

Paramount
Opposite Mistywood 2460
At Atlas 2460
At Mud/At Pembroke 2462

Marston
At Paramount 2419
Opposite Ridell 2463
At Gordon Drummond 2463

Gordon Drummond
At Twinoaks/At Isaac Brock 2464

Isaac Brock
At Kennard/At Gatestone 2465

Gatestone
Opp. Beachgrove 2420
At Highland 2420
At Shadyglen 2421

Highbury
Opp. Gatestone 2421
At Foxmeadow 2421
Opposite Slinger 2422
At Pinewoods 2422
At Saltfleet Highschool 2469

Highland
Opp. Saltfleet Highschool 2469
At Chaumont/At First 2472

First West
Opposite
Maplewood Green Park 2466
Opposite John Murray 2426

Mud
At Trafalgar 2417

Green Mountain West
At Upper Centennial 2418
At Morrisey/First 2424

First West
At Heritage Green
Sports Park / Dog Park 2425
At Mud 2425

Isaac Brock
Opposite William Johnston 2411

Gordon Drummond
At Ventura/At Kelsey Gate 2479
At Gordon Drummond 2479
At Marston 2479

Valley Park 2484

Valley Park 2484

Westbound Stops

Paramount
Opposite Atlas 2481
At Mistywood 2481
At Audubon 2481
At Apex 2483
At Audubon 2483
Opposite Amberwood 2483
At Hickory/At Kingsview 2486

Winterberry
At Old Mud 2468
At Mud 2467
At Paramount 2428

Paramount
At Upper Mount Albion 2906

Stone Church
At Heritage Greene 2906
At RHVP Ramp 2906
At Pritchard/At Arbour 2172
Opposite Dartnall 2152
Opp. 1320 Stone Church 2152
Opposite Nebo 2152
At Upper Ottawa 2752
At Quinn/At Upper Gage 2751
At Rambo 2724
At Upper Sherman 2724
At Redmond 2723

Upper Wentworth
At Stone Church 2291
At Southpark 2291

Limeridge Mall Terminal
Platform 2 1434
At 1024 Upper Wentworth 2238
At Pescara 2134
At Stone Church 2135

Stone Church
Opposite Brigade 2394
At Upper Wellington 2393
At Pineridge/At Benjamin 2392
At Upper James 2786
At West 5th 2786
At Chesley 2357
At 236 Stone Church 2345
At Matthews 2345
At Garth/At Courtland 2340
At Upper Paradise 4334
At Gurnett 2888
Opposite Stonehenge 2326
At Old Golflinks 2326

Martindale
At Golf Links East 2451
Opposite Neville 2451
At 122 Martindale 2452

Meadowlands Terminal
Platform 2 2402

Rymal

Effective April 26, 2026

44

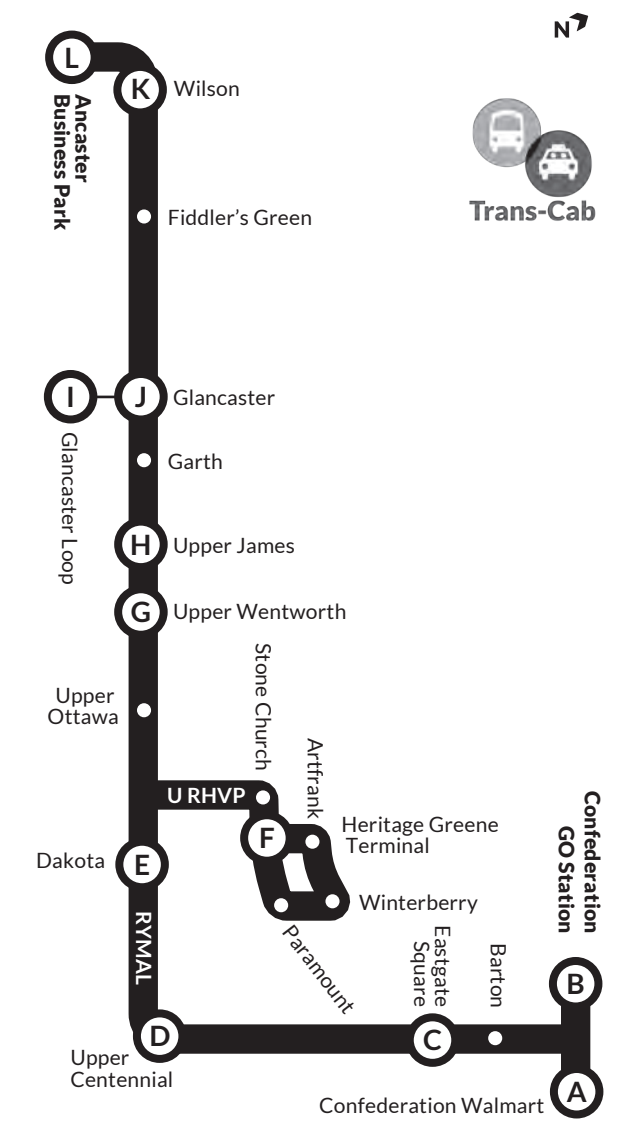
Bus Stop Numbers

Westbound to Ancaster Business Park

Confederation Walmart
Platform 1 5618
Confederation GO
Platform 5 4433
Centennial Parkway
At Arrowsmith/At Barton 2386
At Eastgate/At Delawana 2383
Opposite Vineyard 5602
Eastgate Terminal Platform 1 2390
At Neil 2571
Opposite Felker 2572
At Pleasant/At Orlanda 2572
At King 4406
Upper Centennial Parkway
At Green Mountain 4404
At Desi's Corner Plaza 4273
At Mud 4408
At Highland 4410
At South Mount Health Centre 4412
Rymal Road
At Upper Centennial 4414
Opposite Walmart 4416
At Whitedeer 4416
At 2119 Rymal 4418
At Second 4418
Opposite Celestial 4424
Opposite Fletcher/At Columbus 4420
Opposite Trinity Church 4422
Upper Red Hill
At Times Square (NB) 4453
At Highland (NB) 4455
At Stone Church (NB) 4457
Stone Church
Opposite Heritage Greene (NB) 2126
At Upper Mount Albion (NB) 2126
Winterberry
At Paramount (NB) 2456
Heritage Greene Terminal
Platform #1 4050
Stone Church
At Heritage Greene (SB) 2906
Upper Red Hill
At Stone Church (SB) 4459
At Highland (SB) 4461
Opposite Times Square (SB) 4463
Rymal Road
At Pritchard 4422
Opposite Glover 1547
At Dartnall 1545
At 1275 Rymal 1543
At Nebo 1541
At Upper Ottawa 1537
At Rockland 1535
At Upper Gage 1531
Opposite Sulmona 2187
At Eva 2188
At Upper Sherman 1523
Opposite Arrowhead 1521
At Rymal Square Plaza 1519
At Upper Wentworth 1517
Opposite Turner Park 2787
At Upper Wellington 1509
At Atessa 1507
At Upper James 1505
At South Hamilton Square 2915
At West 5th/At Konstantine 2917
Opposite Westlawn/Hazelton 2917
At Garth 1526
At Spadara 1525
At Upper Paradise 1524
At Meadowbank 4470
Opposite Glancaster 4471
Glancaster Loop 2862
Garner Road
Opposite Glancaster 4472
At Raymond 4472
At Barley 4472
At Springbrook 4474
At Redeemer College University 4476
At Kitty Murray 4478
At Southcote 4480
At John Frederick 4419
At Woodmount 4482
At Miller/Anson 4482
At Fiddlers Green 4484
Garner Road
At Braithwaite/At Pannabaker 4486
At Hamilton 4486
At Shaver 4488
At Walmart 1429
McClure Road
At SmartCentres 4441
Wilson Street
Opposite McClure 4443
At Trinity 4439
Tradewind Drive
At Wilson 4492
Sandhill Drive
At Tradewind 4494
At 1354 Sandhill 4493
At Osprey 4494
Osprey Drive
At 1363 Osprey/At Cormorant 4496
Cormorant Road
Opposite 1325 Cormorant 4498
At 1290 Cormorant 4499

