





Demarchi Lands

Traffic Impact Study

Branthaven

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Executive Summary

GHD Limited is pleased to provide the following Traffic Impact Study for a proposed residential development located on lands municipally known as 9755-9875 Derry Road in the Town of Milton.

This report determines the site related traffic and subsequent traffic related impacts on the adjacent road network and site driveways during the weekday a.m. and p.m. peak hours. These impacts are based on the projected future background traffic and road network conditions derived for a 2029 future planning horizon year.

Based on the approved Terms of Reference for the study, the following intersections were included in the study area:

Existing

- Derry Road and Sauve Street
- Harwood Drive and Cedar Hedge Road
- Derry Road and Trudeau Drive
- Harwood Drive at Trudeau Drive
- Derry Road and Fourth Line
- Cedar Hedge Road at Laurier Avenue/Croft Avenue

Future

- Derry Road and Cedar Hedge Road extension (directly opposite of Fourth Line)

A development concept plan prepared by GSAI consists of a total 365 dwelling units within two blocks. The breakdown between each block is as follows:

West Block

- 16 rear lane townhouse units
- 60 back-to-back townhouse units
- 46 street townhouse units

East Block

- 29 street townhouse units
- 54 back-to-back townhouse units
- 160 apartment dwelling units

Access to the west block is proposed via a series of extensions of existing roads, including Beacham Court and Rusk Avenue in the east/west direction, with Rusk Avenue continuing in the north/south direction intersecting Derry Road West at its existing signalized intersection with Sauve Street.

Access to the east block is proposed via three new east/west condo roadways that will intersect with the proposed Cedar Hedge Road extension to Derry Road.

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 140 two-way vehicle trips during the a.m. peak hour consisting of 40 inbound and 100 outbound trips. During the p.m. peak hour, it is expected to generate 135 new two-way vehicle trips consisting of 105 inbound and 30 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2029 future background conditions, with the addition of corridor growth, background development traffic, and signal improvements, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of:

- Derry Road West and Trudeau Drive
- The eastbound shared through/right-turn movement with a v/c ratio of 0.87 LOS B (a.m. peak hour)

Under the 2029 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of:

- Derry Road West and Trudeau Drive
- The overall intersection with a v/c ratio of 0.86 LOS C (a.m. peak hour)
- The shared through/right-turn movement with a v/c ratio of 0.89 LOS C (a.m. peak hour)

As requested by the Region, a sensitivity analysis was completed assuming Cedar Hedge Road is not extended to Derry Road. The study road network continues to operate at satisfactory levels despite no right-in/right-out access from Cedar Hedge Road to Derry Road West

Application of the Town of Milton Zoning By-Law 016-2014 parking rates to the subject site results in a requirement of a minimum of 732 parking spaces, 11 barrier free spaces, and 88 bicycle parking spaces.

The subject site provides a total of 631 vehicle parking spaces (566 resident spaces and 65 visitor spaces), including 9 barrier free spaces, and 88 bicycle parking spaces. Resident parking for the townhouse dwelling units is proposed to be provided at a rate of 2.0 spaces per unit, meeting the Town's By-law requirement.

It is proposed to provide resident parking for the apartment dwelling units at a reduced rate of 1.0 space per unit and all visitor parking will be provided at a rate of 0.20 spaces per unit.

GHD has undertaken proxy surveys at multiple existing multi-unit residential developments in the Greater Toronto Area (GTA) and in particular within Milton and Oakville for medium density developments for the purpose of collecting parking demand data for both residents and visitors. Based on the survey data, GHD is of the opinion that a reduced parking supply of 1.0 spaces per unit for the medium density block and 0.20 spaces per unit for visitors throughout the site is appropriate.

TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips. These measures include bicycle parking and education material.

GHD assessed the site circulation for emergency vehicles, MSU trucks, waste collection vehicles, and passenger vehicles and confirmed no issues with the site circulation.

The traffic study confirms that the proposed residential development can be accommodated within the existing and planned road network without significant negative effects on traffic flow, capacity, or safety.

We trust that this satisfies your requirements, but do not hesitate to contact the undersigned if you have any questions.

Sincerely,

GHD



Rafael Andrenacci, B.Eng
Transportation Planner



William Maria, P. Eng.
Transportation Planning Lead

Contents

1.	Introduction	1
1.1	Retainer and Objective	1
1.2	Study Team	2
2.	Site Characteristics	2
2.1	Study Area	2
2.2	Proposed Development Content	2
3.	Existing Conditions	3
3.1	Existing Road Network	3
3.2	Pedestrian and Bicycle Facilities	5
3.3	Transit Services	6
3.4	Existing Traffic Data	7
4.	Future Conditions	8
4.1	Study Horizon Year	8
4.2	Corridor Growth	8
4.3	Background Development Traffic	8
4.4	Roadway Improvements	10
4.5	Future Background Traffic Volumes	10
4.6	Future Lane Configuration	11
5.	Site Generated Traffic	12
5.1	Site Trip Generation	12
5.2	Site Traffic Distribution and Assignment	14
5.3	Sensitivity Analysis - Site Traffic Distribution and Assignment	16
6.	Future Total Traffic	17
6.1	Traffic Redistribution	17
6.2	Future Total Traffic Volumes	21
6.3	Future Background Traffic Volumes – Sensitivity Analysis	21
7.	Capacity Analysis	22
7.1	Derry Road West and Sauve Street/Rusk Avenue	23
7.2	Derry Road West and Trudeau Drive	24
7.3	Derry Road West and Fourth Line/Cedar Hedge Road	25
7.4	Laurier Avenue/Craft Avenue and Cedar Hedge Road	26
7.5	Cedar Hedge Road and Harwood Avenue	27
7.6	Trudeau Drive and Harwood Avenue	28
8.	Parking Review	28
8.1	Town of Milton Zoning By-Law 016-2014	29
8.1.1	Vehicular Parking	29
8.1.2	Accessible Parking	29

8.1.3	Bicycle Parking	30
8.1.4	Loading Spaces	30
8.2	Proposed Site Parking	31
8.3	Parking Assessment	31
8.3.1	Resident Parking Assessment	31
8.3.2	Visitor Parking Assessment	34
9.	Travel Demand Management	42
9.1	Travel Demand Management	42
9.2	Existing TDM Opportunities	42
9.3	Recommended TDM Measures	42
10.	Vehicle Swept Path Analysis	43
11.	Conclusion	43

Table Index

Table 1	Background Development Traffic	9
Table 2	Total Site Trip Generation	13
Table 3	Site Traffic Distribution	14
Table 4	Capacity analysis of Derry Road West and Sauve Street/Rusk Avenue	23
Table 5	Capacity analysis of Derry Road West and Trudeau Drive	24
Table 6	Capacity analysis of Derry Road West and Fourth Line/Cedar Avenue	25
Table 7	Capacity analysis of Laurier Avenue/Craft Avenue and Cedar Hedge Road	26
Table 8	Capacity analysis of Cedar Hedge Road and Harwood Avenue	27
Table 9	Capacity analysis of Trudeau Drive and Harwood Avenue	28
Table 10	Parking Requirements and Provisions	31
Table 11	<i>Best Practices – Apartment Dwelling Parking Rates</i>	33
Table 12	Visitor Demand from Proxy Sites	35
Table 13	Best Practices – Residential Visitor Parking Rates	41
Table 14	Recommended TDM Strategies	42

Figure Index

Figure 1	Site Location	1
Figure 2	Development Concept Plan	3
Figure 3	Existing Lane Configuration and Traffic Controls	5
Figure 4	Existing Active Transportation Facilities	6
Figure 5	Existing Transit Routes and Transit Stops	7
Figure 6	Baseline 2024 Traffic Volumes	8
Figure 7	Location of Background Developments	9
Figure 8	Total Background Development Traffic	10

Figure 9	2029 Future Background Traffic Volumes	11
Figure 10	Future Lane Configuration	12
Figure 11	West Block Site Trips	14
Figure 12	East Block Site Trips	15
Figure 13	Total Site Trips	15
Figure 14	East Block Site Trips – Sensitivity Analysis	16
Figure 15	Total Site Trips – Sensitivity Analysis	17
Figure 16	Area Identification for Projected Traffic Redistribution	18
Figure 17	Area 1 Projected Traffic Redistribution	19
Figure 18	Area 2 Projected Traffic Redistribution	20
Figure 19	Total Projected Traffic Redistribution	20
Figure 20	2029 Future Total Traffic Volumes	21
Figure 21	2029 Future Total Traffic Volumes – Sensitivity Analysis	22
Figure 22	Observed Parking Demand for 620-630 Suave Street	36
Figure 23	Observed Parking Demand for 98 Kaitting Trail	37
Figure 24	Observed Parking Demand for 1105-1125 Leger Way	38
Figure 25	Observed Parking Demand for 610 Farmstead Drive	39
Figure 26	Observed Parking Demand for 41 Speers Road	40

Appendices

Appendix A	Terms of Reference
Appendix B	Site Plan
Appendix C	Traffic Data
Appendix D	Background Development Excerpts
Appendix E	Transportation Tomorrow Survey 2016
Appendix F	Synchro Outputs
Appendix G	Parking Survey Data
Appendix H	AutoTURN Swept Path Analysis

1. Introduction

1.1 Retainer and Objective

GHD Limited was retained to prepare a Traffic Impact Study for a residential development on lands municipally known as 9755-9875 Derry Road in the Town of Milton.

The site location is illustrated in **Figure 1**.

The purpose of this study is to:

- Establish baseline traffic conditions for the study area in 2024 and determine future background operating conditions for a future planning horizon in 2029.
- Estimate the site trips generated by the proposed development and distribute the traffic to the adjacent road network.
- Determine future operating traffic conditions during the weekday peak periods through intersection capacity analysis.
- Conduct a swept path review of the proposed site plan.



Figure 1 Site Location

1.2 Study Team

The GHD team involved in the preparation of the study are:

- William Maria, P. Eng., Transportation Planning Lead
- Rafael Andrenacci, B.Eng., Transportation Planner

2. Site Characteristics

2.1 Study Area

As per the agreed Terms of Reference for the study attached in **Appendix A**, the following intersections were included in the study area:

Existing

- Derry Road and Sauve Street
- Harwood Drive and Cedar Hedge Road
- Derry Road and Trudeau Drive
- Harwood Drive at Trudeau Drive
- Derry Road and Fourth Line
- Cedar Hedge Road at Laurier Avenue/Croft Avenue

Future

- Derry Road and Cedar Hedge Road extension (Right-in/out)

2.2 Proposed Development Content

A development concept plan prepared by GSAI is shown in **Figure 2** and provided in **Appendix B**. The proposed development consists of a total 365 dwelling units within two blocks. The breakdown between each block is as follows:

West Block

- 16 rear lane townhouse units
- 60 back-to-back townhouse units
- 46 street townhouse units

East Block

- 29 street townhouse units
- 54 back-to-back townhouse units
- 160 apartment dwelling units

Access to the west block is proposed via a series of extensions of existing roads, including Beacham Court and Rusk Avenue in the east/west direction, with Rusk Avenue continuing in the north/south direction intersecting Derry Road West at its existing signalized intersection with Sauve Street.

Access to the east block is proposed via three new east/west condo roadways that will intersect with the proposed Cedar Hedge Road extension.

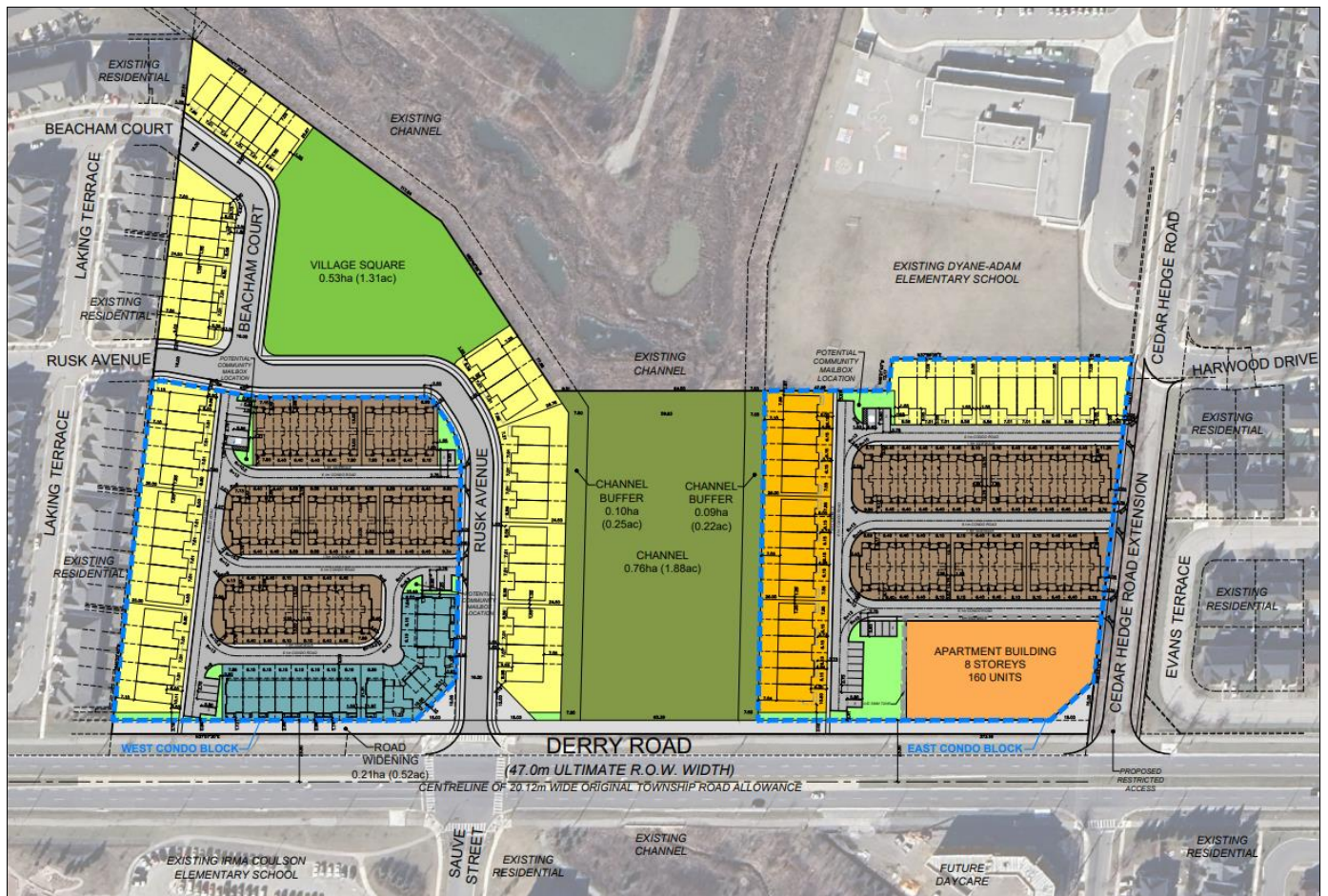


Figure 2 Development Concept Plan

3. Existing Conditions

3.1 Existing Road Network

Derry Road West is an east/west arterial road under the jurisdiction of the Region of Halton. Within the study area, it has a four-lane cross-section. Its intersections with Sauve Street and Trudeau Drive are signalized with auxiliary left-turn lanes in the eastbound and westbound directions (including for the unconstructed north leg of the intersection of Derry Road West and Sauve Street). Its intersection with Fourth Line operates as an unsignalized intersection, with the stop-control only provided for the minor approach. The posted speed limit along Derry Road West is 60 km/h.

Sauve Street is a north/south local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Derry Road West is signalized, with no provision of turning lanes. The assumed posted speed limit along Sauve Street is 50 km/h, however it is reduced to 40 km/h when the beacons are flashing.

Laurier Avenue is an east/west local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Cedar Hedge Road operates as an all-way stop-controlled intersection. The assumed posted speed limit along Laurier Avenue is 50 km/h. Laurier Avenue continues as Craft Avenue east of Cedar Hedge Road.

Craft Avenue is an east/west local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Cedar Hedge Road operates as an all-way stop-controlled intersection.

The assumed posted speed limit along Craft Avenue is 50 km/h. Craft Avenue continues as Laurier Avenue west of Cedar Hedge Road

Cedar Hedge Road is a north/south local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Harwood Avenue is currently an unsignalized intersection with only the north and east legs of the intersection constructed with stop controls provided on neither of the approaches. Its intersection with Laurier Avenue/Craft Avenue is an all-way stop-controlled intersection. The posted speed limit along Cedar Hedge Road is 50 km/h north of Laurier Avenue/Craft Avenue, and reduced to 40 km/h south of it.

Fourth Line is a north/south local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Derry Road West is an unsignalized intersection with the stop-control only provided along the minor approach. The intersection operates as a right-in/right-out intersection with the movements restricted by the existing centre median. The posted speed limit along Fourth Line is 50 km/h.

Trudeau Drive is a north/south local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Derry Road West is signalized, with auxiliary left-turn lane in the northbound and southbound directions. Its intersection with Harwood Avenue operates as an all-way stop-controlled intersection. The posted speed limit along Trudeau Drive is 50 km/h.

Harwood Avenue is an east/west local road under the jurisdiction of the Town of Milton. Within the study area it has a two-lane cross-section. Its intersection with Cedar Hedge Road is currently an unsignalized intersection with only the north and east legs of the intersection constructed with stop controls provided on neither of the approaches. Its intersection with Trudeau Drive operates as an all-way stop-controlled intersection. The assumed posted speed limit along Harwood Avenue is 50 km/h.

The existing lane configurations and intersection control are shown in the figure below.

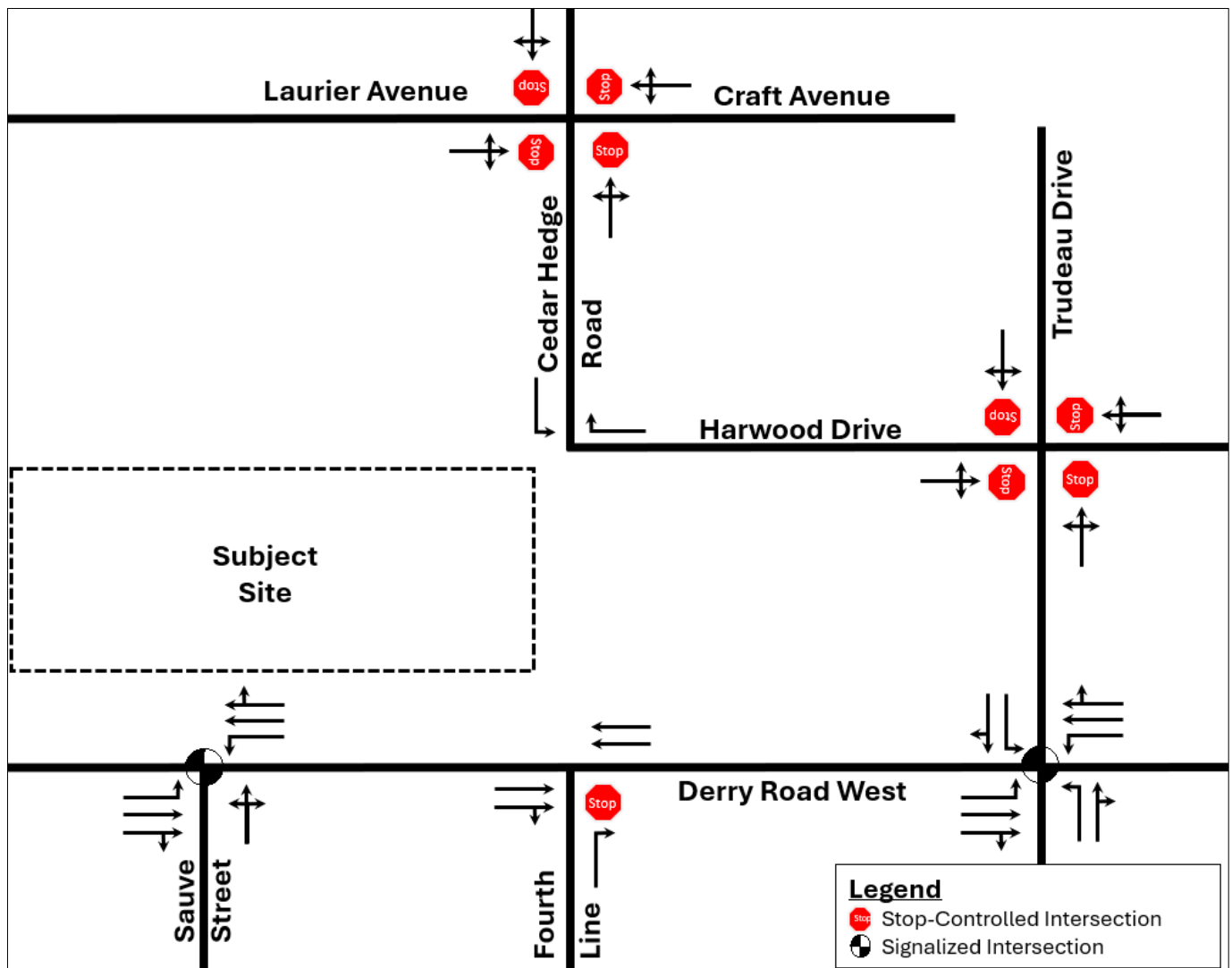


Figure 3 Existing Lane Configuration and Traffic Controls

3.2 Pedestrian and Bicycle Facilities

Within the study area, pedestrian infrastructure such as sidewalks or multi-use paths are provided along both sides of all study area roads.

Cycling infrastructure is provided within the study area as follows:

Bike lanes:

- Along both sides of Laurier Avenue/Craft Avenue, with the exception of sharrows provided between Aylmer Crescent and Cedar Hedge Road
- Along both sides of Trudeau Drive
- Neyagawa Boulevard north of Dundas Street West, The provision of active transportation facilities within the study area includes a bike lane along both sides of Langstaff Road.

Multi-use trail:

- Along both sides of Derry Road West

The pedestrian and bicycle routes are illustrated in the figure below.

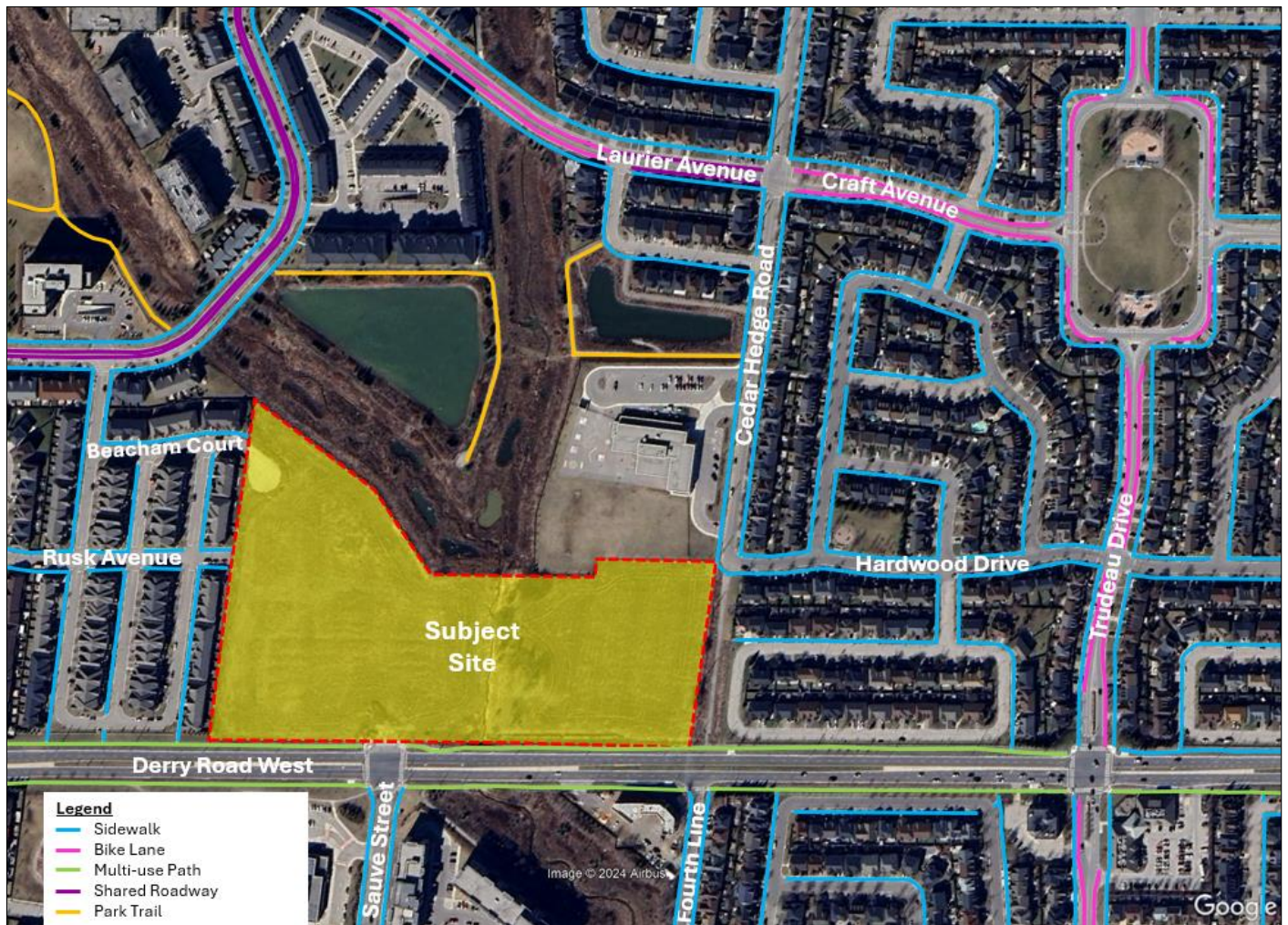


Figure 4 Existing Active Transportation Facilities

3.3 Transit Services

Milton Transit currently offers transit service along Route 3 within the study area. Route 3 (**Trudeau**) operates between the Milton GO Station and the intersection of Fourth Line and Louis St. Laurent Avenue. Within the study area, the route operates in a general east/west direction along Laurier Avenue and Croft Avenue and in the north/south direction along Trudeau Drive. The route operates generally with a 30-minute headway.

GO Transit operates bus route 21 (**Milton**) between the Milton GO Station and Union Station in the City of Toronto. The route operates along Derry Road West within the study area. The bus route does not operate in the eastbound direction during the a.m. peak hour or in the westbound direction during the p.m. peak hour. Throughout the remainder of the day, the route operates with headways ranging from 30 minutes to 1 hour.

Milton Transit Route 3, GO Transit Route 21, and their transit stops within the study area are shown in the figure below.



Figure 5 Existing Transit Routes and Transit Stops

3.4 Existing Traffic Data

GHD contracted Ontario Traffic Inc. to conduct updated turning movement counts at all existing study intersections in September 2024. The baseline 2024 traffic volumes for the a.m. and p.m. peak hours are summarized in **Figure 6** below with the full turning movement counts provided in **Appendix C**.

Signal timings were also provided by Halton Region and included in **Appendix C**.

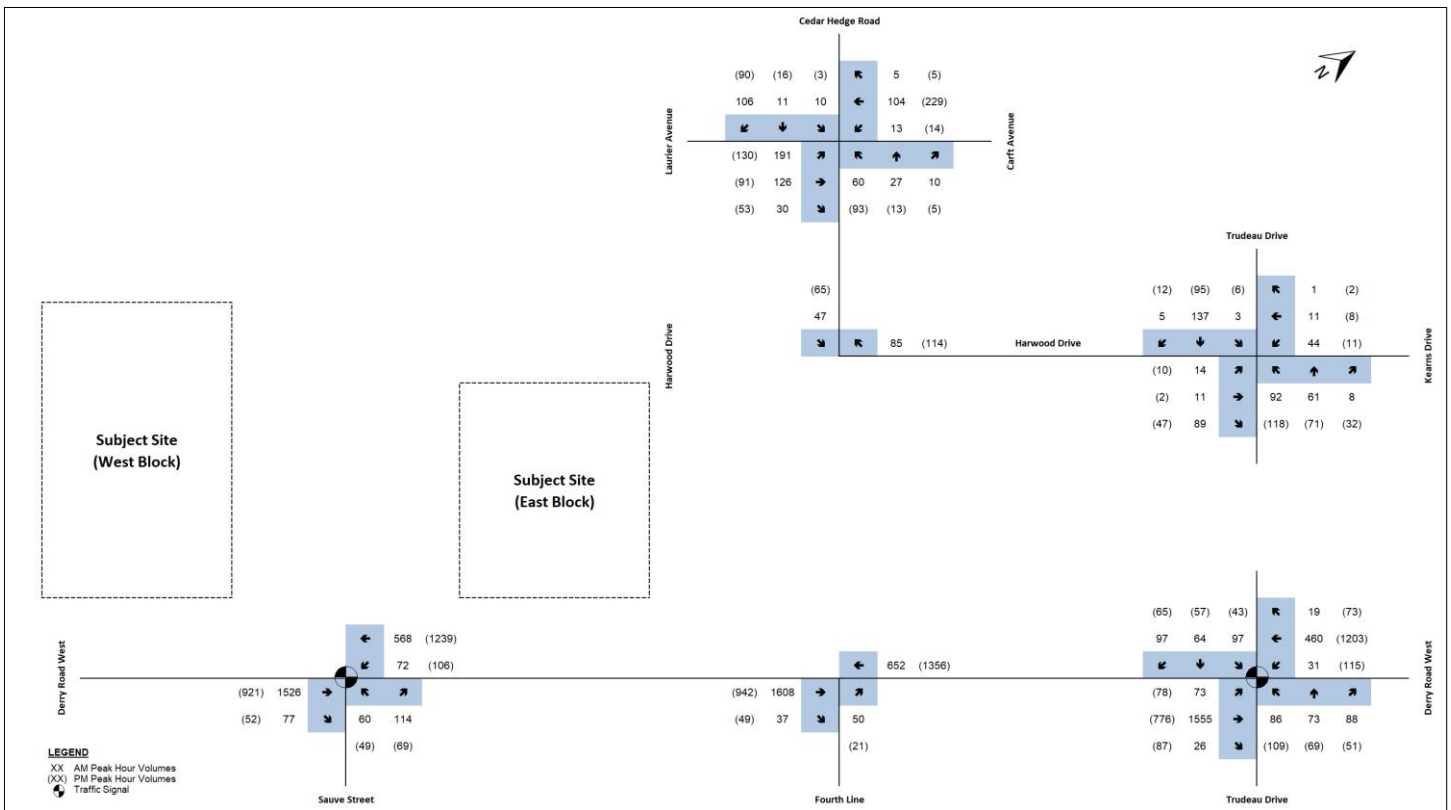


Figure 6 Baseline 2024 Traffic Volumes

4. Future Conditions

4.1 Study Horizon Year

A future horizon year of 2029 was selected for the analysis of future traffic conditions, corresponding to a period of five years from the date of the TIS. The selected horizon year is generally consistent with the Region's TIS Guidelines and confirmed through the Terms of Reference.

4.2 Corridor Growth

The growth rates used to project the 2029 traffic volumes were provided by Region staff and consisted of a 2% per annum growth rate. The growth rate was applied to all movements. The growth rate along the municipal roadways was also approved as per the Terms of Reference and similarly a 2% per annum growth rate was applied to all movements along municipal roads.

4.3 Background Development Traffic

As identified by Town staff, the proposed daycare centre located at 9980 Derry Road West was the only proposed development located in proximity to the subject site that would generate additional traffic along the study area roadways.

The location of the background developments are shown in **Figure 7** below.



Figure 7 Location of Background Developments

The estimated site trips generated by the proposed background development was extracted from its Traffic Impact Study, provided by Town staff, and is summarized in **Table 1** below with detailed excerpts from the background studies attached in **Appendix D**.

The total site trips for the background development is summarized in **Table 1**.

Table 1 Background Development Traffic

Background Development	Parameter	Peak Hour Trips					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
9980 Derry Road West	330 students	136	121	257	123	138	261

The total background development traffic from the background developments is summarized in **Figure 8** with the relevant excerpts provided in **Appendix D**.

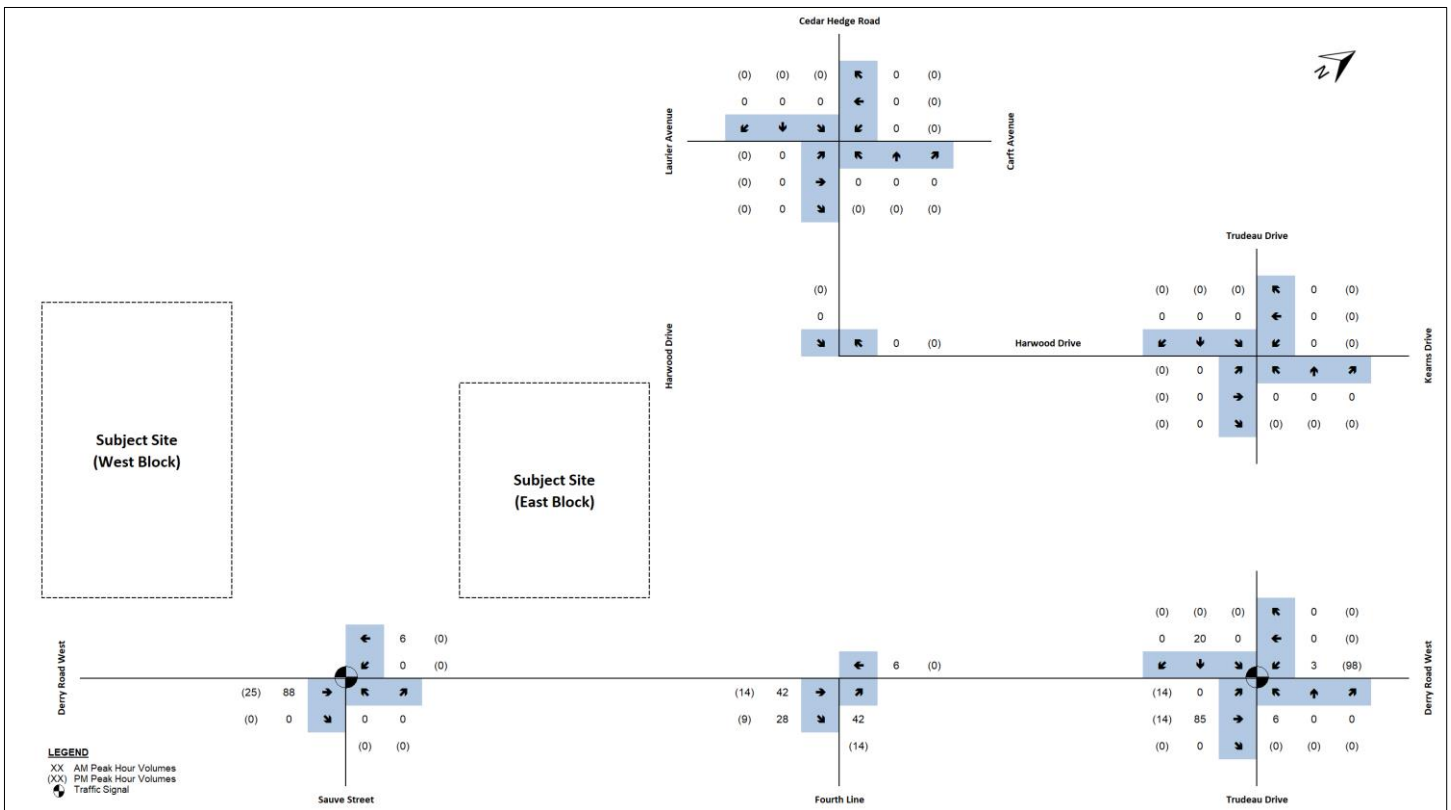


Figure 8 Total Background Development Traffic

4.4 Roadway Improvements

As identified by Region staff, Halton Region's Transportation Master Plan (TMP) identified the need to widen Derry Road to six lanes from Tremaine Road to Highway 407 with construction currently proposed to start in 2031 per Halton Region's 2024 Budget and Business Plan.

Based on the ultimate horizon year of 2029 occurring prior to the currently proposed start date in 2031, the widening of Derry Road West has not been included in the analysis of future horizon years.

4.5 Future Background Traffic Volumes

The background traffic volumes for the 2029 horizon year were derived by applying the 2% per annum growth rates to the study area roads and the total background development traffic from **Figure 8**. The resulting 2029 future background traffic volumes are summarized in **Figure 9**.

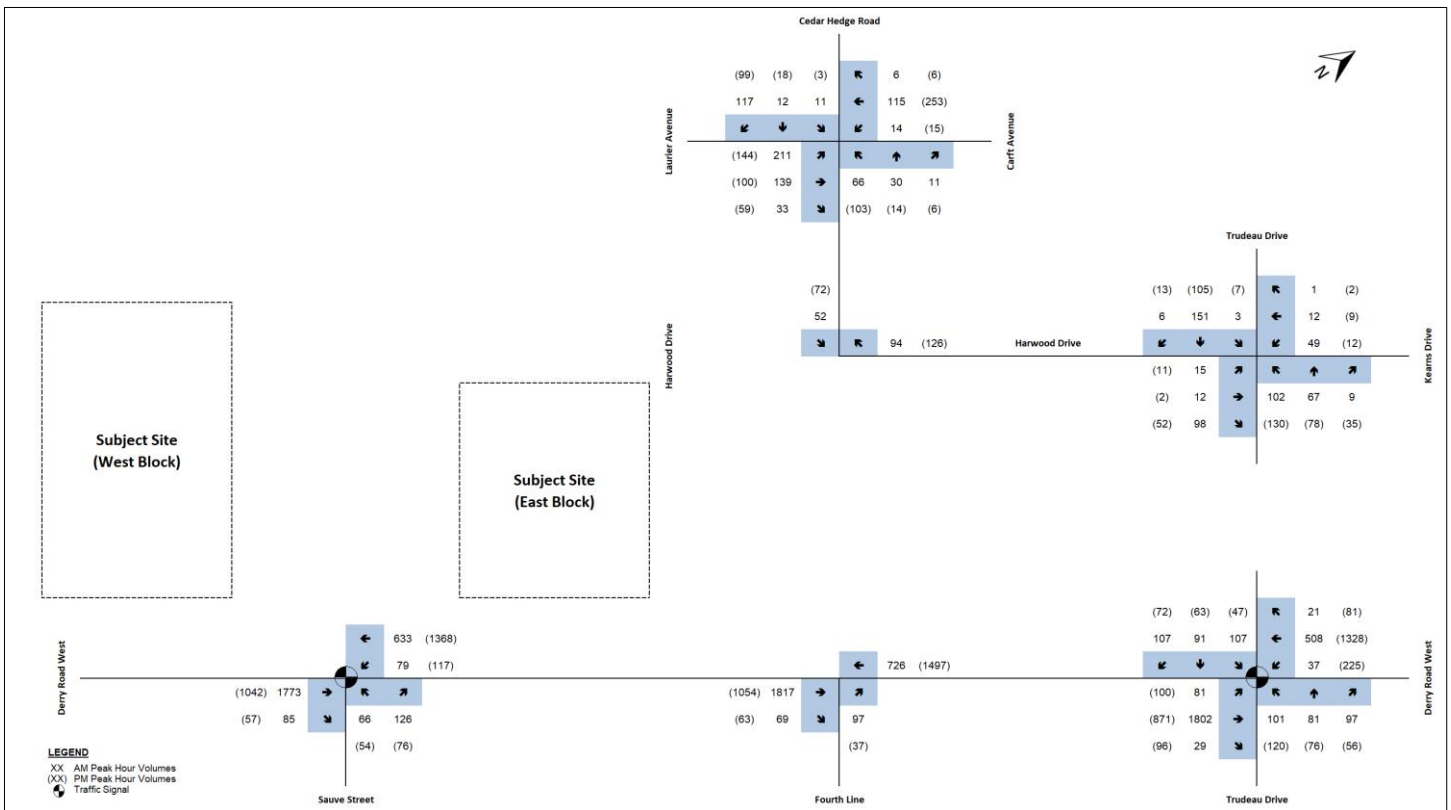


Figure 9 2029 Future Background Traffic Volumes

4.6 Future Lane Configuration

With the development of the subject site, it is proposed to extend the existing Rusk Avenue roadway towards the east within the west block. The extension of the roadway will include a 90 degree turn towards the south and will continue towards the south to Derry Road West and complete the fourth leg of the existing signalized intersection with Sauve Street.

The development of the east block will also consist of the extension of Cedar Hedge Road towards the south to Derry Road West. The extension will generally align with Fourth Line to the south, however the exist centre median will restrict the intersection to a right-in/right-out operation.

The future proposed road network and its lane configuration is shown in **Figure 10**.

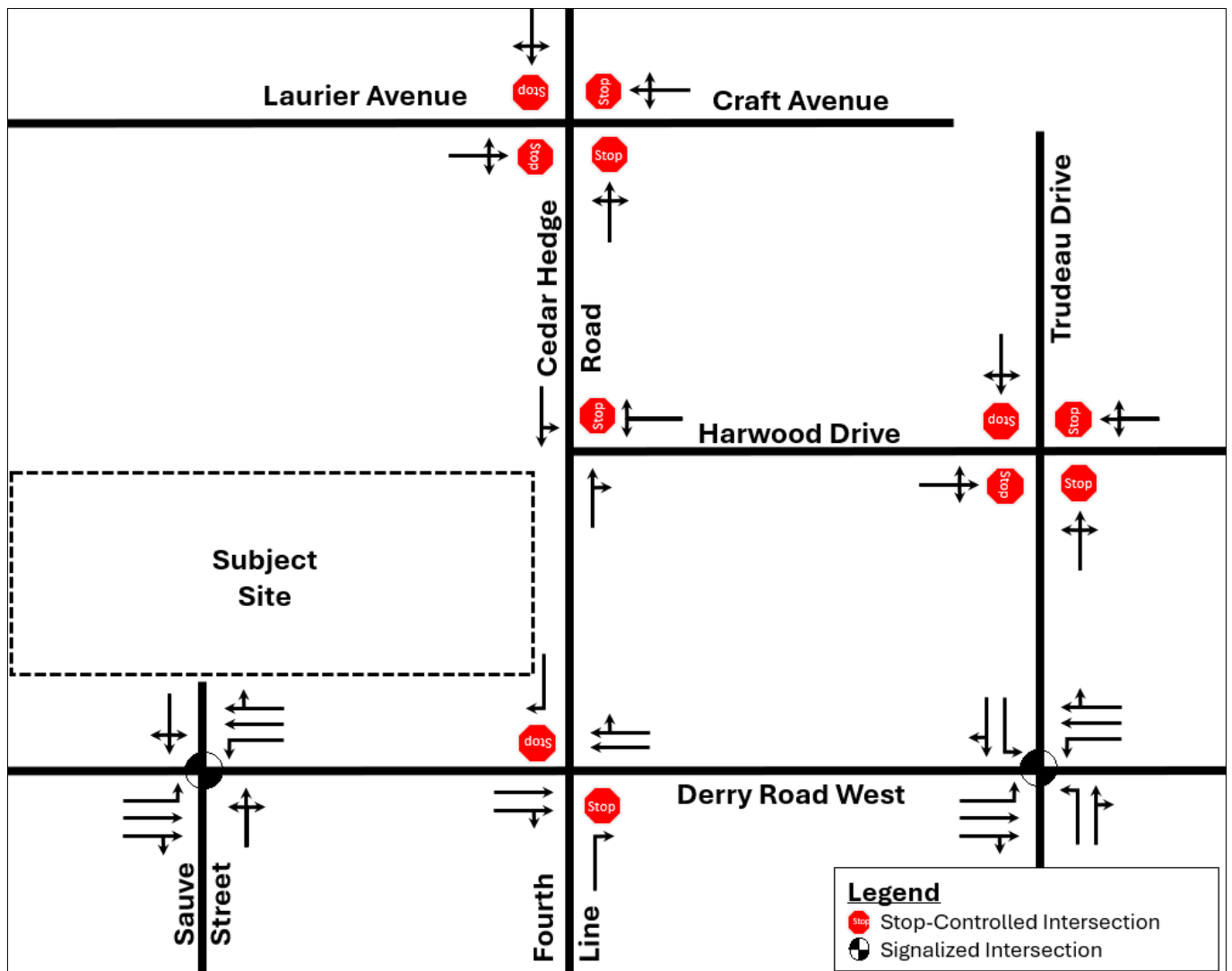


Figure 10 Future Lane Configuration

5. Site Generated Traffic

5.1 Site Trip Generation

The proposed development consists of a total consists of a total 365 dwelling units within two blocks. The breakdown between each block is as follows:

West Block

- 16 rear lane townhouse units
- 60 back-to-back townhouse units
- 46 street townhouse units

East Block

- 27 street townhouse units
- 54 back-to-back townhouse units

➤ 160 apartment dwelling units

Site traffic generated by the proposed development for the weekday a.m. and p.m. peak hours was estimated by applying the trip rates for Land Use Code (LUC) 215 (Single Family Attached Housing) and LUC 221 Multifamily Housing (Mid-Rise) - Not Close to Rail Transit in the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE).

The Single Family Attached Housing LUC was applied to all townhouse dwelling units while the Multifamily Housing (Mid-Rise) LUC was applied to the apartment dwelling units.

Table 2 summarizes the estimated trip generation for the subject site. The trip generation was completed separately for the west block and the east block.

Table 2 Total Site Trip Generation

Block	Unit Type (LUC)	Unit Count	Parameters	Peak Hour Trip Generation					
				Weekday AM			Weekday PM		
				In	Out	Total	In	Out	Total
West	Rear lane townhouse units (LUC 215)	16	Trip Ratio	25%	75%	100%	59%	41%	100%
			Primary Trips	2	6	8	5	4	9
	Back-to-back townhouse units (LUC 215)	60	Trip Ratio	25%	75%	100%	59%	41%	100%
			Primary Trips	7	22	29	20	14	34
	Street townhouse units (LUC 215)	46	Trip Ratio	25%	75%	100%	59%	41%	100%
			Primary Trips	6	16	22	15	11	26
East	Street townhouse units (LUC 215)	29	Trip Ratio	25%	75%	100%	59%	41%	100%
			Primary Trips	4	10	14	10	7	17
	Back-to-back townhouse units (LUC 215)	54	Trip Ratio	25%	75%	100%	59%	41%	100%
			Primary Trips	7	19	26	18	13	31
	Apartment dwelling units (LUC 221)	160	Trip Ratio	23%	77%	100%	59%	41%	100%
			Primary Trips	14	45	59	37	26	63
West Block Primary Trips				15	50	65	40	15	55
East Block Primary Trips				25	50	75	65	15	80
Total New Primary Trips				40	100	140	105	30	135

The proposed development is expected to generate a total of 140 two-way vehicle trips during the a.m. peak hour consisting of 40 inbound and 100 outbound trips. During the p.m. peak hour, it is expected to generate 135 new two-way vehicle trips consisting of 105 inbound and 30 outbound trips.

5.2 Site Traffic Distribution and Assignment

The site generated traffic for the subject site was distributed based on the existing travel patterns and a review of the 2016 Transportation Tomorrow Survey (TTS) data.

The directional distribution is provided in **Table 3** with the site generated traffic assignment to the study area road network for the weekday a.m. and p.m. peak hours provided in **Figure 11** for the West block and in **Figure 12** for the East block. The total site trips for the proposed development is summarized in **Figure 13**.

Table 3 Site Traffic Distribution

Peak Period	Direction	North	South	East	West
AM	Inbound	30%	5%	30%	35%
	Outbound	35%	5%	35%	25%
PM	Inbound	25%	5%	35%	35%
	Outbound	30%	5%	30%	35%

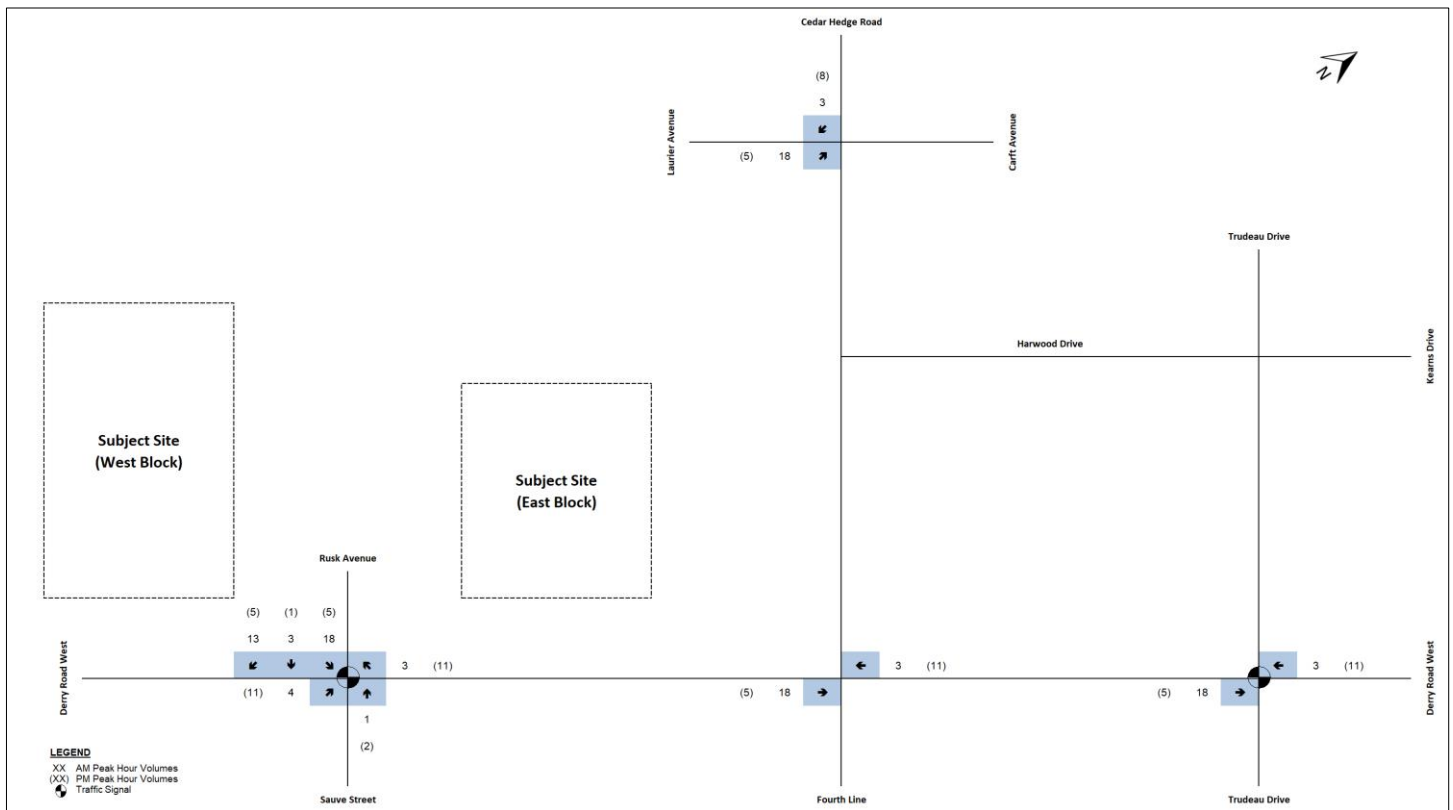


Figure 11 West Block Site Trips

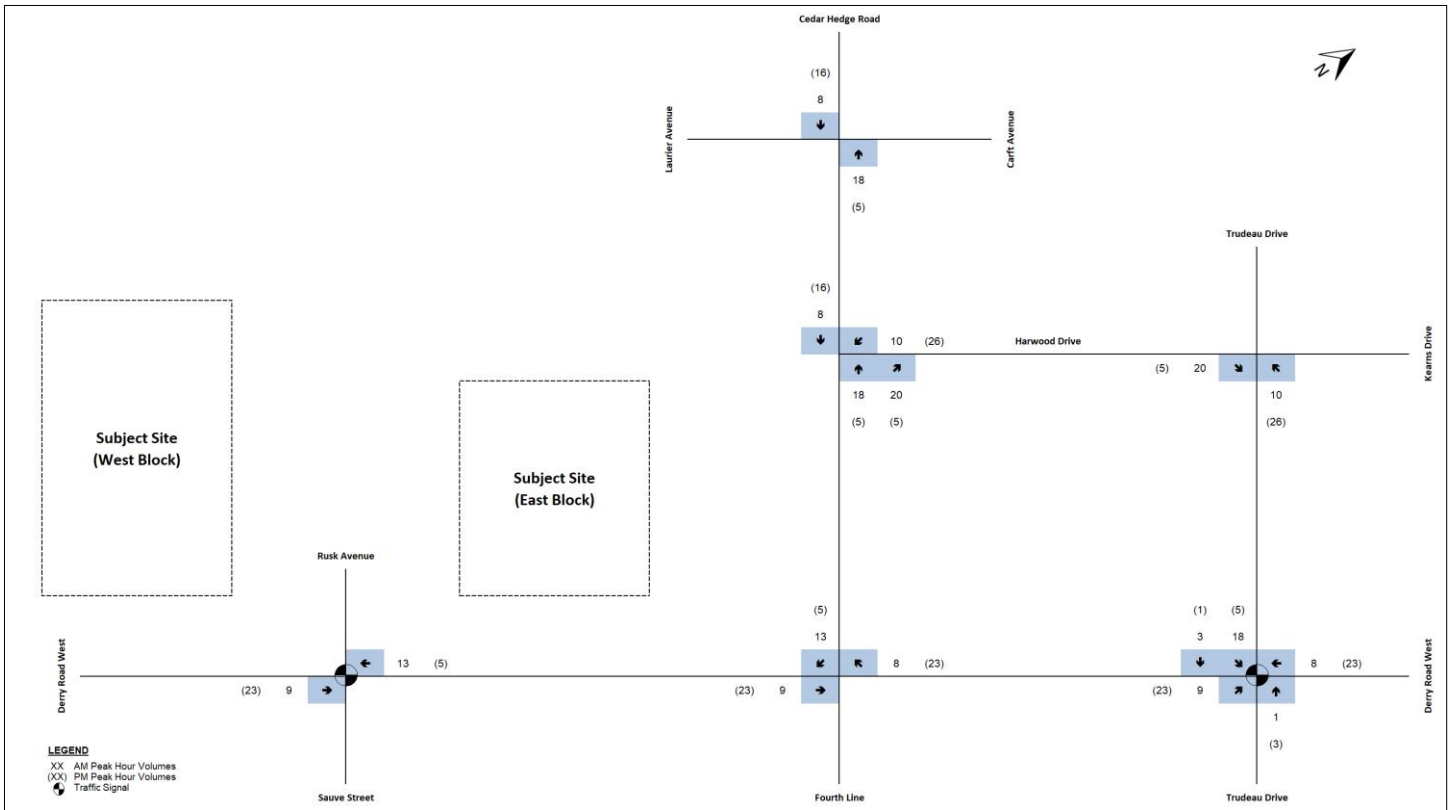


Figure 12 East Block Site Trips

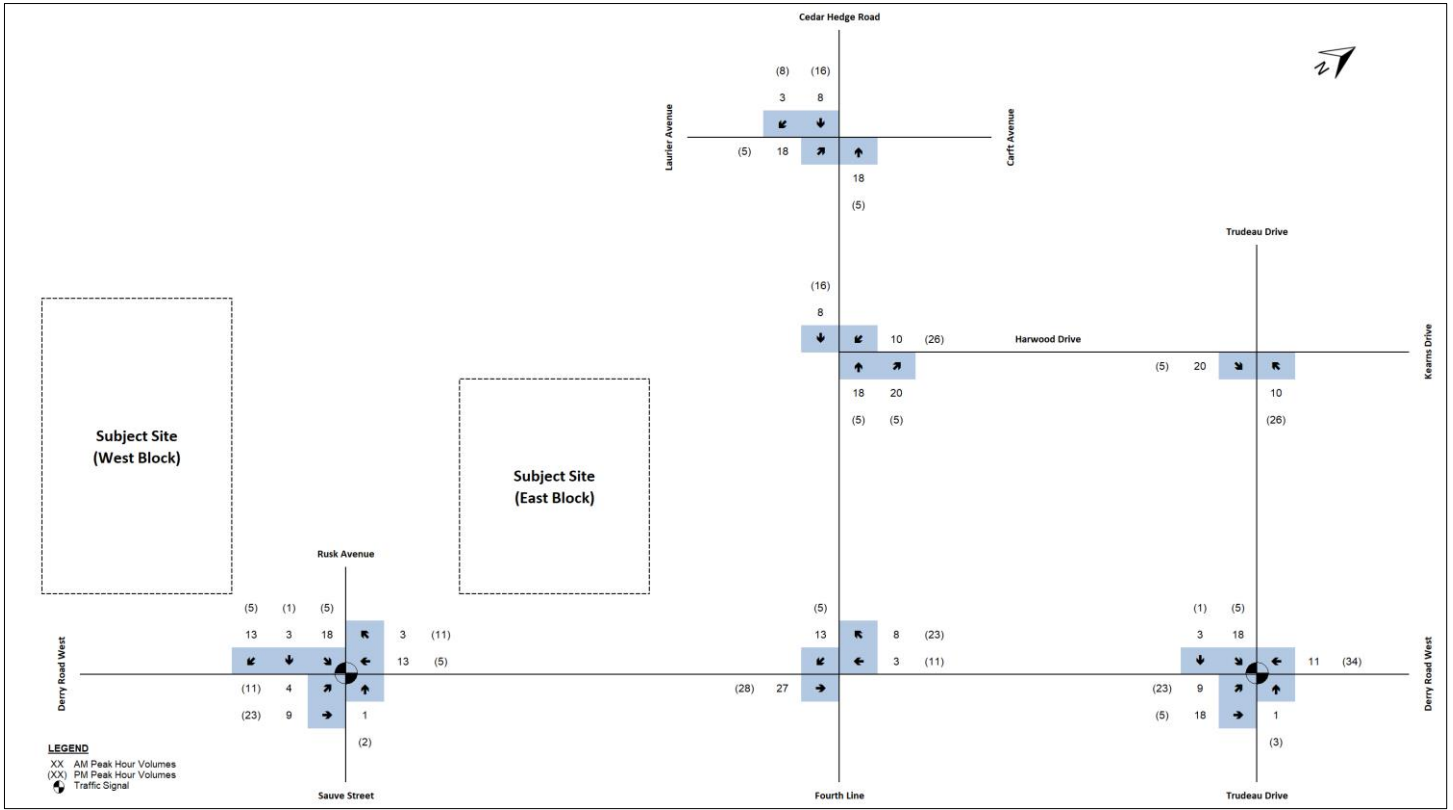


Figure 13 Total Site Trips

5.3 Sensitivity Analysis - Site Traffic Distribution and Assignment

Region staff requested GHD to complete a sensitivity analysis for a scenario in which the proposed extension of Cedar Hedge Road south to Derry Road West does not constructed. The East block site trips were re-assigned to the study area road network based on the shortest route and is summarized in **Figure 14**. The West block site trips remain unaffected with the removal of the right-in/right-out access. The total site trips without the right-in/right-out intersection at Derry Road West and Cedar Hedge Road is provided in **Figure 15**.

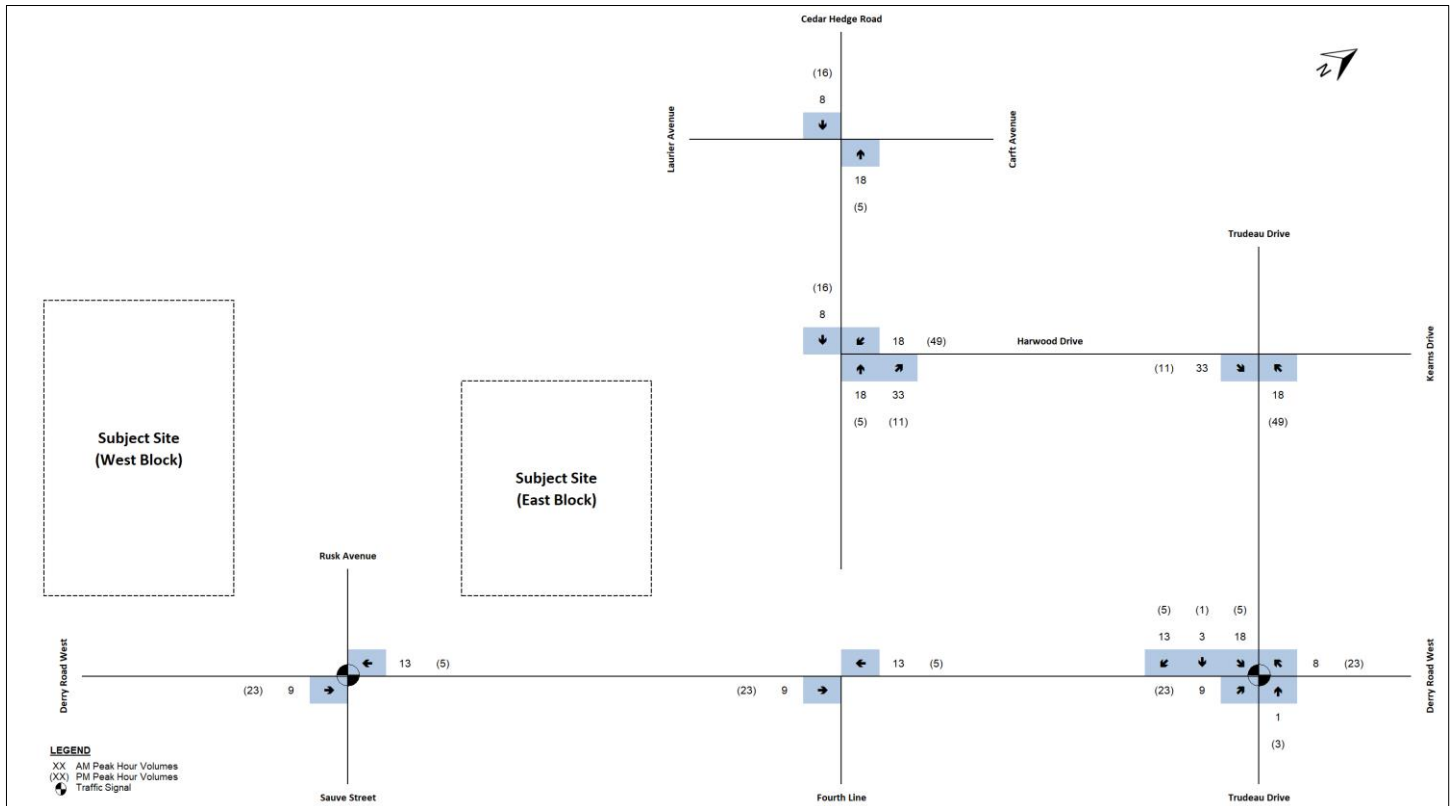


Figure 14 East Block Site Trips – Sensitivity Analysis

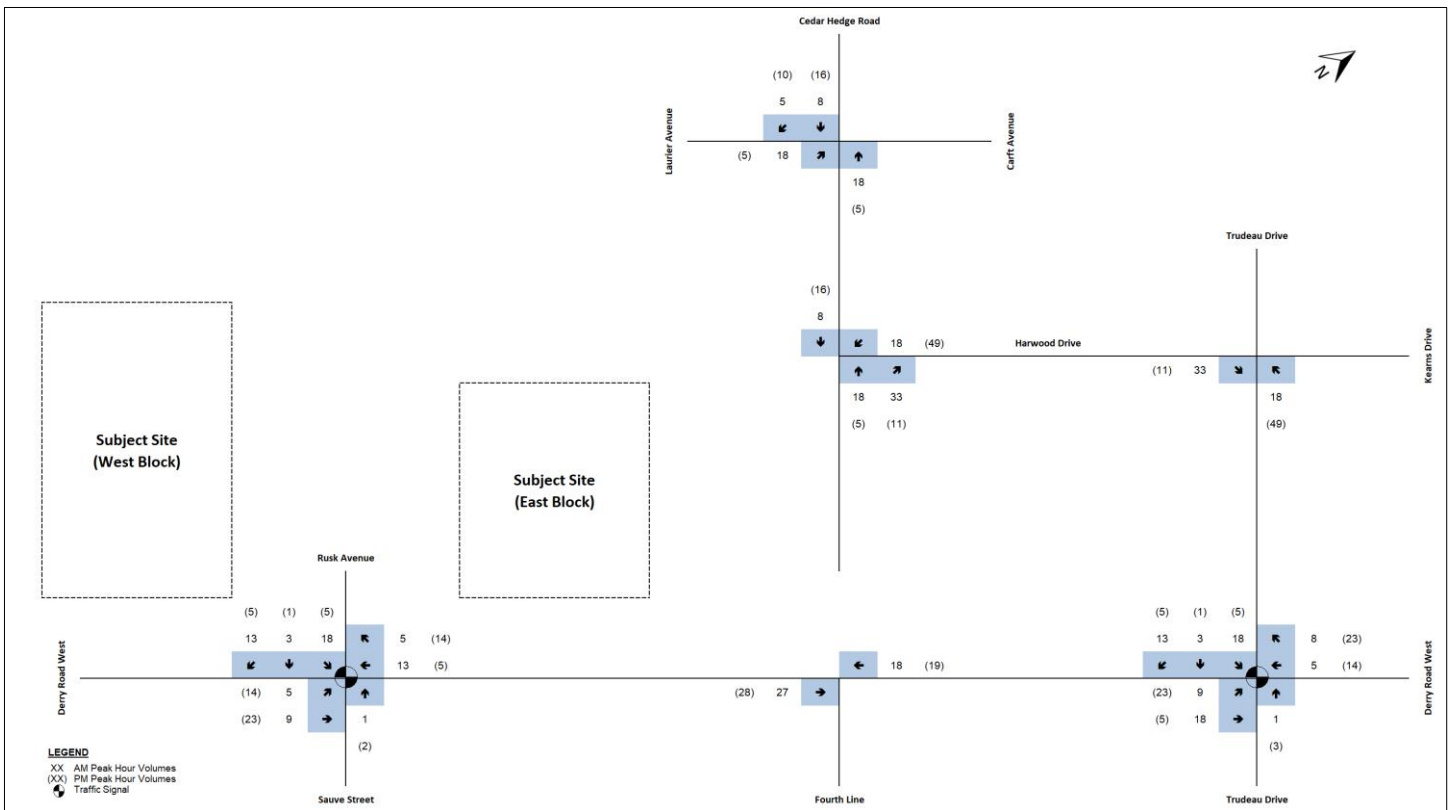


Figure 15 Total Site Trips – Sensitivity Analysis

6. Future Total Traffic

6.1 Traffic Redistribution

The extension of Rusk Avenue and Cedar Hedge Road will provide new connections for drivers to access Derry Road West that currently use alternate routes such as Miller Way to the west and Trudeau Drive to the east to access Derry Road.

