



**19 East Mill Street,
Elora, ON
Transportation Impact Study**

Paradigm Transportation Solutions Limited

February 2023
220311



Project Summary



Project Number
220311

19 East Mill Street, Elora, ON Transportation Impact Study

February 2023

Client

Oxford Green Riverside Developments

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Version 0.0.1

Executive Summary

Content

Oxford Green Riverside Developments retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for a proposed mixed-use redevelopment near the corner of Geddes Street and East Mill Street in Elora, Ontario.

This TIS analyzes existing traffic conditions, provides a description of the proposed redevelopment, forecasts traffic to a five-year horizon beyond the assumed build-out year (2023), and recommends any required improvements.

Development Concept

The redevelopment plan proposes a five-storey (plus loft) building with 18 residential units and 628 square metres (6,760 square feet) of ground floor commercial (GFA).

Vehicle access is proposed via a driveway connection to parking partially underground off Geddes Street.

The development is assumed to be completed by 2023.

Conclusions

Based on the investigations carried out, it is concluded that:

- ▶ **Existing Traffic Conditions:** All study area intersections are currently operating at acceptable levels of service with no specific problem movements.
- ▶ **Development Trip Generation:** The development is forecast to generate approximately 44 and 73 trips during the AM and PM peak hours upon full build-out.
- ▶ **2028 Background Traffic Conditions:** All study area intersections are forecast to operate at acceptable levels of service with no critical movements during the weekday AM and PM peak hours.
- ▶ **2028 Total Traffic Conditions:** All study area intersections are forecast to operate at acceptable levels of service with no critical movements during the weekday AM and PM peak hours.

With the addition of the site-generated traffic volumes, the overall intersection delays at the study area intersections



increase by two seconds or less during the AM and PM peak hours.

- ▶ **Remedial Measures:** A westbound left-turn lane is not warranted at the intersection of East Mill Street and Geddes Street.

Recommendations

Based on the findings of this study, it is recommended that the development be approved with no conditions related to off-site transportation improvements.



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1 Introduction

1.1 Overview

Oxford Green Riverside Developments retained Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this Transportation Impact Study (TIS) for a mixed-use redevelopment at 19 East Mill Street in Elora, Ontario. **Figure 1.1** illustrates the site location.

This study determines the impacts of the additional traffic on the surrounding road network and identifies the necessary remedial measures necessary required to accommodate future traffic in a satisfactory manner. The scope of the study includes:

- ▶ Assessing current traffic and site conditions within the study area;
- ▶ Forecasting future non-development (background) traffic growth;
- ▶ Forecasting site-generated traffic;
- ▶ Analysing future traffic impacts on the surrounding road network five-years after the assumed full build-out year; and
- ▶ Recommending any necessary mitigation.

The study scope was developed in consultation with the Wellington County and the Township of Centre Wellington in June 2022.

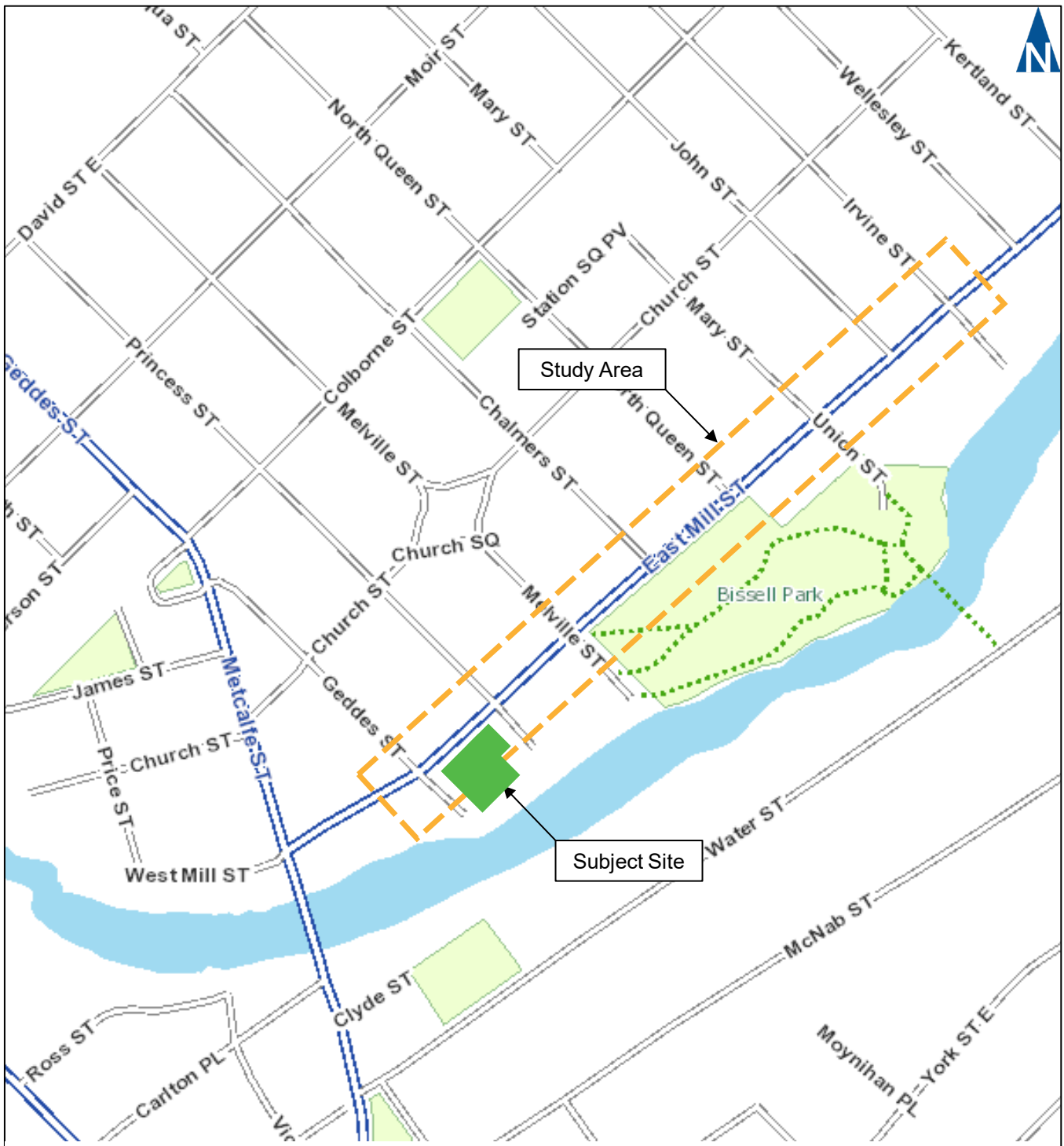
Appendix A contains the pre-study consultation material and response from the County and Township.

1.2 Study Area

The intersection assessed in this study includes:

- ▶ Geddes Street and East Mill Street (unsignalized); and
- ▶ Irvine Street and East Mill Street (unsignalized).





NTS

Image Source: "Explore Wellington," Wellington County Archives and Museum and Planning Department, <https://sgis.wellington.ca/Maps/index.html?viewer=WellingtonCountyExternal>.