Eastbound to Confederation Walmart

Cormorant Road
At 1290 Cormorant 4499
At 1325 Cormorant 4497
Osprey Drive
At Cormorant/At 1362 Osprey 4495
Opposite Sandhill 4495
Sandhill Drive
At 1349 Sandhill 4494
At Tradewind 4493
Tradewind Drive At Wilson 4491
Wilson Street At Duff's Corner 4442
McClure Road
At Ancaster Crossing 4440
Garner Road
At Shaver 4487
Opposite Hamilton 4485
Opposite Pannabaker 4483
Opposite Braithwaite 4483
At Fiddlers Green 4481
Opposite Anson/Miller 4479
Opposite Woodmount 4477
Opposite John Frederick 4421
At Southcote 4475
Opposite Kitty Murray 4475
Opp. Redeemer Coll. University 4475
Opposite Springbrook 4473
At Bennett's Apples 4473
Opposite Raymond 4473
At Glancaster 4489
Glancaster Loop 2862
Rymal Road
At Westmount Health Centre 2832
At Upper Paradise 1500
At Davinci 1501
At Garth 1502
Opposite Hazelton 2918
At Westlawn/Krieghoff 2918
At West 5th 1528
Opp. South Hamilton Square 2914
At Upper James 1504
At Springside 1506
At Upper Wellington 1508
At Turner Park 1367
At Upper Wentworth 1516
At Arrowhead 1518
At Upper Sherman 1520
At Miles 2192
At Sulmona 4452
At Upper Gage 1532
At Derby 1534
At Grayrocks 1536
At Upper Ottawa 1538
At Nebo 1542
At 1280 Rymal 1544
At Dartnall 1546
At Glover 1548
Opposite Pritchard 4450
Upper Red Hill
At Times Square (NB) 4453
At Highland (NB) 4455
At Stone Church (NB) 4457
Stone Church
Opposite Heritage Green (NB) 2126
Heritage Greene Terminal
Platform 2 4041
Artfrank at Winterberry (SB) 4435
Winterberry
At Paramount (SB) 2428
At Upper Mount Albion (SB) 2906
Stone Church
At Heritage Green (SB) 2906
Upper Red Hill
At Stone Church (SB) 4459
At Highland (SB) 4461
Opposite Times Square (SB) 4463
Rymal Road
At Trinity Church 4417
At Dakota 4415
At Fletcher 4413
At Celestial 4411
At Kingsborough 4419
At 2110 Rymal 4425
At Terryberry 4421
At Walmart 4423
At 2260 Rymal 4409
Upper Centennial Parkway
Opposite South Mount Health Centre 4407
At Highland 4407
At Mud 4405
At Green Mountain 4402
Centennial Parkway
At King 4403
Opposite Orlanda 2596
At Glenview 2596
At Felker/Neil 2598
Eastgate Terminal
Platform 3 4401
At Queenston/At Vineyard 2378
At Delawana/At Violet 2379
At Barton 2379
Opposite Arrowsmith 2380
Confederation GO
Platform 5 4433
Walmart on Centennial 5624



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SUNDAY - Westbound

TIMEPOINTS	A CONFEDERATION WALMART PLATFORM 1	B CONFEDERATION GO TERMINAL PLATFORM 4	C EASTGATE SQUARE PLATFORM 1	D RYMAL & UPPER CENTENNIAL	E RYMAL & DAKOTA	F HERITAGE GREENE TERMINAL PLATFORM 1	G RYMAL & UPPER WENTWORTH	H RYMAL & UPPER JAMES	J GARNER & GLANCASTER	K GARNER & WILSON	L At 1290 CORMORANT
5 AM	5:55	5:57	6:08	6:20	6:25	6:32	6:43	6:47	6:53	7:04	7:13
6 AM	6:25	6:27	6:38	6:50	6:55	7:02	7:13	7:17	7:23	7:34	7:43
7 AM to 9 AM	7:05	7:07	7:18	7:30	7:35	7:42	7:53	7:57	8:03	8:14	8:23
	7:35	7:37	7:48	8:00	8:05	8:12	8:23	8:27	8:33	8:44	8:53
	Leave from 7:05 AM to 9:35 AM										
	:05	:07	:18	:30	:35	:42	:53	:57	:03	:14	:23
	:35	:37	:48	:00	:05	:12	:23	:27	:33	:44	:53
10 AM to 5 PM	Leave Confederation Walmart Platform from 10:05 AM to 5:35 PM										
	:05	:07	:18	:31	:36	:43	:57	:01	:07	:18	:27
	:35	:37	:48	:01	:06	:13	:27	:31	:37	:48	:57
6 PM to 11 PM	Leave from 6:09 PM to 11:39 PM										
	:09	:11	:22	:34	:39	:46	:57	:01	:07	:18	:27
	:39	:41	:52	:04	:09	:16	:27	:31	:37	:48	:57
12 AM	12:09	12:11	12:22	12:34	12:39	12:46	12:57	1:01	---	---	---

SUNDAY - Eastbound

TIMEPOINTS	L At 1290 CORMORANT	K GARNER & WILSON	J GARNER & GLANCASTER	H RYMAL & UPPER JAMES	G RYMAL & UPPER WENTWORTH	F HERITAGE GREENE TERMINAL PLATFORM 2	E RYMAL & DAKOTA	D RYMAL & UPPER CENTENNIAL	C EASTGATE SQUARE PLATFORM 3	B CONFEDERATION GO TERMINAL PLATFORM 4	A CONFEDERATION WALMART PLATFORM 2
5 AM	---	---	---	5:51	5:55	6:08	6:14	6:19	6:29	6:41	6:43
6 AM	---	---	---	6:21	6:25	6:38	6:44	6:49	6:59	7:11	7:13
	6:27	6:34	6:45	6:51	6:55	7:08	7:14	7:19	7:29	7:41	7:43
7 AM	6:57	7:04	7:15	7:21	7:25	7:38	7:44	7:49	7:59	8:11	8:13
	7:33	7:40	7:51	7:57	8:01	8:14	8:20	8:25	8:35	8:47	8:49
8 AM	7:57	8:04	8:15	8:21	8:25	8:38	8:44	8:49	8:59	9:11	9:13
	8:33	8:40	8:51	8:57	9:01	9:14	9:20	9:25	9:35	9:47	9:49
9 AM	9:03	9:10	9:21	9:27	9:31	9:44	9:50	9:55	10:05	10:17	10:19
	9:33	9:40	9:51	9:57	10:01	10:14	10:20	10:25	10:35	10:47	10:49
10 AM to 5 PM	L eave At 1290 Cormorant from 10:03 AM to 5:33 PM										
	:03	:10	:21	:27	:31	:44	:51	:56	:06	:18	:20
	:33	:40	:51	:57	:01	:14	:21	:26	:36	:48	:50
6 PM to 11 PM	Leave from 6:03 PM to 11:33 PM										
	:03	:10	:21	:27	:31	:44	:50	:55	:05	:17	:19
	:33	:40	:51	:57	:01	:14	:20	:25	:35	:47	:49
12 AM	12:03	12:10	12:21	12:27	---	---	---	---	---	---	---

THIS SCHEDULE IS SUBJECT TO CHANGE.

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WEEKDAY - Westbound

TIMEPOINTS	A CONFEDERATION WALMART PLATFORM 1	B CONFEDERATION GO TERMINAL PLATFORM 4	C EASTGATE SQUARE PLATFORM 1	D RYMAL & UPPER CENTENNIAL	E RYMAL & DAKOTA	F HERITAGE GREENE TERMINAL PLATFORM 1	G RYMAL & UPPER WENTWORTH	H RYMAL & UPPER JAMES	J GARNER & GLANCASTER	K GARNER & WILSON	L At 1290 CORMORANT
4 am	---	---	---	---	---	---	---	4:48	4:53	5:03	5:12
5 am	---	---	---	---	---	---	---	5:18	5:23	5:33	5:42
	---	---	---	---	---	---	---	5:42	5:47	5:57	6:06
	---	---	---	---	---	---	---	6:04	6:09	6:19	6:28
	---	---	---	---	---	---	---	6:11	6:16	6:26	6:35
	5:25	5:27	5:33	5:45	5:50	5:57	6:10	6:15	6:20	6:30	6:39
	---	---	---	---	---	---	---	6:42	6:47	6:57	7:06
	5:55	5:57	6:03	6:15	6:20	6:27	6:40	6:45	6:50	7:00	7:09
	---	---	---	---	---	---	---	7:00	7:07	7:19	7:28
6 am to 7 am	Leave Confederation Walmart Platform from 6:08 AM to 7:53 AM										
	:08	**:10**	**:18**	**:31**	**:37**	**:44**	**:59**	**:05**	**:12**	**:24**	**:33**
	:23	**:25**	**:33**	**:46**	**:52**	**:59**	**:14**	**:20**	**:27**	**:39**	**:48**
	:38	**:40**	**:48**	**:01**	**:07**	**:14**	**:29**	**:35**	**:42**	**:54**	**:03**
	:53	**:55**	**:03**	**:16**	**:22**	**:29**	**:44**	**:50**	**:57**	**:09**	**:18**
8 am	8:08	8:10	8:18	8:31	8:37	8:44	8:59	9:05	9:12	9:24	9:33
	8:26	8:28	8:36	8:47	8:53	9:00	9:15	9:20	9:26	9:37	9:46
	8:41	8:43	8:51	9:02	9:08	9:15	9:30	9:35	9:41	9:52	10:01
	8:56	8:58	9:06	9:17	9:23	9:30	9:45	9:50	9:56	10:07	10:16
9 am	9:17	9:19	9:27	9:38	9:44	9:51	10:06	10:11	10:17	10:28	10:37
	9:37	9:39	9:47	9:58	10:04	10:11	10:26	10:31	10:37	10:48	10:57
10 am to 12 PM	Leave Confederation Walmart Platform from 10:07 AM to 12:37 PM										
	:07	**:09**	**:17**	**:28**	**:34**	**:41**	**:56**	**:01**	**:07**	**:18**	**:27**
	:37	**:39**	**:47**	**:58**	**:04**	**:11**	**:26**	**:31**	**:37**	**:48**	**:57**
1 PM	---	---	---	---	---	---	---	1:54	2:00	2:11	2:20
	1:07	1:09	1:17	1:28	1:34	1:41	1:56	2:01	2:07	2:18	2:27
	---	---	---	---	---	---	---	2:22	2:28	2:39	2:48
	1:31	1:33	1:41	1:52	1:58	2:05	2:20	2:25	2:31	2:42	2:51
	---	---	---	---	---	---	---	2:47	2:54	3:06	3:15
	1:58	2:00	2:08	2:21	2:27	2:34	2:49	2:55	3:02	3:14	3:23
2 PM	2:13	2:15	2:23	2:36	2:42	2:49	3:04	3:10	3:17	3:29	3:38
	2:28	2:30	2:38	2:51	2:57	3:04	3:19	3:25	3:32	3:44	3:53
	2:43	2:45	2:53	3:06	3:12	3:19	3:34	3:40	3:47	3:59	4:08
	2:53	2:55	3:03	3:16	3:22	3:29	3:44	3:50	3:57	4:09	4:18
3 PM TO 4 PM	Leave Confederation Walmart Platform from 3:08 PM to 4:53 PM										
	:08	**:10**	**:18**	**:31**	**:37**	**:44**	**:59**	**:05**	**:12**	**:24**	**:33**
	:23	**:25**	**:33**	**:46**	**:52**	**:59**	**:14**	**:20**	**:27**	**:39**	**:48**
	:38	**:40**	**:48**	**:01**	**:07**	**:14**	**:29**	**:35**	**:42**	**:54**	**:03**
	:53	**:55**	**:03**	**:16**	**:22**	**:29**	**:44**	**:50**	**:57**	**:09**	**:18**
5 PM	5:08	5:10	5:18	5:31	5:37	5:44	5:59	6:05	6:12	6:24	6:33
	5:23	5:25	5:33	5:46	5:52	5:59	6:14	6:20	6:27	6:39	6:48
	5:38	5:40	5:48	6:01	6:07	6:14	6:29	6:35	6:42	6:54	7:03
	5:58	6:00	6:08	6:21	6:27	6:34	6:49	6:55	7:02	7:14	7:23
6 PM	6:33	6:35	6:41	6:52	6:57	7:04	7:16	7:20	7:25	7:35	7:44
7 PM to 11 PM	Leave Confederation Walmart Platform from 7:03 PM to 11:33 PM										
	:03	**:05**	**:11**	**:22**	**:27**	**:34**	**:46**	**:50**	**:55**	**:05**	**:14**
	:33	**:35**	**:41**	**:52**	**:57**	**:04**	**:16**	**:20**	**:25**	**:35**	**:44**
12 AM	12:03	12:05	12:11	12:22	12:27	12:34	12:46	12:50	12:55	1:05	1:14
	12:33	12:35	12:41	12:52	12:57	1:04	1:16	1:20	1:25	1:35	1:44
	12:58	1:00	1:06	1:17	1:22	1:29	1:41	1:45	---	---	---
1 AM	1:55	1:57	2:03	2:14	2:19	2:26	2:38	2:42	---	---	---

