



**paradigm**  
TRANSPORTATION SOLUTIONS LIMITED

**5338 Wellington Road 125  
Town of Erin, ON**

# **Transportation Impact Study**

Paradigm Transportation Solutions Limited

2026-05  
260151

# Project Summary



## Project Number:

260151

## Date and Version:

2026-05  
1.0.0

## Client:

**Mulmur Aggregates Inc.**  
965 York Road  
Guelph, ON N1E 6Y9

## Consultant Project Team

Andrew Steinsky, P.Eng., PTOE, PTP,  
RSP1

## Paradigm Transportation Solutions Limited

5A-150 Pinebush Road  
Cambridge ON N1R 8J8  
p: 519.896.3163  
905.381.2229  
416.479.9684

[www.ptsl.com](http://www.ptsl.com)

## 5338 Wellington Road 125 Town of Erin, ON Transportation Impact Study



Andrew Steinsky, P.Eng., PTOE, PTP, RSP1

## Disclaimer

This document has been prepared for the titled project or named part thereof (the "project") and except for approval and commenting municipalities and agencies in their review and approval of this project, should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authorization of Paradigm Transportation Solutions Limited being obtained. Paradigm Transportation Solutions Limited accepts no responsibility or liability for the consequence of this document being used for a purpose other than the project for which it was commissioned. Any person using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm their agreement to indemnify Paradigm Transportation Solutions Limited for all loss or damage resulting there from. Paradigm Transportation Solutions Limited accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned and the approval and commenting municipalities and agencies for the project.

To the extent that this report is based on information supplied by other parties, Paradigm Transportation Solutions Limited accepts no liability for any loss or damage suffered by the client, whether through contract or tort, stemming from any conclusions based on data supplied by parties other than Paradigm Transportation Solutions Limited and used by Paradigm Transportation Solutions Limited in preparing this report.

© 1998 Paradigm Transportation Solutions Limited. All rights reserved.

# Executive Summary

## Content

Mulmur Aggregates Inc. retained Paradigm Transportation Solutions Limited (Paradigm) to prepare this Transportation Impact Study for a proposed redevelopment of 5338 Wellington Road 125 in the Town of Erin. The site is on the west side of Wellington Road 125, approximately one kilometre south of Wellington Road 124 in the community of Ospringe.

The purpose of this study is to identify and assess the potential transportation impact(s) of the development. This study includes an assessment of existing traffic conditions during the weekday AM peak hour and weekday PM peak hour and an analysis of future traffic volumes and operations at the planned opening year (2028). This study also includes a review of the available sight distance at the proposed connection to Wellington Road 125.

## Development Concept

The subject site is on the west side of Wellington Road 125 and is generally vacant, having been historically used as an aggregate pit. The surrounding land uses are primarily agricultural and open green space, with low density residential lands to the north of the site near Wellington Road 124.

Redevelopment of the site proposes 43 single detached dwellings on individual lots. Vehicular access is proposed via a new all-moves street connection to Wellington Road 125, in the same location as the existing driveway.

## Findings

Based on the investigations carried out, the findings of this study are as follows:

- ▶ Under existing conditions, the site driveway is operating at acceptable levels of service and within capacity. There are no critical movements in the weekday AM peak hour or weekday PM peak hour;
- ▶ The proposed redevelopment is forecast to generate 34 new vehicle trips in the weekday AM peak hour and 44 new vehicle trips in the weekday PM peak hour;
- ▶ Under 2028 background traffic conditions (that is, without the proposed development) the site driveway is forecast to operate



at acceptable levels of service and within capacity. No critical movements are forecast in the weekday AM peak hour or weekday PM peak hour;

- ▶ Under 2028 future total traffic conditions (that is, with the proposed redevelopment) the site driveway is forecast to operate at acceptable levels of service and within capacity. No critical movements are forecast;
- ▶ A northbound left-turn lane is not warranted on Wellington Road 125 at the site driveway;
- ▶ The proposed street location provides sufficient intersection sight distance and stopping sight distance in accordance with the Wellington County *Entrance Policy* and the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*.

## Conclusions

Based on the findings of this study, it is concluded that the proposed development is forecast to have a negligible impact on traffic operations. There are no critical movements under existing or future background traffic conditions, and the addition of site generated traffic is not forecast to introduce any critical movements.

While the proposed street connection provides sufficient intersection sight distance to the south and stopping sight distance for northbound motorists on Wellington Road 125, consideration could be given to ensuring the new street connection intersects Wellington Road 125 at a similar elevation as the existing centreline of Wellington Road 125. This would reduce the impacts of the sag vertical curve to the south and enhance the available sight distance to and from the south.

## Recommendations

Based on the conclusions of this study it is recommended the site be considered for approval with no requirement for off-site transportation network improvements.

To enhance visibility for outbound motorists from the site (given the sag vertical curve on Wellington Road 125 to the south) it is recommended the new street connection be designed to intersect Wellington Road 125 at a similar elevation to the existing centreline on Wellington Road 125. This would reduce the impacts of the sag vertical curve and increase the available sight distance to the south.



# Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Overview .....	1
1.2	Purpose and Scope .....	1
<b>2</b>	<b>Existing Conditions .....</b>	<b>3</b>
2.1	Road Characteristics.....	3
2.2	Traffic Volumes .....	3
2.3	Traffic Operations .....	6
<b>3</b>	<b>Site Description and Redevelopment Concept .....</b>	<b>8</b>
3.1	Site Description .....	8
3.2	Redevelopment Concept .....	8
<b>4</b>	<b>Future Conditions.....</b>	<b>10</b>
4.1	Horizon Years .....	10
4.2	Future Background Traffic .....	10
4.3	Site Traffic Forecasts .....	12
4.3.1	Trip Generation .....	12
4.3.2	Trip Distribution .....	12
4.4	Future Total Traffic.....	13
<b>5</b>	<b>Traffic Operations Assessment.....</b>	<b>16</b>
5.1	Background Traffic Operations.....	16
5.2	Total Traffic Operations .....	16
5.3	Remedial Measures .....	16
<b>6</b>	<b>Sight Distance Assessment.....</b>	<b>18</b>
<b>7</b>	<b>Findings, Conclusions, and Recommendations ..</b>	<b>21</b>
7.1	Findings .....	21
7.2	Conclusions.....	21
7.3	Recommendations .....	22



## Appendices

Appendix A	Turning Movement Count Data
Appendix B	Existing Conditions Traffic Operations Reports
Appendix C	2028 Background Conditions Traffic Operations Reports
Appendix D	2028 Total Conditions Traffic Operations Reports
Appendix E	Left-Turn Lane Warrants

## Figures

Figure 1.1:	Site Location .....	2
Figure 2.1:	Existing Lane Configuration and Traffic Control .....	4
Figure 2.2:	Existing Traffic Volumes .....	5
Figure 3.1:	Conceptual Plan of Subdivision .....	9
Figure 4.1:	2028 Background Traffic Volumes .....	11
Figure 4.2:	Site Generated Traffic Volumes .....	14
Figure 4.3:	2028 Total Traffic Volumes .....	15

## Tables

Table 2.1:	Existing Traffic Operations .....	7
Table 4.1:	Estimated Trip Generation .....	12
Table 4.2:	Estimated Trip Distribution .....	12
Table 5.1:	2028 Background Traffic Operations .....	17
Table 5.2:	2028 Total Traffic Operations .....	17
Table 6.1:	Sight Distance Parameters .....	18
Table 6.2:	Minimum Sight Distances .....	20
Table 6.3:	Field Measurements of Sight Distance .....	20



# 1 Introduction

## 1.1 Overview

Mulmur Aggregates Inc. retained Paradigm Transportation Solutions Limited (Paradigm) to prepare this Transportation Impact Study for a proposed redevelopment of 5338 Wellington Road 125 in the Town of Erin. **Figure 1.1** illustrates the site location on the west side of Wellington Road 125, approximately one kilometre south of Wellington Road 124 in the community of Ospringe.

## 1.2 Purpose and Scope

The purpose of this study is to identify and assess the potential transportation impact(s) of the development. The scope of this study comprises:

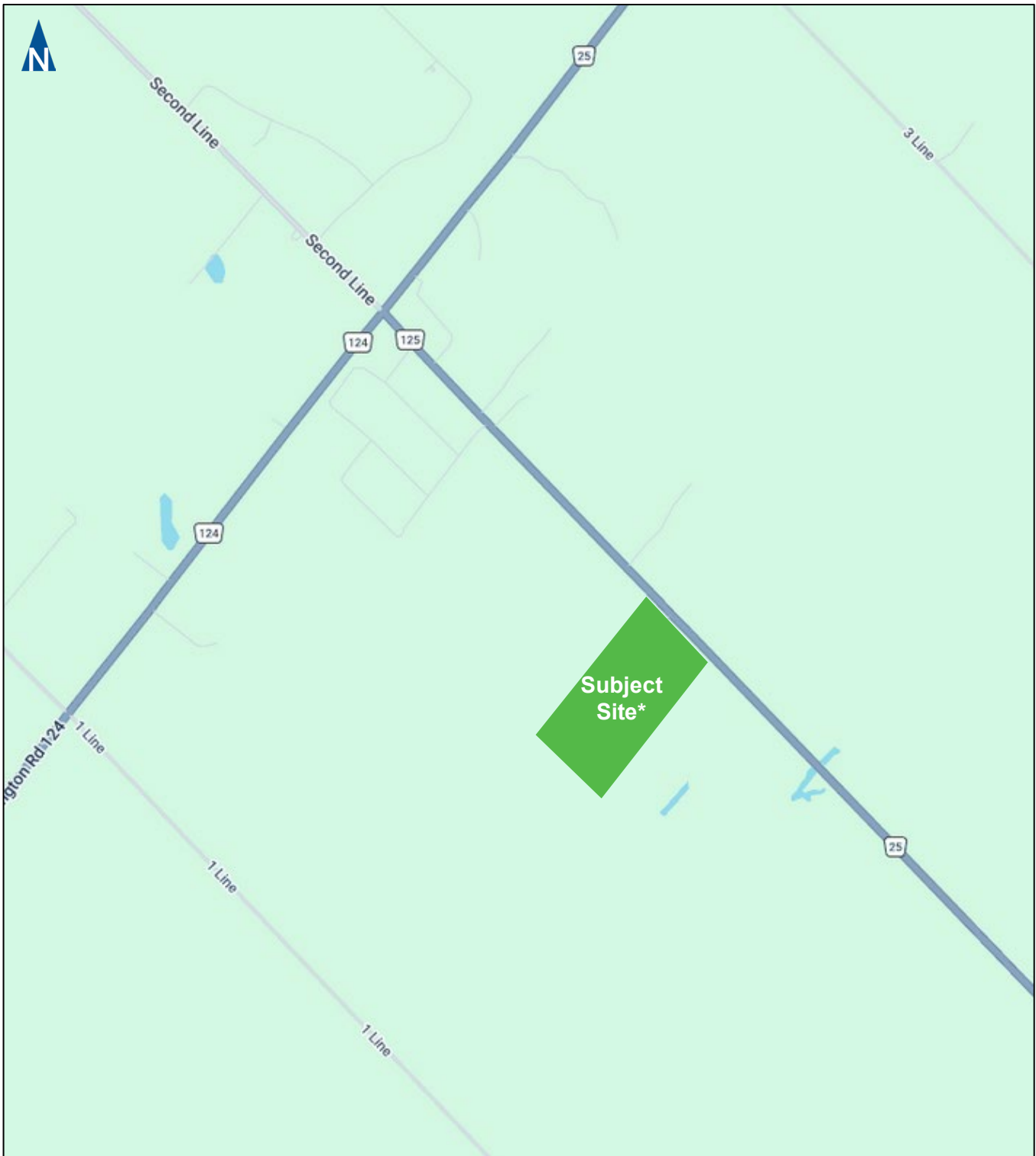
- ▶ An assessment of existing traffic volumes and traffic operations at Wellington Road 125 and the existing site driveway;
- ▶ Estimates of future traffic volumes (with and without the proposed development) at the planned opening year of the development;
- ▶ Estimates of the trips generated by the proposed development;
- ▶ An assessment of future traffic operations and an analysis of the impact(s) of the future traffic volumes;
- ▶ A review of the available sight distance at the proposed street connection; and
- ▶ The identification of remedial measures, if necessary, to support the proposed development.

This study has been carried out in general accordance with the Wellington County *Traffic Impact Study Guidelines* contained in Appendix G of the Wellington County *Road Master Action Plan*.<sup>1</sup>

---

<sup>1</sup> Wellington County, Appendix G “*Traffic Impact Study Guidelines*” in *Road Master Action Plan*, (Guelph: Wellington County, 2021).





*\*approximate subject lands boundary*

Image Source: SnazzyMaps, licensed under creative commons (<https://snazzymaps.com/>)



## Site Location

## 2 Existing Conditions

### 2.1 Road Characteristics

Wellington Road 125 is a north-south county road with a two-lane rural cross-section comprising one travel lane in each direction. Along the site's frontage the road operates with a posted speed limit of 80 km/h. Sidewalks or other active transportation facilities are not provided on either side of the road. **Figure 2.1** illustrates the existing lane configuration and traffic control at the existing driveway connection to Wellington Road 125.

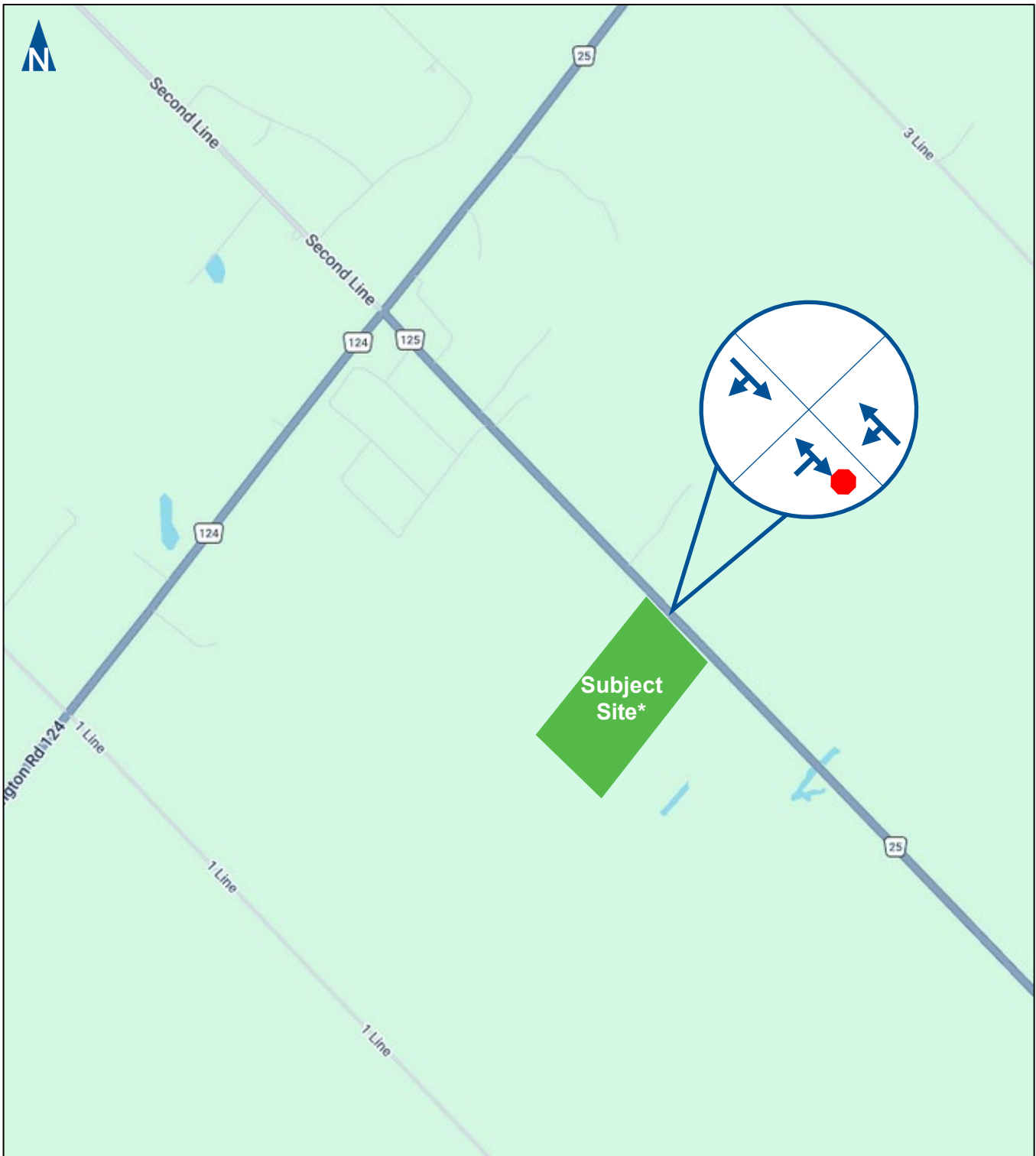
### 2.2 Traffic Volumes

To assess intersection operations, turning movement counts (TMCs) are used to quantify the movement of vehicles through an intersection or roadway segment. Existing traffic data at an intersection or a road section forms the foundation for the operational analyses. The TMCs are usually conducted in such a manner to identify the peak periods at an intersection or road segment. This ensures the level of service analyses is conducted under worst-case operating conditions.

Paradigm conducted an eight-hour turning movement count (TMC) at the existing driveway connection on Tuesday March 24, 2026 from 7:00 AM to 10:00 AM, 11:30 AM to 1:30 PM, and 3:00 PM to 6:00 PM. All vehicle, pedestrian, and cyclist movements (as applicable) were recorded in 15-minute intervals and vehicles classified by type.

**Figure 2.2** illustrates the existing traffic volumes in the weekday AM peak hour and weekday PM peak hour, and **Appendix A** contains the comprehensive turning movement count data.