Location of Subject Site

19 East Mill Street, Elora TIS
220311

Figure 1.1

2 Existing Conditions

2.1 Road Characteristics

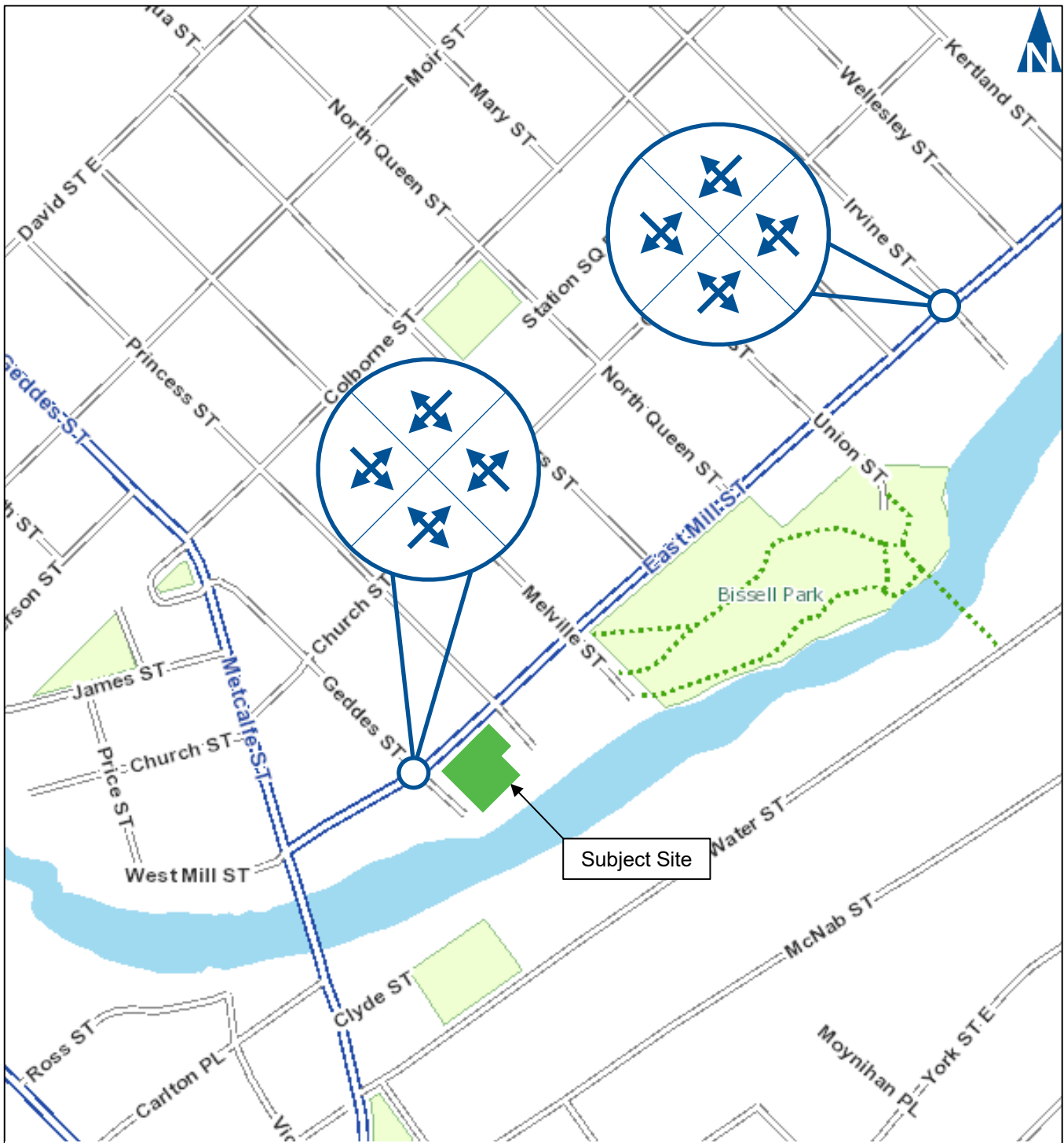
The roadways of interest within the study area include Township of Centre Wellington roads (Geddes Street and Irvine Street and Wellington County¹ roads (East Mill Street and Geddes Street) are generally described as:

- ▶ **East Mill Street (County Road 18)** is a two-lane arterial road with a speed limit of 40 km/h within the study area. Sidewalks are on both sides of the roadway except east of Geddes Street, where it is only on the north side.
- ▶ **Irvine Street** is a two-lane local road south of David Street changing to a collector road north of David Street. The posted speed limit is 50 km/h except between Moir Street and Walser Street where it is 40 km/h. There is a sidewalk on the east side of the roadway except between Church Street and Colborne Street where no sidewalk is present.
- ▶ **Geddes Street** is a two-lane, 50 km/h local road that transitions to an arterial road north of Metcalfe Street. Sidewalks are provided on both sides of the roadway except for a portion approximately between Church Street and Metcalfe Street where none exists on the west side of Geddes Street.

Figure 2.1 details the existing traffic control and lane configurations at the study area intersections.

¹ Township of Centre Wellington, *Municipal Official Plan: Schedule B – Municipal Servicing Plan Fergus-Elora-Salem*, (Elora: Township of Centre Wellington, 2013).





NTS

Image Source: "Explore Wellington," Wellington County Archives and Museum and Planning Department, <https://sgis.wellington.ca/Maps/index.html?viewer=WellingtonCountyExternal>.



Existing Lane Configuration & Traffic Control

2.2 Active Transportation

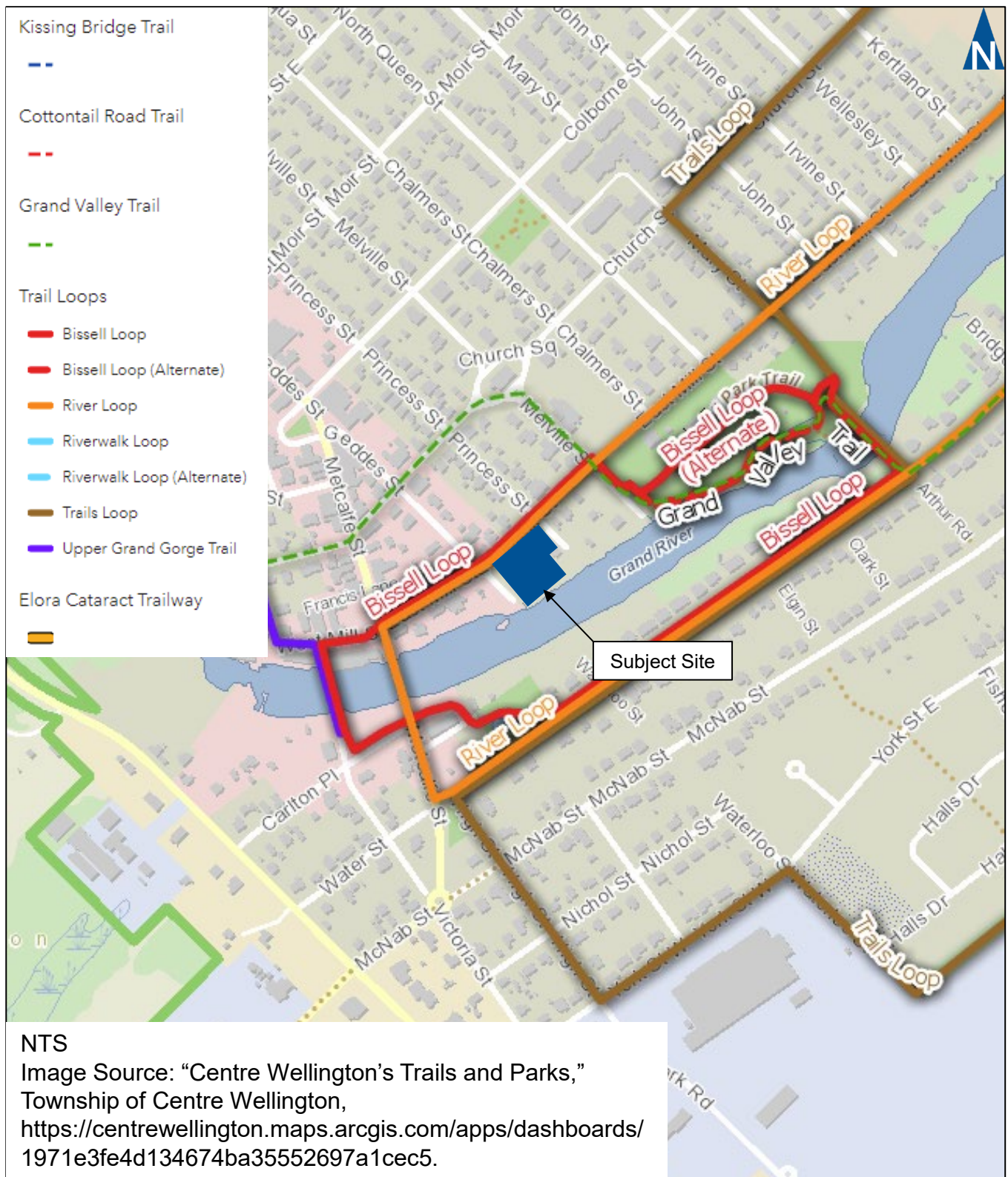
Figure 2.2 illustrates the existing trail network. The existing trail network infrastructure includes:

- ▶ Trail loops running along East Mill Street; and
- ▶ The Grand Valley Trail running along Church Street to the north of the subject site.

Figure 2.3 illustrates the proposed network for active transportation. The identified improvements include:

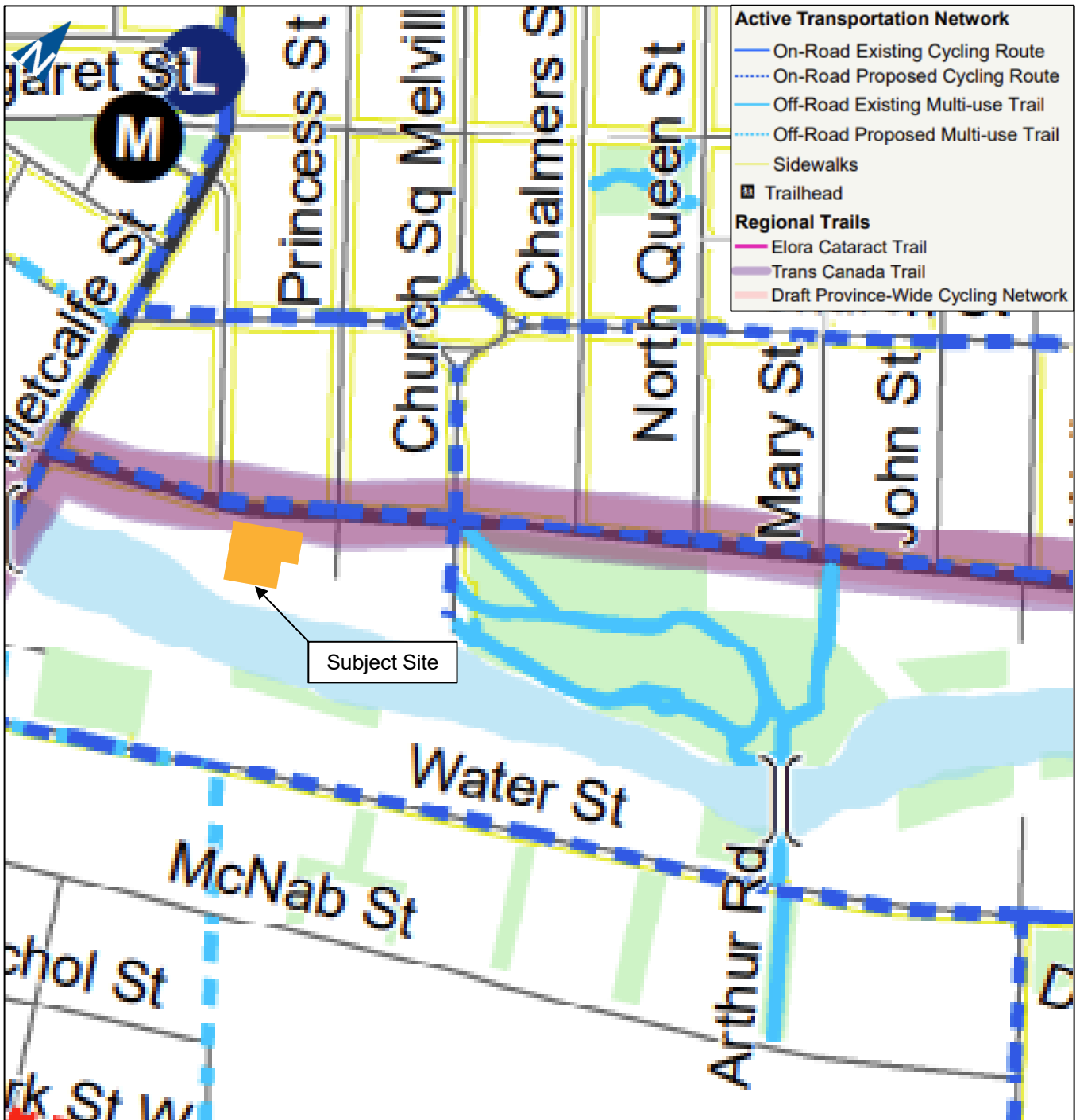
- ▶ An on-road cycling route on East Mill Street;
- ▶ An on-road cycling route on Metcalfe Street;
- ▶ An on-road cycling route on Church Street north of the site;
- ▶ An on-road cycling route (on-road) on Melville Street between East Mill Street and Church Street; and
- ▶ A multi-use path on Church Street, west of Metcalfe Street.





Existing Trail Network

Figure 2.2



NTS

Image Source: Township of Centre Wellington, Transportation Master Plan Final Report January 2019: Map ES-2 Proposed Transportation Network – Elora, Salem and Fergus, (Elora: Township of Centre Wellington, 2019).



Proposed Network for Active Transportation

2.3 Transit Service

Guelph Owen Sound Transit² operates near the study area:

- ▶ The route operates between Guelph and Owen Sound. The route operates Monday to Sunday from 7:30 AM to 9:50 AM, 10:40 AM to 1:00 PM, 2:30 PM to 4:50 PM, and 5:30 PM to 7:50 PM.

The closest transit stop is approximately 300 metres (4-minute walk) away at 25 Metcalfe Street.

Figure 2.4 illustrates the existing transit network.

² “Guelph Owen Sound Transportation,” City of Owen Sound, 2019, <https://www.owensound.ca/en/living/guelph-owen-sound-transportation.aspx>





Transit Network

19 East Mill Street, Elora TIS
220311

Figure 2.4

2.4 Traffic Volumes

Paradigm undertook turning movement counts at the study area intersections in February 2022 and May 2022.

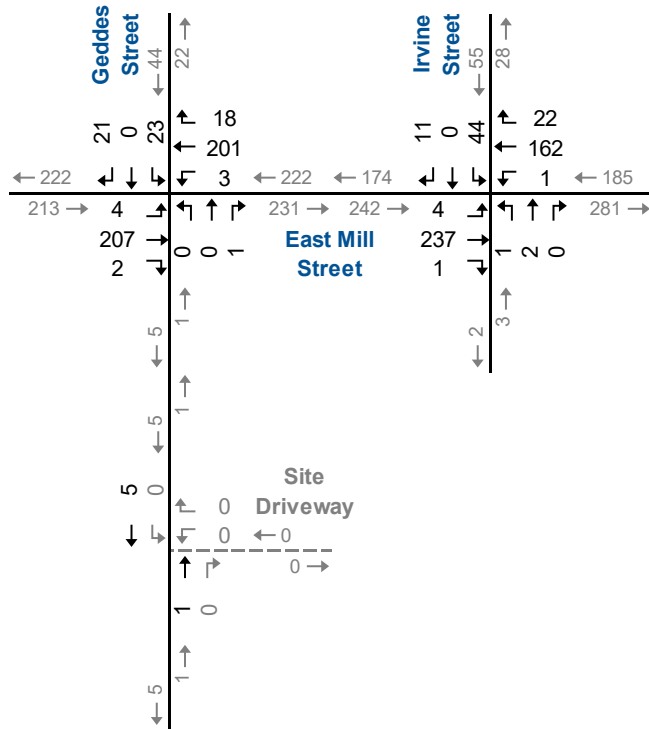
Appendix B contains the observed traffic counts for the study area intersections.

Figure 2.5 illustrate the base year weekday AM and PM peak hour traffic volumes.

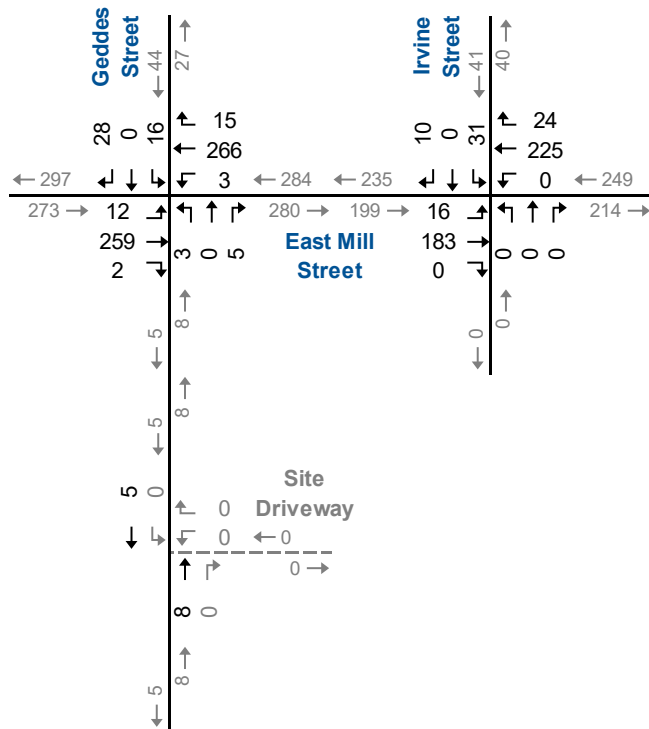




AM Peak Hour



PM Peak Hour



Base Year Traffic Volumes

Figure 2.5

2.5 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on a number of criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.0, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations of the study intersections were evaluated using the existing lane configurations, traffic controls, and the base year traffic peak hour volumes.

The level of service conditions on the existing road network have been assessed using Synchro 10. As noted in Wellington County TIS guidelines³, movements are considered critical under the following conditions:

- ▶ Volume/capacity (V/C) ratios for overall intersection operations, through movements or shared through/turning movements increased to 0.85 or above (signalized intersections);
- ▶ V/C ratios for dedicated turning movements that exceed 0.90 (signalized intersections);
- ▶ LOS E or F for the global performance at unsignalized intersections; and
- ▶ 95th percentile queue lengths for individual movements exceed available lane storage.

Table 2.1 summarizes the existing intersection operations. The entries in the table indicating the AM and PM peak hour level of service (LOS),

³ Dillon Consulting, *Wellington County Road Action Master Plan: Appendix G Traffic Impact Study Guidelines*, (Guelph: Wellington County, 2021).



volume to capacity ratios (V/C), and 95th percentile queues experienced.

All study are intersections are currently operating at acceptable levels of service with no specific problem movements. **Appendix C** contains the detailed Synchro reports.



TABLE 2.1: BASE YEAR OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Geddes Street & East Mill Street	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	A 10 0.00 0	> > > >	A 10 0.00 0	< < < <	B 12 0.10 2	> > > >	B 12 0.00 0	
	Irvine Street & East Mill Street	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 9 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	C 15 0.01 0	> > > >	C 15 0.01 0	< < < <	C 16 0.19 5	> > > >	C 16 0.09 2	
PM Peak Hour	Geddes Street & East Mill Street	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	B 12 0.02 0	> > > >	B 12 0.02 0	< < < <	B 12 0.09 2	> > > >	B 12 0.09 2	
	Irvine Street & East Mill Street	TWSC	LOS Delay V/C Q	A 8 0.02 1	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	A 0 0.00 0	> > > >	A 0 0.00 0	< < < <	C 16 0.14 4	> > > >	C 16 0.14 4	

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



3 Development Concept

3.1 Development Description

The subject site is located near the corner of Geddes Street and East Mill Street in Elora, Ontario.