In order to establish the future traffic redistribution that include these new extensions, GHD identified areas that in our opinion would benefit from the future connections by residents with a shorter route to Derry Road West. The two areas are illustrated in **Figure 16**.



Figure 16 Area Identification for Projected Traffic Redistribution

The first area is generally bounded by Derry Road West, Miller Way, Costigan Road, and the Demarchi lands, has been identified to benefit from the Rusk Avenue extension for drivers by providing a shorter route for those arriving from and/or departing towards the east.

GHD completed an estimate of trip generation for the approximately 295 dwelling units located within the first area. Based on the ITE Trip Generation rates for single-family attached housing, the 295 dwelling units would generate a total of 148 two-way vehicle trips during the a.m. peak hour consisting of 37 inbound and 111 outbound trips. During the p.m. peak hour, it is expected to generate 173 new two-way vehicle trips consisting of 102 inbound and 71 outbound trips. The trips were then assigned to the southbound left-turn (outbound trip) and westbound right-turn (inbound trip) movements based on the trip generation provided in **Section 5.2** with the corresponding existing trips removed. The projected redistribution of traffic is summarized in **Figure 17** for Area 1.

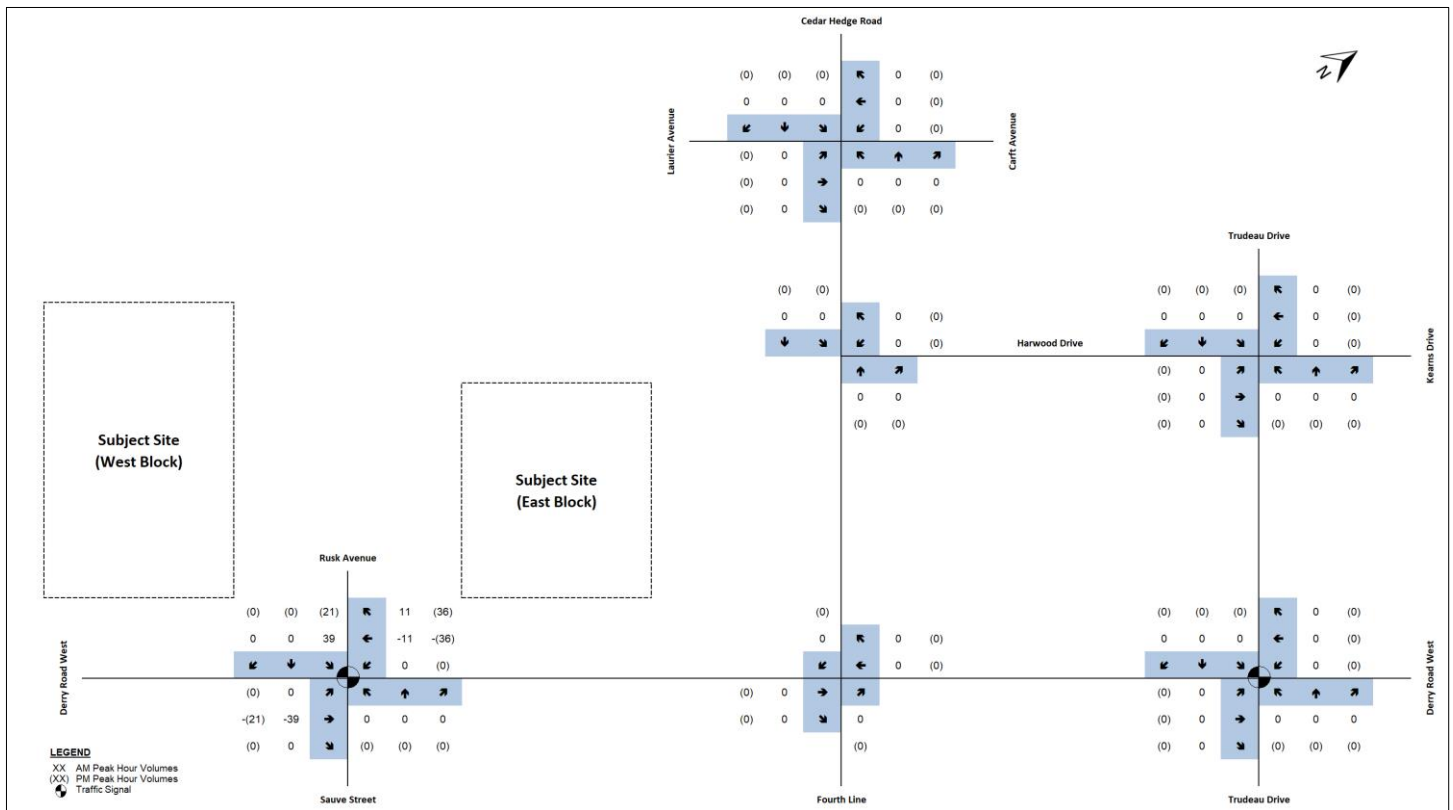


Figure 17 Area 1 Projected Traffic Redistribution

The second area includes units that are generally located adjacent to Cedar Hedge Road. As the future Cedar Hedge Road extension to Derry Road West will operate as a right-in/right-out access, the extension would redistribute traffic that currently depart towards the west and arrive from the east and use the intersection of Derry Road West and Trudeau Drive. GHD reviewed the existing routes taken by drivers around Area 2 based on a review of the surrounding area assumed that 1/3 of existing inbound trips and 1/2 of existing outbound trips would be provided a shorter route to Derry Road with the Cedar Hedge Road extension. The southbound right-turn (outbound) and westbound right-turn (inbound) movements from the intersection of Derry Road West and Trudeau Drive were redistributed to the Cedar Hedge Road extension and is summarized in **Figure 18**.

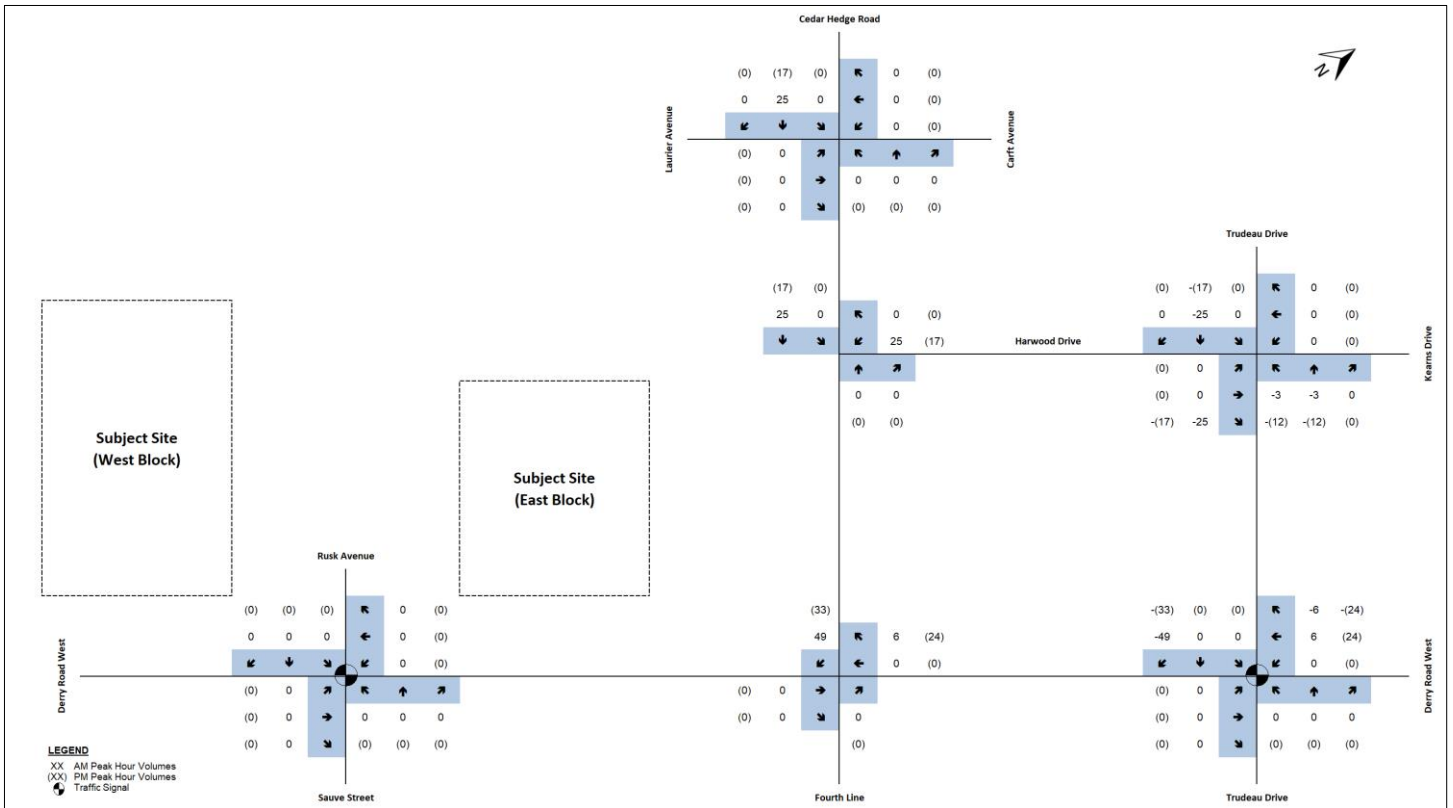


Figure 18 Area 2 Projected Traffic Redistribution
 The total redistribution of existing traffic is summarized in Figure 19.

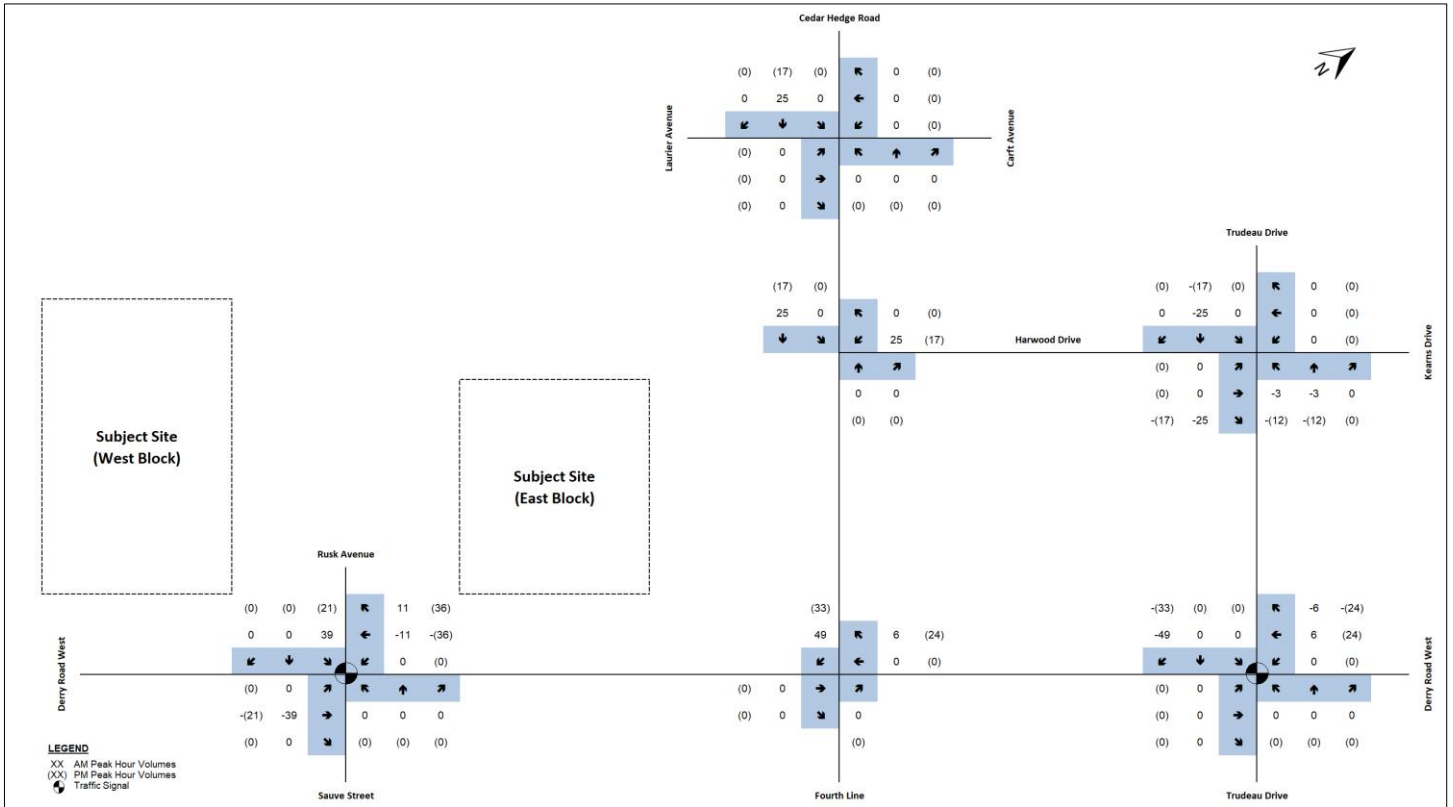


Figure 19 Total Projected Traffic Redistribution

6.2 Future Total Traffic Volumes

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2029 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic in addition to the traffic redistribution. The resulting traffic volumes are presented in **Figure 20** for the 2029 horizon year.

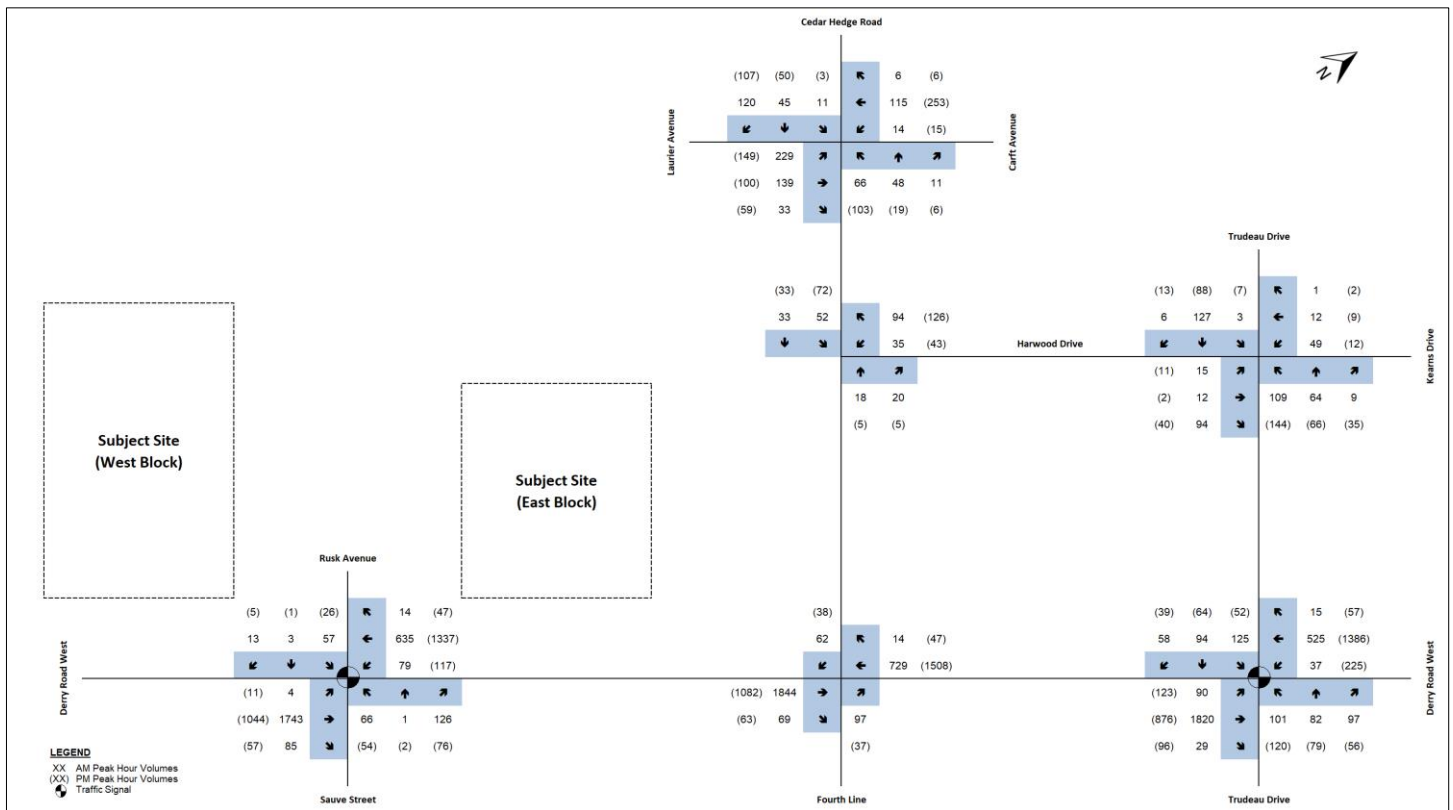


Figure 20 2029 Future Total Traffic Volumes

6.3 Future Background Traffic Volumes – Sensitivity Analysis

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2029 planning horizon prepared for the sensitivity analysis was derived by combining the projected future background traffic with the corresponding estimated site generated traffic prepared for the sensitivity analysis in addition to the revised traffic redistribution. The resulting traffic volumes are presented in **Figure 21** for the 2029 horizon year.

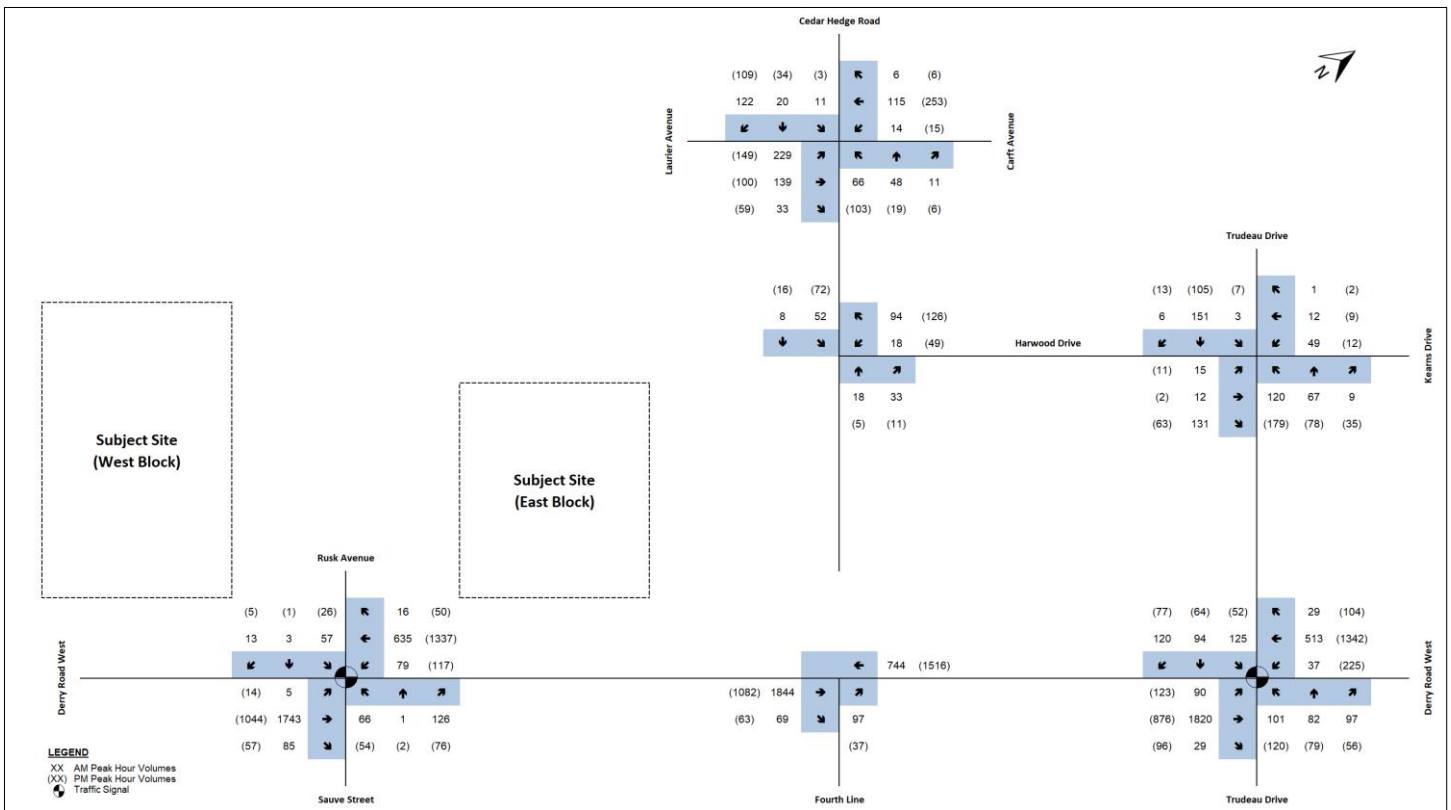


Figure 21 2029 Future Total Traffic Volumes – Sensitivity Analysis

7. Capacity Analysis

The capacity analysis identifies how well the intersections and driveways are operating. The analysis contained within this report utilized the Highway Capacity Manual (HCM) 2000 procedure within the Synchro Version 11 Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement. Queuing characteristics are reported as the predicted 95th percentile queue for each turning movement. Both pedestrian crossing volumes and heavy vehicle proportions are included in the analyses. The peak hour factors from the counts were used to analyze existing traffic conditions.

Existing peak hour factors were also used for future traffic conditions.

The analysis includes identification and required modifications and improvements (if any) at intersections where the addition of background growth or background growth plus site-generated traffic volumes causes the following:

‘Critical’ intersections and movements for a signalized intersection include:

- V/C ratios for overall intersections operations increase to 0.85 or above;
- V/C ratios for individual movements increase to 0.95 or above; or
- 95th percentile queue length for individual movements that are projected to, or exceed, the storage length.

‘Critical’ intersections and movements for an unsignalized intersection include:

- Level of Services (LOS), based on average delay per vehicle, on individual movements exceeds LOS “D”,
- Queue length for individual movements exceed the available queue storage.

The following tables summarize the HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing (2024), future background (2029) and future total (2029) traffic conditions. The detailed calculation sheets are provided in **Appendix F**.

7.1 Derry Road West and Sauve Street/Rusk Avenue

Capacity analysis at this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 4 Capacity analysis of Derry Road West and Sauve Street/Rusk Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2024	Overall: 0.68 (B) 14 EBTR = 0.73 (B) 15 WBL = 0.37 (B) 12 WBT = 0.24 (A) 5 NBLR = 0.56 (D) 45	EBTR = 165 m WBL = 10 m WBT = 30 m NBLR = 40 m	Overall: 0.5 (A) 9 EBTR = 0.46 (A) 10 WBL = 0.27 (A) 5 WBT = 0.49 (A) 6 NBLR = 0.38 (D) 42	EBL = 0 m EBTR = 70 m WBL = 10 m WBT = 65 m NBLR = 30 m
Future Background 2029	Overall: 0.79 (B) 17 EBTR = 0.84 (B) 18 WBL = 0.55 (C) 21 WBT = 0.27 (A) 5 NBLR = 0.61 (D) 46	EBTR = 225 m WBL = 15 m WBT = 35 m NBLR = 45 m	Overall: 0.56 (B) 10 EBTR = 0.53 (B) 11 WBL = 0.34 (A) 6 WBT = 0.55 (A) 6 NBLR = 0.44 (D) 41	EBTR = 90 m WBL = 10 m WBT = 80 m NBLR = 30 m
Future Total 2029	Overall: 0.78 (B) 18 EBL = 0.01 (A) 7 EBTR = 0.83 (B) 18 WBL = 0.55 (C) 21 WBTR = 0.27 (A) 5 NBTLR = 0.62 (D) 46 SBTLR = 0.45 (D) 42	EBL = 5 m EBTR = 220 m WBL = 15 m WBTR = 35 m NBTLR = 45 m SBTLR = 25 m	Overall: 0.58 (B) 11 EBL = 0.07 (A) 8 EBTR = 0.54 (B) 12 WBL = 0.34 (A) 6 WBTR = 0.56 (A) 7 NBTLR = 0.48 (D) 42 SBTLR = 0.19 (D) 39	EBL = 5 m EBTR = 95 m WBL = 15 m WBTR = 85 m NBTLR = 35 m SBTLR = 15 m
Future Total 2029 (Sensitivity Analysis)	Overall: 0.78 (B) 18 EBL = 0.01 (A) 7 EBTR = 0.83 (B) 18 WBL = 0.55 (C) 21 WBTR = 0.27 (A) 5 NBTLR = 0.62 (D) 46 SBTLR = 0.45 (D) 42	EBL = 5 m EBTR = 220 m WBL = 15 m WBTR = 35 m NBTLR = 45 m SBTLR = 25 m	Overall: 0.58 (B) 11 EBL = 0.07 (A) 8 EBTR = 0.54 (B) 12 WBL = 0.34 (A) 6 WBTR = 0.56 (A) 7 NBTLR = 0.48 (D) 42 SBTLR = 0.19 (D) 39	EBL = 5 m EBTR = 95 m WBL = 15 m WBTR = 85 m NBTLR = 35 m SBTLR = 15 m

Under existing traffic conditions, the signalized intersection of Derry Road West and Sauve Street is operating at satisfactory levels with an overall v/c ratio of 0.68 LOS B during the a.m. peak hour and 0.50 LOS A during the p.m. peak hour. The intersection does not currently operate with a critical movement.

With the addition of corridor growth, background development traffic, and signal improvements to mitigate delays for the 2029 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.79 LOS B during the a.m. peak hour and 0.56 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during the both peak hours.

Under the 2029 future total traffic scenario, with the addition of site generated traffic from the proposed development and the north leg of the intersection, the overall v/c ratio is reported to reduce marginally to 0.78 LOS B during the a.m. peak hour and increase marginally to 0.58 LOS B during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

The re-distribution of site traffic under the sensitivity analysis did not result in a redistribution of traffic at Derry Road West and Sauve Street/Rusk Avenue. As a result, the intersection continues to operate with an overall v/c ratio 0.78 LOS B during the a.m. peak hour and 0.58 LOS B during the p.m. peak hour

There are no geometric improvements recommended for the intersection as a result of the proposed development.

7.2 Derry Road West and Trudeau Drive

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the existing, future background, and future total traffic conditions are summarized in the following table.

Table 5 Capacity analysis of Derry Road West and Trudeau Drive

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2024	<u>Overall: 0.72 (B) 19</u> EBL = 0.13 (A) 5 EBTR = 0.75 (B) 15 WBL = 0.24 (B) 12 WBTR = 0.25 (A) 8 NBL = 0.62 (D) 48 NBTR = 0.54 (D) 42 SBL = 0.71 (E) 55 SBTR = 0.49 (D) 41	EBL = 10 m EBTR = 185 m WBL = 5 m WBTR = 40 m NBL = 35 m NBTR = 45 m SBL = 40 m SBTR = 45 m	<u>Overall: 0.58 (C) 24</u> EBL = 0.44 (C) 24 EBTR = 0.5 (B) 19 WBL = 0.37 (B) 16 WBTR = 0.73 (C) 24 NBL = 0.33 (D) 37 NBTR = 0.22 (C) 35 SBL = 0.13 (C) 33 SBTR = 0.2 (C) 34	EBL = 15 m EBTR = 90 m WBL = 20 m WBTR = 150 m NBL = 40 m NBTR = 35 m SBL = 20 m SBTR = 35 m
Future Background 2029	<u>Overall: 0.84 (C) 24</u> EBL = 0.16 (A) 6 EBTR = 0.87 (B) 20 WBL = 0.36 (B) 20 WBTR = 0.27 (A) 9 NBL = 0.81 (E) 72 NBTR = 0.56 (D) 43 SBL = 0.78 (E) 65 SBTR = 0.64 (D) 46	EBL = 15 m EBTR = 285 m WBL = 10 m WBTR = 45 m NBL = 45 m NBTR = 50 m SBL = 45 m SBTR = 60 m	<u>Overall: 0.68 (C) 28</u> EBL = 0.68 (D) 41 EBTR = 0.56 (C) 20 WBL = 0.83 (D) 41 WBTR = 0.8 (C) 27 NBL = 0.38 (D) 38 NBTR = 0.25 (D) 35 SBL = 0.15 (C) 34 SBTR = 0.23 (C) 35	EBL = 35 m EBTR = 100 m WBL = 45 m WBTR = 180 m NBL = 45 m NBTR = 40 m SBL = 20 m SBTR = 35 m
Future Total 2029	<u>Overall: 0.86 (C) 24</u> EBL = 0.18 (A) 6 EBTR = 0.89 (C) 22 WBL = 0.37 (C) 22 WBTR = 0.28 (B) 10 NBL = 0.57 (D) 45 NBTR = 0.53 (D) 43 SBL = 0.84 (E) 72 SBTR = 0.48 (D) 42	EBL = 15 m EBTR = 305 m WBL = 10 m WBTR = 50 m NBL = 40 m NBTR = 50 m SBL = 50 m SBTR = 50 m	<u>Overall: 0.69 (C) 29</u> EBL = 0.85 (E) 66 EBTR = 0.56 (C) 20 WBL = 0.83 (D) 42 WBTR = 0.82 (C) 28 NBL = 0.36 (D) 38 NBTR = 0.26 (D) 35 SBL = 0.17 (C) 34 SBTR = 0.19 (C) 34	EBL = 50 m EBTR = 105 m WBL = 50 m WBTR = 185 m NBL = 45 m NBTR = 40 m SBL = 20 m SBTR = 30 m

Future Total 2029 (Sensitivity Analysis)	Overall: 0.86 (C) 26		Overall: 0.7 (C) 29	
	EBL = 0.18 (A) 6	EBL = 15 m	EBL = 0.85 (E) 66	EBL = 50 m
	EBTR = 0.89 (C) 22	EBTR = 305 m	EBTR = 0.56 (C) 20	EBTR = 105 m
	WBL = 0.37 (C) 22	WBL = 10 m	WBL = 0.83 (D) 42	WBL = 50 m
	WBTR = 0.29 (B) 10	WBTR = 50 m	WBTR = 0.82 (C) 28	WBTR = 185 m
	NBL = 0.81 (E) 72	NBL = 45 m	NBL = 0.38 (D) 38	NBL = 45 m
	NBTR = 0.53 (D) 42	NBTR = 50 m	NBTR = 0.26 (D) 35	NBTR = 40 m
	SBL = 0.83 (E) 72	SBL = 50 m	SBL = 0.17 (C) 34	SBL = 20 m
	SBTR = 0.64 (D) 46	SBTR = 60 m	SBTR = 0.24 (C) 35	SBTR = 35 m

Under existing traffic conditions, the signalized intersection of Derry Road West and Trudeau Drive is operating at satisfactory levels with an overall v/c ratio of 0.72 LOS B during the a.m. peak hour and 0.58 LOS C during the p.m. peak hour. The intersection does not currently operate with a critical movement.

With the addition of corridor growth, background development traffic, and signal improvements to mitigate delays for the 2029 future background traffic scenario, the overall reported v/c of the intersection is expected to increase to 0.84 LOS C during the a.m. peak hour and 0.68 LOS C during the p.m. peak hour. The intersection is reported to operate with the eastbound shared through/right-turn movement during the a.m. peak hour as the only critical movement during both peak hours.

Under the 2029 future total traffic scenario, with the addition of site generated traffic from the proposed development, the overall v/c ratio is reported to increase marginally to 0.86 LOS C during the a.m. peak hour and to 0.69 LOS C during the p.m. peak hour. The overall intersection has begun to operate at a critical level during the a.m. peak hour in addition to the shared eastbound through/right-turn movement continuing to operate at a critical level during the a.m. peak hour.

With the re-distribution of site traffic under the sensitivity analysis, the overall v/c ratio of the intersection remained critical at 0.86 LOS C during the a.m. peak hour and increased marginally to 0.70 LOS C during the p.m. peak hour. The intersection does not report any additional critical movements under the sensitivity analysis.

There are no geometric improvements recommended for the intersection as a result of the proposed development. Derry Road West is planned to be widened to a six-lane cross-section with construction anticipated to begin in 2031.

7.3 Derry Road West and Fourth Line/Cedar Hedge Road

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 6 Capacity analysis of Derry Road West and Fourth Line/Cedar Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2024	EBTR = 0.35 () 0 WBT = 0.13 () 0 NBR = 0.08 (B) 11	EBTR = 0 m WBT = 0 m NBR = 5 m	EBTR = 0.23 () 0 WBT = 0.29 () 0 NBR = 0.03 (A) 10	EBTR = 0 m WBT = 0 m NBR = 5 m
Future Background 2029	EBTR = 0.42 () 0 WBT = 0.15 () 0 NBR = 0.18 (B) 13	EBTR = 0 m WBT = 0 m NBR = 5 m	EBTR = 0.26 () 0 WBT = 0.32 () 0 NBR = 0.05 (A) 10	EBTR = 0 m WBT = 0 m NBR = 5 m
Future Total 2029	EBTR = 0.42 () 0 WBTR = 0.16 () 0 NBR = 0.18 (B) 13 SBR = 0.09 (B) 10	EBTR = 0 m WBTR = 0 m NBR = 5 m SBR = 5 m	EBTR = 0.27 () 0 WBTR = 0.35 () 0 NBR = 0.05 (A) 10 SBR = 0.06 (B) 11	EBTR = 0 m WBTR = 0 m NBR = 5 m SBR = 5 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2029 (Sensitivity Analysis)	EBTR = 0.42 () 0 WBTR = 0.15 () 0 NBR = 0.18 (B) 13	EBTR = 0 m WBTR = 0 m NBR = 5 m	EBTR = 0.27 () 0 WBTR = 0.32 () 0 NBR = 0.05 (A) 10	EBTR = 0 m WBTR = 0 m NBR = 5 m

Under existing conditions, the unsignalized intersection of Derry Road West and Fourth Line operates at satisfactory levels during both peak hours. The northbound approach operates with the greatest delays with an 11 second delay during the a.m. peak hour and 10 second delay during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic, the intersection is reported to continue to operate at satisfactory levels with the delays in the northbound approach reported to increase to 13 seconds during the a.m. peak hour and remain at 10 seconds during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

Under the 2029 future total traffic scenario, with the addition of site generated traffic from the proposed development and the north leg of the intersection, the intersection is reported to continue to operate at satisfactory levels with the delays in the northbound approach remaining unchanged while the southbound approach reports delays of 10 and 11 seconds during the a.m. and p.m. peak hour, respectively.

With the re-distribution of site traffic and the removal of the north leg under the sensitivity analysis, the intersection is reported to operate at satisfactory levels. The northbound approach is reported to continue to operate with a delay of 13 seconds during the a.m. peak hour and 10 seconds during the p.m. peak hour.

There are no further geometric improvements recommended for the intersection as a result of the proposed development.

7.4 Laurier Avenue/Craft Avenue and Cedar Hedge Road

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 7 Capacity analysis of Laurier Avenue/Craft Avenue and Cedar Hedge Road

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2024	EBTLR = 0.61 (C) 16 WBTLR = 0.23 (B) 10 NBTLR = 0.2 (B) 10 SBTLR = 0.23 (A) 10	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.42 (B) 12 WBTLR = 0.38 (B) 11 NBTLR = 0.2 (B) 10 SBTLR = 0.17 (A) 9	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m
Future Background 2029	EBTLR = 0.69 (C) 19 WBTLR = 0.26 (B) 11 NBTLR = 0.23 (B) 11 SBTLR = 0.27 (B) 10	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.48 (B) 13 WBTLR = 0.44 (B) 12 NBTLR = 0.22 (B) 11 SBTLR = 0.2 (A) 10	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m
Future Total 2029	EBTLR = 0.76 (C) 24 WBTLR = 0.28 (B) 11 NBTLR = 0.28 (B) 12 SBTLR = 0.36 (B) 12	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.5 (B) 14 WBTLR = 0.46 (B) 13 NBTLR = 0.24 (B) 11 SBTLR = 0.28 (B) 11	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2029 (Sensitivity Analysis)	EBTLR = 0.74 (C) 22 WBTLR = 0.27 (B) 11 NBTLR = 0.27 (B) 12 SBTLR = 0.3 (B) 11	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.5 (B) 13 WBTLR = 0.45 (B) 13 NBTLR = 0.24 (B) 11 SBTLR = 0.25 (B) 10	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m

Under existing conditions, the unsignalized intersection of Laurier Avenue/Craft Avenue and Cedar Hedge Road operates at satisfactory levels during both peak hours. The eastbound approach operates with the greatest delays with a 16 second delay during the a.m. peak hour and 12 second delay during the p.m. peak hour. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic, the intersection is reported to continue to operate at satisfactory levels with the delays in the eastbound approach reported to increase to 19 seconds during the a.m. peak hour and 13 seconds during the p.m. peak hour. The intersection continues to operate without any critical movements during both peak hours.

Under the 2029 future total traffic scenario, with the addition of site generated traffic from the proposed development, the intersection is reported to continue to operate at satisfactory levels with the delays in the eastbound approach increasing to 24 seconds during the a.m. peak hour and 14 seconds during the p.m. peak hour.

With the re-distribution of site traffic under the sensitivity analysis (including the removal of the re-distributed, the intersection is reported to continue to operate at satisfactory levels with the delays in the eastbound approach decreasing by 2 seconds to 22 seconds during the a.m. peak hour and decrease by 1 second to 13 seconds during the p.m. peak hour.

There are no geometric improvements recommended for the intersection as a result of the proposed development.

7.5 Cedar Hedge Road and Harwood Avenue

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 8 Capacity analysis of Cedar Hedge Road and Harwood Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Future Total 2029	WBLR = 0.14 (A) 9 NBTR = 0.02 () 0 SBTL = 0.04 () 5	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.19 (A) 10 NBTR = 0.01 () 0 SBTL = 0.05 () 5	WBLR = 5 m NBTR = 0 m SBTL = 5 m
Future Total 2029 (Sensitivity Analysis)	WBLR = 0.12 (A) 9 NBTR = 0.03 () 0 SBTL = 0.04 () 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m	WBLR = 0.19 (A) 10 NBTR = 0.01 () 0 SBTL = 0.05 () 6	WBLR = 5 m NBTR = 0 m SBTL = 5 m

Under future total traffic conditions, the intersection of Cedar Hedge Road and Harwood Avenue is reported to operate at satisfactory levels with low levels of delay and queuing. The westbound approach is reported to operate with the greatest delays with a 9 second delay during the a.m. peak hour and 10 second delay during the p.m. peak hour.

With the re-distribution of site traffic under the sensitivity analysis (including the removal of the re-distributed, the delay in the southbound approach is reported to increase by 1 second to 6 seconds during both peak hours.

There are no geometric improvements recommended for the intersection as a result of the proposed development.

7.6 Trudeau Drive and Harwood Avenue

Capacity analysis for this intersection during the weekday a.m. and p.m. peak hours for the future total traffic conditions are summarized in the following table.

Table 9 Capacity analysis of Trudeau Drive and Harwood Avenue

Scenario	AM Peak Hour		PM Peak Hour	
	V/C (LOS) seconds	95 th % Que.	V/C (LOS) seconds	95 th % Que
Existing 2024	EBTLR = 0.18 (A) 9 WBTLR = 0.1 (A) 9 NBTLR = 0.27 (A) 10 SBTLR = 0.24 (A) 9	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.07 (A) 8 WBTLR = 0.03 (A) 8 NBTLR = 0.27 (A) 9 SBTLR = 0.14 (A) 8	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m
Future Background 2029	EBTLR = 0.2 (A) 9 WBTLR = 0.11 (A) 9 NBTLR = 0.3 (B) 10 SBTLR = 0.27 (A) 10	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.08 (A) 8 WBTLR = 0.03 (A) 8 NBTLR = 0.3 (A) 9 SBTLR = 0.15 (A) 8	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m
Future Total 2029	EBTLR = 0.19 (A) 9 WBTLR = 0.11 (A) 9 NBTLR = 0.31 (B) 10 SBTLR = 0.23 (A) 9	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.07 (A) 8 WBTLR = 0.03 (A) 8 NBTLR = 0.3 (A) 9 SBTLR = 0.13 (A) 8	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m
Future Total 2029 (Sensitivity Analysis)	EBTLR = 0.26 (A) 10 WBTLR = 0.12 (A) 9 NBTLR = 0.34 (B) 11 SBTLR = 0.28 (A) 10	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m	EBTLR = 0.1 (A) 8 WBTLR = 0.03 (A) 8 NBTLR = 0.37 (A) 10 SBTLR = 0.16 (A) 8	EBTLR = 0 m WBTLR = 0 m NBTLR = 0 m SBTLR = 0 m

Under existing conditions, the unsignalized intersection of Trudeau Drive and Harwood Avenue operates at satisfactory levels during both peak hours. The intersection operates with delays of 10 seconds or less during both peak hours. The intersection operates without any critical movements during both peak hours.

With the addition of corridor growth and background development traffic, the intersection is reported to continue to operate at satisfactory levels with delays of 10 seconds or less during both peak hours. The intersection continues to operate without any critical movements during both peak hours.

Under the 2029 future total traffic scenario, with the addition of site generated traffic, the intersection is reported to continue to operate at satisfactory levels with delays of 10 seconds or less during both peak hours. The intersection continues to operate without any critical movements during both peak hours.

With the re-distribution of site traffic under the sensitivity analysis (including the removal of the re-distributed, the intersection is reported to continue to operate at satisfactory levels with the delays in the northbound approach increasing by 1 second to 11 seconds during the a.m. peak hour and 10 seconds during the p.m. peak hour.

There are no geometric improvements recommended for the intersection as a result of the proposed development.

8. Parking Review

GHD reviewed the Town's current Zoning By-Law parking and loading requirements for the subject site.

8.1 Town of Milton Zoning By-Law 016-2014

8.1.1 Vehicular Parking

The current Town of Milton Zoning By-Law 016-2014 minimum parking requirements for residential developments are found in Section 5.8.1, Table 5E for residential uses. The minimum By-Law requirement for the subject site is as follows:

- Dwellings with individual driveway access from a public street
 - 2 parking spaces per dwelling unit
- Apartment Buildings
 - 1.5 parking spaces per unit, plus
 - 0.25 parking spaces per unit for visitors in a designated visitor parking area
- All other dwelling units
 - 2 parking spaces per dwelling units, plus
 - 0.25 parking spaces per unit for visitors on a lot with four or more dwelling units

The minimum parking required for the subject site is as follows:

- West Block
 - Dwellings with individual driveway access from a public street (as confirmed with Town staff, the 10 back-to-back townhouse dwelling units abutting Rusk Avenue may be considered as being on a public street)
 - 2 parking spaces per dwelling unit x 40 units = 80 parking spaces
 - All other dwelling units
 - 2 parking spaces per dwelling units x 82 dwelling units = 164 spaces
 - 0.25 parking spaces per unit for visitors x 82 dwelling units = 21 spaces
- East Block
 - Apartment Buildings
 - 1.5 parking spaces per unit x 160 dwelling units = 240 spaces
 - 0.25 parking spaces per unit for visitors x 160 dwelling units = 40 spaces
 - All other dwelling units
 - 2 parking spaces per dwelling units x 83 dwelling units = 166 spaces
 - 0.25 parking spaces per unit for visitors x 83 dwelling units = 21 spaces

In total, the subject site is required to provide up to 650 resident spaces and a minimum of 82 visitor parking spaces.

8.1.2 Accessible Parking

The minimum requirement for accessible parking spaces can also be found in the Town of Milton Zoning By-Law 016-2014, Section 5.9, Table 5H. The minimum By-Law requirement accessible parking for the subject site is based on the number of parking spaces required, as follows:

- Number of required parking spaces
 - 1 to 12 spaces: 1 Type A

- 13 to 100 spaces: 4% of parking spaces
- 101 to 200 spaces: 1 accessible parking space, plus 3% of parking spaces
- 201 to 1,000 spaces: 2 accessible parking space, plus 2% of parking spaces
- More than 1,000 spaces: 11 accessible parking space, plus 1% of parking spaces

Where the minimum number of accessible parking spaces required is even, an equal number of Type A and Type B accessible parking spaces shall be provided. Where the minimum number of accessible parking spaces is odd, an equal number of Type A and Type B accessible parking spaces shall be provided but the last accessible parking space may be a Type B

The minimum number of accessible parking spaces required for the subject site is as follow, based on the number of parking spaces required for each block:

- West Block
 - Number of parking spaces required: 19 visitor spaces
 - 4% of 19 spaces = 1 barrier-free spaces
- East Block
 - Number of parking spaces required: 21 visitor spaces (townhouse)
 - 4% of 21 spaces = 1 barrier-free spaces
 - Number of parking spaces required: 240 spaces (apartment - residents)
 - 2 accessible parking space, plus 2% of 240 parking spaces = 7 barrier-free spaces
 - Number of visitor parking spaces required: 40 spaces (apartment - visitors)
 - 4% of 40 spaces = 2 barrier-free spaces

In total, 11 barrier-free parking spaces are required under the Town's current By-Law.

8.1.3 Bicycle Parking

Under the Town of Milton Zoning By-Law 016-2014, the bicycle parking requirement are found in Section 5.10, Table 5I. The minimum By-Law requirement for bicycle parking for the subject site is as follows:

- Apartment Building and Mixed Use Building
 - 0.5 long-term bicycle parking spaces per unit
 - 0.05 short-term bicycle parking space per unit

The minimum number of bicycle parking spaces required for the subject site is as follows:

- East Block
 - Apartment Building and Mixed Use Building
 - 0.5 long-term bicycle parking spaces per unit x 160 units = 80 spaces
 - 0.05 short-term bicycle parking space per unit x 160 units = 8 spaces

A total of 88 bicycle parking spaces is required for the medium density block located in the east block.

8.1.4 Loading Spaces

Loading spaces are not required for residential developments under the Town of Milton Zoning By-Law 016-2014

8.2 Proposed Site Parking

The following table summarizes the minimum By-law requirements and the proposed parking/loading supply for the subject site.

Table 10 *Parking Requirements and Provisions*

Type	Unit Count	By-Law 016-2014 Requirement	Provided
Vehicle Parking	<ul style="list-style-type: none"> ➤ West Block ➤ 16 rear lane townhouse units 	A minimum of 732 parking spaces, consisting of 650 resident spaces and 82 visitor spaces	631 parking spaces, consisting of 566 resident spaces and 65 visitor spaces
Barrier Free Parking	<ul style="list-style-type: none"> ➤ 60 back-to-back townhouse units ➤ 46 street townhouse units ➤ East Block 	A minimum of 11 barrier free spaces (1 space for the west block and 10 spaces for the east block, including 9 for the apartment building)	9 barrier free spaces (1 space for the west block and 8 spaces for the east block, including 7 for the apartment building)
Bicycle Parking	<ul style="list-style-type: none"> ➤ 27 street townhouse units ➤ 54 back-to-back townhouse units ➤ 160 apartment dwelling units 	A minimum of 88 bicycle parking spaces, consisting of 80 long-term spaces and 8 short-term spaces	88 bicycle parking spaces (80 long-term spaces and 8 short-term spaces)
Loading Spaces		No loading spaces required	1 loading space

The provision of 631 parking spaces represents a shortfall of 101 parking spaces from the 732 parking spaces required by the Town's By-law.

The provision of 2 parking spaces for each townhouse unit generally meets the Town By-law requirement. Visitor parking (for both the townhouse and apartment dwelling units) is proposed to be provided at a rate of 0.20 spaces per unit. The resident parking for the apartment dwelling unit is proposed to be provided at a rate of 1.0 spaces per unit.

8.3 Parking Assessment

8.3.1 Resident Parking Assessment

Providing off-street residential parking influences a commuter choice on whether to drive or choose alternate forms of transportation. Providing more parking in general leads to a higher percentage of auto ownership and auto usage as well. When a parking space is provided in an affordable manner, with no additional cost, or provided in excess it can change commuters' primary mode of travel due to the convenience and the sunk cost fallacy, once auto travel mode is favoured, it is hard to change.

Many municipalities have begun to assist developers in helping to change travel behaviour by reviewing and updating their Zoning By-Laws in order to implement policies that encourage alternate forms of transportation. Sustainable transportation is a crucial component of achieving climate change adaption and environmental protection goals and reducing traffic related air pollutant and greenhouse gas emissions. To this effect, the development through the Site Plan Application stage will recommend various TDM options including transit subsidies, planning and design, walking

and cycling, education and promotion that can be adopted to make alternatives more competitive to driving, reducing the dependency on auto trips, and the need to provide more parking.

An oversupply of parking for the medium density block can lead to several issues, reflecting inefficiencies and missed opportunities in urban planning and environmental stewardship including:

Increased Development Costs

- More parking means higher costs for construction. Underground or structured parking, in particular, can significantly increase development expenses.
- The higher costs of providing excessive parking can be passed on to residents, making housing units more expensive.

Inefficient Land Use

- Land used for parking could be utilized for additional housing units, green spaces, or community amenities, contributing to a better quality of life for residents.
- Excessive parking can lead to lower overall density, undermining the efficiency advantages of apartment buildings and potentially making the development less supportable of transit.

Environmental Impact

- An oversupply of parking can encourage car ownership and use, contributing to increased greenhouse gas emissions, air pollution, and traffic congestion.

Social and Community Effects

- Excessive parking can create physical and psychological barriers between spaces in a community, reducing walkability and the sense of neighbourhood connectivity.
- When parking readily available, it can discourage the use of public transit, cycling, and walking, undermining investments in these alternative modes of transportation.

Economic Implications

- The space and resources dedicated to parking could be invested in other amenities or services that add value to the development and the community, such as amenity space and enhanced landscaping.

In summary, while adequate parking is necessary, oversupplying parking can lead to a range of negative consequences, from environmental degradation to discouraging the use of public transit, cycling, and walking. The proposed parking supply will be known at the time of purchase and therefore the notion of self-selection will occur, whereby purchasers who only require one parking space will be attracted to the development and the benefits it provides.

Comparison to Other Municipalities

Residential parking spaces is a large contributor to car ownership and usage of single-occupancy vehicles. This is because families are encouraged to purchase their second or third knowing that they will have parking spaces available. As such, many municipalities within southern Ontario have begun to revise their parking standards to limit parking for apartment units to 1.0 space per dwelling unit.

The following table summarizes the minimum required parking for Apartment Dwelling Units from other municipalities in Ontario. These rates were extracted from their current Zoning By-Laws recognizing the evolving needs of urban environments and the importance of sustainable development. This shift is motivated by a desire to combat urban sprawl, reduce greenhouse gas emissions, and encourage the use of public transit, cycling, and walking as healthier, more eco-friendly alternatives to car dependency.

Table 11 Best Practices – Apartment Dwelling Parking Rates

Municipality	By-law #	Enaction Date	Land Use	Parking Rates (per Dwelling Unit)
				Minimum
Hamilton	05-200	2005	Dwelling Units greater than 50 sq.m.	1.0
Township of Port Perry	2014-21	2016	Residential	1.0
London	Z.-1-223046	2011	Apartment	0.50
Town of Shelburne	38-2007	2012	Apartment	1.0
City of Belleville	2024-100	2024		1.0
City of Brantford	124-2024	2024	Apartment	1.0
City of Cambridge	150-85	2012	Apartment	1.0
City of St. Catharines	2013-283	2013	Apartment	1.25 including visitors
City of Vaughan	001-2021	2021	Apartment	1.0
Town of Oakville	2009-189	2009	Apartment	Up to 1.25
City of Brampton	270-2004	2004	Apartment	1.0

This table shows a clear trend in municipalities reducing the required resident parking rate to promote more efficient land use, allowing for higher-density developments that can support vibrant, walkable communities and make better use of limited urban space. When comparing this list of municipalities with minimum parking rates of 1.0 for apartment units to the requirement in Milton, it's crucial to consider the context of transit and active transportation facilities. Each of these municipalities were selected as they do not have superior transit or active transportation infrastructure to that which currently exists in Milton along Derry Road surrounding the subject site and the specific parking ratios summarized in the preceding table, would apply in general to any development area within the municipality regardless of the surrounding transportation context. GHD intentionally avoided using parking ratios that apply only the urban growth areas, downtown areas, mixed-use areas, Metropolitan Centres or Main Street areas.

The rationale for suggesting that a minimum parking rate of 1.0 can also be supported in Milton for the subject site stems from the recognition that, without extensive public transit options or well-developed active transportation networks in these other municipalities, residents are more likely to rely on personal vehicles for their daily commute and other transportation needs than they would at the subject site.

Additionally, to support lower vehicle ownership one can consider the growing popularity of rideshare services such as Uber, Lyft, and other competitors that have emerged as a viable alternative and provide residents with choices to avoid the necessity of purchasing a second personal vehicle. By utilizing rideshare platforms, individuals can access convenient transportation without the financial burdens of car ownership, including purchasing, maintenance, insurance, and parking costs.

This approach not only offers significant cost savings but also aligns with environmentally conscious lifestyles, reducing the overall carbon footprint associated with personal vehicle usage. Rideshare services also cater to diverse travel needs, offering options ranging from solo rides to shared trips, promoting efficient resource utilization.

With the ease of smartphone app access, users can summon rides on-demand, making them a flexible and time-efficient solution for daily commuting, errands, and social activities. As urban areas strive for improved traffic flow and reduced congestion, rideshare services have become a pivotal component of a modern, sustainable transportation ecosystem, granting residents the freedom to navigate their surroundings without the commitment of vehicle ownership.

Resident Parking Assessment Summary

Reducing the minimum parking bylaw for apartments from 1.5 to 1 space per unit encourages more sustainable development by limiting car ownership and promoting alternative transportation modes such as public transit, cycling, and ridesharing. Excess parking can lead to increased traffic, higher development costs, environmental impacts, and inefficient land use, while a lower parking requirement supports walkable, higher-density communities.

The proposed resident parking supply is consistent with many municipalities in Ontario have already adopted reduced parking standards to align with goals of reducing urban sprawl, lowering greenhouse gas emissions, and creating more vibrant, transit-oriented neighbourhoods. This shift aligns with modern transportation needs and the growing popularity of rideshare services, which reduced the necessity for personal vehicle ownership.

8.3.2 Visitor Parking Assessment

In support of the proposed reduction in visitor parking, GHD in the past has conducted parking demand surveys at proxy sites to assess the visitor parking demand over a period of three days using the following schedule:

- Parking accumulation on Friday between 6:00 pm and 12:00 am, Saturday between 11:00 am and 2:00 pm and from 6:00 pm to 12:00 am, and Sunday between 11:00 am and 2:00 pm and from 6:00 pm to 12:00 am in 30-minute intervals.

Three sites are in Milton and the fourth located in North Oakville.

620 – 630 Suave Street (Milton) – The proxy site consists of four buildings, each with five storeys and a combined unit count of 407 units. The visitor parking is all located on the surface parking lot with a total of 102 spaces provided. During the surveys, parking demand along Sauve Street and within the school parking lot across the street at the Irma Coulson Public School was also observed.

1105-1125 Leger Way (Milton) – The proxy site consists of 38 townhouse units and 213 condo suites. There are 55 visitor parking spots provided. The on-street parking demand along Leger Way was also observed as was the parking lot for the Saint Francis Xavier Catholic Secondary School across the street.

610 Farmstead Drive (Milton) – The proxy site consists of a 6-storey building with 170 units. There are 43 visitor parking spaces provided. The on-street parking demand along Farmstead Drive was also observed.

98 Kaitting Trail (North Oakville) – The proxy site 98 Kaitting Trail consists of multiple apartment buildings (2 towers) and townhouses. There are a combined 263 apartment units and 10 townhouse units. There are 55 visitor parking spaces provided. This does not include on-street parking along Kaitting Trail for the townhouses. During the surveys, on-street parking demand along Kaitting Trail site was also observed.

41 Speers Road (Oakville) - The proxy site at 41 Speers Road is a 17 storey residential building with a total of 137 residential units. There are 24 visitor parking spaces provided on a surface parking lot accessed from a single driveway on Speers Road with no visitor parking provided in the underground garage.

Table 12 below summarizes the results of the visitor parking utilization surveys itemized by unit count. Survey data and calculations are attached in the appendix.

Table 12 Visitor Demand from Proxy Sites

Table 12: Visitor Demand from Proxy Sites					
Building (Address)	Units	Visitor Spaces Provided	Date	Max Observed Occupied Visitor Spaces	Visitor Demand Rate (spaces/unit)
620-630 Sauve Street	407	102 (0.25 spaces per unit)	Friday December 1, 2023	79	0.194
			Saturday December 2, 2023	86	0.211
			Sunday December 3, 2023	86	0.211
Average for all three days					0.21
98 Kaitting Trail	273	55 (0.20 spaces per unit)	Friday January 19, 2024	25	0.092
			Saturday January 20, 2024	36	0.132
			Sunday January 21, 2024	29	0.106
Average for all three days					0.11
1105-1125 Leger Way	251	55 (0.22 spaces per unit)	Friday January 19, 2024	30	0.120
			Saturday January 20, 2024	38	0.151
			Sunday January 21, 2024	42	0.167
Average for all three days					0.15
610 Farmstead Drive	170	43 (0.25 spaces per unit)	Friday January 19, 2024	20	0.118
			Saturday January 20, 2024	27	0.159
			Sunday January 21, 2024	24	0.141
Average for all three days					0.14
41 Speers Road	137	24 (0.17 spaces per unit)	Friday March 8, 2024	4	0.03
			Saturday March 9 2024	7	0.05
			Sunday March 10, 2024	6	0.04
Average for all three days					0.04
Visitor Average Rate for all proxy sites					0.13

Referring to **Table 12**, the visitor average rate over all four sites is 0.13 spaces per unit. This average incorporates the demand for five proxy sites and considers all three days of data.

620-630 Sauve Street (Milton)

This site was surveyed on Friday December 1, 2023; Saturday December 2, 2023; and Sunday December 3, 2023. Figure 3 illustrates the parking demand observed for all three days along with the Town of Milton Zoning By-law requirement and the proposed parking ratio for the subject site.

It is important to note that during the survey, it is believed that several of the visitor parking spaces were being used by residents as the same vehicle was seen parked in the same spot for longer than the typical visitor parking duration and over a period of several days. The resulting visitor parking demand calculated from the proxy site survey data can therefore be considered conservative in that it includes these vehicles as visitor demand.

Lastly, during the survey periods, no parking was observed on Sauve Street or the school parking lot across the street. Therefore, we are confident that all of the visitor parking demand is being accommodated on site and was captured in the surveys.

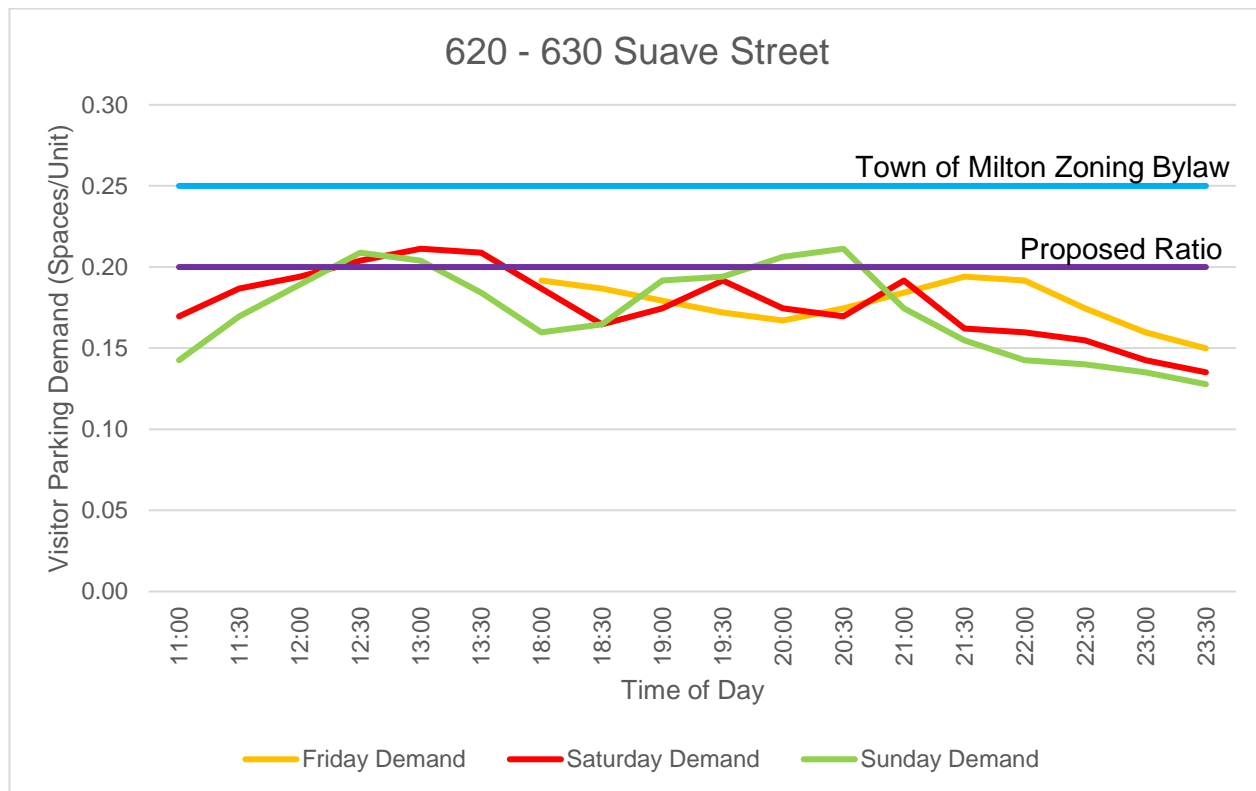


Figure 22 Observed Parking Demand for 620-630 Suave Street

For 620-630 Suave Street, the maximum visitor demand of 86 spaces occurs twice; once on Saturday, December 2, 2023, between 1:00 and 1:30 p.m. and the other on Sunday between 8:30 and 9:00 p.m. This represents a maximum occupancy of 84% of the available visitor spaces. The peak parking demand occurred only twice during the three-day survey and lasted less than 1 hour in total. Additionally, in only 7 of the 48 half hour survey periods did the parking demand observed at the proxy site exceed a rate of 0.20 spaces per unit, at 0.21 spaces per unit. Outside of these peak periods, the visitor parking demand observed was less than 0.20 spaces per unit.

98 Kaitting Trail (North Oakville)

The site was surveyed on Friday January 19, 2024; Saturday January 20, 2024; and Sunday January 21, 2024. Figure 4 illustrates the parking demand of 98 Kaitting Trail for all three days along with the Town of Milton Zoning By-law requirement and the proposed parking ratio.