WEEKDAY - Eastbound

TIMEPOINTS	L At 1290 CORMORANT	K GARNER & WILSON	J GARNER & GLANCASTER	H RYMAL & UPPER JAMES	G RYMAL & UPPER WENTWORTH	F HERITAGE GREENE TERMINAL PLATFORM 2	E RYMAL & DAKOTA	D RYMAL & UPPER CENTENNIAL	C EASTGATE SQUARE PLATFORM 3	B CONFEDERATION GO TERMINAL PLATFORM 4	A CONFEDERATION WALMART PLATFORM 2
4 AM	---	---	---	4:11	4:16	4:29	4:35	4:40	4:50	4:56	4:58
	---	---	---	4:39	4:44	4:57	5:03	5:08	5:18	5:24	5:26
5 AM	---	---	---	5:15	5:20	5:33	5:39	5:44	5:54	6:00	6:02
	---	---	---	5:30	5:35	5:48	5:54	5:59	6:09	6:15	6:17
	5:17	5:25	5:35	5:40	5:45	5:58	6:04	6:09	6:19	6:25	6:27
	---	---	---	5:46	5:51	6:04	6:10	6:15	6:25	6:31	6:33
	5:47	5:55	6:05	6:12	6:17	6:30	6:36	6:41	6:51	6:57	6:59
6 AM	6:11	6:19	6:29	6:36	6:41	6:54	7:00	7:05	7:15	7:21	7:23
	---	---	---	6:46	6:51	7:04	7:10	7:15	7:25	7:31	7:33
	6:33	6:41	6:51	6:58	7:03	7:16	7:22	7:27	7:37	7:43	7:45
	6:40	6:49	7:01	7:10	7:16	7:30	7:37	7:43	7:56	8:04	8:06
	6:55	7:04	7:16	7:25	7:31	7:45	7:52	7:58	8:11	8:19	8:21
7 AM	7:10	7:19	7:31	7:40	7:46	8:00	8:07	8:13	8:26	8:34	8:36
	7:25	7:34	7:46	7:55	8:01	8:15	8:22	8:28	8:41	8:49	8:51
	7:40	7:49	8:01	8:10	8:16	8:30	8:37	8:43	8:56	9:04	9:06
	7:55	8:04	8:16	8:25	8:31	8:45	8:52	8:58	9:11	9:19	9:21
8 AM	8:10	8:19	8:31	8:40	8:46	9:00	9:07	9:13	9:26	9:34	9:36
	8:25	8:34	8:46	8:55	9:01	9:15	9:22	9:28	9:41	9:49	9:51
	8:40	8:49	9:01	9:10	9:16	9:30	9:37	9:43	9:56	10:04	10:06
	8:57	9:06	9:17	9:25	9:30	9:43	9:50	9:55	10:07	10:15	10:17
9 AM TO 11 AM	Leave At 1290 Cormorant from 9:27 AM to 11:57 AM										
	:27	**:36**	**:47**	**:55**	**:00**	**:13**	**:20**	**:25**	**:37**	**:45**	**:47**
	:57	**:06**	**:17**	**:25**	**:30**	**:43**	**:50**	**:55**	**:07**	**:15**	**:17**
12 PM	12:25	12:34	12:45	12:53	12:58	1:11	1:18	1:23	1:35	1:43	1:45
	---	---	---	1:08	1:13	1:26	1:33	1:38	1:50	1:58	2:00
1 PM	12:55	1:04	1:15	1:23	1:28	1:41	1:48	1:53	2:05	2:13	2:15
	---	---	---	1:38	1:43	1:56	2:03	2:08	2:20	2:28	2:30
	1:27	1:36	1:47	1:55	2:00	2:13	2:20	2:25	2:37	2:45	2:47
	1:42	1:51	2:02	2:10	2:15	2:28	2:35	2:40	2:52	3:00	3:02
	1:57	2:06	2:17	2:25	2:30	2:43	2:50	2:55	3:07	3:15	3:17
2 PM	Leave from 2:10 PM to 4:55 PM										
	:10	**:19**	**:31**	**:40**	**:46**	**:00**	**:07**	**:13**	**:26**	**:34**	**:36**
2 PM to 4 PM	**:25**	**:34**	**:46**	**:55**	**:01**	**:15**	**:22**	**:28**	**:41**	**:49**	**:51**
	:40	**:49**	**:01**	**:10**	**:16**	**:30**	**:37**	**:43**	**:56**	**:04**	**:06**
	:55	**:04**	**:16**	**:25**	**:31**	**:45**	**:52**	**:58**	**:11**	**:19**	**:21**
5 PM	5:15	5:24	5:36	5:45	5:51	6:05	6:12	6:18	6:31	6:39	6:41
	5:35	5:44	5:56	6:05	6:11	6:25	6:32	6:38	6:51	6:59	7:01
6 PM	6:00	6:09	6:21	6:30	6:36	6:50	6:57	7:03	7:16	7:24	7:26
	6:30	6:38	6:48	6:55	7:00	7:13	7:19	7:24	7:34	7:40	7:42
7 PM to 12 AM	Leave from 7:00 PM to 12:30 AM										
	:00	**:08**	**:18**	**:25**	**:30**	**:43**	**:49**	**:54**	**:04**	**:10**	**:12**
	:30	**:38**	**:48**	**:55**	**:00**	**:13**	**:19**	**:24**	**:34**	**:40**	**:42**