*\*approximate subject lands boundary*

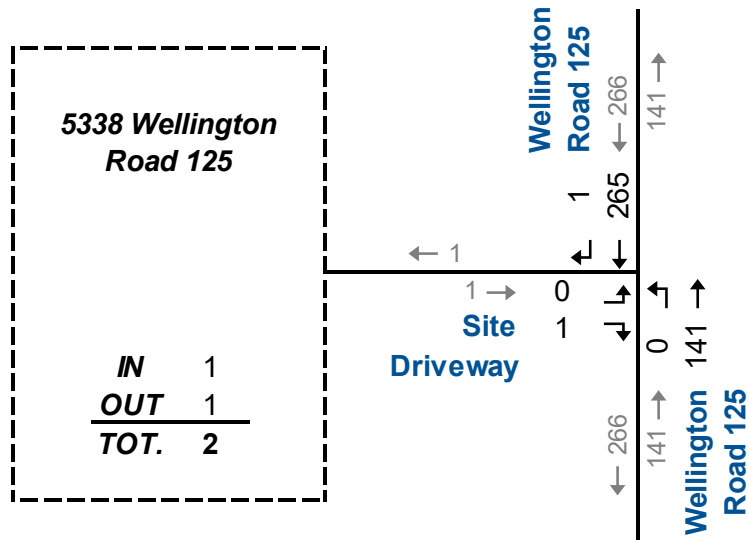
Image Source: SnazzyMaps, licensed under creative commons (<https://snazzymaps.com/>)



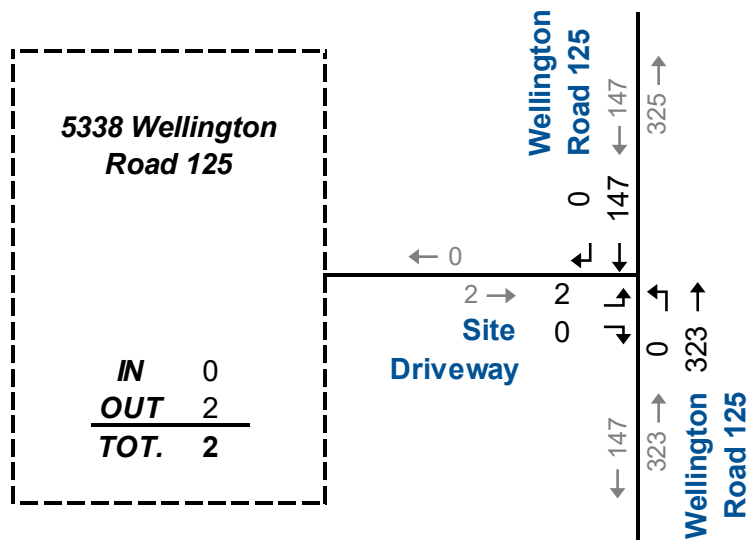
## Existing Lane Configuration and Traffic Control



### AM Peak Hour



### PM Peak Hour



Not to Scale



## Existing Traffic Volumes

## 2.3 Traffic Operations

The quality of intersection operations at signalized and unsignalized intersections is evaluated in terms of level of service (LOS) and volume-to-capacity (v/c) as defined by the Highway Capacity Manual (HCM). LOS is evaluated based on the average control delay per vehicle and includes deceleration delay, queue move-up delay, stopped delay, and final acceleration delay. Volume-to-capacity is calculated as the ratio of the total vehicular demand for each movement as compared to the theoretical capacity for each movement.

For unsignalized intersections, LOS ranges from LOS A (less than 10 seconds of average delay) to LOS F (greater than 50 seconds of average delay). Capacity is evaluated in terms of the ratio of demand flow to theoretical capacity, with an at capacity condition represented by a v/c ratio of 1.00 (that is, volume demand equals capacity).

The Wellington County *Traffic Impact Study Guidelines* define critical operations at unsignalized intersections as those cases where:

- ▶ Overall intersection level of service is LOS E or F; and/or
- ▶ 95th percentile queues exceed available storage.<sup>2</sup>

The operations of the study intersections have been modelled and analyzed using Synchro with the following parameters:

- ▶ Existing lane geometry and traffic control;
- ▶ Heavy vehicle percentages and pedestrian volumes as extracted from the turning movement counts; and
- ▶ Synchro default values for all other inputs.

The analysis considers three separate measures of performance:

- ▶ The level of service (LOS) and average delay for each turning movement, measured in seconds (s);
- ▶ The volume to capacity (v/c) ratio for each movement; and
- ▶ The 95th percentile queue length, in metres (m).

**Table 2.1** summarizes the existing traffic operations and indicates the study intersections are operating at acceptable levels of service and within capacity. There are no critical movements. **Appendix B** contains the detailed Synchro reports.

<sup>2</sup> Wellington County, Appendix G “*Traffic Impact Study Guidelines*” in *Road Master Action Plan*, (Guelph: Wellington County, 2021), 7.



**TABLE 2.1: EXISTING TRAFFIC OPERATIONS**

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																	
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
AM Peak Hour	County Road 125 & Site Driveway	TWSC	LOS Delay V/C Q Ex Avail.	A 10 0.00 0 - -	> > > > > >	> > > > > >	A 10						< < < < < <	A 0 0.00 0 - -						UM > > > > >	UM
PM Peak Hour	County Road 125 & Site Driveway	TWSC	LOS Delay V/C Q Ex Avail.	B 12 0.00 0 - -	> > > > > >	> > > > > >	B 12						< < < < < <	A 0 0.00 0 - -						UM > > > > >	UM

MOE - Measure of Effectiveness      Q - 95th Percentile Queue Length (m)      TWSC - Two-Way Stop Control      <- Shared Left/Through Lane  
 LOS - Level of Service      Ex. - Existing Available Storage (m)      UM - Unopposed Movement      >- Shared Right/Through Lane  
 Delay - Average Delay per Vehicle in Seconds      Avail. - Available Storage (m)



## 3 Site Description and Redevelopment Concept

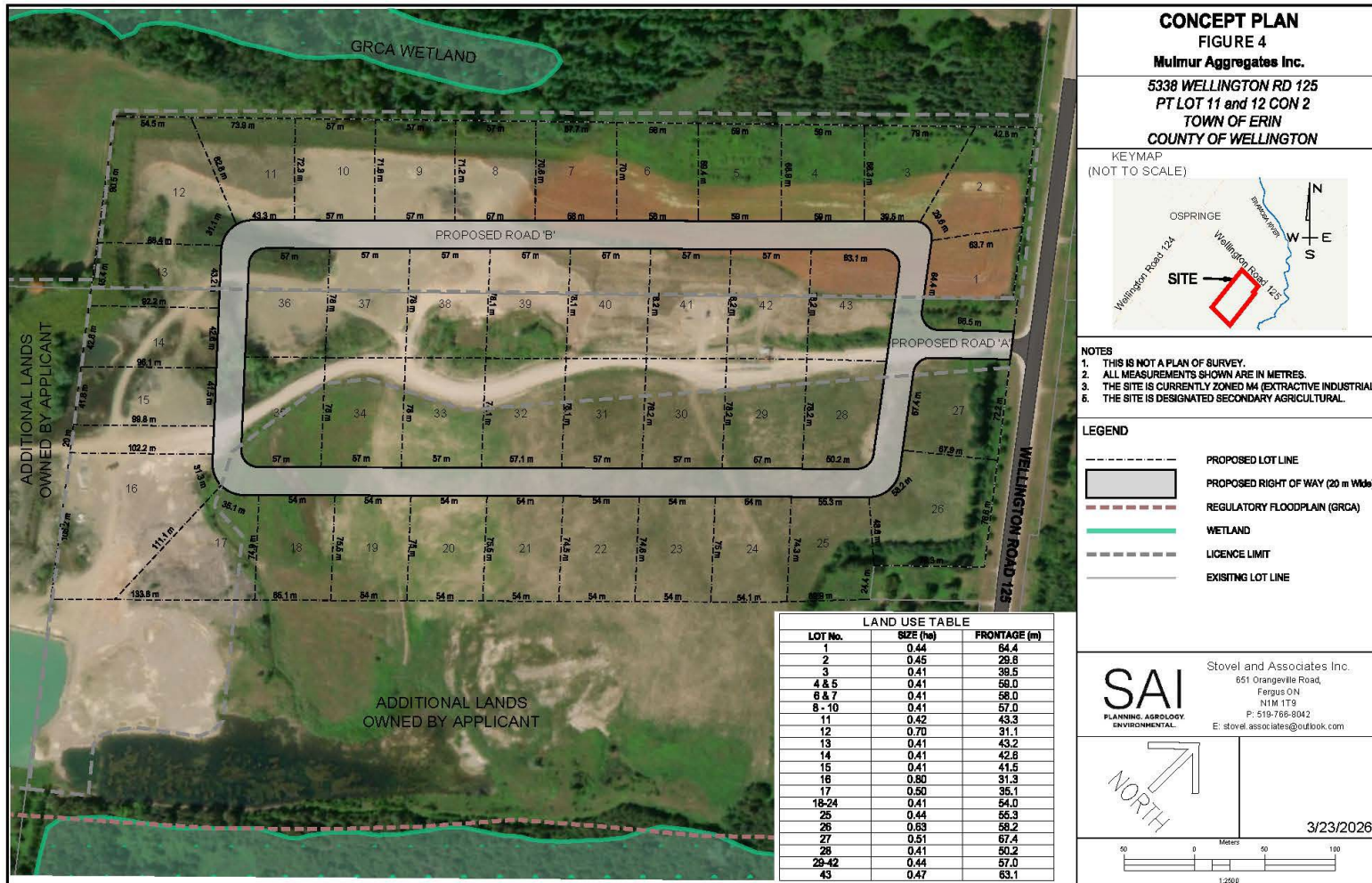
### 3.1 Site Description

The subject site is on the west side of Wellington Road 125 and is generally vacant, having historically been used as an aggregate pit. The surrounding land uses are primarily agricultural and open green space, with low density residential lands to the north of the site near Wellington Road 124.

### 3.2 Redevelopment Concept

Redevelopment of the site proposes 43 single detached dwellings on individual lots. Vehicular access is proposed via a new all-moves street connection to Wellington Road 125, in the same location as the existing driveway. **Figure 3.1** illustrates the conceptual site plan. Build-out is anticipated by 2028; however, the actual timing is subject to market conditions.





# Conceptual Plan of Subdivision

5338 Wellington Road 125 TIS  
260151

Figure 3.1

## 4 Future Conditions

### 4.1 Horizon Years

The site generated traffic volume estimates in **Section 4.3** indicate that the site is forecast to generate less than 100 trips in either of the weekday AM peak hour or weekday PM peak hour. This level of trip generation activity is less than the thresholds noted in Table 1 of the Wellington County *TIS Guidelines* which is used to determine the applicable horizon years for analysis. For the purposes of this study (and given the scale of the redevelopment) the analysis of future transportation conditions reflects only the estimated opening year (2028).<sup>3</sup>

### 4.2 Future Background Traffic

Future traffic volumes in the study area are assumed to comprise increased non-site traffic (referred to as background traffic) and traffic generated by the site itself (referred to as site generated traffic).