The redevelopment plan proposes a five-storey (plus loft) building with 18 residential units and 628 square metres (6,760 square feet) of ground floor commercial (GFA).

Vehicle access is proposed via a single all-moves driveway connection to parking partially underground from Geddes Street.

The development is assumed to be completed by 2023.

Figure 3.1 shows the proposed development concept.



3.2 Site Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation⁴ provides methods predict the site trip generation. The following Land Use Codes (LUC) were used to estimate the site trip generation:

- ▶ LUC 220 (Multifamily Housing, Low-Rise); and
- ▶ LUC 822 (Strip Retail Plaza, <40k).

The regression equation rates for LUC 220 and the average rates for LUC 822 were used to calculate the site trips. **Table 3.1** summarizes the forecast site-generated trips. The entries in the table indicate that at full build-out the site is forecast to generate 44 AM peak hour trips and 73 PM peak hour trips. No reductions for alternative modes of transportation were used.

LUC 220 was selected for the residential component trip generation because of the size of the subject site surroundings. Elora residents do not have access to local public transit increasing reliance on personal vehicles. The trip generation for the residential component is therefore likely conservative.

TABLE 3.1: FORECAST SITE-GENERATED TRIPS

Land Use	QTY	AM Peak Hour			PM Peak Hour				
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 220 - Multi-Family Housing (Low-Rise)	18 Units	Eq	7	21	28	Eq	18	10	28
LUC 822 - Strip Retail Plaza (<40k)	6.76 GLA/1000 ft ²	Avg	10	6	16	Eq	22	23	45
Total Trip Generation			17	27	44		40	33	73

LUC 220 - AM: $T = 0.31(X) + 22.85$ | PM: $T = 0.43(X) + 20.55$

LUC 822 - AM: AVG = 2.36 | PM: AVG = 6.59

The trip distribution used for this study was based on the existing distribution and the most recent Transportation Tomorrow Survey⁵ (TTS) data that provides the travel patterns of Elora residents including trips to Waterloo Region and Guelph. Trip assignment followed the local routing choices revealed in the observed traffic counts **Table 3.2**.

⁴ Institute of Transportation Engineers, *Trip Generation Manual*, 11th ed., (Washington, DC: ITE, 2021).

⁵ Data Management Group, *Transportation Tomorrow Survey 2016*, University of Toronto, 2016, <http://www.transportationtomorrow.on.ca/>

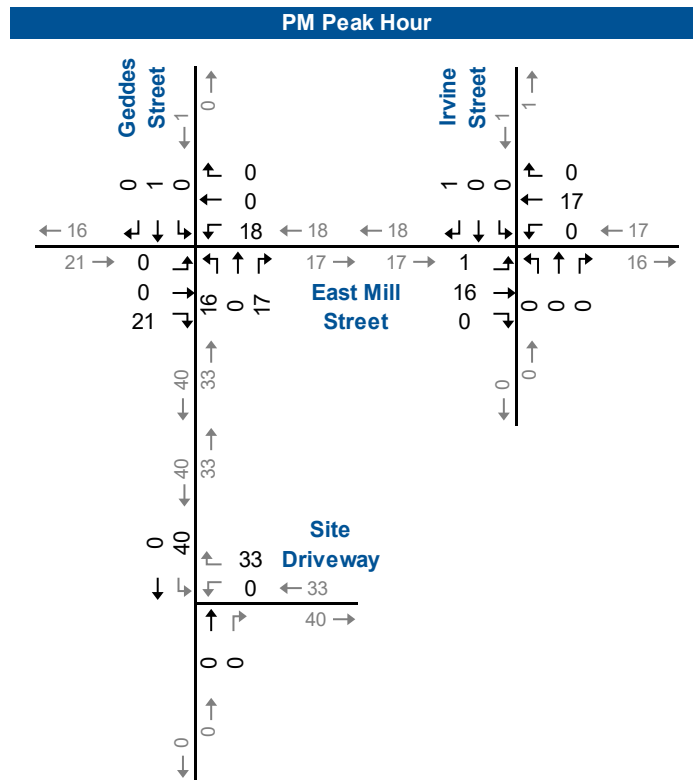
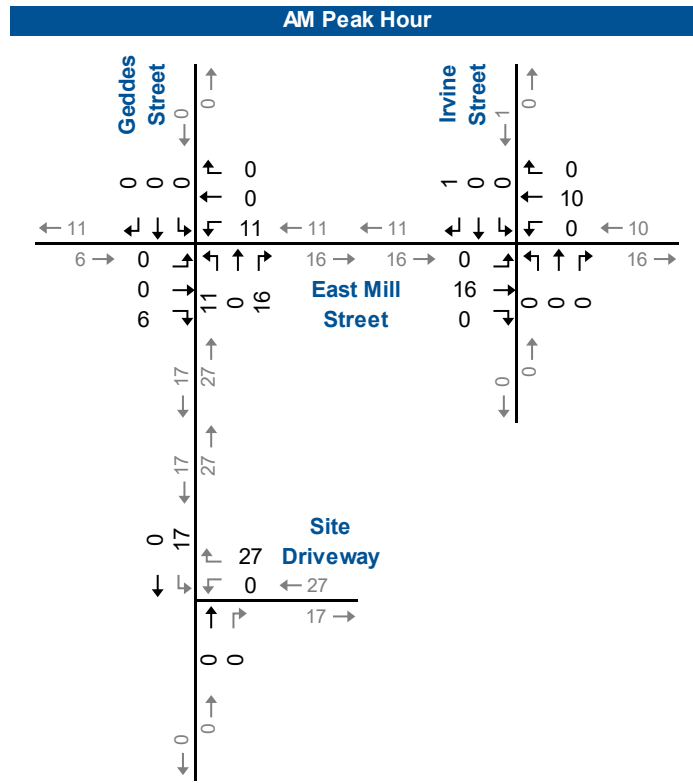


TABLE 3.2: TRIP ASSIGNMENT

Origin/Destination	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
East via Mill Street	58%	57%	44%	50%
West via Mill Street	37%	41%	53%	47%
North via Geddes Street	2%	1%	2%	1%
North via Irvine Street	3%	1%	2%	2%
Total	100%	100%	100%	100%

Figure 3.2 contains the AM and PM peak hour trip assignment.





Site Generated Traffic Volumes

4 Evaluation of Future Traffic Conditions

The assessment of the future traffic conditions contained in this section includes the future traffic forecasts as well as the level of service analysis. A five-year horizon following the anticipated build-out of the subject site (2023) was assessed to determine traffic impacts.

4.1 2028 Background Horizon

4.1.1 2028 Background Traffic Growth

The 2028 background traffic volumes reflect a Township-provided annual growth rate of 2.0% per annum applied to the existing volumes.

No other background developments were identified by the Township or County.

Figure 4.1 illustrates the forecast 2028 background traffic volumes for the weekday AM and PM peak hours.

4.1.2 2028 Background Traffic Operations

The operations at the study area intersections followed the same methodology used for the existing traffic conditions. **Table 4.1** details the level of service conditions.

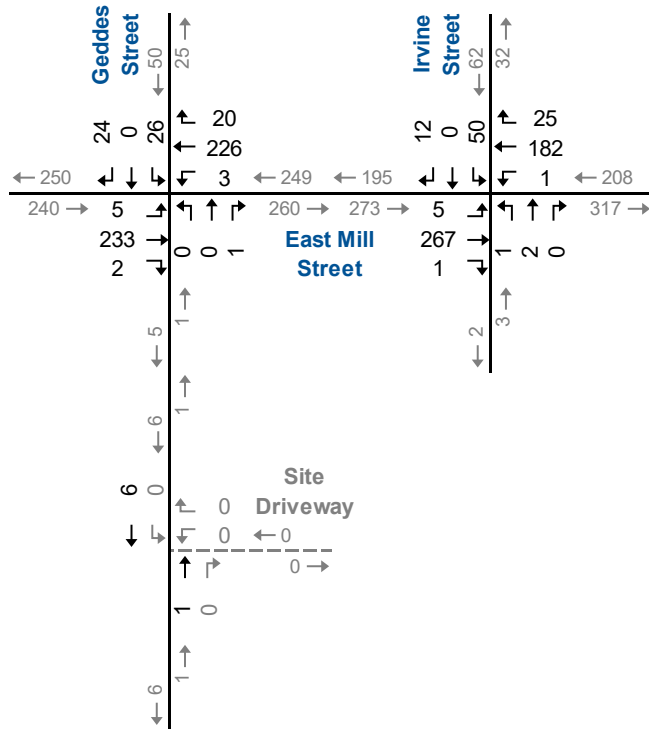
All study area intersections are forecast to operate at acceptable levels of service with no critical movements during the weekday AM and PM peak hours.

Appendix D contains the supporting detailed Synchro 10 reports.