SATURDAY - Westbound

TIMEPOINTS	A CONFEDERATION WALMART PLATFORM 1	B CONFEDERATION GO TERMINAL PLATFORM 4	C EASTGATE SQUARE PLATFORM 1	D RYMAL & UPPER CENTENNIAL	E RYMAL & DAKOTA	F HERITAGE GREENE TERMINAL PLATFORM 1	G RYMAL & UPPER WENTWORTH	H RYMAL & UPPER JAMES	J GARNER & GLANCASTER	K GARNER & WILSON	L At 1290 CORMORANT
5 AM	5:02	5:04	5:15	5:27	5:32	5:39	5:52	5:56	6:02	6:13	6:22
	5:32	5:34	5:45	5:57	6:02	6:09	6:22	6:26	6:32	6:43	6:52
6 AM	6:02	6:04	6:15	6:27	6:32	6:39	6:52	6:56	7:02	7:13	7:22
	6:37	6:39	6:50	7:02	7:07	7:14	7:27	7:31	7:37	7:48	7:57
7 AM to 9 AM	7:07	7:09	7:20	7:32	7:37	7:44	7:57	8:01	8:07	8:18	8:27
	Leave from 7:07 AM to 9:37 AM										
	:07	**:09**	**:20**	**:32**	**:37**	**:44**	**:57**	**:01**	**:07**	**:18**	**:27**
	:37	**:39**	**:50**	**:02**	**:07**	**:14**	**:27**	**:31**	**:37**	**:48**	**:57**
10 AM to 5 PM	Leave from 10:05 AM to 5:35 PM										
	:05	**:07**	**:18**	**:31**	**:36**	**:43**	**:57**	**:01**	**:07**	**:18**	**:27**
	:35	**:37**	**:48**	**:01**	**:06**	**:13**	**:27**	**:31**	**:37**	**:48**	**:57**
6 PM	6:05	6:07	6:18	6:31	6:36	6:43	6:57	7:01	7:07	7:18	7:27
	6:38	6:40	6:51	7:03	7:08	7:15	7:27	7:31	7:37	7:48	7:57
7 PM	7:08	7:10	7:21	7:33	7:38	7:45	7:57	8:01	8:07	8:18	8:27
	7:38	7:40	7:51	8:03	8:08	8:15	8:27	8:31	8:37	8:48	8:57
8 PM	8:08	8:10	8:21	8:33	8:38	8:45	8:57	9:01	9:07	9:18	9:27
	8:38	8:40	8:51	9:03	9:08	9:15	9:27	9:31	9:37	9:48	9:57
9 PM	9:08	9:10	9:21	9:33	9:38	9:45	9:57	10:01	10:07	10:18	10:27
	9:38	9:40	9:51	10:03	10:08	10:15	10:27	10:31	10:37	10:48	10:56
10 PM	10:08	10:10	10:21	10:33	10:38	10:45	10:57	11:01	11:07	11:18	11:26
	10:38	10:40	10:51	11:03	11:08	11:15	11:27	11:31	11:37	11:48	11:56
11 PM	11:08	11:10	11:21	11:33	11:38	11:45	11:57	12:01	12:07	12:18	12:26
	11:38	11:40	11:51	12:03	12:08	12:15	12:27	12:31	12:37	12:48	12:56
12 AM	12:21	12:23	12:34	12:46	12:51	12:58	1:10	1:14	1:20	1:31	1:39

SATURDAY - Eastbound

TIMEPOINTS	L At 1290 CORMORANT	K GARNER & WILSON	J GARNER & GLANCASTER	H RYMAL & UPPER JAMES	G RYMAL & UPPER WENTWORTH	F HERITAGE GREENE TERMINAL PLATFORM 2	E RYMAL & DAKOTA	D RYMAL & UPPER CENTENNIAL	C EASTGATE SQUARE PLATFORM 3	B CONFEDERATION GO TERMINAL PLATFORM 4	A CONFEDERATION WALMART PLATFORM 2
5 AM to 6 AM	Leave from 5:05 AM to 6:35 AM										
	:05	**:12**	**:23**	**:30**	**:34**	**:47**	**:53**	**:58**	**:08**	**:20**	**:22**
	:35	**:42**	**:53**	**:00**	**:04**	**:17**	**:23**	**:28**	**:38**	**:50**	**:52**
7 AM to 9 AM	Leave from 7:00 AM to 9:30 AM										
	:00	**:07**	**:18**	**:25**	**:29**	**:42**	**:48**	**:53**	**:03**	**:15**	**:17**
	:30	**:37**	**:48**	**:55**	**:59**	**:12**	**:18**	**:23**	**:33**	**:45**	**:47**
10 AM to 6 PM	Leave from 10:00 AM to 6:30 PM										
	:00	**:07**	**:18**	**:25**	**:29**	**:43**	**:52**	**:57**	**:08**	**:20**	**:22**
	:30	**:37**	**:48**	**:55**	**:59**	**:13**	**:22**	**:27**	**:38**	**:50**	**:52**
7 PM	7:00	7:07	7:18	7:25	7:29	7:42	7:48	7:53	8:03	8:15	8:17
	7:30	7:37	7:48	7:55	7:59	8:12	8:18	8:23	8:33	8:45	8:47
8 PM	8:00	8:07	8:18	8:25	8:29	8:42	8:48	8:53	9:03	9:15	9:17
	8:30	8:37	8:48	8:55	8:59	9:12	9:18	9:23	9:33	9:45	9:47
9 PM	9:00	9:07	9:18	9:25	9:29	9:42	9:48	9:53	10:03	10:15	10:17
	9:31	9:38	9:49	9:55	9:59	10:12	10:18	10:23	10:33	10:45	10:47
10 PM	10:01	10:08	10:19	10:25	10:29	10:42	10:48	10:53	11:03	11:15	11:17
	10:31	10:38	10:49	10:55	10:59	11:12	11:18	11:23	11:33	11:45	11:47
11 PM	11:01	11:08	11:19	11:25	11:29	11:42	11:48	11:53	12:03	12:15	12:17
	11:31	11:38	11:49	11:55	11:59	12:12	12:18	12:23	12:33	12:45	12:47
12 AM	12:01	12:08	12:19	12:25	12:29	12:42	12:48	12:53	1:03	1:15	1:17
	12:46	12:53	1:04	1:10	1:14	1:27	1:33	1:38	1:48	2:00	2:02

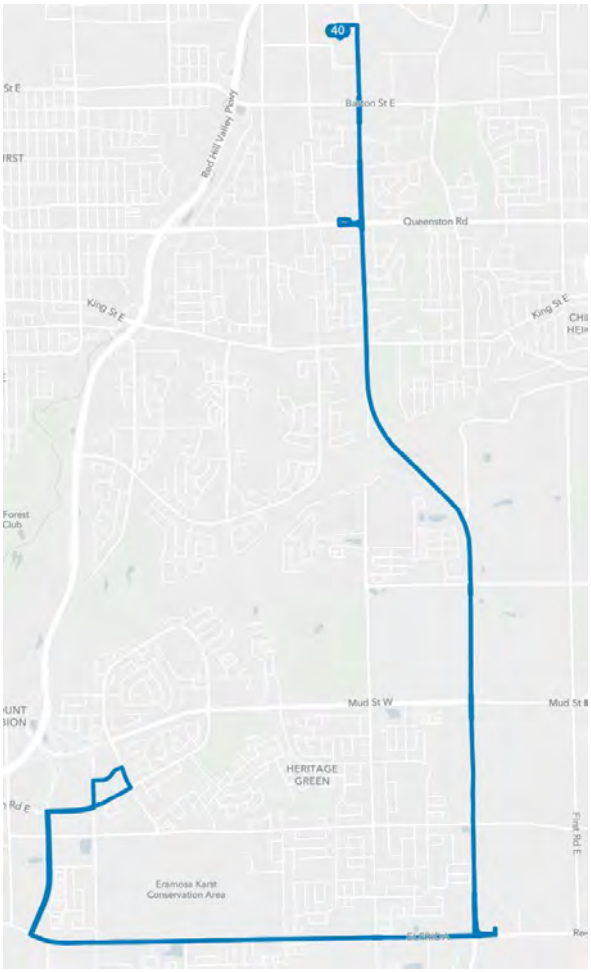
APPENDIX J:

HSR Next Plan Excerpts

Exhibit 4-8. Elfrida Gateway Concept Design

ELFRIDA GATEWAY

- New off-street hub near the corner of Rymal Road East and Upper Centennial Parkway
- Estimated capital cost of **$4,627,100**

Route 40 E Line (partial service levels)	From	To	Every
34,655 service hours, 4 60-foot peak vehicles, 2 40-foot peak vehicles	**Weekday**		
	5:00am	11:00pm	15 minutes
	11:00pm	2:00am	20 minutes
	Saturday		
	5:00am	7:00am	20 minutes
	7:00am	8:00pm	15 minutes
	8:00pm	2:00am	20 minutes
	Sunday		
	6:00am	1:00am	30 minutes

Year 5 (2030)