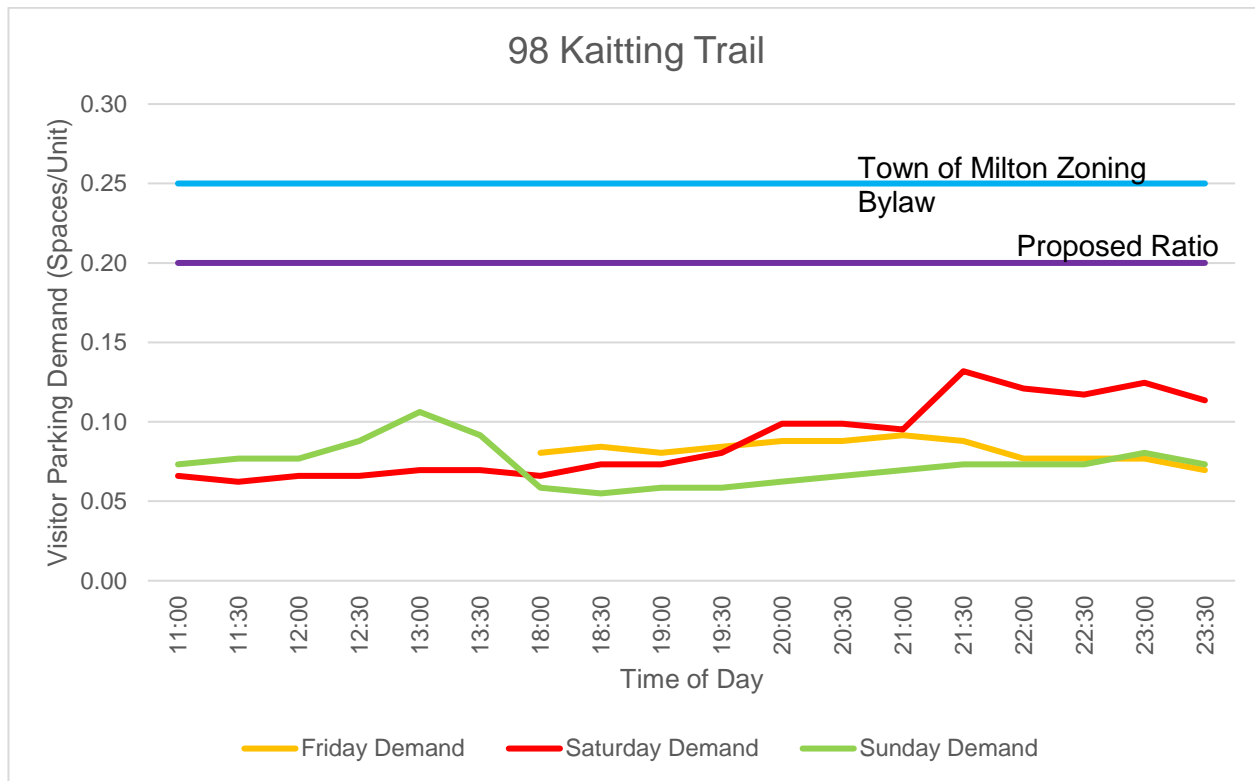


Figure 23 Observed Parking Demand for 98 Kaitting Trail

For 98 Kaitting Trail, a maximum demand of 36 spaces was observed once on Saturday, January 20, 2024, between 9:30 and 10:00 p.m. and this represents a maximum occupancy of 65% of the available visitor spaces. The peak parking demand occurred only once during the three-day survey and lasted less than 30 minutes in total.

During the survey periods, no on-street parking was observed along Kaitting Trail and therefore, we are confident that all visitor parking demand is being accommodated on site and was captured in the surveys.

1105-1125 Leger Way (Milton)

The site was surveyed on Friday January 19, 2024; Saturday January 20, 2024; and Sunday January 21, 2024. Figure 5 illustrates the parking demand for all three days along with the Town of Milton Zoning By-law requirement and the proposed parking ratio.

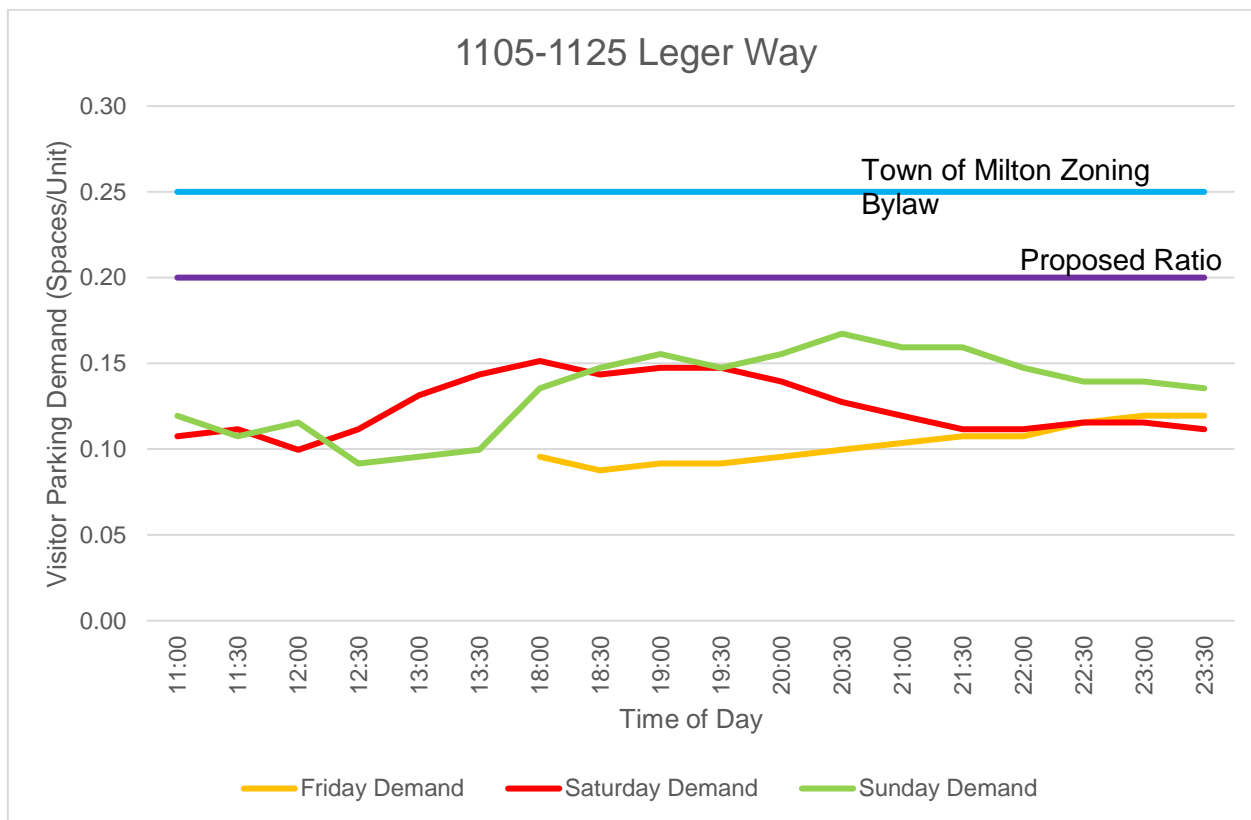


Figure 24 Observed Parking Demand for 1105-1125 Leger Way

For 1105-1125 Leger Way, a maximum parking demand of 42 spaces was observed once on Sunday, January 21, 2024, between 8:30 and 9:00 p.m. This represents a maximum occupancy of 76% of the available visitor spaces. The peak parking demand occurred only once during the three-day survey period and lasted less than 30 minutes in total. The visitor parking demand never exceeded 0.17 for this site. During the survey periods, no on-street parking was observed along Leger Way, therefore, we are confident that all visitor parking demand is being accommodated on site and was captured in the surveys.

610 Farmstead Drive (Milton)

The site was surveyed on Friday January 19, 2024; Saturday January 20, 2024; and Sunday January 21, 2024. Figure 6 shows the parking demand for 610 Farmstead Drive for all three days along with the Town of Milton Zoning By-law requirement and the proposed parking ratio.

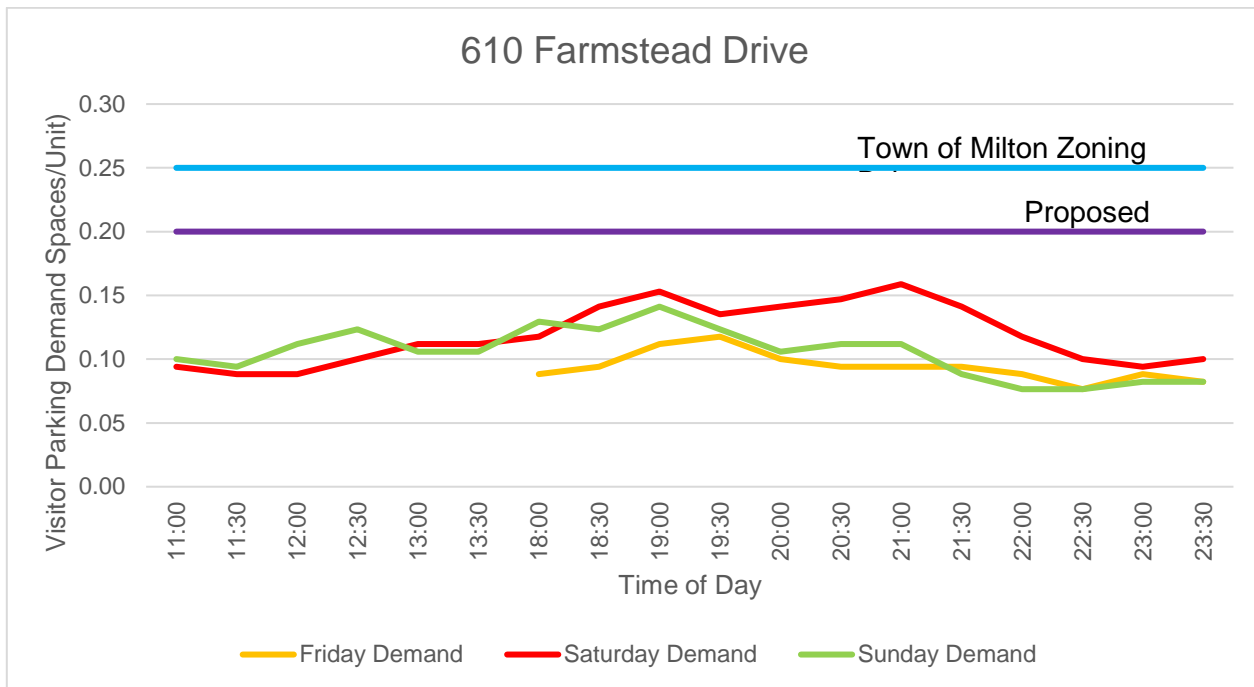


Figure 25 Observed Parking Demand for 610 Farmstead Drive

For 610 Farmstead Drive, a maximum visitor parking demand of 27 spaces was observed once on Saturday, January 20, 2024, between 9:00 and 9:30 p.m. This represents a maximum occupancy of 63% of the available visitor spaces. The peak parking demand occurred only once during the three-day survey period and lasted less than 30 minutes in total. The parking rate also did not exceed 0.16 for this proxy site. During the survey periods, no on-street parking was observed along Farmstead Drive, therefore, we are confident that all visitor parking demand is being accommodated on site and was captured in the surveys.

41 Speers Road (Oakville)

The site was surveyed on March 8, 2024; Saturday March 9, 2024; and Sunday March 10, 2024. Figure 7 shows the parking demand for this site for all three days along with the Town of Milton Zoning By-law requirement and the proposed parking ratio.

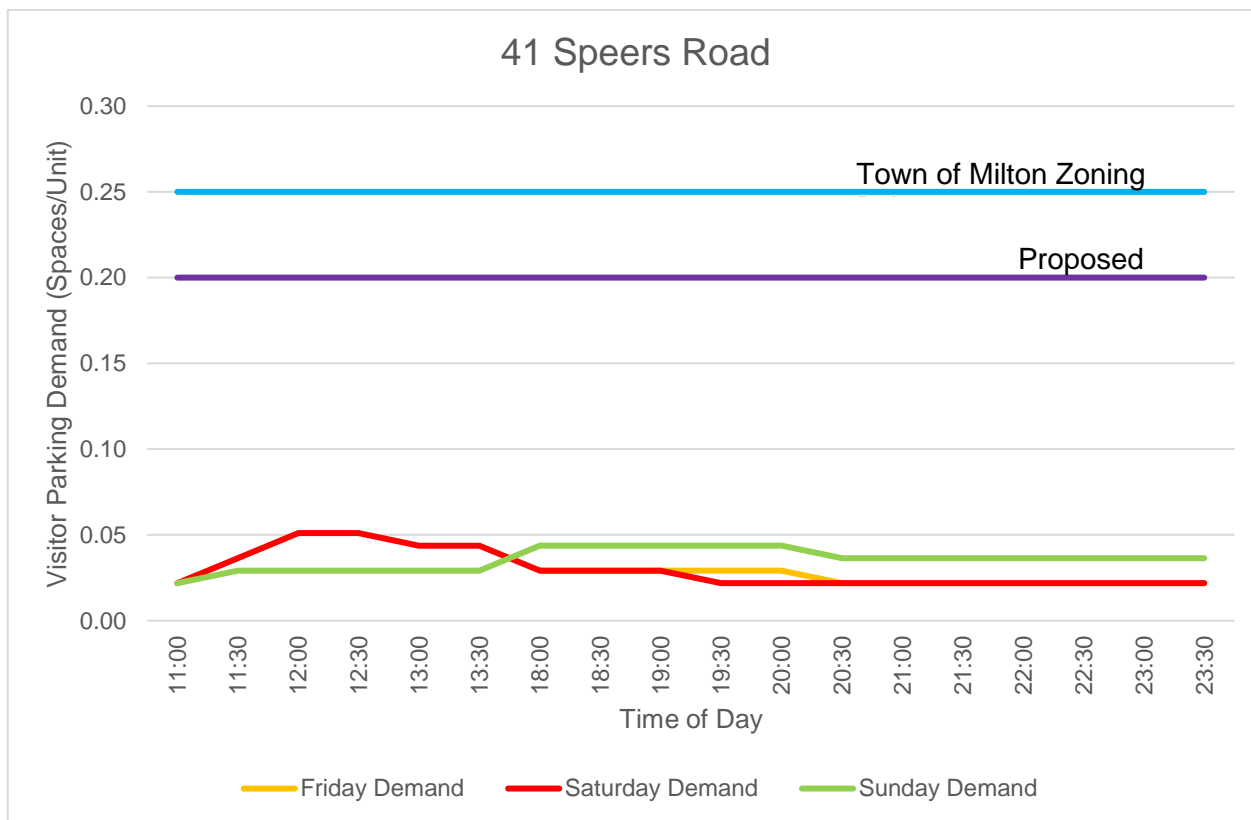


Figure 26 Observed Parking Demand for 41 Speers Road

For 41 Speers Road, a maximum visitor parking demand of 7 spaces was observed once on Saturday, March 9, 2024, between 12:00 and 1:00 p.m. This represents a maximum occupancy of 30% of the available visitor spaces. The peak parking demand occurred only during this one-hour period during the three-day survey period.

Best Practices from Other Municipalities

It is our opinion that the recommended minimum visitor parking rate contained within the Town's current Zoning Bylaw is outdated and works against the Town's plans and strategies. For this reason, GHD has reviewed the parking provisions from other municipalities to review some of the best practices within Southern Ontario.

Similar to the parking spaces for resident parking, the resident visitor parking rates have been trending downwards to discourage visits using automobiles and many municipalities have been updating their Zoning By-Laws to reflect a lower visitor parking rate.

The following table provides examples of visitor parking rates from other municipal By-laws, some have been approved and others are in draft format, however all have completed considerable studies to justify and support the recommended reduced visitor parking rates.

Table 13 Best Practices – Residential Visitor Parking Rates

Municipality	By-law #	Enaction Date	Land Use ⁱ	Parking Rates (per Dwelling Unit)
				Minimum
London	Z.-1	2011	Apartment	0.10
Hamilton	05-200	2005	Multiple Dwelling	Min. 1.0 Max. 1.25 Includes visitor parking
Oakville	2009-189	2009	Apartment	0.20
City of Belleville	-	Draft January 2024	Multi-unit Dwelling (greater than 4 units)	0.20
Newmarket Urban Centres	2019-06	2019	Apartment Building Dwelling	0.15
Vaughan	001-2021	2021	Apartment Dwelling	0.20
Mississauga	022-2007	Part 3 -Parking 2022	Condominium Apartment	0.20
Recommended Visitor Parking Rate for the subject site				0.20

Reviewing best practices from other municipalities demonstrates a clear trend in reducing the number of parking spaces required for visitors to apartment buildings with even lower rates recommended along transit corridors and within urban growth centres where urbanization is targeted and transit-oriented development is encouraged.

It should be noted that in the City of London, the Zoning By-Law does not explicitly speak to a visitor parking rate but instead requires a minimum parking rate of 0.50 spaces per unit for apartments inclusive of visitor parking. However, the city's Site Plan Control By-Law does provide direct for off-street parking facilities and stipulate that for multi-unit residential developments with three or more units that visitor designated parking be provided at one visitor parking space for every ten dwelling units.

Hamilton's Zoning By-Law only provides a minimum and maximum number of parking spaces per unit but does not stipulate how many spaces should be designated for visitor to a site. Instead, the proportion of parking spaces designated for visitors is left up to the developer based on the expected visitor demand.

The Town of Oakville is great example of a municipality taking steps to ensure planned investment in transit infrastructure is supported with its North Oakville Secondary Plan (NOSP) policies and Zoning By-Law 2009-189. The NOSP identifies the Dundas Urban Core area and the Trafalgar Urban Core Area and currently requires visitor parking for apartment dwelling units to be provided at a minimum of 0.20 spaces per unit.

Visitor Parking Assessment Summary

In considering the reduction of visitor parking rates for high-rise buildings, multiple factors should be evaluated including the shift towards alternative transportation modes, such as public transit and ride-sharing, especially in urban settings, diminishes the need to provide extensive parking. Reducing parking rates aligns with environmental goals by promoting sustainable transport options resulting in reduced carbon emissions. Economically, reducing parking space

requirements can significantly cut construction and maintenance costs, potentially leading to more affordable housing. Additionally, in areas where real estate is at a premium, optimizing land use by minimizing parking spaces can open up space for green areas or community amenities, and lastly, the rise of the shared economy, including ride-sharing services which has been incorporated into this project also plays a role in this shift. This approach is not only environmentally conscious but also supports healthier, more active lifestyles and addresses the evolving needs of urban populations.

The proposed visitor parking supply of 0.20 spaces per unit exceeds the average rate from the surveyed demand at proxy sites in both Milton and Oakville and is consistent with the requirement of similar municipalities that have or are in the process of updating their Zoning Bylaws.

Detailed information pertaining to the undertaken surveys are provided in **Appendix G**.

9. Travel Demand Management

9.1 Travel Demand Management

Travel Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- Reduced auto-related emissions to improve air quality;
- Decreased traffic congestion to reduce travel time;
- Increased travel options for businesses and commuters;
- Reduced personal transportation costs and energy consumptions; and
- Support Provincial smart growth objectives.

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation standards for the local businesses and surrounding community.

9.2 Existing TDM Opportunities

9.3 Recommended TDM Measures

Table 14 *Recommended TDM Strategies*

TDM Measure	Responsibility	Cost	Note
Hard Measures			
Pedestrian connections	Applicant	Integrated into the overall development cost	Site plan includes a walkway system providing a connection to the municipal and regional right-of-ways

Bicycle Parking	Applicant	Integrated into the overall development cost. Short term bike parking costs are estimated at \$300 per rack that can accommodate 2 bikes. Values to be confirmed through detailed design.	Bicycle parking will be provided matching the requirements of the Town's Bylaw for long and short term bicycle parking. Short-term bicycle parking will be provided within well-lit and visible areas.
Soft Measures			
Provide Individualized Marketing Programs & Travel Plans	Applicant	To be determined.	Information packages distributed to residents (Milton Transit, GO Transit, cycling maps)
Communication strategy	Applicant	To be determined.	Providing information promoting sustainable travel options to employees.

10. Vehicle Swept Path Analysis

GHD undertook a vehicle swept path analysis to assess the site plan circulation for an emergency vehicles, MSU vehicles, waste collection vehicle, and passenger vehicle within the site. The results of the analysis are provided in **Appendix H** and illustrate that the site can sufficiently accommodate the aforementioned design vehicles with no issues.

11. Conclusion

A development concept plan prepared by GSAI consists of a total 365 dwelling units within two blocks. The breakdown between each block is as follows:

West Block

- 16 rear lane townhouse units
- 60 back-to-back townhouse units
- 46 street townhouse units

East Block

- 29 street townhouse units
- 54 back-to-back townhouse units
- 160 apartment dwelling units

Access to the subject site will primarily be provided through new private roadways and extensions of existing municipal roadways. The proposed extensions will become the north legs of the existing intersections of Derry Road West and Sauve Street (signalized) and Derry Road and Fourth Line (unsignalized, right-in/right-out).

Based on ITE Trip Generation rates, the subject site is expected to generate a total of 140 two-way vehicle trips during the a.m. peak hour consisting of 40 inbound and 100 outbound trips. During the p.m. peak hour, it is expected to generate 135 new two-way vehicle trips consisting of 105 inbound and 30 outbound trips.

Under existing traffic conditions, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours.

Under the 2029 future background conditions, with the addition of corridor growth, background development traffic, and signal improvements, all intersections are operating at acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of:

- Derry Road West and Trudeau Drive
- The eastbound shared through/right-turn movement with a v/c ratio of 0.87 LOS B (a.m. peak hour)

Under the 2029 future total conditions, with the addition of site traffic from the proposed development, all intersections are reported to continue to operate with acceptable v/c ratios and levels of service during the a.m. peak and p.m. peak hours with the exception of:

- Derry Road West and Trudeau Drive
- The overall intersection with a v/c ratio of 0.86 LOS C (a.m. peak hour)
- The shared through/right-turn movement with a v/c ratio of 0.89 LOS C (a.m. peak hour)

A sensitivity analysis was completed for the intersection of Dundas Street West and Neyagawa Boulevard to include a dual left-turn lane in the eastbound and northbound approaches. The provision of the dual left-turn lane mitigates the over-capacity operation of all movements with the exception of the westbound through movement during the p.m. peak hour under the 2035 horizon year.

Application of the Town of Milton Zoning By-Law 016-2014 parking rates to the subject site results in a requirement of a minimum of 730 parking spaces, 4 barrier free spaces, and 88 bicycle parking spaces.

The subject site provides a total of 631 vehicle parking spaces (566 resident spaces and 65 visitor spaces), including 9 barrier free spaces, and 88 bicycle parking spaces. Resident parking for the townhouse dwelling units is proposed to be provided at a rate of 2.0 spaces per unit, meeting the Town's By-law requirement. It is proposed to provide resident parking for the apartment dwelling units at a rate of 1.0 space per unit. Visitor parking throughout the site will be provided at a rate of 0.20 spaces per unit.

The proposed parking supply of 0.20 spaces per unit is supported by a series of parking surveys completed for townhouse and apartment dwelling units.

TDM measures are proposed for the subject site to encourage residents to explore various modes of transportation in order to reduce their dependency on single occupancy vehicle trips. These measures include bicycle parking and education material.

GHD assessed the site circulation for emergency vehicles, MSU trucks, waste collection vehicles, and passenger vehicles and confirmed no issues with the site circulation.

The traffic study confirms that the proposed residential development can be accommodated on the existing/planned road network.

Appendix A

Terms of Reference

Raf Andrenacci

From: Sian.Younan@milton.ca
Sent: Wednesday, September 4, 2024 9:45 AM
To: Raf Andrenacci
Cc: Will Maria; 'Loro, Darren'
Subject: RE: Terms of Reference - DeMarchi Lands
Attachments: Attachments.txt

Hi Raf,

In addition to the comments provided by the Region, please see Town comments below in **red**. As noted below, a full scope of work for the parking justification study, including the proposed proxy sites will need to be circulated to the Town.

The Town of Milton Secure Email

Expires October 4, 2024

2021.10.13 9980 Derry Road TIS.pdf

17.3 MB

[Download Attachments](#)

The only way to send sensitive information with email. [The Town of Milton](#)

Regards,



Sian Younan

Transportation Planning Technologist
150 Mary Street, Milton ON, L9T 6Z5
905-878-7252 ext. 2363
www.milton.ca

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From: Loro, Darren <Darren.Loro@halton.ca>
Sent: Tuesday, September 3, 2024 12:14 PM
To: Raf Andrenacci <Raf.Andrenacci@ghd.com>
Cc: Will Maria <William.Maria@ghd.com>; Sian Younan <Sian.Younan@milton.ca>
Subject: RE: Terms of Reference - DeMarchi Lands

Hi Raf,

Thank you for circulating your proposed TIS Terms of Reference. We have provided our comments below in blue.

As always, let me know if you have any questions or want to discuss further.

Cheers,
Darren

Darren Loro, C.E.T.

Project Manager I – Transportation Development Review

Development Services

Public Works

Halton Region

905-825-6000, ext. 2694 | 1-866-442-5866



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From: Raf Andrenacci <Raf.Andrenacci@ghd.com>

Sent: Thursday, August 8, 2024 3:27 PM

To: Chris.Toews@milton.ca; Loro, Darren <Darren.Loro@halton.ca>

Cc: Will Maria <William.Maria@ghd.com>

Subject: Terms of Reference - DeMarchi Lands

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Hello,

GHD Inc. has been retained to prepare a Transportation Impact Study for a proposed residential development on lands located north of Derry Road West opposite Sauve Street in the Town of Milton. The TIS must conform to Halton Region's Transportation Impact Study Guidelines (2015). The Region's TIS Guidelines are available online at: <https://www.halton.ca/Repository/Transportation-Impact-Study-Guidelines>



The proposed development is generally located between Laking Terrace and Fourth Line. The development concept has not yet been finalized but will consist of low-rise condo townhouse and mid-rise condo units.

Access to the west side of the subject site is proposed via the north leg of the intersection of Sauve Street and Derry Road and through the adjacent existing development via Ruck Avenue and Beacham Court. Access to the east side of the subject site is proposed via Cedar Hedge Road (both the Region and Town have requested Cedar Hedge Road be extended to Derry Road terminating at in a right-in/out).

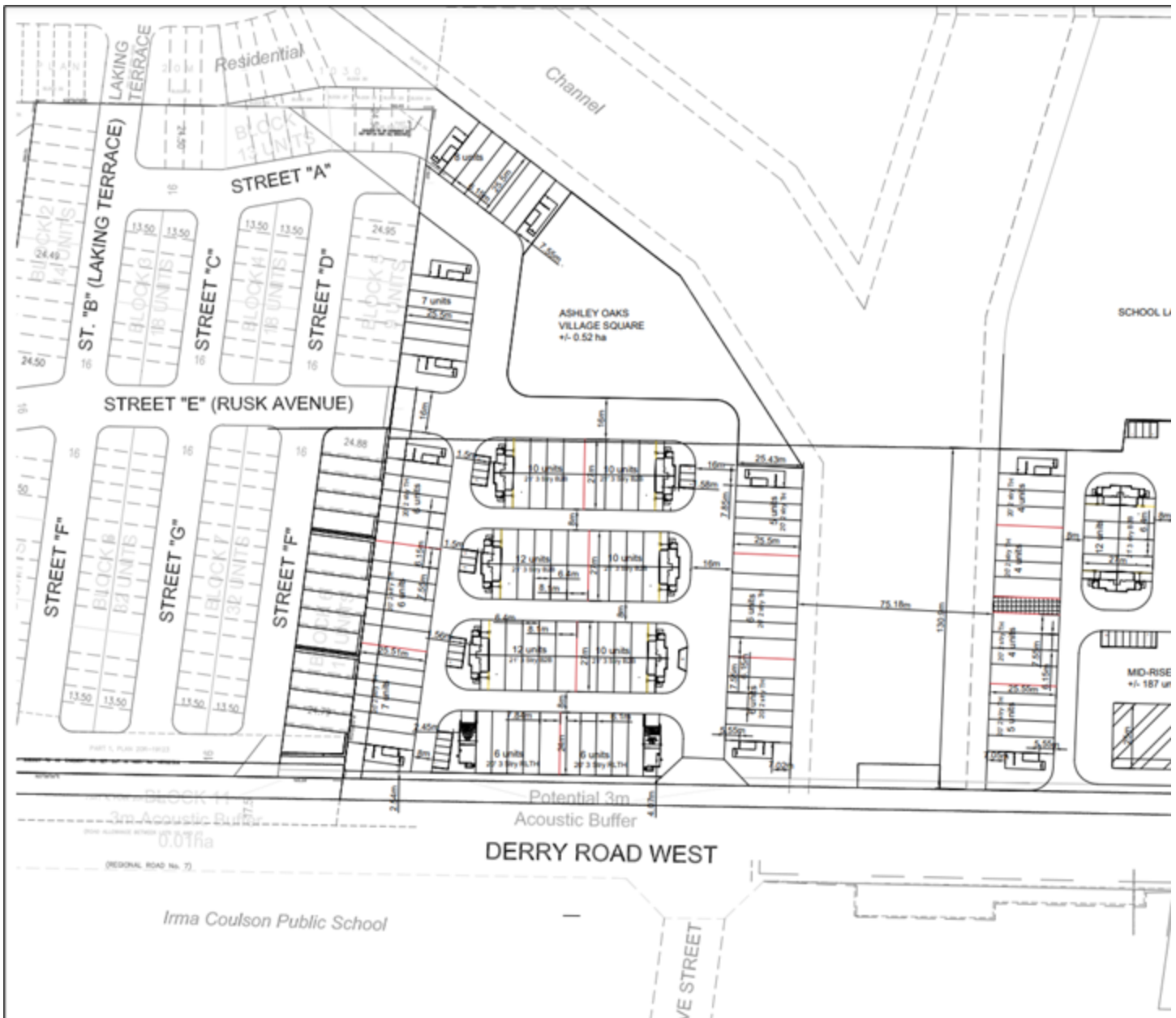
As noted in our pre-consultation comments, the proposed development must conform to Halton Region's Access By-Law NO. 32-17, a By-Law to prohibit, restrict and regulate access to the Regional Road System to maintain a high level of service for through traffic. The Access By-Law NO. 32-17 is available online at: <https://www.halton.ca/Repository/By-law-32-17-Regional-Roads>. Section 6.1 (a) of

the Access By-law states that “*access to a Regional Road from private property shall be permitted only where such access is necessary because access to a local road is not feasible.*” Access to a Regional Road must conform to Halton Region’s Access Management Guideline (2015). The Access Management Guideline document is available online at: <https://www.halton.ca/Repository/Access-Management-Guideline>.

The proposed RI/RO private access to Derry Road for the east block does not conform to the Access By-Law NO. 32-17 (since the easterly portion of the subject property could be accessed via the local road network) nor to the minimum spacing requirement of 115 metres per the Access Management Guideline along Derry Road from Cedar Hedge Road (if restored). Transportation Development Review staff do not support this proposed access, especially if the intersection of Derry Road and Cedar Hedge Road will be restored.

Therefore, the TIS must demonstrate that the proposed RI/RO private access to Derry Road for the east block is absolutely necessary from a traffic operations and safety perspective. The justification must clearly demonstrate the benefits of permitting access to Derry Road (e.g. traffic operations, safety, circulation, etc.) and highlight any negative impacts of not permitting access to Derry Road, while factoring in the restoration of the intersection of Derry Road and Cedar Hedge Road. The proposed RI/RO private access must be approved by Halton Region’s Senior Management.

As noted in our pre-consultation comments, Transportation Development Review staff generally support the proposed restoration of Cedar Hedge Road between Harwood Drive and Derry Road, and restoration of the intersection of Derry Road and Cedar Hedge Road opposite the existing right-in/right-out (RI/RO) intersection of Derry Road and Fourth Line. However, staff will only support the restoration under the conditions that the intersection operate as a RI/RO intersection (similar to the existing intersection of Derry Road and Fourth Line) and that other applicable stakeholders (internal and external to Halton Region) are in support of the restoration.



In order to properly scope this project, we ask that the Region and Town review and provide comments on the following scope and provide any additional items required as part of the study.

Study intersections

- Existing
 - Derry Road and Sauve Street
 - Harwood Drive and Cedar Hedge Road
 - Derry Road and Trudeau Drive
 - Please add the existing RI/RO intersection of Derry Road and Fourth Line to the study scope.
 - Harwood Drive at Trudeau Drive
 - Cedar Hedge Road at Laurier Avenue/Croft Avenue
- Future
 - Derry Road and Cedar Hedge Road extension
 - Please add the proposed RI/RO private access to Derry Road for the east block.

- Harwood Drive at Trudeau Drive
- Cedar Hedge Road at Laurier Avenue/Croft Avenue

Traffic Data

Updated traffic counts at the existing study intersections will be undertaken during the a.m. and p.m. peak hours. [Acceptable, as long as the counts are conducted on a typical mid-week weekday \(i.e. a typical Tuesday, Wednesday or Thursday\).](#)

Study Peak Hours

Weekday a.m. and p.m. peak hours [Acceptable.](#)

Study Horizon Year

2024 (existing) and 2029 (five years from the date of the study), as per the Region's TIS Guidelines. [Acceptable.](#)

Background Growth Rate

GHD will consult with Region staff to determine the growth rates to be used. A 2% per annum growth rate will be used along roads under the jurisdiction of Milton, as typically used for their municipal roadways.

[Halton Region's Transportation Master Plan \(TMP\) identified the need to widen Derry Road to six lanes from Tremaine Road to Highway 407 with construction currently proposed to start in 2031 per Halton Region's 2024 Budget and Business Plan. As construction can reasonably be expected to take a minimum of 2-3 years to complete, this improvement does not need to be quantitatively accounted for in the TIS. However, this future improvement must be documented in the TIS.](#)

[A growth rate of 2% compounded annually can be applied to all movements at the Derry Road study intersections to forecast future background traffic volumes.](#)

Background Development Traffic

GHD reviewed the Town's development application portal and did not identify any proposed developments within the surrounding area that would generate additional traffic along the study area roadway. Town staff to confirm if there are any background developments to include. [Please account for background development traffic associated with the proposed daycare at the south-west corner of the existing intersection of Derry Road and Fourth line \(application # SP-24/21\). The Town can provide the supporting TIS. Provided in sharefile link.](#)

Trip Generation

Will be completed using rates published by the ITE Trip Generation 11th Edition, LUC 220 and LUC 221 Multifamily Housing (Low-Rise and Mid-Rise). [Acceptable, as long as all trip generation assumptions are clearly documented in the TIS with supporting data appended.](#)

The directional distribution of traffic approaching and departing the site will be determined based on the TTS 2016 data, existing local patterns, and first principles. [Acceptable, as long as all trip distribution assumptions are clearly documented in the TIS with supporting data appended.](#)

Future Total Traffic Diversions

[Given the development proposal to restore the intersection of Derry Road and Cedar Hedge Road, diversions to travel patterns within the existing subdivision east of the subject property can be expected](#)

(e.g. traffic existing the subdivision heading west on Derry Road would be expected to divert from Trudeau Drive to the restored Cedar Hedge Road to access Derry Road). The future total traffic volumes forecasts must account for diversions associated with the restoration of the intersection of Derry Road and Cedar Hedge Road. All diversions assumptions and calculations must be clearly documented in the TIS.

The analysis will identify the transportation system requirements and other measures required to ensure the acceptable operation of the study intersections, including auxiliary turning lanes and other transportation infrastructure improvements.

- All traffic operations analysis must conform to the Region's TIS Guidelines. This includes documenting all analysis methodologies and highlighting or bolding all critical volume-to-capacity ratios or 95th percentile queue lengths results that exceed the thresholds outlined in the TIS Guidelines.
- If traffic operations issues are identified under future background or total conditions, then the TIS will need to recommend mitigation measures to address these issues (even if not necessarily triggered by the proposed development) or at the very least, rationalize the traffic operations issues if there are no feasible mitigation measures. The TIS should identify who is responsible for each recommended mitigation measure, if required.
- The TIS must clearly recommend modifications and improvements (e.g. geometric, signals, etc.) to the existing three-legged intersection of Derry Road and Sauve Street to accommodate the proposed "Rusk Avenue" connection to the north leg of the intersection for the west block of the proposed development.
- The following future total scenarios must be analyzed in the TIS for traffic operations comparison purposes:
 - **Inclusion of the restoration of the intersection of Derry Road and Cedar Hedge Road and proposed RI/RO private access to Derry Road for the east block.**
 - **Inclusion of the restoration of the intersection of Derry Road and Cedar Hedge Road but no proposed RI/RO private access to Derry Road for the east block.**
 - The purpose of these two scenarios described above is to confirm if the proposed RI/RO private access to Derry Road for the east block is necessary from a traffic operations perspective if the adjacent intersection of Derry Road and Cedar Hedge Road is also being provided.
 - **Inclusion of the proposed RI/RO private access to Derry Road for the east block but no restoration of the intersection of Derry Road and Cedar Hedge Road.**
 - **No proposed RI/RO private access to Derry Road for the east block nor the restoration of the intersection of Derry Road and Cedar Hedge Road.**
 - The purpose of these two scenarios described above is to confirm if the proposed development is viable from a traffic operations perspective even without the restoration of the intersection of Derry Road and Cedar Hedge Road, to demonstrate the traffic operations benefits of the proposed RI/RO private access to Derry Road and to highlight any negative traffic operations impacts of not permitting the private access to Derry Road.
 - For these scenarios, the "future total traffic diversions" as described above would obviously not be applied.

TAC, Region, and Town guidelines will be reviewed in order to complete an access management. Acceptable.

Review for the site access that reviews corner clearance, driveway spacing, auxiliary lanes, corner radii, and clear throat distance. **Acceptable.** Sight distance analysis for the proposed connections to Derry Road must also be included in the TIS.

The TIS must analyze traffic safety components associated with the proposed RI/RO private access to Derry Road for the east block, including (but not limited to):

- sightlines along Derry Road;
- spacing from adjacent intersections **with and without** the restoration of the intersection of Derry Road and Cedar Hedge Road – specifically conformance to the minimum spacing requirements per Halton Region’s Access Management Guideline; and
- the proposed clear throat length at the access.

If the proposed RI/RO private access to Derry Road for the east block is approved by Halton Region, the RI/RO operation would be physically enforced by the raised centre median along Derry Road. Therefore, the proposed pork-chop island as shown on the concept plan would have to be removed. This method of RI/RO restriction must be documented in the TIS.

Complete AutoTurn assessment where necessary.

The following scenarios must be analyzed in the TIS for swept path analysis comparison purposes:

- **Inclusion of the restoration of the intersection of Derry Road and Cedar Hedge Road and proposed RI/RO private access to Derry Road for the east block.**
- **Inclusion of the restoration of the intersection of Derry Road and Cedar Hedge Road but no proposed RI/RO private access to Derry Road for the east block.**
 - The purpose of these two scenarios described above is to confirm if the proposed RI/RO private access to Derry Road for the east block is necessary from a traffic circulation perspective if the adjacent intersection of Derry Road and Cedar Hedge Road is also being provided.
- **Inclusion of the proposed RI/RO private access to Derry Road for the east block but no restoration of the intersection of Derry Road and Cedar Hedge Road.**
- **No proposed RI/RO private access to Derry Road for the east block nor the restoration of the intersection of Derry Road and Cedar Hedge Road.**
 - The purpose of these two scenarios described above is to confirm if the proposed development is viable from a traffic circulation perspective even without the restoration of the intersection of Derry Road and Cedar Hedge Road, to demonstrate the traffic circulation benefits of the proposed RI/RO private access to Derry Road and to highlight any negative traffic circulation impacts of not permitting the private access to Derry Road.

If the proposed RI/RO private access to Derry Road for the east block is approved by Halton Region, the access should be designed as to allow a simultaneous inbound design vehicle and outbound passenger car, or vice versa.

Existing TDM opportunities will be identified and future TDM opportunities will be recommended for the site. **Acceptable,** as long as no modal split reductions are applied to the site trip generation forecasts.

The parking supply will be reviewed in accordance with the Town’s Zoning By-law. Parking for the subject site is proposed to be reduced from the Zoning Bylaw requirement with visitor parking proposed at a rate of 0.20 spaces per unit and resident parking for the mid-rise proposed at a rate of 1 space per unit. **Town to confirm.** **Please provide a full scope of work for the Parking Justification Study.**

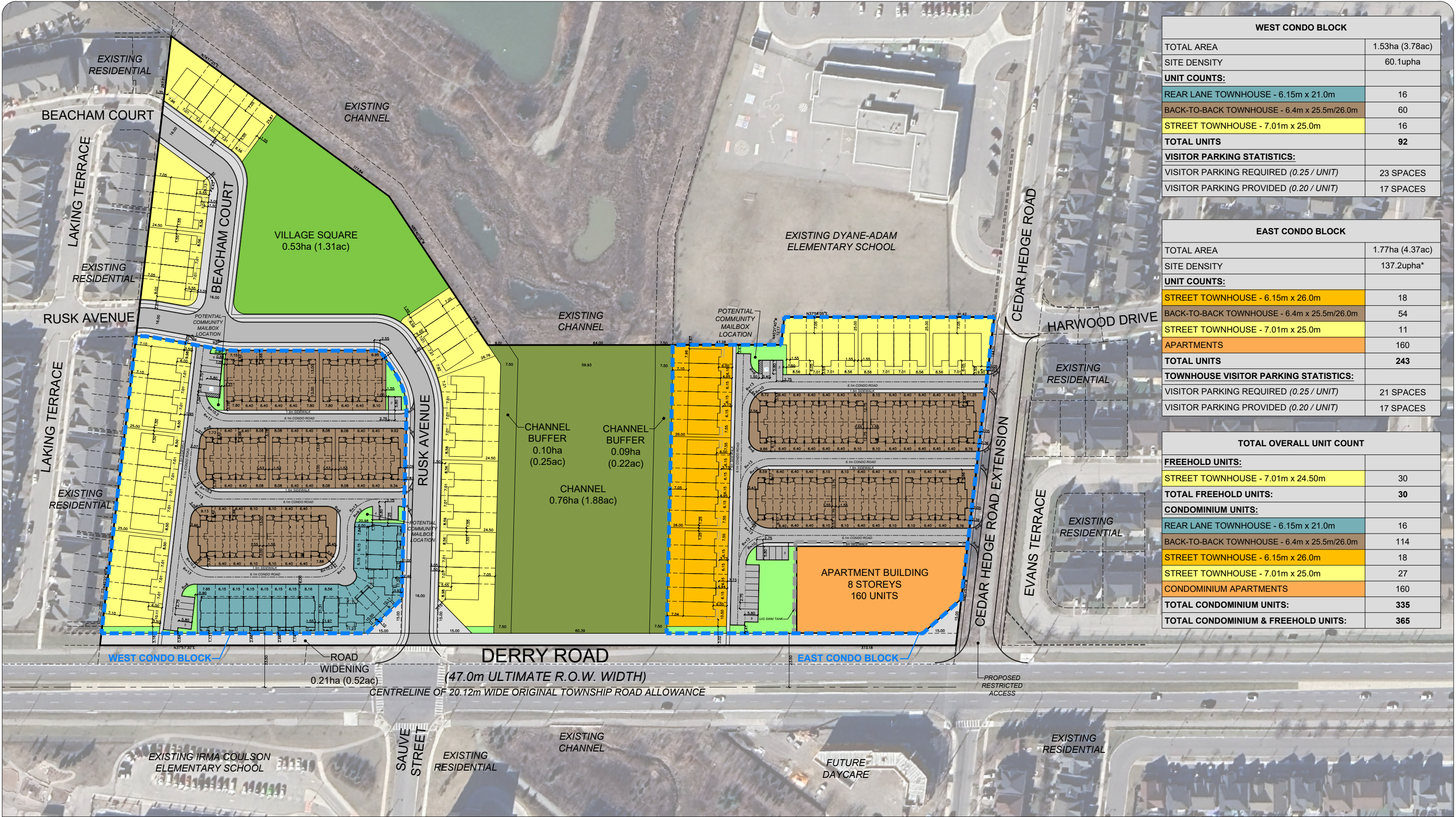
If the above scope is acceptable to the Town and Region, it will form the basis of our scope of work.

Thank you,
Raf

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Appendix B

Site Plan



WEST CONDO BLOCK	
TOTAL AREA	1.53ha (3.78ac)
SITE DENSITY	60.1upha
UNIT COUNTS:	
REAR LANE TOWNHOUSE - 6.15m x 21.0m	16
BACK-TO-BACK TOWNHOUSE - 6.4m x 25.5m/26.0m	60
STREET TOWNHOUSE - 7.01m x 25.0m	16
TOTAL UNITS	92
VISITOR PARKING STATISTICS:	
VISITOR PARKING REQUIRED (0.25 / UNIT)	23 SPACES
VISITOR PARKING PROVIDED (0.20 / UNIT)	17 SPACES

EAST CONDO BLOCK	
TOTAL AREA	1.77ha (4.37ac)
SITE DENSITY	137.2upha*
UNIT COUNTS:	
STREET TOWNHOUSE - 6.15m x 26.0m	18
BACK-TO-BACK TOWNHOUSE - 6.4m x 25.5m/26.0m	54
STREET TOWNHOUSE - 7.01m x 25.0m	11
APARTMENTS	160
TOTAL UNITS	243
TOWNHOUSE VISITOR PARKING STATISTICS:	
VISITOR PARKING REQUIRED (0.25 / UNIT)	21 SPACES
VISITOR PARKING PROVIDED (0.20 / UNIT)	17 SPACES

TOTAL OVERALL UNIT COUNT	
FREEHOLD UNITS:	
STREET TOWNHOUSE - 7.01m x 24.50m	30
TOTAL FREEHOLD UNITS:	30
CONDOMINIUM UNITS:	
REAR LANE TOWNHOUSE - 6.15m x 21.0m	16
BACK-TO-BACK TOWNHOUSE - 6.4m x 25.5m/26.0m	114
STREET TOWNHOUSE - 6.15m x 26.0m	18
STREET TOWNHOUSE - 7.01m x 25.0m	27
CONDOMINIUM APARTMENTS	160
TOTAL CONDOMINIUM UNITS:	335
TOTAL CONDOMINIUM & FREEHOLD UNITS:	365

DEVELOPMENT CONCEPT PLAN
BRANTHAVEN - DEMARCHI PROPERTY

PART OF LOT 11, CONCESSION 4,
TOWN OF MILTON, REGIONAL MUNICIPALITY OF HALTON

* NOTE: OVERALL RESIDENTIAL / OFFICE DESIGNATION DENSITY (EAST CONDO BLOCK): 243 UNITS / 1.77ha = 137upha
(RESIDENTIAL / OFFICE DESIGNATION RANGE: 85-150upha)



SCALE 1:1500
OCTOBER 7, 2024

SITE AREA
SITE AREA (EXCLUDING
STW AREA) = 2783m²
0.688 ACRE

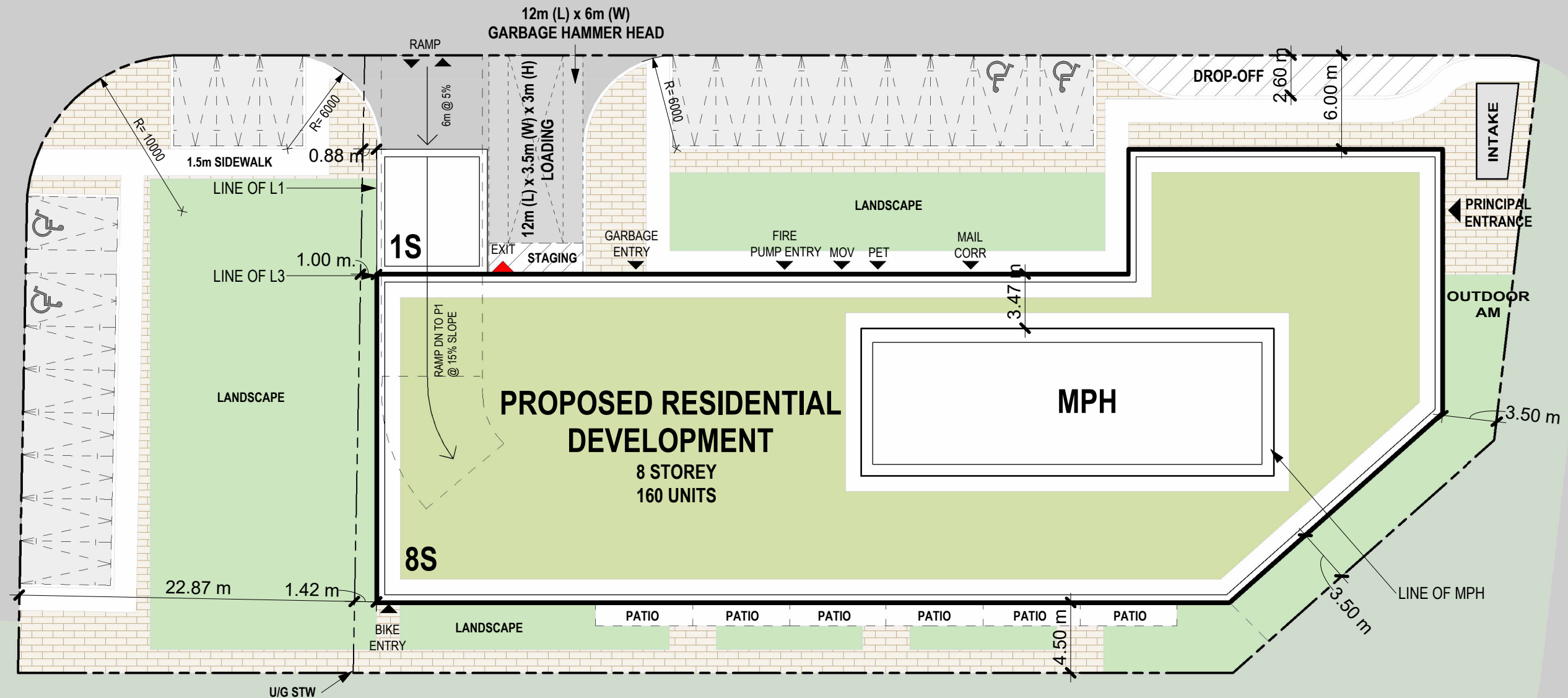
GFA:
TOTAL 11488.3m²
L1:1397m²
L2:1391.16m²
L3-8:8450.04m²
MPH: 250.10m²

UNIT COUNT
TOTAL UNITS 160
L1= 6
L2= 22
L3-8 = 132

UNIT RATIO
 $1B/1B+D = 79\%$
 $2B/2B+D = 21\%$

PARKING COUNT
3 LEVEL UNDERGROUND
TOTAL PARKING 192
RATIO= 1.2 (1R+0.2V)

BIKE COUNT
TOTAL BIKE PARKING 88
RATIO= 0.55 (0.5R +0.05V)



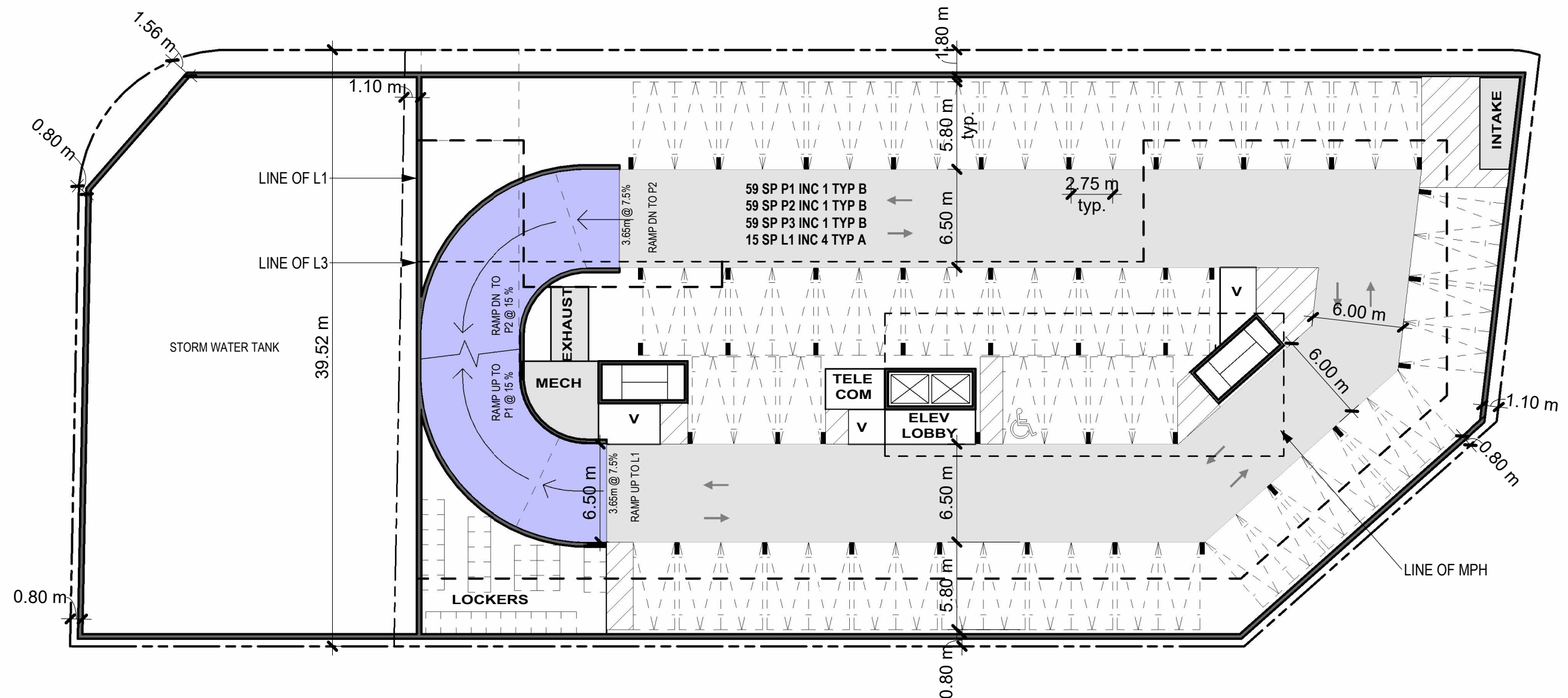
FOURTH LINE

DERRY RD W

Site Plan

SCALE: 1 : 300

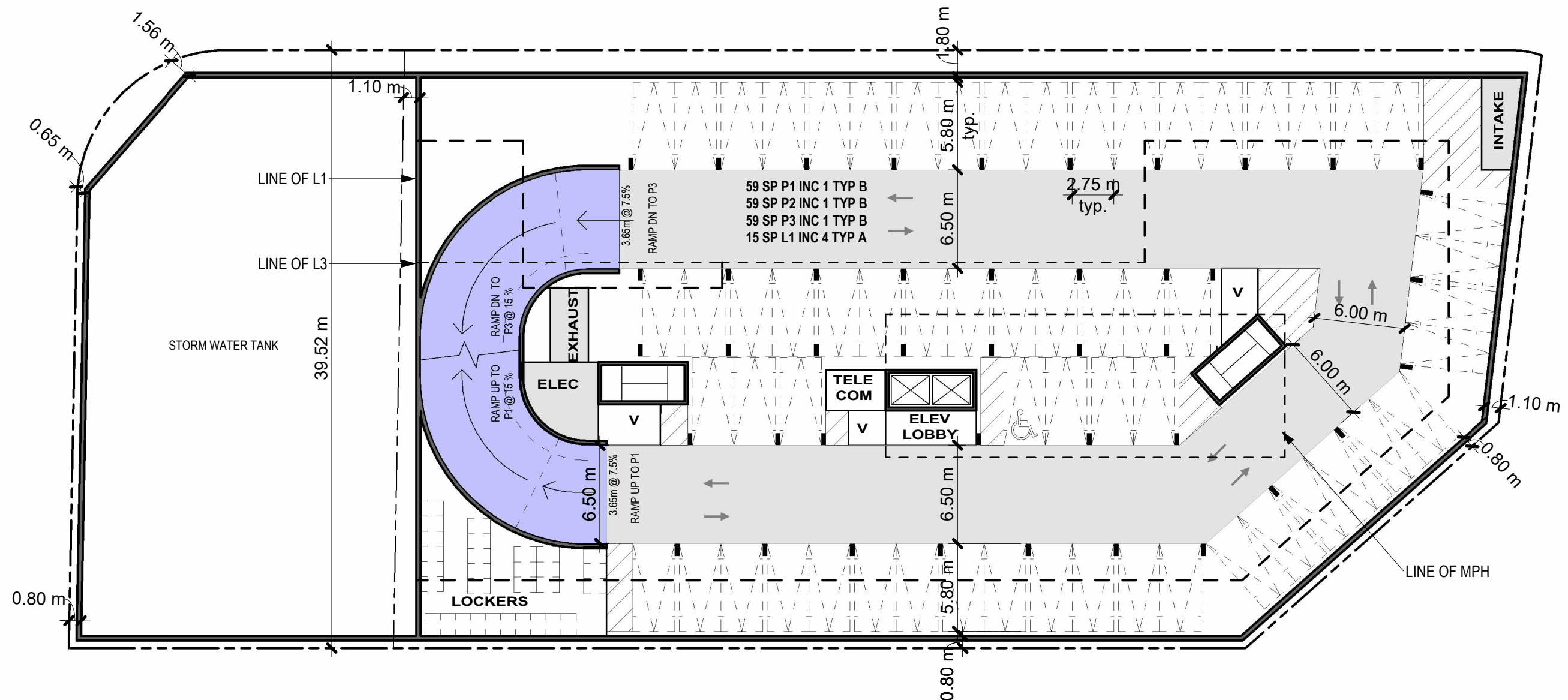




Parking Plan - P1

SCALE: 1 : 300

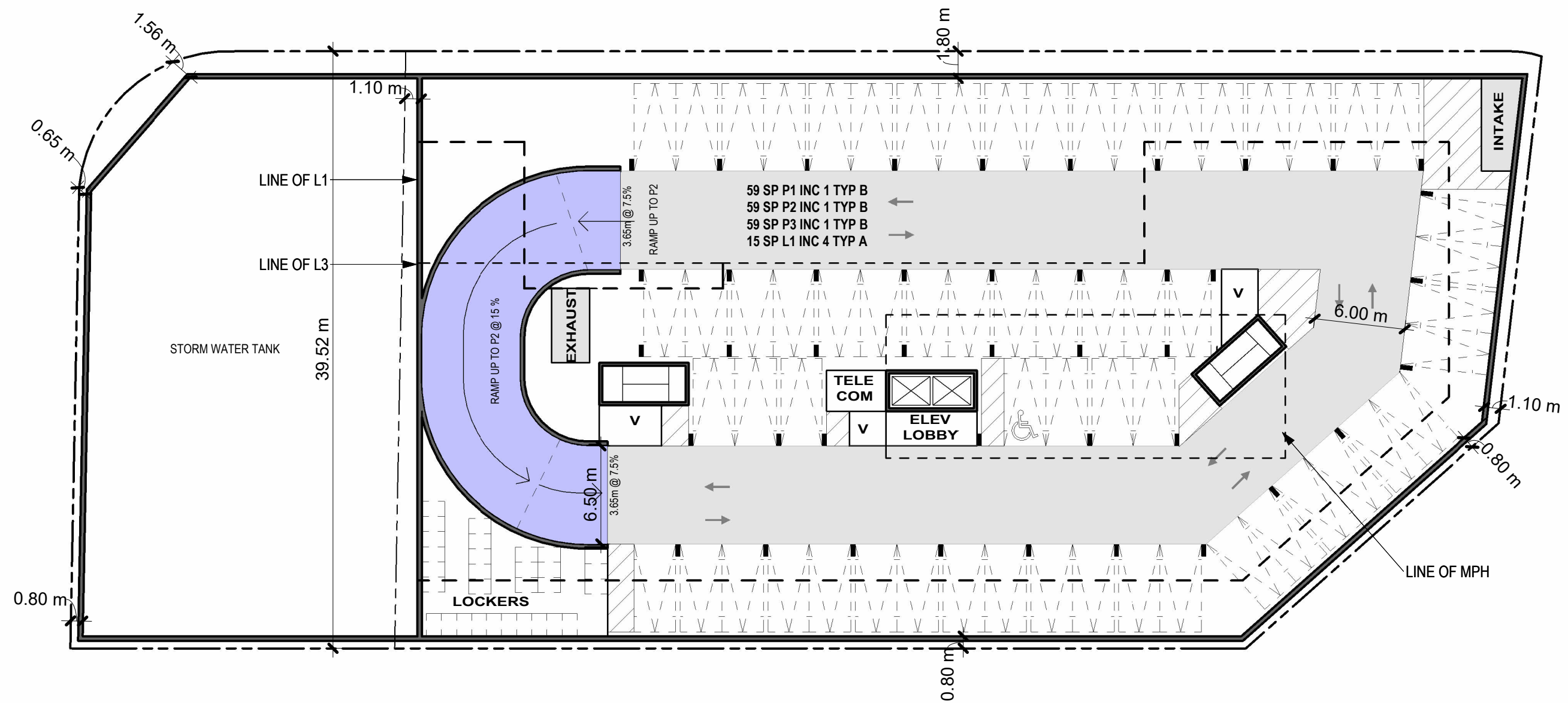




Parking Plan - P2

SCALE: 1 : 300

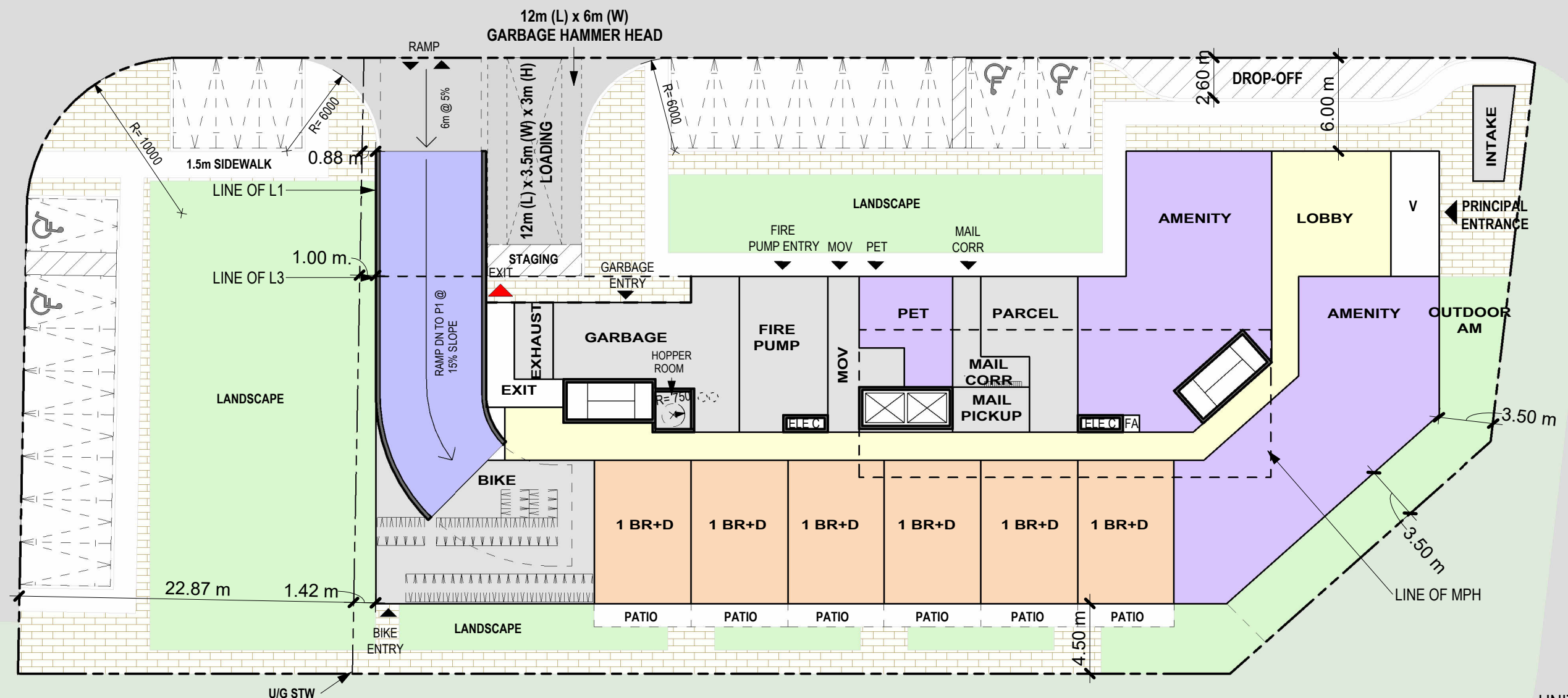




Parking Plan - P3

SCALE: 1 : 300





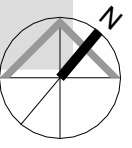
DERRY RD W

FOURTH LINE

UNIT COUNT: 6

Ground Floor Plan

SCALE: 1 : 300



Appendix C

Traffic Data

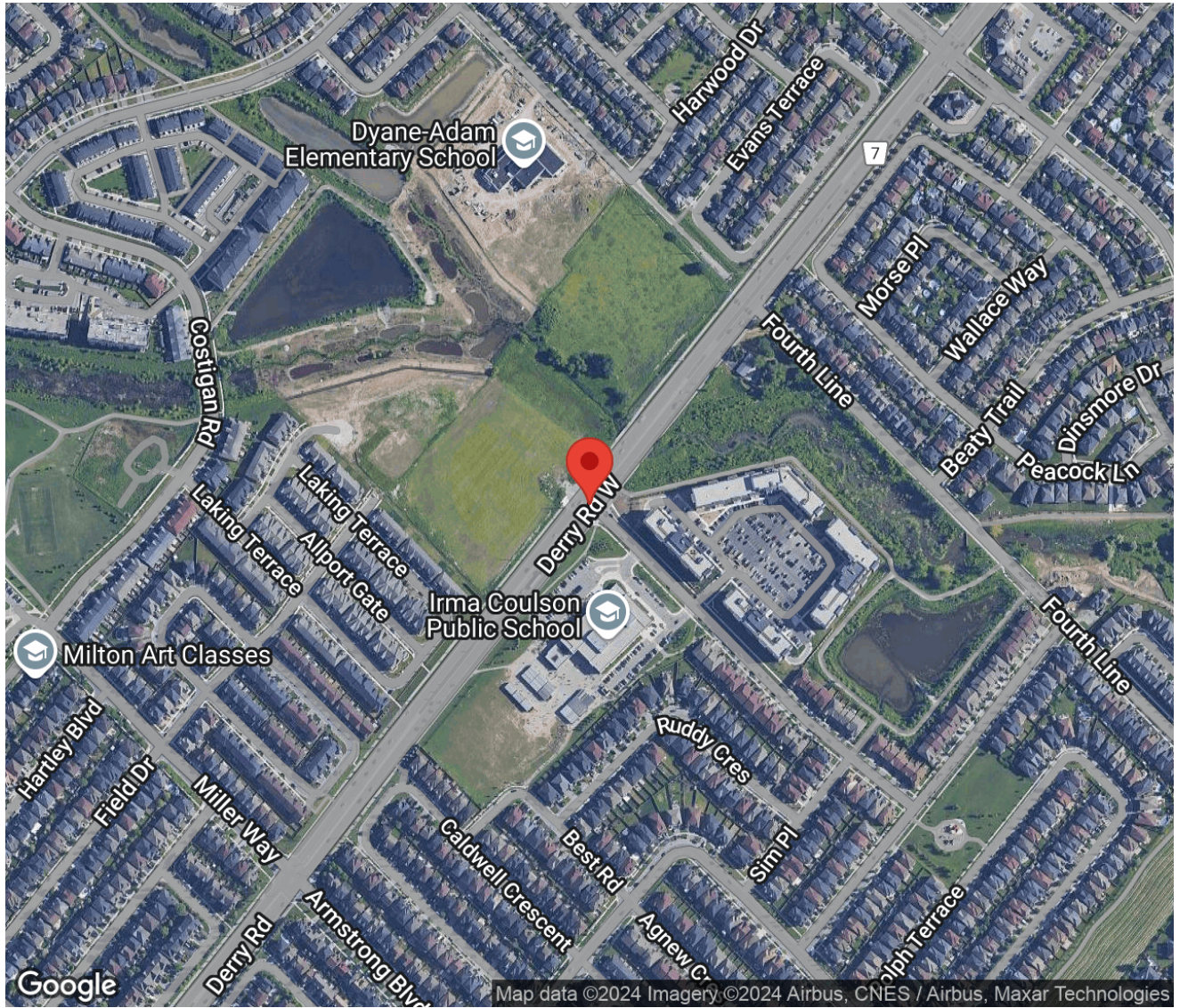
Project #24-390 - GHD

Intersection Count Report

Intersection: Derry Rd & Sauve St
Municipality: Milton
Count Date: Thursday, Sep 19, 2024
Site Code: 2439000001
Count Categories: Cars, Trucks, Bicycles, Pedestrians
Count Period: 07:00-09:00, 16:00-18:00
Weather: Clear
Comments:

Traffic Count Map

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024



Traffic Count Summary

Intersection: Derry Rd & Sauve St
 Site Code: 2439000001
 Municipality: Milton
 Count Date: Sep 19, 2024

Sauve St - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	0	0	0	0	0	52	0	111	0	163	8	163
08:00 - 09:00	0	0	0	0	0	0	64	0	120	0	184	82	184
BREAK													
16:00 - 17:00	0	0	0	0	0	0	44	0	55	0	99	6	99
17:00 - 18:00	0	0	0	0	0	0	57	0	64	0	121	14	121
GRAND TOTAL	0	0	0	0	0	0	217	0	350	0	567	110	567

Traffic Count Summary

Intersection: Derry Rd & Sauve St
 Site Code: 2439000001
 Municipality: Milton
 Count Date: Sep 19, 2024

Derry Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	28	461	0	0	489	6	0	1383	37	1	1421	0	1910
08:00 - 09:00	88	582	0	0	670	2	0	1436	91	2	1529	3	2199
BREAK													
16:00 - 17:00	110	1201	0	0	1311	5	0	867	49	0	916	0	2227
17:00 - 18:00	101	1253	0	2	1356	3	0	893	54	0	947	3	2303
GRAND TOTAL	327	3497	0	2	3826	16	0	4579	231	3	4813	6	8639

Traffic Count Data

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024

South Approach - Sauve St

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	10	0	19	0	29	0	0	0	0	0	0	0	0	0	0	3
07:15	10	0	30	0	40	0	0	1	0	1	0	0	0	0	0	1
07:30	15	0	25	0	40	0	0	0	0	0	0	0	0	0	0	1
07:45	17	0	36	0	53	0	0	0	0	0	0	0	0	0	0	3
08:00	16	0	26	0	42	0	0	0	0	0	0	0	0	0	0	2
08:15	18	0	23	0	41	0	0	0	0	0	0	0	0	0	0	0
08:30	8	0	29	0	37	1	0	0	0	1	0	0	0	0	0	22
08:45	20	0	40	0	60	1	0	2	0	3	0	0	0	0	0	58
SUBTOTAL	114	0	228	0	342	2	0	3	0	5	0	0	0	0	0	90

Traffic Count Data

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024

South Approach - Sauve St

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	15	0	15	0	30	0	0	0	0	0	0	0	0	0	0	4
16:15	12	0	10	0	22	1	0	0	0	1	0	0	0	0	0	0
16:30	7	0	11	0	18	0	0	0	0	0	0	0	0	0	0	0
16:45	9	0	19	0	28	0	0	0	0	0	0	0	0	0	0	2
17:00	19	0	20	0	39	0	0	0	0	0	0	0	0	0	0	4
17:15	12	0	16	0	28	0	0	0	0	0	0	0	0	0	0	3
17:30	9	0	14	0	23	0	0	0	0	0	0	0	0	0	0	4
17:45	17	0	14	0	31	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	100	0	119	0	219	1	0	0	0	1	0	0	0	0	0	20
GRAND TOTAL	214	0	347	0	561	3	0	3	0	6	0	0	0	0	0	110

Traffic Count Data

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	4	78	0	0	82	0	8	0	0	8	0	0	0	0	0	0
07:15	7	105	0	0	112	0	6	0	0	6	0	0	0	0	0	1
07:30	9	119	0	0	128	0	6	0	0	6	0	0	0	0	0	5
07:45	8	130	0	0	138	0	9	0	0	9	0	0	0	0	0	0
08:00	21	141	0	0	162	0	8	0	0	8	0	0	0	0	0	1
08:15	16	135	0	0	151	0	9	0	0	9	0	0	0	0	0	0
08:30	26	123	0	0	149	1	13	0	0	14	0	0	0	0	0	0
08:45	24	144	0	0	168	0	9	0	0	9	0	0	0	0	0	1
SUBTOTAL	115	975	0	0	1090	1	68	0	0	69	0	0	0	0	0	8

Traffic Count Data

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	29	267	0	0	296	0	10	0	0	10	0	0	0	0	0	3
16:15	23	316	0	0	339	0	7	0	0	7	0	0	0	0	0	0
16:30	31	291	0	0	322	0	3	0	0	3	0	0	0	0	0	0
16:45	27	307	0	0	334	0	0	0	0	0	0	0	0	0	0	2
17:00	26	313	0	0	339	0	2	0	0	2	0	0	0	0	0	0
17:15	21	288	0	0	309	0	5	0	0	5	0	0	0	0	0	3
17:30	32	320	0	0	352	0	4	0	0	4	0	0	0	0	0	0
17:45	22	317	0	2	341	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	211	2419	0	2	2632	0	35	0	0	35	0	0	0	0	0	8
GRAND TOTAL	326	3394	0	2	3722	1	103	0	0	104	0	0	0	0	0	16

Traffic Count Data

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	0	293	4	0	297	0	3	0	0	3	0	0	0	0	0	0
07:15	0	334	8	1	343	0	6	0	0	6	0	0	0	0	0	0
07:30	0	333	10	0	343	0	10	1	0	11	0	0	0	0	0	0
07:45	0	396	14	0	410	0	8	0	0	8	0	0	0	0	0	0
08:00	0	390	16	1	407	0	5	0	0	5	0	0	0	0	0	0
08:15	0	366	21	0	387	0	7	0	0	7	0	0	0	0	0	0
08:30	0	345	24	0	369	0	9	2	0	11	0	0	0	0	0	0
08:45	0	310	27	1	338	0	4	1	0	5	0	0	0	0	0	3
SUBTOTAL	0	2767	124	3	2894	0	52	4	0	56	0	0	0	0	0	3

Traffic Count Data

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	0	204	11	0	215	0	4	0	0	4	0	0	0	0	0	0
16:15	0	220	13	0	233	0	7	0	0	7	0	0	0	0	0	0
16:30	0	196	10	0	206	0	4	0	0	4	0	0	0	0	0	0
16:45	0	228	15	0	243	0	4	0	0	4	0	0	0	0	0	0
17:00	0	222	12	0	234	0	5	0	0	5	0	0	0	0	0	0
17:15	0	206	10	0	216	0	2	0	0	2	0	0	0	0	0	0
17:30	0	250	15	0	265	0	4	0	0	4	0	0	0	0	0	0
17:45	0	200	17	0	217	0	4	0	0	4	0	0	0	0	0	3
SUBTOTAL	0	1726	103	0	1829	0	34	0	0	34	0	0	0	0	0	3
GRAND TOTAL	0	4493	227	3	4723	0	86	4	0	90	0	0	0	0	0	6

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 07:45:00
To: 08:45:00




Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Signalized Intersection ****

Major Road: Derry Rd runs E/W

East Approach

	Out	In	Total
	600	1611	2211
	40	29	69
	0	0	0
	640	1640	2280

Derry Rd




			Totals
0	0	1	1
0	29	1497	1526
0	2	75	77

Peds: 0



Peds: 1




Derry Rd

Totals			
0	0	0	0
568	529	39	0
72	71	1	0

Peds: 27

West Approach


Out	In	Total
1573	589	2162
31	40	71
0	0	0
1604	629	2233


Totals	60	114	0
	59	114	0
	1	0	0
	0	0	0

South Approach

Out	In	Total
173	146	319
1	3	4
0	0	0
174	149	323

Sauve St

 - Cars

 - Trucks

















 - Bicycles

Comments

Peak Hour Summary

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Count Date: Sep 19, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

	North Approach						South Approach Sauve St						East Approach Derry Rd						West Approach Derry Rd						Total Vehi es									
Start Time					Peds	Total					Peds	Total					Peds	Total					Peds	Total										
07:45					0		17					36	0	3	53	8	139					0	0	147		404	14	0	0	418	618			
08:00					0		16					0	2	42	21	149	0					1	170	395		16	1	0	412	624				
08:15					0		18					0	0	41	16	144	0					0	160	373		21	0	0	394	595				
08:30					0		9					0	22	38	27	136	0					0	163	354		26	0	0	380	581				
Grand Total					0	0	60					114	0	27	174	72	568					0	1	640					1526	77	1	0	1604	2418
Approach %					-	-	34.5					65.5	0	-	-	11.3	88.8					0	-	-					95.1	4.8	0.1	-		
Totals %					0	0	2.5					4.7	0	7.2	3	23.5					0	26.5	63.1	3.2	0					66.3				
PHF					0	0	0.83					0.79	0	0.82	0.67	0.95					0	0.94	0.94	0.74	0.25					0.96	0.97			
Cars					0	0	59					114	0	173	71	529					0	600	1497	75	1					1573	2346			
% Cars					0	0	98.3					100	0	99.4	98.6	93.1					0	93.8	98.1	97.4	100					98.1	97			
Trucks					0	0	1					0	0	1	1	39					0	40	29	2	0					31	72			
% Trucks					0	0	1.7					0	0	0.6	1.4	6.9					0	6.3	1.9	2.6	0					1.9	3			
Bicycles					0	0	0					0	0	0	0	0					0	0	0	0	0					0	0			
% Bicycles					0	0	0					0	0	0	0	0					0	0	0	0	0					0	0			
Peds					0	-							27	-							1	-							0	-	28			
% Peds					0	-							96.4	-							3.6	-							0	-				

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 16:45:00
To: 17:45:00




Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Signalized Intersection ****

Major Road: Derry Rd runs E/W

East Approach

	Out	In	Total
	1334	975	2309
	11	15	26
	0	0	0
	1345	990	2335

Derry Rd

			Totals
0	0	0	0
0	15	906	921
0	0	52	52




Peds: 0

Peds: 0












Peds: 5

Derry Rd

Totals			
0	0	0	0
1239	1228	11	0
106	106	0	0




West Approach

	Out	In	Total
	958	1277	2235
	15	11	26
	0	0	0
	973	1288	2261


Totals			
49	69	0	
	49	69	0
	0	0	0
	0	0	0

Sauve St

South Approach

	Out	In	Total
	118	158	276
	0	0	0
	0	0	0
	118	158	276

 - Cars

 - Trucks

















 - Bicycles

Comments

Peak Hour Summary

Intersection: Derry Rd & Sauve St
Site Code: 2439000001
Count Date: Sep 19, 2024
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

	North Approach						South Approach Sauve St						East Approach Derry Rd						West Approach Derry Rd						Total Vehicl es
Start Time					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45					0		9		19	0	2	28	27	307		0	2	334		232	15	0	0	247	609
17:00					0		19		0	4	39	26	315	0		0	341	227		12	0	0	239	619	
17:15					0		12		0	3	28	21	293	0		3	314	208		10	0	0	218	560	
17:30					0		9		0	4	23	32	324	0		0	356	254		15	0	0	269	648	
Grand Total					0	0	49		69	0	13	118	106	1239		0	5	1345		921	52	0	0	973	2436
Approach %					-		41.5		58.5	0	-		7.9	92.1		0	-			94.7	5.3	0	-		
Totals %					0		2		2.8	0	4.8		4.4	50.9		0	55.2		37.8	2.1	0	39.9			
PHF					0		0.64		0.86	0	0.76		0.83	0.96		0	0.94		0.91	0.87	0	0.9	0.94		
Cars					0		49		69	0	118		106	1228		0	1334		906	52	0	958	2410		
% Cars					0		100		100	0	100		100	99.1		0	99.2		98.4	100	0	98.5	98.9		
Trucks					0		0		0	0	0		0	11		0	11		15	0	0	15	26		
% Trucks					0		0		0	0	0		0	0.9		0	0.8		1.6	0	0	1.5	1.1		
Bicycles					0		0		0	0	0		0	0		0	0		0	0	0	0	0		
% Bicycles					0		0		0	0	0		0	0		0	0		0	0	0	0	0		
Peds					0	-					13	-					5	-					0	-	18
% Peds					0	-					72.2	-					27.8	-					0	-	

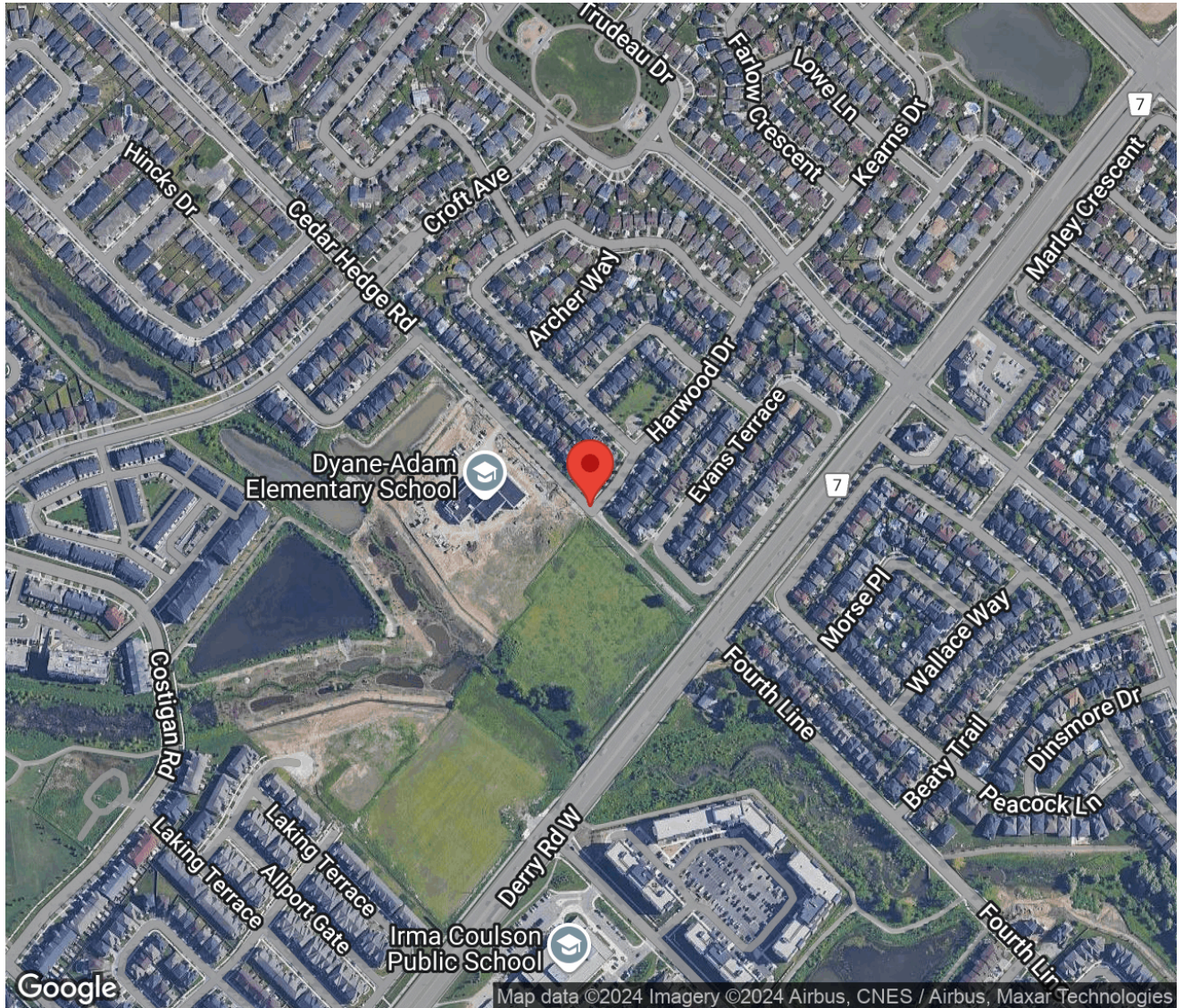
Project #24-390 - GHD

Intersection Count Report

Intersection: Harwood Dr & Cedar Hedge Rd
Municipality: Milton
Count Date: Thursday, Sep 19, 2024
Site Code: 2439000002
Count Categories: Cars, Trucks, Bicycles, Pedestrians
Count Period: 07:00-09:00, 16:00-18:00
Weather: Clear
Comments:

Traffic Count Map

Intersection:	Harwood Dr & Cedar Hedge Rd
Site Code:	2439000002
Municipality:	Milton
Count Date:	Sep 19, 2024



Traffic Count Summary

Intersection: Harwood Dr & Cedar Hedge Rd
 Site Code: 2439000002
 Municipality: Milton
 Count Date: Sep 19, 2024

Cedar Hedge Rd - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	39	0	0	0	39	1	0	0	0	0	0	0	39
08:00 - 09:00	41	0	0	0	41	0	0	0	0	0	0	0	41
BREAK													
16:00 - 17:00	46	0	0	0	46	0	0	0	0	0	0	0	46
17:00 - 18:00	65	0	0	2	67	0	0	0	0	0	0	0	67
GRAND TOTAL	191	0	0	2	193	1	0	0	0	0	0	0	193

Traffic Count Summary

Intersection: Harwood Dr & Cedar Hedge Rd
 Site Code: 2439000002
 Municipality: Milton
 Count Date: Sep 19, 2024

Harwood Dr - Traffic Summary

Hour	East Approach Totals						West Approach Totals							Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles							
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds		
07:00 - 08:00	0	0	61	0	61	4	4	4	0	0	8	7	69	
08:00 - 09:00	0	0	74	0	74	3	16	23	0	0	39	7	113	
BREAK														
16:00 - 17:00	0	0	88	0	88	1	1	3	0	0	4	11	92	
17:00 - 18:00	0	0	114	0	114	0	9	3	0	0	12	6	126	
GRAND TOTAL	0	0	337	0	337	8	30	33	0	0	63	31	400	

Traffic Count Data

Intersection: Harwood Dr & Cedar Hedge Rd
 Site Code: 2439000002
 Municipality: Milton
 Count Date: Sep 19, 2024

North Approach - Cedar Hedge Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
07:15	16	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0
07:30	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
07:45	10	0	0	0	10	2	0	0	0	2	0	0	0	0	0	1
08:00	12	0	0	0	12	2	0	0	0	2	0	0	0	0	0	0
08:15	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
08:30	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
08:45	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	76	0	0	0	76	4	0	0	0	4	0	0	0	0	0	1

Traffic Count Data

Intersection: Harwood Dr & Cedar Hedge Rd
Site Code: 2439000002
Municipality: Milton
Count Date: Sep 19, 2024

North Approach - Cedar Hedge Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0
16:15	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
16:30	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
16:45	17	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0
17:00	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0
17:15	21	0	0	1	22	0	0	0	0	0	0	0	0	0	0	0
17:30	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
17:45	16	0	0	1	17	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	111	0	0	2	113	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	187	0	0	2	189	4	0	0	0	4	0	0	0	0	0	1

Traffic Count Data

Intersection: Harwood Dr & Cedar Hedge Rd
 Site Code: 2439000002
 Municipality: Milton
 Count Date: Sep 19, 2024

East Approach - Harwood Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	4
07:15	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	13	0	13	0	0	3	0	3	0	0	0	0	0	0
07:45	0	0	23	0	23	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	32	0	32	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	13	0	13	0	0	1	0	1	0	0	0	0	0	0
08:30	0	0	6	0	6	0	0	0	0	0	0	0	1	0	1	0
08:45	0	0	20	0	20	0	0	1	0	1	0	0	0	0	0	3
SUBTOTAL	0	0	129	0	129	0	0	5	0	5	0	0	1	0	1	7

Traffic Count Data

Intersection: Harwood Dr & Cedar Hedge Rd
 Site Code: 2439000002
 Municipality: Milton
 Count Date: Sep 19, 2024

East Approach - Harwood Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	0	0	17	0	17	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	20	0	20	0	0	1	0	1	0	0	0	0	0	1
16:30	0	0	25	0	25	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	23	0	23	0	0	1	0	1	0	0	1	0	1	0
17:00	0	0	26	0	26	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	36	0	36	0	0	0	0	0	0	0	1	0	1	0
17:30	0	0	26	0	26	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	25	0	25	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	198	0	198	0	0	2	0	2	0	0	2	0	2	1
GRAND TOTAL	0	0	327	0	327	0	0	7	0	7	0	0	3	0	3	8

[illegible]

[illegible]

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 07:15:00
To: 08:15:00




Intersection: Harwood Dr & Cedar Hedge Rd
Site Code: 2439000002
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****

Major Road: Harwood Dr runs E/W




North Approach

	Out	In	Total
	43	101	144
	4	3	7
	0	0	0
Totals	47	104	151







Cedar Hedge Rd

	0	0	0
	0	4	0
	0	43	0
Totals	0	47	0

East Approach

	Out	In	Total
	82	62	144
	3	4	7
	0	0	0
Totals	85	66	151

Harwood Dr

				Totals
	0	0	0	0
	0	0	19	19
	0	0	19	19

Peds: 8




Peds: 1






Peds: 0

Peds: 0


Harwood Dr

Totals			
0	0	0	0
85	82	3	0
0	0	0	0

West Approach

	Out	In	Total
	38	0	38
	0	0	0
	0	0	0
Totals	38	0	38

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Harwood Dr & Cedar Hedge Rd
Site Code: 2439000002
Count Date: Sep 19, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:15 - 08:15)

Start Time	North Approach Cedar Hedge Rd						South Approach						East Approach Harwood Dr						West Approach Harwood Dr						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:15	16		0	0	0	16					0			0	14	0	0	14	0	0		0	0	0	30
07:30	5		0	0	0	5					0			0	16	0	0	16	0	0		0	3	0	21
07:45	12		0	0	1	12					0			0	23	0	0	23	4	4		0	3	8	43
08:00	14		0	0	0	14					0			0	32	0	0	32	15	15		0	2	30	76
Grand Total	47		0	0	1	47					0	0		0	85	0	0	85	19	19		0	8	38	170
Approach %	100		0	0	-	-					-	-		0	100	0	-	-	50	50		0	-	-	-
Totals %	27.6		0	0	-	27.6					0	-		0	50	0	-	50	11.2	11.2		0	-	22.4	-
PHF	0.73		0	0	-	0.73					0	-		0	0.66	0	-	0.66	0.32	0.32		0	-	0.32	0.56
Cars	43		0	0	-	43					0	-		0	82	0	-	82	19	19		0	-	38	163
% Cars	91.5		0	0	-	91.5					0	-		0	96.5	0	-	96.5	100	100		0	-	100	95.9
Trucks	4		0	0	-	4					0	-		0	3	0	-	3	0	0		0	-	0	7
% Trucks	8.5		0	0	-	8.5					0	-		0	3.5	0	-	3.5	0	0		0	-	0	4.1
Bicycles	0		0	0	-	0					0	-		0	0	0	-	0	0	0		0	-	0	0
% Bicycles	0		0	0	-	0					0	-		0	0	0	-	0	0	0		0	-	0	0
Peds					1	-					0	-					0	-					8	-	9
% Peds					11.1	-					0	-					0	-					88.9	-	-

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 17:00:00
To: 18:00:00




Intersection: Harwood Dr & Cedar Hedge Rd
Site Code: 2439000002
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****




Major Road: Harwood Dr runs E/W

North Approach




	Out	In	Total
	67	124	191
	0	0	0
	0	1	1
	67	125	192

Cedar Hedge Rd







	0	0	0
	0	0	0
	0	65	2
Totals	0	65	2

East Approach

	Out	In	Total
	113	68	181
	0	0	0
	1	0	1
	114	68	182

Harwood Dr

				Totals
	0	0	0	0
	0	0	9	9
	0	0	3	3

Peds: 6







Peds: 0






Peds: 0

Peds: 0


Harwood Dr

Totals			
	0	0	0
	114	113	0
	0	0	0

West Approach

	Out	In	Total
	12	0	12
	0	0	0
	0	0	0
	12	0	12

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Harwood Dr & Cedar Hedge Rd
Site Code: 2439000002
Count Date: Sep 19, 2024
Period: 16:00 - 18:00

Peak Hour Data (17:00 - 18:00)

Start Time	North Approach Cedar Hedge Rd						South Approach						East Approach Harwood Dr						West Approach Harwood Dr						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
17:00	19		0	0	0	19					0			0	26	0	0	26	2	0		0	0	2	47
17:15	21		0	1	0	22					0			0	37	0	0	37	2	1		0	0	3	62
17:30	9		0	0	0	9					0			0	26	0	0	26	3	0		0	0	3	38
17:45	16		0	1	0	17					0			0	25	0	0	25	2	2		0	6	4	46
Grand Total	65		0	2	0	67					0	0		0	114	0	0	114	9	3		0	6	12	193
Approach %	97		0	3		-					-			0	100	0		-	75	25		0		-	
Totals %	33.7		0	1		34.7					0			0	59.1	0		59.1	4.7	1.6		0		6.2	
PHF	0.77		0	0.5		0.76					0			0	0.77	0		0.77	0.75	0.38		0		0.75	0.78
Cars	65		0	2		67					0			0	113	0		113	9	3		0		12	192
% Cars	100		0	100		100					0			0	99.1	0		99.1	100	100		0		100	99.5
Trucks	0		0	0		0					0			0	0	0		0	0	0		0		0	0
% Trucks	0		0	0		0					0			0	0	0		0	0	0		0		0	0
Bicycles	0		0	0		0					0			0	1	0		1	0	0		0		0	1
% Bicycles	0		0	0		0					0			0	0.9	0		0.9	0	0		0		0	0.5
Peds					0	-					0	-					0	-				6	-	6	
% Peds					0	-					0	-					0	-				100	-		

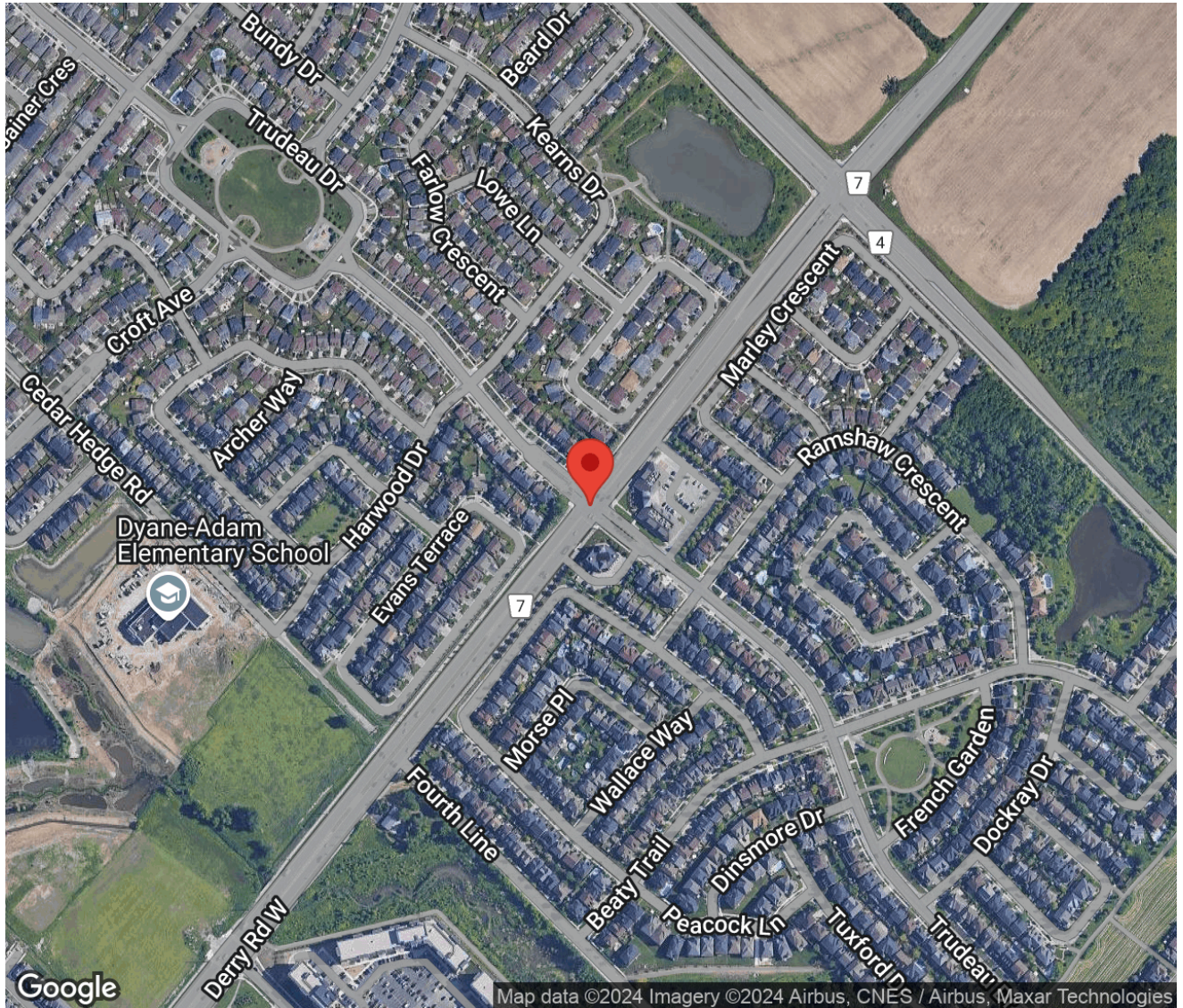
Project #24-390 - GHD

Intersection Count Report

Intersection: Derry Rd & Trudeau Dr
Municipality: Milton
Count Date: Thursday, Sep 19, 2024
Site Code: 2439000003
Count Categories: Cars, Trucks, Bicycles, Pedestrians
Count Period: 07:00-09:00, 16:00-18:00
Weather: Clear
Comments:

Traffic Count Map

Intersection:	Derry Rd & Trudeau Dr
Site Code:	2439000003
Municipality:	Milton
Count Date:	Sep 19, 2024



Traffic Count Summary

Intersection: Derry Rd & Trudeau Dr
 Site Code: 2439000003
 Municipality: Milton
 Count Date: Sep 19, 2024

Trudeau Dr - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	102	49	73	0	224	4	73	46	105	0	224	0	448
08:00 - 09:00	88	56	102	1	247	0	97	60	75	0	232	0	479
BREAK													
16:00 - 17:00	38	57	68	0	163	3	90	43	48	0	181	1	344
17:00 - 18:00	43	57	65	0	165	7	109	69	51	0	229	8	394
GRAND TOTAL	271	219	308	1	799	14	369	218	279	0	866	9	1665

Traffic Count Summary

Intersection: Derry Rd & Trudeau Dr
 Site Code: 2439000003
 Municipality: Milton
 Count Date: Sep 19, 2024

Derry Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	35	338	22	0	395	13	36	1438	25	0	1499	8	1894
08:00 - 09:00	27	478	20	0	525	7	69	1481	36	1	1587	0	2112
BREAK													
16:00 - 17:00	89	1132	76	1	1298	17	80	767	48	3	898	5	2196
17:00 - 18:00	115	1203	73	0	1391	15	78	776	87	0	941	1	2332
GRAND TOTAL	266	3151	191	1	3609	52	263	4462	196	4	4925	14	8534

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

North Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	14	4	10	0	28	0	1	0	0	1	0	0	0	0	0	1
07:15	34	9	14	0	57	0	0	0	0	0	0	0	0	0	0	2
07:30	27	13	28	0	68	0	1	0	0	1	0	0	0	0	0	1
07:45	26	21	20	0	67	1	0	1	0	2	0	0	0	0	0	0
08:00	26	17	25	0	68	1	3	2	0	6	0	0	0	0	0	0
08:15	23	16	22	0	61	0	1	0	0	1	0	0	0	0	0	0
08:30	20	6	26	0	52	0	0	1	0	1	0	0	0	0	0	0
08:45	18	11	26	1	56	0	2	0	0	2	0	0	0	0	0	0
SUBTOTAL	188	97	171	1	457	2	8	4	0	14	0	0	0	0	0	4

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

North Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	13	14	17	0	44	0	3	2	0	5	0	0	0	0	0	1
16:15	11	12	16	0	39	1	2	1	0	4	0	0	0	0	0	0
16:30	7	7	14	0	28	1	1	0	0	2	0	0	0	0	0	0
16:45	5	18	18	0	41	0	0	0	0	0	0	0	0	0	0	2
17:00	7	17	18	0	42	0	1	0	0	1	0	0	0	0	0	4
17:15	7	12	15	0	34	0	0	0	0	0	0	0	0	0	0	0
17:30	15	17	11	0	43	0	1	0	0	1	0	0	0	0	0	1
17:45	14	9	21	0	44	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	79	106	130	0	315	2	8	3	0	13	0	0	0	0	0	10
GRAND TOTAL	267	203	301	1	772	4	16	7	0	27	0	0	0	0	0	14

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

South Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	9	4	21	0	34	0	0	0	0	0	0	0	0	0	0	0
07:15	13	4	26	0	43	2	2	0	0	4	0	0	0	0	0	0
07:30	23	9	27	0	59	1	1	1	0	3	0	0	0	0	0	0
07:45	24	25	30	0	79	1	1	0	0	2	0	0	0	0	0	0
08:00	25	19	24	0	68	0	2	0	0	2	0	0	0	0	0	0
08:15	18	12	22	0	52	0	3	0	0	3	0	0	0	0	0	0
08:30	18	10	12	0	40	0	1	0	0	1	0	0	0	0	0	0
08:45	36	10	17	0	63	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	166	93	179	0	438	4	13	1	0	18	0	0	0	0	0	0

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

South Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	21	8	14	0	43	2	0	0	0	2	0	0	0	0	0	1
16:15	20	11	8	0	39	0	4	0	0	4	0	0	0	0	0	0
16:30	16	5	11	0	32	0	2	0	0	2	0	0	0	0	0	0
16:45	31	13	15	0	59	0	0	0	0	0	0	0	0	0	0	0
17:00	25	22	13	0	60	0	1	0	0	1	0	0	0	0	0	2
17:15	25	14	9	0	48	1	0	0	0	1	0	0	0	0	0	2
17:30	31	15	14	0	60	0	0	0	0	0	0	0	0	0	0	1
17:45	27	16	15	0	58	0	1	0	0	1	0	0	0	0	0	3
SUBTOTAL	196	104	99	0	399	3	8	0	0	11	0	0	0	0	0	9
GRAND TOTAL	362	197	278	0	837	7	21	1	0	29	0	0	0	0	0	9

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	9	71	4	0	84	3	8	0	0	11	0	0	0	0	0	2
07:15	5	84	9	0	98	2	5	1	0	8	0	0	0	0	0	3
07:30	5	73	2	0	80	1	5	0	0	6	0	0	0	0	0	3
07:45	9	84	6	0	99	1	8	0	0	9	0	0	0	0	0	5
08:00	7	123	7	0	137	0	7	0	0	7	0	0	0	0	0	2
08:15	8	100	3	0	111	0	8	0	0	8	0	0	0	0	0	4
08:30	5	116	3	0	124	1	14	0	0	15	0	0	0	0	0	0
08:45	6	101	7	0	114	0	9	0	0	9	0	0	0	0	0	1
SUBTOTAL	54	752	41	0	847	8	64	1	0	73	0	0	0	0	0	20

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	22	257	15	0	294	0	6	0	0	6	0	0	0	0	0	6
16:15	25	294	22	1	342	1	5	0	0	6	0	0	0	0	0	4
16:30	21	280	24	0	325	0	2	0	0	2	0	0	0	0	0	5
16:45	20	288	15	0	323	0	0	0	0	0	0	0	0	0	0	2
17:00	26	304	7	0	337	0	2	0	0	2	0	0	0	0	0	5
17:15	32	275	30	0	337	0	5	0	0	5	0	0	0	0	0	1
17:30	27	310	19	0	356	0	4	0	0	4	0	0	0	0	0	0
17:45	30	299	17	0	346	0	4	0	0	4	0	0	0	0	0	9
SUBTOTAL	203	2307	149	1	2660	1	28	0	0	29	0	0	0	0	0	32
GRAND TOTAL	257	3059	190	1	3507	9	92	1	0	102	0	0	0	0	0	52

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	8	303	2	0	313	0	2	0	0	2	0	0	0	0	0	4
07:15	4	355	7	0	366	1	6	0	0	7	0	0	0	0	0	2
07:30	9	358	10	0	377	0	9	1	0	10	0	0	0	0	0	2
07:45	14	398	5	0	417	0	7	0	0	7	0	0	0	0	0	0
08:00	29	406	3	1	439	0	4	1	0	5	0	0	0	0	0	0
08:15	9	377	7	0	393	3	3	0	0	6	0	0	0	0	0	0
08:30	16	353	10	0	379	1	7	0	0	8	0	0	0	0	0	0
08:45	9	324	15	0	348	2	7	0	0	9	0	0	0	0	0	0
SUBTOTAL	98	2874	59	1	3032	7	45	2	0	54	0	0	0	0	0	8

Traffic Count Data

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	18	189	9	0	216	0	3	0	1	4	0	0	0	0	0	3
16:15	21	198	14	0	233	1	7	0	0	8	0	0	0	0	0	1
16:30	15	172	9	0	196	2	2	0	0	4	0	0	0	0	0	1
16:45	22	192	16	2	232	1	4	0	0	5	0	0	0	0	0	0
17:00	22	189	20	0	231	0	5	0	0	5	0	0	0	0	0	1
17:15	24	162	26	0	212	0	1	0	0	1	0	0	0	0	0	0
17:30	19	225	23	0	267	0	4	0	0	4	0	0	0	0	0	0
17:45	13	186	18	0	217	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	154	1513	135	2	1804	4	30	0	1	35	0	0	0	0	0	6
GRAND TOTAL	252	4387	194	3	4836	11	75	2	1	89	0	0	0	0	0	14

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 07:45:00
To: 08:45:00




Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Signalized Intersection ****





Major Road: Derry Rd runs E/W

North Approach




	Out	In	Total
	248	153	401
	10	11	21
	0	0	0
Totals	258	164	422

Trudeau Dr








	0	0	0	0
	4	4	2	0
	93	60	95	0
Totals	97	64	97	0

East Approach

	Out	In	Total
	471	1717	2188
	39	23	62
	0	0	0
Totals	510	1740	2250

Derry Rd

				Totals
0	0	1		1 
0	4	68		72 
0	21	1534		1555 
0	1	25		26 

Peds: 0




Peds: 0






Peds: 11








Peds: 0

Derry Rd

Totals			
0	0	0	0
19	19	0	0
460	423	37	0
31	29	2	0




West Approach

	Out	In	Total
	1628	602	2230
	26	42	68
	0	0	0
Totals	1654	644	2298


				
Totals	86	73	88	0
	85	66	88	0
	1	7	0	0
	0	0	0	0

Trudeau Dr

South Approach

	Out	In	Total
	239	114	353
	8	7	15
	0	0	0
Totals	247	121	368

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Count Date: Sep 19, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Trudeau Dr						South Approach Trudeau Dr						East Approach Derry Rd						West Approach Derry Rd						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:45	27	21	21	0	0	69	25	26	30	0	0	81	10	92	6	0	5	108	14	405	5	0	0	424	682
08:00	27	20	27	0	0	74	25	21	24	0	0	70	7	130	7	0	2	144	29	410	4	1	0	444	732
08:15	23	17	22	0	0	62	18	15	22	0	0	55	8	108	3	0	4	119	12	380	7	0	0	399	635
08:30	20	6	27	0	0	53	18	11	12	0	0	41	6	130	3	0	0	139	17	360	10	0	0	387	620
Grand Total	97	64	97	0	0	258	86	73	88	0	0	247	31	460	19	0	11	510	72	1555	26	1	0	1654	2669
Approach %	37.6	24.8	37.6	0	-	-	34.8	29.6	35.6	0	-	-	6.1	90.2	3.7	0	-	-	4.4	94	1.6	0.1	-	-	-
Totals %	3.6	2.4	3.6	0	-	9.7	3.2	2.7	3.3	0	-	9.3	1.2	17.2	0.7	0	-	19.1	2.7	58.3	1	0	-	62	-
PHF	0.9	0.76	0.9	0	-	0.87	0.86	0.7	0.73	0	-	0.76	0.78	0.88	0.68	0	-	0.89	0.62	0.95	0.65	0.25	-	0.93	0.91
Cars	95	60	93	0	-	248	85	66	88	0	-	239	29	423	19	0	-	471	68	1534	25	1	-	1628	2586
% Cars	97.9	93.8	95.9	0	-	96.1	98.8	90.4	100	0	-	96.8	93.5	92	100	0	-	92.4	94.4	98.6	96.2	100	-	98.4	96.9
Trucks	2	4	4	0	-	10	1	7	0	0	-	8	2	37	0	0	-	39	4	21	1	0	-	26	83
% Trucks	2.1	6.3	4.1	0	-	3.9	1.2	9.6	0	0	-	3.2	6.5	8	0	0	-	7.6	5.6	1.4	3.8	0	-	1.6	3.1
Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	11	-	-	-	-	-	0	-	11
% Peds	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	100	-	-	-	-	-	0	-	-

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 17:00:00
To: 18:00:00




Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Signalized Intersection ****





Major Road: Derry Rd runs E/W

North Approach




	Out	In	Total
	163	218	381
	2	2	4
	0	0	0
Totals	165	220	385

Trudeau Dr








	0	0	0	0
	0	2	0	0
	65	55	43	0
Totals	65	57	43	0

East Approach

	Out	In	Total
	1376	856	2232
	15	14	29
	0	0	0
Totals	1391	870	2261

Derry Rd

				Totals
	0	0	0	0
	0	0	78	78
	0	14	762	776
	0	0	87	87

Peds: 1








Peds: 7






Peds: 15








Peds: 8

Derry Rd

Totals			
	0	0	0
	73	73	0
	1203	1188	15
	115	115	0




West Approach

	Out	In	Total
	927	1361	2288
	14	16	30
	0	0	0
Totals	941	1377	2318


Totals				
	109	69	51	0
	1	2	0	0
	0	0	0	0

Trudeau Dr

South Approach

	Out	In	Total
	226	257	483
	3	2	5
	0	0	0
Totals	229	259	488

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Derry Rd & Trudeau Dr
Site Code: 2439000003
Count Date: Sep 19, 2024
Period: 16:00 - 18:00

Peak Hour Data (17:00 - 18:00)

Start Time	North Approach Trudeau Dr						South Approach Trudeau Dr						East Approach Derry Rd						West Approach Derry Rd						Total Vehicles
	←	↑	→	↺	Peds	Total	←	↑	→	↺	Peds	Total	←	↑	→	↺	Peds	Total	←	↑	→	↺	Peds	Total	
17:00	7	18	18	0	4	43	25	23	13	0	2	61	26	306	7	0	5	339	22	194	20	0	1	236	679
17:15	7	12	15	0	0	34	26	14	9	0	2	49	32	280	30	0	1	342	24	163	26	0	0	213	638
17:30	15	18	11	0	1	44	31	15	14	0	1	60	27	314	19	0	0	360	19	229	23	0	0	271	735
17:45	14	9	21	0	2	44	27	17	15	0	3	59	30	303	17	0	9	350	13	190	18	0	0	221	674
Grand Total	43	57	65	0	7	165	109	69	51	0	8	229	115	1203	73	0	15	1391	78	776	87	0	1	941	2726
Approach %	26.1	34.5	39.4	0	-	-	47.6	30.1	22.3	0	-	-	8.3	86.5	5.2	0	-	-	8.3	82.5	9.2	0	-	-	-
Totals %	1.6	2.1	2.4	0	-	6.1	4	2.5	1.9	0	-	8.4	4.2	44.1	2.7	0	-	51	2.9	28.5	3.2	0	-	34.5	-
PHF	0.72	0.79	0.77	0	-	0.94	0.88	0.75	0.85	0	-	0.94	0.9	0.96	0.61	0	-	0.97	0.81	0.85	0.84	0	-	0.87	0.93
Cars	43	55	65	0	-	163	108	67	51	0	-	226	115	1188	73	0	-	1376	78	762	87	0	-	927	2692
% Cars	100	96.5	100	0	-	98.8	99.1	97.1	100	0	-	98.7	100	98.8	100	0	-	98.9	100	98.2	100	0	-	98.5	98.8
Trucks	0	2	0	0	-	2	1	2	0	0	-	3	0	15	0	0	-	15	0	14	0	0	-	14	34
% Trucks	0	3.5	0	0	-	1.2	0.9	2.9	0	0	-	1.3	0	1.2	0	0	-	1.1	0	1.8	0	0	-	1.5	1.2
Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
Peds	-	-	-	-	7	-	-	-	-	-	8	-	-	-	-	-	15	-	-	-	-	-	1	-	31
% Peds	-	-	-	-	22.6	-	-	-	-	-	25.8	-	-	-	-	-	48.4	-	-	-	-	-	3.2	-	-

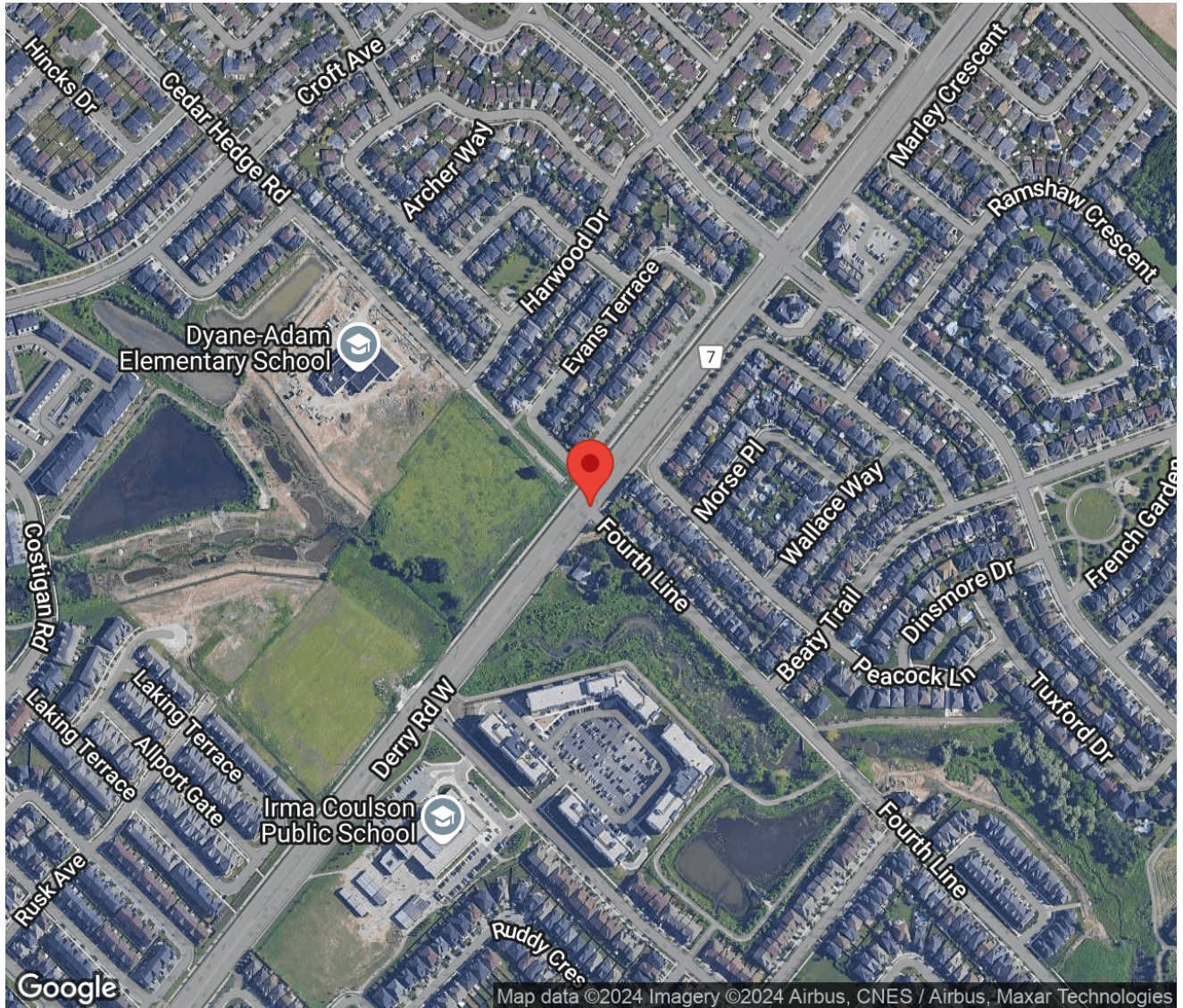
Project #24-390 - GHD

Intersection Count Report

Intersection:	Derry Rd & Fourth Line
Municipality:	Milton
Count Date:	Thursday, Sep 19, 2024
Site Code:	2439000004
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Traffic Count Map

Intersection:	Derry Rd & Fourth Line
Site Code:	2439000004
Municipality:	Milton
Count Date:	Sep 19, 2024



Traffic Count Summary

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Municipality: Milton
Count Date: Sep 19, 2024

Fourth Line - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	0	0	0	0	0	0	0	48	0	48	8	48
08:00 - 09:00	0	0	0	0	0	0	0	0	58	0	58	62	58
BREAK													
16:00 - 17:00	0	0	0	0	0	0	0	0	31	0	31	1	31
17:00 - 18:00	0	0	0	0	0	0	0	0	17	0	17	14	17
GRAND TOTAL	0	0	0	0	0	0	0	0	154	0	154	85	154

Traffic Count Summary

Intersection: Derry Rd & Fourth Line
 Site Code: 2439000004
 Municipality: Milton
 Count Date: Sep 19, 2024

Derry Rd - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	0	491	0	0	491	3	0	1457	27	0	1484	5	1975
08:00 - 09:00	0	670	0	0	670	1	0	1529	38	0	1567	1	2237
BREAK													
16:00 - 17:00	0	1304	0	0	1304	2	0	872	40	0	912	1	2216
17:00 - 18:00	0	1365	0	0	1365	2	0	921	47	0	968	0	2333
GRAND TOTAL	0	3830	0	0	3830	8	0	4779	152	0	4931	7	8761

Traffic Count Data

Intersection: Derry Rd & Fourth Line
 Site Code: 2439000004
 Municipality: Milton
 Count Date: Sep 19, 2024

South Approach - Fourth Line

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0	3
07:15	0	0	10	0	10	0	0	1	0	1	0	0	0	0	0	1
07:30	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	4
07:45	0	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	18	0	18	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	8	0	8	0	0	0	0	0	0	1	0	1	1	5
08:30	0	0	12	0	12	0	0	1	0	1	0	0	0	0	0	19
08:45	0	0	17	0	17	0	0	1	0	1	0	0	0	0	0	38
SUBTOTAL	0	0	102	0	102	0	0	3	0	3	0	0	1	0	1	70

Traffic Count Data

Intersection: Derry Rd & Fourth Line
 Site Code: 2439000004
 Municipality: Milton
 Count Date: Sep 19, 2024

South Approach - Fourth Line

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	0	0	9	0	9	0	0	1	0	1	0	0	0	0	0	0
16:15	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	4
17:15	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	7
17:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	0	0	47	0	47	0	0	1	0	1	0	0	0	0	0	15
GRAND TOTAL	0	0	149	0	149	0	0	4	0	4	0	0	1	0	1	85

Traffic Count Data

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	91	0	0	91	0	10	0	0	10	0	0	0	0	0	3
07:15	0	109	0	0	109	0	6	0	0	6	0	0	0	0	0	0
07:30	0	128	0	0	128	0	5	0	0	5	0	0	0	0	0	0
07:45	0	131	0	0	131	0	11	0	0	11	0	0	0	0	0	0
08:00	0	170	0	0	170	0	9	0	0	9	0	0	0	0	0	0
08:15	0	151	0	0	151	0	7	0	0	7	0	0	0	0	0	0
08:30	0	158	0	0	158	0	15	0	0	15	0	0	0	0	0	0
08:45	0	152	0	0	152	0	8	0	0	8	0	0	0	0	0	1
SUBTOTAL	0	1090	0	0	1090	0	71	0	0	71	0	0	0	0	0	4

Traffic Count Data

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	0	297	0	0	297	0	10	0	0	10	0	0	0	0	0	2
16:15	0	329	0	0	329	0	7	0	0	7	0	0	0	0	0	0
16:30	0	320	0	0	320	0	2	0	0	2	0	0	0	0	0	0
16:45	0	339	0	0	339	0	0	0	0	0	0	0	0	0	0	0
17:00	0	343	0	0	343	0	2	0	0	2	0	0	0	0	0	0
17:15	0	312	0	0	312	0	5	0	0	5	0	0	0	0	0	0
17:30	0	351	0	0	351	0	4	0	0	4	0	0	0	0	0	2
17:45	0	343	0	0	343	0	5	0	0	5	0	0	0	0	0	0
SUBTOTAL	0	2634	0	0	2634	0	35	0	0	35	0	0	0	0	0	4
GRAND TOTAL	0	3724	0	0	3724	0	106	0	0	106	0	0	0	0	0	8

Traffic Count Data

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	0	299	7	0	306	0	1	1	0	2	0	0	0	0	0	4
07:15	0	364	4	0	368	0	7	1	0	8	0	0	0	0	0	0
07:30	0	360	0	0	360	0	9	1	0	10	0	0	0	0	0	0
07:45	0	409	13	0	422	0	8	0	0	8	0	0	0	0	0	1
08:00	0	412	7	0	419	0	4	0	0	4	0	0	0	0	0	0
08:15	0	389	11	0	400	0	5	1	0	6	0	0	0	0	0	0
08:30	0	372	5	0	377	0	8	0	0	8	0	1	0	0	1	0
08:45	0	329	14	0	343	0	9	0	0	9	0	0	0	0	0	1
SUBTOTAL	0	2934	61	0	2995	0	51	4	0	55	0	1	0	0	1	6

Traffic Count Data

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Derry Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	0	203	12	0	215	0	2	0	0	2	0	0	0	0	0	1
16:15	0	228	6	0	234	0	8	0	0	8	0	0	0	0	0	0
16:30	0	195	11	0	206	0	4	0	0	4	0	0	0	0	0	0
16:45	0	227	11	0	238	0	5	0	0	5	0	0	0	0	0	0
17:00	0	232	13	0	245	0	5	0	0	5	0	0	0	0	0	0
17:15	0	210	8	0	218	0	2	0	0	2	0	0	0	0	0	0
17:30	0	257	17	0	274	0	4	0	0	4	0	0	0	0	0	0
17:45	0	207	9	0	216	0	4	0	0	4	0	0	0	0	0	0
SUBTOTAL	0	1759	87	0	1846	0	34	0	0	34	0	0	0	0	0	1
GRAND TOTAL	0	4693	148	0	4841	0	85	4	0	89	0	1	0	0	1	7

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 07:45:00
To: 08:45:00




Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****

Major Road: Derry Rd runs E/W

East Approach

	Out	In	Total
	610	1630	2240
	42	26	68
	0	2	2
	652	1658	2310

Derry Rd

			Totals
0	0	0	0
1	25	1582	1608
0	1	36	37




Peds: 1

Peds: 0






Peds: 0







Derry Rd

Totals			
0	0	0	0
652	610	42	0
0	0	0	0

Peds: 24




West Approach

	Out	In	Total
	1618	610	2228
	26	42	68
	1	0	1
	1645	652	2297


Totals			
	0	50	0
	0	48	0
	0	1	0
	0	1	0

Fourth Line

South Approach

	Out	In	Total
	48	36	84
	1	1	2
	1	0	1
	50	37	87

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Count Date: Sep 19, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

	North Approach						South Approach Fourth Line						East Approach Derry Rd						West Approach Derry Rd						Total Vehicl es
Start Time	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:45					0		0		10	0	0	10	0	142		0	0	142		417	13	0	1	430	582
08:00					0		0		18	0	0	18	0	179		0	0	179		416	7	0	0	423	620
08:15					0		0		9	0	5	9	0	158		0	0	158		394	12	0	0	406	573
08:30					0		0		13	0	19	13	0	173		0	0	173		381	5	0	0	386	572
Grand Total	00					0	5002450					0652	00652	160837011645					2347						
Approach %	-					0	1000-					0100	0-	97.82.20-											
Totals %	0					0	2.102.1					027.8	027.8	68.51.6070.1											
PHF	0					0	0.6900.69					00.91	00.91	0.960.7100.96					0.95						
Cars	0					0	48048					0610	0610	15823601618					2276						
% Cars	0					0	96096					093.6	093.6	98.497.3098.4					97						
Trucks	0					0	101					042	042	251026					69						
% Trucks	0					0	202					06.4	06.4	1.62.701.6					2.9						
Bicycles	0					0	101					00	00	1001					2						
% Bicycles	0					0	202					00	00	0.1000.1					0.1						
Peds	0-					24-					0-					1-					25				
% Peds	0-					96-					0-					4-									

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 16:45:00
To: 17:45:00




Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****

Major Road: Derry Rd runs E/W

East Approach

	Out	In	Total
	1345	947	2292
	11	16	27
	0	0	0
	1356	963	2319

Derry Rd

			Totals
0	0	0	0
0	16	926	942
0	0	49	49




Peds: 0

Peds: 0






Peds: 2







Derry Rd

Totals			
0	0	0	0
1356	1345	11	0
0	0	0	0

Peds: 11




West Approach

	Out	In	Total
	975	1345	2320
	16	11	27
	0	0	0
	991	1356	2347


Totals			
	0	21	0
	0	21	0
	0	0	0
	0	0	0

Fourth Line

South Approach

	Out	In	Total
	21	49	70
	0	0	0
	0	0	0
	21	49	70

 - Cars

 - Trucks

















 - Bicycles

Comments

Peak Hour Summary

Intersection: Derry Rd & Fourth Line
Site Code: 2439000004
Count Date: Sep 19, 2024
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

	North Approach						South Approach Fourth Line						East Approach Derry Rd						West Approach Derry Rd						Total Vehicl es
Start Time					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45					0		0		7	0	0	7	0	339		0	0	339		232	11	0	0	243	589
17:00					0		0		3	0	4	3	0	345		0	0	345		237	13	0	0	250	598
17:15					0		0		5	0	0	5	0	317		0	0	317		212	8	0	0	220	542
17:30					0		0		6	0	7	6	0	355		0	2	355		261	17	0	0	278	639
Grand Total					0	0	0		21	0	11	21	0	1356		0	2	1356		942	49	0	0	991	2368
Approach %					-		0		100	0	-		0	100		0	-			95.1	4.9	0	-		
Totals %					0		0		0.9	0	0.9		0	57.3		0	57.3		39.8	2.1	0	41.8			
PHF					0		0		0.75	0	0.75		0	0.95		0	0.95		0.9	0.72	0	0.89	0.93		
Cars					0		0		21	0	21		0	1345		0	1345		926	49	0	975	2341		
% Cars					0		0		100	0	100		0	99.2		0	99.2		98.3	100	0	98.4	98.9		
Trucks					0		0		0	0	0		0	11		0	11		16	0	0	16	27		
% Trucks					0		0		0	0	0		0	0.8		0	0.8		1.7	0	0	1.6	1.1		
Bicycles					0		0		0	0	0		0	0		0	0		0	0	0	0	0		
% Bicycles					0		0		0	0	0		0	0		0	0		0	0	0	0	0		
Peds					0	-					11	-					2	-					0	-	13
% Peds					0	-					84.6	-					15.4	-					0	-	

