

UPDATED JANUARY 15, 2025

PROJECT NO: 2533-6826

**SENT VIA: E-MAIL
DMCKAY@MHBCPLAN.COM**

Canadian Addiction Treatment Centres
c/o MHBC Planning, Urban Design & Landscape Architecture
7050 Weston Road, Suite 230
Woodbridge, ON L4L 8G7

**Attention: David A. McKay, BES, MSc, MLAI, MCIP, RPP
Vice President & Partner**

**RE: TRANSPORTATION OPINION LETTER
5483 TRAFALGER ROAD
TOWN OF ERIN, COUNTY OF WELLINGTON**

Dear David,

C.F. Crozier & Associates Inc. (Crozier) was retained by Canadian Addiction Treatment Centres to complete a Transportation Opinion Letter (TOL) to support the Zoning By-Law Amendment (ZBA) and Site Plan Application (SPA) for the site located at 5483 Trafalgar Road in the Town of Erin, County of Wellington (Site). This letter has been completed to support the Zoning By-Law Amendment (ZBA) and Site Plan Approval (SPA) for the Site, which are required to permit the current operation of the treatment centre.

The purpose of the Transportation Opinion Letter is to evaluate the impact of the development on the surrounding road network and recommend transportation-related mitigation measures, if required.

1.0 Scope of Study

A Terms of Reference (ToR) was circulated to the Town of Erin and Wellington County on July 21, 2023, which scoped the study. Correspondence from the Town of Erin and Wellington County, including the response to these terms, is included in **Attachment A**.

The following intersections were reviewed in the scope of this study:

- Trafalgar Road and the 5483 Trafalgar Road site access

The following timeframes were included in this study:

- 2023 Conditions
- Weekday a.m. and p.m. peak hours

2.0 Base Conditions

The following section provides a description of the study area from a transportation context, as well as a transportation operations analysis of the study road network.

2.1 Development Lands

The Site covers an area of approximately 5.32 ha and currently consists of an addiction treatment centre, a gravel driveway, two (2) gravel parking lots, a storage shed, and landscaped/forested areas. The Trafalgar Addiction Treatment Centre offers in-patient addiction and mental health rehabilitation treatment with 30 to 45-day treatment programs. The treatment centre has 21 client beds and staffs on a variety of shifts with a maximum of 8 staff per shift.

The property, located in a rural area, is surrounded by agricultural and treed lands to the north and east, and residential and agricultural lands to the south and west with Trafalgar Road along the west frontage.

The Site is currently zoned as Rural Commercial (C3-113) and Environmental Protection (EP2) per the Town of Erin Zoning By-Law No. 07-67 April 2023 Consolidation.

2.2 Boundary Road Network

Trafalgar Road (Wellington County Road 24) is a north/south roadway, at this location it has a two-lane cross section. Trafalgar Road is an arterial road under the jurisdiction of Wellington County. There are no sidewalks or dedicated cyclist facilities available on this roadway in the study area. The roadway has a posted speed limit of 80 km/h in the study area. Relevant road maps can be found in **Attachment B**.

2.3 Traffic Data

Turning movement counts at the intersection of Trafalgar Road at the site access were provided by Spectrum Traffic Data. The counts were undertaken on August 2, 2023, between the hours of 6:00 a.m. – 10:00 a.m. and 3:00 p.m. – 7:00 p.m. for the a.m. and p.m. peak periods, respectively.

Table 1 provides the peak hours at the site access.

Table 1: Intersection and Peak Hours

Intersection	Weekday A.M. Peak	Weekday P.M. Peak
Trafalgar Road and 5483 Trafalgar Road Site Access	7:15 – 8:15	4:30 – 5:30

Traffic data can be found in **Attachment C**.

2.4 Traffic Modelling

The evaluation of intersections within this report is conducted based on the methodology outlined in the Highway Capacity Manual (2000) using Synchro 11 modelling software. Intersections are assessed using a Level of Service (LOS) metric, with ranges of intersection delays assigned a letter from “A” to “F”. For stop-controlled intersections, a Level of Service “A” or “B” would typically be measured during off-peak hours when lesser traffic volumes are on the roadways. Levels of Service “C” through “F” would typically be observed during commuter peak hours when significant vehicle volumes would cause lengthy travel times. The Level of Service definitions for stop-controlled intersections is included in **Attachment D**.

2.5 Intersection Operations

The traffic operations at the site access were analyzed based on existing traffic during the weekday a.m. and p.m. peak hours. Detailed capacity analyses are included in **Attachment E**. **Table 2** summarizes the 2023 traffic operations at the site access.

Table 2: 2023 Levels of Service

Intersection	Movement	A.M. Peak		P.M. Peak	
		LOS (Control Delay)	v/c Ratio	LOS (Control Delay)	v/c Ratio
Trafalgar Road at Site Access (Unsignalized)	Overall	A (0.1 s)	0.08 (NB)	B (11.4s)	0.22 (NB)
	NBT + NBR	A (0 s)	0.08	A (0 s)	0.22
	SBT + SBL	A (0.1 s)	0	A (0 s)	0
	WBR + WBL	A (0 s)	0.01	B (11.4 s)	0.01

Note 1: The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach.

Note 2: Wellington County TIS Guidelines defines critical v/c ratios as greater than 0.85 for through or shared through/turning movements, and greater than 0.90 for exclusive turning movements.

The unsignalized intersection of Trafalgar Road at the site access operates with a LOS of “A” and “B” during the a.m. and p.m. peak hours, respectively. The access to the site operates well with no impediments to entering the Trafalgar Road traffic stream.

3.0 On-Site Circulation

An AutoTURN analysis was undertaken to confirm that critical design vehicles (fire trucks) can safely maneuver throughout the site. The vehicle maneuvering diagrams presented in **Attachment F** found no issues with vehicle maneuverability.

4.0 Parking Review

The purpose of this section is to evaluate the parking requirements associated with the treatment centre and determine whether the existing parking supply can sufficiently accommodate Zoning By-Law requirements.

4.1 Vehicle Parking Requirements

The proposed parking supply was compared to the parking requirements for the existing development based on the *Town of Erin Comprehensive Zoning By-Law 07-67, Special Provision C3-113 By-Law 95-31* (April 2023). This special provision allows for all permitted uses of the Rural Commercial Zone. It is assumed that this minimum requirement for parking would still apply to this site due to the special provision. Relevant Zoning By-Law excerpts are provided in **Attachment G. Table 3** displays the results of the findings.

The Site has no marked parking spaces, so spaces were assumed to be 6.0 metres by 3.0 metres per the *Town of Erin Comprehensive Zoning By-Law 07-67* (April 2023) requirements for off-street parking spaces. The estimated location of these spaces were then located in the areas in front of the structures and the number of parking spaces provided was calculated. These spaces were placed outside of the emergency vehicle route and can be seen sketched in the diagrams in **Attachment F** or in the Site Plan.

Table 3: Town of Erin Zoning By-Law Minimum Vehicle Parking Requirement

Type of Use/Building	Parking Rate	Parking Required	Parking Provided
Rural Commercial (C3-113)	20 Spaces Minimum	20	20
Surplus			0

The existing site has an adequate parking supply based on the Town of Erin Zoning By-Law standards. The treatment centre requires 20 parking spaces and there are 20 spaces provided. Therefore, the site meets the Town of Erin Zoning By-Law minimum parking requirements without any surplus.

5.0 Site Access Review

This section assesses the existing access to the site for conformance with sightline requirements.

5.1 Site Access Review

A review of the available sight distance of the 5482 Trafalgar Road site access was undertaken based on Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, June 2017 (GDGCR). Trafalgar Road has a posted speed limit of 80 km/h in the study area which translates to a design speed of 100 km/h.