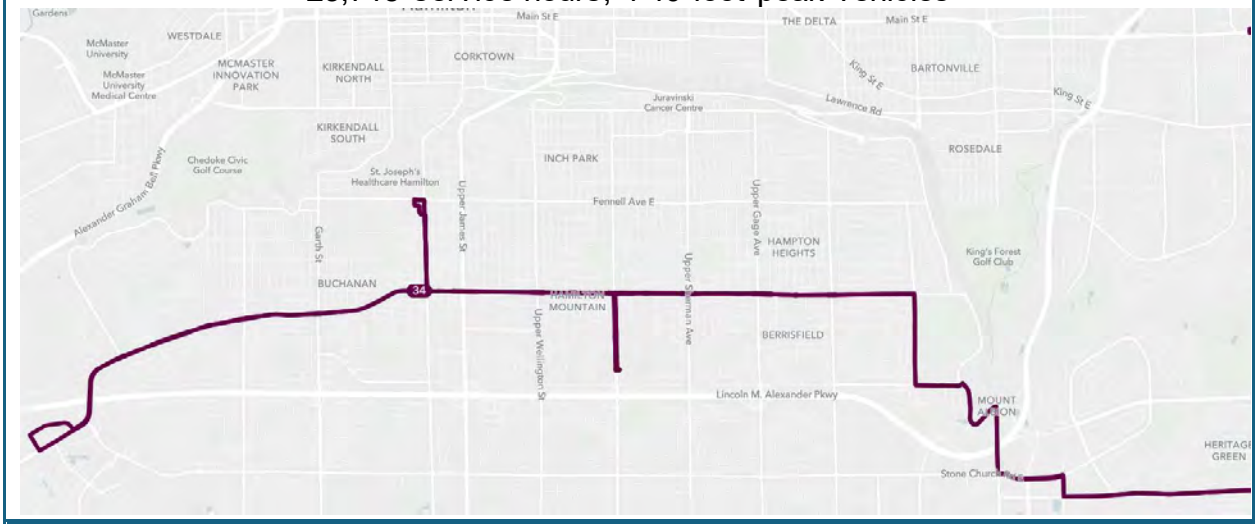
Rapid Routes

Route 30 S Line	Service
3 additional 60-foot vehicles to replace 40-foot vehicles for a total of 14 60-foot vehicles	No change in service levels

Route 40 E Line (full service levels)		
46,589 service hours, 6 60-foot peak vehicles, 3 40-foot peak vehicles No change to routing		
From	**To**	**Every**
	Weekday	
5:00am	7:00am	15 minutes
7:00am	10:00am	10 minutes
10:00am	3:00pm	15 minutes
3:00pm	8:00pm	10 minutes
8:00pm	11:00pm	15 minutes
11:00pm	2:00am	20 minutes
	Saturday	
5:00am	7:00am	20 minutes
7:00am	8:00pm	15 minutes
8:00pm	2:00am	20 minutes
	Sunday	
6:00am	1:00am	30 minutes

Route 34 Mohawk

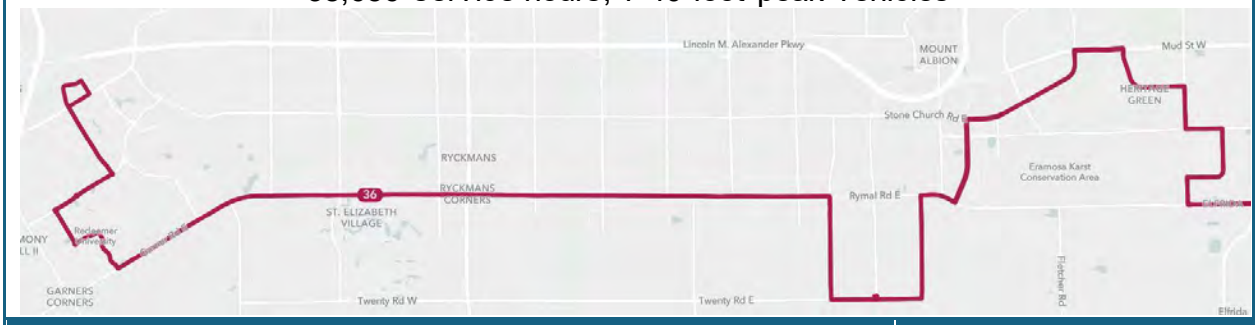
23,715 service hours, 4 40-foot peak vehicles



From	To	Every
	Weekday	
5:00am	8:00pm	20 minutes
8:00pm	2:00am	30 minutes
	Saturday	
5:00am	2:00am	30 minutes
	Sunday	
6:00am	1:00am	30 minutes

Route 36 Rymal (partial service levels)

38,656 service hours, 7 40-foot peak vehicles



From	To	Every
Weekday		
5:00am	10:00am	20 minutes
10:00am	3:00pm	30 minutes
3:00pm	8:00pm	20 minutes
8:00pm	2:00am	30 minutes
Saturday		
5:00am	2:00am	30 minutes
Sunday		
6:00am	1:00am	30 minutes

Route 36 Rymal (full service levels)		
39,731 service hours, 7 40-foot peak vehicles No change to routing		
From	**To**	**Every**
Weekday		
5:00am	8:00pm	20 minutes
8:00pm	2:00am	30 minutes
Saturday		
5:00am	2:00am	30 minutes
Sunday		
6:00am	1:00am	30 minutes

myRide On-Demand

Ancaster (full service levels)
21,348 service hours, up to 4 30-foot vehicles No change to service area or service span

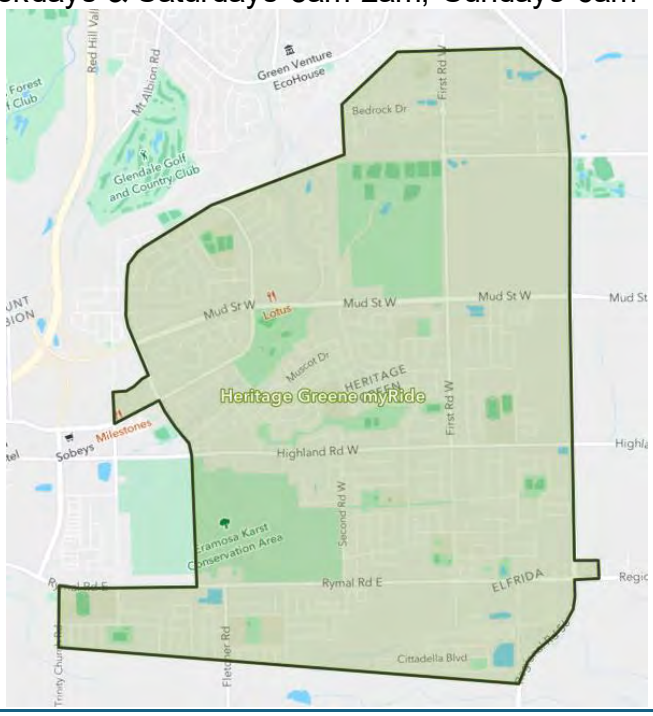
Waterdown (full service levels)
21,470 service hours, up to 3 30-foot vehicles No change to service area or service span

Heritage Green (partial service levels)

14,313 service hours, up to 2 30-foot vehicles

Operating Hours:

Weekdays & Saturdays 5am-2am; Sundays 6am-1am



6:00am	1:00am	30 minutes

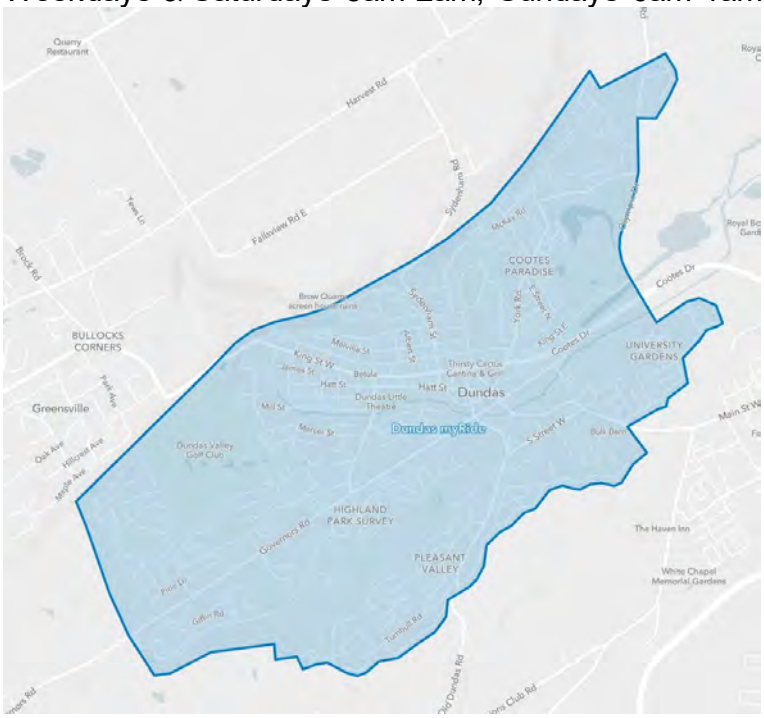
myRide On-Demand

Dundas

14,678 service hours, up to 2 30-foot vehicles

Operating Hours:

Weekdays & Saturdays 5am-2am; Sundays 6am-1am



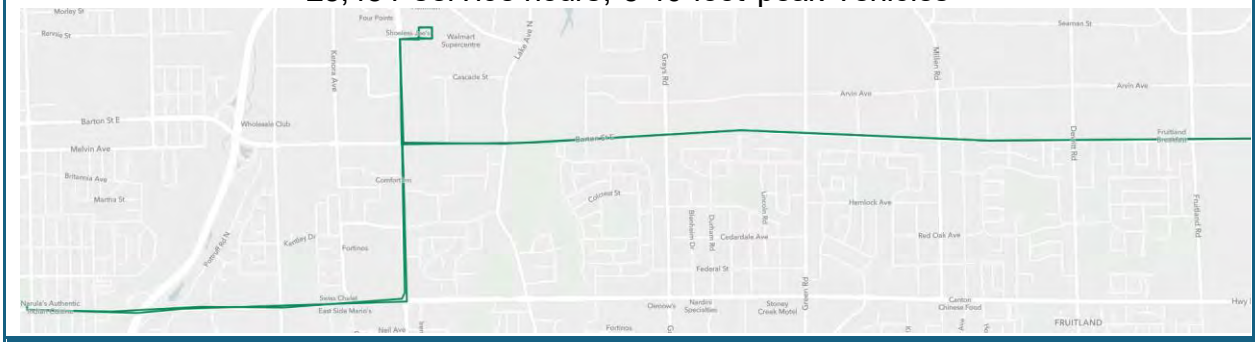
Heritage Green (full service levels)