During a site visit on April 13, 2026, Paradgm staff observed public notice boards on the west side of Second Line (north of Wellington Road 124) related to an application for 13 single detached residential lots. Subsequent review of the Town of Erin *Current Development Applications* web portal<sup>4</sup> identified a June 2021 Transportation Impact Study for the lands<sup>5</sup> indicating redevelopment of the site was forecast to generate 14 trips in the weekday AM peak hour and 14 trips in the weekday PM peak hour.

For consistency with this June 2021 TIS, Paradigm has estimated background traffic conditions by applying a per annum growth rate of 1.3% to the northbound and southbound volumes on Wellington Road 125, and including the estimated traffic generated by the development on the 13-unit residential development on northwest corner of Wellington Road 124 and Second Line. **Figure 4.1** illustrates the forecast 2028 background traffic volumes in the weekday AM peak hour and weekday PM peak hour.

<sup>3</sup> Wellington County, Appendix G “*Traffic Impact Study Guidelines*” in *Road Master Action Plan*, (Guelph: Wellington County, 2021), 4-5.

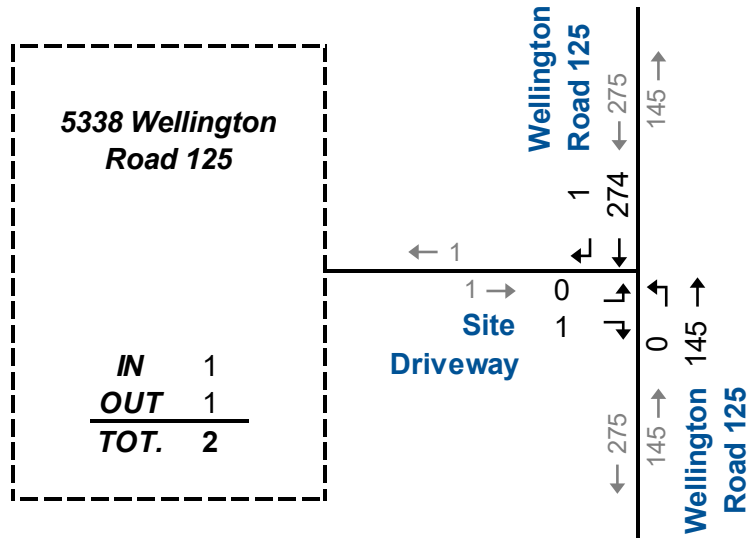
<sup>4</sup> Current Development Applications, <https://www.erin.ca/living-here/home-and-property/planning/current-development-applications>, Accessed 13 April 2026.

<sup>5</sup> IBI Group, *Transportation Impact Study – Northwest Corner of Highway 124 and Second Line, Ospringle, Erin, Wellington County*, 2021.

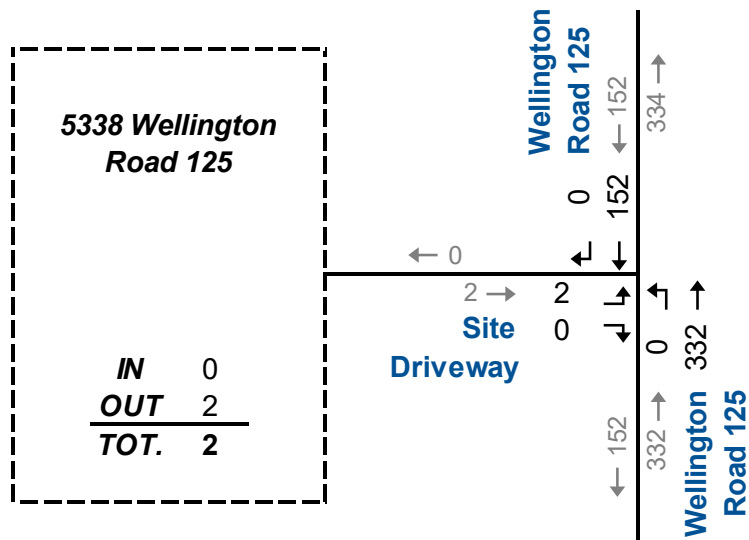




### AM Peak Hour



### PM Peak Hour



Not to Scale



## 2028 Background Traffic Volumes

## 4.3 Site Traffic Forecasts

### 4.3.1 Trip Generation

The estimated site trip generation reflects information in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*<sup>6</sup> for land use code (LUC) 210 (Single Family Detached Housing). LUC 210 is described as “single family detached homes on individual lots.”

**Table 4.1** summarizes the trip generation estimates and indicates the site is estimated to generate 34 trips in the weekday AM peak hour and 44 trips in the weekday PM peak hour.

**TABLE 4.1: ESTIMATED TRIP GENERATION**

LUC	Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
210	43	Eqn. <sup>[1]</sup>	9	25	34	Eqn. <sup>[2]</sup>	27	17	44

Notes:

- LUC 210 (AM):  $T = 0.67(X) + 5.59$ , (27% entering, 73% exiting)
- LUC 210 (PM):  $\ln(T) = 0.92\ln(X) + 0.33$ , (62% entering, 38% exiting)

### 4.3.2 Trip Distribution

The estimated trip distribution is based on the existing travel patterns observed from the TMC data collected for this study and specific to passenger vehicles (which are assumed representative of typical commuter travel patterns on Wellington Road 125).

**Table 4.2** summarizes the estimated trip distribution and **Figure 4.2** illustrates the site generated traffic volumes in the weekday AM peak hour and weekday PM peak hour.

**TABLE 4.2: ESTIMATED TRIP DISTRIBUTION**

Origin/Destination	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
North via Wellington Road 125	65%	35%	70%	70%
South via Wellington Road 125	35%	65%	30%	30%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<sup>6</sup> Institute of Transportation Engineers, *Trip Generation Manual*, 12th ed., (Washington DC: ITE, 2025).



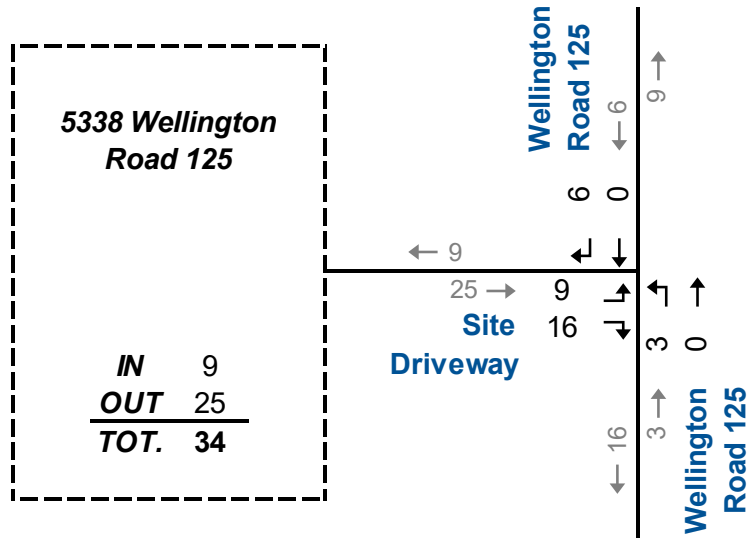
## 4.4 Future Total Traffic

The future total traffic volumes represent the summation of the site generated traffic volumes (**Figure 4.2**) and the background traffic volumes (**Figure 4.1**). **Figure 4.3** illustrates the 2028 future total traffic volumes in the weekday AM peak hour and weekday PM peak hour. These estimates include the removal of existing trips entering and exiting the site.