Measurements were taken to verify that sight distances could be met from the site entrance. These measurements followed guidance in the TAC GDGCR. A driver's eye height of 1.08 metres was used, a vehicle height of 1.15 metres was used, and the measurement was taken 4.4 metres from the edge of the travel lane to represent a vehicle waiting to exit the site.

To the north, approximately 207 metres of sight distance was measured, which meets the minimum of 190 metres from table 9.9.6 in the GDGCR.

To the south, approximately 250 metres of sight distance was measured, which meets the minimum of 210 metres from table 9.9.4 in the GDGCR.

Table 4 displays the results of the analysis.

Table 4: Sight Distance Analysis

Feature	5483 Trafalgar Road Site Access
Access Type	Full-Movement
Posted Speed Limit of Roadway	80 km/h
Assumed Design Speed	100 km/h
Base Time Gap	6.5 s (right) 7.5 s (left)
Grade of Roadway	Less than 3%
Horizontal Alignment of Roadway	Straight
Required Sight Distance (right turn)	>190 m
Available Sight Distance (right turn)	207 m
Required Sight Distance (left turn)	>210 m
Available Sight Distance (left turn)	250 m
Minimum Sight Distances Satisfied?	YES

Utilizing the equation provided by the TAC guideline 9.9.1 and the tables provided in 9.9.4 and 9.9.6, the required sight distance of a passenger vehicle making a right-turn and a left-turn from stop are approximately 190 metres and 210 metres respectively for the design speed of 100 km/h.

The 5483 Trafalgar Road site access meets all relevant TAC GDGCR requirements of the sight distance analysis.

6.0 Comment Response

Comments were provided after the initial submission and addressed throughout the report. However, the specific comments that are targeted towards the Transportation Opinion Letter and their associated specific responses are summarized as follows:

Comment: *The submitted documentation should describe what the proposed land use will be. The Transportation Opinion Letter indicates that a part of its use will be as a conference centre and bases the number of parking spaces on that, but the Existing Conditions Report also talks about a maximum of 20 staff on site for a work shift, and 25 client beds. The two (2) reports do not appear to be aligned with each other in terms of land use.*

Response: The Transportation Opinion Letter does not indicate the site's use as a conference centre and matches the Existing Conditions Report.

Comment: *The parking lot demand calculations should be reviewed. The referenced C3-113 By-law 95-31 referenced in Appendix G is the subject site, but the proposed Zoning By-law C3-113 amendment is adding a new land use which is not accounted for in the parking demand.*

Response: The proposed amendment does not add new land use as the proposed land use falls under the Rural Commercial C3 designation per Table in Section 7 of the By-Law.

Comment: *With the additional land use described in the Transportation Opinion Letter, the traffic demand should be reviewed to confirm it "captures" the property's use as a conference centre, bed and breakfast operation, and place of employment.*

Response: The proposed amendment does not add new land use as the proposed land use falls under the Rural Commercial C3 designation per Table in Section 7 of the By-Law. The development does not offer a conference centre.

7.0 Conclusion

The findings of our analysis are summarized as the following:

- During 2023 conditions, the unsignalized intersection of Trafalgar Road and the site access operates at a LOS of "B" or better and experiences a maximum overall control delay of 11.4 seconds. There are no notable operational deficiencies in the road network, therefore the existing use of the treatment centre can be supported from a transportation operations perspective.
- Based on the parking review, the site can adequately support the minimum parking required per the Zoning By-Law. The site requires 20 parking spaces to be available.
- As there are no marked parking spaces, the space for a parking space was assumed to be based on off-street parking space requirements. With these assumed areas, there is a supply of 20 parking spots. The site plan shows these assumed parking spaces.
- The minimum parking rate is provided in a special provision for this site which includes all the uses for a Rural Commercial zoned site.
- The Vehicle Maneuvering Analysis found in Attachment F illustrated that the site has adequate maneuverability for critical design vehicles (fire trucks).
- The site access meets the relevant TAC GDGCR requirements for sight distance.

We trust that this Transportation Opinion Letter satisfies transportation related concerns for the Canadian Addiction Treatment Centre. Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Respectfully Submitted,

C.F. CROZIER & ASSOCIATES INC.



Shaira Ahmed, EIT
Engineering Intern, Transportation

IL/sh/la;cj

C.C.

Enclosure:

Attachment A – Correspondence & Comment Response

Attachment B – Road Hierarchy

Attachment C – Traffic Data

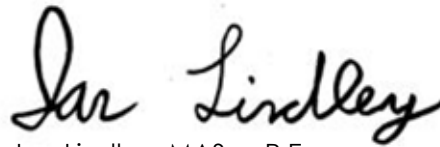
Attachment D – Level of Service Definitions

Attachment E - Detailed Capacity Analysis

Attachment F – Vehicle Maneuvering Diagrams

Attachment G – Zoning By-Law

C.F. CROZIER & ASSOCIATES INC.



Ian Lindley, M.A.Sc., P.Eng.
Project Engineer, Transportation

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_(2533-6826) TOL_Final.docx

Attachment A

Correspondence

From: Tanjot Bal <Tanjot.Bal@erin.ca>
Sent: July 31, 2023 10:17 AM
To: Ian Lindley; zacharyp@wellington.ca; pasqualec@wellington.ca
Subject: RE: 5483 Trafalgar Road Transportation Requirements

Good Morning All,

Ian sent the Town a follow-up email today.

Zach/Pasquale can you please see Ian's request below?

Thank you,

Tanjot Bal, MCIP, RPP
Senior Planner
Town of Erin
Email: Tanjot.Bal@erin.ca



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From: Ian Lindley [<mailto:ilindley@cfcrozier.ca>]
Sent: Friday, July 21, 2023 10:26 AM
To: planning <planning@erin.ca>; zacharyp@wellington.ca; pasqualec@wellington.ca
Subject: 5483 Trafalgar Road Transportation Requirements

Hello,

C.F. Crozier and Associates (Crozier) has been retained to prepare a Transportation Opinion Letter (TOL) for a commercial development located at 5483 Trafalgar Road, in the Town of Erin, Wellington County, in support of the Zoning By-Law Amendment (ZBA) and Site Plan Approval Application (SPA) to permit the existing uses on the site.

Please see the attached topographic plan for the site.

This letter and its attachment are intended to serve as the Terms of Reference (ToR) for the TOL to support the development application. We are kindly requesting that you review the ToR and provide feedback regarding our scope of work and request for data.

Should you not be the appropriate person for correspondence, it would be appreciated to be directed to the appropriate contact.

Study Methodology for the Transportation Impact Study

The following intersections are proposed to be analyzed as part of the scope of the study:

- Trafalgar Road and Site Access

Analysis Periods and Scenarios

The above intersections will be analyzed in the weekday A.M. and P.M. peak hours of current year (2023). **Please confirm if the peak hour periods are sufficient for the analysis.**

Analysis Procedures

Weekday A.M. and P.M. peak hours will be analyzed using Synchro 11.0 analysis software based on Highway Capacity Manual (HCM) procedures. **Please confirm if this acceptable.**

Site Circulation

Site circulation was outlined in the Rezoning checklist for this project. **Please confirm if this is still to be included.**

If so, the Site circulation will be conducted using AutoTURN software and will focus on emergency vehicles and small delivery vehicles as these are the expected vehicles on site. **Please confirm if this acceptable**

Summary

We request the following information for inclusion in the study, along with any comments that arise with regards to the above Terms of Reference.

Please provide:

- Confirmation that the intersections of study are sufficient.
- Confirm the study horizon years are acceptable.
- Confirmation on the Site circulation procedure.