21,470 service hours, up to 3 30-foot vehicles

No change to service area or service span

Route 12 Barton East

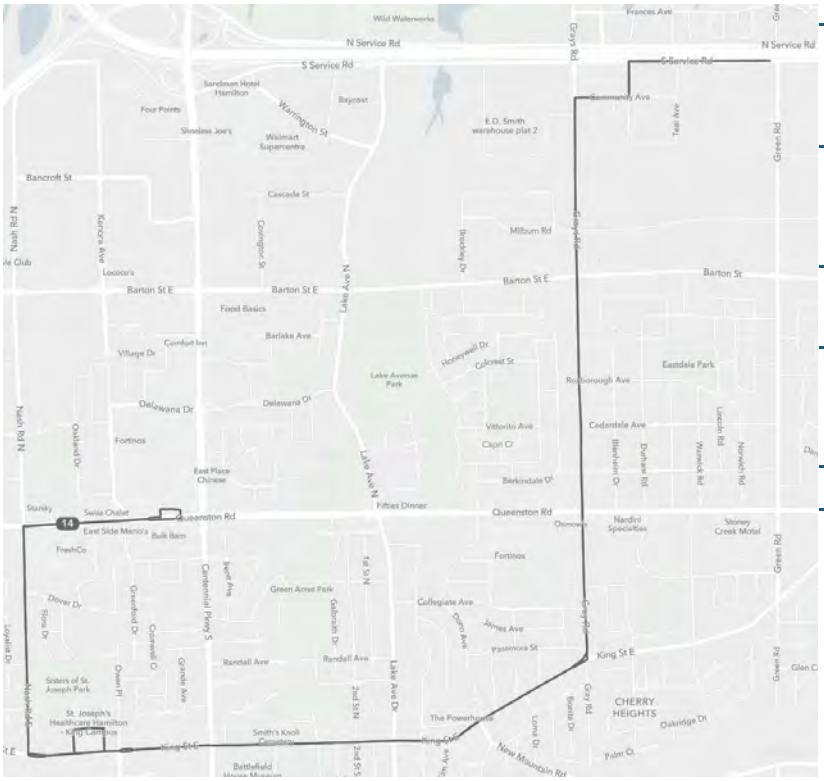
25,454 service hours, 5 40-foot peak vehicles



From	To	Every
Weekday		
5:00am	8:00pm	20 minutes
8:00pm	2:00am	30 minutes
Saturday		
5:00am	2:00am	30 minutes
Sunday		
6:00am	1:00am	30 minutes

Route 14 Stoney Creek Gray

16,338 service hours, 3 30-foot peak vehicles

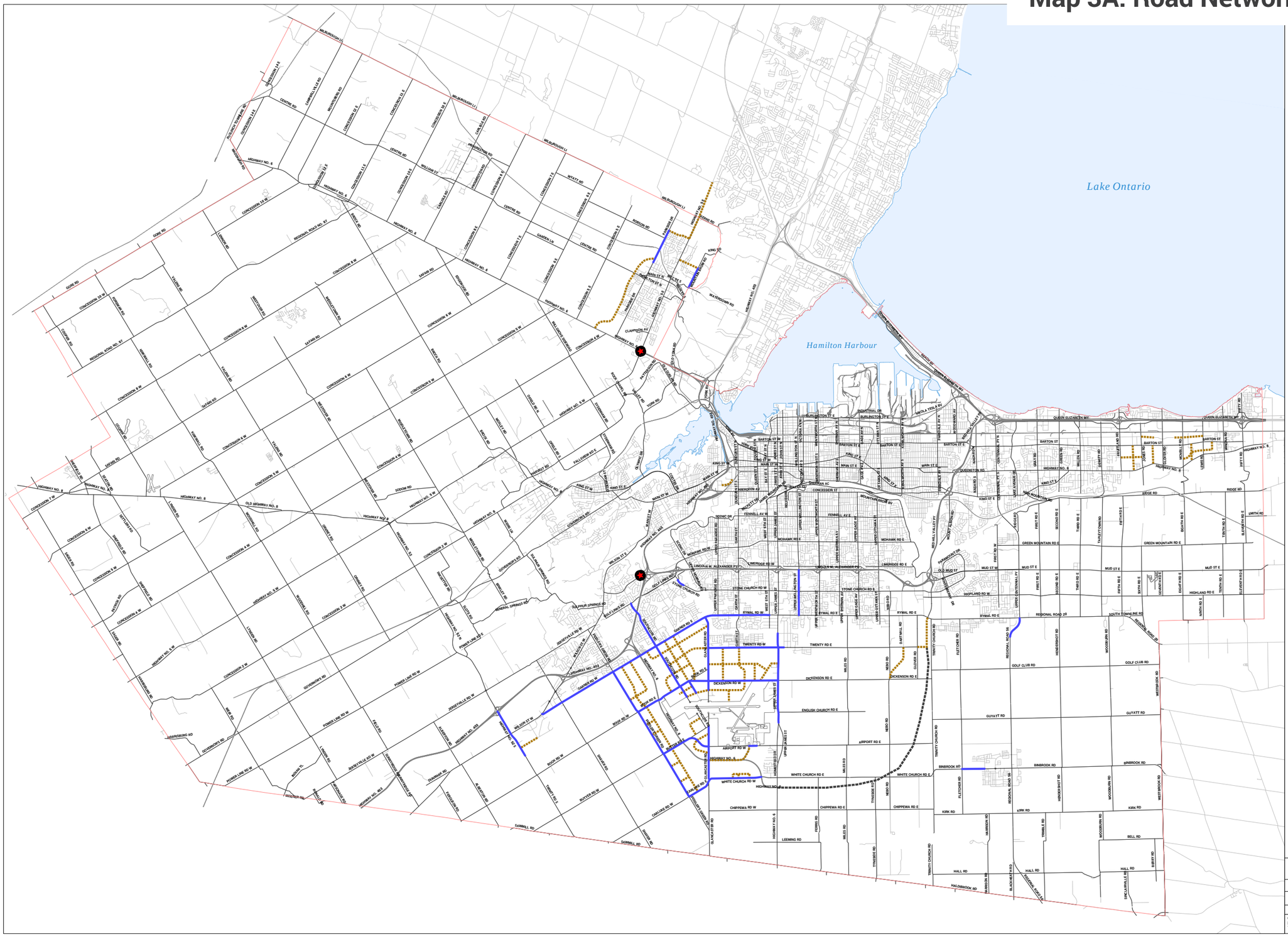


From	To	Every
Weekday		
5:00am	8:00pm	20 minutes
8:00pm	2:00am	30 minutes
Saturday		
5:00am	2:00am	30 minutes
Sunday		
6:00am	1:00am	30 minutes

APPENDIX K:

Transportation Improvement Excerpts

Map 3A: Road Network Improvements



Legend

- MTO Interchange Improvements
- Road Expansion
- Future Road Connections
- Conceptual Link
- Railway
- Existing Road Network
- Major Lake
- Municipal Boundary