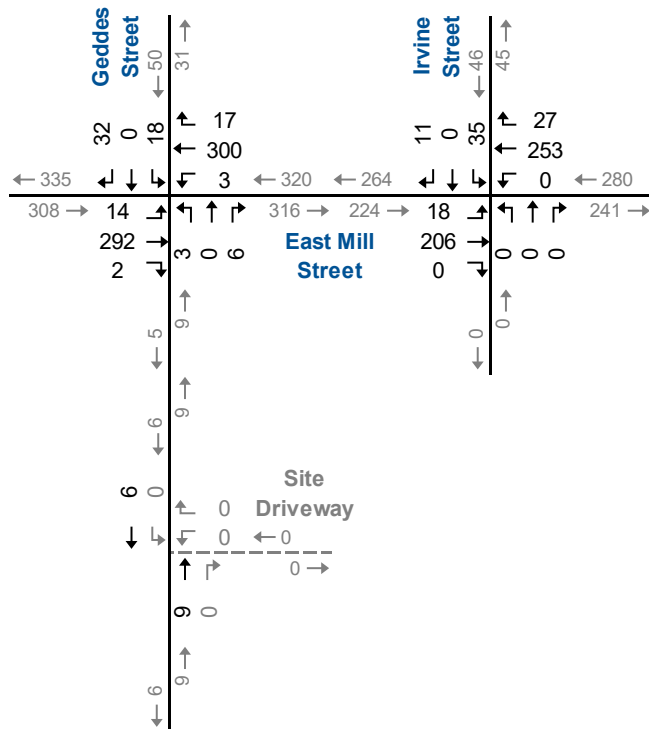




AM Peak Hour



PM Peak Hour



2028 Background Traffic Volumes

Figure 4.1

TABLE 4.1: 2028 BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Geddes Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	B	>	B	
			Delay	8	0	0	0	8	0	0	0	<	10	>	10	<	13	>	13	
			V/C	0.01	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.12	>		
			Q	0	0	0		0	0	0		<	0	>		<	3	>		
AM Peak Hour	Irvine Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	<	C	>	C	<	C	>	C		
			Delay	8	0	0	0	10	0	0	0	<	16	>	16	<	18	>	18	
			V/C	0.01	0.00	0.00		0.00	0.00	0.00		<	0.01	>		<	0.23	>		
			Q	0	0	0		0	0	0		<	0	>		<	7	>		
PM Peak Hour	Geddes Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B		
			Delay	8	0	0	0	8	0	0	0	<	12	>	12	<	13	>	13	
			V/C	0.01	0.00	0.00		0.00	0.00	0.00		<	0.02	>		<	0.11	>		
			Q	0	0	0		0	0	0		<	1	>		<	3	>		
PM Peak Hour	Irvine Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	<	A	>	A	<	C	>	C		
			Delay	8	0	0	1	0	0	0	0	<	0	>	0	<	18	>	18	
			V/C	0.02	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.17	>		
			Q	1	0	0		0	0	0		<	0	>		<	4	>		

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

</> - Shared with through movement



4.2 2028 Total Traffic Horizon

4.2.1 2028 Total Traffic Volumes

Figure 4.2 illustrates the forecast 2028 total (background + site traffic) traffic volumes.

4.2.2 2028 Total Traffic Operations

The study area intersection operations analysis followed the same methodology used for the existing and background traffic conditions.

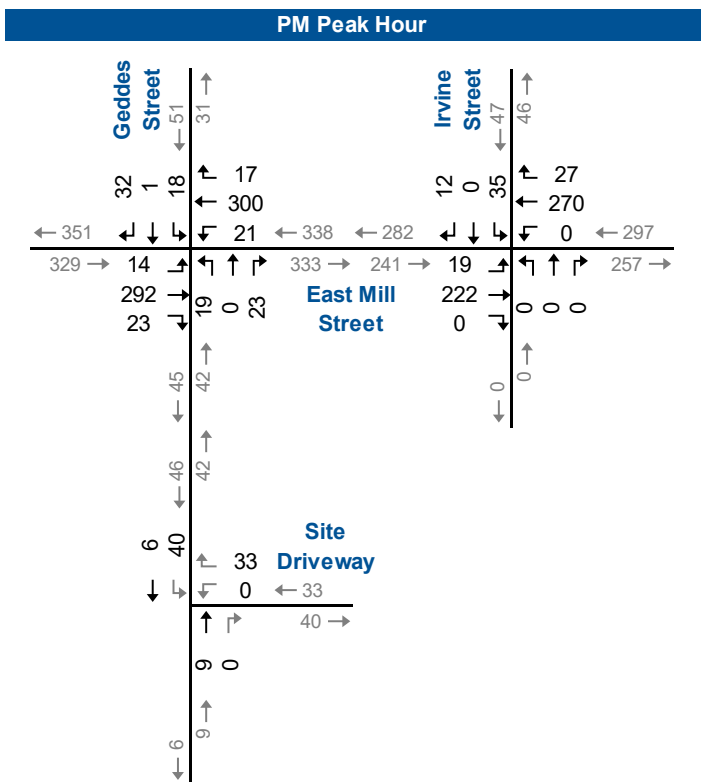
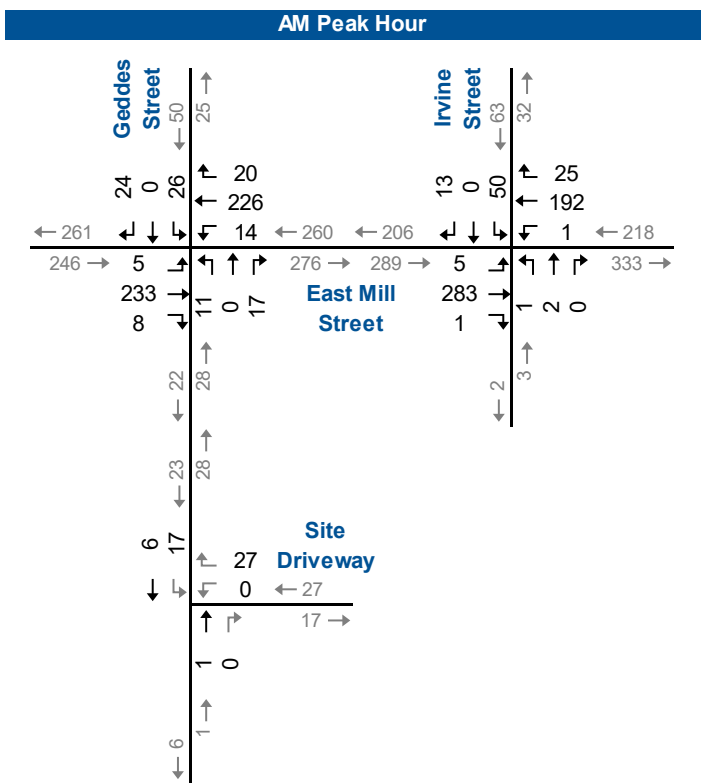
Table 4.2 details the level of service conditions for the weekday AM and PM peak hours.

All study area intersections are forecast to operate at acceptable levels of service with no critical movements during the weekday AM and PM peak hours.

With the addition of the site generated traffic volumes, the overall intersection delays at the study area intersections increase by two seconds, or less, during the AM and PM peak hours.

Appendix E contains the supporting detailed Synchro 11 reports.





2028 Total Traffic Volumes

TABLE 4.2: 2028 TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Geddes Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B	
			Delay	8	0	0	0	8	0	0	0	<	12	>	12	<	14	>	14	
			V/C	0.01	0.00	0.00		0.01	0.00	0.00		<	0.07	>		<	0.13	>		
			Q	0	0	0		0	0	0		<	2	>		<	3	>		
AM Peak Hour	Irvine Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	<	C	>	C	<	C	>	C		
			Delay	8	0	0	0	10	0	0	0	<	17	>	17	<	19	>	19	
			V/C	0.01	0.00	0.00		0.00	0.00	0.00		<	0.01	>		<	0.25	>		
			Q	0	0	0		0	0	0		<	0	>		<	8	>		
PM Peak Hour	Geddes Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B		
			Delay	8	0	0	0	8	0	0	0	<	14	>	14	<	14	>	14	
			V/C	0.01	0.00	0.00		0.02	0.00	0.00		<	0.10	>		<	0.12	>		
			Q	0	0	0		1	0	0		<	2	>		<	3	>		
PM Peak Hour	Irvine Street & East Mill Street	TWSC	LOS	A	A	A	A	A	A	A	<	A	>	A	<	C	>	C		
			Delay	8	0	0	1	0	0	0	0	<	0	>	0	<	19	>	19	
			V/C	0.02	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.18	>		
			Q	1	0	0		0	0	0		<	0	>		<	5	>		

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)

TWSC - Two-Way Stop Control

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5 Remedial Measures

5.1 Left-Turn Lanes

The intersection of East Mill Street and Geddes Street was assessed to determine if the projected traffic volumes warrant installation of a westbound left-turn lane. The warrants for left-turn lanes follow the requirements in the Ministry of Transportation's (MTO) Design Supplement for TAC Geometric Design Guide for Canadian Roads⁶. A design speed of 50 km/h (10 km/h over the posted speed limit) was used for East Mill Street.