I hope the contents outlined in this email are acceptable. Again, if you are not the appropriate contact, we would appreciate being directed to the appropriate contact.

Regards,


Ian

Ian Lindley, M.A.Sc., P.Eng.

Project Engineer, Transportation

Office: 548.708.0022

Collingwood | Milton | Toronto | Bradford | Guelph



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Attachment B

Road Hierarchy

NO.	COMMENTS	RESPONSE	ADDRESSED	CONSULTANT RESPONSIBLE
5.0	AINLEY GROUP ENGINEERING			
	Leonard Borgdorff, Senior Project Engineer – leonard.borgdorff@ainleygroup.com or 705-726-3371 ext. 249			
5.1	The submitted documentation should describe what the proposed land use will be. The Transportation Opinion Letter indicates that a part of its use will be as a conference centre and bases the number of parking spaces on that, but the Existing Conditions Report also talks about a maximum of 20 staff on site for a work shift, and 25 client beds. The two reports do not appear to be aligned with each other in terms of land use.	The Transportation Opinion Letter does not indicate the site’s use as a conference centre and matches the Existing Conditions Report.		CROZIER
5.2	The parking lot demand calculations should be reviewed. The referenced C3-113 By-law 95-31 referenced in Appendix G is the subject site, but the proposed Zoning By-law C3-113 amendment is adding a new land use which is not accounted for in the parking demand.	The proposed amendment does not add new land use as the proposed land use falls under the Rural Commercial C3 designation per Table in Section 7 of the By-Law.		CROZIER / MHBC
5.3	With the additional land use described in the Transportation Opinion Letter, the traffic demand should be reviewed to confirm it “captures” the property’s use as a conference centre, bed and breakfast operation, and place of employment.	The proposed amendment does not add new land use as the proposed land use falls under the Rural Commercial C3 designation per Table in Section 7 of the By-Law. The development does not offer a conference centre		CROZIER – TRANSPORTATION

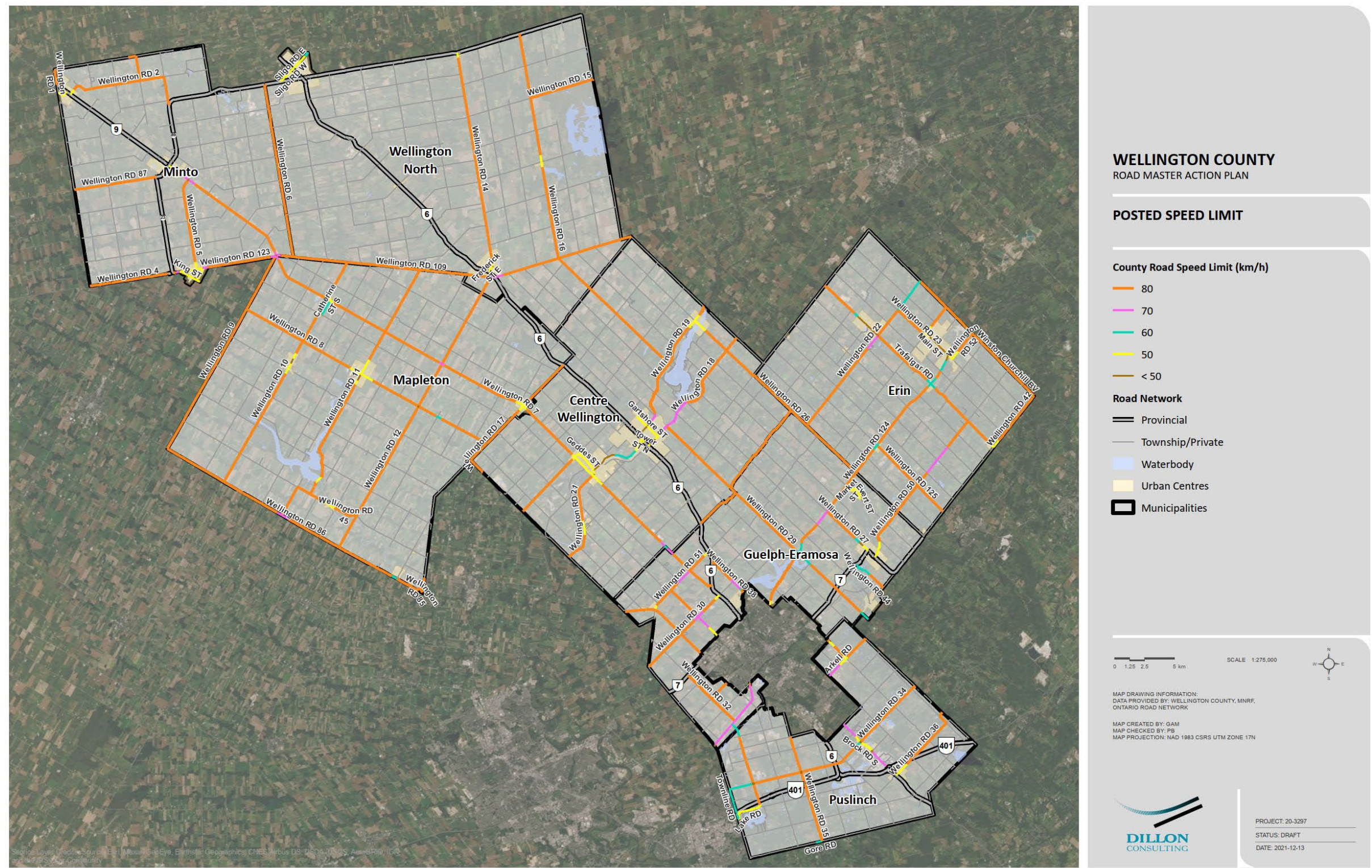


Figure 5: Existing Roadway Posted Speed Limits

3.0




Existing Conditions

3.1

Roadway Network

The road network in the County of Wellington includes Provincial highways, County arterial and collector roadways, and Town and Township collector and local roadways. This hierarchy helps to determine the use and purpose of a roadway, giving direction on the speed limit, capacity, and typical volumes for that roadway type. The County's Official Plan provides guidance on the classification of roadways. Characteristics of each roadway type are detailed in **Table 2**.

Table 2: Roadway Characteristics

Type	Highways and Arterial Roadways	Collector Roadways	Local Roadways
Graphic Representation			
Jurisdiction	Provincial highways, County roads	County roads, Town and Township roads	Town and Township roads
Traffic Volume	High volumes	Moderate to high volumes	Low volumes
Average Speed (km/h)	80 to 100	60 to 80	40 to 60
Function	Serve as major connecting links for inter-urban traffic.	Provide access between local and arterial roads and circulate traffic within a neighbourhood.	Provide access to individual properties by connecting them to collector roads. Not intended to act as through routes.