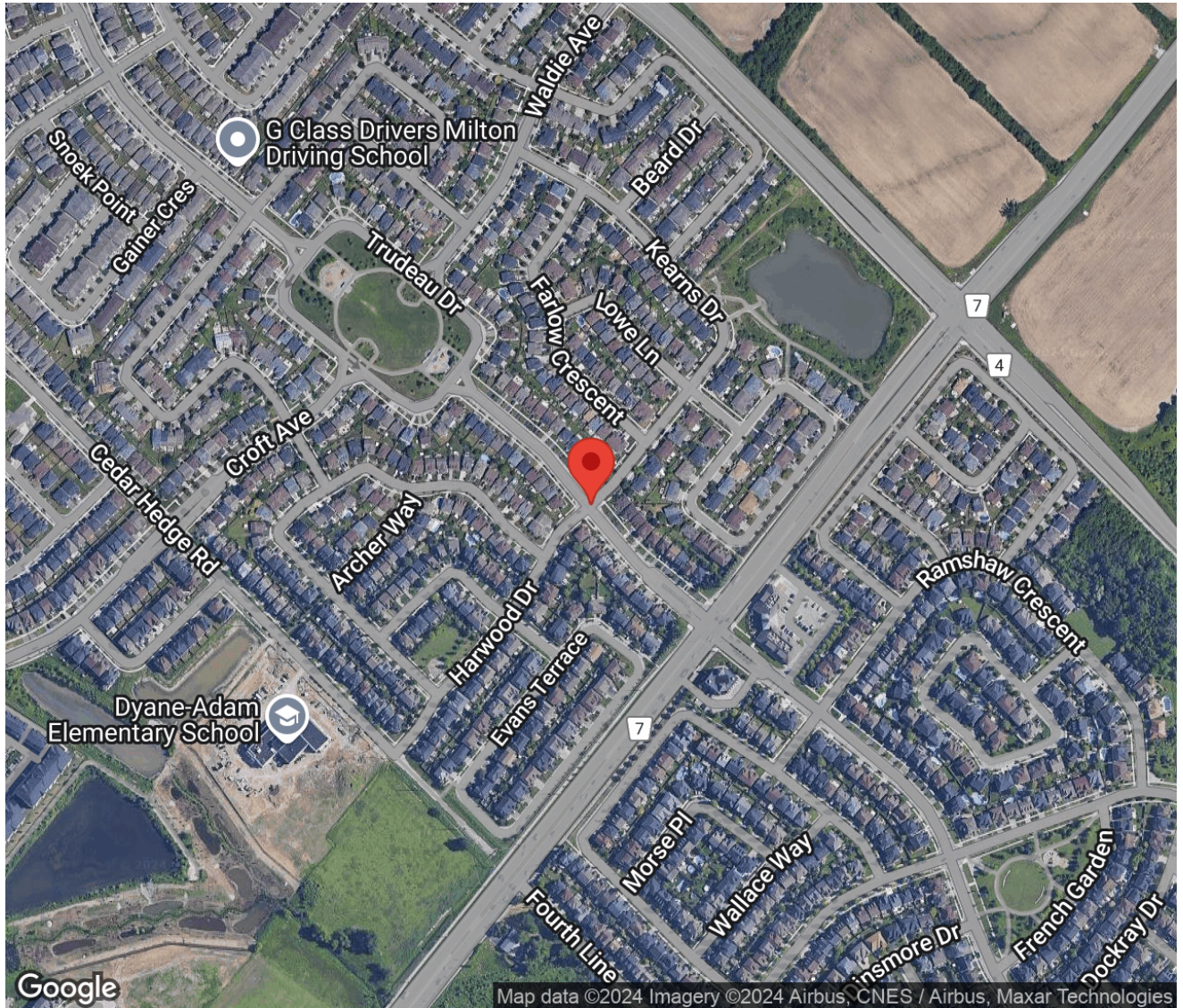
Project #24-390 - GHD

Intersection Count Report

Intersection:	Harwood Dr & Trudeau Dr
Municipality:	Milton
Count Date:	Thursday, Sep 19, 2024
Site Code:	2439000005
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Traffic Count Map

Intersection:	Harwood Dr & Trudeau Dr
Site Code:	2439000005
Municipality:	Milton
Count Date:	Sep 19, 2024



Traffic Count Summary

Intersection: Harwood Dr & Trudeau Dr
 Site Code: 2439000005
 Municipality: Milton
 Count Date: Sep 19, 2024

Trudeau Dr - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	2	120	5	0	127	13	60	51	3	0	114	8	241
08:00 - 09:00	5	116	4	0	125	9	80	47	15	0	142	11	267
BREAK													
16:00 - 17:00	9	97	12	0	118	5	90	68	34	0	192	6	310
17:00 - 18:00	4	85	14	0	103	3	123	68	31	0	222	6	325
GRAND TOTAL	20	418	35	0	473	30	353	234	83	0	670	31	1143

Traffic Count Summary

Intersection: Harwood Dr & Trudeau Dr
 Site Code: 2439000005
 Municipality: Milton
 Count Date: Sep 19, 2024

Harwood Dr - Traffic Summary

Hour	East Approach Totals						West Approach Totals							Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles							
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds		
07:00 - 08:00	42	8	1	0	51	21	14	11	70	0	95	4	146	
08:00 - 09:00	45	11	4	0	60	4	10	7	82	0	99	8	159	
BREAK														
16:00 - 17:00	27	6	3	0	36	8	8	5	38	0	51	10	87	
17:00 - 18:00	28	9	2	0	39	2	8	2	57	0	67	2	106	
GRAND TOTAL	142	34	10	0	186	35	40	25	247	0	312	24	498	

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

North Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	1	15	0	0	16	0	1	0	0	1	0	0	0	0	0	3
07:15	1	33	0	0	34	0	0	0	0	0	0	1	1	0	2	7
07:30	0	35	1	0	36	0	1	1	0	2	0	0	0	0	0	2
07:45	0	33	1	0	34	0	0	1	0	1	0	1	0	0	1	1
08:00	1	33	0	0	34	1	2	0	0	3	0	0	0	0	0	1
08:15	1	31	1	0	33	0	1	0	0	1	0	0	0	0	0	2
08:30	0	26	0	0	26	0	0	0	0	0	0	0	1	0	1	4
08:45	2	21	2	0	25	0	2	0	0	2	0	0	0	0	0	2
SUBTOTAL	6	227	5	0	238	1	7	2	0	10	0	2	2	0	4	22

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

North Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	4	28	2	0	34	0	5	1	0	6	0	0	0	0	0	3
16:15	0	22	1	0	23	1	2	0	0	3	0	1	0	0	1	2
16:30	1	11	6	0	18	0	2	0	0	2	0	0	0	0	0	0
16:45	3	26	2	0	31	0	0	0	0	0	0	0	0	0	0	0
17:00	2	16	4	0	22	0	1	0	0	1	0	0	0	0	0	1
17:15	1	23	2	0	26	0	0	0	0	0	0	0	0	0	0	0
17:30	0	29	4	0	33	0	0	0	0	0	0	0	0	0	0	2
17:45	1	15	4	0	20	0	0	0	0	0	0	1	0	0	1	0
SUBTOTAL	12	170	25	0	207	1	10	1	0	12	0	2	0	0	2	8
GRAND TOTAL	18	397	30	0	445	2	17	3	0	22	0	4	2	0	6	30

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

South Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	9	7	0	0	16	0	1	0	0	1	0	0	0	0	0	1
07:15	12	6	0	0	18	0	3	0	0	3	0	1	0	0	1	1
07:30	12	12	2	0	26	1	0	0	0	1	0	0	0	0	0	5
07:45	25	18	1	0	44	1	2	0	0	3	0	1	0	0	1	1
08:00	38	18	0	0	56	1	1	0	0	2	0	0	0	0	0	3
08:15	13	5	4	0	22	1	4	1	0	6	0	0	0	0	0	1
08:30	9	9	5	0	23	0	1	1	0	2	0	0	0	0	0	3
08:45	17	7	2	0	26	1	2	2	0	5	0	0	0	0	0	4
SUBTOTAL	135	82	14	0	231	5	14	4	0	23	0	2	0	0	2	19

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

South Approach - Trudeau Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	18	11	11	0	40	0	0	0	0	0	0	0	0	0	0	4
16:15	25	17	11	0	53	1	3	1	0	5	0	0	0	0	0	0
16:30	22	14	3	0	39	1	2	0	0	3	0	1	0	0	1	1
16:45	23	19	8	0	50	0	0	0	0	0	0	1	0	0	1	1
17:00	30	14	10	0	54	0	1	0	0	1	0	0	0	0	0	0
17:15	37	24	5	0	66	0	0	0	0	0	0	0	0	0	0	3
17:30	28	12	9	0	49	0	0	0	0	0	0	0	0	0	0	0
17:45	28	16	7	0	51	0	1	0	0	1	0	0	0	0	0	3
SUBTOTAL	211	127	64	0	402	2	7	1	0	10	0	2	0	0	2	12
GRAND TOTAL	346	209	78	0	633	7	21	5	0	33	0	4	0	0	4	31

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Harwood Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	3
07:15	10	1	1	0	12	0	0	0	0	0	0	0	0	0	0	8
07:30	15	4	0	0	19	0	0	0	0	0	0	0	0	0	0	7
07:45	11	2	0	0	13	0	0	0	0	0	1	0	0	0	1	3
08:00	7	3	0	0	10	0	0	0	0	0	0	0	0	0	0	3
08:15	10	2	1	0	13	0	0	0	0	0	0	0	0	0	0	1
08:30	12	3	3	0	18	1	0	0	0	1	0	0	0	0	0	0
08:45	15	3	0	0	18	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	85	19	5	0	109	1	0	0	0	1	1	0	0	0	1	25

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

East Approach - Harwood Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0
16:15	4	2	1	0	7	2	0	1	0	3	0	0	0	0	0	5
16:30	7	1	0	0	8	0	0	0	0	0	0	0	0	0	0	2
16:45	11	3	0	0	14	0	0	0	0	0	0	0	0	0	0	1
17:00	7	2	0	0	9	0	0	0	0	0	0	0	0	0	0	1
17:15	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0
17:30	6	3	2	0	11	0	0	0	0	0	0	0	0	0	0	0
17:45	8	4	0	0	12	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	53	15	4	0	72	2	0	1	0	3	0	0	0	0	0	10
GRAND TOTAL	138	34	9	0	181	3	0	1	0	4	1	0	0	0	1	35

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Harwood Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	5	1	14	0	20	0	0	0	0	0	0	0	0	0	0	4
07:15	3	5	17	0	25	0	0	0	0	0	0	0	0	0	0	0
07:30	4	2	16	0	22	0	0	0	0	0	0	0	0	0	0	0
07:45	2	3	20	0	25	0	0	3	0	3	0	0	0	0	0	0
08:00	4	4	32	0	40	0	0	3	0	3	0	0	0	0	0	1
08:15	4	2	15	0	21	0	0	0	0	0	0	0	0	0	0	4
08:30	1	1	14	0	16	0	0	0	0	0	0	0	0	0	0	3
08:45	1	0	18	0	19	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	24	18	146	0	188	0	0	6	0	6	0	0	0	0	0	12

Traffic Count Data

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Municipality: Milton
Count Date: Sep 19, 2024

West Approach - Harwood Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	2	2	12	0	16	0	1	0	0	1	0	0	0	0	0	7
16:15	1	0	11	0	12	0	1	0	0	1	0	0	0	0	0	0
16:30	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	3
16:45	4	0	10	0	14	0	1	0	0	1	0	0	0	0	0	0
17:00	4	1	16	0	21	0	0	0	0	0	0	0	0	0	0	0
17:15	2	0	12	0	14	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	8	0	8	0	0	0	0	0	0	0	1	0	1	1
17:45	2	1	20	0	23	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	16	4	94	0	114	0	3	0	0	3	0	0	1	0	1	12
GRAND TOTAL	40	22	240	0	302	0	3	6	0	9	0	0	1	0	1	24

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00




Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****





Major Road: Trudeau Dr runs N/S

North Approach




	Out	In	Total
	137	68	205
	7	7	14
	1	1	2
Totals	145	76	221

Trudeau Dr








	0	1	0	0
	2	4	1	0
	3	132	2	0
Totals	5	137	3	0

East Approach

	Out	In	Total
	55	20	75
	0	2	2
	1	0	1
Totals	56	22	78

Harwood Dr

				Totals
	0	0	0	0
	0	0	14	14
	0	0	11	11
	0	6	83	89

Peds: 5








Peds: 6






Peds: 14








Peds: 10

Harwood Dr

Totals			
	0	0	0
	1	1	0
	11	11	0
	44	43	1




West Approach

	Out	In	Total
	108	102	210
	6	6	12
	0	0	0
Totals	114	108	222


Totals				
	92	61	8	0
	4	7	1	0
	0	1	0	0

Trudeau Dr

South Approach

	Out	In	Total
	148	258	406
	12	10	22
	1	2	3
Totals	161	270	431

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Count Date: Sep 19, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Trudeau Dr						South Approach Trudeau Dr						East Approach Harwood Dr						West Approach Harwood Dr						Total Vehicles
	←	↑	→	↺	Peds	Total	←	↑	→	↺	Peds	Total	←	↑	→	↺	Peds	Total	←	↑	→	↺	Peds	Total	
07:30	0	36	2	0	2	38	13	12	2	0	5	27	15	4	0	0	7	19	4	2	16	0	0	22	106
07:45	0	34	2	0	1	36	26	21	1	0	1	48	12	2	0	0	3	14	2	3	23	0	0	28	126
08:00	2	35	0	0	1	37	39	19	0	0	3	58	7	3	0	0	3	10	4	4	35	0	1	43	148
08:15	1	32	1	0	2	34	14	9	5	0	1	28	10	2	1	0	1	13	4	2	15	0	4	21	96
Grand Total	3	137	5	0	6	145	92	61	8	0	10	161	44	11	1	0	14	56	14	11	89	0	5	114	476
Approach %	2.1	94.5	3.4	0	-	-	57.1	37.9	5	0	-	-	78.6	19.6	1.8	0	-	-	12.3	9.6	78.1	0	-	-	-
Totals %	0.6	28.8	1.1	0	-	30.5	19.3	12.8	1.7	0	-	33.8	9.2	2.3	0.2	0	-	11.8	2.9	2.3	18.7	0	-	23.9	-
PHF	0.38	0.95	0.63	0	-	0.95	0.59	0.73	0.4	0	-	0.69	0.73	0.69	0.25	0	-	0.74	0.88	0.69	0.64	0	-	0.66	0.8
Cars	2	132	3	0	-	137	88	53	7	0	-	148	43	11	1	0	-	55	14	11	83	0	-	108	448
% Cars	66.7	96.4	60	0	-	94.5	95.7	86.9	87.5	0	-	91.9	97.7	100	100	0	-	98.2	100	100	93.3	0	-	94.7	94.1
Trucks	1	4	2	0	-	7	4	7	1	0	-	12	0	0	0	0	-	0	0	0	6	0	-	6	25
% Trucks	33.3	2.9	40	0	-	4.8	4.3	11.5	12.5	0	-	7.5	0	0	0	0	-	0	0	0	6.7	0	-	5.3	5.3
Bicycles	0	1	0	0	-	1	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	3
% Bicycles	0	0.7	0	0	-	0.7	0	1.6	0	0	-	0.6	2.3	0	0	0	-	1.8	0	0	0	0	-	0	0.6
Peds	-	-	-	-	6	-	-	-	-	-	10	-	-	-	-	-	14	-	-	-	-	-	5	-	35
% Peds	-	-	-	-	17.1	-	-	-	-	-	28.6	-	-	-	-	-	40	-	-	-	-	-	14.3	-	-

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 16:45:00
To: 17:45:00




Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****





Major Road: Trudeau Dr runs N/S

North Approach




	Out	In	Total
	112	81	193
	1	1	2
	0	1	1
Totals	113	83	196

Trudeau Dr




	0	0	0	0
	0	1	0	0
	12	94	6	0
Totals	12	95	6	0










East Approach

	Out	In	Total
	41	39	80
	0	1	1
	0	0	0
Totals	41	40	81

Harwood Dr

				Totals
0	0	0	0	0
0	0	10	0	10
0	1	1	0	2
1	0	46	0	47

Peds: 3










Peds: 1

Peds: 2




Peds: 4








Harwood Dr

Totals			
0	0	0	0
2	2	0	0
8	8	0	0
31	31	0	0




West Approach

	Out	In	Total
	57	138	195
	1	0	1
	1	0	1
Totals	59	138	197


Totals				
	118	69	32	0
	0	1	0	0
	0	1	0	0

Trudeau Dr

South Approach

	Out	In	Total
	219	171	390
	1	1	2
	1	1	2
Totals	221	173	394

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Harwood Dr & Trudeau Dr
Site Code: 2439000005
Count Date: Sep 19, 2024
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Trudeau Dr						South Approach Trudeau Dr						East Approach Harwood Dr						West Approach Harwood Dr						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:45	3	26	2	0	0	31	23	20	8	0	1	51	11	3	0	0	1	14	4	1	10	0	0	15	111
17:00	2	17	4	0	1	23	30	15	10	0	0	55	7	2	0	0	1	9	4	1	16	0	0	21	108
17:15	1	23	2	0	0	26	37	24	5	0	3	66	7	0	0	0	0	7	2	0	12	0	0	14	113
17:30	0	29	4	0	2	33	28	12	9	0	0	49	6	3	2	0	0	11	0	0	9	0	1	9	102
Grand Total	6	95	12	0	3	113	118	71	32	0	4	221	31	8	2	0	2	41	10	2	47	0	1	59	434
Approach %	5.3	84.1	10.6	0	-	-	53.4	32.1	14.5	0	-	-	75.6	19.5	4.9	0	-	-	16.9	3.4	79.7	0	-	-	-
Totals %	1.4	21.9	2.8	0	-	26	27.2	16.4	7.4	0	-	50.9	7.1	1.8	0.5	0	-	9.4	2.3	0.5	10.8	0	-	13.6	-
PHF	0.5	0.82	0.75	0	-	0.86	0.8	0.74	0.8	0	-	0.84	0.7	0.67	0.25	0	-	0.73	0.63	0.5	0.73	0	-	0.7	0.96
Cars	6	94	12	0	-	112	118	69	32	0	-	219	31	8	2	0	-	41	10	1	46	0	-	57	429
% Cars	100	98.9	100	0	-	99.1	100	97.2	100	0	-	99.1	100	100	100	0	-	100	100	50	97.9	0	-	96.6	98.8
Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	3
% Trucks	0	1.1	0	0	-	0.9	0	1.4	0	0	-	0.5	0	0	0	0	-	0	0	50	0	0	-	1.7	0.7
Bicycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	2
% Bicycles	0	0	0	0	-	0	0	1.4	0	0	-	0.5	0	0	0	0	-	0	0	2.1	0	0	-	1.7	0.5
Peds	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	1	-	10
% Peds	-	-	-	-	30	-	-	-	-	-	40	-	-	-	-	-	20	-	-	-	-	-	10	-	-

Project #24-390 - GHD

Intersection Count Report

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave

Municipality: Milton

Count Date: Thursday, Sep 19, 2024

Site Code: 2439000006

Count Categories: Cars, Trucks, Bicycles, Pedestrians

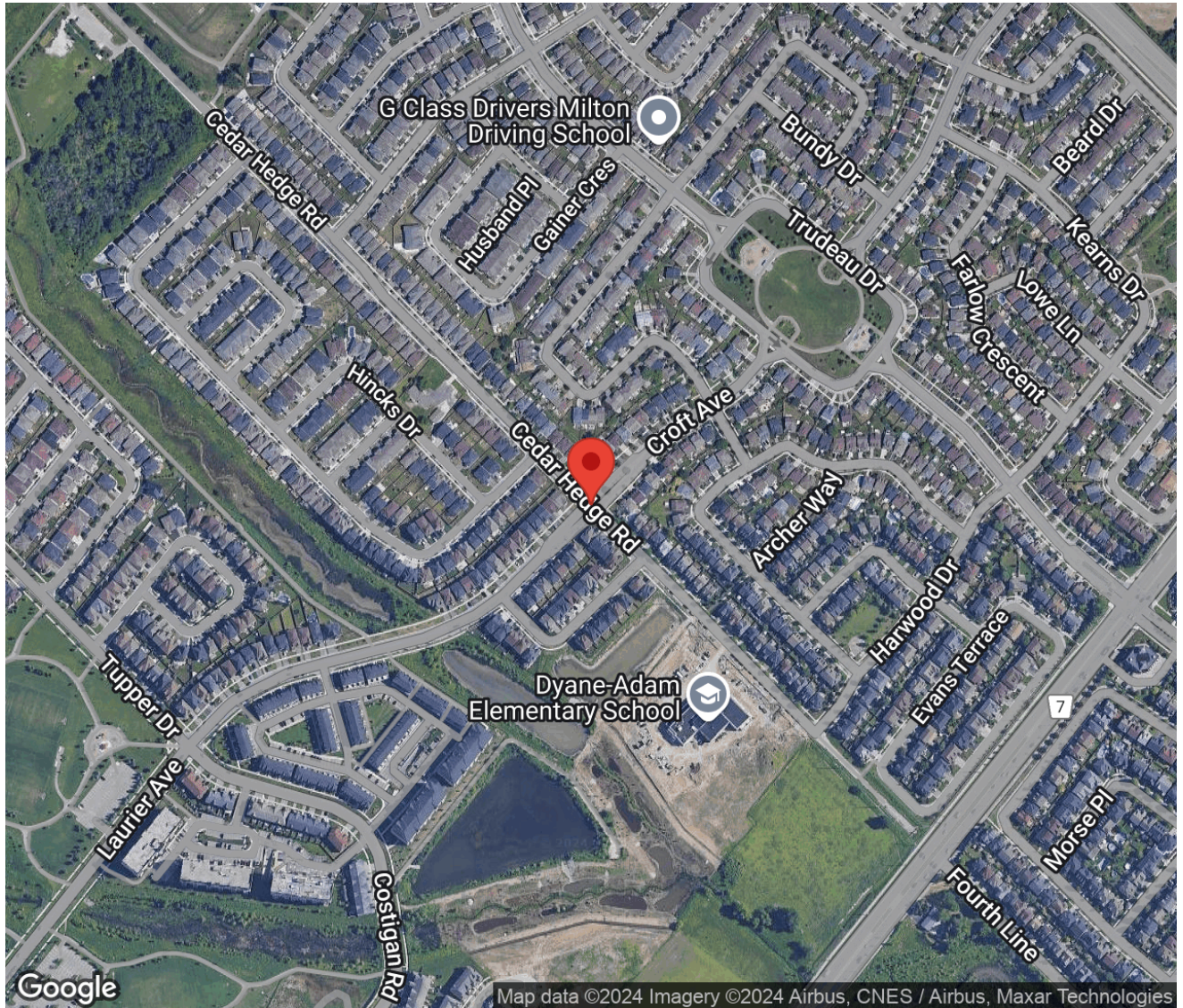
Count Period: 07:00-09:00, 16:00-18:00

Weather: Clear

Comments:

Traffic Count Map

Intersection:	Cedar Hedge Rd & Laurier Ave - Croft Ave
Site Code:	2439000006
Municipality:	Milton
Count Date:	Sep 19, 2024



Traffic Count Summary

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

Cedar Hedge Rd - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	8	16	74	0	98	0	38	18	3	0	59	4	157
08:00 - 09:00	9	5	103	0	117	24	59	22	9	0	90	16	207
BREAK													
16:00 - 17:00	6	11	70	0	87	6	67	17	3	0	87	17	174
17:00 - 18:00	2	15	96	0	113	0	86	12	6	0	104	2	217
GRAND TOTAL	25	47	343	0	415	30	250	69	21	0	340	39	755

Traffic Count Summary

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

Croft Ave - Traffic Summary

Hour	East Approach Totals						West Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	6	62	4	0	72	3	175	108	26	0	309	11	381
08:00 - 09:00	9	132	3	1	145	6	174	113	26	0	313	21	458
BREAK													
16:00 - 17:00	11	177	5	0	193	5	119	107	33	0	259	13	452
17:00 - 18:00	12	221	5	0	238	0	149	85	49	0	283	13	521
GRAND TOTAL	38	592	17	1	648	14	617	413	134	0	1164	58	1812

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

North Approach - Cedar Hedge Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	3	8	0	11	0	0	0	0	0	0	0	0	0	0	0
07:15	2	4	13	0	19	0	0	2	0	2	0	0	0	0	0	0
07:30	3	3	22	0	28	0	0	0	0	0	0	0	0	0	0	0
07:45	2	6	27	0	35	1	0	2	0	3	0	0	0	0	0	0
08:00	1	1	36	0	38	0	0	0	0	0	0	0	0	0	0	6
08:15	3	1	17	0	21	0	0	2	0	2	0	0	0	0	0	3
08:30	1	0	11	0	12	0	0	0	0	0	0	0	0	0	0	2
08:45	3	3	37	0	43	1	0	0	0	1	0	0	0	0	0	13
SUBTOTAL	15	21	171	0	207	2	0	6	0	8	0	0	0	0	0	24

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

North Approach - Cedar Hedge Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	1	4	11	0	16	2	0	0	0	2	0	0	0	0	0	6
16:15	2	3	9	0	14	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	27	0	28	0	0	0	0	0	0	0	0	0	0	0
16:45	0	3	21	0	24	1	0	2	0	3	0	0	0	0	0	0
17:00	0	7	24	0	31	0	0	0	0	0	0	0	0	0	0	0
17:15	1	3	19	0	23	0	0	0	0	0	0	0	0	0	0	0
17:30	1	3	24	0	28	0	0	0	0	0	0	0	0	0	0	0
17:45	0	2	29	0	31	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	5	26	164	0	195	3	0	2	0	5	0	0	0	0	0	6
GRAND TOTAL	20	47	335	0	402	5	0	8	0	13	0	0	0	0	0	30

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

South Approach - Cedar Hedge Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	7	1	0	0	8	0	0	0	0	0	0	0	0	0	0	1
07:15	9	3	0	0	12	0	0	0	0	0	0	0	0	0	0	0
07:30	9	6	1	0	16	3	0	0	0	3	0	0	0	0	0	3
07:45	10	7	2	0	19	0	1	0	0	1	0	0	0	0	0	0
08:00	26	8	7	0	41	0	1	0	0	1	0	0	0	0	0	1
08:15	12	3	0	0	15	0	1	0	0	1	0	0	0	0	0	4
08:30	3	5	1	0	9	0	0	0	0	0	0	0	0	0	0	1
08:45	18	3	1	0	22	0	1	0	0	1	0	0	0	0	0	10
SUBTOTAL	94	36	12	0	142	3	4	0	0	7	0	0	0	0	0	20

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

South Approach - Cedar Hedge Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	13	6	1	0	20	0	0	1	0	1	0	0	0	0	0	10
16:15	14	3	0	0	17	0	1	0	0	1	0	0	0	0	0	1
16:30	19	3	1	0	23	0	0	0	0	0	0	0	0	0	0	4
16:45	21	3	0	0	24	0	0	0	0	0	0	1	0	0	1	2
17:00	19	6	0	0	25	0	0	0	0	0	0	0	0	0	0	2
17:15	35	1	1	0	37	0	0	0	0	0	0	0	0	0	0	0
17:30	18	2	4	0	24	0	0	0	0	0	0	0	0	0	0	0
17:45	14	3	1	0	18	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	153	27	8	0	188	0	1	1	0	2	0	1	0	0	1	19
GRAND TOTAL	247	63	20	0	330	3	5	1	0	9	0	1	0	0	1	39

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

East Approach - Croft Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0
07:15	1	13	0	0	14	0	1	0	0	1	0	0	0	0	0	0
07:30	1	16	1	0	18	0	0	0	0	0	0	0	0	0	0	2
07:45	3	20	3	0	26	1	1	0	0	2	0	2	0	0	2	1
08:00	7	40	1	0	48	1	1	0	0	2	0	0	0	0	0	2
08:15	0	21	0	0	21	0	3	0	0	3	0	0	0	0	0	0
08:30	1	20	0	1	22	0	0	0	0	0	0	0	0	0	0	1
08:45	0	44	2	0	46	0	3	0	0	3	0	0	0	0	0	3
SUBTOTAL	13	183	7	1	204	2	9	0	0	11	0	2	0	0	2	9

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

East Approach - Croft Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
16:00	2	38	0	0	40	0	0	0	0	0	0	0	0	0	0	2
16:15	1	36	2	0	39	0	2	0	0	2	0	0	0	0	0	2
16:30	4	44	2	0	50	0	1	0	0	1	0	0	0	0	0	0
16:45	4	56	0	0	60	0	0	1	0	1	0	0	0	0	0	1
17:00	6	56	2	0	64	0	1	0	0	1	0	0	0	0	0	0
17:15	1	54	2	0	57	0	0	0	0	0	0	0	0	0	0	0
17:30	3	62	0	0	65	0	0	0	0	0	0	0	0	0	0	0
17:45	2	47	1	0	50	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	23	393	9	0	425	0	5	1	0	6	0	0	0	0	0	5
GRAND TOTAL	36	576	16	1	629	2	14	1	0	17	0	2	0	0	2	14

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

West Approach - Laurier Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	41	19	5	0	65	0	1	0	0	1	0	0	0	0	0	1
07:15	46	26	7	0	79	1	0	0	0	1	0	0	0	0	0	3
07:30	40	30	3	0	73	0	1	0	0	1	0	0	0	0	0	6
07:45	47	31	8	0	86	0	0	3	0	3	0	0	0	0	0	1
08:00	46	32	8	0	86	0	1	0	0	1	0	0	0	0	0	1
08:15	57	31	8	0	96	1	0	0	0	1	0	0	0	0	0	9
08:30	46	25	6	0	77	0	0	0	0	0	0	0	0	0	0	2
08:45	24	23	4	0	51	0	1	0	0	1	0	0	0	0	0	9
SUBTOTAL	347	217	49	0	613	2	4	3	0	9	0	0	0	0	0	32

Traffic Count Data

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
 Site Code: 2439000006
 Municipality: Milton
 Count Date: Sep 19, 2024

West Approach - Laurier Ave

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
16:00	44	30	7	0	81	3	2	0	0	5	0	0	0	0	0	8
16:15	28	22	7	0	57	0	1	0	0	1	0	0	0	0	0	1
16:30	18	26	7	0	51	1	2	0	0	3	0	0	0	0	0	2
16:45	25	23	12	0	60	0	1	0	0	1	0	0	0	0	0	2
17:00	31	23	11	0	65	0	1	0	0	1	0	0	0	0	0	1
17:15	41	27	22	0	90	0	0	0	0	0	0	0	0	0	0	5
17:30	33	15	8	0	56	0	1	0	0	1	0	0	0	0	0	2
17:45	44	18	8	0	70	0	0	0	0	0	0	0	0	0	0	5
SUBTOTAL	264	184	82	0	530	4	8	0	0	12	0	0	0	0	0	26
GRAND TOTAL	611	401	131	0	1143	6	12	3	0	21	0	0	0	0	0	58

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 09:00:00

One Hour Peak

From: 07:30:00
To: 08:30:00




Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
Site Code: 2439000006
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****





Major Road: Croft Ave runs E/W

North Approach




	Out	In	Total
	122	219	341
	5	4	9
	0	0	0
Totals	127	223	350

Cedar Hedge Rd




	0	0	0	0
	4	0	1	0
	102	11	9	0
Totals	106	11	10	0









East Approach

	Out	In	Total
	113	143	256
	7	3	10
	2	0	2
Totals	122	146	268

Laurier Ave

				Totals
0	0	0	0	0
0	0	1	190	191
0	0	2	124	126
0	0	3	27	30

Peds: 9









Peds: 17

Peds: 5




Peds: 8





Croft Ave

Totals			
0	0	0	0
5	5	0	0
104	97	5	2
13	11	2	0




West Approach

	Out	In	Total
	341	256	597
	6	12	18
	0	2	2
Totals	347	270	617


Totals				
60	57	24	10	0
27	3	3	0	0
10	0	0	0	0
0	0	0	0	0

Cedar Hedge Rd

South Approach

	Out	In	Total
	91	49	140
	6	5	11
	0	0	0
Totals	97	54	151

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
Site Code: 2439000006
Count Date: Sep 19, 2024
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Cedar Hedge Rd						South Approach Cedar Hedge Rd						East Approach Croft Ave						West Approach Laurier Ave						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:30	3	3	22	0	0	28	12	6	1	0	3	19	1	16	1	0	2	18	40	31	3	0	6	74	139
07:45	3	6	29	0	0	38	10	8	2	0	0	20	4	23	3	0	1	30	47	31	11	0	1	89	177
08:00	1	1	36	0	6	38	26	9	7	0	1	42	8	41	1	0	2	50	46	33	8	0	1	87	217
08:15	3	1	19	0	3	23	12	4	0	0	4	16	0	24	0	0	0	24	58	31	8	0	9	97	160
Grand Total	10	11	106	0	9	127	60	27	10	0	8	97	13	104	5	0	5	122	191	126	30	0	17	347	693
Approach %	7.9	8.7	83.5	0	-	-	61.9	27.8	10.3	0	-	-	10.7	85.2	4.1	0	-	-	55	36.3	8.6	0	-	-	-
Totals %	1.4	1.6	15.3	0	-	18.3	8.7	3.9	1.4	0	-	14	1.9	15	0.7	0	-	17.6	27.6	18.2	4.3	0	-	50.1	-
PHF	0.83	0.46	0.74	0	-	0.84	0.58	0.75	0.36	0	-	0.58	0.41	0.63	0.42	0	-	0.61	0.82	0.95	0.68	0	-	0.89	0.8
Cars	9	11	102	0	-	122	57	24	10	0	-	91	11	97	5	0	-	113	190	124	27	0	-	341	667
% Cars	90	100	96.2	0	-	96.1	95	88.9	100	0	-	93.8	84.6	93.3	100	0	-	92.6	99.5	98.4	90	0	-	98.3	96.2
Trucks	1	0	4	0	-	5	3	3	0	0	-	6	2	5	0	0	-	7	1	2	3	0	-	6	24
% Trucks	10	0	3.8	0	-	3.9	5	11.1	0	0	-	6.2	15.4	4.8	0	0	-	5.7	0.5	1.6	10	0	-	1.7	3.5
Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	2
% Bicycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1.9	0	0	-	1.6	0	0	0	0	-	0	0.3
Peds	-	-	-	-	9	-	-	-	-	-	8	-	-	-	-	-	5	-	-	-	-	-	17	-	39
% Peds	-	-	-	-	23.1	-	-	-	-	-	20.5	-	-	-	-	-	12.8	-	-	-	-	-	43.6	-	-

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 16:45:00
To: 17:45:00




Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
Site Code: 2439000006
Count Date: Sep 19, 2024

Weather conditions: Clear




**** Unsignalized Intersection ****





Major Road: Croft Ave runs E/W

North Approach




	Out	In	Total
	106	146	252
	3	1	4
	0	1	1
Totals	109	148	257

Cedar Hedge Rd




	0	0	0	0
	2	0	1	0
	88	16	2	0
Totals	90	16	3	0










East Approach

	Out	In	Total
	246	95	341
	2	4	6
	0	0	0
Totals	248	99	347

Laurier Ave

				Totals
0	0	0	0	0
0	0	0	130	130
0	3	88	91	91
0	0	53	53	53

Peds: 0




Peds: 10







Peds: 1




Peds: 4








Croft Ave

Totals			
0	0	0	0
5	4	1	0
229	228	1	0
14	14	0	0




West Approach

	Out	In	Total
	271	409	680
	3	3	6
	0	0	0
Totals	274	412	686


Totals				
	93	12	5	0
	0	0	0	0
	0	1	0	0

Cedar Hedge Rd

South Approach

	Out	In	Total
	110	83	193
	0	0	0
	1	0	1
Totals	111	83	194

 - Cars

 - Trucks

 - Bicycles

Comments

Peak Hour Summary

Intersection: Cedar Hedge Rd & Laurier Ave - Croft Ave
Site Code: 2439000006
Count Date: Sep 19, 2024
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Cedar Hedge Rd						South Approach Cedar Hedge Rd						East Approach Croft Ave						West Approach Laurier Ave						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
16:45	1	3	23	0	0	27	21	4	0	0	2	25	4	56	1	0	1	61	25	24	12	0	2	61	174
17:00	0	7	24	0	0	31	19	6	0	0	2	25	6	57	2	0	0	65	31	24	11	0	1	66	187
17:15	1	3	19	0	0	23	35	1	1	0	0	37	1	54	2	0	0	57	41	27	22	0	5	90	207
17:30	1	3	24	0	0	28	18	2	4	0	0	24	3	62	0	0	0	65	33	16	8	0	2	57	174
Grand Total	3	16	90	0	0	109	93	13	5	0	4	111	14	229	5	0	1	248	130	91	53	0	10	274	742
Approach %	2.8	14.7	82.6	0	-	-	83.8	11.7	4.5	0	-	-	5.6	92.3	2	0	-	-	47.4	33.2	19.3	0	-	-	-
Totals %	0.4	2.2	12.1	0	-	14.7	12.5	1.8	0.7	0	-	15	1.9	30.9	0.7	0	-	33.4	17.5	12.3	7.1	0	-	36.9	-
PHF	0.75	0.57	0.94	0	-	0.88	0.66	0.54	0.31	0	-	0.75	0.58	0.92	0.63	0	-	0.95	0.79	0.84	0.6	0	-	0.76	0.9
Cars	2	16	88	0	-	106	93	12	5	0	-	110	14	228	4	0	-	246	130	88	53	0	-	271	733
% Cars	66.7	100	97.8	0	-	97.2	100	92.3	100	0	-	99.1	100	99.6	80	0	-	99.2	100	96.7	100	0	-	98.9	98.8
Trucks	1	0	2	0	-	3	0	0	0	0	-	0	0	1	1	0	-	2	0	3	0	0	-	3	8
% Trucks	33.3	0	2.2	0	-	2.8	0	0	0	0	-	0	0	0.4	20	0	-	0.8	0	3.3	0	0	-	1.1	1.1
Bicycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles	0	0	0	0	-	0	0	7.7	0	0	-	0.9	0	0	0	0	-	0	0	0	0	0	-	0	0.1
Peds	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	10	-	15
% Peds	-	-	-	-	0	-	-	-	-	-	26.7	-	-	-	-	-	6.7	-	-	-	-	-	66.7	-	-

Pattern 1

Time: 6:00
 Cycle Length: 120
 Offset (%): 3%

Direction	WBL	EB		
Phase	1	2	3	4
%	9	56	0	
Direction		WB		NB
Phase	5	6	7	8
%	0	65	0	35

Pattern 2

Time: 9:30, 18:30
 Cycle Length: 110
 Offset (%): 21%

Direction	WBL	EB		
Phase	1	2	3	4
%	10	52	0	
Direction		WB		NB
Phase	5	6	7	8
%	0	62	0	38

Pattern 3

Time: 15:15
 Cycle Length: 120
 Offset (%): 4%

Direction	WBL	EB		
Phase	1	2	3	4
%	9	56	0	
Direction		WB		NB
Phase	5	6	7	8
%	0	65	0	35

Pattern 4

Time: Weekend, 07:00-19:00
 Cycle Length: 110
 Offset (%): 21%

Direction	WBL	EB		
Phase	1	2	3	4
%	10	52	0	
Direction		WB		NB
Phase	5	6	7	8
%	0	62	0	38

Pattern 5

Time: 21:00
 Cycle Length: Local
 Offset (%):

Direction	WBL	EB		
Phase	1	2	3	4
%				
Direction		WB		NB
Phase	5	6	7	8
%				

Pattern 6

Time:
 Cycle Length:
 Offset (%):

Direction				
Phase	1	2	3	4
%		x		x
Direction				
Phase	5	6	7	8
%		x		x



Date: 9-Jul-2018

Intersection: Derry & Trudeau Dr.

8 Phase Basic Timing Sheet

	1	2	3	4	5	6	7	8	2 Ped	4 Ped	6 Ped	8 Ped
Phases in use	X	X		X	X	X		X	X	x	x	x
Direction	WBL	EB		SB	EBL	WB		NB				
Min Green	5	20		10	5	20		10				
Veh Ext.	3.0	5.0		3.0	3.0	5.0		3.0				
Yellow	3	3.7		3.7	3	3.7		3.7				
Red	1	3		3.2	1	3		3.2				
Walk		7		7		7		7				
Don't Walk		23		25		23		25				
Max 1	15	40		25	15	40		25				
Max 2												
Max 3												
Veh Recall		x				x						
Ped Recall												

Notes:

Pedestrian Reservice Active
Sync Reference to 3:15

Pattern 1

Time: 6:00
 Cycle Length: 120
 Offset (%): 28%

Direction	WBL	EB		SB
Phase	1	2	3	4
%	9	58	0	33
Direction	EBL	WB		NB
Phase	5	6	7	8
%	9	58	0	33

Pattern 2

Time: 9:30, 18:30
 Cycle Length: 110
 Offset (%): 54%

Direction	WBL	EB		SB
Phase	1	2	3	4
%	10	54	0	36
Direction	EBL	WB		NB
Phase	5	6	7	8
%	10	54	0	36

Pattern 3

Time: 15:15
 Cycle Length: 120
 Offset (%): 68%

Direction	WBL	EB		SB
Phase	1	2	3	4
%	9	58	0	33
Direction	EBL	WB		NB
Phase	5	6	7	8
%	9	58	0	33

Pattern 4

Time: Weekend, 07:00-19:00
 Cycle Length: 110
 Offset (%): 54%

Direction	WBL	EB		SB
Phase	1	2	3	4
%	10	54	0	36
Direction	EBL	WB		NB
Phase	5	6	7	8
%	10	54	0	36

Pattern 5

Time: 21:00
 Cycle Length: Local
 Offset (%):

Direction	WBL	EB		SB
Phase	1	2	3	4
%				
Direction	EBL	WB		NB
Phase	5	6	7	8
%				

Pattern 6

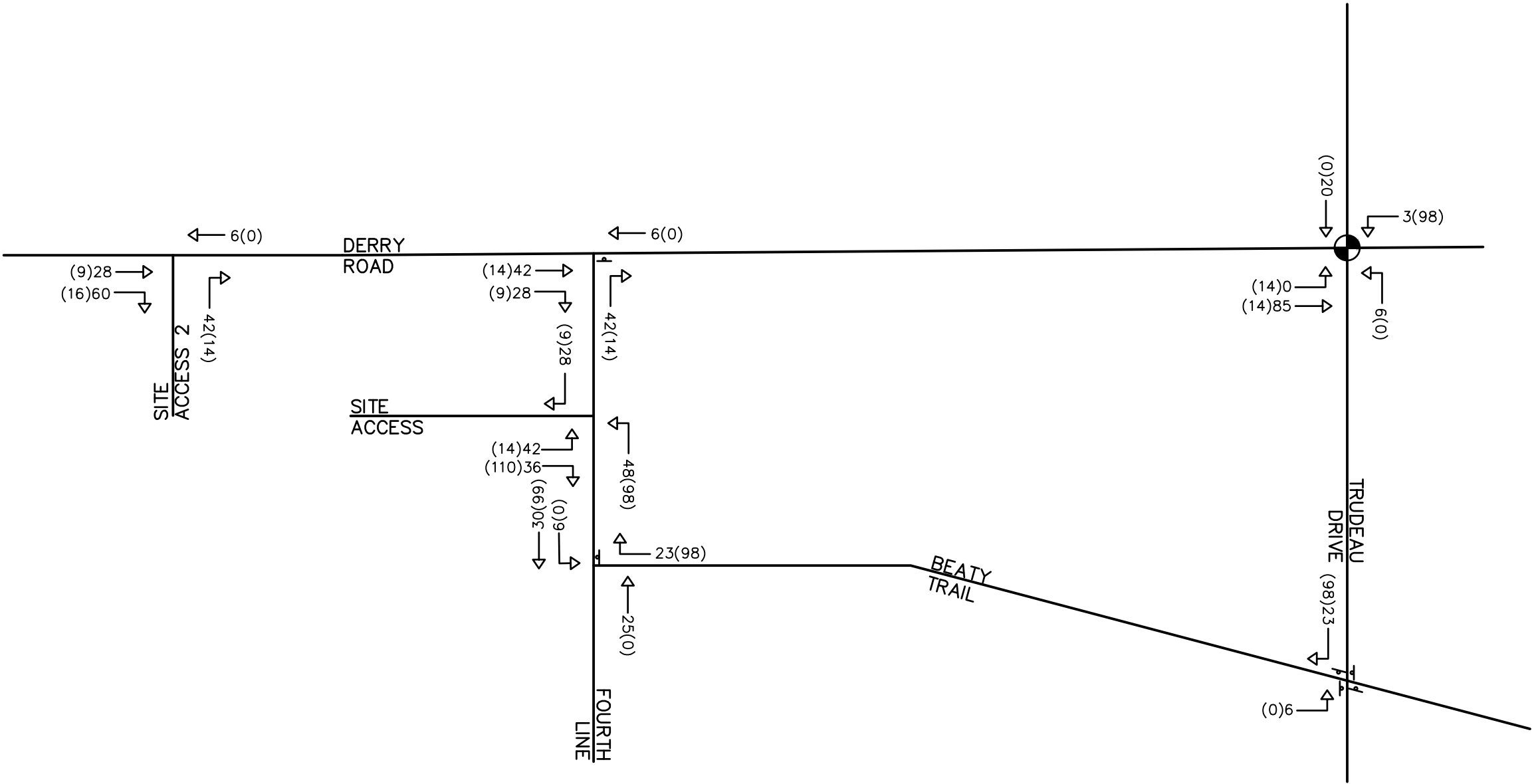
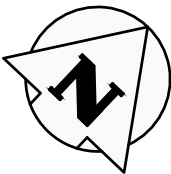
Time:
 Cycle Length:
 Offset (%):

Direction				
Phase	1	2	3	4
%		x		x
Direction				
Phase	5	6	7	8
%		x		x


Appendix D


Background Development Excerpts

NOTE:
THIS FIGURE IS SCHEMATIC ONLY
AND IS NOT TO BE SCALED.



LEGEND:


 SIGNAL CONTROL

 STOP CONTROL

AM(PM) WEEKDAY AM(PM)
TRIP DISTRIBUTION

PROPOSED NURSERY & CHILDCARE CENTER
9980 DERRY ROAD
TOWN OF MILTON

TRIP ASSIGNMENT



CROZIER
CONSULTING ENGINEERS

211 Yonge Street
Suite 301
Toronto, ON M5B 1M4
416-477-3392 T
www.ccrozier.ca

Drawn	M.J.	Design	M.C.	Project No.	1588-5193	
Check	M.C.	Check	M.L.	Scale	N.T.S.	
					Dwg.	FIG. 8

Appendix E

Transportation Tomorrow Survey 2016

AM Inbound
Sun Oct 06 2024 14:25:16 GMT-0400 (Eastern Daylight Time) - Run Time: 2529ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(4108,4110,4120,4125)
TblG:

Filters:
Start time of trip - start_time In 600-900
and
Trip purpose of destination - purp_dest In H,

Trip 2016

Table:

.J	N	S	E	W	N Trips	S Trips	E Trips	W Trips
PD 8 of Tor	34	0.5			17	0	17	0
PD 9 of Tor	14	0.5			7	0	7	0
Richmond I	20	0.5			10	0	10	0
Brampton	25	0.5			12.5	0	12.5	0
Mississauga	99	0.5			49.5	0	49.5	0
Halton Hills	73	1			73	0	0	0
Milton	1331	0.5			665.5	0	0	665.5
Oakville	87			1	0	0	87	0
Burlington	28		0.5	0.5	0	0	14	14
	1711				834.5	0	197	679.5
					49%	0%	12%	40%

AM Outbound
Sun Oct 06 2024 14:26:28 GMT-0400 (Eastern Daylight Time) - Run Time: 2988ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(4108,4110,4120,4125)
TblG:

Filters:
Start time of trip - start_time In 600-900
and
Trip purpose of origin - purp_orig In H,

Trip 2016

Table:

.J	N	S	E	W	N Trips	S Trips	E Trips	W Trips
PD 1 of Tor	936	0.5	0.5		468	0	468	0
PD 2 of Tor	8	0.5	0.5		4	0	4	0
PD 3 of Tor	122	0.5	0.5		61	0	61	0
PD 4 of Tor	38	0.5	0.5		19	0	19	0
PD 5 of Tor	23	0.5	0.5		11.5	0	11.5	0
PD 6 of Tor	45	0.5	0.5		22.5	0	22.5	0
PD 7 of Tor	62	0.5	0.5		31	0	31	0
PD 8 of Tor	97	0.5	0.5		48.5	0	48.5	0
PD 9 of Tor	339	0.5	0.5		169.5	0	169.5	0
PD 10 of Tor	329	0.5	0.5		164.5	0	164.5	0
PD 11 of Tor	272	0.5	0.5		136	0	136	0
PD 12 of Tor	20	0.5	0.5		10	0	10	0
PD 16 of Tor	44	0.5			22	0	22	0
Ajax	15	0.5			7.5	0	7.5	0
Clarington	18	0.5			9	0	9	0
Newmarket	23	0.5			11.5	0	11.5	0
Richmond I	25	0.5			12.5	0	12.5	0
Markham	148	0.5			74	0	74	0
King	23	0.5			11.5	0	11.5	0
Vaughan	349	0.5			174.5	0	174.5	0
Caledon	88	0.5			44	0	44	0
Brampton	1264	0.5			632	0	632	0
Mississauga	4159	0.5			2079.5	0	2079.5	0
Halton Hills	195	0.5			97.5	0	97.5	0
Milton	9009	0.5			4504.5	0	0	4504.5
Oakville	1616		1	0	0	0	1616	0
Burlington	418		0.5	0.5	0	0	209	209
Flamborough	44	0.5			0.5	22	0	0
Glanbrook	47		1	0	0	0	0	47
Stoney Cre	15		1	0	0	0	0	15
Hamilton	207		1	0	0	0	0	207
St Cathar	39		1	0	0	0	0	39
Niagara Fal	17		1	0	0	0	0	17
Waterloo	113	1			113	0	0	0
Kitchener	33	1			33	0	0	0
Cambridge	153	0.5			0.5	76.5	0	0
Woolwich	46	1			46	0	0	0
City of Guel	157	1			157	0	0	0
Puslinch	15	1			15	0	0	0
Erin	10	0.5		0.5	5	0	5	0
Perth	6	0.5		0.5	3	0	3	0
Orillia	36	0.5		0.5	18	0	18	0
	20523				9114	0	6172	5117
					45%	0%	30%	25%

TTS

	N	S	E	W	
AM Inbound	49%	0%	12%	40%	100%
Outbound	45%	0%	30%	25%	100%
PM Inbound	46%	0%	35%	19%	100%
Outbound	47%	0%	16%	37%	100%
Existing Patterns (Laurier and Hedge Wood)					
	N	S	E	W	
AM Inbound	18%	14%	18%	50%	100%
Outbound	32%	8%	21%	39%	100%
PM Inbound	15%	15%	33%	37%	100%
Outbound	20%	11%	13%	56%	100%

PM Inbound
Sun Oct 06 2024 14:25:52 GMT-0400 (Eastern Daylight Time) - Run Time: 2738ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

RowG:
ColG:(4108,4110,4120,4125)
TblG:

Filters:
Start time of trip - start_time In 1800-1900
and
Trip purpose of destination - purp_dest In H,

Trip 2016

Table:

.J	N	S	E	W	N Trips	S Trips	E Trips	W Trips
PD 1 of Tor	872	0.5	0.5		436	0	436	0
PD 2 of Tor	21	0.5	0.5		10.5	0	10.5	0
PD 3 of Tor	123		1		0	0	123	0
PD 4 of Tor	73		1		0	0	73	0
PD 5 of Tor	11		1		0	0	11	0
PD 6 of Tor	20		1		0	0	20	0
PD 7 of Tor	96		1		0	0	96	0
PD 8 of Tor	99	0.5	0.5		49.5	0	49.5	0
PD 9 of Tor	345	0.5	0.5		172.5	0	172.5	0
PD 10 of Tor	236	0.5	0.5		118	0	118	0
PD 11 of Tor	253	0.5	0.5		126.5	0	126.5	0
PD 12 of Tor	18		1		0	0	18	0
PD 16 of Tor	44		1		0	0	44	0
Ajax	15	0.5			7.5	0	7.5	0
Whitby	37		1		0	0	37	0
Oshawa	18		1		0	0	18	0
Clarington	18		1		0	0	18	0
Newmarket	23	0.5	0.5		11.5	0	11.5	0
Richmond I	41	0.5	0.5		20.5	0	20.5	0
Markham	95		1		0	0	95	0
Vaughan	318	0.5	0.5		159	0	159	0
Caledon	69		1		0	0	69	0
Brampton	868	0.5	0.5		434	0	434	0
Mississauga	3328	0.5	0.5		1664	0	1664	0
Halton Hills	235	0.5	0.5		117.5	0	117.5	0
Milton	4554	0.5		0.5	0	2277	0	2277
Oakville	1293	0.5	0.5		646.5	0	646.5	0
Burlington	451		1		0	0	451	0
Glanbrook	47		1		0	0	0	47
Stoney Cre	11		1		0	0	0	11
Hamilton	202		1		0	0	0	202
St Cathar	18		1		0	0	0	18
Niagara Fal	17		1		0	0	0	17
Waterloo	98	0.5		0.5	49	0	0	49
Kitchener	11	0.5		0.5	5.5	0	0	5.5
Cambridge	88	0.5		0.5	44	0	0	44
Woolwich	46	1			46	0	0	0
City of Guel	112	1			112	0	0	0
Puslinch	48	1			48	0	0	0
Erin	10		1		0	0	10	0
Perth	6	0.5	0.5		3	0	3	0
Orillia	21	0.5	0.5		10.5	0	10.5	0
	14309				6568.5	0	5070	2670.5
					46%	0%	35%	19%

PM Outbound
Sun Oct 06 2024 14:26:16 GMT-0400 (Eastern Daylight Time) - Run Time: 3054ms

Cross Tabulation Query Form - Trip - 2016

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

RowG:
ColG:(4108,4110,4120,4125)
TblG:

Filters:
Start time of trip - start_time In 1800-1900
and
Trip purpose of origin - purp_orig In H,

Trip 2016

Table:

.J	N	S	E	W	N Trips	S Trips	E Trips	W Trips
PD 1 of Tor	67	0.5	0.5		33.5	0	33.5	0
PD 2 of Tor	38	0.5	0.5		19	0	19	0
PD 9 of Tor	10	0.5	0.5		5	0	5	0
PD 9 of Tor	43	0.5	0.5		21.5	0	21.5	0
PD 10 of Tor	15	0.5	0.5		7.5	0	7.5	0
Brampton	59	0.5	0.5		29.5	0	29.5	0
Mississauga	500	0.5	0.5		250	0	250	0
Halton Hills	39	0.5	0.5		19.5	0	19.5	0
Milton	2652	0.5		0.5	1326	0	0	1326
Oakville	281	0.5		0.5	140.5	0	0	140.5
Burlington	113		1		0	0	113	0
Hamilton	178			1	0	0	0	178
Niagara Fal	3			1	0	0	0	3
Waterloo	29	0.5		0.5	14.5	0	0	14.5
City of Guel	27	1			27	0	0	0
Centre Wel	22	1			22	0	0	0
Orangeville	38	0.5		0.5	19	0	19	0
Brant	33			1	0	0	0	33
	4147				1994.5	0	658	1554.5
					47%	0%	16%	37%

Appendix F

Synchro Outputs

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Existing 2024
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		
Traffic Volume (vph)	1526	77	72	568	60	114
Future Volume (vph)	1526	77	72	568	60	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	40.0		0.0	0.0
Storage Lanes		0	1		0	0
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00				0.99	
Frt	0.993				0.902	
Flt Protected			0.950		0.983	
Satd. Flow (prot)	3540	0	1807	3411	0	0
Flt Permitted			0.060		0.983	
Satd. Flow (perm)	3540	0	114	3411	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6					
Link Speed (k/h)	60			60	40	
Link Distance (m)	311.5			245.8	98.9	
Travel Time (s)	18.7			14.7	8.9	
Confl. Peds. (#/hr)		27	27			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	1%	7%	2%	0%
Adj. Flow (vph)	1573	79	74	586	62	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1652	0	74	586	180	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	30.5		6.1	30.5	6.1	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	1.8		6.1	1.8	6.1	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Existing 2024
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	20.0		5.0	20.0	10.0	
Minimum Split (s)	39.5		9.0	39.5	42.7	
Total Split (s)	67.0		11.0	78.0	42.0	
Total Split (%)	55.8%		9.2%	65.0%	35.0%	
Maximum Green (s)	60.5		7.0	71.5	34.3	
Yellow Time (s)	3.7		3.0	3.7	3.3	
All-Red Time (s)	2.8		1.0	2.8	4.4	
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.5		4.0	6.5		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		None	Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Dont Walk (s)	26.0			26.0	28.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	62.8		74.0	71.5	0.0	
Actuated g/C Ratio	0.52		0.62	0.60	0.00	
v/c Ratio	0.89		0.45	0.29	no cap	
Control Delay	33.6		20.5	12.3		
Queue Delay	0.0		0.0	0.0		
Total Delay	33.6		20.5	12.3	Error	
LOS	C		C	B	F	
Approach Delay	33.6			13.2	Err	
Approach LOS	C			B	F	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: Err

Intersection Signal Delay: Err

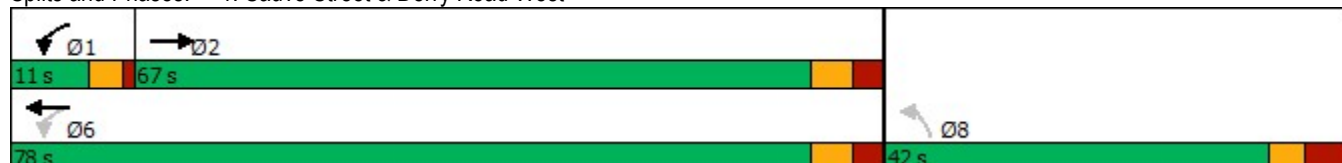
Intersection LOS: F

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street & Derry Road West

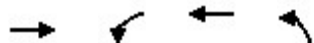


Queues

1: Sauve Street & Derry Road West

Existing 2024

AM Peak Hour



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1652	74	586	180
v/c Ratio	0.89	0.45	0.29	no cap
Control Delay	33.6	20.5	12.3	
Queue Delay	0.0	0.0	0.0	
Total Delay	33.6	20.5	12.3	Error
Queue Length 50th (m)	183.4	6.5	33.4	0.0
Queue Length 95th (m)	#228.8	16.0	43.4	0.0
Internal Link Dist (m)	287.5		221.8	74.9
Turn Bay Length (m)		40.0		
Base Capacity (vph)	1854	169	2032	1
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.44	0.29	180.00

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Sauve Street & Derry Road West

Existing 2024





















AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		
Traffic Volume (vph)	1526	77	72	568	60	114
Future Volume (vph)	1526	77	72	568	60	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		4.0	6.5	7.7	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.90	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3540		1807	3411	0	
Flt Permitted	1.00		0.06	1.00	0.98	
Satd. Flow (perm)	3540		114	3411	0	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1573	79	74	586	62	118
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	1649	0	74	586	180	0
Confl. Peds. (#/hr)		27	27			1
Heavy Vehicles (%)	2%	3%	1%	7%	2%	0%
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Actuated Green, G (s)	62.8		72.3	72.3	34.3	
Effective Green, g (s)	62.8		72.3	72.3	34.3	
Actuated g/C Ratio	0.52		0.60	0.60	0.28	
Clearance Time (s)	6.5		4.0	6.5	7.7	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1840		145	2041	0	
v/s Ratio Prot	c0.47		c0.02	0.17		
v/s Ratio Perm			0.28			
v/c Ratio	0.90		0.51	0.29	no cap	
Uniform Delay, d1	26.1		23.1	11.8	Error	
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	7.3		3.0	0.4	Error	
Delay (s)	33.4		26.1	12.1	Error	
Level of Service	C		C	B	F	
Approach Delay (s)	33.4			13.7	Error	
Approach LOS	C			B	F	
Intersection Summary						
HCM 2000 Control Delay			Error	HCM 2000 Level of Service		F
HCM 2000 Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			120.8	Sum of lost time (s)		18.2
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2: Trudeau Drive & Derry Road West













Existing 2024
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	1555	26	31	460	19	86	73	88	97	64	97
Future Volume (vph)	73	1555	26	31	460	19	86	73	88	97	64	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt		0.997			0.994			0.918			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3601	0	1706	3369	0	1807	1665	0	1789	1666	0
Flt Permitted	0.448			0.073			0.538			0.538		
Satd. Flow (perm)	812	3601	0	131	3369	0	1023	1665	0	1004	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			5			50			63	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)									11	11		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Adj. Flow (vph)	80	1709	29	34	505	21	95	80	97	107	70	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1738	0	34	526	0	95	177	0	107	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings

2: Trudeau Drive & Derry Road West

Existing 2024
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		10.0	10.0		10.0		10.0
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9		38.9
Total Split (s)	10.0	70.0		10.0	70.0		40.0	40.0		40.0		40.0
Total Split (%)	8.3%	58.3%		8.3%	58.3%		33.3%	33.3%		33.3%		33.3%
Maximum Green (s)	6.0	63.3		6.0	63.3		33.1	33.1		33.1		33.1
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7		3.7
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2		3.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9		6.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	Max		None	Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0		25.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	71.9	65.7		71.0	63.7		15.4	15.4		15.4		15.4
Actuated g/C Ratio	0.72	0.65		0.71	0.63		0.15	0.15		0.15		0.15
v/c Ratio	0.13	0.74		0.18	0.25		0.61	0.60		0.70		0.58
Control Delay	4.9	15.9		6.7	9.3		57.2	37.1		64.9		33.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	4.9	15.9		6.7	9.3		57.2	37.1		64.9		33.0
LOS	A	B		A	A		E	D		E		C
Approach Delay		15.5			9.1			44.1				45.0
Approach LOS		B			A			D				D

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 100.5

Natural Cycle: 105

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.8

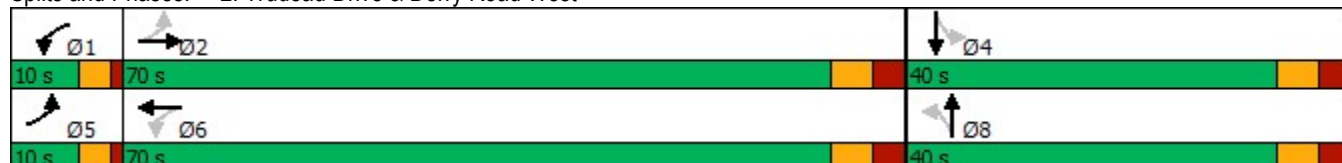
Intersection LOS: B

Intersection Capacity Utilization 91.7%

ICU Level of Service F

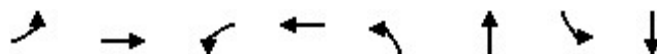
Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West



Queues
2: Trudeau Drive & Derry Road West

Existing 2024
AM Peak Hour























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	1738	34	526	95	177	107	177
v/c Ratio	0.13	0.74	0.18	0.25	0.61	0.60	0.70	0.58
Control Delay	4.9	15.9	6.7	9.3	57.2	37.1	64.9	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	15.9	6.7	9.3	57.2	37.1	64.9	33.0
Queue Length 50th (m)	3.5	121.6	1.5	22.3	17.9	23.6	20.5	20.9
Queue Length 95th (m)	9.5	184.1	4.9	37.0	34.3	44.6	38.5	41.7
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	635	2355	187	2137	339	585	332	594
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.74	0.18	0.25	0.28	0.30	0.32	0.30
Intersection Summary								

HCM Signalized Intersection Capacity Analysis










2: Trudeau Drive & Derry Road West

Existing 2024
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	1555	26	31	460	19	86	73	88	97	64	97
Future Volume (vph)	73	1555	26	31	460	19	86	73	88	97	64	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.92		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1722	3603		1706	3369		1807	1666		1775	1667	
Flt Permitted	0.45	1.00		0.07	1.00		0.54	1.00		0.54	1.00	
Satd. Flow (perm)	811	3603		132	3369		1024	1666		1006	1667	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	80	1709	29	34	505	21	95	80	97	107	70	107
RTOR Reduction (vph)	0	1	0	0	2	0	0	42	0	0	53	0
Lane Group Flow (vph)	80	1737	0	34	524	0	95	135	0	107	124	0
Confl. Peds. (#/hr)									11	11		
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	70.3	65.7		67.9	64.5		15.4	15.4		15.4	15.4	
Effective Green, g (s)	70.3	65.7		67.9	64.5		15.4	15.4		15.4	15.4	
Actuated g/C Ratio	0.69	0.64		0.67	0.63		0.15	0.15		0.15	0.15	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	599	2318		140	2128		154	251		151	251	
v/s Ratio Prot	0.01	c0.48		c0.01	0.16			0.08			0.07	
v/s Ratio Perm	0.09			0.15			0.09			c0.11		
v/c Ratio	0.13	0.75		0.24	0.25		0.62	0.54		0.71	0.49	
Uniform Delay, d1	5.2	12.5		10.9	8.2		40.6	40.0		41.2	39.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.3		0.9	0.3		7.2	2.2		14.1	1.5	
Delay (s)	5.3	14.8		11.8	8.5		47.7	42.2		55.3	41.3	
Level of Service	A	B		B	A		D	D		E	D	
Approach Delay (s)		14.4			8.7			44.2			46.6	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			19.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			102.1			Sum of lost time (s)				17.6		
Intersection Capacity Utilization			91.7%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Fourth Line & Derry Road West

Existing 2024
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1608	37	0	652	0	50
Future Volume (vph)	1608	37	0	652	0	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.997					0.865
Flt Protected						
Satd. Flow (prot)	3567	0	0	3444	0	1629
Flt Permitted						
Satd. Flow (perm)	3567	0	0	3444	0	1629
Link Speed (k/h)	60			60	50	
Link Distance (m)	245.8			305.4	90.9	
Travel Time (s)	14.7			18.3	6.5	
Confl. Peds. (#/hr)	24		24	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	3%	0%	6%	0%	2%
Adj. Flow (vph)	1693	39	0	686	0	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1732	0	0	686	0	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	55.7%			ICU Level of Service B		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

