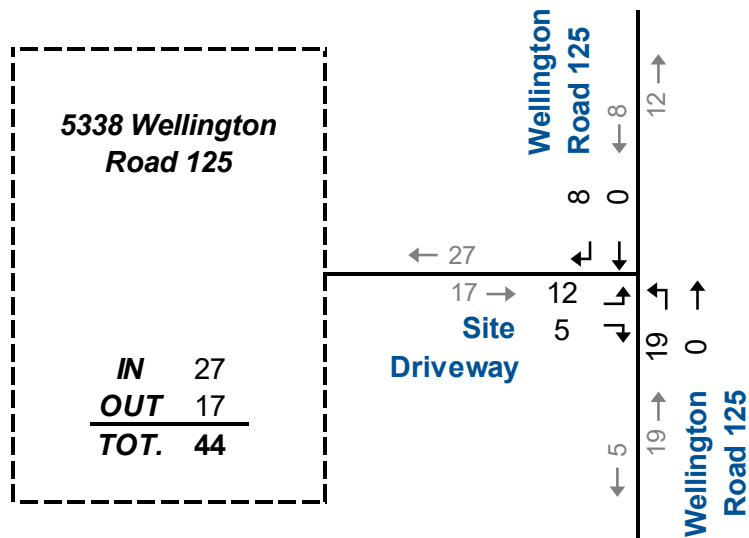




### AM Peak Hour



### PM Peak Hour



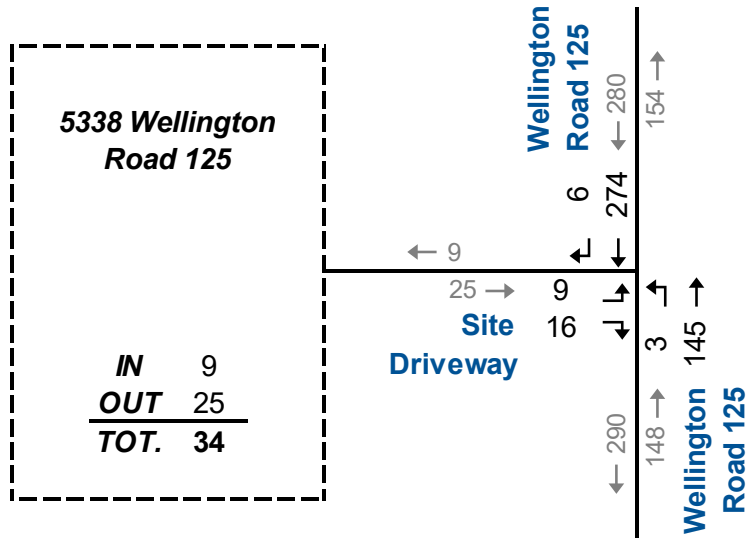
Not to Scale



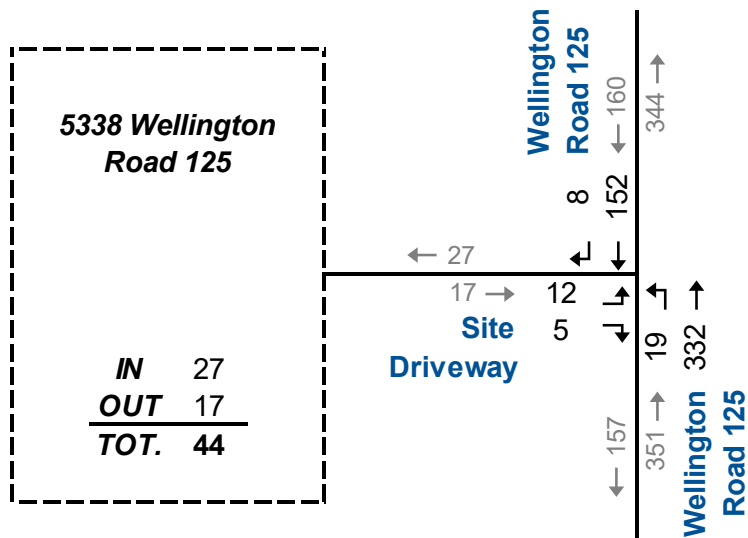
## Site Generated Traffic Volumes



### AM Peak Hour



### PM Peak Hour



Not to Scale



## 2028 Total Traffic Volumes

## 5 Traffic Operations Assessment

### 5.1 Background Traffic Operations

The analysis of background traffic conditions uses the same methodology as existing traffic conditions. **Table 5.1** summarizes the estimated level of service conditions under 2028 background traffic conditions. The results indicate the driveway is forecast to operate at acceptable levels of service and within capacity. No critical movements are forecast. **Appendix C** contains the detailed Synchro reports.

### 5.2 Total Traffic Operations

The analysis of total traffic conditions uses the same methodology as existing and background traffic conditions. **Table 5.2** summarizes the estimated level of service conditions under 2028 total traffic conditions. The results indicate all study intersections are forecast to operate at acceptable levels of service and within capacity. No critical movements are forecast. **Appendix D** contains the detailed Synchro reports.

### 5.3 Remedial Measures

The results of the analyses indicate that the driveway is forecast to operate at acceptable levels of service with or without the proposed development. For completeness, Paradigm has assessed the need for a northbound left-turn lane on Wellington Road 125 in accordance with the methodologies published in the Ministry of Transportation *Design Supplement*<sup>7</sup> to the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*.<sup>8</sup>

The warrant analysis is based on that for a two-lane road at a design speed of 100 km/h, which is 20 km/h above the posted speed limit on Wellington Road 125. **Appendix E** contains the left-turn warrant analysis based on 2028 total traffic conditions and indicates a northbound left-turn lane is not warranted.

---

<sup>7</sup> Ontario Ministry of Transportation Standards and Contracts Branch Highway Design Office, *MTO Design Supplement for TAC Geometric Design Guide (GDG) for Canadian Roads – 2017*, (St. Catharines: MTO, 2023).

<sup>8</sup> TAC, "Left-Turn Lanes," Chap. 9.17 in *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017).



**TABLE 5.1: 2028 BACKGROUND TRAFFIC OPERATIONS**

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																		
				Eastbound				Westbound				Northbound				Southbound						
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach			
AM Peak Hour	County Road 125 & Site Driveway	TWSC	LOS Delay V/C Q Ex Avail.	A 10 0.00 0 - -		>	A 10							<	A 0 0.00 0 - -			A 0		UM	>	UM
PM Peak Hour	County Road 125 & Site Driveway	TWSC	LOS Delay V/C Q Ex Avail.	B 12 0.00 0 - -		>	B 12							<	A 0 0.00 0 - -			A 0		UM	>	UM

MOE - Measure of Effectiveness      Q - 95th Percentile Queue Length (m)      TWSC - Two-Way Stop Control      <- Shared Left/Through Lane  
 LOS - Level of Service      Ex. - Existing Available Storage (m)      UM - Unopposed Movement      >- Shared Right/Through Lane  
 Delay - Average Delay per Vehicle in Seconds      Avail. - Available Storage (m)

**TABLE 5.2: 2028 TOTAL TRAFFIC OPERATIONS**

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																		
				Eastbound				Westbound				Northbound				Southbound						
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach			
AM Peak Hour	County Road 125 & Site Driveway	TWSC	LOS Delay V/C Q Ex Avail.	B 11 0.05 1 - -		>	B 11							<	A 0 0.00 0 - -			A 0		UM	>	UM
PM Peak Hour	County Road 125 & Site Driveway	TWSC	LOS Delay V/C Q Ex Avail.	B 12 0.03 1 - -		>	B 12							<	A 1 0.01 0 - -			A 1		UM	>	UM

MOE - Measure of Effectiveness      Q - 95th Percentile Queue Length (m)      TWSC - Two-Way Stop Control      <- Shared Left/Through Lane  
 LOS - Level of Service      Ex. - Existing Available Storage (m)      UM - Unopposed Movement      >- Shared Right/Through Lane  
 Delay - Average Delay per Vehicle in Seconds      Avail. - Available Storage (m)



## 6 Sight Distance Assessment

Vehicle access to the site is proposed via a new all-moves street connection to Wellington Road 125 in the same location as the existing driveway. Paradigm has assessed the available sight distance at the proposed connection in accordance with guidance published in both the Wellington County *Entrance Policy*<sup>9</sup> and the TAC *Geometric Design Guide for Canadian Roads*.<sup>10</sup>

The Wellington County *Entrance By-law* defines minimum sight distances based on the posted speed limit of a road. For an entrance onto a road with a posted speed limit of 80 km/h, the *Entrance Policy* requires a minimum sight distance of 200 metres. This measurement applies to both vehicles exiting the site (intersection sight distance) and vehicles on Wellington Road 125 approaching the driveway (stopping sight distance).

The TAC *GDGCR* defines minimum sight distances based on the design speed of the road; typically 10 km/h to 20 km/h above the speed limit. TAC publishes both stopping sight distance (representing that for vehicles on Wellington Road 125 approaching the driveway) and intersection sight distance (for vehicles exiting the site). Intersection sight distances are based on applicable time gaps for both the specific movement (left-turn, right-turn, crossing road) and the design vehicle (passenger car, single unit truck, and combination truck).

**Table 6.1** summarizes the respective design parameters used in the sight distance assessment and **Table 6.2** summarizes the minimum sight distances published by TAC (at a design speed of 100 km/h) and by the Wellington County *Entrance Policy* (at a posted speed limit of 80 km/h).

**TABLE 6.1: SIGHT DISTANCE PARAMETERS**

Parameter	TAC GDGCR	Wellington County
Vehicle Tail or Brake Light	0.60 m	Not Defined
Top of Passenger Car	1.30 m	1.30 m
Driver Eye Height – Passenger Car	1.08 m	1.05 m

<sup>9</sup> Wellington County Engineering Services – Roads Division, *Entrance Policy*, (Guelph: Wellington County, 2024).

<sup>10</sup> TAC, “AASHTO Intersection Sight Distance Model,” Chap. 9.9 in *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017).



Paradigm staff conducted a site visit on Monday April 13, 2026 to estimate the available sight distance at the proposed street location. The measurements for intersection sight distance were taken 4.4 metres from the existing edge of pavement, representing the position of a driver performing a turning movement from the site. The measurements for stopping sight distance were taken from the centre of the respective northbound and southbound travel lanes on Wellington Road 125.

**Table 6.3** summarizes the field measurements for both stopping and intersection sight distance. Visibility to and from the north is unobstructed to and from the driveway to 5362 Wellington Road 125, a distance of approximately 390 metres. Visibility to and from the south is impacted by a sag vertical curve; however, visibility is provided to and from a point at least 210 metres south of the proposed street location.

It is noted that the existing driveway is unpaved and slopes away from Wellington Road 125, resulting in an assumed driver position at a lower elevation than the centreline of Wellington Road 125. To enhance intersection sight distance to the south, consideration could be given to designing the new street connection to intersect Wellington Road 125 at an elevation similar to the centreline of Wellington Road 125. This would reduce the impacts of the sag vertical curve and increase the available sight distance to the south.