Attachment C

Traffic Data



Turning Movement Count (1 . TRAFALGAR RD & 5483 TRAFALGAR RD SITE ACCESS)

Start Time	N Approach 5483 TRAFALGAR RD SITE ACCESS					E Approach TRAFALGAR RD					W Approach TRAFALGAR RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
06:00:00	0	0	0	0	0	0	13	0	0	13	45	0	0	0	45	58	
06:15:00	0	0	0	0	0	1	15	0	0	16	54	0	0	0	54	70	
06:30:00	0	0	0	0	0	0	25	0	0	25	47	0	0	0	47	72	
06:45:00	0	0	0	0	0	1	24	0	0	25	44	0	0	0	44	69	269
07:00:00	0	1	0	0	1	1	25	0	0	26	52	0	0	0	52	79	290
07:15:00	0	0	0	0	0	0	32	0	0	32	58	0	0	0	58	90	310
07:30:00	0	0	0	0	0	0	29	0	0	29	52	0	0	0	52	81	319
07:45:00	0	0	0	0	0	1	28	0	0	29	46	0	0	0	46	75	325
08:00:00	0	0	0	0	0	2	27	0	0	29	49	2	0	0	51	80	326
08:15:00	0	0	0	0	0	4	36	0	0	40	45	1	0	0	46	86	322
08:30:00	0	0	0	0	0	1	28	0	0	29	42	0	0	0	42	71	312
08:45:00	0	0	0	0	0	1	28	1	0	30	35	0	0	0	35	65	302
09:00:00	0	0	0	0	0	0	28	0	0	28	36	0	0	0	36	64	286
09:15:00	0	0	0	0	0	1	22	0	0	23	30	0	0	0	30	53	253
09:30:00	0	1	0	0	1	1	30	0	0	31	29	0	0	0	29	61	243
09:45:00	0	0	0	0	0	0	32	0	0	32	30	0	0	0	30	62	240
BREAK																	
15:00:00	0	0	0	0	0	0	34	0	0	34	27	0	0	0	27	61	
15:15:00	0	0	0	0	0	2	55	0	0	57	24	0	0	0	24	81	
15:30:00	0	0	0	0	0	0	42	0	0	42	32	0	0	0	32	74	
15:45:00	0	0	0	0	0	0	63	0	0	63	28	0	0	0	28	91	307
16:00:00	1	1	0	0	2	0	66	0	0	66	34	0	0	0	34	102	348
16:15:00	0	1	0	0	1	0	81	0	0	81	33	0	0	0	33	115	382
16:30:00	1	2	0	0	3	0	80	0	0	80	53	0	0	0	53	136	444
16:45:00	0	0	0	0	0	0	73	0	0	73	28	0	0	0	28	101	454
17:00:00	1	1	0	0	2	0	103	0	0	103	34	0	0	0	34	139	491
17:15:00	0	0	0	0	0	0	82	0	0	82	36	0	0	0	36	118	494
17:30:00	0	1	0	0	1	0	77	0	0	77	23	0	0	0	23	101	459
17:45:00	0	0	0	0	0	0	77	0	0	77	30	0	0	0	30	107	465
18:00:00	0	0	0	0	0	0	59	0	0	59	33	0	0	0	33	92	418
18:15:00	0	0	0	0	0	0	63	0	0	63	18	0	0	0	18	81	381
18:30:00	0	1	0	0	1	0	42	0	0	42	34	0	0	0	34	77	357
18:45:00	0	0	0	0	0	1	48	0	0	49	22	0	0	0	22	71	321



Grand Total	3	9	0	0	12	17	1467	1	0	1485	1183	3	0	0	1186	2683	-
Approach%	25%	75%	0%		-	1.1%	98.8%	0.1%		-	99.7%	0.3%	0%		-	-	-
Totals %	0.1%	0.3%	0%		0.4%	0.6%	54.7%	0%		55.3%	44.1%	0.1%	0%		44.2%	-	-
Heavy	0	0	0		-	1	62	0		-	42	0	0		-	-	-
Heavy %	0%	0%	0%		-	5.9%	4.2%	0%		-	3.6%	0%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:15 AM - 08:15 AM Weather: Overcast Clouds (13.35 °C)

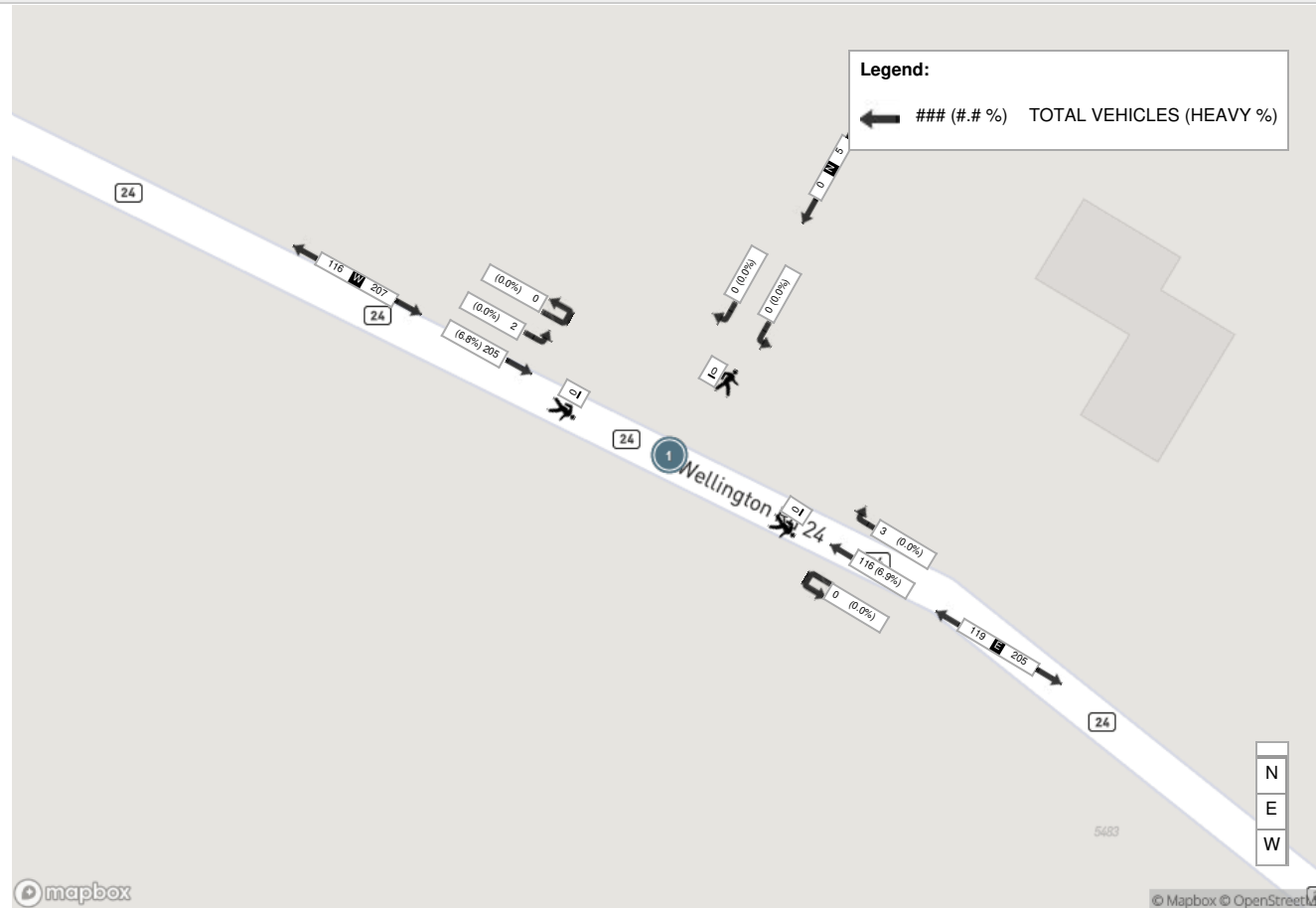
Start Time	N Approach 5483 TRAFALGAR RD SITE ACCESS					E Approach TRAFALGAR RD					W Approach TRAFALGAR RD					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
07:15:00	0	0	0	0	0	0	32	0	0	32	58	0	0	0	58	90
07:30:00	0	0	0	0	0	0	29	0	0	29	52	0	0	0	52	81
07:45:00	0	0	0	0	0	1	28	0	0	29	46	0	0	0	46	75
08:00:00	0	0	0	0	0	2	27	0	0	29	49	2	0	0	51	80
Grand Total	0	0	0	0	0	3	116	0	0	119	205	2	0	0	207	326
Approach%	0%	0%	0%		-	2.5%	97.5%	0%		-	99%	1%	0%		-	-
Totals %	0%	0%	0%		0%	0.9%	35.6%	0%		36.5%	62.9%	0.6%	0%		63.5%	-
PHF	0	0	0		0	0.38	0.91	0		0.93	0.88	0.25	0		0.89	-
Heavy	0	0	0		0	0	8	0		8	14	0	0		14	-
Heavy %	0%	0%	0%		0%	0%	6.9%	0%		6.7%	6.8%	0%	0%		6.8%	-
Lights	0	0	0		0	3	108	0		111	191	2	0		193	-
Lights %	0%	0%	0%		0%	100%	93.1%	0%		93.3%	93.2%	100%	0%		93.2%	-
Single-Unit Trucks	0	0	0		0	0	8	0		8	14	0	0		14	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	6.9%	0%		6.7%	6.8%	0%	0%		6.8%	-
Buses	0	0	0		0	0	0	0		0	0	0	0		0	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-