3: Fourth Line & Derry Road West

Existing 2024
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↘			↑↑		↗
Traffic Volume (veh/h)	1608	37	0	652	0	50
Future Volume (Veh/h)	1608	37	0	652	0	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1693	39	0	686	0	53
Pedestrians	1				24	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				2	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	246			305		
pX, platoon unblocked			0.56		0.57	0.56
vC, conflicting volume			1756		2080	890
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			782		1195	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	91
cM capacity (veh/h)			463		102	594
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1129	603	343	343	53	
Volume Left	0	0	0	0	0	
Volume Right	0	39	0	0	53	
cSH	1700	1700	1700	1700	594	
Volume to Capacity	0.66	0.35	0.20	0.20	0.09	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	2.2	
Control Delay (s)	0.0	0.0	0.0	0.0	11.7	
Lane LOS					B	
Approach Delay (s)	0.0		0.0		11.7	
Approach LOS					B	
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			55.7%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Existing 2024
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	126	30	13	104	5	60	27	10	10	11	106
Future Volume (vph)	191	126	30	13	104	5	60	27	10	10	11	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.995			0.986			0.888	
Flt Protected		0.973			0.995			0.970			0.996	
Satd. Flow (prot)	0	1808	0	0	1797	0	0	1731	0	0	1632	0
Flt Permitted		0.973			0.995			0.970			0.996	
Satd. Flow (perm)	0	1808	0	0	1797	0	0	1731	0	0	1632	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)	9		8	8		9	17		5	5		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	1%	2%	10%	15%	5%	0%	5%	11%	0%	10%	0%	4%
Adj. Flow (vph)	239	158	38	16	130	6	75	34	13	13	14	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	435	0	0	152	0	0	122	0	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.7%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

















4: Cedar Hedge & Laurier Avenue/Croft Avenue

Existing 2024
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	191	126	30	13	104	5	60	27	10	10	11	106
Future Volume (vph)	191	126	30	13	104	5	60	27	10	10	11	106
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	239	158	38	16	130	6	75	34	12	12	14	132
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	435	152	121	158								
Volume Left (vph)	239	16	75	12								
Volume Right (vph)	38	6	12	132								
Hadj (s)	0.09	0.10	0.17	-0.42								
Departure Headway (s)	5.0	5.4	5.9	5.3								
Degree Utilization, x	0.61	0.23	0.20	0.23								
Capacity (veh/h)	689	609	538	607								
Control Delay (s)	15.5	10.1	10.4	9.8								
Approach Delay (s)	15.5	10.1	10.4	9.8								
Approach LOS	C	B	B	A								
Intersection Summary												
Delay				12.8								
Level of Service				B								
Intersection Capacity Utilization				44.7%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

















Existing 2024
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	11	89	44	11	1	92	61	8	3	137	5
Future Volume (vph)	14	11	89	44	11	1	92	61	8	3	137	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.895			0.998			0.993			0.996	
Flt Protected		0.994			0.962			0.972			0.999	
Satd. Flow (prot)	0	1621	0	0	1844	0	0	1725	0	0	1822	0
Flt Permitted		0.994			0.962			0.972			0.999	
Satd. Flow (perm)	0	1621	0	0	1844	0	0	1725	0	0	1822	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	6		10	10		6	5		14	14		5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	7%	0%	0%	0%	4%	12%	13%	33%	3%	40%
Adj. Flow (vph)	18	14	111	55	14	1	115	76	10	4	171	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	143	0	0	70	0	0	201	0	0	181	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.5%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

6: Trudeau Drive & Harwood Drive

Existing 2024
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	14	11	89	44	11	1	92	61	8	3	137	5
Future Volume (vph)	14	11	89	44	11	1	92	61	8	3	137	5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	18	14	111	55	14	1	115	76	10	4	171	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	143	70	201	181								
Volume Left (vph)	18	55	115	4								
Volume Right (vph)	111	1	10	6								
Hadj (s)	-0.35	0.15	0.21	0.07								
Departure Headway (s)	4.6	5.2	4.9	4.8								
Degree Utilization, x	0.18	0.10	0.27	0.24								
Capacity (veh/h)	717	628	702	712								
Control Delay (s)	8.6	8.8	9.7	9.3								
Approach Delay (s)	8.6	8.8	9.7	9.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.2								
Level of Service				A								
Intersection Capacity Utilization				39.5%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Existing 2024
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑		
Traffic Volume (vph)	921	52	106	1239	49	69
Future Volume (vph)	921	52	106	1239	49	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	40.0		0.0	0.0
Storage Lanes		0	1		0	0
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		0.99	
Frt	0.992				0.912	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	3545	0	1825	3614	0	0
Flt Permitted			0.177		0.980	
Satd. Flow (perm)	3545	0	339	3614	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	7					
Link Speed (k/h)	60			60	40	
Link Distance (m)	311.5			245.8	98.9	
Travel Time (s)	18.7			14.7	8.9	
Confl. Peds. (#/hr)		13	13			5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	980	55	113	1318	52	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1035	0	113	1318	125	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	30.5		6.1	30.5	6.1	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	1.8		6.1	1.8	6.1	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Existing 2024
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	20.0		5.0	20.0	10.0	
Minimum Split (s)	39.5		9.0	39.5	42.7	
Total Split (s)	67.0		11.0	65.0	42.0	
Total Split (%)	55.8%		9.2%	54.2%	35.0%	
Maximum Green (s)	60.5		7.0	58.5	34.3	
Yellow Time (s)	3.7		3.0	3.7	3.3	
All-Red Time (s)	2.8		1.0	2.8	4.4	
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.5		4.0	6.5		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		None	Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Dont Walk (s)	26.0			26.0	28.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	60.6		74.0	71.5	0.0	
Actuated g/C Ratio	0.50		0.62	0.60	0.00	
v/c Ratio	0.58		0.38	0.61	no cap	
Control Delay	22.2		13.3	17.0		
Queue Delay	0.0		0.0	0.0		
Total Delay	22.2		13.3	17.0	Error	
LOS	C		B	B	F	
Approach Delay	22.2			16.7	Err	
Approach LOS	C			B	F	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: Err

Intersection Signal Delay: Err

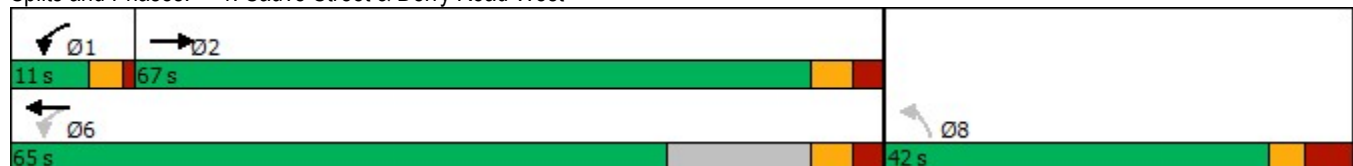
Intersection LOS: F

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street & Derry Road West

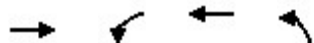


Queues

1: Sauve Street & Derry Road West

Existing 2024

PM Peak Hour



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1035	113	1318	125
v/c Ratio	0.58	0.38	0.61	no cap
Control Delay	22.2	13.3	17.0	
Queue Delay	0.0	0.0	0.0	
Total Delay	22.2	13.3	17.0	Error
Queue Length 50th (m)	86.3	10.2	98.0	0.0
Queue Length 95th (m)	106.3	17.7	118.5	0.0
Internal Link Dist (m)	287.5		221.8	74.9
Turn Bay Length (m)		40.0		
Base Capacity (vph)	1794	295	2153	1
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.38	0.61	125.00
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

1: Sauve Street & Derry Road West

Existing 2024





















PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		
Traffic Volume (vph)	921	52	106	1239	49	69
Future Volume (vph)	921	52	106	1239	49	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		4.0	6.5	7.7	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.91	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3546		1824	3614	0	
Flt Permitted	1.00		0.18	1.00	0.98	
Satd. Flow (perm)	3546		340	3614	0	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	980	55	113	1318	52	73
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	1032	0	113	1318	125	0
Confl. Peds. (#/hr)		13	13			5
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Actuated Green, G (s)	60.6		71.5	71.5	34.3	
Effective Green, g (s)	60.6		71.5	71.5	34.3	
Actuated g/C Ratio	0.51		0.60	0.60	0.29	
Clearance Time (s)	6.5		4.0	6.5	7.7	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1790		287	2153	0	
v/s Ratio Prot	0.29		0.02	c0.36		
v/s Ratio Perm			0.21			
v/c Ratio	0.58		0.39	0.61	no cap	
Uniform Delay, d1	20.7		13.3	15.4	Error	
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	1.4		0.9	1.3	Error	
Delay (s)	22.1		14.2	16.7	Error	
Level of Service	C		B	B	F	
Approach Delay (s)	22.1			16.5	Error	
Approach LOS	C			B	F	
Intersection Summary						
HCM 2000 Control Delay			Error	HCM 2000 Level of Service		F
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			120.0	Sum of lost time (s)		18.2
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings













2: Trudeau Drive & Derry Road West

Existing 2024
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	776	87	115	1203	73	109	69	51	43	57	65
Future Volume (vph)	78	776	87	115	1203	73	109	69	51	43	57	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99		0.99	0.99	
Frt		0.985			0.991			0.936			0.920	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3519	0	1825	3577	0	1807	1746	0	1825	1723	0
Flt Permitted	0.100			0.238			0.673			0.674		
Satd. Flow (perm)	192	3519	0	456	3577	0	1279	1746	0	1277	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			8			31			48	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Adj. Flow (vph)	84	834	94	124	1294	78	117	74	55	46	61	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	928	0	124	1372	0	117	129	0	46	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9	38.9	
Total Split (s)	10.0	70.0		10.0	70.0		40.0	40.0		40.0	40.0	
Total Split (%)	8.3%	58.3%		8.3%	58.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	63.3		6.0	63.3		33.1	33.1		33.1	33.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Existing 2024
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effect Green (s)	72.0	63.3		72.0	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.60	0.53		0.60	0.53		0.28	0.28		0.28	0.28	
v/c Ratio	0.43	0.50		0.36	0.73		0.33	0.26		0.13	0.26	
Control Delay	15.5	19.0		11.8	24.4		37.9	27.1		34.0	22.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.5	19.0		11.8	24.4		37.9	27.1		34.0	22.7	
LOS	B	B		B	C		D	C		C	C	
Approach Delay		18.7			23.3			32.2			25.6	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 85

Control Type: Pretimed

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 22.6

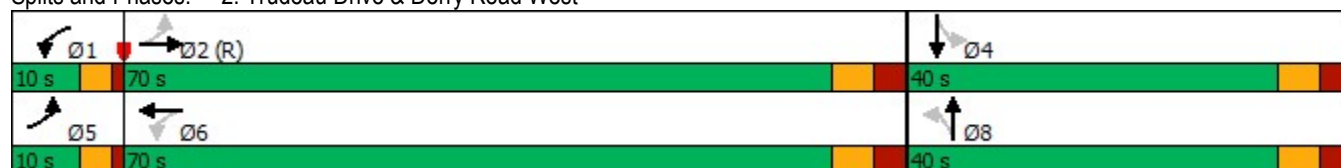
Intersection LOS: C

Intersection Capacity Utilization 95.4%

ICU Level of Service F









Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West



Queues
2: Trudeau Drive & Derry Road West





















Existing 2024
PM Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	928	124	1372	117	129	46	131
v/c Ratio	0.43	0.50	0.36	0.73	0.33	0.26	0.13	0.26
Control Delay	15.5	19.0	11.8	24.4	37.9	27.1	34.0	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	19.0	11.8	24.4	37.9	27.1	34.0	22.7
Queue Length 50th (m)	7.1	69.7	10.7	124.5	22.0	17.7	8.2	14.9
Queue Length 95th (m)	13.1	86.7	18.2	150.5	38.8	33.9	17.7	31.0
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	196	1863	342	1890	352	504	352	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.50	0.36	0.73	0.33	0.26	0.13	0.26
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

Existing 2024
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	776	87	115	1203	73	109	69	51	43	57	65
Future Volume (vph)	78	776	87	115	1203	73	109	69	51	43	57	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.94		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	3518		1824	3578		1805	1746		1799	1723	
Flt Permitted	0.10	1.00		0.24	1.00		0.67	1.00		0.67	1.00	
Satd. Flow (perm)	192	3518		456	3578		1279	1746		1277	1723	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	84	834	94	124	1294	78	117	74	55	46	61	70
RTOR Reduction (vph)	0	7	0	0	4	0	0	22	0	0	35	0
Lane Group Flow (vph)	84	921	0	124	1368	0	117	107	0	46	96	0
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Effective Green, g (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.58	0.53		0.58	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Grp Cap (vph)	192	1855		331	1887		352	481		352	475	
v/s Ratio Prot	c0.02	0.26		0.02	c0.38			0.06			0.06	
v/s Ratio Perm	0.23			0.20			c0.09			0.04		
v/c Ratio	0.44	0.50		0.37	0.73		0.33	0.22		0.13	0.20	
Uniform Delay, d1	16.5	18.1		12.6	21.7		34.6	33.5		32.6	33.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.1	1.0		3.2	2.5		2.5	1.1		0.8	1.0	
Delay (s)	23.6	19.1		15.8	24.2		37.2	34.6		33.4	34.3	
Level of Service	C	B		B	C		D	C		C	C	
Approach Delay (s)		19.5			23.5			35.8			34.1	
Approach LOS		B			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			23.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)				17.6		
Intersection Capacity Utilization			95.4%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Fourth Line & Derry Road West

Existing 2024
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (vph)	942	49	0	1356	0	21
Future Volume (vph)	942	49	0	1356	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.993					0.865
Flt Protected						
Satd. Flow (prot)	3557	0	0	3614	0	1662
Flt Permitted						
Satd. Flow (perm)	3557	0	0	3614	0	1662
Link Speed (k/h)	60			60	50	
Link Distance (m)	245.8			305.4	90.9	
Travel Time (s)	14.7			18.3	6.5	
Confl. Peds. (#/hr)	11		11			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1013	53	0	1458	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1066	0	0	1458	0	23
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

















3: Fourth Line & Derry Road West

Existing 2024
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↗
Traffic Volume (veh/h)	942	49	0	1356	0	21
Future Volume (Veh/h)	942	49	0	1356	0	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1013	53	0	1458	0	23
Pedestrians					11	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	246			305		
pX, platoon unblocked			0.80		0.80	0.80
vC, conflicting volume			1077		1780	544
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			591		346	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			785		500	861
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	675	391	729	729	23	
Volume Left	0	0	0	0	0	
Volume Right	0	53	0	0	23	
cSH	1700	1700	1700	1700	861	
Volume to Capacity	0.40	0.23	0.43	0.43	0.03	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.6	
Control Delay (s)	0.0	0.0	0.0	0.0	9.3	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		9.3	
Approach LOS					A	
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			40.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Existing 2024
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	91	53	14	229	5	93	13	5	3	16	90
Future Volume (vph)	130	91	53	14	229	5	93	13	5	3	16	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.997			0.993			0.888	
Flt Protected		0.977			0.997			0.960			0.999	
Satd. Flow (prot)	0	1810	0	0	1901	0	0	1831	0	0	1663	0
Flt Permitted		0.977			0.997			0.960			0.999	
Satd. Flow (perm)	0	1810	0	0	1901	0	0	1831	0	0	1663	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)			4	4			10		1	1		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	0%	20%	0%	0%	0%	33%	0%	2%
Adj. Flow (vph)	144	101	59	16	254	6	103	14	6	3	18	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	304	0	0	276	0	0	123	0	0	121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	51.3%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

















4: Cedar Hedge & Laurier Avenue/Croft Avenue

Existing 2024
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	130	91	53	14	229	5	93	13	5	3	16	90
Future Volume (vph)	130	91	53	14	229	5	93	13	5	3	16	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	144	101	59	16	254	6	103	14	6	3	18	100
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	304	276	123	121								
Volume Left (vph)	144	16	103	3								
Volume Right (vph)	59	6	6	100								
Hadj (s)	0.00	0.01	0.14	-0.45								
Departure Headway (s)	5.0	5.0	5.7	5.2								
Degree Utilization, x	0.42	0.38	0.20	0.17								
Capacity (veh/h)	685	677	556	612								
Control Delay (s)	11.5	11.1	10.1	9.2								
Approach Delay (s)	11.5	11.1	10.1	9.2								
Approach LOS	B	B	B	A								
Intersection Summary												
Delay				10.8								
Level of Service				B								
Intersection Capacity Utilization				51.3%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

















Existing 2024
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	2	47	11	8	2	118	71	32	6	95	12
Future Volume (vph)	10	2	47	11	8	2	118	71	32	6	95	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.892			0.987			0.981			0.985	
Flt Protected		0.992			0.974			0.974			0.997	
Satd. Flow (prot)	0	1673	0	0	1847	0	0	1830	0	0	1871	0
Flt Permitted		0.992			0.974			0.974			0.997	
Satd. Flow (perm)	0	1673	0	0	1847	0	0	1830	0	0	1871	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	3		4	4		3	1		2	2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	50%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	10	2	49	11	8	2	123	74	33	6	99	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	21	0	0	230	0	0	118	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	30.7%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis










6: Trudeau Drive & Harwood Drive

Existing 2024
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	2	47	11	8	2	118	71	32	6	95	12
Future Volume (vph)	10	2	47	11	8	2	118	71	32	6	95	12
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	2	49	11	8	2	123	74	33	6	99	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	61	21	230	117								
Volume Left (vph)	10	11	123	6								
Volume Right (vph)	49	2	33	12								
Hadj (s)	-0.42	0.05	0.03	-0.04								
Departure Headway (s)	4.3	4.8	4.2	4.3								
Degree Utilization, x	0.07	0.03	0.27	0.14								
Capacity (veh/h)	769	686	826	803								
Control Delay (s)	7.6	7.9	8.8	8.0								
Approach Delay (s)	7.6	7.9	8.8	8.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				8.4								
Level of Service				A								
Intersection Capacity Utilization				30.7%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Future Background 2029
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1772	85	79	633	66	125
Future Volume (vph)	1772	85	79	633	66	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	40.0		0.0	0.0
Storage Lanes		0	1		0	0
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00				0.99	
Frt	0.993				0.902	
Flt Protected			0.950		0.983	
Satd. Flow (prot)	3541	0	1807	3411	0	0
Flt Permitted			0.059		0.983	
Satd. Flow (perm)	3541	0	112	3411	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6					
Link Speed (k/h)	60			60	40	
Link Distance (m)	311.5			245.8	98.9	
Travel Time (s)	18.7			14.7	8.9	
Confl. Peds. (#/hr)		27	27			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	1%	7%	2%	0%
Adj. Flow (vph)	1827	88	81	653	68	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1915	0	81	653	197	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	30.5		6.1	30.5	6.1	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	1.8		6.1	1.8	6.1	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Future Background 2029
AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	20.0		5.0	20.0	10.0	
Minimum Split (s)	39.5		9.0	39.5	42.7	
Total Split (s)	68.0		9.0	77.0	43.0	
Total Split (%)	56.7%		7.5%	64.2%	35.8%	
Maximum Green (s)	61.5		5.0	70.5	35.3	
Yellow Time (s)	3.7		3.0	3.7	3.3	
All-Red Time (s)	2.8		1.0	2.8	4.4	
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.5		4.0	6.5		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		None	Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Dont Walk (s)	26.0			26.0	28.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	63.3		73.0	70.5	0.0	
Actuated g/C Ratio	0.53		0.61	0.59	0.00	
v/c Ratio	1.02		0.59	0.33	no cap	
Control Delay	56.1		30.6	13.2		
Queue Delay	0.0		0.0	0.0		
Total Delay	56.1		30.6	13.2	Error	
LOS	E		C	B	F	
Approach Delay	56.1			15.1	Err	
Approach LOS	E			B	F	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: Err

Intersection Signal Delay: Err

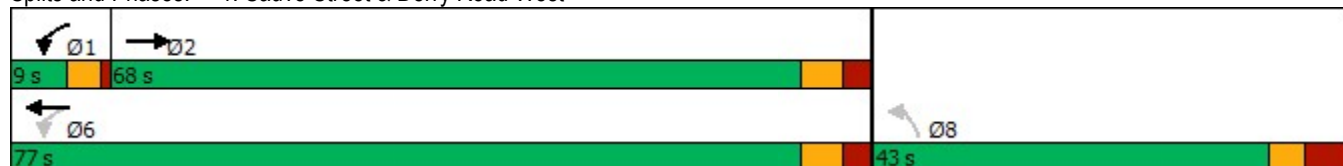
Intersection LOS: F

Intersection Capacity Utilization Err%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street & Derry Road West

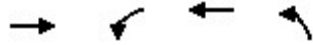


Queues

Future Background 2029

1: Sauve Street & Derry Road West

AM Peak Hour



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1915	81	653	197
v/c Ratio	1.02	0.59	0.33	no cap
Control Delay	56.1	30.6	13.2	
Queue Delay	0.0	0.0	0.0	
Total Delay	56.1	30.6	13.2	Error
Queue Length 50th (m)	~259.5	7.4	39.1	0.0
Queue Length 95th (m)	#302.2	#21.5	50.1	0.0
Internal Link Dist (m)	287.5		221.8	74.9
Turn Bay Length (m)		40.0		
Base Capacity (vph)	1870	138	2003	1
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.02	0.59	0.33	197.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Future Background 2029

1: Sauve Street & Derry Road West

AM Peak Hour





















	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		
Traffic Volume (vph)	1772	85	79	633	66	125
Future Volume (vph)	1772	85	79	633	66	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		4.0	6.5	7.7	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.90	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3541		1807	3411	0	
Flt Permitted	1.00		0.06	1.00	0.98	
Satd. Flow (perm)	3541		113	3411	0	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1827	88	81	653	68	129
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	1912	0	81	653	197	0
Confl. Peds. (#/hr)		27	27			1
Heavy Vehicles (%)	2%	3%	1%	7%	2%	0%
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Actuated Green, G (s)	63.3		71.3	71.3	35.3	
Effective Green, g (s)	63.3		71.3	71.3	35.3	
Actuated g/C Ratio	0.52		0.59	0.59	0.29	
Clearance Time (s)	6.5		4.0	6.5	7.7	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1855		122	2013	0	
v/s Ratio Prot	c0.54		c0.02	0.19		
v/s Ratio Perm			0.37			
v/c Ratio	1.03		0.66	0.32	no cap	
Uniform Delay, d1	28.8		27.9	12.5	Error	
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	29.3		12.8	0.4	Error	
Delay (s)	58.0		40.7	13.0	Error	
Level of Service	E		D	B	F	
Approach Delay (s)	58.0			16.0	Error	
Approach LOS	E			B	F	
Intersection Summary						
HCM 2000 Control Delay			Error	HCM 2000 Level of Service		F
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			120.8	Sum of lost time (s)		18.2
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2: Trudeau Drive & Derry Road West

Future Background 2029













AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1801	28	37	507	20	100	80	97	107	90	107
Future Volume (vph)	80	1801	28	37	507	20	100	80	97	107	90	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt		0.998			0.994			0.918			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3605	0	1706	3369	0	1807	1665	0	1789	1681	0
Flt Permitted	0.419			0.060			0.437			0.496		
Satd. Flow (perm)	759	3605	0	108	3369	0	831	1665	0	926	1681	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			5			50			49	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)									11	11		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Adj. Flow (vph)	88	1979	31	41	557	22	110	88	107	118	99	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	2010	0	41	579	0	110	195	0	118	217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Background 2029

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		10.0	10.0		10.0		10.0
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9		38.9
Total Split (s)	9.0	71.8		9.0	71.8		39.2	39.2		39.2		39.2
Total Split (%)	7.5%	59.8%		7.5%	59.8%		32.7%	32.7%		32.7%		32.7%
Maximum Green (s)	5.0	65.1		5.0	65.1		32.3	32.3		32.3		32.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7		3.7
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2		3.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9		6.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	Max		None	Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0		25.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	73.0	67.4		72.2	65.6		17.2	17.2		17.2		17.2
Actuated g/C Ratio	0.71	0.65		0.70	0.63		0.17	0.17		0.17		0.17
v/c Ratio	0.15	0.86		0.27	0.27		0.80	0.61		0.77		0.68
Control Delay	5.7	21.3		9.6	9.9		79.2	38.0		72.1		42.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	5.7	21.3		9.6	9.9		79.2	38.0		72.1		42.2
LOS	A	C		A	A		E	D		E		D
Approach Delay		20.7			9.9			52.8				52.7
Approach LOS		C			A			D				D

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 103.5

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 24.8

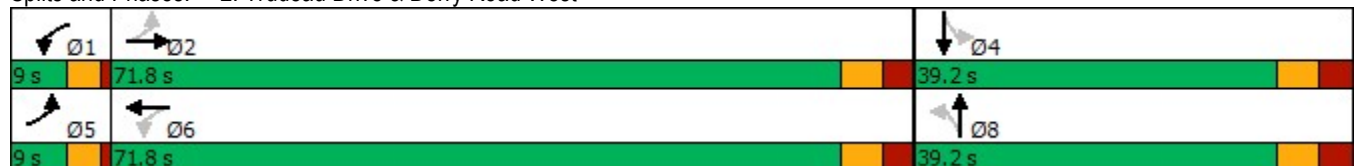
Intersection LOS: C

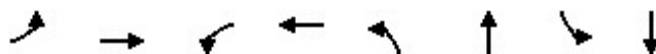
Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	88	2010	41	579	110	195	118	217
v/c Ratio	0.15	0.86	0.27	0.27	0.80	0.61	0.77	0.68
Control Delay	5.7	21.3	9.6	9.9	79.2	38.0	72.1	42.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	21.3	9.6	9.9	79.2	38.0	72.1	42.2
Queue Length 50th (m)	4.3	169.1	1.9	25.7	21.9	27.6	23.3	32.6
Queue Length 95th (m)	11.7	#285.3	6.4	44.1	41.3	49.8	42.9	56.5
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	582	2349	153	2136	261	557	291	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.86	0.27	0.27	0.42	0.35	0.41	0.39

Intersection Summary

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





















Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

Future Background 2029

AM Peak Hour










												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	1801	28	37	507	20	100	80	97	107	90	107
Future Volume (vph)	80	1801	28	37	507	20	100	80	97	107	90	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1722	3604		1706	3370		1807	1666		1775	1682	
Flt Permitted	0.42	1.00		0.06	1.00		0.44	1.00		0.50	1.00	
Satd. Flow (perm)	760	3604		108	3370		830	1666		927	1682	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	88	1979	31	41	557	22	110	88	107	118	99	118
RTOR Reduction (vph)	0	1	0	0	2	0	0	42	0	0	41	0
Lane Group Flow (vph)	88	2009	0	41	577	0	110	153	0	118	176	0
Confl. Peds. (#/hr)									11	11		
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	71.3	67.4		69.1	66.3		17.2	17.2		17.2	17.2	
Effective Green, g (s)	71.3	67.4		69.1	66.3		17.2	17.2		17.2	17.2	
Actuated g/C Ratio	0.68	0.64		0.66	0.63		0.16	0.16		0.16	0.16	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	551	2313		113	2127		135	272		151	275	
v/s Ratio Prot	0.01	c0.56		c0.01	0.17			0.09			0.10	
v/s Ratio Perm	0.10			0.23			c0.13			0.13		
v/c Ratio	0.16	0.87		0.36	0.27		0.81	0.56		0.78	0.64	
Uniform Delay, d1	5.7	15.2		17.6	8.6		42.4	40.4		42.1	41.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.8		2.0	0.3		30.0	2.7		22.6	5.0	
Delay (s)	5.9	20.0		19.6	8.9		72.4	43.1		64.7	46.0	
Level of Service	A	B		B	A		E	D		E	D	
Approach Delay (s)		19.4			9.6			53.7			52.6	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			24.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)				17.6		
Intersection Capacity Utilization			99.2%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

3: Fourth Line & Derry Road West







Future Background 2029
AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1817	68	0	725	0	97
Future Volume (vph)	1817	68	0	725	0	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.995				0.865	
Flt Protected						
Satd. Flow (prot)	3559	0	0	3444	0	1629
Flt Permitted						
Satd. Flow (perm)	3559	0	0	3444	0	1629
Link Speed (k/h)	60			60	50	
Link Distance (m)	245.8			305.4	90.9	
Travel Time (s)	14.7			18.3	6.5	
Confl. Peds. (#/hr)	24		24	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	3%	0%	6%	0%	2%
Adj. Flow (vph)	1913	72	0	763	0	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1985	0	0	763	0	102
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.1%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Fourth Line & Derry Road West

















Future Background 2029
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1817	68	0	725	0	97
Future Volume (Veh/h)	1817	68	0	725	0	97
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1913	72	0	763	0	102
Pedestrians	1				24	
Lane Width (m)	3.7			3.7		
Walking Speed (m/s)	1.1			1.1		
Percent Blockage	0			2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	246			305		
pX, platoon unblocked			0.49		0.51	0.49
vC, conflicting volume			2009		2356	1016
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			963		1370	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	80
cM capacity (veh/h)			343		69	515
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1275	710	382	382	102	
Volume Left	0	0	0	0	0	
Volume Right	0	72	0	0	102	
cSH	1700	1700	1700	1700	515	
Volume to Capacity	0.75	0.42	0.22	0.22	0.20	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	5.6	
Control Delay (s)	0.0	0.0	0.0	0.0	13.7	
Lane LOS						B
Approach Delay (s)	0.0		0.0		13.7	
Approach LOS						B
Intersection Summary						
Average Delay	0.5					
Intersection Capacity Utilization	65.1%			ICU Level of Service		C
Analysis Period (min)	15					

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Background 2029

AM Peak Hour

















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	139	33	14	114	5	66	29	11	11	12	117
Future Volume (vph)	210	139	33	14	114	5	66	29	11	11	12	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.995			0.986			0.887	
Flt Protected		0.973			0.995			0.970			0.996	
Satd. Flow (prot)	0	1808	0	0	1796	0	0	1732	0	0	1630	0
Flt Permitted		0.973			0.995			0.970			0.996	
Satd. Flow (perm)	0	1808	0	0	1796	0	0	1732	0	0	1630	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)	9		8	8		9	17		5	5		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	1%	2%	10%	15%	5%	0%	5%	11%	0%	10%	0%	4%
Adj. Flow (vph)	263	174	41	18	143	6	83	36	14	14	15	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	478	0	0	167	0	0	133	0	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 56.1%	ICU Level of Service B											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Background 2029

















AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	210	139	33	14	114	5	66	29	11	11	12	117
Future Volume (vph)	210	139	33	14	114	5	66	29	11	11	12	117
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	262	174	41	18	142	6	82	36	14	14	15	146
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	477	166	132	175								
Volume Left (vph)	262	18	82	14								
Volume Right (vph)	41	6	14	146								
Hadj (s)	0.09	0.10	0.16	-0.41								
Departure Headway (s)	5.2	5.7	6.2	5.5								
Degree Utilization, x	0.69	0.26	0.23	0.27								
Capacity (veh/h)	671	582	511	577								
Control Delay (s)	18.8	10.7	10.9	10.5								
Approach Delay (s)	18.8	10.7	10.9	10.5								
Approach LOS	C	B	B	B								
Intersection Summary												
Delay				14.8								
Level of Service				B								
Intersection Capacity Utilization				56.1%	ICU Level of Service	B						
Analysis Period (min)				15								

Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

















Future Background 2029

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	12	98	48	12	1	101	67	8	3	151	5
Future Volume (vph)	15	12	98	48	12	1	101	67	8	3	151	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.894			0.998			0.994			0.996	
Flt Protected		0.994			0.962			0.972			0.999	
Satd. Flow (prot)	0	1618	0	0	1844	0	0	1727	0	0	1825	0
Flt Permitted		0.994			0.962			0.972			0.999	
Satd. Flow (perm)	0	1618	0	0	1844	0	0	1727	0	0	1825	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	6		10	10		6	5		14	14		5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	7%	0%	0%	0%	4%	12%	13%	33%	3%	40%
Adj. Flow (vph)	19	15	123	60	15	1	126	84	10	4	189	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	157	0	0	76	0	0	220	0	0	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	40.8%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis 6: Trudeau Drive & Harwood Drive

Future Background 2029
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	12	98	48	12	1	101	67	8	3	151	5
Future Volume (vph)	15	12	98	48	12	1	101	67	8	3	151	5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	19	15	122	60	15	1	126	84	10	4	189	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	156	76	220	199								
Volume Left (vph)	19	60	126	4								
Volume Right (vph)	122	1	10	6								
Hadj (s)	-0.35	0.15	0.21	0.07								
Departure Headway (s)	4.7	5.3	5.0	4.9								
Degree Utilization, x	0.20	0.11	0.30	0.27								
Capacity (veh/h)	694	608	688	698								
Control Delay (s)	8.9	9.0	10.1	9.6								
Approach Delay (s)	8.9	9.0	10.1	9.6								
Approach LOS	A	A	B	A								
Intersection Summary												
Delay				9.6								
Level of Service				A								
Intersection Capacity Utilization				40.8%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Future Background 2029
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑		
Traffic Volume (vph)	1041	57	117	1367	54	76
Future Volume (vph)	1041	57	117	1367	54	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	40.0		0.0	0.0
Storage Lanes		0	1		0	0
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		0.99	
Frt	0.992				0.912	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	3546	0	1825	3614	0	0
Flt Permitted			0.125		0.980	
Satd. Flow (perm)	3546	0	240	3614	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6					
Link Speed (k/h)	60			60	40	
Link Distance (m)	311.5			245.8	98.9	
Travel Time (s)	18.7			14.7	8.9	
Confl. Peds. (#/hr)		13	13			5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1107	61	124	1454	57	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1168	0	124	1454	138	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	30.5		6.1	30.5	6.1	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	1.8		6.1	1.8	6.1	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		

Lanes, Volumes, Timings
1: Sauve Street & Derry Road West

Future Background 2029
PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Detector Phase	2		1	6	8	
Switch Phase						
Minimum Initial (s)	20.0		5.0	20.0	10.0	
Minimum Split (s)	39.5		9.0	39.5	42.7	
Total Split (s)	62.0		15.0	77.0	43.0	
Total Split (%)	51.7%		12.5%	64.2%	35.8%	
Maximum Green (s)	55.5		11.0	70.5	35.3	
Yellow Time (s)	3.7		3.0	3.7	3.3	
All-Red Time (s)	2.8		1.0	2.8	4.4	
Lost Time Adjust (s)	0.0		0.0	0.0		
Total Lost Time (s)	6.5		4.0	6.5		
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Max		None	Max	None	
Walk Time (s)	7.0			7.0	7.0	
Flash Dont Walk (s)	26.0			26.0	28.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	57.6		73.0	70.5	0.0	
Actuated g/C Ratio	0.48		0.61	0.59	0.00	
v/c Ratio	0.68		0.47	0.68	no cap	
Control Delay	26.8		16.0	19.2		
Queue Delay	0.0		0.0	0.0		
Total Delay	26.8		16.0	19.2	Error	
LOS	C		B	B	F	
Approach Delay	26.8			18.9	Err	
Approach LOS	C			B	F	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: Err

Intersection Signal Delay: Err

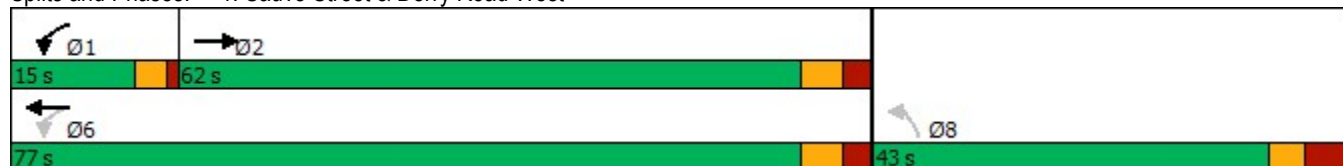
Intersection LOS: F

Intersection Capacity Utilization Err%

ICU Level of Service H

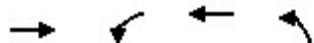
Analysis Period (min) 15

Splits and Phases: 1: Sauve Street & Derry Road West



1: Sauve Street & Derry Road West

PM Peak Hour



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1168	124	1454	138
v/c Ratio	0.68	0.47	0.68	no cap
Control Delay	26.8	16.0	19.2	
Queue Delay	0.0	0.0	0.0	
Total Delay	26.8	16.0	19.2	Error
Queue Length 50th (m)	108.5	11.5	117.6	0.0
Queue Length 95th (m)	137.3	19.7	141.7	0.0
Internal Link Dist (m)	287.5		221.8	74.9
Turn Bay Length (m)		40.0		
Base Capacity (vph)	1706	291	2123	1
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.68	0.43	0.68	138.00
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

Future Background 2029

1: Sauve Street & Derry Road West

PM Peak Hour





















	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		
Traffic Volume (vph)	1041	57	117	1367	54	76
Future Volume (vph)	1041	57	117	1367	54	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		4.0	6.5	7.7	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	0.99	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.99		1.00	1.00	0.91	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3546		1825	3614	0	
Flt Permitted	1.00		0.12	1.00	0.98	
Satd. Flow (perm)	3546		240	3614	0	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1107	61	124	1454	57	81
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	1165	0	124	1454	138	0
Confl. Peds. (#/hr)		13	13			5
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Turn Type	NA		pm+pt	NA	Perm	
Protected Phases	2		1	6		
Permitted Phases			6		8	
Actuated Green, G (s)	57.6		70.5	70.5	35.3	
Effective Green, g (s)	57.6		70.5	70.5	35.3	
Actuated g/C Ratio	0.48		0.59	0.59	0.29	
Clearance Time (s)	6.5		4.0	6.5	7.7	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1702		258	2123	0	
v/s Ratio Prot	0.33		0.04	c0.40		
v/s Ratio Perm			0.25			
v/c Ratio	0.68		0.48	0.68	no cap	
Uniform Delay, d1	24.2		16.0	17.1	Error	
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	2.3		1.4	1.8	Error	
Delay (s)	26.4		17.4	18.9	Error	
Level of Service	C		B	B	F	
Approach Delay (s)	26.4			18.8	Error	
Approach LOS	C			B	F	
Intersection Summary						
HCM 2000 Control Delay			Error	HCM 2000 Level of Service		F
HCM 2000 Volume to Capacity ratio			0.47			
Actuated Cycle Length (s)			120.0	Sum of lost time (s)		18.2
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2: Trudeau Drive & Derry Road West













Future Background 2029

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	870	96	224	1328	80	120	76	56	47	62	71
Future Volume (vph)	100	870	96	224	1328	80	120	76	56	47	62	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99		0.99	0.99	
Frt		0.985			0.991			0.937			0.920	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3519	0	1825	3577	0	1807	1748	0	1825	1723	0
Flt Permitted	0.067			0.197			0.654			0.656		
Satd. Flow (perm)	129	3519	0	377	3577	0	1243	1748	0	1243	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			8			30			47	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Adj. Flow (vph)	108	935	103	241	1428	86	129	82	60	51	67	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	1038	0	241	1514	0	129	142	0	51	143	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9	38.9	
Total Split (s)	10.0	70.0		10.0	70.0		40.0	40.0		40.0	40.0	
Total Split (%)	8.3%	58.3%		8.3%	58.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	63.3		6.0	63.3		33.1	33.1		33.1	33.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	

Lanes, Volumes, Timings 2: Trudeau Drive & Derry Road West

Future Background 2029
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effect Green (s)	72.0	63.3		72.0	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.60	0.53		0.60	0.53		0.28	0.28		0.28	0.28	
v/c Ratio	0.67	0.56		0.81	0.80		0.38	0.28		0.15	0.28	
Control Delay	35.9	20.1		34.4	27.2		39.1	28.4		34.4	24.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.9	20.1		34.4	27.2		39.1	28.4		34.4	24.3	
LOS	D	C		C	C		D	C		C	C	
Approach Delay		21.6			28.2			33.5			26.9	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 95

Control Type: Pretimed

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 26.3

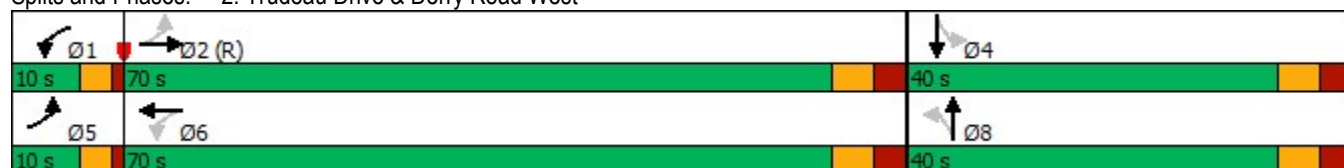
Intersection LOS: C

Intersection Capacity Utilization 100.3%

ICU Level of Service G

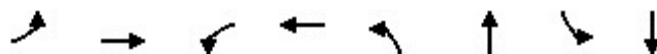
Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West



2: Trudeau Drive & Derry Road West

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	1038	241	1514	129	142	51	143
v/c Ratio	0.67	0.56	0.81	0.80	0.38	0.28	0.15	0.28
Control Delay	35.9	20.1	34.4	27.2	39.1	28.4	34.4	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	20.1	34.4	27.2	39.1	28.4	34.4	24.3
Queue Length 50th (m)	9.2	81.5	22.3	146.9	24.6	20.4	9.1	17.4
Queue Length 95th (m)	#31.6	100.4	#45.9	177.3	42.7	37.6	19.4	34.5
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	162	1863	298	1890	342	503	342	509
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.56	0.81	0.80	0.38	0.28	0.15	0.28

Intersection Summary

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





















Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

Future Background 2029










PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	870	96	224	1328	80	120	76	56	47	62	71
Future Volume (vph)	100	870	96	224	1328	80	120	76	56	47	62	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	3520		1824	3578		1805	1747		1800	1723	
Flt Permitted	0.07	1.00		0.20	1.00		0.65	1.00		0.66	1.00	
Satd. Flow (perm)	129	3520		379	3578		1242	1747		1242	1723	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	108	935	103	241	1428	86	129	82	60	51	67	76
RTOR Reduction (vph)	0	7	0	0	4	0	0	22	0	0	34	0
Lane Group Flow (vph)	108	1031	0	241	1510	0	129	120	0	51	109	0
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Effective Green, g (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.58	0.53		0.58	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Grp Cap (vph)	159	1856		291	1887		342	481		342	475	
v/s Ratio Prot	0.03	0.29		c0.04	0.42			0.07			0.06	
v/s Ratio Perm	0.36			c0.44			c0.10			0.04		
v/c Ratio	0.68	0.56		0.83	0.80		0.38	0.25		0.15	0.23	
Uniform Delay, d1	20.5	18.9		18.3	23.2		35.1	33.8		32.8	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.9	1.2		23.0	3.7		3.2	1.2		0.9	1.1	
Delay (s)	41.4	20.2		41.3	26.9		38.3	35.0		33.7	34.7	
Level of Service	D	C		D	C		D	D		C	C	
Approach Delay (s)		22.2			28.8			36.6			34.5	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			27.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			17.6			
Intersection Capacity Utilization			100.3%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Fourth Line & Derry Road West

Future Background 2029







PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1054	63	0	1497	0	37
Future Volume (vph)	1054	63	0	1497	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.992					0.865
Flt Protected						
Satd. Flow (prot)	3554	0	0	3614	0	1662
Flt Permitted						
Satd. Flow (perm)	3554	0	0	3614	0	1662
Link Speed (k/h)	60			60	50	
Link Distance (m)	245.8			305.4	90.9	
Travel Time (s)	14.7			18.3	6.5	
Confl. Peds. (#/hr)		11	11			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	1133	68	0	1610	0	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1201	0	0	1610	0	40
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Fourth Line & Derry Road West

















Future Background 2029
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Volume (veh/h)	1054	63	0	1497	0	37
Future Volume (Veh/h)	1054	63	0	1497	0	37
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1133	68	0	1610	0	40
Pedestrians					11	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	246			305		
pX, platoon unblocked				0.74	0.77	0.74
vC, conflicting volume				1212	1983	612
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				596	183	0
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				100	100	95
cM capacity (veh/h)				729	606	803
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	755	446	805	805	40	
Volume Left	0	0	0	0	0	
Volume Right	0	68	0	0	40	
cSH	1700	1700	1700	1700	803	
Volume to Capacity	0.44	0.26	0.47	0.47	0.05	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.2	
Control Delay (s)	0.0	0.0	0.0	0.0	9.7	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		9.7	
Approach LOS					A	
Intersection Summary						
Average Delay				0.1		
Intersection Capacity Utilization				44.7%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Background 2029

PM Peak Hour

















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	100	58	15	252	5	102	14	5	3	17	99
Future Volume (vph)	143	100	58	15	252	5	102	14	5	3	17	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.974			0.997			0.994			0.887	
Flt Protected		0.977			0.997			0.960			0.999	
Satd. Flow (prot)	0	1810	0	0	1902	0	0	1833	0	0	1662	0
Flt Permitted		0.977			0.997			0.960			0.999	
Satd. Flow (perm)	0	1810	0	0	1902	0	0	1833	0	0	1662	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)			4	4			10		1	1		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	0%	20%	0%	0%	0%	33%	0%	2%
Adj. Flow (vph)	159	111	64	17	280	6	113	16	6	3	19	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	334	0	0	303	0	0	135	0	0	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.6%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis

4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Future Background 2029

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	143	100	58	15	252	5	102	14	5	3	17	99
Future Volume (vph)	143	100	58	15	252	5	102	14	5	3	17	99
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	159	111	64	17	280	6	113	16	6	3	19	110
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	334	303	135	132								
Volume Left (vph)	159	17	113	3								
Volume Right (vph)	64	6	6	110								
Hadj (s)	0.00	0.01	0.14	-0.45								
Departure Headway (s)	5.1	5.2	5.9	5.4								
Degree Utilization, x	0.48	0.44	0.22	0.20								
Capacity (veh/h)	662	656	531	581								
Control Delay (s)	12.7	12.1	10.6	9.7								
Approach Delay (s)	12.7	12.1	10.6	9.7								
Approach LOS	B	B	B	A								
Intersection Summary												
Delay				11.8								
Level of Service				B								
Intersection Capacity Utilization				54.6%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

















Future Background 2029
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	2	51	12	8	2	130	78	35	6	104	13
Future Volume (vph)	11	2	51	12	8	2	130	78	35	6	104	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.892			0.988			0.981			0.985	
Flt Protected		0.992			0.973			0.974			0.998	
Satd. Flow (prot)	0	1675	0	0	1847	0	0	1830	0	0	1873	0
Flt Permitted		0.992			0.973			0.974			0.998	
Satd. Flow (perm)	0	1675	0	0	1847	0	0	1830	0	0	1873	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	3		4	4		3	1		2	2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	50%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	11	2	53	13	8	2	135	81	36	6	108	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	23	0	0	252	0	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.2%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

6: Trudeau Drive & Harwood Drive

Future Background 2029
PM Peak Hour

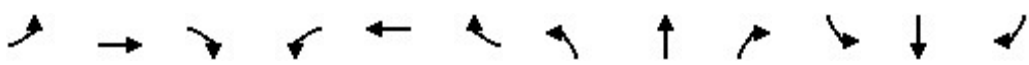






												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	2	51	12	8	2	130	78	35	6	104	13
Future Volume (vph)	11	2	51	12	8	2	130	78	35	6	104	13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	11	2	53	12	8	2	135	81	36	6	108	14
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	66	22	252	128								
Volume Left (vph)	11	12	135	6								
Volume Right (vph)	53	2	36	14								
Hadj (s)	-0.42	0.05	0.03	-0.04								
Departure Headway (s)	4.4	4.9	4.3	4.3								
Degree Utilization, x	0.08	0.03	0.30	0.15								
Capacity (veh/h)	753	670	820	796								
Control Delay (s)	7.7	8.0	9.1	8.1								
Approach Delay (s)	7.7	8.0	9.1	8.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				8.6								
Level of Service				A								
Intersection Capacity Utilization				32.2%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings

Future Total 2029

1: Sauve Street/Rusk Avenue & Derry Road West

AM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Future Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99			1.00	
Frt		0.993			0.996			0.912			0.977	
Flt Protected	0.950			0.950				0.983			0.962	
Satd. Flow (prot)	1825	3541	0	1807	3403	0	0	1696	0	0	1806	0
Flt Permitted	0.397			0.059				0.856			0.560	
Satd. Flow (perm)	763	3541	0	112	3403	0	0	1477	0	0	1050	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			3			79			9	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		311.5			245.8			98.9			133.1	
Travel Time (s)		18.7			14.7			8.9			9.6	
Confl. Peds. (#/hr)			27	27					1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	3%	1%	7%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	5	1796	88	81	655	16	68	1	129	59	3	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1884	0	81	671	0	0	198	0	0	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings

Future Total 2029

1: Sauve Street/Rusk Avenue & Derry Road West

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	39.5	39.5		9.0	39.5		42.7	42.7		42.7	42.7	
Total Split (s)	68.0	68.0		9.0	77.0		43.0	43.0		43.0	43.0	
Total Split (%)	56.7%	56.7%		7.5%	64.2%		35.8%	35.8%		35.8%	35.8%	
Maximum Green (s)	61.5	61.5		5.0	70.5		35.3	35.3		35.3	35.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.8		1.0	2.8		4.4	4.4		4.4	4.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	26.0	26.0			26.0		28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effect Green (s)	64.0	64.0		73.7	71.2			14.3			14.3	
Actuated g/C Ratio	0.64	0.64		0.74	0.71			0.14			0.14	
v/c Ratio	0.01	0.83		0.49	0.28			0.71			0.47	
Control Delay	8.8	19.4		18.1	5.8			38.1			44.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.8	19.4		18.1	5.8			38.1			44.1	
LOS	A	B		B	A			D			D	
Approach Delay		19.3			7.2			38.1			44.1	
Approach LOS		B			A			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 99.7

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 18.1

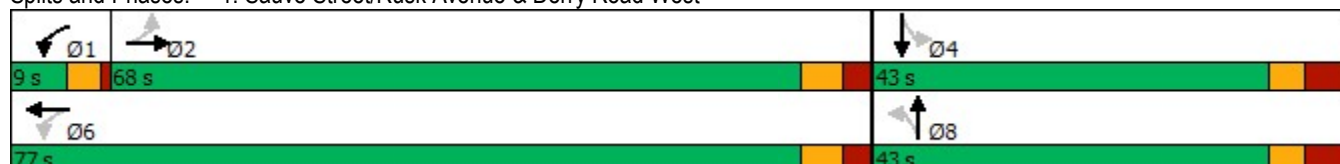
Intersection LOS: B

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street/Rusk Avenue & Derry Road West



Queues

Future Total 2029

1: Sauve Street/Rusk Avenue & Derry Road West

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	5	1884	81	671	198	75
v/c Ratio	0.01	0.83	0.49	0.28	0.71	0.47
Control Delay	8.8	19.4	18.1	5.8	38.1	44.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	19.4	18.1	5.8	38.1	44.1
Queue Length 50th (m)	0.3	136.7	3.4	20.1	21.7	11.7
Queue Length 95th (m)	1.9	#218.7	15.4	35.9	44.9	25.4
Internal Link Dist (m)		287.5		221.8	74.9	109.1
Turn Bay Length (m)						
Base Capacity (vph)	489	2274	167	2429	574	378
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.83	0.49	0.28	0.34	0.20

Intersection Summary



















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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West





















Future Total 2029
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Future Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.91			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	
Satd. Flow (prot)	1825	3542		1807	3404			1696			1804	
Flt Permitted	0.40	1.00		0.06	1.00			0.86			0.56	
Satd. Flow (perm)	762	3542		112	3404			1477			1050	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	1796	88	81	655	16	68	1	129	59	3	13
RTOR Reduction (vph)	0	2	0	0	1	0	0	68	0	0	8	0
Lane Group Flow (vph)	5	1882	0	81	670	0	0	130	0	0	67	0
Confl. Peds. (#/hr)			27	27					1	1		
Heavy Vehicles (%)	0%	2%	3%	1%	7%	0%	2%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	64.0	64.0		72.0	72.0			14.3			14.3	
Effective Green, g (s)	64.0	64.0		72.0	72.0			14.3			14.3	
Actuated g/C Ratio	0.64	0.64		0.72	0.72			0.14			0.14	
Clearance Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	485	2255		147	2438			210			149	
v/s Ratio Prot		c0.53		c0.02	0.20							
v/s Ratio Perm	0.01			0.37				c0.09			0.06	
v/c Ratio	0.01	0.83		0.55	0.27			0.62			0.45	
Uniform Delay, d1	6.7	14.1		16.5	5.0			40.5			39.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	3.8		4.4	0.3			5.6			2.2	
Delay (s)	6.7	18.0		20.9	5.3			46.1			41.7	
Level of Service	A	B		C	A			D			D	
Approach Delay (s)		17.9			7.0			46.1			41.7	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			17.6			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.5			Sum of lost time (s)			18.2			
Intersection Capacity Utilization			82.2%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group













Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1819	28	37	526	14	100	81	97	125	93	58
Future Volume (vph)	89	1819	28	37	526	14	100	81	97	125	93	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt		0.998			0.996			0.918			0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3605	0	1706	3373	0	1807	1665	0	1789	1720	0
Flt Permitted	0.402			0.060			0.577			0.500		
Satd. Flow (perm)	729	3605	0	108	3373	0	1098	1665	0	933	1720	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			49			26	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)									11	11		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Adj. Flow (vph)	98	1999	31	41	578	15	110	89	107	137	102	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	2030	0	41	593	0	110	196	0	137	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9	38.9	
Total Split (s)	9.0	71.8		9.0	71.8		39.2	39.2		39.2	39.2	
Total Split (%)	7.5%	59.8%		7.5%	59.8%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	5.0	65.1		5.0	65.1		32.3	32.3		32.3	32.3	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	74.8	69.2		73.1	65.3		19.2	19.2		19.2	19.2	
Actuated g/C Ratio	0.70	0.65		0.68	0.61		0.18	0.18		0.18	0.18	
v/c Ratio	0.18	0.87		0.28	0.29		0.56	0.58		0.83	0.51	
Control Delay	6.4	23.4		10.6	11.1		51.0	36.5		77.6	38.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.4	23.4		10.6	11.1		51.0	36.5		77.6	38.2	
LOS	A	C		B	B		D	D		E	D	
Approach Delay		22.6			11.1			41.7			56.0	
Approach LOS		C			B			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 107.2

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 25.2

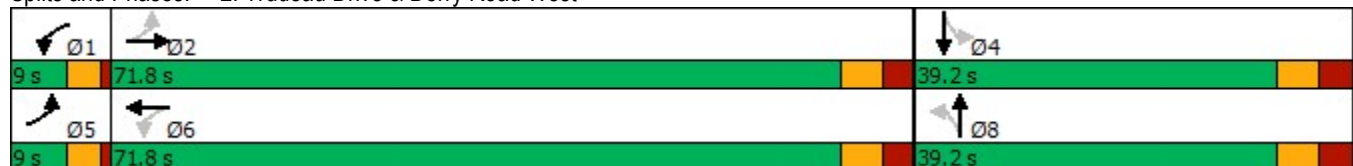
Intersection LOS: C

Intersection Capacity Utilization 99.8%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West



Queues

Future Total 2029

2: Trudeau Drive & Derry Road West

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	2030	41	593	110	196	137	166
v/c Ratio	0.18	0.87	0.28	0.29	0.56	0.58	0.83	0.51
Control Delay	6.4	23.4	10.6	11.1	51.0	36.5	77.6	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	23.4	10.6	11.1	51.0	36.5	77.6	38.2
Queue Length 50th (m)	5.3	184.1	2.1	28.3	21.1	28.0	27.7	26.4
Queue Length 95th (m)	13.6	#301.1	6.8	47.7	38.4	50.1	49.7	46.3
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	554	2327	148	2057	332	537	282	538
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.87	0.28	0.29	0.33	0.36	0.49	0.31

Intersection Summary























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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

















Future Total 2029
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	89	1819	28	37	526	14	100	81	97	125	93	58
Future Volume (vph)	89	1819	28	37	526	14	100	81	97	125	93	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1722	3604		1706	3373		1807	1666		1775	1720	
Flt Permitted	0.40	1.00		0.06	1.00		0.58	1.00		0.50	1.00	
Satd. Flow (perm)	729	3604		107	3373		1097	1666		935	1720	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	98	1999	31	41	578	15	110	89	107	137	102	64
RTOR Reduction (vph)	0	1	0	0	1	0	0	40	0	0	21	0
Lane Group Flow (vph)	98	2029	0	41	592	0	110	156	0	137	145	0
Confl. Peds. (#/hr)									11	11		
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	74.2	69.2		70.0	67.1		19.2	19.2		19.2	19.2	
Effective Green, g (s)	74.2	69.2		70.0	67.1		19.2	19.2		19.2	19.2	
Actuated g/C Ratio	0.68	0.64		0.64	0.62		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	542	2290		111	2078		193	293		164	303	
v/s Ratio Prot	c0.01	c0.56		c0.01	0.18			0.09			0.08	
v/s Ratio Perm	0.11			0.23			0.10			c0.15		
v/c Ratio	0.18	0.89		0.37	0.28		0.57	0.53		0.84	0.48	
Uniform Delay, d1	6.0	16.6		19.5	9.7		41.1	40.8		43.3	40.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	5.5		2.1	0.3		3.8	1.8		29.1	1.2	
Delay (s)	6.1	22.1		21.6	10.1		44.9	42.6		72.4	41.5	
Level of Service	A	C		C	B		D	D		E	D	
Approach Delay (s)		21.3			10.8			43.4			55.5	
Approach LOS		C			B			D			E	
Intersection Summary												
HCM 2000 Control Delay	24.4			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.86											
Actuated Cycle Length (s)	108.9			Sum of lost time (s)			17.6					
Intersection Capacity Utilization	99.8%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings
3: Fourth Line/Cedar Hedge & Derry Road West

Future Total 2029

















AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1844	68	0	730	14	0	0	97	0	0	62
Future Volume (vph)	0	1844	68	0	730	14	0	0	97	0	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.995				0.997				0.865		0.865	
Flt Protected												
Satd. Flow (prot)	0	3559	0	0	3437	0	0	0	1629	0	0	1662
Flt Permitted												
Satd. Flow (perm)	0	3559	0	0	3437	0	0	0	1629	0	0	1662
Link Speed (k/h)	60				60				50		48	
Link Distance (m)	245.8				305.4				90.9		167.2	
Travel Time (s)	14.7				18.3				6.5		12.5	
Confl. Peds. (#/hr)			24	24			1				1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	3%	0%	6%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	0	1941	72	0	768	15	0	0	102	0	0	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2013	0	0	783	0	0	0	102	0	0	65
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	3.7				3.7				0.0		0.0	
Link Offset(m)	0.0				0.0				0.0		0.0	
Crosswalk Width(m)	1.6				1.6				1.6		1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		24	14		24	14		24	14	
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	65.9%											
Analysis Period (min)	15											
ICU Level of Service C												

HCM Unsignalized Intersection Capacity Analysis

















3: Fourth Line/Cedar Hedge & Derry Road West

Future Total 2029
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1844	68	0	730	14	0	0	97	0	0	62
Future Volume (Veh/h)	0	1844	68	0	730	14	0	0	97	0	0	62
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1941	72	0	768	15	0	0	102	0	0	65
Pedestrians		1						24				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						2				
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246			305							
pX, platoon unblocked	0.94			0.54			0.57	0.57	0.54	0.57	0.57	0.94
vC, conflicting volume	783			2037			2451	2784	1030	1848	2812	392
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652			1210			1586	2174	0	520	2224	238
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	82	100	100	91
cM capacity (veh/h)	892			307			37	26	570	202	24	726
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	1294	719	512	271	102	65						
Volume Left	0	0	0	0	0	0						
Volume Right	0	72	0	15	102	65						
cSH	1700	1700	1700	1700	570	726						
Volume to Capacity	0.76	0.42	0.30	0.16	0.18	0.09						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	4.9	2.2						
Control Delay (s)	0.0	0.0	0.0	0.0	12.7	10.4						
Lane LOS					B	B						
Approach Delay (s)	0.0		0.0		12.7	10.4						
Approach LOS					B	B						
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			65.9%		ICU Level of Service				C			
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Future Total 2029
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	139	33	14	114	5	66	47	11	11	44	122
Future Volume (vph)	228	139	33	14	114	5	66	47	11	11	44	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989			0.995			0.988			0.907	
Flt Protected		0.972			0.995			0.974			0.997	
Satd. Flow (prot)	0	1809	0	0	1796	0	0	1731	0	0	1680	0
Flt Permitted		0.972			0.995			0.974			0.997	
Satd. Flow (perm)	0	1809	0	0	1796	0	0	1731	0	0	1680	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)	9		8	8		9	17		5	5		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	1%	2%	10%	15%	5%	0%	5%	11%	0%	10%	0%	4%
Adj. Flow (vph)	285	174	41	18	143	6	83	59	14	14	55	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	500	0	0	167	0	0	156	0	0	222	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.9%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis










4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Total 2029
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	228	139	33	14	114	5	66	47	11	11	44	122
Future Volume (vph)	228	139	33	14	114	5	66	47	11	11	44	122
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	285	174	41	18	142	6	82	59	14	14	55	152
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	500	166	155	221								
Volume Left (vph)	285	18	82	14								
Volume Right (vph)	41	6	14	152								
Hadj (s)	0.10	0.10	0.17	-0.34								
Departure Headway (s)	5.5	6.1	6.5	5.8								
Degree Utilization, x	0.76	0.28	0.28	0.36								
Capacity (veh/h)	500	530	495	551								
Control Delay (s)	23.8	11.4	11.9	12.0								
Approach Delay (s)	23.8	11.4	11.9	12.0								
Approach LOS	C	B	B	B								
Intersection Summary												
Delay				17.5								
Level of Service				C								
Intersection Capacity Utilization				58.9%	ICU Level of Service	B						
Analysis Period (min)				15								

Lanes, Volumes, Timings
5: Cedar Hedge & Harwood Drive










Future Total 2029
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	34	93	18	20	51	32
Future Volume (vph)	34	93	18	20	51	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.901		0.929			
Flt Protected	0.987					0.970
Satd. Flow (prot)	1708	0	1785	0	0	1766
Flt Permitted	0.987					0.970
Satd. Flow (perm)	1708	0	1785	0	0	1766
Link Speed (k/h)	50		50			50
Link Distance (m)	300.1		167.2			296.2
Travel Time (s)	21.6		12.0			21.3
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	9%	0%
Adj. Flow (vph)	37	101	20	22	55	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	42	0	0	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

















5: Cedar Hedge & Harwood Drive

Future Total 2029
AM Peak Hour

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Traffic Volume (veh/h)	34	93	18	20	51	32			
Future Volume (Veh/h)	34	93	18	20	51	32			
Sign Control	Stop		Free			Free			
Grade	0%		0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	37	101	20	22	55	35			
Pedestrians						1			
Lane Width (m)						3.7			
Walking Speed (m/s)						1.1			
Percent Blockage						0			
Right turn flare (veh)									
Median type			None			None			
Median storage veh)									
Upstream signal (m)									
pX, platoon unblocked									
vC, conflicting volume	176	32			42				
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	176	32			42				
tC, single (s)	6.4	6.2			4.2				
tC, 2 stage (s)									
tF (s)	3.5	3.3			2.3				
p0 queue free %	95	90			96				
cM capacity (veh/h)	789	1047			1523				
Direction, Lane #	WB 1	NB 1	SB 1						
Volume Total	138	42	90						
Volume Left	37	0	55						
Volume Right	101	22	0						
cSH	962	1700	1523						
Volume to Capacity	0.14	0.02	0.04						
Queue Length 95th (m)	3.8	0.0	0.9						
Control Delay (s)	9.4	0.0	4.7						
Lane LOS	A		A						
Approach Delay (s)	9.4	0.0	4.7						
Approach LOS	A								
Intersection Summary									
Average Delay		6.3							
Intersection Capacity Utilization		25.7%	ICU Level of Service	A					
Analysis Period (min)		15							

















Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

Future Total 2029
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	12	93	48	12	1	108	64	8	3	126	5
Future Volume (vph)	15	12	93	48	12	1	108	64	8	3	126	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.896			0.998			0.994			0.995	
Flt Protected		0.994			0.962			0.971			0.999	
Satd. Flow (prot)	0	1623	0	0	1844	0	0	1729	0	0	1818	0
Flt Permitted		0.994			0.962			0.971			0.999	
Satd. Flow (perm)	0	1623	0	0	1844	0	0	1729	0	0	1818	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	6		10	10		6	5		14	14		5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	7%	0%	0%	0%	4%	12%	13%	33%	3%	40%
Adj. Flow (vph)	19	15	116	60	15	1	135	80	10	4	158	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	150	0	0	76	0	0	225	0	0	168	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	39.9%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis 6: Trudeau Drive & Harwood Drive