**TABLE 6.2: MINIMUM SIGHT DISTANCES**

Sight Distance Measurement	TAC GDGCR	Wellington County <i>Entrance Policy</i>
	100 km/h (Design)	80 km/h (Posted)
Minimum Stopping Sight Distance (Northbound)	185 metres	200 metres
Minimum Stopping Sight Distance (Southbound)	185 metres	200 metres
Intersection Sight Distance (Left Turn from Stop) – Looking Left	210 metres	200 metres
Intersection Sight Distance (Left Turn from Stop) – Looking Right	210 metres	200 metres
Intersection Sight Distance (Right Turn from Stop)	185 metres	200 metres

**TABLE 6.3: FIELD MEASUREMENTS OF SIGHT DISTANCE**

Sight Distance Measurement	Field Measurement	Meets TAC	Meets <i>Entrance Policy</i>
Minimum Stopping Sight Distance (Northbound)	>210 metres	Yes	Yes
Minimum Stopping Sight Distance (Southbound)	Unobstructed from 5362 Wellington Road 125 (~390 metres)	Yes	Yes
Intersection Sight Distance (Left Turn from Stop) – Looking Left	Unobstructed to 5362 Wellington Road 125 (~390 metres)	Yes	Yes
Intersection Sight Distance (Left Turn from Stop) – Looking Right	>210 metres	Yes	Yes
Intersection Sight Distance (Right Turn from Stop)	Unobstructed to 5362 Wellington Road 125 (~390 metres)	Yes	Yes



## 7 Findings, Conclusions, and Recommendations

### 7.1 Findings

Based on the investigations carried out, the findings of this study are as follows:

- ▶ Under existing conditions, the site driveway is operating at acceptable levels of service and within capacity. There are no critical movements in the weekday AM peak hour or weekday PM peak hour;
- ▶ The proposed redevelopment is forecast to generate 34 new vehicle trips in the weekday AM peak hour and 44 new vehicle trips in the weekday PM peak hour;
- ▶ Under 2028 background traffic conditions (that is, without the proposed development) the site driveway is forecast to operate at acceptable levels of service and within capacity. No critical movements are forecast in the weekday AM peak hour or weekday PM peak hour;
- ▶ Under 2028 future total traffic conditions (that is, with the proposed redevelopment) the site driveway is forecast to operate at acceptable levels of service and within capacity. No critical movements are forecast;
- ▶ A northbound left-turn lane is not warranted on Wellington Road 125 at the site driveway;
- ▶ The proposed street location provides sufficient intersection sight distance and stopping sight distance in accordance with the Wellington County *Entrance Policy* and the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*.

### 7.2 Conclusions

Based on the findings of this study, it is concluded that the proposed development is forecast to have a negligible impact on traffic operations. There are no critical movements under existing or future background traffic conditions, and the addition of site generated traffic is not forecast to introduce any critical movements.

While the proposed street connection provides sufficient intersection sight distance to the south and stopping sight distance for northbound motorists on Wellington Road 125, consideration could be given to



ensuring the new street connection intersects Wellington Road 125 at a similar elevation as the existing centreline of Wellington Road 125. This would reduce the impacts of the sag vertical curve to the south and enhance the available sight distance to and from the south.

### **7.3 Recommendations**

Based on the conclusions of this study it is recommended the site be considered for approval with no requirement for off-site transportation network improvements.

To enhance visibility for outbound motorists from the site (given the sag vertical curve on Wellington Road 125 to the south) it is recommended the new street connection be designed to intersect Wellington Road 125 at a similar elevation to the existing centreline on Wellington Road 125. This would reduce the impacts of the sag vertical curve and increase the available sight distance to the south.



# Appendix A

## Turning Movement Count Data





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@ptsl.com

Count Name: 5338 Wellington Road 125  
Site Code: 260151  
Start Date: 03/24/2026  
Page No: 1

### Turning Movement Data

Start Time	5338 Wellington Road 125 Eastbound					Wellington Road 125 Northbound					Wellington Road 125 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
	7:00 AM	0	0	0	1	0	0	19	0	0	19	40	0	0	0	
7:15 AM	0	0	0	0	0	0	35	0	0	35	59	0	0	0	59	94
7:30 AM	0	0	0	0	0	0	47	0	0	47	72	1	0	0	73	120
7:45 AM	0	0	0	0	0	0	37	0	0	37	77	0	0	0	77	114
Hourly Total	0	0	0	1	0	0	138	0	0	138	248	1	0	0	249	387
8:00 AM	0	1	0	0	1	0	22	0	0	22	57	0	0	0	57	80
8:15 AM	0	0	0	0	0	0	19	0	0	19	59	0	0	0	59	78
8:30 AM	0	0	0	0	0	0	16	0	0	16	46	0	0	0	46	62
8:45 AM	1	0	0	0	1	0	39	0	0	39	35	0	0	0	35	75
Hourly Total	1	1	0	0	2	0	96	0	0	96	197	0	0	0	197	295
9:00 AM	0	0	0	0	0	0	21	0	0	21	31	0	0	1	31	52
9:15 AM	0	0	0	0	0	0	26	0	0	26	36	1	0	0	37	63
9:30 AM	0	0	0	0	0	0	26	0	0	26	49	0	0	0	49	75
9:45 AM	0	0	0	0	0	0	29	0	0	29	28	0	0	0	28	57
Hourly Total	0	0	0	0	0	0	102	0	0	102	144	1	0	1	145	247
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	0	0	0	0	0	27	0	0	27	31	0	0	0	31	58
11:45 AM	0	0	0	0	0	0	33	0	0	33	33	0	0	0	33	66
Hourly Total	0	0	0	0	0	0	60	0	0	60	64	0	0	0	64	124
12:00 PM	0	0	0	0	0	0	21	0	0	21	22	0	0	0	22	43
12:15 PM	0	0	0	0	0	0	29	0	0	29	34	1	0	0	35	64
12:30 PM	0	0	0	0	0	0	27	0	0	27	33	0	0	0	33	60
12:45 PM	0	0	0	0	0	0	24	0	0	24	24	0	0	0	24	48
Hourly Total	0	0	0	0	0	0	101	0	0	101	113	1	0	0	114	215
1:00 PM	0	0	0	0	0	0	29	0	0	29	34	0	0	0	34	63
1:15 PM	0	0	0	0	0	0	23	0	0	23	32	0	0	0	32	55
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	52	0	0	52	66	0	0	0	66	118
3:00 PM	1	0	0	0	1	0	34	0	0	34	29	0	0	0	29	64
3:15 PM	0	0	0	0	0	0	50	0	0	50	21	0	0	0	21	71
3:30 PM	0	0	0	0	0	0	69	0	0	69	28	0	0	0	28	97
3:45 PM	0	0	0	0	0	0	71	0	0	71	35	0	0	0	35	106
Hourly Total	1	0	0	0	1	0	224	0	0	224	113	0	0	0	113	338
4:00 PM	0	0	0	0	0	0	71	0	0	71	36	0	0	0	36	107
4:15 PM	1	0	0	0	1	0	75	0	0	75	32	0	0	0	32	108
4:30 PM	1	0	0	0	1	0	93	0	0	93	35	0	0	0	35	129

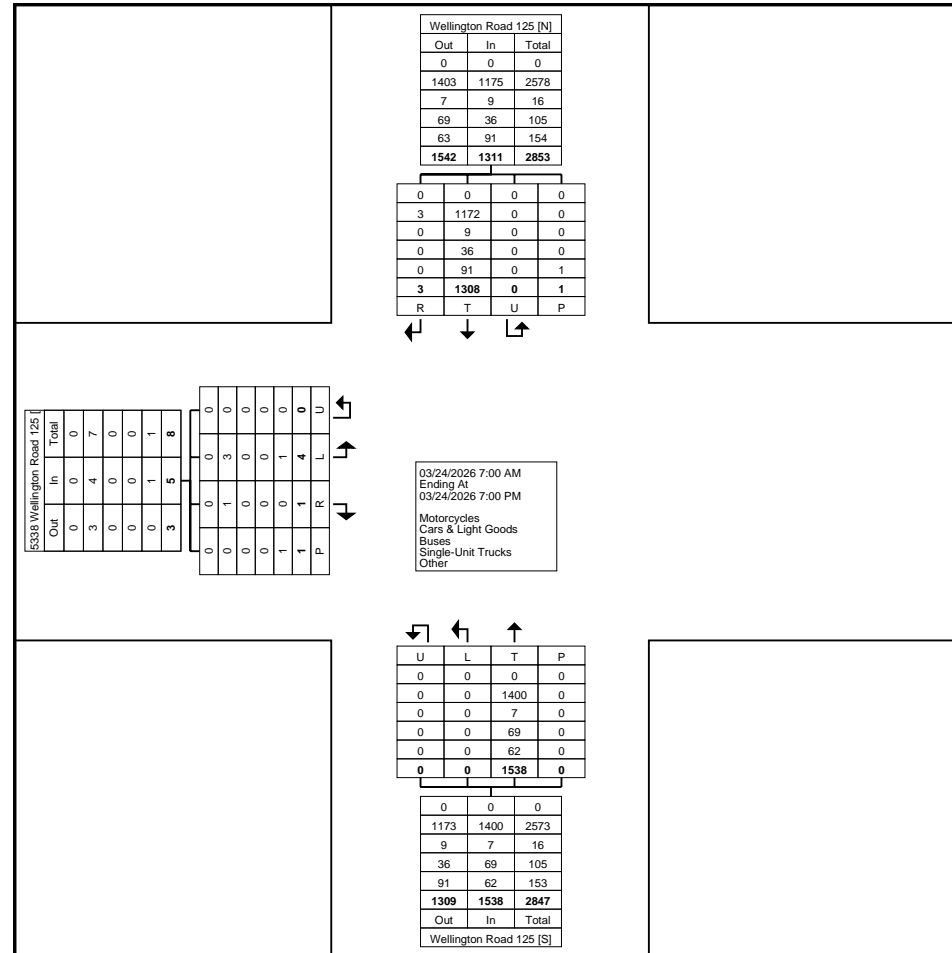
4:45 PM	0	0	0	0	0	0	76	0	0	76	42	0	0	0	42	118
Hourly Total	2	0	0	0	2	0	315	0	0	315	145	0	0	0	145	462
5:00 PM	0	0	0	0	0	0	79	0	0	79	38	0	0	0	38	117
5:15 PM	0	0	0	0	0	0	78	0	0	78	29	0	0	0	29	107
5:30 PM	0	0	0	0	0	0	67	0	0	67	31	0	0	0	31	98
5:45 PM	0	0	0	0	0	0	65	0	0	65	29	0	0	0	29	94
Hourly Total	0	0	0	0	0	0	289	0	0	289	127	0	0	0	127	416
6:00 PM	0	0	0	0	0	0	39	0	0	39	31	0	0	0	31	70
6:15 PM	0	0	0	0	0	0	50	0	0	50	18	0	0	0	18	68
6:30 PM	0	0	0	0	0	0	33	0	0	33	24	0	0	0	24	57
6:45 PM	0	0	0	0	0	0	39	0	0	39	18	0	0	0	18	57
Hourly Total	0	0	0	0	0	0	161	0	0	161	91	0	0	0	91	252
Grand Total	4	1	0	1	5	0	1538	0	0	1538	1308	3	0	1	1311	2854
Approach %	80.0	20.0	0.0	-	-	0.0	100.0	0.0	-	-	99.8	0.2	0.0	-	-	-
Total %	0.1	0.0	0.0	-	0.2	0.0	53.9	0.0	-	53.9	45.8	0.1	0.0	-	45.9	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	3	1	0	-	4	0	1400	0	-	1400	1172	3	0	-	1175	2579
% Cars & Light Goods	75.0	100.0	-	-	80.0	-	91.0	-	-	91.0	89.6	100.0	-	-	89.6	90.4
Buses	0	0	0	-	0	0	7	0	-	7	9	0	0	-	9	16
% Buses	0.0	0.0	-	-	0.0	-	0.5	-	-	0.5	0.7	0.0	-	-	0.7	0.6
Single-Unit Trucks	0	0	0	-	0	0	69	0	-	69	36	0	0	-	36	105
% Single-Unit Trucks	0.0	0.0	-	-	0.0	-	4.5	-	-	4.5	2.8	0.0	-	-	2.7	3.7
Articulated Trucks	1	0	0	-	1	0	62	0	-	62	91	0	0	-	91	154
% Articulated Trucks	25.0	0.0	-	-	20.0	-	4.0	-	-	4.0	7.0	0.0	-	-	6.9	5.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@pts.com