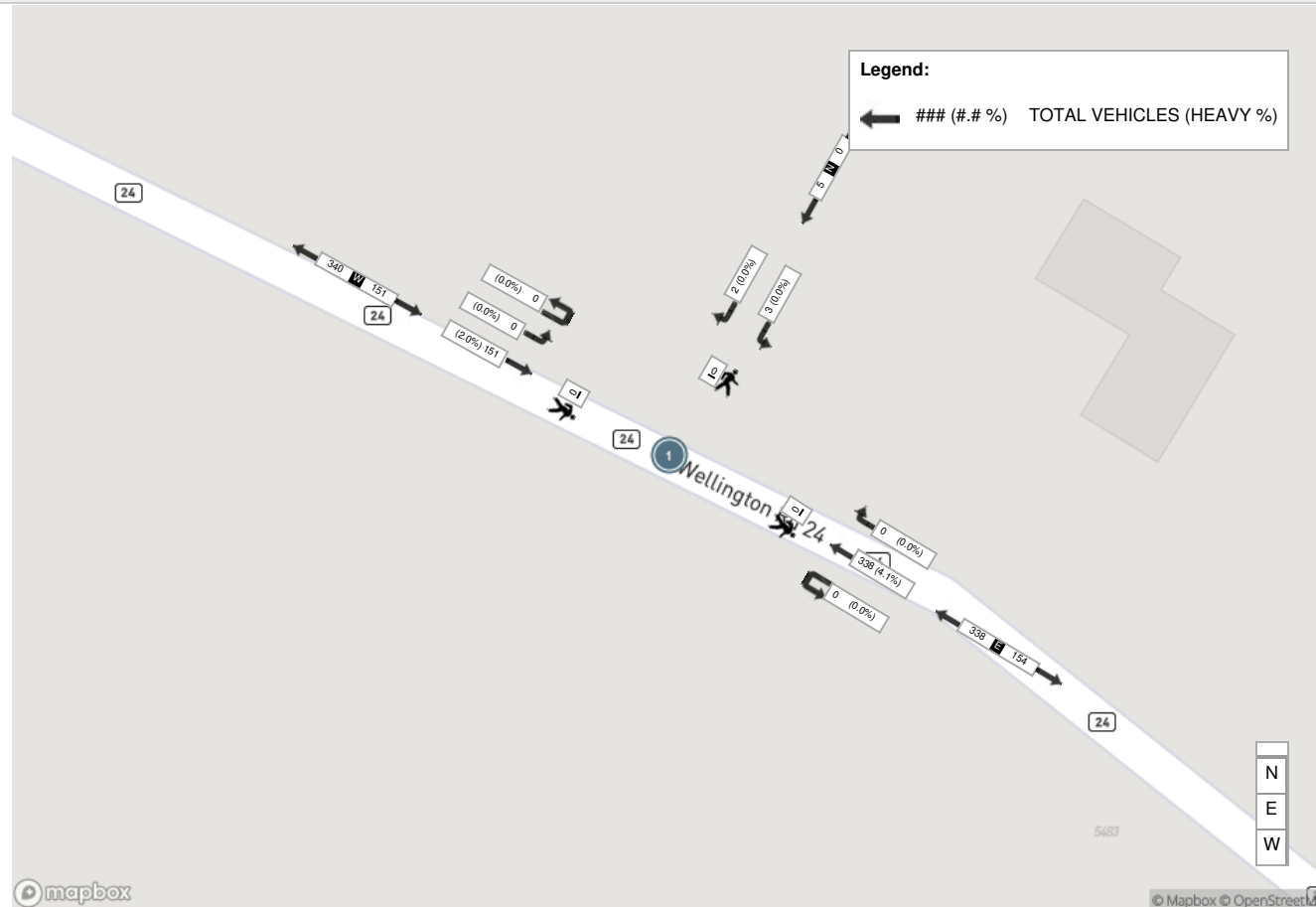
Peak Hour: 04:30 PM - 05:30 PM Weather: Scattered Clouds (24.33 °C)

Start Time	N Approach 5483 TRAFALGAR RD SITE ACCESS					E Approach TRAFALGAR RD					W Approach TRAFALGAR RD					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	1	2	0	0	3	0	80	0	0	80	53	0	0	0	53	136
16:45:00	0	0	0	0	0	0	73	0	0	73	28	0	0	0	28	101
17:00:00	1	1	0	0	2	0	103	0	0	103	34	0	0	0	34	139
17:15:00	0	0	0	0	0	0	82	0	0	82	36	0	0	0	36	118
Grand Total	2	3	0	0	5	0	338	0	0	338	151	0	0	0	151	494
Approach%	40%	60%	0%		-	0%	100%	0%		-	100%	0%	0%		-	-
Totals %	0.4%	0.6%	0%		1%	0%	68.4%	0%		68.4%	30.6%	0%	0%		30.6%	-
PHF	0.5	0.38	0		0.42	0	0.82	0		0.82	0.71	0	0		0.71	-
Heavy	0	0	0		0	0	14	0		14	3	0	0		3	-
Heavy %	0%	0%	0%		0%	0%	4.1%	0%		4.1%	2%	0%	0%		2%	-
Lights	2	3	0		5	0	324	0		324	148	0	0		148	-
Lights %	100%	100%	0%		100%	0%	95.9%	0%		95.9%	98%	0%	0%		98%	-
Single-Unit Trucks	0	0	0		0	0	11	0		11	3	0	0		3	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	3.3%	0%		3.3%	2%	0%	0%		2%	-
Buses	0	0	0		0	0	3	0		3	0	0	0		0	-
Buses %	0%	0%	0%		0%	0%	0.9%	0%		0.9%	0%	0%	0%		0%	-

Peak Hour: 07:15 AM - 08:15 AM Weather: Overcast Clouds (13.35 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Scattered Clouds (24.33 °C)



Attachment D

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Attachment E

Detailed Capacity Analysis

Intersection: 3: Trafalgar Road /Trafalgar Road & Site Access

Movement

Directions Served

Maximum Queue (m)

Average Queue (m)

95th Queue (m)

Link Distance (m)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (m)

Storage Blk Time (%)










Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Lanes, Volumes, Timings
3: Trafalgar Road /Trafalgar Road & Site Access










2023 Existing AM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	116	3	2	205
Future Volume (vph)	0	0	116	3	2	205
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	0.997					
Flt Protected						
Satd. Flow (prot)	1863	0	1857	0	0	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	1857	0	0	1863
Link Speed (k/h)	50		50			50
Link Distance (m)	138.0		197.3			148.4
Travel Time (s)	9.9		14.2			10.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	126	3	2	223
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	129	0	0	225
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	15.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