The percentages of left-turning vehicles in the approaching volume were rounded to the nearest 5% to make use of nomographs provided.

Table 5.1 summarizes the left-turn lane warrant for the intersection of East Mill Street and Geddes Street. The analysis indicates that a westbound left-turn lane is not warranted at a planning horizon five years beyond full buildout and occupancy.

TABLE 5.1: LEFT-TURN LANE WARRANT SUMMARY – EAST MILL STREET

Roadway	East Mill Street	
Intersection	Geddes Street	
Approach Direction	Westbound	
Design Speed	50 km/h	
Horizon	Total 2028	
Peak Hour	AM	PM
Advancing Volume	260	338
Opposing Volume	246	329
Left Turning Traffic	14	21
% of Left Turning Traffic	5%	6%
Figure Used*	9A-3	9A-3
Warranted	No	No
Storage Length Required	NA	NA

*Ontario Ministry of Transportation, *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads*, (Toronto: Queens Printer for Ontario, 2020).

Appendix F contains the left-turn lane warrant nomographs.

⁶ Ontario Ministry of Transportation, *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads*, (Toronto: Queen's Printer for Ontario, 2020).



6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations carried out, it is concluded that:

- ▶ **Existing Traffic Conditions:** All study area intersections are currently operating at acceptable levels of service with no specific problem movements.
- ▶ **Development Trip Generation:** The development is forecast to generate approximately 44 and 73 trips during the AM and PM peak hours upon full build-out.
- ▶ **2028 Background Traffic Conditions:** All study area intersections are forecast to operate at acceptable levels of service with no critical movements during the weekday AM and PM peak hours.
- ▶ **2028 Total Traffic Conditions:** All study area intersections are forecast to operate at acceptable levels of service with no critical movements during the weekday AM and PM peak hours.

With the addition of the site-generated traffic volumes, the overall intersection delays at the study area intersections increase by two seconds or less during the AM and PM peak hours.

- ▶ **Remedial Measures:** A westbound left-turn lane is not warranted at the intersection of East Mill Street and Geddes Street.

6.2 Recommendations

Based on the findings of this study, it is recommended that the development be approved with no conditions related to off-site transportation improvements.



Appendix A

Pre-Study Consultation



From: Pasquale Costanzo <pasqualec@wellington.ca>
Sent: June 6, 2022 11:10 AM
To: Erica Bayley; Andrew Orr
Cc: Lee Wheildon
Subject: RE: 19 Mill Street, Elora TIA

Hi Erica,

I have an additional intersection requirement of East Mill Street at Irvine Street and I don't know of any to be built developments on County roads in the vicinity of this one.

If you have any questions please let me know.
Take care

Pasquale Costanzo, C.E.T., CMMII Infrastructure Specialist
Technical Services Supervisor
County of Wellington, Roads Division
T 519.837.2601 x 2250
E pasqualec@wellington.ca

From: Erica Bayley <ebayley@ptsl.com>
Sent: Friday, June 3, 2022 4:04 PM
To: Andrew Orr <aorr@ptsl.com>; Pasquale Costanzo <pasqualec@wellington.ca>
Subject: RE: 19 Mill Street, Elora TIA

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you know the contents to be safe.

Hi Pasquale – checking in to see if you have any comments on our scope outlined below.

Township staff comments are shown in red, per Lee Wheildon.

Thanks and have a nice weekend,

Erica Bayley, P.Eng.
Senior Project Manager, Associate
(She/Her)



Paradigm Transportation Solutions Limited
p: 519.896.3163 x202
m: 519.635.5349

From: Lee Wheildon <LWheildon@centrewellington.ca>
Sent: May 26, 2022 2:51 PM

To: Andrew Orr <aorr@ptsl.com>
Cc: Erica Bayley <ebayley@ptsl.com>; pasqualec@wellington.ca; Colin Baker <CBaker@centrewellington.ca>
Subject: RE: 19 Mill Street, Elora TIA

Andrew,

Please see Township Staff's comments below in red.

As noted below, County Staff may have additional comments regarding a terms of reference for the proposed TIS.

Should you have any questions or concerns, please do not hesitate to contact me.

Regards,

Lee Wheildon C.E.T.,rcca | Engineering Technologist - Development

Township of Centre Wellington | 1 MacDonald Square, Elora, ON N0B 1S0
519.846.9691 x253 CentreWellington.ca

From: Andrew Orr <aorr@ptsl.com>
Sent: May 25, 2022 11:25 AM
To: Lee Wheildon <LWheildon@centrewellington.ca>; pasqualec@wellington.ca
Cc: Erica Bayley <ebayley@ptsl.com>
Subject: 19 Mill Street, Elora TIA

Hello Lee and Pasquale,

We are preparing a TIA for a proposed residential development located at 19 Mill Street in Elora, ON. (prelim concept attached).

We'd like to prepare our report based on the following scope, subject to your comments:

PROPOSED TERMS OF REFERENCE

Study Area Intersections:

- Geddes Street & Mill Street (unsignalized);

Analysis Periods:

- Weekday AM peak hour
- Weekday PM peak hour

Existing Data:

- Existing 8-hour TMC data for the above noted intersections.

Horizon Year

- Five-years from the full buildout

Analysis

- Synchro 10, HCM 6 analysis

Background Traffic

- Background traffic annual growth rate. **As a base line, 2% annual growth**
- Other Approved but not yet built developments to include in background. **The County of Wellington may wish to speak to this.**

Future Road Improvements:

- **East Mill Street (Metcalfe Street to Melville Street) scheduled for 2023 reconstruction (pending 2023 budget approval from Council)**

Trip Generation

- ITE Trip Generation Data 11th Edition with no modal split reductions.

Site Traffic Distribution

- Existing Traffic Patterns.

Andrew Orr, M.A.Sc., EIT

Transportation Consultant



Paradigm Transportation Solutions Limited

5A-150 Pinebush Road, Cambridge ON N1R 8J8

p: 519.896.3163 x210

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Appendix B

Traffic Data





Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
Page No: 1

Turning Movement Data

Start Time	East Mill Street Eastbound						East Mill Street Westbound						Irvine Street Northbound						Irvine Street Southbound						Int. Total	
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total		
7:00 AM	0	25	0	0	0	25	0	16	3	0	0	19	0	0	0	0	0	0	3	0	1	0	5	4	48	
7:15 AM	0	16	0	0	0	16	0	23	3	0	0	26	0	0	0	0	0	0	2	0	0	0	0	2	44	
7:30 AM	1	27	0	0	0	28	0	23	2	0	0	25	0	0	0	0	0	0	5	0	3	0	0	8	61	
7:45 AM	1	32	0	0	0	33	0	18	2	0	0	20	0	0	0	0	0	0	5	0	2	0	1	7	60	
Hourly Total	2	100	0	0	0	102	0	80	10	0	0	90	0	0	0	0	0	0	15	0	6	0	6	21	213	
8:00 AM	0	41	0	0	0	41	0	26	2	0	0	28	0	0	0	0	0	0	7	0	3	0	0	10	79	
8:15 AM	2	57	0	0	0	59	1	30	4	0	0	35	0	1	0	0	0	1	7	0	1	0	11	8	103	
8:30 AM	0	72	1	0	0	73	0	33	7	0	0	40	1	1	0	0	0	2	22	0	3	0	23	25	140	
8:45 AM	2	67	0	0	0	69	0	73	9	0	0	82	0	0	0	0	0	0	8	0	4	0	8	12	163	
Hourly Total	4	237	1	0	0	242	1	162	22	0	0	185	1	2	0	0	0	3	44	0	11	0	42	55	485	
9:00 AM	0	21	0	0	0	21	0	30	4	0	0	34	0	0	0	0	0	0	2	0	1	0	0	3	58	
9:15 AM	0	32	0	0	0	32	0	43	4	0	0	47	0	0	0	0	0	0	5	0	0	0	4	5	84	
9:30 AM	1	34	0	0	0	35	1	39	2	0	0	42	0	0	0	0	0	0	1	0	1	0	0	2	79	
9:45 AM	0	38	0	0	0	38	0	39	2	0	0	41	0	0	0	0	0	0	6	0	4	0	1	10	89	
Hourly Total	1	125	0	0	0	126	1	151	12	0	0	164	0	0	0	0	0	0	14	0	6	0	5	20	310	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	0	27	0	0	0	27	0	46	3	0	0	49	0	0	0	0	0	0	9	0	0	0	2	9	85	
12:15 PM	0	29	0	0	0	29	0	42	0	0	0	42	0	0	0	0	0	0	6	0	2	0	2	8	79	
12:30 PM	2	42	0	0	0	44	1	41	3	0	0	45	0	0	0	0	0	0	5	0	1	0	1	6	95	
12:45 PM	1	54	0	0	0	55	0	34	5	0	0	39	0	0	0	0	0	0	7	0	0	0	0	7	101	
Hourly Total	3	152	0	0	0	155	1	163	11	0	0	175	0	0	0	0	0	0	27	0	3	0	5	30	360	
1:00 PM	0	29	0	0	0	29	0	42	4	0	0	46	0	0	0	0	0	0	3	0	1	0	0	4	79	
1:15 PM	0	41	0	0	0	41	0	48	3	0	0	51	1	0	0	0	0	1	4	0	0	0	0	4	97	
1:30 PM	1	43	1	0	0	45	0	41	3	0	0	44	0	0	0	0	0	0	3	0	1	0	2	4	93	
1:45 PM	1	43	0	0	0	44	0	38	4	0	0	42	1	0	0	0	0	1	1	0	0	0	2	1	88	
Hourly Total	2	156	1	0	0	159	0	169	14	0	0	183	2	0	0	0	0	2	11	0	2	0	4	13	357	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	66	0	0	0	67	0	41	2	0	0	43	0	0	0	0	0	0	13	0	3	0	2	16	126	
3:15 PM	3	44	0	0	0	47	0	85	10	0	0	95	0	0	0	0	0	0	9	0	1	0	35	10	152	
3:30 PM	9	38	0	0	0	47	0	51	8	0	0	59	0	0	0	0	0	0	4	0	5	0	16	9	115	
3:45 PM	3	35	0	0	0	38	0	48	4	0	0	52	0	0	0	0	0	0	5	0	1	0	1	6	96	
Hourly Total	16	183	0	0	0	199	0	225	24	0	0	249	0	0	0	0	0	0	31	0	10	0	54	41	489	
4:00 PM	1	38	0	0	0	39	0	40	4	0	0	44	0	0	0	0	0	0	6	0	3	0	3	9	92	
4:15 PM	3	55	0	0	0	58	0	42	5	0	0	47	0	0	1	0	0	1	2	0	4	0	1	6	112	
4:30 PM	1	50	0	0	0	51	0	34	2	0	0	36	0	0	0	0	0	0	5	0	0	0	3	5	92	