Count Name: 5338 Wellington Road 125  
Site Code: 260151  
Start Date: 03/24/2026  
Page No: 3



Turning Movement Data Plot

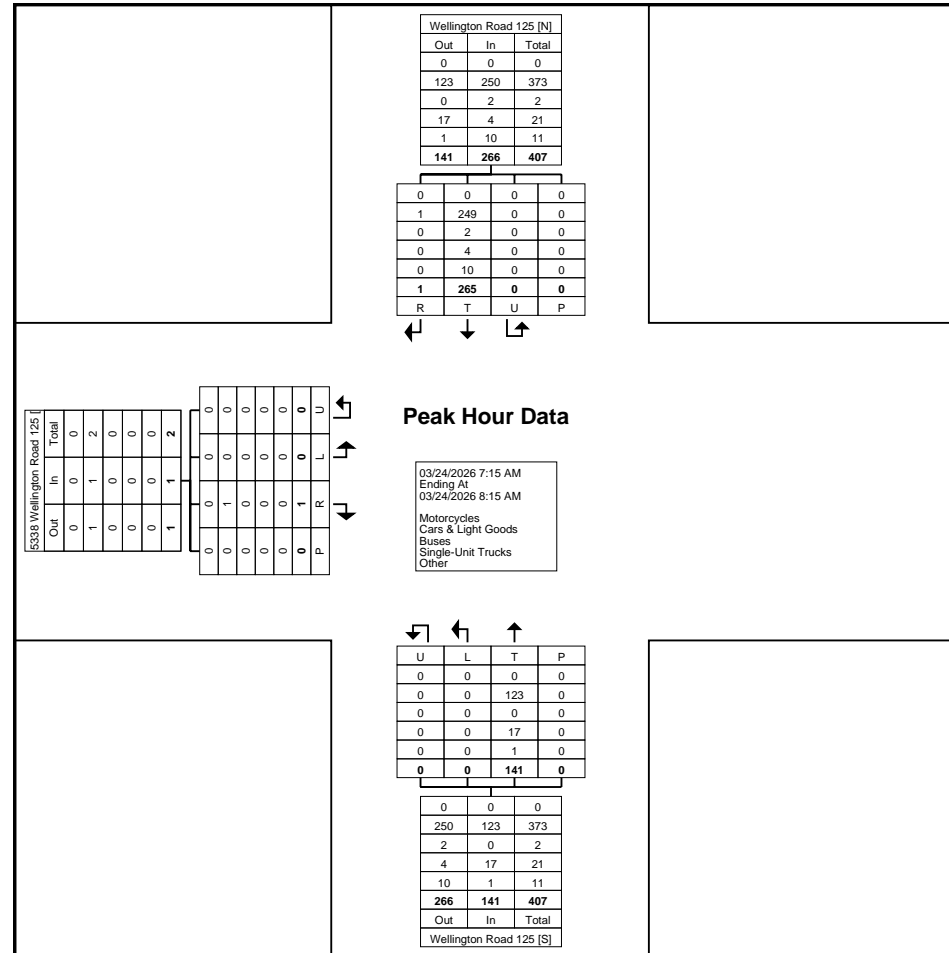




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@pts.com

Count Name: 5338 Wellington Road 125  
Site Code: 260151  
Start Date: 03/24/2026  
Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)

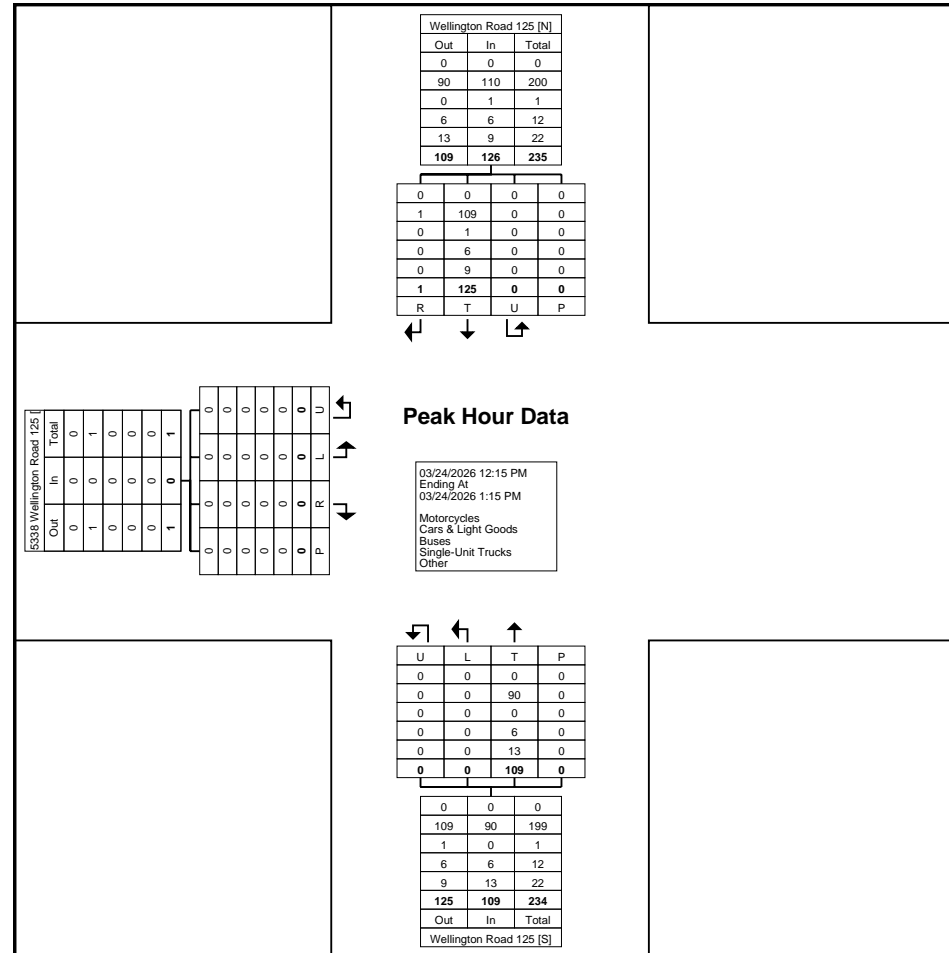




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@ptsl.com

Count Name: 5338 Wellington Road 125  
Site Code: 260151  
Start Date: 03/24/2026  
Page No: 7



Turning Movement Peak Hour Data Plot (12:15 PM)





# Appendix B

## Existing Conditions Traffic Operations Reports



Lanes, Volumes, Timings  
 1: County Road 125 & Site Driveway

Existing: AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1	0	141	265	1
Future Volume (vph)	0	1	0	141	265	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865					
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	1644	0	0	1681	1793	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	1644	0	0	1681	1793	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	167.3			140.7	152.6	
Travel Time (s)	12.0			6.3	6.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	13%	6%	0%
Adj. Flow (vph)	0	1	0	166	312	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	166	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.0%
ICU Level of Service	A
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 1: County Road 125 & Site Driveway

Existing: AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	0	141	265	1
Future Volume (Veh/h)	0	1	0	141	265	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	1	0	166	312	1
<b>Pedestrians</b>						
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	478	312	313			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	478	312	313			
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)	549	732	1259			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	1	166	313			
Volume Left	0	0	0			
Volume Right	1	0	1			
cSH	732	1259	1700			
Volume to Capacity	0.00	0.00	0.18			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	9.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.9	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	24.0%		ICU Level of Service	A		
Analysis Period (min)	15					

Lanes, Volumes, Timings  
 1: County Road 125 & Site Driveway

Existing: PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	0	0	323	147	0
Future Volume (vph)	2	0	0	323	147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Frt</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1805	0	0	1827	1845	0
Flt Permitted	0.950					
Satd. Flow (perm)	1805	0	0	1827	1845	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	167.3			140.7	152.6	
Travel Time (s)	12.0			6.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Adj. Flow (vph)	2	0	0	351	160	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	2	0	0	351	160	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.0% ICU Level of Service A
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 1: County Road 125 & Site Driveway