3: Trafalgar Road /Trafalgar Road & Site Access

2023 Existing AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	116	3	2	205
Future Volume (Veh/h)	0	0	116	3	2	205
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)	0	0	126	3	2	223
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	354	128			129	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	354	128			129	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	643	923			1457	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	129	225			
Volume Left	0	0	2			
Volume Right	0	3	0			
cSH	1700	1700	1457			
Volume to Capacity	0.01	0.08	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.1			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.1			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.7%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 3: Trafalgar Road /Trafalgar Road & Site Access










Movement	WB
Directions Served	LR
Maximum Queue (m)	8.9
Average Queue (m)	1.6
95th Queue (m)	7.2
Link Distance (m)	128.9
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Lanes, Volumes, Timings
3: Trafalgar Road /Trafalgar Road & Site Access










2023 Existing PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	2	338	0	0	151
Future Volume (vph)	3	2	338	0	0	151
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	0.946					
Flt Protected	0.971					
Satd. Flow (prot)	1711	0	1863	0	0	1863
Flt Permitted	0.971					
Satd. Flow (perm)	1711	0	1863	0	0	1863
Link Speed (k/h)	50		50			50
Link Distance (m)	138.0		197.3			148.4
Travel Time (s)	9.9		14.2			10.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	2	367	0	0	164
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	367	0	0	164
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

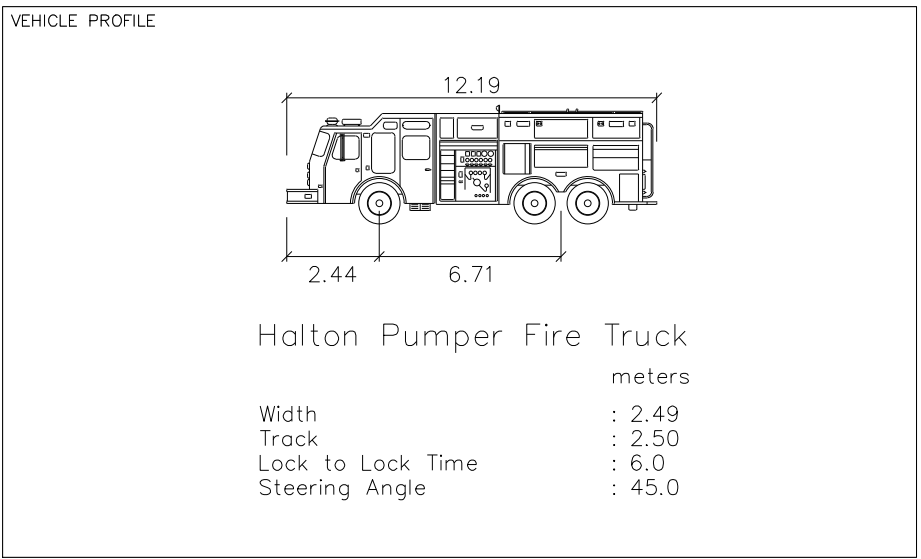
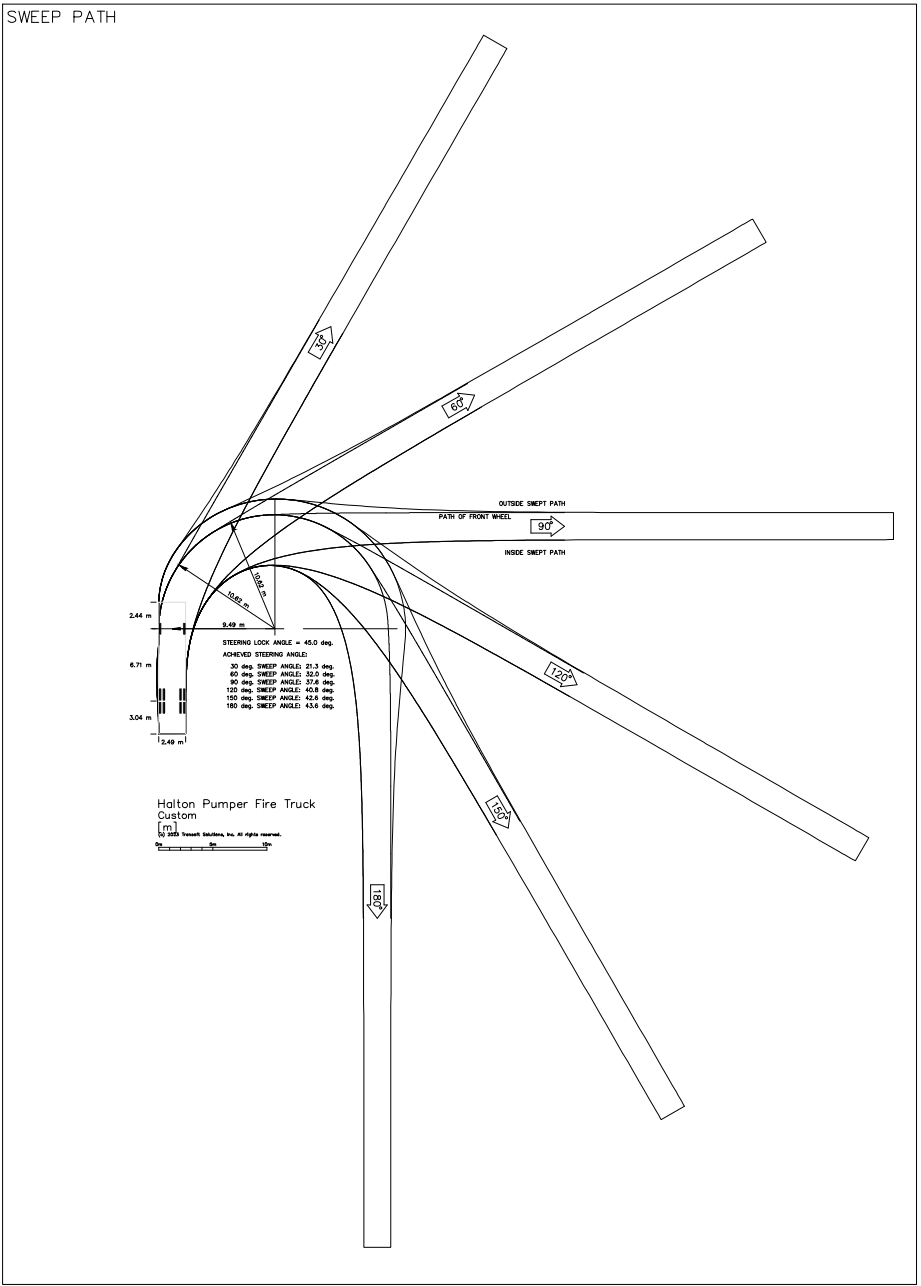
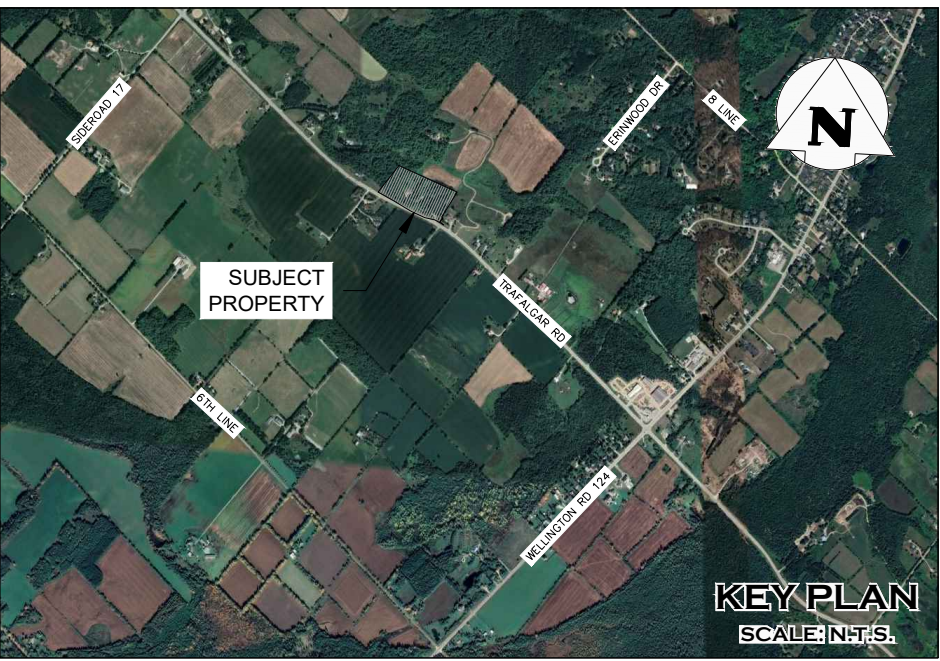
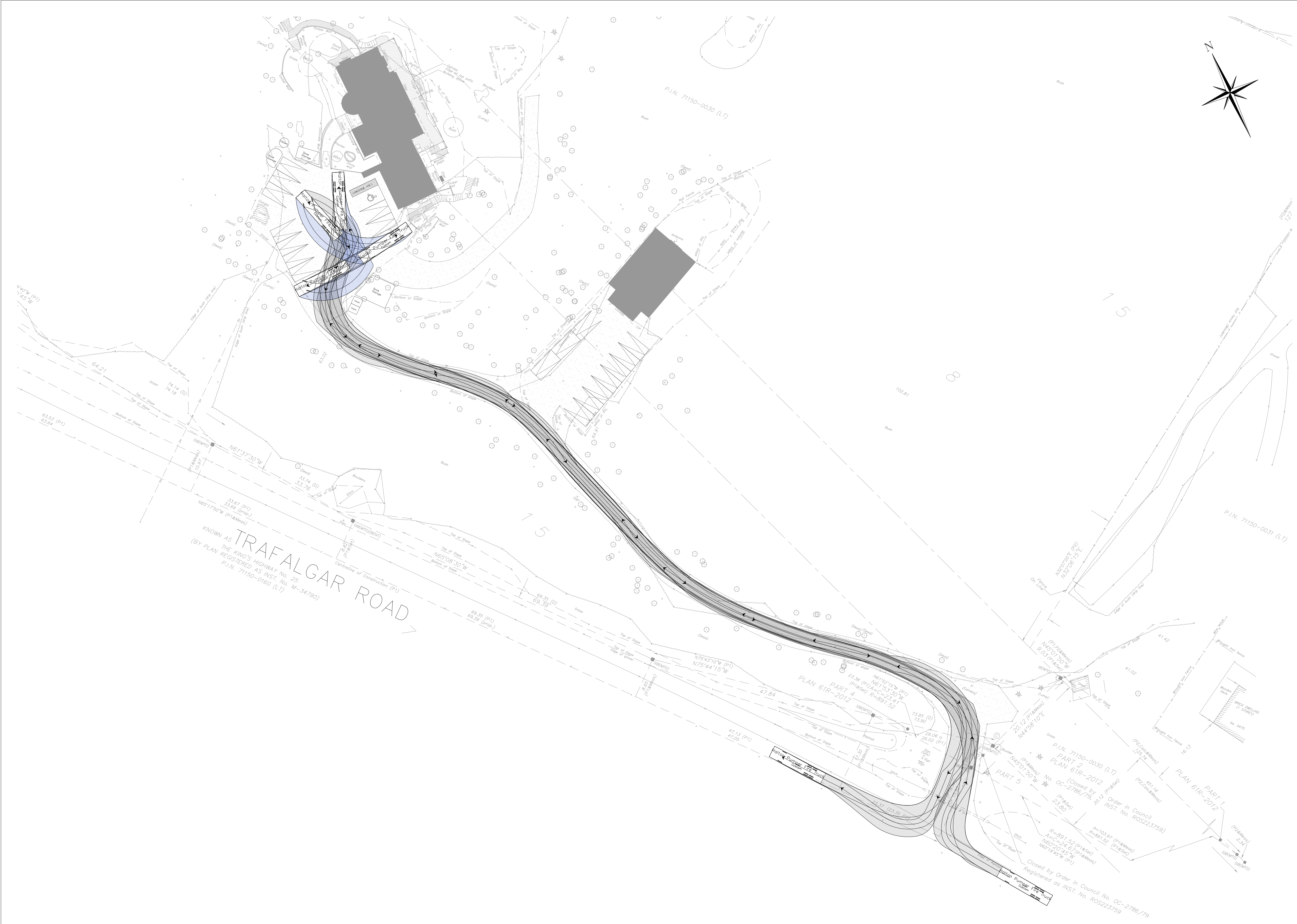
3: Trafalgar Road /Trafalgar Road & Site Access