Source Date:
April 27, 2018

N.T.S

PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
TRANSPORTATION PLANNING

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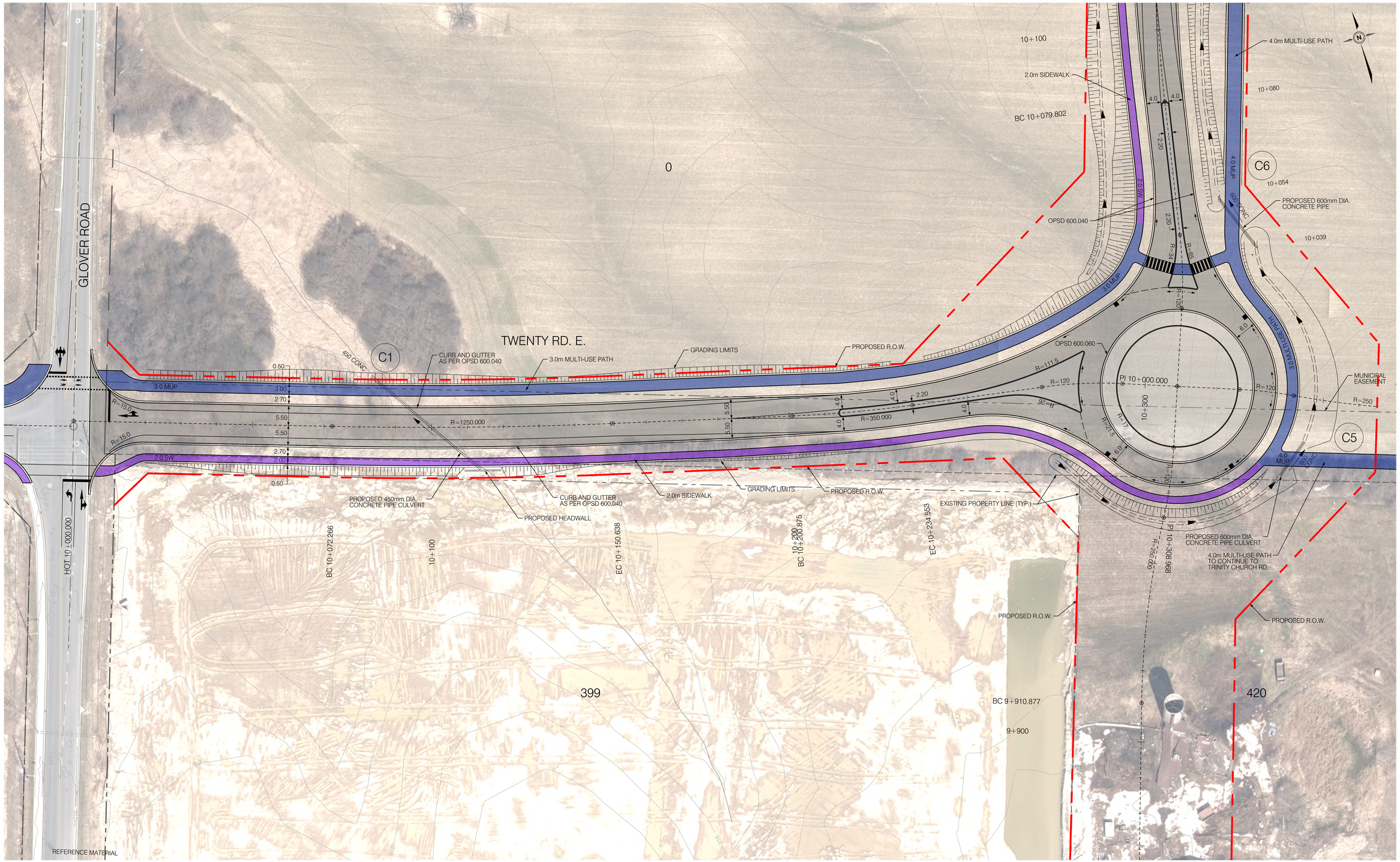


No.	REVISIONS	INITIAL	DATE
1	ISSUED FOR PRESENTATION	A.B.	05-03-25
2	ISSUED FOR PRESENTATION	A.B.	29-04-25

REFERENCE MATERIAL

ACTIVITIES	
Surveyed By:	
Survey Date:	
Drawn By:	A.B.
Drawn Date:	29-04-25
Design By:	R.M.
Design Date:	29-04-25

SCALES
0 5m 10m 20m
HORIZONTAL 1:500

Dimensions shown on this plan are in millimetres unless otherwise noted

AECOM

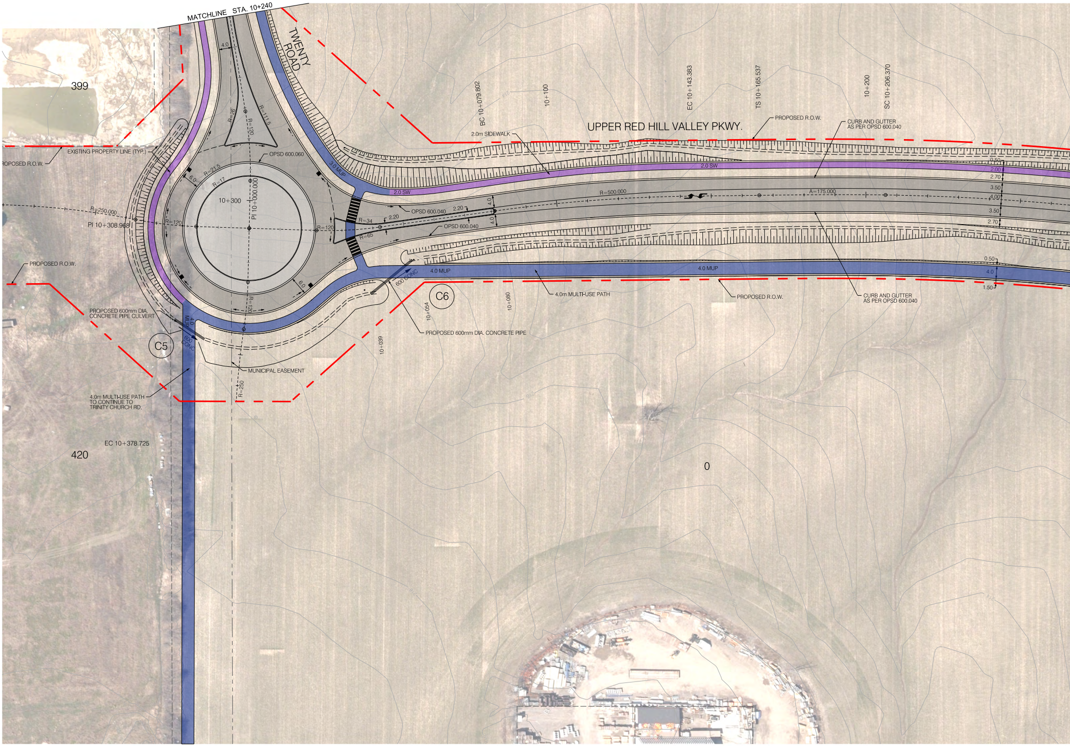
Project Manager (Design)
NAME

Manager of Design
NAME

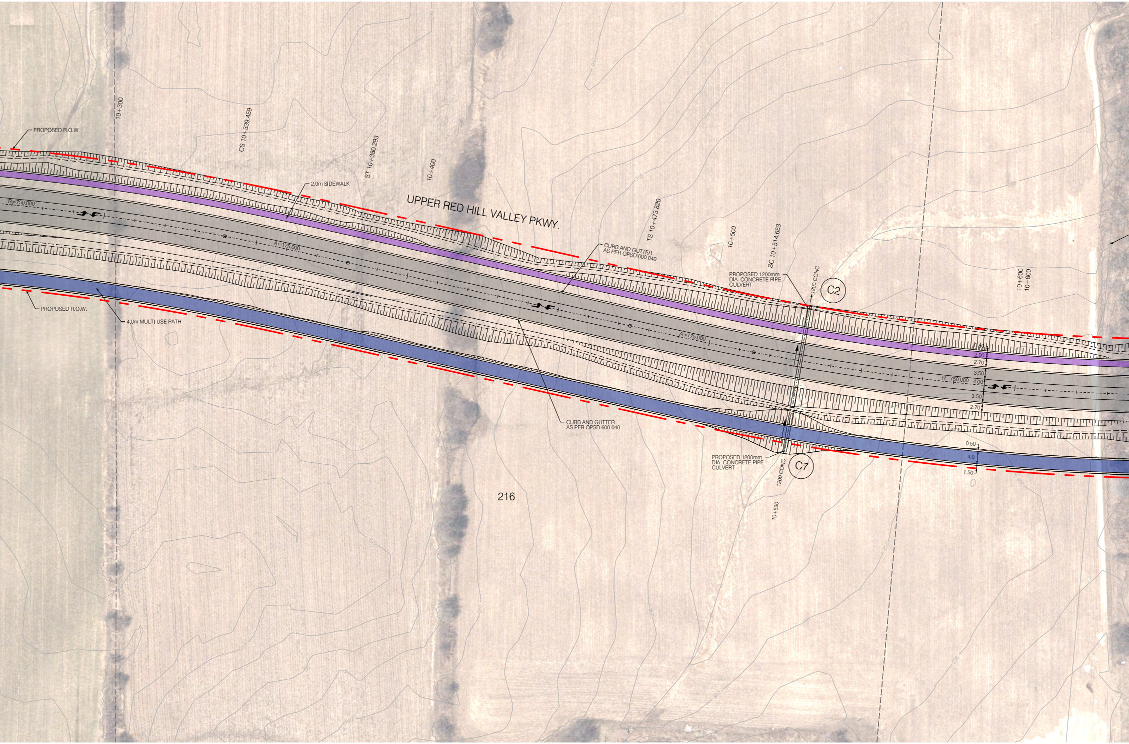
Hamilton
Planning and Economic Development Department