Existing: PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	0	323	147	0
Future Volume (Veh/h)	2	0	0	323	147	0
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)	2	0	0	351	160	0
<b>Pedestrians</b>						
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	511	160	160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	511	160	160			
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)	526	890	1432			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	2	351	160			
Volume Left	2	0	0			
Volume Right	0	0	0			
cSH	526	1432	1700			
Volume to Capacity	0.00	0.00	0.09			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	11.9	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	11.9	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	27.0%			ICU Level of Service	A	
Analysis Period (min)	15					

# Appendix C

## 2028 Background Conditions Traffic Operations Reports



Lanes, Volumes, Timings  
 1: County Road 125 & Site Driveway

2028 Background: AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1	0	145	274	1
Future Volume (vph)	0	1	0	145	274	1
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	0.865					
Flt Protected						
Satd. Flow (prot)	1644	0	0	1681	1793	0
Flt Permitted						
Satd. Flow (perm)	1644	0	0	1681	1793	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	167.3			140.7	152.6	
Travel Time (s)	12.0			6.3	6.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	13%	6%	0%
Adj. Flow (vph)	0	1	0	171	322	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	171	323	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5% ICU Level of Service A
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 1: County Road 125 & Site Driveway

2028 Background: AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	0	145	274	1
Future Volume (Veh/h)	0	1	0	145	274	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	1	0	171	322	1
<b>Pedestrians</b>						
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	494	322	323			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	494	322	323			
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)	539	723	1248			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	1	171	323			
Volume Left	0	0	0			
Volume Right	1	0	1			
cSH	723	1248	1700			
Volume to Capacity	0.00	0.00	0.19			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	10.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	10.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	24.5%			ICU Level of Service	A	
Analysis Period (min)	15					

Lanes, Volumes, Timings  
 1: County Road 125 & Site Driveway

2028 Background: PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	0	0	332	152	0
Future Volume (vph)	2	0	0	332	152	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1805	0	0	1827	1845	0
Flt Permitted	0.950					
Satd. Flow (perm)	1805	0	0	1827	1845	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	167.3			140.7	152.6	
Travel Time (s)	12.0			6.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Adj. Flow (vph)	2	0	0	361	165	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	2	0	0	361	165	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.5%
Analysis Period (min)	15
	ICU Level of Service A

# HCM Unsignalized Intersection Capacity Analysis

## 1: County Road 125 & Site Driveway

2028 Background: PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			T	T	
Traffic Volume (veh/h)	2	0	0	332	152	0
Future Volume (Veh/h)	2	0	0	332	152	0
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)	2	0	0	361	165	0
<b>Pedestrians</b>						
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	526	165	165			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	526	165	165			
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)	516	885	1426			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	2	361	165			
Volume Left	2	0	0			
Volume Right	0	0	0			
cSH	516	1426	1700			
Volume to Capacity	0.00	0.00	0.10			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	12.0	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	12.0	0.0	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay	0.0					
Intersection Capacity Utilization	27.5%			ICU Level of Service	A	
Analysis Period (min)	15					

# Appendix D

## 2028 Total Conditions Traffic Operations Reports



Lanes, Volumes, Timings  
 1: County Road 125 & Site Driveway

2028 Total: AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	16	3	145	274	6
Future Volume (vph)	9	16	3	145	274	6
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	0.914			0.997		
Flt Protected	0.982			0.999		
Satd. Flow (prot)	1705	0	0	1684	1789	0
Flt Permitted	0.982			0.999		
Satd. Flow (perm)	1705	0	0	1684	1789	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	167.3			140.7	152.6	
Travel Time (s)	12.0			6.3	6.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	13%	6%	0%
Adj. Flow (vph)	11	19	4	171	322	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	0	175	329	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.8% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 125 & Site Driveway

2028 Total: AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	16	3	145	274	6
Future Volume (Veh/h)	9	16	3	145	274	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	11	19	4	171	322	7
<b>Pedestrians</b>						
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	504	326	329			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	504	326	329			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	97	100			
cM capacity (veh/h)	529	720	1242			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	30	175	329			
Volume Left	11	4	0			
Volume Right	19	0	7			
cSH	636	1242	1700			
Volume to Capacity	0.05	0.00	0.19			
Queue Length 95th (m)	1.2	0.1	0.0			
Control Delay (s)	10.9	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.9	0.2	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			24.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings  
 1: County Road 125 & Site Driveway

2028 Total: PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	5	19	332	152	8
Future Volume (vph)	12	5	19	332	152	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
Frt	0.962			0.993		
Flt Protected	0.965			0.997		
Satd. Flow (prot)	1764	0	0	1825	1835	0
Flt Permitted	0.965			0.997		
Satd. Flow (perm)	1764	0	0	1825	1835	0
Link Speed (k/h)	50			80	80	
Link Distance (m)	167.3			140.7	152.6	
Travel Time (s)	12.0			6.3	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Adj. Flow (vph)	13	5	21	361	165	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	382	174	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.3%
	ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 1: County Road 125 & Site Driveway

2028 Total: PM Peak Hour

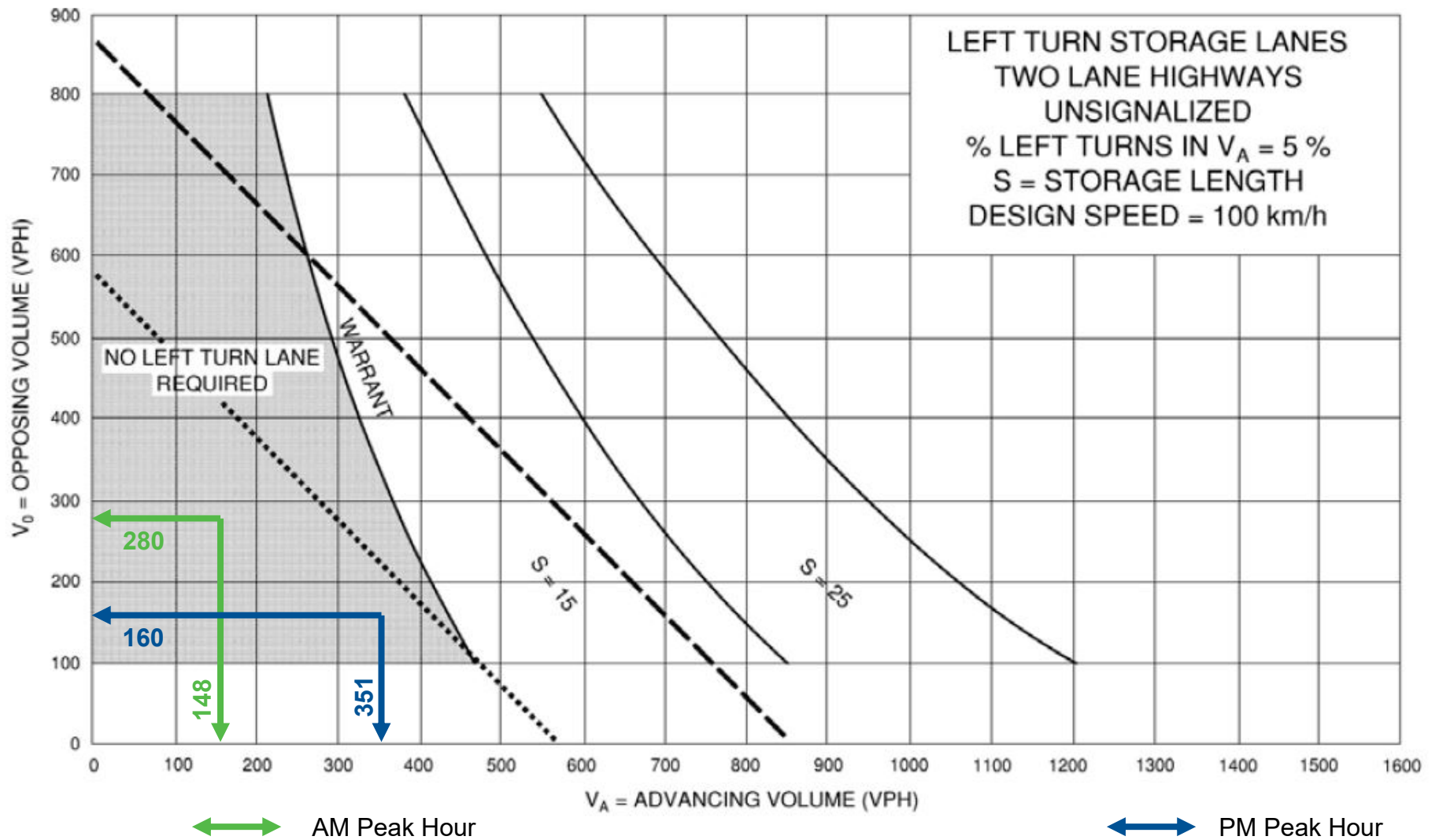


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	5	19	332	152	8
Future Volume (Veh/h)	12	5	19	332	152	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	5	21	361	165	9
<b>Pedestrians</b>						
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	572	170	174			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	572	170	174			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	99			
cM capacity (veh/h)	478	880	1415			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	18	382	174			
Volume Left	13	21	0			
Volume Right	5	0	9			
cSH	547	1415	1700			
Volume to Capacity	0.03	0.01	0.10			
Queue Length 95th (m)	0.8	0.4	0.0			
Control Delay (s)	11.8	0.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.8	0.6	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			40.3%	ICU Level of Service	A	
Analysis Period (min)			15			

# Appendix E

## Left-Turn Lane Warrants





## Left-Turn Warrant Wellington Road 125 and Site Driveway 2033 Total Traffic Conditions