Future Total 2029
AM Peak Hour



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	12	93	48	12	1	108	64	8	3	126	5
Future Volume (vph)	15	12	93	48	12	1	108	64	8	3	126	5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	19	15	116	60	15	1	135	80	10	4	158	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	150	76	225	168								
Volume Left (vph)	19	60	135	4								
Volume Right (vph)	116	1	10	6								
Hadj (s)	-0.35	0.15	0.22	0.07								
Departure Headway (s)	4.6	5.2	4.9	4.8								
Degree Utilization, x	0.19	0.11	0.31	0.23								
Capacity (veh/h)	706	621	699	699								
Control Delay (s)	8.8	8.9	10.1	9.2								
Approach Delay (s)	8.8	8.9	10.1	9.2								
Approach LOS	A	A	B	A								
Intersection Summary												
Delay				9.4								
Level of Service				A								
Intersection Capacity Utilization				39.9%	ICU Level of Service		A					
Analysis Period (min)				15								

Lanes, Volumes, Timings

1: Sauve Street/Rusk Avenue & Derry Road West

Future Total 2029

PM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Future Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00				0.99			1.00	
Frt		0.992			0.995			0.922			0.980	
Flt Protected	0.950			0.950				0.980			0.960	
Satd. Flow (prot)	1825	3546	0	1825	3597	0	0	1719	0	0	1807	0
Flt Permitted	0.172			0.177				0.852			0.666	
Satd. Flow (perm)	330	3546	0	339	3597	0	0	1494	0	0	1250	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			5			58			5	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		311.5			245.8			98.9			133.1	
Travel Time (s)		18.7			14.7			8.9			9.6	
Confl. Peds. (#/hr)			13	13					5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	1110	61	124	1421	53	57	2	81	28	1	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1171	0	124	1474	0	0	140	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings

1: Sauve Street/Rusk Avenue & Derry Road West

Future Total 2029

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	39.5	39.5		9.0	39.5		42.7	42.7		42.7	42.7	
Total Split (s)	62.0	62.0		15.0	77.0		43.0	43.0		43.0	43.0	
Total Split (%)	51.7%	51.7%		12.5%	64.2%		35.8%	35.8%		35.8%	35.8%	
Maximum Green (s)	55.5	55.5		11.0	70.5		35.3	35.3		35.3	35.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.8		1.0	2.8		4.4	4.4		4.4	4.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	26.0	26.0			26.0		28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effect Green (s)	60.0	60.0		73.8	71.3			12.0			12.0	
Actuated g/C Ratio	0.62	0.62		0.76	0.73			0.12			0.12	
v/c Ratio	0.07	0.54		0.34	0.56			0.60			0.22	
Control Delay	10.1	12.3		6.0	7.2			34.7			36.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.1	12.3		6.0	7.2			34.7			36.9	
LOS	B	B		A	A			C			D	
Approach Delay		12.3			7.1			34.7			36.9	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 97.5

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 10.9

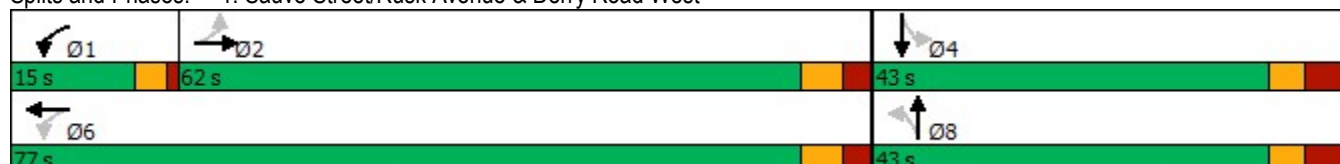
Intersection LOS: B

Intersection Capacity Utilization 84.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street/Rusk Avenue & Derry Road West



Queues

Future Total 2029

1: Sauve Street/Rusk Avenue & Derry Road West

PM Peak Hour





















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	15	1171	124	1474	140	34
v/c Ratio	0.07	0.54	0.34	0.56	0.60	0.22
Control Delay	10.1	12.3	6.0	7.2	34.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	12.3	6.0	7.2	34.7	36.9
Queue Length 50th (m)	1.0	58.0	4.6	52.3	14.4	4.9
Queue Length 95th (m)	4.5	91.8	11.2	85.2	32.9	13.6
Internal Link Dist (m)		287.5		221.8	74.9	109.1
Turn Bay Length (m)						
Base Capacity (vph)	203	2184	424	2630	578	455
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.54	0.29	0.56	0.24	0.07
Intersection Summary						

HCM Signalized Intersection Capacity Analysis





















1: Sauve Street/Rusk Avenue & Derry Road West

Future Total 2029
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Future Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	
Satd. Flow (prot)	1825	3547		1824	3596			1720			1804	
Flt Permitted	0.17	1.00		0.18	1.00			0.85			0.67	
Satd. Flow (perm)	330	3547		341	3596			1495			1252	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	1110	61	124	1421	53	57	2	81	28	1	5
RTOR Reduction (vph)	0	2	0	0	1	0	0	51	0	0	4	0
Lane Group Flow (vph)	15	1169	0	124	1473	0	0	89	0	0	30	0
Confl. Peds. (#/hr)			13	13					5	5		
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	60.0	60.0		71.3	71.3			12.0			12.0	
Effective Green, g (s)	60.0	60.0		71.3	71.3			12.0			12.0	
Actuated g/C Ratio	0.62	0.62		0.73	0.73			0.12			0.12	
Clearance Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	203	2182		360	2629			184			154	
v/s Ratio Prot		0.33		0.03	c0.41							
v/s Ratio Perm	0.05			0.23				c0.06			0.02	
v/c Ratio	0.07	0.54		0.34	0.56			0.48			0.19	
Uniform Delay, d1	7.6	10.8		5.8	6.0			39.9			38.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.7	0.9		0.6	0.9			2.0			0.6	
Delay (s)	8.3	11.7		6.4	6.8			41.9			39.0	
Level of Service	A	B		A	A			D			D	
Approach Delay (s)		11.7			6.8			41.9			39.0	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			97.5			Sum of lost time (s)			18.2			
Intersection Capacity Utilization			84.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												













Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	875	96	224	1389	56	120	79	56	52	63	38
Future Volume (vph)	123	875	96	224	1389	56	120	79	56	52	63	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99		0.99	1.00	
Frt		0.985			0.994			0.938			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3519	0	1825	3589	0	1807	1750	0	1825	1761	0
Flt Permitted	0.063			0.195			0.687			0.650		
Satd. Flow (perm)	121	3519	0	374	3589	0	1305	1750	0	1232	1761	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			5			29			25	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Adj. Flow (vph)	132	941	103	241	1494	60	129	85	60	56	68	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	1044	0	241	1554	0	129	145	0	56	109	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9	38.9	
Total Split (s)	10.0	70.0		10.0	70.0		40.0	40.0		40.0	40.0	
Total Split (%)	8.3%	58.3%		8.3%	58.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	63.3		6.0	63.3		33.1	33.1		33.1	33.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effect Green (s)	72.0	63.3		72.0	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.60	0.53		0.60	0.53		0.28	0.28		0.28	0.28	
v/c Ratio	0.84	0.56		0.81	0.82		0.36	0.29		0.17	0.22	
Control Delay	61.2	20.2		35.1	28.1		38.5	28.9		34.7	26.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.2	20.2		35.1	28.1		38.5	28.9		34.7	26.9	
LOS	E	C		D	C		D	C		C	C	
Approach Delay		24.8			29.0			33.4			29.6	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 95

Control Type: Pretimed

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 27.9

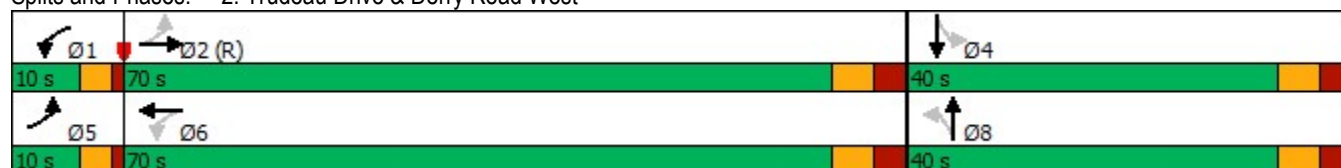
Intersection LOS: C

Intersection Capacity Utilization 102.4%

ICU Level of Service G

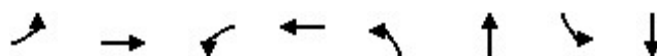
Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West



Queues
2: Trudeau Drive & Derry Road West

Future Total 2029
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	132	1044	241	1554	129	145	56	109
v/c Ratio	0.84	0.56	0.81	0.82	0.36	0.29	0.17	0.22
Control Delay	61.2	20.2	35.1	28.1	38.5	28.9	34.7	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	20.2	35.1	28.1	38.5	28.9	34.7	26.9
Queue Length 50th (m)	14.3	82.2	22.3	153.9	24.5	21.2	10.0	15.1
Queue Length 95th (m)	#48.8	101.4	#46.3	185.1	42.3	38.7	20.9	29.8
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	157	1863	296	1895	359	503	339	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.56	0.81	0.82	0.36	0.29	0.17	0.22























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

















Future Total 2029
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	123	875	96	224	1389	56	120	79	56	52	63	38
Future Volume (vph)	123	875	96	224	1389	56	120	79	56	52	63	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	3520		1824	3590		1805	1750		1800	1760	
Flt Permitted	0.06	1.00		0.20	1.00		0.69	1.00		0.65	1.00	
Satd. Flow (perm)	121	3520		375	3590		1305	1750		1232	1760	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	132	941	103	241	1494	60	129	85	60	56	68	41
RTOR Reduction (vph)	0	7	0	0	2	0	0	21	0	0	18	0
Lane Group Flow (vph)	132	1037	0	241	1552	0	129	124	0	56	91	0
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Effective Green, g (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.58	0.53		0.58	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Grp Cap (vph)	155	1856		289	1893		359	482		339	485	
v/s Ratio Prot	c0.04	0.29		0.04	0.43			0.07			0.05	
v/s Ratio Perm	c0.45			0.44			c0.10			0.05		
v/c Ratio	0.85	0.56		0.83	0.82		0.36	0.26		0.17	0.19	
Uniform Delay, d1	25.0	19.0		18.4	23.6		34.9	33.9		33.0	33.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	41.2	1.2		23.7	4.1		2.8	1.3		1.0	0.9	
Delay (s)	66.3	20.2		42.1	27.7		37.7	35.2		34.0	34.0	
Level of Service	E	C		D	C		D	D		C	C	
Approach Delay (s)		25.4			29.7			36.4			34.0	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			28.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			17.6			
Intersection Capacity Utilization			102.4%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Fourth Line/Cedar Hedge & Derry Road West

Future Total 2029

















PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1082	63	0	1511	47	0	0	37	0	0	38
Future Volume (vph)	0	1082	63	0	1511	47	0	0	37	0	0	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.992				0.995				0.865		0.865	
Flt Protected												
Satd. Flow (prot)	0	3554	0	0	3597	0	0	0	1662	0	0	1662
Flt Permitted												
Satd. Flow (perm)	0	3554	0	0	3597	0	0	0	1662	0	0	1662
Link Speed (k/h)	60				60				50		48	
Link Distance (m)	245.8				305.4				90.9		167.2	
Travel Time (s)	14.7				18.3				6.5		12.5	
Confl. Peds. (#/hr)			11	11								
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	1163	68	0	1625	51	0	0	40	0	0	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1231	0	0	1676	0	0	0	40	0	0	41
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	3.7				3.7				0.0		0.0	
Link Offset(m)	0.0				0.0				0.0		0.0	
Crosswalk Width(m)	1.6				1.6				1.6		1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.3%				ICU Level of Service A							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

3: Fourth Line/Cedar Hedge & Derry Road West

















Future Total 2029
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1082	63	0	1511	47	0	0	37	0	0	38
Future Volume (Veh/h)	0	1082	63	0	1511	47	0	0	37	0	0	38
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	1163	68	0	1625	51	0	0	40	0	0	41
Pedestrians								11				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.1				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		246			305							
pX, platoon unblocked	0.62			0.81			0.71	0.71	0.81	0.71	0.71	0.62
vC, conflicting volume	1676			1242			2062	2884	626	2272	2892	838
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	858			830			486	1639	70	781	1651	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	94
cM capacity (veh/h)	489			650			308	71	789	194	70	674
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	775	456	1083	593	40	41						
Volume Left	0	0	0	0	0	0						
Volume Right	0	68	0	51	40	41						
cSH	1700	1700	1700	1700	789	674						
Volume to Capacity	0.46	0.27	0.64	0.35	0.05	0.06						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.2	1.5						
Control Delay (s)	0.0	0.0	0.0	0.0	9.8	10.7						
Lane LOS					A	B						
Approach Delay (s)	0.0		0.0		9.8	10.7						
Approach LOS					A	B						
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			53.3%		ICU Level of Service		A					
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Future Total 2029

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	100	58	15	252	5	102	19	5	3	50	109
Future Volume (vph)	148	100	58	15	252	5	102	19	5	3	50	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.997			0.994			0.909	
Flt Protected		0.976			0.997			0.961			0.999	
Satd. Flow (prot)	0	1810	0	0	1902	0	0	1835	0	0	1712	0
Flt Permitted		0.976			0.997			0.961			0.999	
Satd. Flow (perm)	0	1810	0	0	1902	0	0	1835	0	0	1712	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)			4	4			10		1	1		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	0%	20%	0%	0%	0%	33%	0%	2%
Adj. Flow (vph)	164	111	64	17	280	6	113	21	6	3	56	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	0	303	0	0	140	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	63.0%						ICU Level of Service B					
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis 4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Total 2029
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	148	100	58	15	252	5	102	19	5	3	50	109
Future Volume (vph)	148	100	58	15	252	5	102	19	5	3	50	109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	164	111	64	17	280	6	113	21	6	3	56	121
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	339	303	140	180								
Volume Left (vph)	164	17	113	3								
Volume Right (vph)	64	6	6	121								
Hadj (s)	0.00	0.01	0.14	-0.37								
Departure Headway (s)	5.4	5.4	6.1	5.6								
Degree Utilization, x	0.50	0.46	0.24	0.28								
Capacity (veh/h)	633	624	510	568								
Control Delay (s)	13.7	12.9	11.1	10.7								
Approach Delay (s)	13.7	12.9	11.1	10.7								
Approach LOS	B	B	B	B								
Intersection Summary												
Delay				12.5								
Level of Service				B								
Intersection Capacity Utilization				63.0%	ICU Level of Service	B						
Analysis Period (min)				15								

Lanes, Volumes, Timings
5: Cedar Hedge & Harwood Drive










Future Total 2029
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	125	5	5	71	32
Future Volume (vph)	42	125	5	5	71	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899		0.932			
Flt Protected	0.988					0.967
Satd. Flow (prot)	1706	0	1790	0	0	1858
Flt Permitted	0.988					0.967
Satd. Flow (perm)	1706	0	1790	0	0	1858
Link Speed (k/h)	50		50			50
Link Distance (m)	300.1		167.2			296.2
Travel Time (s)	21.6		12.0			21.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	46	136	5	5	77	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	182	0	10	0	0	112
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

















5: Cedar Hedge & Harwood Drive

Future Total 2029
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	42	125	5	5	71	32
Future Volume (Veh/h)	42	125	5	5	71	32
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	136	5	5	77	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	196	8			10	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	8			10	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	87			95	
cM capacity (veh/h)	759	1081			1623	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	182	10	112			
Volume Left	46	0	77			
Volume Right	136	5	0			
cSH	976	1700	1623			
Volume to Capacity	0.19	0.01	0.05			
Queue Length 95th (m)	5.2	0.0	1.1			
Control Delay (s)	9.5	0.0	5.1			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	5.1			
Approach LOS	A					
Intersection Summary						
Average Delay		7.6				
Intersection Capacity Utilization		29.0%		ICU Level of Service		A
Analysis Period (min)		15				

















Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

Future Total 2029
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	2	40	12	8	2	144	66	35	6	88	13
Future Volume (vph)	11	2	40	12	8	2	144	66	35	6	88	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.897			0.988			0.981			0.983	
Flt Protected		0.990			0.973			0.971			0.997	
Satd. Flow (prot)	0	1676	0	0	1847	0	0	1825	0	0	1867	0
Flt Permitted		0.990			0.973			0.971			0.997	
Satd. Flow (perm)	0	1676	0	0	1847	0	0	1825	0	0	1867	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	3		4	4		3	1		2	2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	50%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	11	2	42	13	8	2	150	69	36	6	92	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	23	0	0	255	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	31.7%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 6: Trudeau Drive & Harwood Drive

Future Total 2029
PM Peak Hour



















																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Sign Control		Stop			Stop			Stop			Stop									
Traffic Volume (vph)	11	2	40	12	8	2	144	66	35	6	88	13								
Future Volume (vph)	11	2	40	12	8	2	144	66	35	6	88	13								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96								
Hourly flow rate (vph)	11	2	42	12	8	2	150	69	36	6	92	14								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total (vph)	55	22	255	112																
Volume Left (vph)	11	12	150	6																
Volume Right (vph)	42	2	36	14																
Hadj (s)	-0.39	0.05	0.04	-0.05																
Departure Headway (s)	4.4	4.8	4.2	4.3																
Degree Utilization, x	0.07	0.03	0.30	0.13																
Capacity (veh/h)	753	679	828	803																
Control Delay (s)	7.7	8.0	9.0	8.0																
Approach Delay (s)	7.7	8.0	9.0	8.0																
Approach LOS	A	A	A	A																
Intersection Summary																				
Delay			8.5																	
Level of Service			A																	
Intersection Capacity Utilization			31.7%	ICU Level of Service		A														
Analysis Period (min)			15																	

Lanes, Volumes, Timings

Future Total 2029 - Sensitivity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

AM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Future Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99			1.00	
Frt		0.993			0.996			0.912			0.977	
Flt Protected	0.950			0.950				0.983			0.962	
Satd. Flow (prot)	1825	3541	0	1807	3403	0	0	1696	0	0	1806	0
Flt Permitted	0.397			0.059				0.856			0.560	
Satd. Flow (perm)	763	3541	0	112	3403	0	0	1477	0	0	1050	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			3			79			9	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		311.5			245.8			98.9			133.1	
Travel Time (s)		18.7			14.7			8.9			9.6	
Confl. Peds. (#/hr)			27	27					1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	3%	1%	7%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	5	1796	88	81	655	16	68	1	129	59	3	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1884	0	81	671	0	0	198	0	0	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings

Future Total 2029 - Sensitivity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	39.5	39.5		9.0	39.5		42.7	42.7		42.7	42.7	
Total Split (s)	68.0	68.0		9.0	77.0		43.0	43.0		43.0	43.0	
Total Split (%)	56.7%	56.7%		7.5%	64.2%		35.8%	35.8%		35.8%	35.8%	
Maximum Green (s)	61.5	61.5		5.0	70.5		35.3	35.3		35.3	35.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.8		1.0	2.8		4.4	4.4		4.4	4.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	26.0	26.0			26.0		28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effect Green (s)	64.0	64.0		73.7	71.2			14.3			14.3	
Actuated g/C Ratio	0.64	0.64		0.74	0.71			0.14			0.14	
v/c Ratio	0.01	0.83		0.49	0.28			0.71			0.47	
Control Delay	8.8	19.4		18.1	5.8			38.1			44.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	8.8	19.4		18.1	5.8			38.1			44.1	
LOS	A	B		B	A			D			D	
Approach Delay		19.3			7.2			38.1			44.1	
Approach LOS		B			A			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 99.7

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 18.1

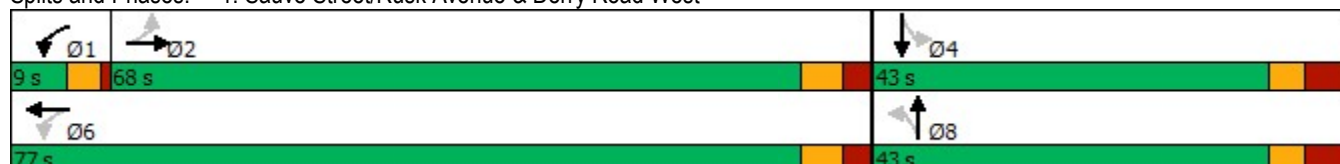
Intersection LOS: B

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street/Rusk Avenue & Derry Road West



Queues

Future Total 2029 - Sensitivity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	5	1884	81	671	198	75
v/c Ratio	0.01	0.83	0.49	0.28	0.71	0.47
Control Delay	8.8	19.4	18.1	5.8	38.1	44.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	19.4	18.1	5.8	38.1	44.1
Queue Length 50th (m)	0.3	136.7	3.4	20.1	21.7	11.7
Queue Length 95th (m)	1.9	#218.7	15.4	35.9	44.9	25.4
Internal Link Dist (m)		287.5		221.8	74.9	109.1
Turn Bay Length (m)						
Base Capacity (vph)	489	2274	167	2429	574	378
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.83	0.49	0.28	0.34	0.20

Intersection Summary

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



















Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

Future Total 2029 - Sensitivity Analysis

AM Peak Hour





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Future Volume (vph)	5	1742	85	79	635	16	66	1	125	57	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	1.00			0.91			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	
Satd. Flow (prot)	1825	3542		1807	3404			1696			1804	
Flt Permitted	0.40	1.00		0.06	1.00			0.86			0.56	
Satd. Flow (perm)	762	3542		112	3404			1477			1050	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	1796	88	81	655	16	68	1	129	59	3	13
RTOR Reduction (vph)	0	2	0	0	1	0	0	68	0	0	8	0
Lane Group Flow (vph)	5	1882	0	81	670	0	0	130	0	0	67	0
Confl. Peds. (#/hr)			27	27					1	1		
Heavy Vehicles (%)	0%	2%	3%	1%	7%	0%	2%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	64.0	64.0		72.0	72.0			14.3			14.3	
Effective Green, g (s)	64.0	64.0		72.0	72.0			14.3			14.3	
Actuated g/C Ratio	0.64	0.64		0.72	0.72			0.14			0.14	
Clearance Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	485	2255		147	2438			210			149	
v/s Ratio Prot		c0.53		c0.02	0.20							
v/s Ratio Perm	0.01			0.37				c0.09			0.06	
v/c Ratio	0.01	0.83		0.55	0.27			0.62			0.45	
Uniform Delay, d1	6.7	14.1		16.5	5.0			40.5			39.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.0	3.8		4.4	0.3			5.6			2.2	
Delay (s)	6.7	18.0		20.9	5.3			46.1			41.7	
Level of Service	A	B		C	A			D			D	
Approach Delay (s)		17.9			7.0			46.1			41.7	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			17.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.5			Sum of lost time (s)			18.2			
Intersection Capacity Utilization			82.2%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029 - Sensitivity Analysis













AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1819	28	37	512	28	100	81	97	125	93	120
Future Volume (vph)	89	1819	28	37	512	28	100	81	97	125	93	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.99		0.99		
Frt		0.998			0.992			0.918			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1722	3605	0	1706	3366	0	1807	1665	0	1789	1676	0
Flt Permitted	0.402			0.060			0.406			0.501		
Satd. Flow (perm)	729	3605	0	108	3366	0	772	1665	0	935	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			7			49			53	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)									11	11		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Adj. Flow (vph)	98	1999	31	41	563	31	110	89	107	137	102	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	2030	0	41	594	0	110	196	0	137	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029 - Sensitivity Analysis

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8			4		
Detector Phase	5	2		1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		10.0	10.0		10.0		10.0
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9		38.9
Total Split (s)	9.0	71.8		9.0	71.8		39.2	39.2		39.2		39.2
Total Split (%)	7.5%	59.8%		7.5%	59.8%		32.7%	32.7%		32.7%		32.7%
Maximum Green (s)	5.0	65.1		5.0	65.1		32.3	32.3		32.3		32.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7		3.7
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2		3.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9		6.9
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	None	Max		None	Max		None	None		None		None
Walk Time (s)		7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0		25.0
Pedestrian Calls (#/hr)		0			0		0	0		0		0
Act Effect Green (s)	74.8	69.2		73.1	65.4		19.3	19.3		19.3		19.3
Actuated g/C Ratio	0.70	0.64		0.68	0.61		0.18	0.18		0.18		0.18
v/c Ratio	0.18	0.87		0.28	0.29		0.80	0.58		0.82		0.68
Control Delay	6.5	23.6		10.7	11.2		78.4	36.3		76.3		41.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	6.5	23.6		10.7	11.2		78.4	36.3		76.3		41.3
LOS	A	C		B	B		E	D		E		D
Approach Delay		22.8			11.1			51.4				54.2
Approach LOS		C			B			D				D

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 107.4

Natural Cycle: 125

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.6

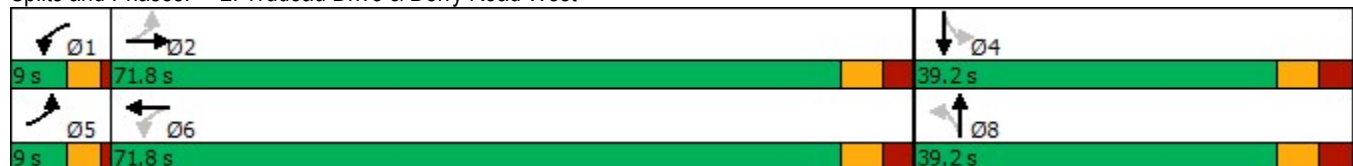
Intersection LOS: C

Intersection Capacity Utilization 99.8%

ICU Level of Service F

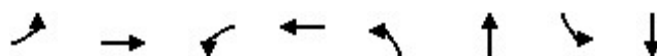
Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West



Queues
2: Trudeau Drive & Derry Road West

Future Total 2029 - Sensitivity Analysis
AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	2030	41	594	110	196	137	234
v/c Ratio	0.18	0.87	0.28	0.29	0.80	0.58	0.82	0.68
Control Delay	6.5	23.6	10.7	11.2	78.4	36.3	76.3	41.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	23.6	10.7	11.2	78.4	36.3	76.3	41.3
Queue Length 50th (m)	5.3	184.1	2.1	28.2	22.1	28.0	27.7	35.5
Queue Length 95th (m)	14.0	#305.4	7.0	48.4	42.0	49.8	49.4	60.2
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	554	2324	148	2051	233	536	282	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.87	0.28	0.29	0.47	0.37	0.49	0.43

Intersection Summary





















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

















HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

Future Total 2029 - Sensitivity Analysis

















AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	1819	28	37	512	28	100	81	97	125	93	120
Future Volume (vph)	89	1819	28	37	512	28	100	81	97	125	93	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1722	3604		1706	3366		1807	1666		1775	1677	
Flt Permitted	0.40	1.00		0.06	1.00		0.41	1.00		0.50	1.00	
Satd. Flow (perm)	728	3604		107	3366		773	1666		936	1677	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	98	1999	31	41	563	31	110	89	107	137	102	132
RTOR Reduction (vph)	0	1	0	0	3	0	0	40	0	0	44	0
Lane Group Flow (vph)	98	2029	0	41	591	0	110	156	0	137	190	0
Confl. Peds. (#/hr)									11	11		
Heavy Vehicles (%)	6%	1%	4%	7%	8%	0%	1%	10%	0%	2%	6%	4%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	74.2	69.2		70.0	67.1		19.3	19.3		19.3	19.3	
Effective Green, g (s)	74.2	69.2		70.0	67.1		19.3	19.3		19.3	19.3	
Actuated g/C Ratio	0.68	0.63		0.64	0.62		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	541	2288		111	2072		136	294		165	296	
v/s Ratio Prot	c0.01	c0.56		c0.01	0.18			0.09			0.11	
v/s Ratio Perm	0.11			0.23			0.14			c0.15		
v/c Ratio	0.18	0.89		0.37	0.29		0.81	0.53		0.83	0.64	
Uniform Delay, d1	6.0	16.6		19.6	9.8		43.1	40.7		43.3	41.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	5.6		2.1	0.3		28.6	1.7		28.3	4.7	
Delay (s)	6.1	22.2		21.6	10.1		71.7	42.4		71.6	46.4	
Level of Service	A	C		C	B		E	D		E	D	
Approach Delay (s)		21.5			10.9			52.9			55.7	
Approach LOS		C			B			D			E	
Intersection Summary												
HCM 2000 Control Delay			26.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			109.0			Sum of lost time (s)				17.6		
Intersection Capacity Utilization			99.8%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	1844	68	0	743	0	0	0	97	0	0	0	
Future Volume (vph)	0	1844	68	0	743	0	0	0	97	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt	0.995				0.865								
Flt Protected													
Satd. Flow (prot)	0	3559	0	0	3444	0	0	0	1629	0	0	1921	
Flt Permitted													
Satd. Flow (perm)	0	3559	0	0	3444	0	0	0	1629	0	0	1921	
Link Speed (k/h)	60				60				50				48
Link Distance (m)	245.8				305.4				90.9				167.2
Travel Time (s)	14.7				18.3				6.5				12.5
Confl. Peds. (#/hr)			24	24			1						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	2%	3%	0%	6%	0%	0%	0%	2%	0%	0%	0%	
Adj. Flow (vph)	0	1941	72	0	782	0	0	0	102	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	2013	0	0	782	0	0	0	102	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	3.7				3.7				0.0				0.0
Link Offset(m)	0.0				0.0				0.0				0.0
Crosswalk Width(m)	1.6				1.6				1.6				1.6
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14	24		14	24		14	24		14	
Sign Control	Free				Free				Stop		Stop		
Intersection Summary													
Area Type:	Other												
Control Type:	Unsignalized												
Intersection Capacity Utilization	65.9%				ICU Level of Service C								
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis 3: Fourth Line/Cedar Hedge & Derry Road West

















Future Total 2029 - Sensitivity Analysis
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1844	68	0	743	0	0	0	97	0	0	0
Future Volume (Veh/h)	0	1844	68	0	743	0	0	0	97	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1941	72	0	782	0	0	0	102	0	0	0
Pedestrians		1						24				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						2				
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246			305							
pX, platoon unblocked	0.95			0.54			0.56	0.56	0.54	0.56	0.56	0.95
vC, conflicting volume	782			2037			2393	2783	1030	1854	2819	392
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	670			1210			1536	2230	0	578	2294	261
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	82	100	100	100
cM capacity (veh/h)	885			307			43	24	570	183	22	708
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	1294	719	521	261	102	0						
Volume Left	0	0	0	0	0	0						
Volume Right	0	72	0	0	102	0						
cSH	1700	1700	1700	1700	570	1700						
Volume to Capacity	0.76	0.42	0.31	0.15	0.18	0.00						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	4.9	0.0						
Control Delay (s)	0.0	0.0	0.0	0.0	12.7	0.0						
Lane LOS					B	A						
Approach Delay (s)	0.0		0.0		12.7	0.0						
Approach LOS					B	A						
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			65.9%		ICU Level of Service		C					
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Future Total 2029 - Sensitivity Analysis

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	139	33	14	114	5	66	47	11	11	20	122
Future Volume (vph)	228	139	33	14	114	5	66	47	11	11	20	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989			0.995			0.988			0.892	
Flt Protected		0.972			0.995			0.974			0.996	
Satd. Flow (prot)	0	1809	0	0	1796	0	0	1731	0	0	1642	0
Flt Permitted		0.972			0.995			0.974			0.996	
Satd. Flow (perm)	0	1809	0	0	1796	0	0	1731	0	0	1642	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)	9		8	8		9	17		5	5		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	1%	2%	10%	15%	5%	0%	5%	11%	0%	10%	0%	4%
Adj. Flow (vph)	285	174	41	18	143	6	83	59	14	14	25	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	500	0	0	167	0	0	156	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.3%						ICU Level of Service B					
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis 4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Total 2029 - Sensitivity Analysis
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	228	139	33	14	114	5	66	47	11	11	20	122
Future Volume (vph)	228	139	33	14	114	5	66	47	11	11	20	122
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	285	174	41	18	142	6	82	59	14	14	25	152
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	500	166	155	191								
Volume Left (vph)	285	18	82	14								
Volume Right (vph)	41	6	14	152								
Hadj (s)	0.10	0.10	0.17	-0.40								
Departure Headway (s)	5.4	5.9	6.3	5.7								
Degree Utilization, x	0.74	0.27	0.27	0.30								
Capacity (veh/h)	500	548	498	555								
Control Delay (s)	22.3	11.1	11.7	11.2								
Approach Delay (s)	22.3	11.1	11.7	11.2								
Approach LOS	C	B	B	B								
Intersection Summary												
Delay				16.7								
Level of Service				C								
Intersection Capacity Utilization				58.3%	ICU Level of Service	B						
Analysis Period (min)				15								










Lanes, Volumes, Timings
5: Cedar Hedge & Harwood Drive

Future Total 2029 - Sensitivity Analysis
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	93	18	33	51	8
Future Volume (vph)	18	93	18	33	51	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.887		0.913			
Flt Protected	0.992					0.959
Satd. Flow (prot)	1690	0	1754	0	0	1710
Flt Permitted	0.992					0.959
Satd. Flow (perm)	1690	0	1754	0	0	1710
Link Speed (k/h)	50		50			50
Link Distance (m)	300.1		167.2			296.2
Travel Time (s)	21.6		12.0			21.3
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	9%	0%
Adj. Flow (vph)	20	101	20	36	55	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	0	56	0	0	64
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 5: Cedar Hedge & Harwood Drive

















Future Total 2029 - Sensitivity Analysis
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	93	18	33	51	8
Future Volume (Veh/h)	18	93	18	33	51	8
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	101	20	36	55	9
Pedestrians						1
Lane Width (m)						3.7
Walking Speed (m/s)						1.1
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	157	39			56	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	39			56	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	90			96	
cM capacity (veh/h)	808	1037			1505	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	121	56	64			
Volume Left	20	0	55			
Volume Right	101	36	0			
cSH	991	1700	1505			
Volume to Capacity	0.12	0.03	0.04			
Queue Length 95th (m)	3.2	0.0	0.9			
Control Delay (s)	9.1	0.0	6.5			
Lane LOS	A		A			
Approach Delay (s)	9.1	0.0	6.5			
Approach LOS	A					
Intersection Summary						
Average Delay		6.3				
Intersection Capacity Utilization		23.6%	ICU Level of Service	A		
Analysis Period (min)		15				

Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

















Future Total 2029 - Sensitivity Analysis

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	12	131	48	12	1	119	67	8	3	151	5
Future Volume (vph)	15	12	131	48	12	1	119	67	8	3	151	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.888			0.998			0.994			0.996	
Flt Protected		0.995			0.962			0.970			0.999	
Satd. Flow (prot)	0	1604	0	0	1844	0	0	1729	0	0	1825	0
Flt Permitted		0.995			0.962			0.970			0.999	
Satd. Flow (perm)	0	1604	0	0	1844	0	0	1729	0	0	1825	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	6		10	10		6	5		14	14		5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	7%	0%	0%	0%	4%	12%	13%	33%	3%	40%
Adj. Flow (vph)	19	15	164	60	15	1	149	84	10	4	189	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	198	0	0	76	0	0	243	0	0	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.7%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM Unsignalized Intersection Capacity Analysis 6: Trudeau Drive & Harwood Drive

Future Total 2029 - Sensitivity Analysis
AM Peak Hour



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	12	131	48	12	1	119	67	8	3	151	5
Future Volume (vph)	15	12	131	48	12	1	119	67	8	3	151	5
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	19	15	164	60	15	1	149	84	10	4	189	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	198	76	243	199								
Volume Left (vph)	19	60	149	4								
Volume Right (vph)	164	1	10	6								
Hadj (s)	-0.38	0.15	0.22	0.07								
Departure Headway (s)	4.8	5.5	5.1	5.0								
Degree Utilization, x	0.26	0.12	0.34	0.28								
Capacity (veh/h)	687	585	668	669								
Control Delay (s)	9.5	9.2	10.8	9.9								
Approach Delay (s)	9.5	9.2	10.8	9.9								
Approach LOS	A	A	B	A								
Intersection Summary												
Delay				10.0								
Level of Service				B								
Intersection Capacity Utilization				47.7%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings

Future Total 2029 - Sensitivity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

PM Peak Hour













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Future Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00				0.99			1.00	
Frt		0.992			0.995			0.922			0.980	
Flt Protected	0.950			0.950				0.980			0.960	
Satd. Flow (prot)	1825	3546	0	1825	3597	0	0	1719	0	0	1807	0
Flt Permitted	0.172			0.177				0.852			0.666	
Satd. Flow (perm)	330	3546	0	339	3597	0	0	1494	0	0	1250	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			5			58			5	
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		311.5			245.8			98.9			133.1	
Travel Time (s)		18.7			14.7			8.9			9.6	
Confl. Peds. (#/hr)			13	13					5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	1110	61	124	1421	53	57	2	81	28	1	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	1171	0	124	1474	0	0	140	0	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		

Lanes, Volumes, Timings

Future Total 2029 - Sensitivity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		5.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	39.5	39.5		9.0	39.5		42.7	42.7		42.7	42.7	
Total Split (s)	62.0	62.0		15.0	77.0		43.0	43.0		43.0	43.0	
Total Split (%)	51.7%	51.7%		12.5%	64.2%		35.8%	35.8%		35.8%	35.8%	
Maximum Green (s)	55.5	55.5		11.0	70.5		35.3	35.3		35.3	35.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.8		1.0	2.8		4.4	4.4		4.4	4.4	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		None	Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	26.0	26.0			26.0		28.0	28.0		28.0	28.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effect Green (s)	60.0	60.0		73.8	71.3			12.0			12.0	
Actuated g/C Ratio	0.62	0.62		0.76	0.73			0.12			0.12	
v/c Ratio	0.07	0.54		0.34	0.56			0.60			0.22	
Control Delay	10.1	12.3		6.0	7.2			34.7			36.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	10.1	12.3		6.0	7.2			34.7			36.9	
LOS	B	B		A	A			C			D	
Approach Delay		12.3			7.1			34.7			36.9	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 97.5

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 10.9

Intersection LOS: B

Intersection Capacity Utilization 84.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Sauve Street/Rusk Avenue & Derry Road West



Queues

Future Total 2029 - Sensitivity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

PM Peak Hour





















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	15	1171	124	1474	140	34
v/c Ratio	0.07	0.54	0.34	0.56	0.60	0.22
Control Delay	10.1	12.3	6.0	7.2	34.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	12.3	6.0	7.2	34.7	36.9
Queue Length 50th (m)	1.0	58.0	4.6	52.3	14.4	4.9
Queue Length 95th (m)	4.5	91.8	11.2	85.2	32.9	13.6
Internal Link Dist (m)		287.5		221.8	74.9	109.1
Turn Bay Length (m)						
Base Capacity (vph)	203	2184	424	2630	578	455
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.54	0.29	0.56	0.24	0.07
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

1: Sauve Street/Rusk Avenue & Derry Road West

Future Total 2029 - Sensitivity Analysis

PM Peak Hour





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Future Volume (vph)	14	1043	57	117	1336	50	54	2	76	26	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.92			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	
Satd. Flow (prot)	1825	3547		1824	3596			1720			1804	
Flt Permitted	0.17	1.00		0.18	1.00			0.85			0.67	
Satd. Flow (perm)	330	3547		341	3596			1495			1252	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	1110	61	124	1421	53	57	2	81	28	1	5
RTOR Reduction (vph)	0	2	0	0	1	0	0	51	0	0	4	0
Lane Group Flow (vph)	15	1169	0	124	1473	0	0	89	0	0	30	0
Confl. Peds. (#/hr)			13	13					5	5		
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	60.0	60.0		71.3	71.3			12.0			12.0	
Effective Green, g (s)	60.0	60.0		71.3	71.3			12.0			12.0	
Actuated g/C Ratio	0.62	0.62		0.73	0.73			0.12			0.12	
Clearance Time (s)	6.5	6.5		4.0	6.5			7.7			7.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	203	2182		360	2629			184			154	
v/s Ratio Prot		0.33		0.03	c0.41							
v/s Ratio Perm	0.05			0.23				c0.06			0.02	
v/c Ratio	0.07	0.54		0.34	0.56			0.48			0.19	
Uniform Delay, d1	7.6	10.8		5.8	6.0			39.9			38.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.7	0.9		0.6	0.9			2.0			0.6	
Delay (s)	8.3	11.7		6.4	6.8			41.9			39.0	
Level of Service	A	B		A	A			D			D	
Approach Delay (s)		11.7			6.8			41.9			39.0	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			97.5			Sum of lost time (s)			18.2			
Intersection Capacity Utilization			84.0%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West













Future Total 2029 - Sensitivity Analysis

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	875	96	224	1342	103	120	79	56	52	63	76
Future Volume (vph)	123	875	96	224	1342	103	120	79	56	52	63	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	50.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00		1.00	0.99		0.99	0.99	
Frt		0.985			0.989			0.938			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3519	0	1825	3568	0	1807	1750	0	1825	1720	0
Flt Permitted	0.063			0.195			0.642			0.650		
Satd. Flow (perm)	121	3519	0	374	3568	0	1220	1750	0	1232	1720	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			10			29			50	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		305.4			62.0			99.2			165.1	
Travel Time (s)		18.3			3.7			7.1			11.9	
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Adj. Flow (vph)	132	941	103	241	1443	111	129	85	60	56	68	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	1044	0	241	1554	0	129	145	0	56	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	9.0	36.7		9.0	36.7		38.9	38.9		38.9	38.9	
Total Split (s)	10.0	70.0		10.0	70.0		40.0	40.0		40.0	40.0	
Total Split (%)	8.3%	58.3%		8.3%	58.3%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	63.3		6.0	63.3		33.1	33.1		33.1	33.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		1.0	3.0		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		23.0			23.0		25.0	25.0		25.0	25.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	

Lanes, Volumes, Timings
2: Trudeau Drive & Derry Road West

Future Total 2029 - Sensitivity Analysis
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effect Green (s)	72.0	63.3		72.0	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.60	0.53		0.60	0.53		0.28	0.28		0.28	0.28	
v/c Ratio	0.84	0.56		0.81	0.82		0.38	0.29		0.17	0.29	
Control Delay	61.2	20.2		35.1	28.2		39.3	28.9		34.7	24.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.2	20.2		35.1	28.2		39.3	28.9		34.7	24.3	
LOS	E	C		D	C		D	C		C	C	
Approach Delay		24.8			29.2			33.8			27.1	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 95

Control Type: Pretimed

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 27.9

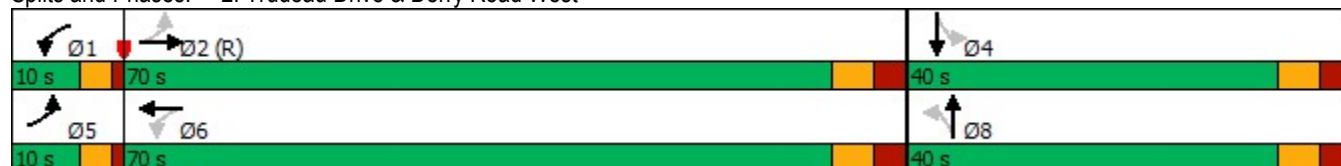
Intersection LOS: C

Intersection Capacity Utilization 102.7%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 2: Trudeau Drive & Derry Road West

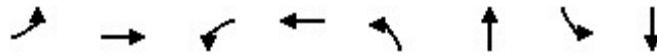


Queues

Future Total 2029 - Sensitivity Analysis

2: Trudeau Drive & Derry Road West

PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	132	1044	241	1554	129	145	56	150
v/c Ratio	0.84	0.56	0.81	0.82	0.38	0.29	0.17	0.29
Control Delay	61.2	20.2	35.1	28.2	39.3	28.9	34.7	24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	20.2	35.1	28.2	39.3	28.9	34.7	24.3
Queue Length 50th (m)	14.3	82.2	22.3	154.0	24.6	21.2	10.0	18.1
Queue Length 95th (m)	#48.8	101.4	#46.3	185.5	42.8	38.7	20.9	35.7
Internal Link Dist (m)		281.4		38.0		75.2		141.1
Turn Bay Length (m)	55.0		50.0		45.0		45.0	
Base Capacity (vph)	157	1863	296	1886	336	503	339	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.56	0.81	0.82	0.38	0.29	0.17	0.29

Intersection Summary

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





















Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Trudeau Drive & Derry Road West

Future Total 2029 - Sensitivity Analysis

















PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	875	96	224	1342	103	120	79	56	52	63	76
Future Volume (vph)	123	875	96	224	1342	103	120	79	56	52	63	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.94		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	3520		1824	3569		1805	1750		1800	1720	
Flt Permitted	0.06	1.00		0.20	1.00		0.64	1.00		0.65	1.00	
Satd. Flow (perm)	121	3520		375	3569		1219	1750		1232	1720	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	132	941	103	241	1443	111	129	85	60	56	68	82
RTOR Reduction (vph)	0	7	0	0	5	0	0	21	0	0	36	0
Lane Group Flow (vph)	132	1037	0	241	1549	0	129	124	0	56	114	0
Confl. Peds. (#/hr)	7		8	8		7	1		15	15		1
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	1%	3%	0%	0%	4%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Effective Green, g (s)	69.3	63.3		69.3	63.3		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.58	0.53		0.58	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	4.0	6.7		4.0	6.7		6.9	6.9		6.9	6.9	
Lane Grp Cap (vph)	155	1856		289	1882		336	482		339	474	
v/s Ratio Prot	c0.04	0.29		0.04	0.43			0.07			0.07	
v/s Ratio Perm	c0.45			0.44			c0.11			0.05		
v/c Ratio	0.85	0.56		0.83	0.82		0.38	0.26		0.17	0.24	
Uniform Delay, d1	25.0	19.0		18.4	23.7		35.2	33.9		33.0	33.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	41.2	1.2		23.7	4.2		3.3	1.3		1.0	1.2	
Delay (s)	66.3	20.2		42.1	27.9		38.5	35.2		34.0	34.9	
Level of Service	E	C		D	C		D	D		C	C	
Approach Delay (s)		25.4			29.8			36.7			34.7	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			29.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			17.6			
Intersection Capacity Utilization			102.7%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Fourth Line/Cedar Hedge & Derry Road West

















Future Total 2029 - Sensitivity Analysis

PM Peak Hour

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	1082	63	0	1516	0	0	0	37	0	0	0	
Future Volume (vph)	0	1082	63	0	1516	0	0	0	37	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt	0.992						0.865						
Flt Protected													
Satd. Flow (prot)	0	3554	0	0	3614	0	0	0	1662	0	0	1921	
Flt Permitted													
Satd. Flow (perm)	0	3554	0	0	3614	0	0	0	1662	0	0	1921	
Link Speed (k/h)	60				60				50				
Link Distance (m)	245.8				305.4				90.9				
Travel Time (s)	14.7				18.3				6.5				
Confl. Peds. (#/hr)			11	11									
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	0	1163	68	0	1630	0	0	0	40	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1231	0	0	1630	0	0	0	40	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)	3.7				3.7				0.0				
Link Offset(m)	0.0				0.0				0.0				
Crosswalk Width(m)	1.6				1.6				1.6				
Two way Left Turn Lane													
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	
Turning Speed (k/h)	24		14	24		14	24		14	24		14	
Sign Control	Free			Free				Stop				Stop	
Intersection Summary													
Area Type:	Other												
Control Type: Unsignalized													
Intersection Capacity Utilization 45.2%													
ICU Level of Service A													
Analysis Period (min) 15													

HCM Unsignalized Intersection Capacity Analysis 3: Fourth Line/Cedar Hedge & Derry Road West

















Future Total 2029 - Sensitivity Analysis
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1082	63	0	1516	0	0	0	37	0	0	0
Future Volume (Veh/h)	0	1082	63	0	1516	0	0	0	37	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	1163	68	0	1630	0	0	0	40	0	0	0
Pedestrians								11				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.1				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		246			305							
pX, platoon unblocked	0.63			0.81			0.72	0.72	0.81	0.72	0.72	0.63
vC, conflicting volume	1630			1242			2023	2838	626	2252	2872	815
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	812			830			461	1591	70	778	1638	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	100
cM capacity (veh/h)	515			650			346	77	789	197	72	683
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	775	456	1087	543	40	0						
Volume Left	0	0	0	0	0	0						
Volume Right	0	68	0	0	40	0						
cSH	1700	1700	1700	1700	789	1700						
Volume to Capacity	0.46	0.27	0.64	0.32	0.05	0.00						
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.2	0.0						
Control Delay (s)	0.0	0.0	0.0	0.0	9.8	0.0						
Lane LOS					A	A						
Approach Delay (s)	0.0		0.0		9.8	0.0						
Approach LOS					A	A						
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			45.2%		ICU Level of Service		A					
Analysis Period (min)			15									

Lanes, Volumes, Timings
4: Cedar Hedge & Laurier Avenue/Croft Avenue

















Future Total 2029 - Sensitivity Analysis

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	100	58	15	252	5	102	19	5	3	33	109
Future Volume (vph)	148	100	58	15	252	5	102	19	5	3	33	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.997			0.994			0.899	
Flt Protected		0.976			0.997			0.961			0.999	
Satd. Flow (prot)	0	1810	0	0	1902	0	0	1835	0	0	1690	0
Flt Permitted		0.976			0.997			0.961			0.999	
Satd. Flow (perm)	0	1810	0	0	1902	0	0	1835	0	0	1690	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		310.1			233.9			296.2			40.6	
Travel Time (s)		22.3			16.8			26.7			2.9	
Confl. Peds. (#/hr)			4	4			10		1	1		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	0%	20%	0%	0%	0%	33%	0%	2%
Adj. Flow (vph)	164	111	64	17	280	6	113	21	6	3	37	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	0	303	0	0	140	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	62.5%						ICU Level of Service B					
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis 4: Cedar Hedge & Laurier Avenue/Croft Avenue

Future Total 2029 - Sensitivity Analysis
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	148	100	58	15	252	5	102	19	5	3	33	109
Future Volume (vph)	148	100	58	15	252	5	102	19	5	3	33	109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	164	111	64	17	280	6	113	21	6	3	37	121
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	339	303	140	161								
Volume Left (vph)	164	17	113	3								
Volume Right (vph)	64	6	6	121								
Hadj (s)	0.00	0.01	0.14	-0.41								
Departure Headway (s)	5.3	5.3	6.1	5.5								
Degree Utilization, x	0.50	0.45	0.24	0.25								
Capacity (veh/h)	644	634	518	572								
Control Delay (s)	13.4	12.6	10.9	10.3								
Approach Delay (s)	13.4	12.6	10.9	10.3								
Approach LOS	B	B	B	B								
Intersection Summary												
Delay				12.2								
Level of Service				B								
Intersection Capacity Utilization				62.5%	ICU Level of Service		B					
Analysis Period (min)				15								










Lanes, Volumes, Timings
5: Cedar Hedge & Harwood Drive

Future Total 2029 - Sensitivity Analysis
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	125	5	11	71	16
Future Volume (vph)	49	125	5	11	71	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.903		0.905			
Flt Protected	0.986					0.961
Satd. Flow (prot)	1710	0	1739	0	0	1846
Flt Permitted	0.986					0.961
Satd. Flow (perm)	1710	0	1739	0	0	1846
Link Speed (k/h)	50		50			50
Link Distance (m)	300.1		167.2			296.2
Travel Time (s)	21.6		12.0			21.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	53	136	5	12	77	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	0	17	0	0	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis 5: Cedar Hedge & Harwood Drive

















Future Total 2029 - Sensitivity Analysis
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	125	5	11	71	16
Future Volume (Veh/h)	49	125	5	11	71	16
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	136	5	12	77	17
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	182	11			17	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	182	11			17	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	87			95	
cM capacity (veh/h)	773	1076			1613	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	189	17	94			
Volume Left	53	0	77			
Volume Right	136	12	0			
cSH	969	1700	1613			
Volume to Capacity	0.19	0.01	0.05			
Queue Length 95th (m)	5.5	0.0	1.1			
Control Delay (s)	9.6	0.0	6.1			
Lane LOS	A		A			
Approach Delay (s)	9.6	0.0	6.1			
Approach LOS	A					
Intersection Summary						
Average Delay		8.0				
Intersection Capacity Utilization		28.5%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
6: Trudeau Drive & Harwood Drive

















Future Total 2029 - Sensitivity Analysis

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	2	62	12	8	2	179	78	35	6	104	13
Future Volume (vph)	11	2	62	12	8	2	179	78	35	6	104	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.887			0.988			0.984			0.985	
Flt Protected		0.993			0.973			0.970			0.998	
Satd. Flow (prot)	0	1671	0	0	1847	0	0	1829	0	0	1873	0
Flt Permitted		0.993			0.973			0.970			0.998	
Satd. Flow (perm)	0	1671	0	0	1847	0	0	1829	0	0	1873	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		300.1			106.7			165.1			149.0	
Travel Time (s)		21.6			7.7			11.9			10.7	
Confl. Peds. (#/hr)	3		4	4		3	1		2	2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	50%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	11	2	65	13	8	2	186	81	36	6	108	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	78	0	0	23	0	0	303	0	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.5%						ICU Level of Service A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 6: Trudeau Drive & Harwood Drive

Future Total 2029 - Sensitivity Analysis
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	2	62	12	8	2	179	78	35	6	104	13
Future Volume (vph)	11	2	62	12	8	2	179	78	35	6	104	13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	11	2	65	12	8	2	186	81	36	6	108	14
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	78	22	303	128								
Volume Left (vph)	11	12	186	6								
Volume Right (vph)	65	2	36	14								
Hadj (s)	-0.45	0.05	0.06	-0.04								
Departure Headway (s)	4.5	5.0	4.3	4.4								
Degree Utilization, x	0.10	0.03	0.37	0.16								
Capacity (veh/h)	732	643	809	776								
Control Delay (s)	7.9	8.2	9.8	8.2								
Approach Delay (s)	7.9	8.2	9.8	8.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				9.1								
Level of Service				A								
Intersection Capacity Utilization				35.5%	ICU Level of Service		A					
Analysis Period (min)				15								

Appendix G

Parking Survey Data

Ontario Traffic Inc - Parking Occupancy Counts

Location: 620-630 Sauve St (Derry Rd & Sauve St), Milton

Time			Parked Vehicles				Parked Vehicles				Parked Vehicles			
			Friday, December 01, 2023				Saturday, December 02, 2023				Sunday, December 03, 2023			
			Visitor Parking		On The Road	School Parking	Visitor Parking		On The Road	School Parking	Visitor Parking		On The Road	School Parking
			Regular	Accessible			Regular	Accessible			Regular	Accessible		
11:00	to	11:30					69	0	0	0	57	1	0	0
11:30	to	12:00					76	0	0	0	68	1	0	0
12:00	to	12:30					78	1	0	0	76	1	0	0
12:30	to	13:00					83	0	0	0	85	0	0	0
13:00	to	13:30					86	0	0	0	83	0	0	0
13:30	to	14:00					84	1	0	0	75	0	0	0
18:00	to	18:30	78	0	0	0	76	0	0	0	65	0	0	0
18:30	to	19:00	76	0	0	0	67	0	0	0	67	0	0	0
19:00	to	19:30	72	1	0	0	71	0	0	0	77	1	0	0
19:30	to	20:00	69	1	0	0	77	1	0	0	78	1	0	0
20:00	to	20:30	67	1	0	0	71	0	0	0	84	0	0	0
20:30	to	21:00	71	0	0	0	69	0	0	0	85	1	0	0
21:00	to	21:30	75	0	0	0	77	1	0	0	71	0	0	0
21:30	to	22:00	79	0	0	0	65	1	0	0	63	0	0	0
22:00	to	22:30	78	0	0	0	64	1	0	0	58	0	0	0
22:30	to	23:00	71	0	0	0	62	1	0	0	57	0	0	0
23:00	to	23:30	65	0	0	0	58	0	0	0	55	0	0	0
23:30	to	0:00	61	0	0	0	55	0	0	0	52	0	0	0
Available Parking Spaces =			100	1			100	1			100	1		

Time	Friday Visitor Parking	Friday Demand	Saturday Visitor Parking	Saturday Demand	Sunday Visitor Parking	Sunday Demand
11:00			69	0.170	58	0.143
11:30			76	0.187	69	0.170
12:00			79	0.194	77	0.189
12:30			83	0.204	85	0.209
13:00			86	0.211	83	0.204
13:30			85	0.209	75	0.184
18:00	78	0.192	76	0.187	65	0.160
18:30	76	0.187	67	0.165	67	0.165
19:00	73	0.179	71	0.174	78	0.192
19:30	70	0.172	78	0.192	79	0.194
20:00	68	0.167	71	0.174	84	0.206
20:30	71	0.174	69	0.170	86	0.211
21:00	75	0.184	78	0.192	71	0.174
21:30	79	0.194	66	0.162	63	0.155
22:00	78	0.192	65	0.160	58	0.143
22:30	71	0.174	63	0.155	57	0.140
23:00	65	0.160	58	0.143	55	0.135
23:30	61	0.150	55	0.135	52	0.128
Average		0.177	Average	0.177	Average	0.172
Average over all three days:						0.175
Average from all four Proxy Sites						0.122



Ontario Traffic Inc - Parking Occupancy Counts

Location: 1105-1125 Leger Way, Milton, Ontario

Time	Friday, January 19, 2024			Saturday, January 20, 2024			Sunday, January 20, 2024		
	Parked Vehicles			Parked Vehicles			Parked Vehicles		
	Resident	Visitor	Accessible	Resident	Visitor	Accessible	Resident	Visitor	Accessible
11:00 to 11:30				6	25	2	5	28	2
11:30 to 12:00				6	26	2	5	25	2
12:00 to 12:30				5	24	1	6	26	3
12:30 to 13:00				5	27	1	6	21	2
13:00 to 13:30				6	31	2	5	23	1
13:30 to 14:00				6	34	2	5	24	1
18:00 to 18:30	6	22	2	8	35	3	7	31	3
18:30 to 19:00	5	21	1	7	33	3	7	34	3
19:00 to 19:30	5	22	1	7	34	3	9	36	3
19:30 to 20:00	5	22	1	6	34	3	9	35	2
20:00 to 20:30	6	23	1	6	31	4	9	37	2
20:30 to 21:00	7	24	1	6	28	4	8	39	3
21:00 to 21:30	7	24	2	6	26	4	8	37	3
21:30 to 22:00	6	25	2	7	26	2	9	36	4
22:00 to 22:30	5	25	2	6	26	2	9	33	4
22:30 to 23:00	5	27	2	6	27	2	9	31	4
23:00 to 23:30	5	28	2	6	27	2	8	32	3
23:30 to 0:00	5	28	2	6	26	2	8	31	3
Available Parking Spaces =	11	50	5	11	50	5	11	50	5

Time	Friday Visitor Parking	Friday Demand	Saturday Visitor Parking	Saturday Demand	Sunday Visitor Parking	Sunday Demand
11:00			27	0.108	30	0.120
11:30			28	0.112	27	0.108
12:00			25	0.100	29	0.116
12:30			28	0.112	23	0.092
13:00			33	0.131	24	0.096
13:30			36	0.143	25	0.100
18:00	24	0.096	38	0.151	34	0.135
18:30	22	0.088	36	0.143	37	0.147
19:00	23	0.092	37	0.147	39	0.155
19:30	23	0.092	37	0.147	37	0.147
20:00	24	0.096	35	0.139	39	0.155
20:30	25	0.100	32	0.127	42	0.167
21:00	26	0.104	30	0.120	40	0.159
21:30	27	0.108	28	0.112	40	0.159
22:00	27	0.108	28	0.112	37	0.147
22:30	29	0.116	29	0.116	35	0.139
23:00	30	0.120	29	0.116	35	0.139
23:30	30	0.120	28	0.112	34	0.135
Average		0.103	Average	0.125	Average	0.134
Average over all three days:						0.123
Average from all four Proxy Sites						0.122

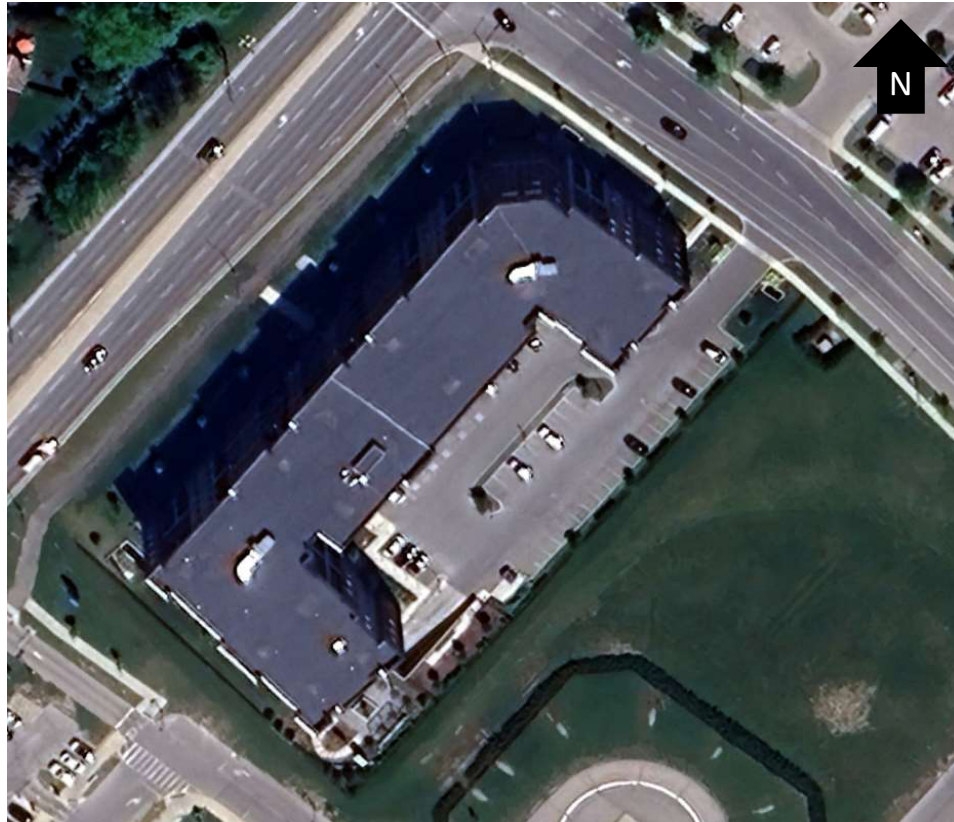


Ontario Traffic Inc - Parking Occupancy Counts

Location: 610 Farmstead Drive, Milton, Ontario

Time			Friday, January 19, 2024			Saturday, January 20, 2024			Sunday, January 20, 2024		
			Parked Vehicles			Parked Vehicles			Parked Vehicles		
			Resident	Visitor	Accessible	Resident	Visitor	Accessible	Resident	Visitor	Accessible
11:00	to	11:30				2	15	1	2	16	1
11:30	to	12:00				2	14	1	1	14	2
12:00	to	12:30				2	13	2	1	17	2
12:30	to	13:00				1	15	2	2	19	2
13:00	to	13:30				1	17	2	2	17	1
13:30	to	14:00				1	17	2	2	18	0
18:00	to	18:30	2	13	2	2	19	1	3	21	1
18:30	to	19:00	3	14	2	1	22	2	3	19	2
19:00	to	19:30	3	17	2	1	24	2	2	22	2
19:30	to	20:00	3	19	1	2	21	2	2	19	2
20:00	to	20:30	3	16	1	3	21	3	2	17	1
20:30	to	21:00	3	15	1	3	22	3	2	18	1
21:00	to	21:30	3	15	1	3	24	3	3	18	1
21:30	to	22:00	3	15	1	3	22	2	3	14	1
22:00	to	22:30	3	14	1	3	18	2	3	12	1
22:30	to	23:00	3	12	1	3	15	2	3	12	1
23:00	to	23:30	3	14	1	3	13	3	3	13	1
23:30	to	0:00	3	13	1	3	14	3	3	13	1
Available Parking Spaces =			4	41	5	4	41	5	4	41	5