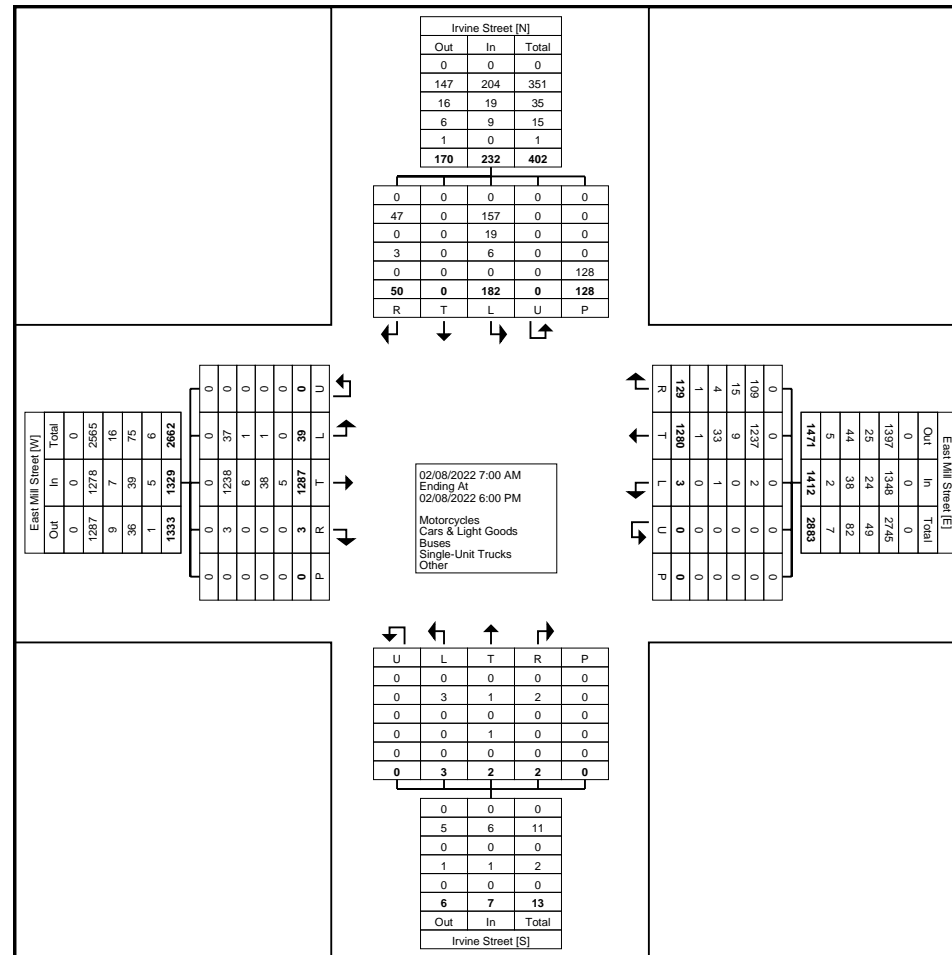
4:45 PM	3	54	0	0	0	57	0	52	5	0	0	57	0	0	0	0	0	6	0	1	0	0	7	121	
Hourly Total	8	197	0	0	0	205	0	168	16	0	0	184	0	0	1	0	0	1	19	0	8	0	7	27	417
5:00 PM	0	44	0	0	0	44	0	62	4	0	0	66	0	0	0	0	0	0	6	0	0	0	3	6	116
5:15 PM	1	38	0	0	0	39	0	46	6	0	0	52	0	0	0	0	0	0	3	0	4	0	1	7	98
5:30 PM	1	23	1	0	0	25	0	29	8	0	0	37	0	0	0	0	0	0	5	0	0	0	0	5	67
5:45 PM	1	32	0	0	0	33	0	25	2	0	0	27	0	0	1	0	0	1	7	0	0	0	1	7	68
Hourly Total	3	137	1	0	0	141	0	162	20	0	0	182	0	0	1	0	0	1	21	0	4	0	5	25	349
Grand Total	39	1287	3	0	0	1329	3	1280	129	0	0	1412	3	2	2	0	0	7	182	0	50	0	128	232	2980
Approach %	2.9	96.8	0.2	0.0	-	-	0.2	90.7	9.1	0.0	-	-	42.9	28.6	28.6	0.0	-	-	78.4	0.0	21.6	0.0	-	-	-
Total %	1.3	43.2	0.1	0.0	-	44.6	0.1	43.0	4.3	0.0	-	47.4	0.1	0.1	0.1	0.0	-	0.2	6.1	0.0	1.7	0.0	-	7.8	-
Motorcycles	0	0	0	0	-	0	0	0	0	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	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	37	1238	3	0	-	1278	2	1237	109	0	-	1348	3	1	2	0	-	6	157	0	47	0	-	204	2836
% Cars & Light Goods	94.9	96.2	100.0	-	-	96.2	66.7	96.6	84.5	-	-	95.5	100.0	50.0	100.0	-	-	85.7	86.3	-	94.0	-	-	87.9	95.2
Buses	1	6	0	0	-	7	0	9	15	0	-	24	0	0	0	0	-	0	19	0	0	0	-	19	50
% Buses	2.6	0.5	0.0	-	-	0.5	0.0	0.7	11.6	-	-	1.7	0.0	0.0	0.0	-	-	0.0	10.4	-	0.0	-	-	8.2	1.7
Single-Unit Trucks	1	38	0	0	-	39	1	33	4	0	-	38	0	1	0	0	-	1	6	0	3	0	-	9	87
% Single-Unit Trucks	2.6	3.0	0.0	-	-	2.9	33.3	2.6	3.1	-	-	2.7	0.0	50.0	0.0	-	-	14.3	3.3	-	6.0	-	-	3.9	2.9
Articulated Trucks	0	5	0	0	-	5	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	7
% Articulated Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.1	0.8	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	128	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
Page No: 4

Turning Movement Peak Hour Data (8:00 AM)