2023 Existing PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	2	338	0	0	151
Future Volume (Veh/h)	3	2	338	0	0	151
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)	3	2	367	0	0	164
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	531	367			367	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	531	367			367	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	509	678			1192	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	5	367	164			
Volume Left	3	0	0			
Volume Right	2	0	0			
cSH	565	1700	1192			
Volume to Capacity	0.01	0.22	0.00			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	11.4	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	11.4	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			27.8%	ICU Level of Service		A
Analysis Period (min)			15			

Attachment F

Vehicle Maneuvering Diagrams

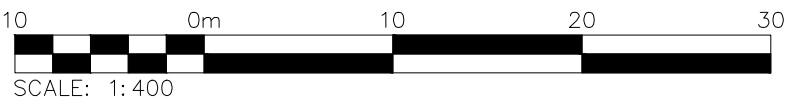


No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR SUBMISSION	2025/01/14

Project
5483 TRAFALGAR ROAD
TOWN OF ERIN

Drawing
FIRE TRUCK
VEHICLE MANEUVERING ANALYSIS

Drawn By	I.M.	Design By	Project	2533-6826
Check By	I.L.	Check By	Scale	1:400
			Drawing	T001



FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

Attachment G

Zoning By-Law

COMMERCIAL ZONE By-law, Location, Roll #	SPECIAL PROVISIONS
C3-112 By-law 95-06 Sherrington Medical Clinic 9565 WCR 124 Roll# 03-02700	Notwithstanding the provisions of the Rural Commercial zone, the <i>lands</i> zoned C3-112 shall be used only in accordance with the following: <ol style="list-style-type: none"> a) Permitted <i>Uses</i>: <ul style="list-style-type: none"> • a <i>medical clinic</i>; or • a single <i>dwelling</i> and <i>uses accessory</i> thereto b) Regulations: <ul style="list-style-type: none"> • Minimum <i>Lot Area</i>: 0.18 ha • Minimum <i>Lot Frontage</i>: 60 m • Minimum <i>Side Yard</i>: 15.0 m • Minimum <i>Rear Yard</i>: as existing • Maximum Ground <i>Floor Area</i> (Excluding <i>garage</i>): 140.0 m² • Minimum Parking: 4 spaces per practitioner (excluding <i>garage</i>)
C3-113 By-law 95-31 Cedarbrooke 5483 WCR 24 Roll # 4-15600	Notwithstanding the permitted <i>uses</i> of the Rural Commercial (C3) zone, the <i>lands</i> zoned C3-113 may be used for a bed and breakfast operation and conference centre, including <i>accessory</i> dining facilities, subject to the following regulations: <ol style="list-style-type: none"> i) Minimum <i>Lot Size</i>: 4.8 ha ii) Maximum Number of Guest Bedrooms: 10 iii) Maximum Conference Facility Size: 35 iv) Minimum <i>Parking Spaces</i>: 20
C3-114 By-law 02-52 By-law 07-25 Stonecroft 5331 WCR 24 Roll # 4-14300	Notwithstanding the permitted <i>uses</i> of the Rural Commercial zone (C3), the <i>lands</i> zoned C3-114 may be used for <i>agricultural use</i> , a bed and breakfast operation, tea room including dining facilities, a <i>craft shop</i> and second <i>dwelling</i> , subject to the following regulations: <ol style="list-style-type: none"> i) Minimum <i>Lot Size</i>: 38 ha ii) Maximum Number of Guest Bedrooms: 6 iii) Maximum Dining Area Seating: 75 iv) Minimum <i>Parking Spaces</i>: 20
C3-115 By-law 96-03 Morey, Orton Roll #	Notwithstanding the permitted <i>uses</i> of the C3 zone, the <i>lands</i> zoned C3-115 may be used for a general store, <i>restaurant</i> and <i>accessory office use</i> , subject to the following regulations: <ol style="list-style-type: none"> i) Maximum Ground <i>Floor Area</i>: 75 m² ii) Minimum <i>Front Yard Setback</i>: 7.0 m iii) Minimum <i>Parking Spaces</i>: 5 iv) <i>Parking Space Area</i>: 2.6 m x 5.5 m
C3-116 By-laws 88-12 & 96-27 Ed Stewart 9408 WCR 124 Roll # 04-1510	Notwithstanding the <i>uses</i> permitted in the Rural Commercial zone, the <i>lands</i> zoned C3-116 may only be used for an <i>automotive service station</i> , a <i>restaurant</i> , a <i>convenience store</i> , office <i>uses</i> , an <i>accessory</i> single detached <i>dwelling</i> , and <i>buildings, structures</i> and <i>uses accessory</i> to the foregoing <i>uses</i> .

arranged as to divert the light away from adjacent *lots* or *streets*, and such that they will not be confused with traffic lights or be otherwise hazardous to traffic;

- .3 A *structure*, not more than 4.5 m in *height* and not more than 15m² in area may be *erected* in the *parking area* for the *use of parking lot* attendants;
- .4 All *parking areas* shall be provided with curbing, wheel stops or other devices to prevent *motor vehicles* from being parked or driven within required *setback* areas or onto required landscaped open spaces.

Amended by
By-law 22-43

- .5 The *parking area* shall be *setback* a minimum of 3.0 m from the *street line* and a minimum of 3.0 m from all other *lot lines*, and the area between the *street line* and the *parking area* shall be used for no purpose other than landscaping.

TABLE 1 - OFF STREET PARKING REQUIREMENTS

A) TYPE OF USE / BUILDING	B) MINIMUM PARKING REQUIRED
1. A residential <i>building</i> or portion of a <i>building</i> with no more than 4 <i>dwelling units</i> , or a <i>street townhouse dwelling</i>	1 space per <i>dwelling unit</i>
2. <i>Apartment</i> or <i>townhouse dwelling</i> , or any other multiple unit residential building or portion of a <i>building</i> containing 5 or more <i>dwelling units</i>	1 space per <i>dwelling unit</i> , plus 0.5 visitor <i>parking space</i> per <i>dwelling unit</i>
3. Medical or <i>Veterinary Clinic</i>	6 spaces per practitioner for the first 5 practitioners (or fraction thereof plus 4 spaces for each additional practitioner).
4. <i>Bed & Breakfast Establishment</i> or <i>Boarding House</i>	1 space per <i>dwelling unit</i> plus 1 space per room for rent
5. <i>Automotive Service Station</i>	4 spaces per service bay, minimum 6 spaces
6. <i>Bank</i> or <i>Financial Institution</i>	1 space per 15.0 m ² GFA
7. <i>Tavern/Bar</i>	1 space per 4 <i>person</i> capacity
8. <i>Restaurants</i> Full Service Dining Room Drive In /Drive thru	1 space per 4 <i>person</i> capacity 10 waiting spaces, plus 1 space per 4 <i>person</i> capacity
9. <i>Personal Service Shops</i>	1 space per 40 m ² GFA
10. Business / Professional Office	1 space per 40 m ² GFA
11. Hotel or Motel	1.5 spaces per guest room plus 1 space for each 10 m ² GFA devoted to public use
12. Church; Church Hall, Auditorium; Arena; Hall; Stadium; <i>Club</i> ; Recreation Centre; Theatre; Other Places of Entertainment, Recreation or Assembly	The greater of: 1 space per 5 <i>person</i> capacity <u>OR</u> 1 space per 9.3 m ² GFA
13. Car Wash Manual Automatic	1 space plus 3 waiting spaces per bay 1 space plus 6 waiting spaces per bay
14. Gas Bar	1 space per fuel pump island plus 2 waiting spaces per island

A) TYPE OF USE / BUILDING	B) MINIMUM PARKING REQUIRED
15. <i>Building Supply Outlet</i>	1 space per 28 m ² of <i>retail floor area</i>
16. <i>Wholesale Outlet</i>	1 space per 80 m ² GFA
17. <i>Warehouse / Indoor Storage</i>	1 space per 500 m ² GFA
18. <i>Funeral Home</i>	1 space per 5 <i>person</i> seating capacity
19. <i>Retail Store</i>	1 space per 28 m ² GFA
20. All Commercial Uses Not Otherwise Specified	1 space per 28 m ² GFA
21. <i>Industrial Uses</i>	1 space per 100 m ² GFA
22. Non-Commercial Schools	3 spaces per classroom
Nursery	2 spaces per classroom
Elementary	5 spaces per classroom plus additional spaces required for any auditorium or other place of assembly
Secondary	1 space per 20 m ² GFA
23. <i>Commercial Schools</i>	1 space per 20 m ² GFA
24. Hospitals; Rest Homes; <i>Nursing Homes</i>	1 space for every 2 beds plus 1.0 space for every 2 employees
25. <i>Day Nursery</i>	2 spaces plus 1.0 space for each staff member
26. <i>Public Buildings; Museum; Art Gallery, Library</i>	1 space per 28 m ² GFA
27. All Other Uses Not Listed Above	1 space per 50 m ² GFA

4.27.1 Parking Structures

Amended by
By-law 22-43

.1 Above-grade Parking Structures

- .1 Any portion of a parking structure located above established grade shall be subject to the minimum *lot* and *building* requirements of the zone in which the *lot* is located.

.2 Below-grade Parking Structures

- .1 A below-grade parking structure shall be permitted to encroach into any required *yard*.
- .2 The minimum setback of a below-grade parking structure shall be subject to the following requirements:
 - .1 The minimum setback from a street line shall be 1.8 m; and,
 - .2 The minimum setback from an interior side lot line or rear lot line shall be 0.0 m.
- .3 Notwithstanding any other requirements of this By-law, an *accessory building* or *structure* that is incidental to a below-grade parking *structure*, such as air ventilation or an access staircase, shall be permitted anywhere on the same *lot* as the parking *structure* is located subject to the following requirements:
 - .1 The *accessory building* or *structure* shall not be located in a minimum required *front yard* or *exterior side yard*.
 - .2 The *accessory building* or *structure* shall have a minimum setback of 3.0