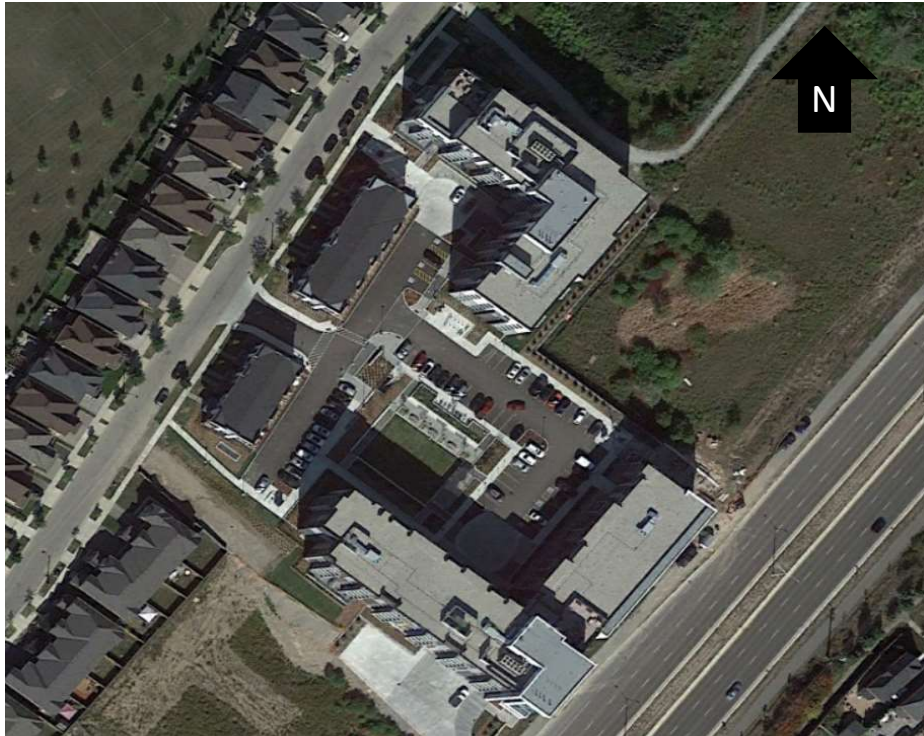
Time	Friday Visitor Parking	Friday Demand	Saturday Visitor Parking	Saturday Demand	Sunday Visitor Parking	Sunday Demand
11:00			16	0.094	17	0.100
11:30			15	0.088	16	0.094
12:00			15	0.088	19	0.112
12:30			17	0.100	21	0.124
13:00			19	0.112	18	0.106
13:30			19	0.112	18	0.106
18:00	15	0.088	20	0.118	22	0.129
18:30	16	0.094	24	0.141	21	0.124
19:00	19	0.112	26	0.153	24	0.141
19:30	20	0.118	23	0.135	21	0.124
20:00	17	0.100	24	0.141	18	0.106
20:30	16	0.094	25	0.147	19	0.112
21:00	16	0.094	27	0.159	19	0.112
21:30	16	0.094	24	0.141	15	0.088
22:00	15	0.088	20	0.118	13	0.076
22:30	13	0.076	17	0.100	13	0.076
23:00	15	0.088	16	0.094	14	0.082
23:30	14	0.082	17	0.100	14	0.082
Average		0.094	Average	0.119	Average	0.105
Average over all three days:						0.108
Average from all four Proxy Sites						0.122



Ontario Traffic Inc - Parking Occupancy Counts

Location: 98 Kaitting Trail, Oakville, Ontario

Time			Friday, January 19, 2024			Saturday, January 20, 2024			Sunday, January 20, 2024		
			Parked Vehicles			Parked Vehicles			Parked Vehicles		
			Resident	Visitor	Accessible	Resident	Visitor	Accessible	Resident	Visitor	Accessible
11:00	to	11:30				2	16	2	3	18	2
11:30	to	12:00				2	15	2	3	19	2
12:00	to	12:30				2	16	2	3	19	2
12:30	to	13:00				2	16	2	3	22	2
13:00	to	13:30				2	17	2	3	27	2
13:30	to	14:00				3	17	2	3	23	2
18:00	to	18:30	3	20	2	3	16	2	2	15	1
18:30	to	19:00	3	20	3	3	18	2	2	14	1
19:00	to	19:30	3	19	3	3	18	2	2	14	2
19:30	to	20:00	3	20	3	3	20	2	2	14	2
20:00	to	20:30	3	21	3	3	24	3	2	15	2
20:30	to	21:00	3	21	3	4	24	3	2	16	2
21:00	to	21:30	3	22	3	4	23	3	2	17	2
21:30	to	22:00	3	21	3	3	33	3	3	18	2
22:00	to	22:30	3	18	3	3	30	3	3	17	3
22:30	to	23:00	3	18	3	3	29	3	3	17	3
23:00	to	23:30	3	18	3	3	31	3	3	19	3
23:30	to	0:00	3	16	3	3	28	3	3	17	3
Available Parking Spaces =			8	47	8	8	47	8	8	47	8



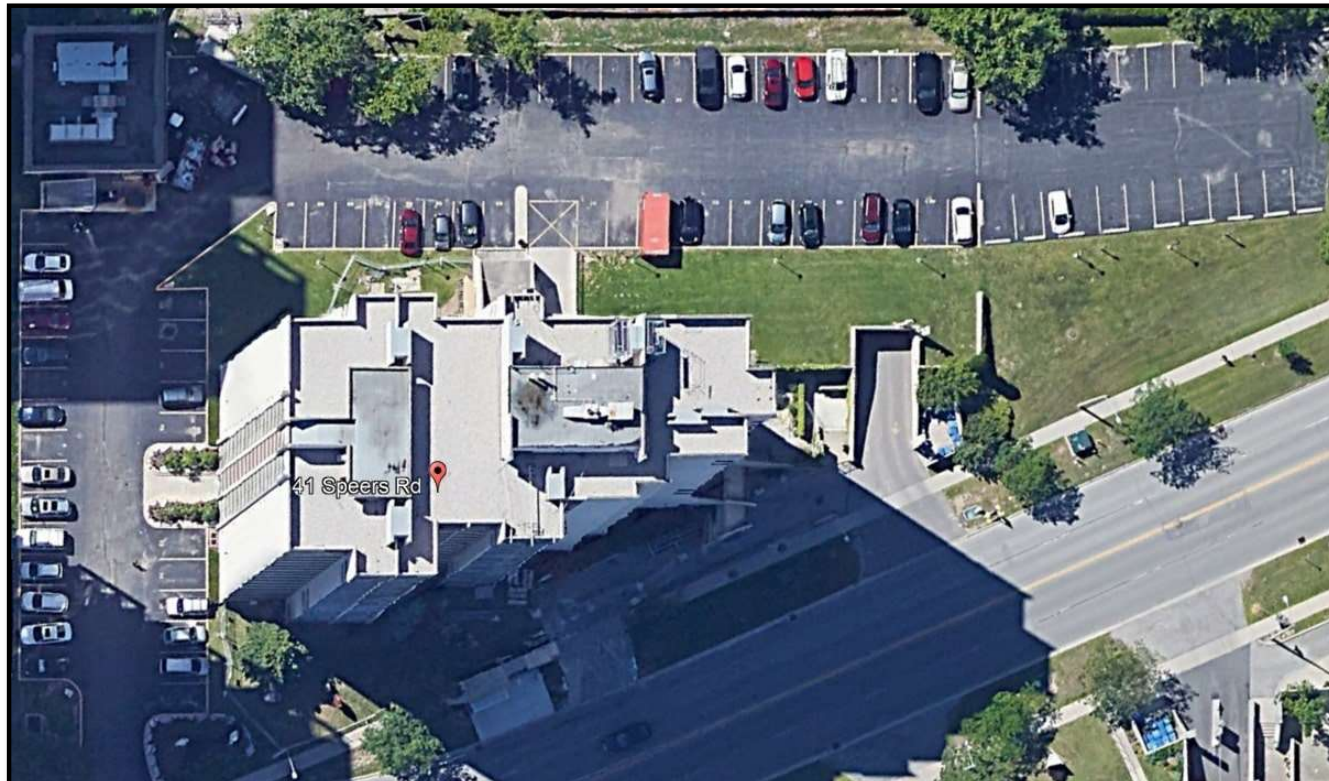
Time	Friday Visitor Parking	Friday Demand	Saturday Visitor Parking	Saturday Demand	Sunday Visitor Parking	Sunday Demand
11:00			18	0.066	20	0.073
11:30			17	0.062	21	0.077
12:00			18	0.066	21	0.077
12:30			18	0.066	24	0.088
13:00			19	0.070	29	0.106
13:30			19	0.070	25	0.092
18:00	22	0.081	18	0.066	16	0.059
18:30	23	0.084	20	0.073	15	0.055
19:00	22	0.081	20	0.073	16	0.059
19:30	23	0.084	22	0.081	16	0.059
20:00	24	0.088	27	0.099	17	0.062
20:30	24	0.088	27	0.099	18	0.066
21:00	25	0.092	26	0.095	19	0.070
21:30	24	0.088	36	0.132	20	0.073
22:00	21	0.077	33	0.121	20	0.073
22:30	21	0.077	32	0.117	20	0.073
23:00	21	0.077	34	0.125	22	0.081
23:30	19	0.070	31	0.114	20	0.073
Average		0.082	Average	0.089	Average	0.073
Average over all three days:						0.081
Average from all four Proxy Sites						0.122

Ontario Traffic Inc - Parking Occupancy Counts

Location: 41 Speers Drive, Oakville, Ontario

Time			Friday, March 8, 2024	Saturday, March 9, 2024	Sunday, March 10, 2024
			Parked Vehicles	Parked Vehicles	Parked Vehicles
11:00	to	11:30		3	3
11:30	to	12:00		5	4
12:00	to	12:30		7	4
12:30	to	13:00		7	4
13:00	to	13:30		6	4
13:30	to	14:00		6	4
18:00	to	18:30	4	4	6
18:30	to	19:00	4	4	6
19:00	to	19:30	4	4	6
19:30	to	20:00	4	3	6
20:00	to	20:30	4	3	6
20:30	to	21:00	3	3	5
21:00	to	21:30	3	3	5
21:30	to	22:00	3	3	5
22:00	to	22:30	3	3	5
22:30	to	23:00	3	3	5
23:00	to	23:30	3	3	5
23:30	to	0:00	3	3	5
Available Parking Spaces =			20	20	20

Time	Friday Visitor Parking	Friday Demand	Saturday Visitor Parking	Saturday Demand	Sunday Visitor Parking	Sunday Demand
11:00			3	0.022	3	0.022
11:30			5	0.036	4	0.029
12:00			7	0.051	4	0.029
12:30			7	0.051	4	0.029
13:00			6	0.044	4	0.029
13:30			6	0.044	4	0.029
18:00	4	0.029	4	0.029	6	0.044
18:30	4	0.029	4	0.029	6	0.044
19:00	4	0.029	4	0.029	6	0.044
19:30	4	0.029	3	0.022	6	0.044
20:00	4	0.029	3	0.022	6	0.044
20:30	3	0.022	3	0.022	5	0.036
21:00	3	0.022	3	0.022	5	0.036
21:30	3	0.022	3	0.022	5	0.036
22:00	3	0.022	3	0.022	5	0.036
22:30	3	0.022	3	0.022	5	0.036
23:00	3	0.022	3	0.022	5	0.036
23:30	3	0.022	3	0.022	5	0.036
Average		0.025	Average	0.030	Average	0.036
Average over all three days:						0.031
Average from all four Proxy Sites						0.102





Appendix H

AutoTURN Swept Path Analysis

Concept Plan Swept Path Analysis






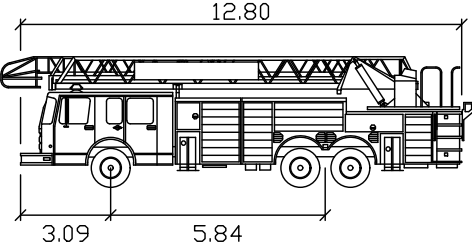
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Aerial Fire

Width	2.54 meters
Track	2.54
Lock to Lock Time	6.0
Steering Angle	37.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	R.A		Designer R.A	
Drafting	W.M		Design W.M	
Check			Check	
Project	W.M		Project W.M	
Manager			Director	

Client

BRANTHAVEN

Project

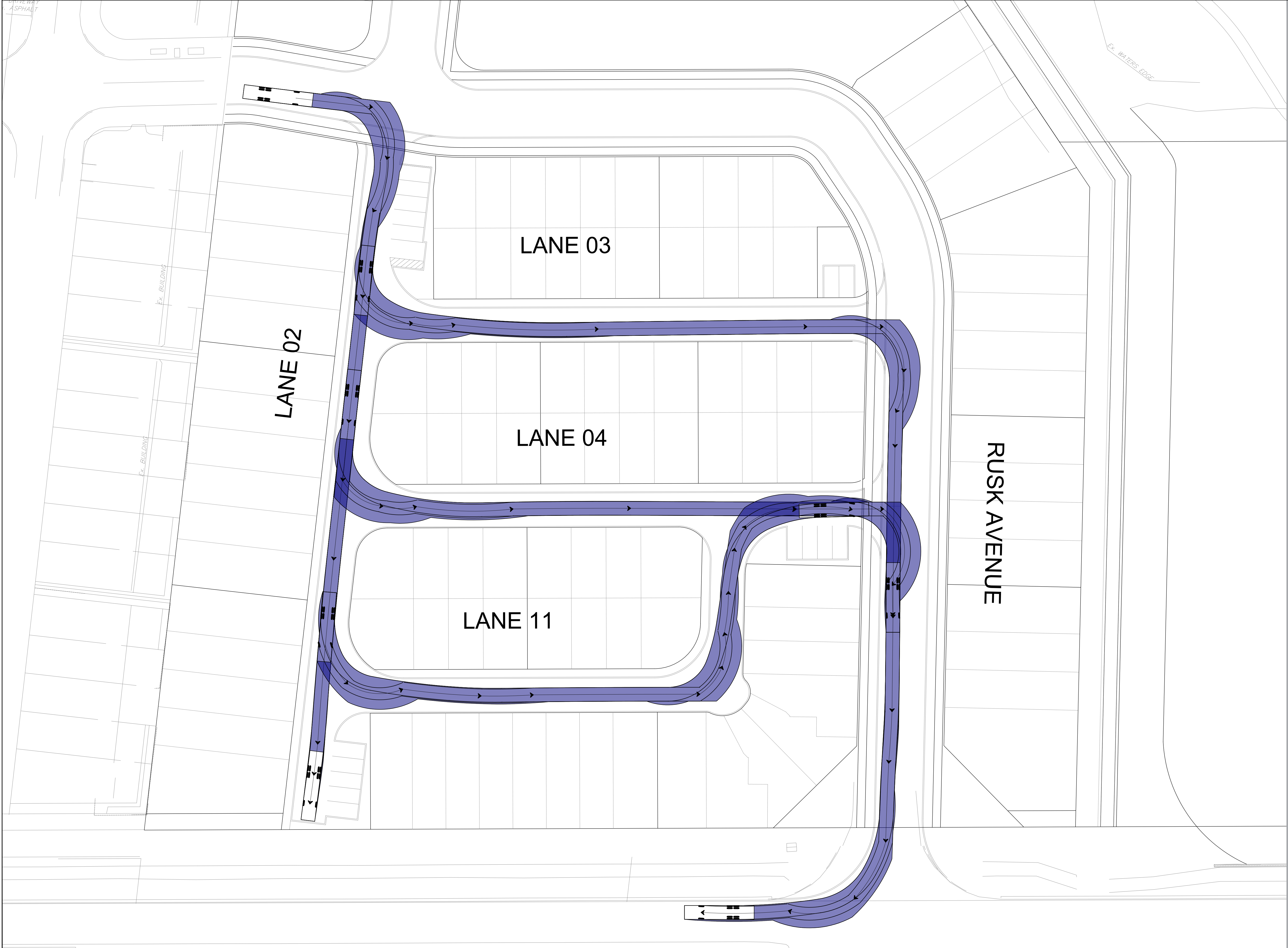
DEMARCHI LANDS



Date	October 9, 2024	Scale	NTS
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Project No. 12654065

Title	Size
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (INBOUND - WEST BLOCK)	ANSI D

Sheet No. AT-101




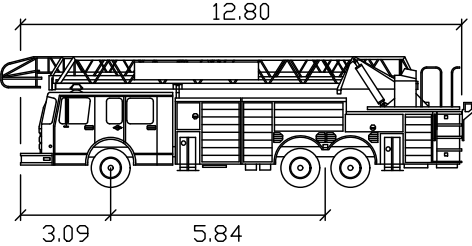


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Aerial Fire

Width	2.54
Track	2.54
Lock to Lock Time	6.0
Steering Angle	37.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	R.A		Designer R.A	
Drafting Check	W.M		Design Check W.M	
Project Manager	W.M		Project Director W.M	

Client

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Project

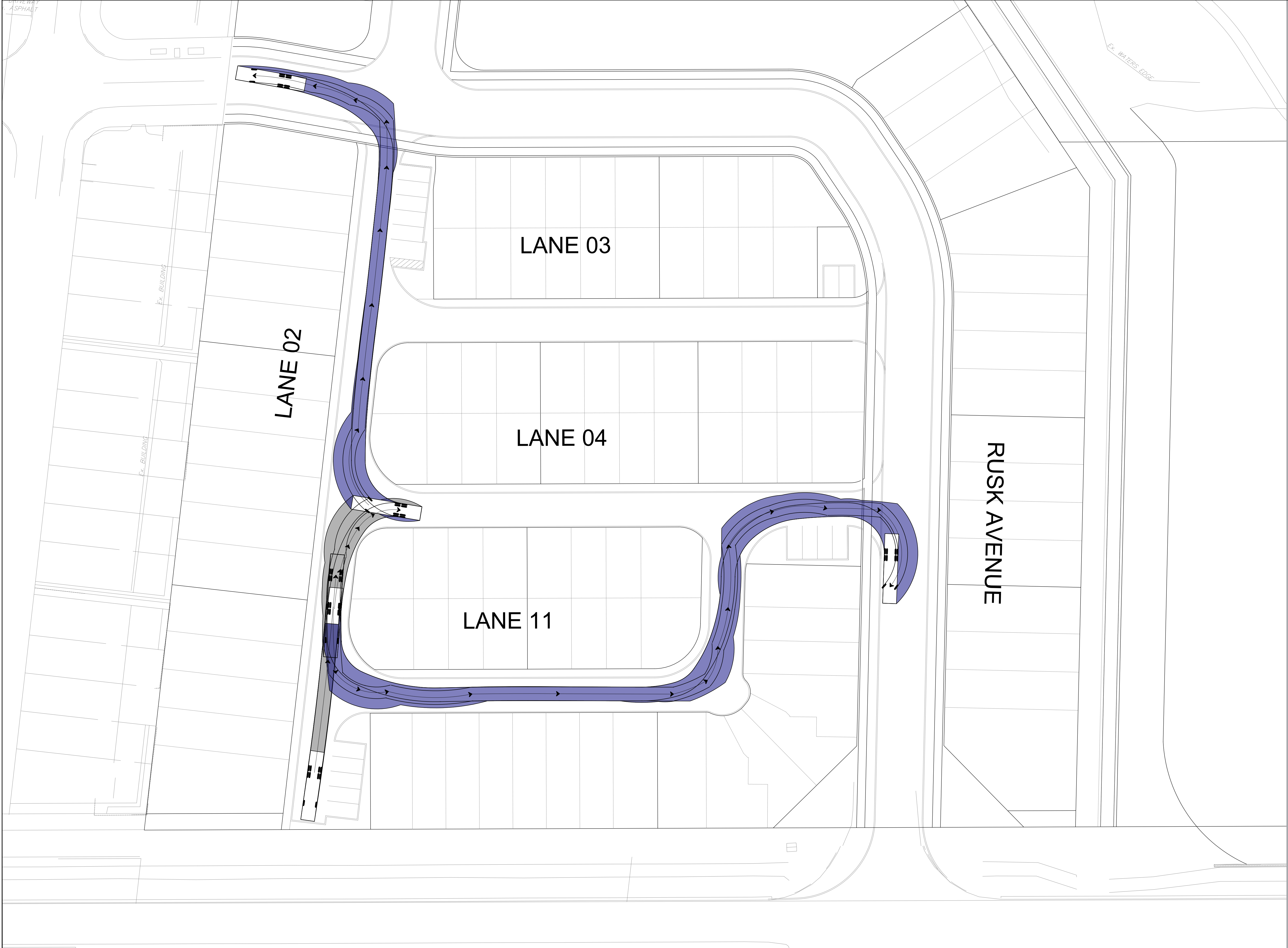
DEMARCHI LANDS



Date	October 9, 2024	Scale	NTS
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Project No. 12654065

Title	Size
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (INBOUND - WEST BLOCK)	ANSI D

Sheet No. AT-102




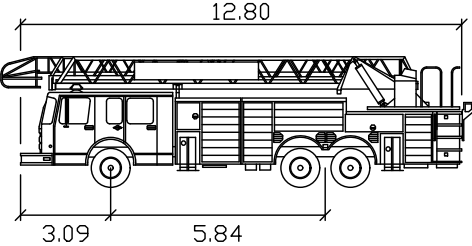


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Aerial Fire

Width	2.54
Track	2.54
Lock to Lock Time	6.0
Steering Angle	37.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	R.A		Designer R.A	
Drafting	W.M		Design W.M	
Check			Check	
Project	W.M		Project W.M	
Manager			Director	

Client

BRANTHAVEN

Project

DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
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Project No. 12654065

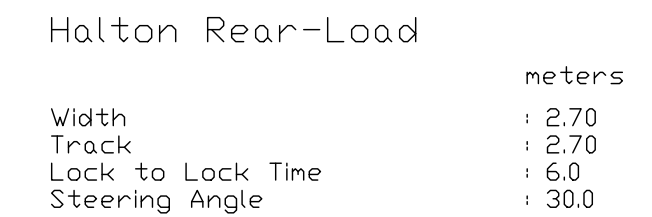
Title	Size
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (OUTBOUND - WEST BLOCK)	ANSI D

Sheet No. AT-103



Conditions of Use

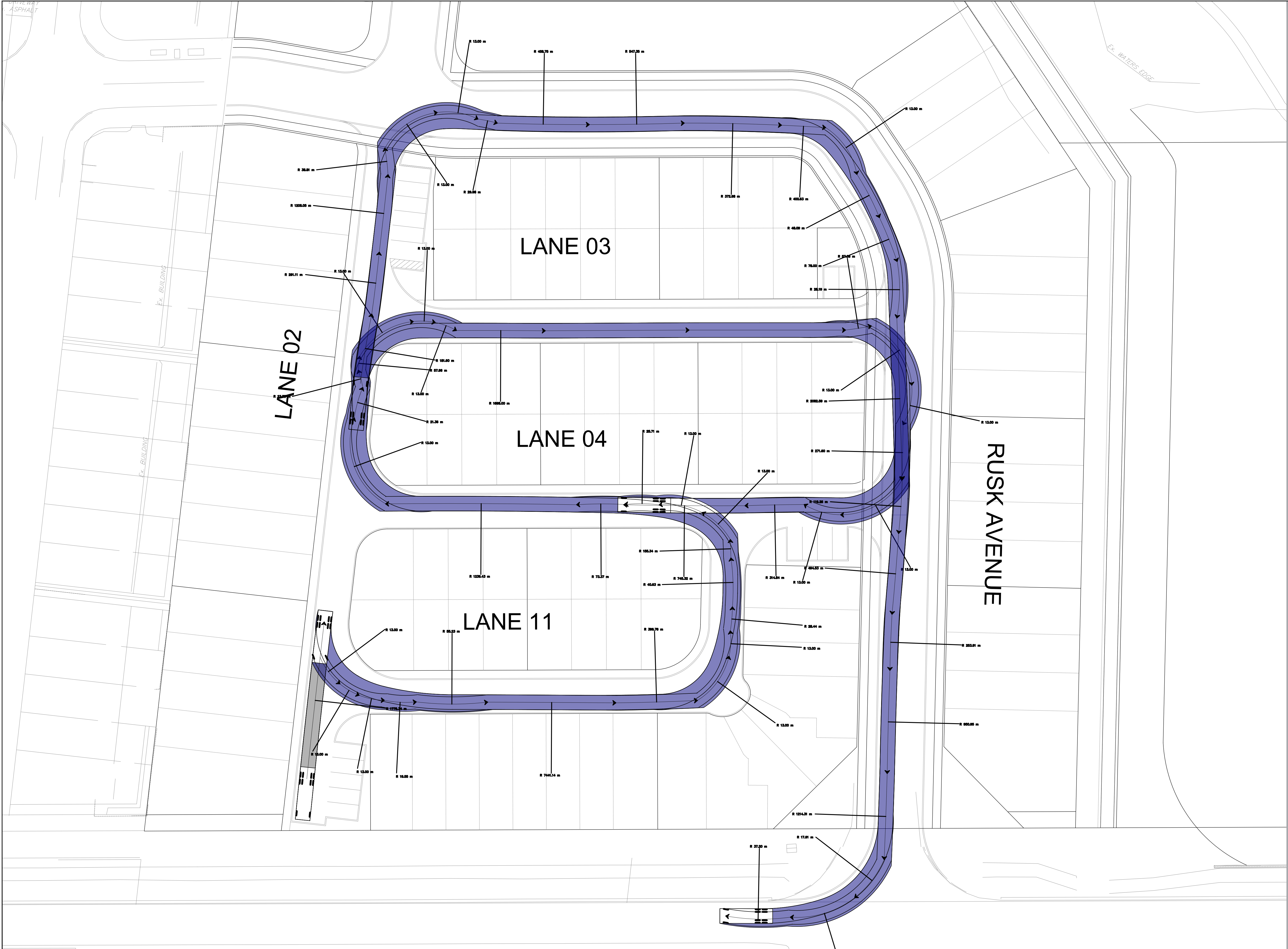
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Project	DEMARCHI LANDS

Project No.	12654065
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Sheet No.
T-104

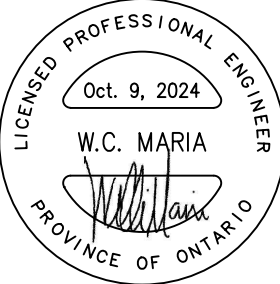


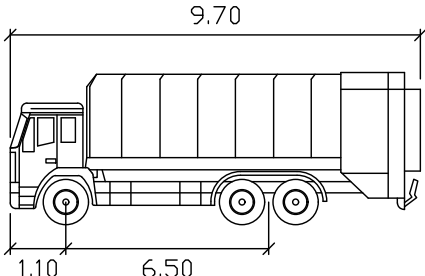


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Halton Rear-Load

Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 30.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	RA		Designer RA	
Drafting	W.M		Design	W.M
Check			Check	
Project	W.M		Project	W.M
Manager			Director	

Client
BRANTHAVEN



Project
DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
------	-----------------	-------	-----

Project No.
12654065

Title	VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION VEHICLE (OUTBOUND - WEST BLOCK)	Size ANSI D
Sheet No.	AT-105	




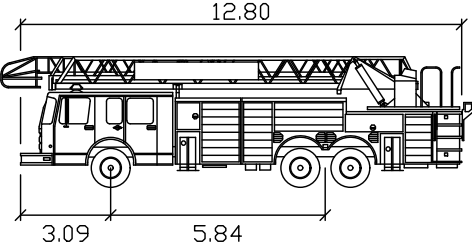


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Aerial Fire

Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	R.A		Designer R.A	
Drafting Check	W.M		Design Check W.M	
Project Manager	W.M		Project Director W.M	

Client

BRANTHAVEN

Project



DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
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Project No. 12654065

Title	VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (INBOUND - EAST BLOCK)	Size ANSI D
Sheet No.	AT-106	




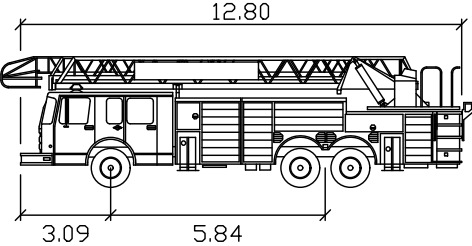


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Aerial Fire

Width	3.09	meters
Track	5.84	meters
Lock to Lock Time	6.0	seconds
Steering Angle	37.0	degrees

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	R.A		Designer R.A	
Drafting Check	W.M		Design Check W.M	
Project Manager	W.M		Project Director W.M	

Client

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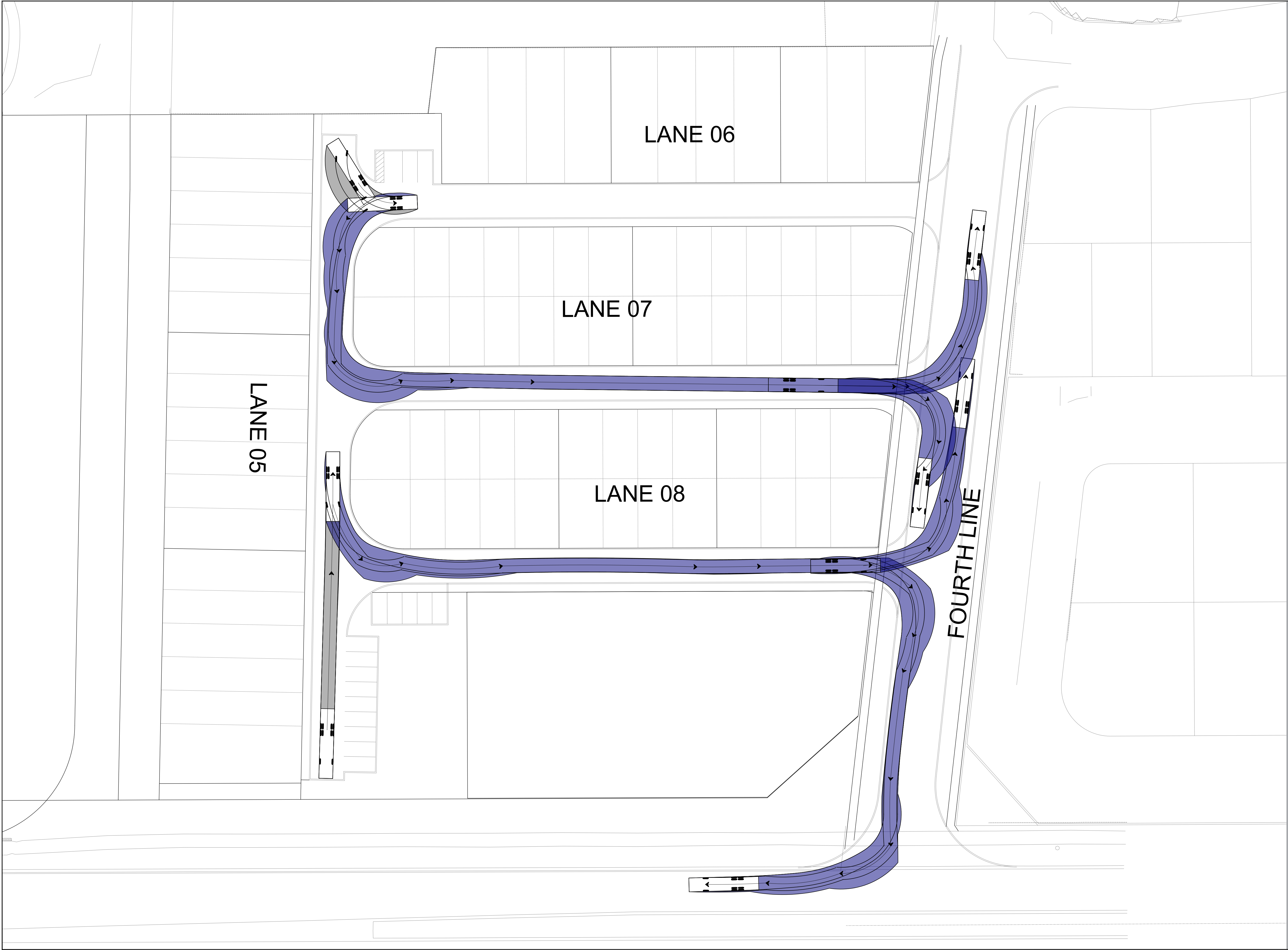
Project



DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
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Project No. 12654065

Title	Size
VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (INBOUND - EAST BLOCK)	ANSI D
Sheet No.	
AT-107	




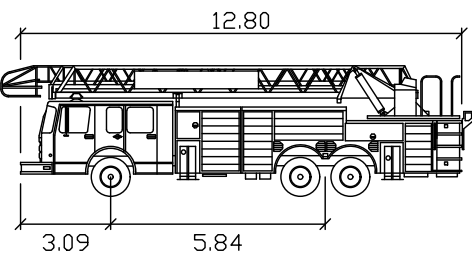


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Aerial Fire

	Width	Track	Lock to Lock Time	Steering Angle
12.80	3.09	5.84	2.54	2.54
			6.0	37.0

No.	Issue	Checked	Approved	Date
1	First Submission	W.M	W.M	10/9/24

Author	R.A	Designer	R.A
Drafting	W.M	Design	W.M
Check		Check	
Project	W.M	Project	W.M
Manager		Director	

Client

BRANTHAVEN

Project

DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
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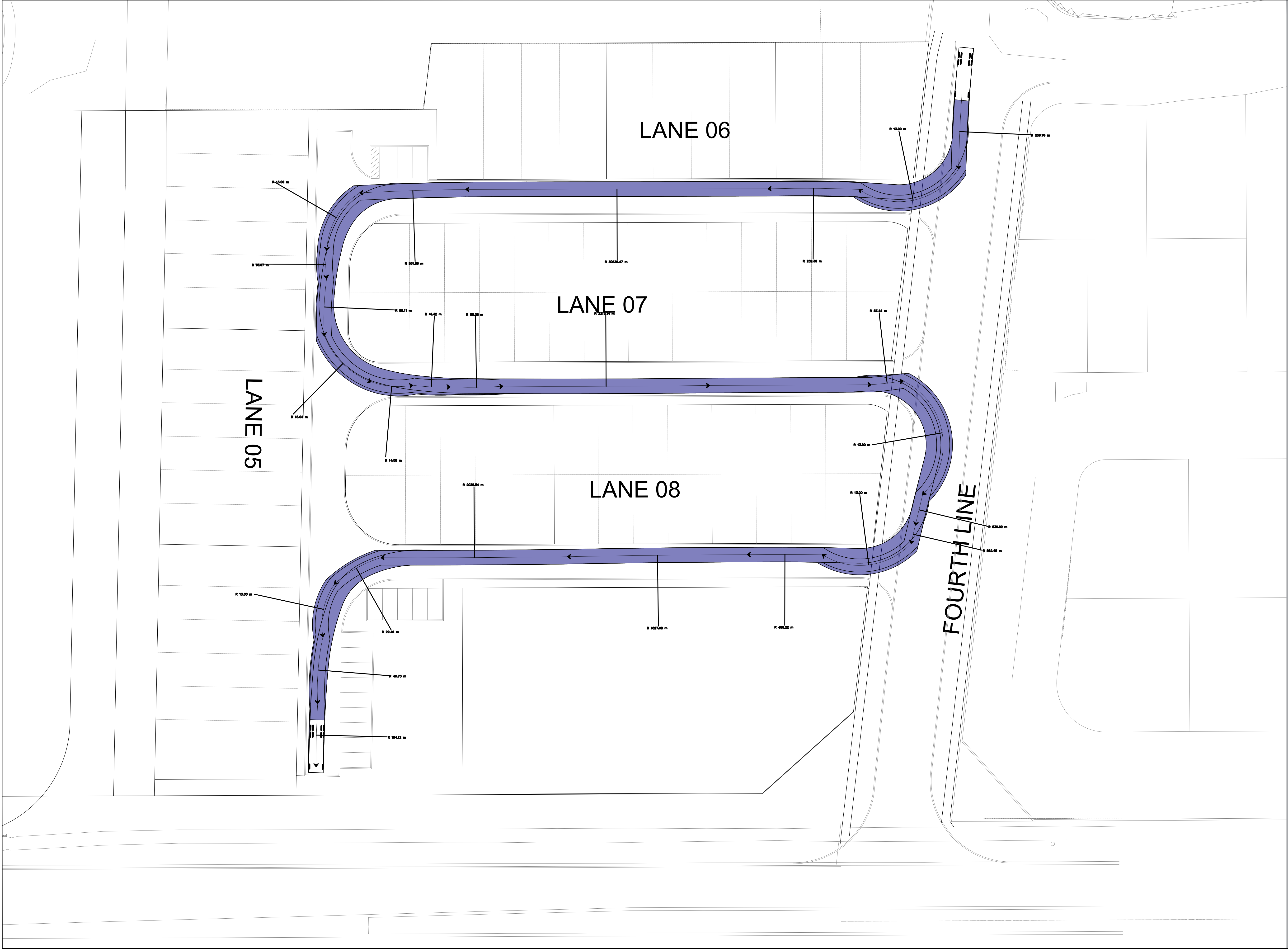
Project No.



12654065

Title	VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (OUTBOUND - EAST BLOCK)	Size ANSI D
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Sheet No.

AT-108




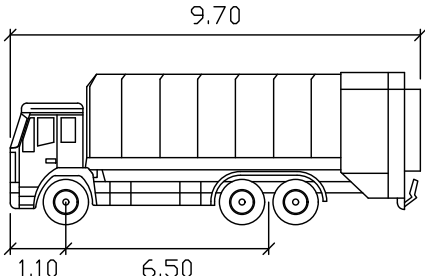


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Halton Rear-Load

Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 30.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	R.A	Designer	R.A	
Drafting	W.M	Design	W.M	
Check		Check		
Project Manager	W.M	Project Director	W.M	

Client

BRANTHAVEN

Project

DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
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Project No.	12654065
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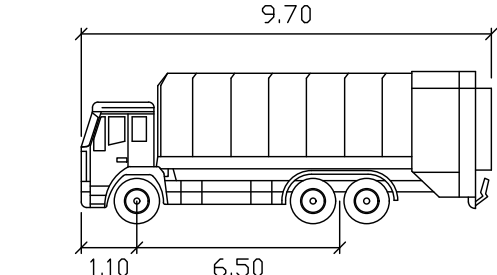
Title	VEHICLE MANEUVERING DIAGRAM - WASTE COLLECTION VEHICLE (INBOUND - EAST BLOCK)	Size	ANSI D
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Sheet No.	AT-109
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	meters
Width	: 2.70
Track	: 2.70
Lock to Lock Time	: 6.0
Steering Angle	: 30.0

Author	R.A	Designer	R.A
Drafting Check	W.M	Design Check	W.M
Project Manager	W.M	Project Director	W.M

Project

DEMARCHI LANDS

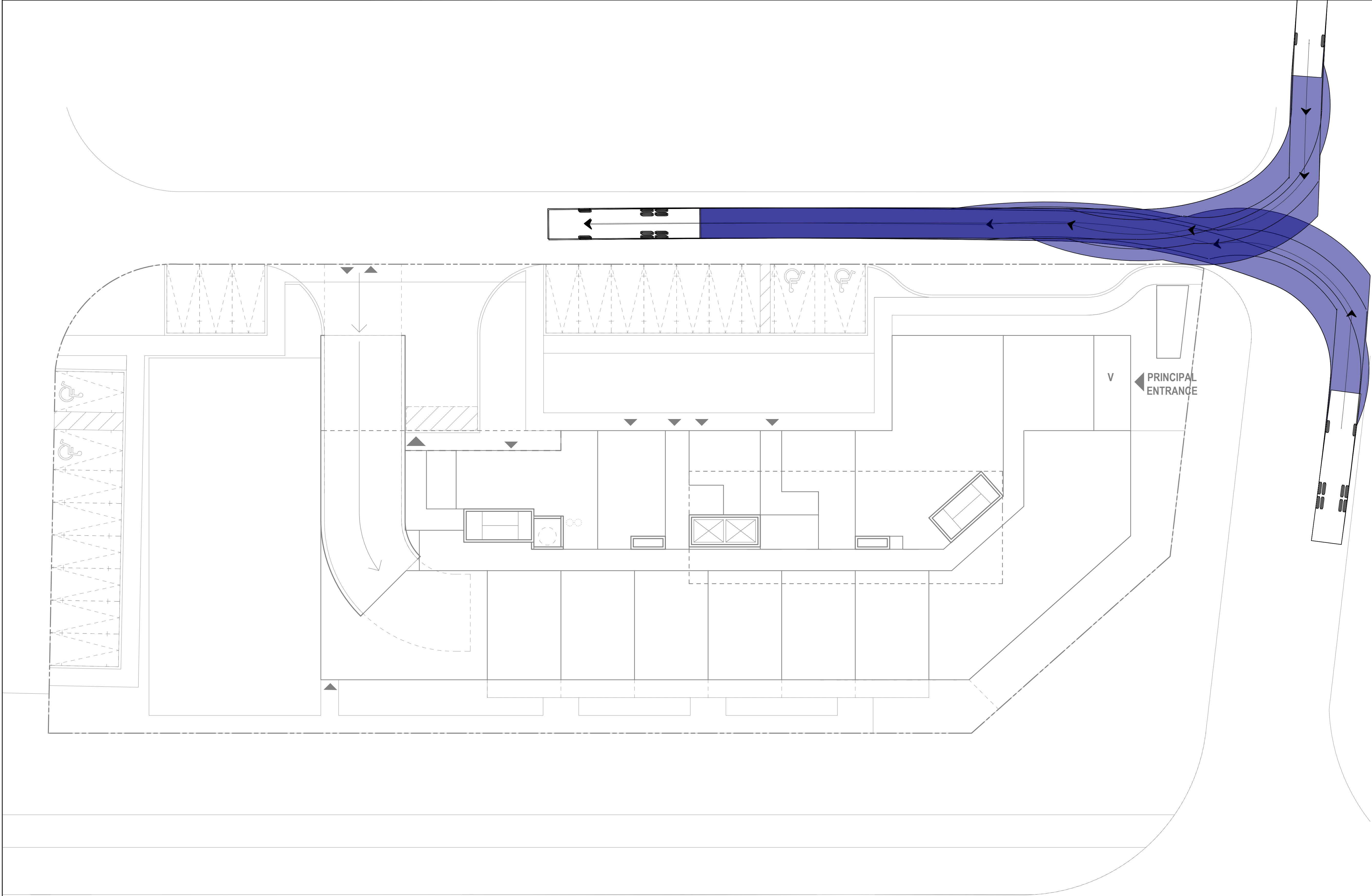
Scale	NTS
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VEHICLE MANEUVERING
DIAGRAM -
WASTE COLLECTION VEHICLE
(OUTBOUND - EAST BLOCK)

Sheet No
AT-110

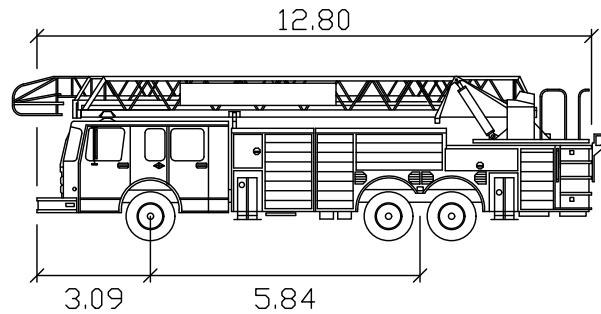


Mid-Rise Block Swept Path Analysis



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Aerial Fire

	meters
Width	: 2.54
Track	: 2.54
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	S.B	Designer	S.B	
Drafting	W.M	Design	W.M	
Check		Check		
Project	W.M	Project	W.M	
Manager		Director		

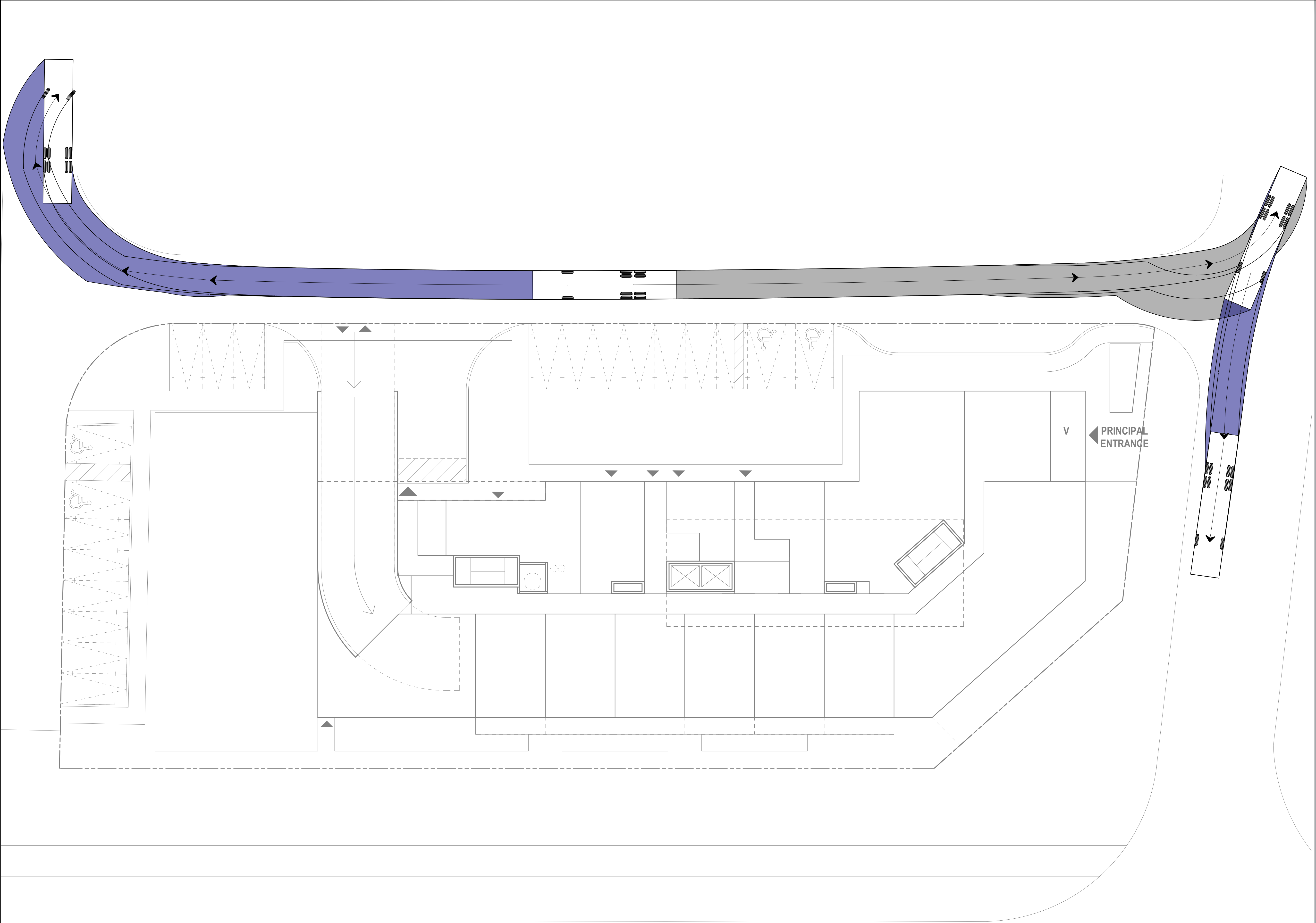
Client	BRANTHAVEN
Project	DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
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Project No.	12654065
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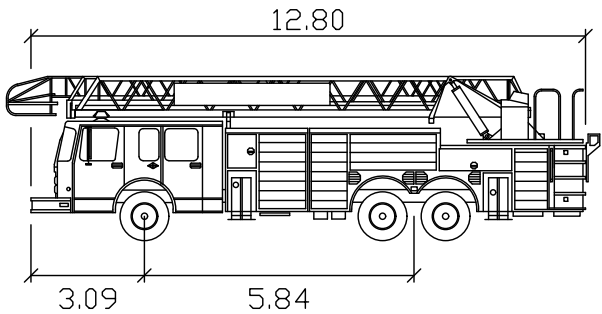
Title	VEHICLE MANEUVERING DIAGRAM - FIRE TRUCK (INBOUND 1)	Size ANSI D
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Sheet No.	AT-101
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Aerial Fire

Width : 2.54 meters
Track : 2.54
Lock to Lock Time : 6.0
Steering Angle : 37.0

1 First Submission		W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	S.B		Designer	S.B
Drafting	W.M		Design	W.M
Check			Check	
Project	W.M		Project	W.M
Manager			Director	

Client
BRANTHAVEN

Project
DEMARCHI LANDS

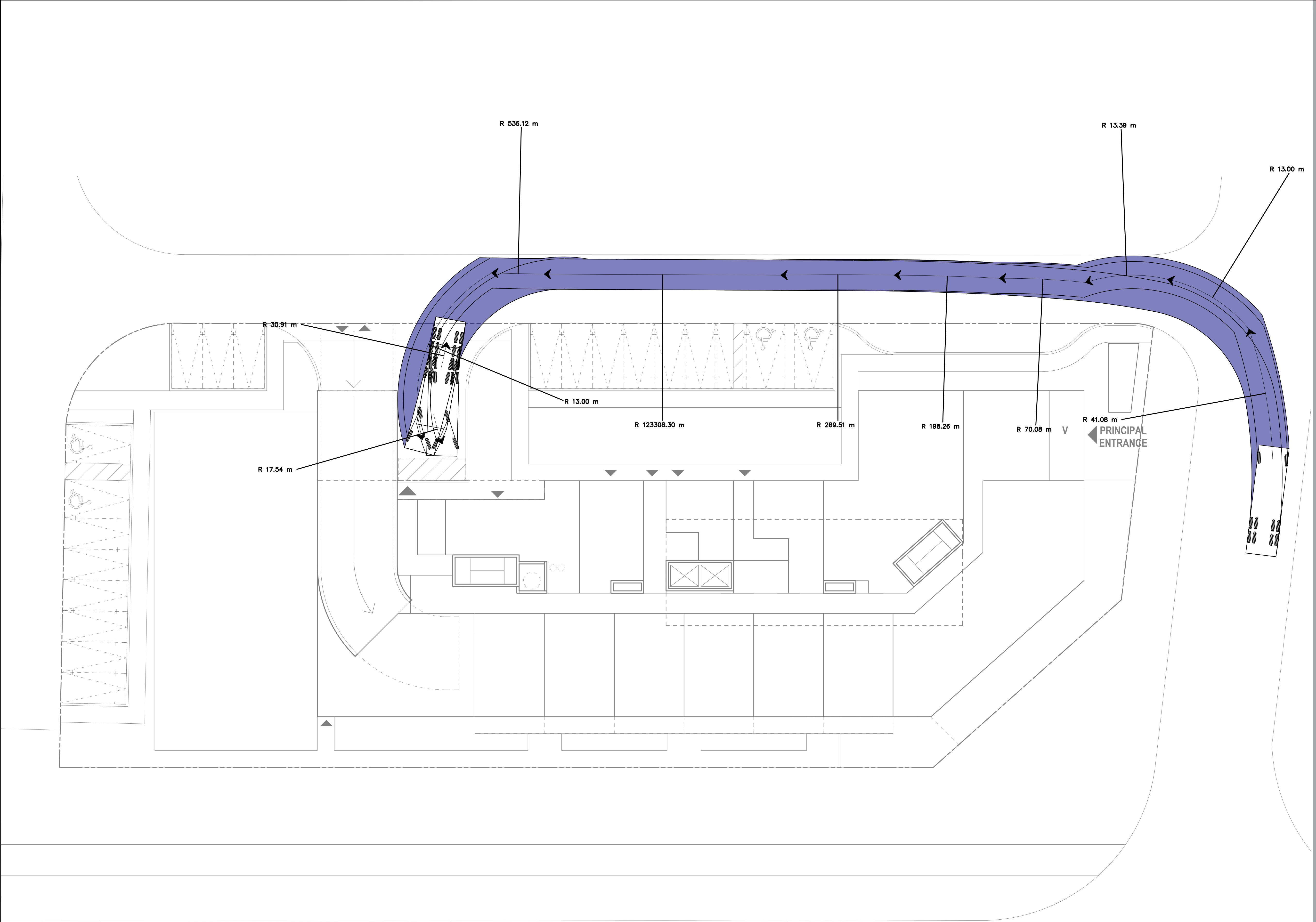
Date
October 9, 2024



Scale
NTS

Project No.
12654065

Title
**VEHICLE MANEUVERING
DIAGRAM -
FIRE TRUCK
(OUTBOUND 1)**

Sheet No.
AT-102

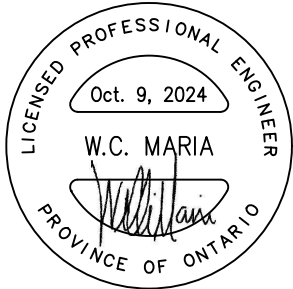


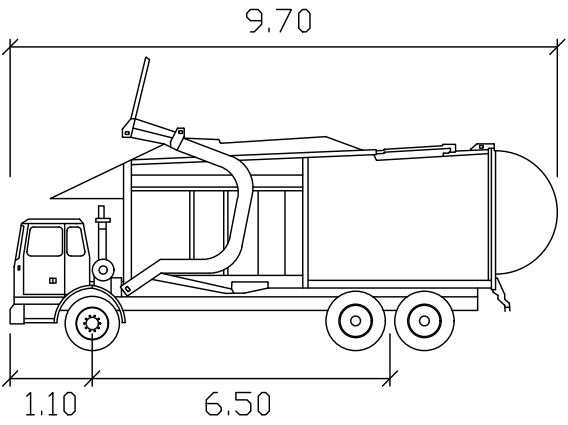


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Halton-Front-End
meters

Width : 2.70
Track : 2.70
Lock to Lock Time 6.0
Steering Angle : 30.0

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	S.B	Designer	S.B	
Drafting	W.M	Design	W.M	
Check		Check		
Project	W.M	Project	W.M	
Manager		Director		

Client

BRANTHAVEN

Project

DEMARCHI LANDS

Date	October 9, 2024	Scale	NTS
Project No.	12654065		

Title

VEHICLE MANEUVERING
DIAGRAM -
GARBAGE TRUCK
(INBOUND)

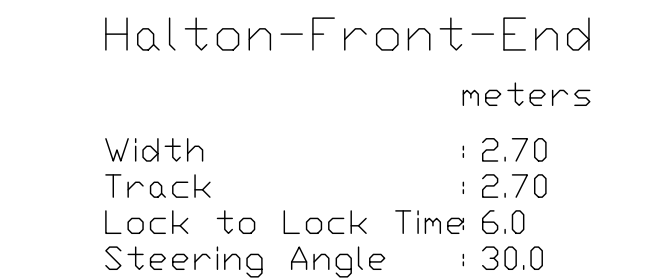
Sheet No.
AT-103

Size
ANSI D



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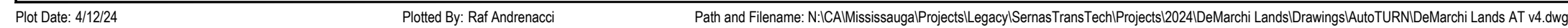
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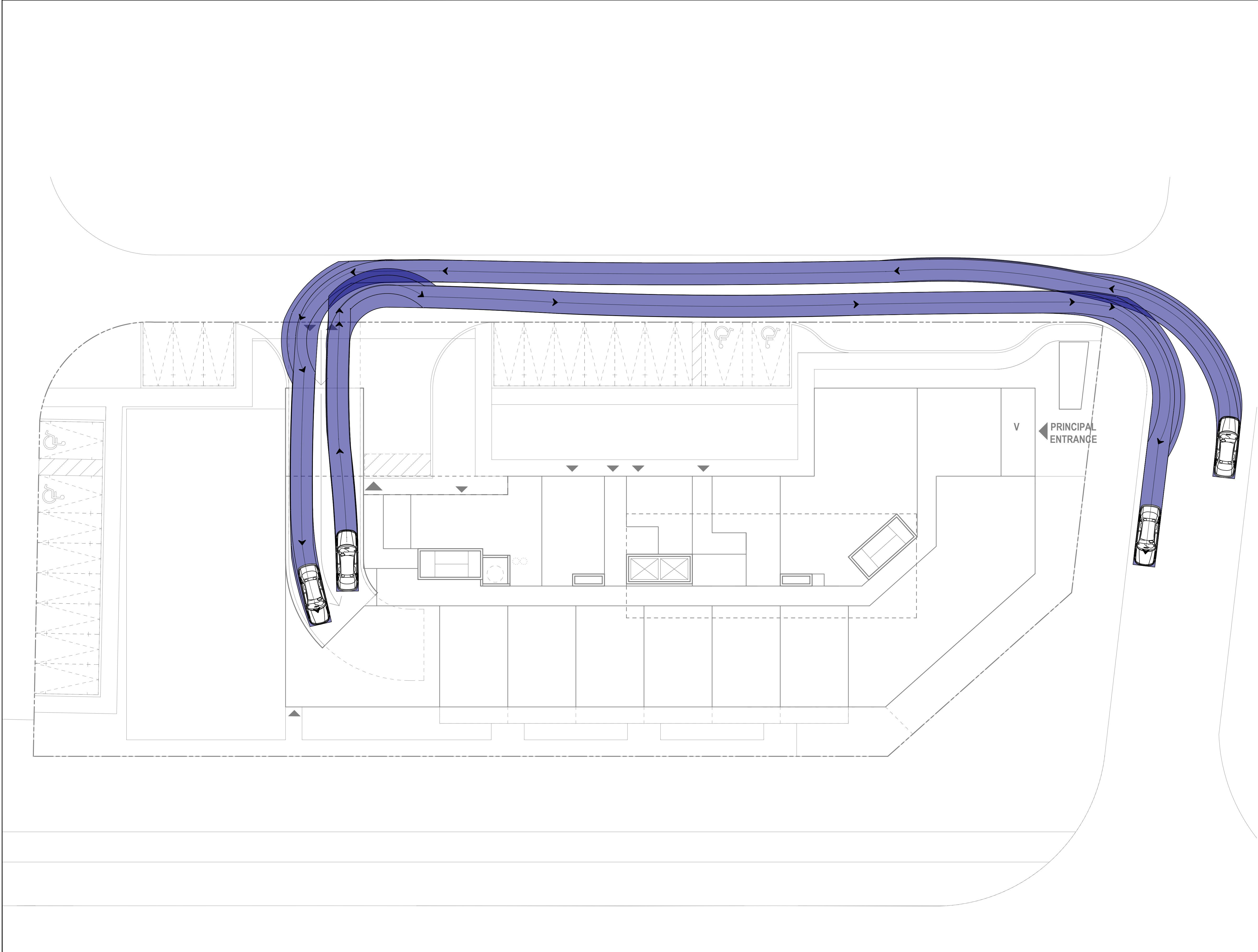




Client	BRANTHAVEN
Project	DEMARCHI LANDS

Project No.	12654065
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Sheet No.
T-104





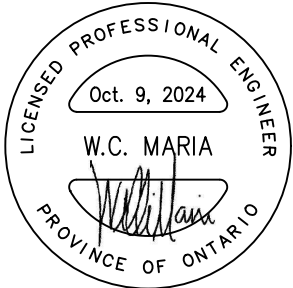


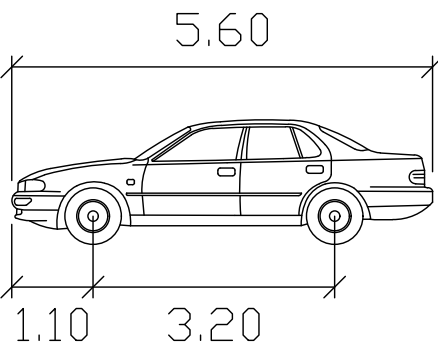
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P

Width : 2.00 meters

Track : 2.00

Lock to Lock Time: 6.0

Steering Angle : 35.9

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	S.B	Designer	S.B	
Drafting	W.M	Design	W.M	
Check		Check		
Project	W.M	Project	W.M	
Manager		Director		

Client

BRANTHAVEN

Project

DEMARCHI LANDS

Date

October 9, 2024

Scale

NTS

Project No.

12654065

Title

VEHICLE MANEUVERING
DIAGRAM -
PASSENGER CAR
(CIRCULATION)

Size

ANSI D

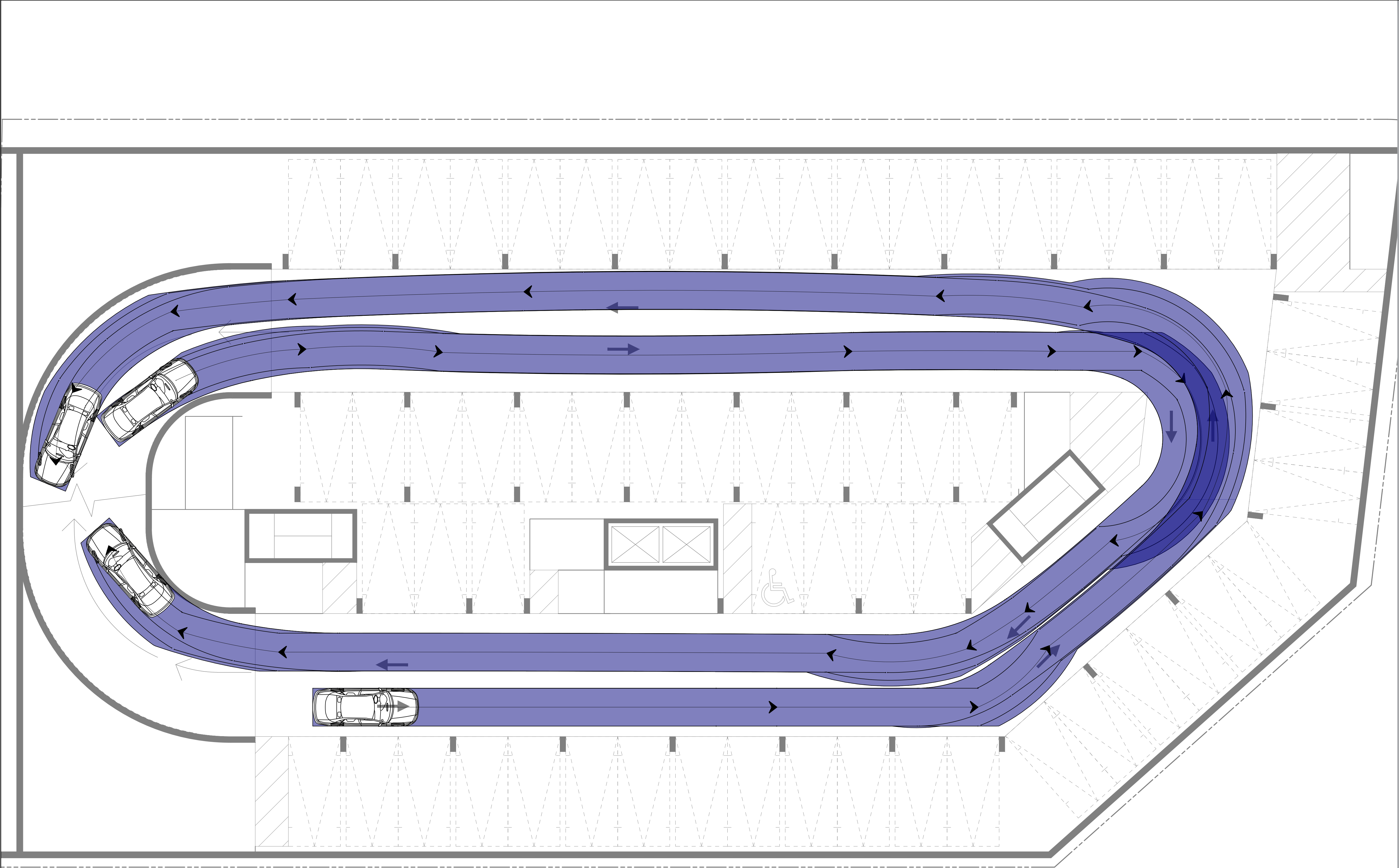
Sheet No.



AT-105

Plot Date: 4/12/24

Plotted By: Raf Andrenacci

Path and Filename: N:\CA\Mississauga\Projects\Legacy\SernasTransTech\Projects\2024\DeMarchi Lands\Drawings\AutoTURN\DeMarchi Lands AT v4.dwg

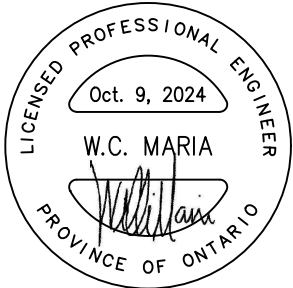


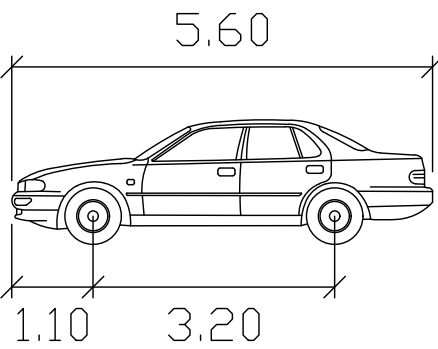


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Width : 2.00 meters
Track : 2.00
Lock to Lock Time: 6.0
Steering Angle : 35.9

1	First Submission	W.M	W.M	10/9/24
No.	Issue	Checked	Approved	Date
Author	S.B	Designer	S.B	
Drafting Check	W.M	Design Check	W.M	
Project Manager	W.M	Project Director	W.M	

Client

BRANTHAVEN

Project

DEMARCHI LANDS

Date

October 9, 2024

Scale

NTS

Project No.

12654065

Title

VEHICLE MANEUVERING
DIAGRAM -
PASSENGER CAR
(CIRCULATION 2)

Sheet No.

AT-106

Size

ANSI D