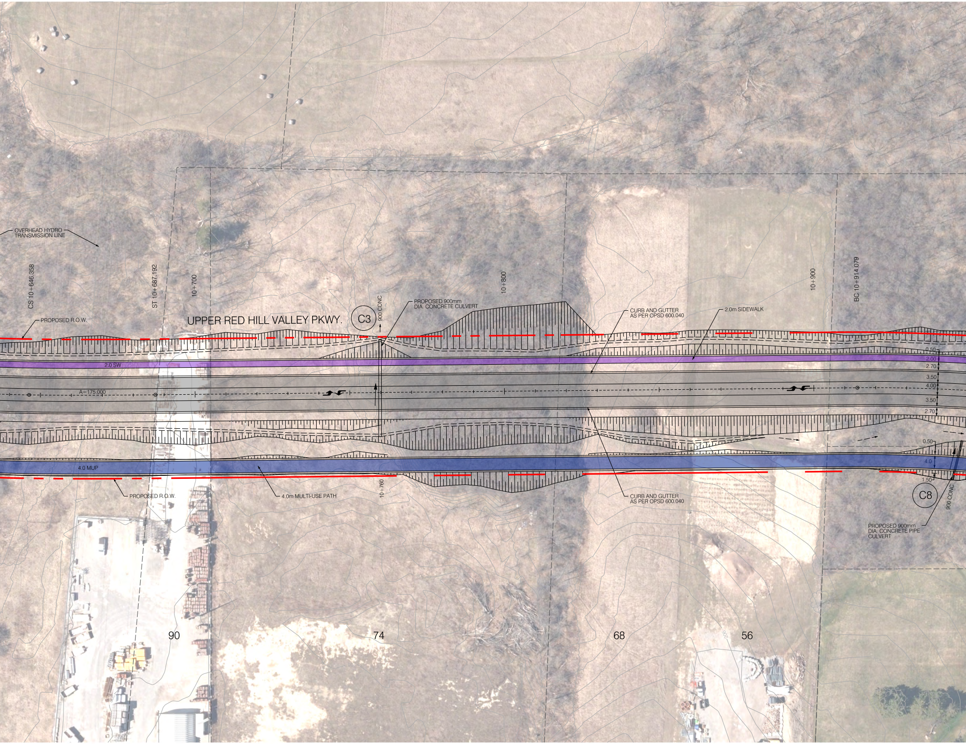
TWENTY RD. E. AND UPPER RED HILL VALLEY PKWY.

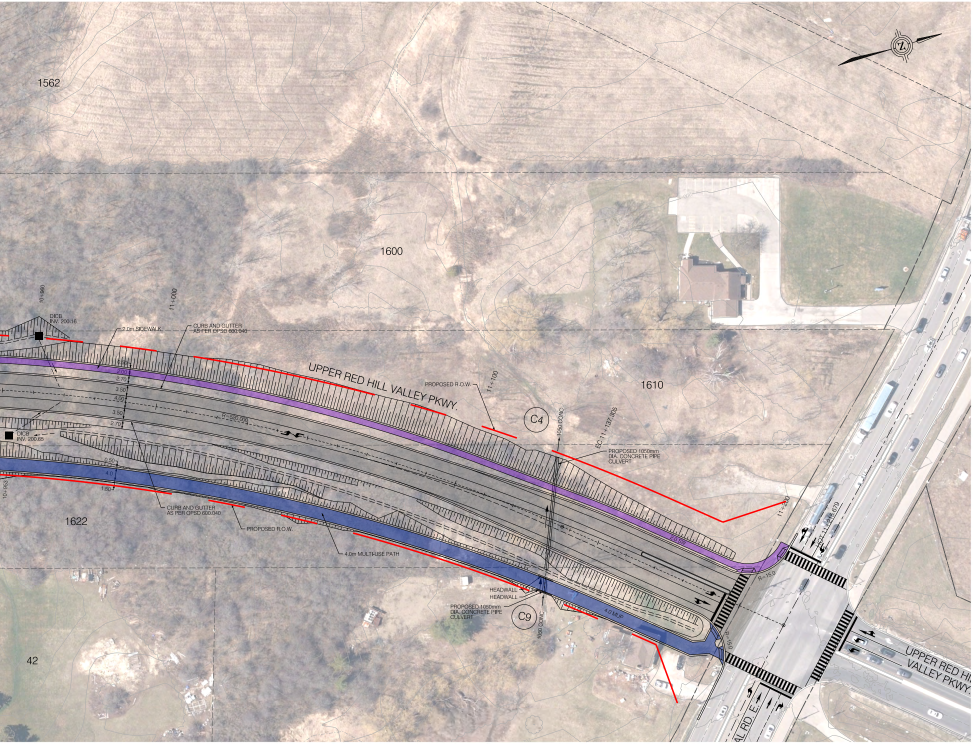
TWENTY RD. E. EXTENSION ROLL PLAN


MATCHLINE STA. 10+240
TWENTY ROAD
399
420
0
UPPER RED HILL VALLEY PKWY.
BC 10+079.802
10+100
EC 10+143.383
TS 10+165.537
10+200
SC 10+206.370
PROPOSED R.O.W.
CURB AND GUTTER AS PER OPSD 600.040
2.0m SIDEWALK
EXISTING PROPERTY LINE (TYP.)
PROPOSED R.O.W.
OPSD 600.060
3.0 MUP
2.0 SW
R=26
R=120
R=111.5
4.0
R=21.5
R=17
6.0
10+300
PI 10+000.000
R=250.000
PI 10+308.968
R=120
R=120
R=34
R=65
2.20
2.20
OPSD 600.040
OPSD 600.040
4.0
4.0
R=500.000
A=175.000
0.50
2.00
2.70
3.50
4.00
3.50
2.70
0.50
4.0
1.50
4.0 MUP
4.0 MUP
600 CONC
C6
10+054
10+080
10+039
4.0m MULTI-USE PATH
PROPOSED R.O.W.
CURB AND GUTTER AS PER OPSD 600.040
PROPOSED 600mm DIA. CONCRETE PIPE
PROPOSED R.O.W.
PROPOSED 600mm DIA. CONCRETE PIPE CULVERT
4.0 MUP
600 CONC
C5
6.0
R=120
MUNICIPAL EASEMENT
R=250
4.0m MULTI-USE PATH TO CONTINUE TO TRINITY CHURCH RD.
EC 10+378.725

No.	REVISIONS	INITIAL	DATE	REFERENCE MATERIAL	ACTIVITIES	
1	ISSUED FOR PRESENTATION	A.B.	05-03-25		Surveyed By:	
2	ISSUED FOR PRESENTATION	A.B.	29-04-25		Survey Date:	
					Drawn By:	A.B.
					Drawn Date:	29-04-25
					Design By:	R.M.
					Design Date:	29-04-25


PROPOSED R.O.W.
10+300
CS 10+339.459
ST 10+380.293
10+400
2.0m SIDEWALK
UPPER RED HILL VALLEY PKWY.
R=750.000
A=175.000
TS 10+473.820
10+500
SC 10+514.653
CURB AND GUTTER AS PER OPSD 600.040
PROPOSED 1200mm DIA. CONCRETE PIPE CULVERT
1200 CONC
C2
10+600
10+600
PROPOSED R.O.W.
4.0m MULTI-USE PATH
CURB AND GUTTER AS PER OPSD 600.040
A=175.000
0.50
2.00
2.70
3.50
R=750.000
4.00
3.50
2.70
0.50
4.0
1.50
PROPOSED 1200mm DIA. CONCRETE PIPE CULVERT
1200 CONC
C7
10+530
216
208
206


OVERHEAD HYDRO TRANSMISSION LINE
CS 10+646.358
ST 10+687.192
10+700
10+800
10+900
BC 10+914.079
PROPOSED R.O.W.
UPPER RED HILL VALLEY PKWY.
C3
900 CONC
PROPOSED 900mm DIA. CONCRETE CULVERT
CURB AND GUTTER AS PER OPSD 600.040
2.0m SIDEWALK
2.0 SW
A=175.000
0.50
2.00
2.70
3.50
4.00
3.50
2.70
0.50
4.0
1.50
4.0 MUP
PROPOSED R.O.W.
4.0m MULTI-USE PATH
10+760
CURB AND GUTTER AS PER OPSD 600.040
C8
900 CONC
PROPOSED 900mm DIA. CONCRETE PIPE CULVERT
90
74
68
56


1562
1600
1610
1622
42
10+960
11+000
11+100
11+200
10+953
DICB
INV. 200.16
2.0m SIDEWALK
CURB AND GUTTER
AS PER OPSD 600.040
0.50
2.00
2.70
3.50
4.00
3.50
2.70
R=520.000
DICB
INV. 200.65
0.50
4.0
1.50
CURB AND GUTTER
AS PER OPSD 600.040
PROPOSED R.O.W.
4.0m MULTI-USE PATH
UPPER RED HILL VALLEY PKWY.
PROPOSED R.O.W.
C4
1050 CONC
EC 11+137.305
PROPOSED 1050mm
DIA. CONCRETE PIPE
CULVERT
2.0 SW
HEADWALL
HEADWALL
PROPOSED 1050mm
DIA. CONCRETE PIPE
CULVERT
C9
1050 CONC
4.0 MUP
R=15.0
R=15.0
HOT 11+215.679
UPPER RED HI
VALLEY PKWY.
AL RD. E.

SCALES
0 5m 10m 20m
HORIZONTAL 1:500

Dimensions shown on this plan are in millimetres unless otherwise noted

AECOM

Project Manager (Design)

NAME

Manager of Design

NAME

Hamilton

Planning and Economic Development Department

TWENTY RD. E. AND UPPER RED HILL VALLEY PKWY.

RED HILL VALLEY PARKWAY EXTENSION
ROLL PLAN