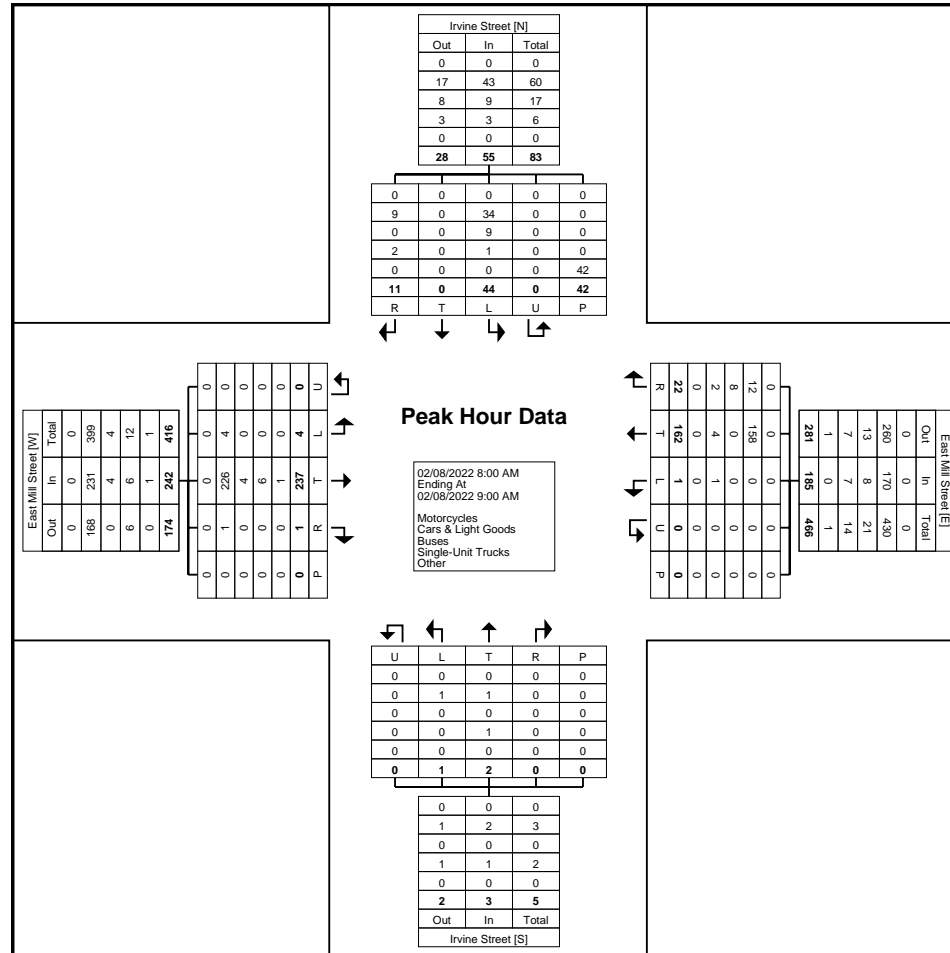
Start Time	East Mill Street Eastbound						East Mill Street Westbound						Irvine Street Northbound						Irvine Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	0	41	0	0	0	41	0	26	2	0	0	28	0	0	0	0	0	0	7	0	3	0	0	10	79
8:15 AM	2	57	0	0	0	59	1	30	4	0	0	35	0	1	0	0	0	1	7	0	1	0	11	8	103
8:30 AM	0	72	1	0	0	73	0	33	7	0	0	40	1	1	0	0	0	2	22	0	3	0	23	25	140
8:45 AM	2	67	0	0	0	69	0	73	9	0	0	82	0	0	0	0	0	0	8	0	4	0	8	12	163
Total	4	237	1	0	0	242	1	162	22	0	0	185	1	2	0	0	0	3	44	0	11	0	42	55	485
Approach %	1.7	97.9	0.4	0.0	-	-	0.5	87.6	11.9	0.0	-	-	33.3	66.7	0.0	0.0	-	-	80.0	0.0	20.0	0.0	-	-	-
Total %	0.8	48.9	0.2	0.0	-	49.9	0.2	33.4	4.5	0.0	-	38.1	0.2	0.4	0.0	0.0	-	0.6	9.1	0.0	2.3	0.0	-	11.3	-
PHF	0.500	0.823	0.250	0.000	-	0.829	0.250	0.555	0.611	0.000	-	0.564	0.250	0.500	0.000	0.000	-	0.375	0.500	0.000	0.688	0.000	-	0.550	0.744
Motorcycles	0	0	0	0	-	0	0	0	0	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	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	4	226	1	0	-	231	0	158	12	0	-	170	1	1	0	0	-	2	34	0	9	0	-	43	446
% Cars & Light Goods	100.0	95.4	100.0	-	-	95.5	0.0	97.5	54.5	-	-	91.9	100.0	50.0	-	-	-	66.7	77.3	-	81.8	-	-	78.2	92.0
Buses	0	4	0	0	-	4	0	0	8	0	-	8	0	0	0	0	-	0	9	0	0	0	-	9	21
% Buses	0.0	1.7	0.0	-	-	1.7	0.0	0.0	36.4	-	-	4.3	0.0	0.0	-	-	-	0.0	20.5	-	0.0	-	-	16.4	4.3
Single-Unit Trucks	0	6	0	0	-	6	1	4	2	0	-	7	0	1	0	0	-	1	1	0	2	0	-	3	17
% Single-Unit Trucks	0.0	2.5	0.0	-	-	2.5	100.0	2.5	9.1	-	-	3.8	0.0	50.0	-	-	-	33.3	2.3	-	18.2	-	-	5.5	3.5
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	42	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
Page No: 5



Turning Movement Peak Hour Data Plot (8:00 AM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
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Turning Movement Peak Hour Data (12:30 PM)

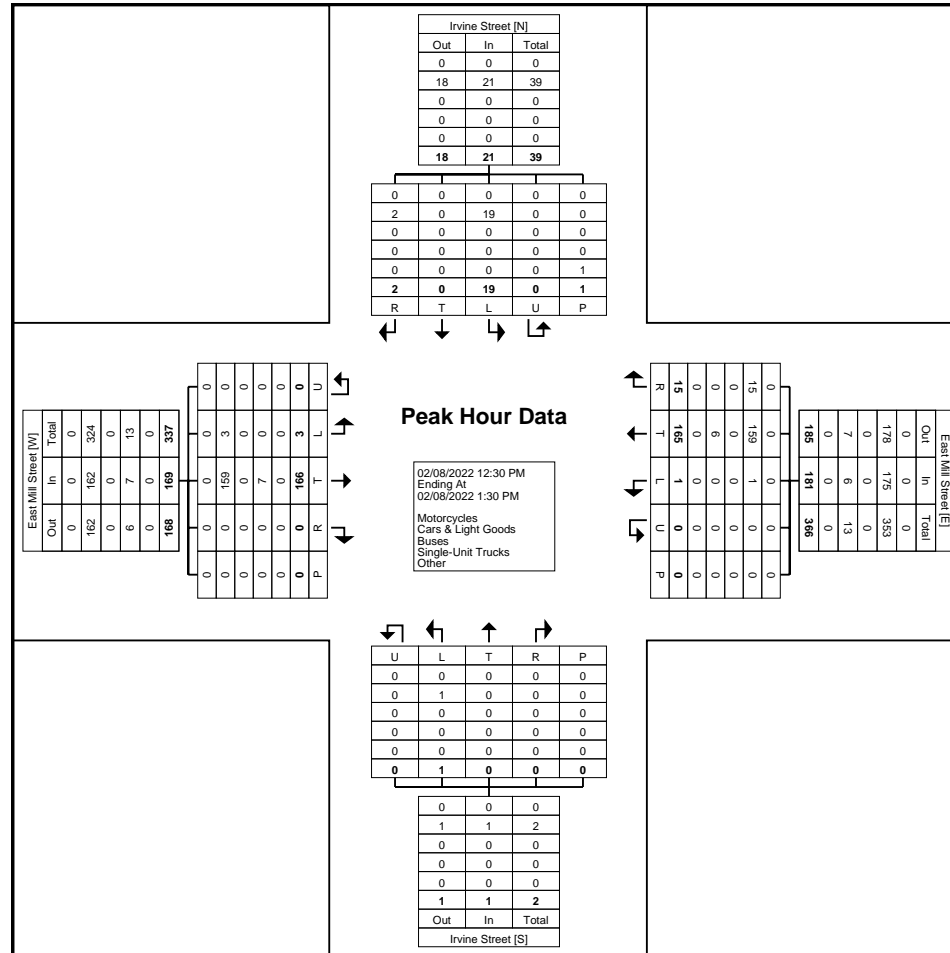
Start Time	East Mill Street Eastbound						East Mill Street Westbound						Irvine Street Northbound						Irvine Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	2	42	0	0	0	44	1	41	3	0	0	45	0	0	0	0	0	0	5	0	1	0	1	6	95
12:45 PM	1	54	0	0	0	55	0	34	5	0	0	39	0	0	0	0	0	0	7	0	0	0	0	7	101
1:00 PM	0	29	0	0	0	29	0	42	4	0	0	46	0	0	0	0	0	0	3	0	1	0	0	4	79
1:15 PM	0	41	0	0	0	41	0	48	3	0	0	51	1	0	0	0	0	1	4	0	0	0	0	4	97
Total	3	166	0	0	0	169	1	165	15	0	0	181	1	0	0	0	0	1	19	0	2	0	1	21	372
Approach %	1.8	98.2	0.0	0.0	-	-	0.6	91.2	8.3	0.0	-	-	100.0	0.0	0.0	0.0	-	-	90.5	0.0	9.5	0.0	-	-	-
Total %	0.8	44.6	0.0	0.0	-	45.4	0.3	44.4	4.0	0.0	-	48.7	0.3	0.0	0.0	0.0	-	0.3	5.1	0.0	0.5	0.0	-	5.6	-
PHF	0.375	0.769	0.000	0.000	-	0.768	0.250	0.859	0.750	0.000	-	0.887	0.250	0.000	0.000	0.000	-	0.250	0.679	0.000	0.500	0.000	-	0.750	0.921
Motorcycles	0	0	0	0	-	0	0	0	0	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	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	3	159	0	0	-	162	1	159	15	0	-	175	1	0	0	0	-	1	19	0	2	0	-	21	359
% Cars & Light Goods	100.0	95.8	-	-	-	95.9	100.0	96.4	100.0	-	-	96.7	100.0	-	-	-	-	100.0	100.0	-	100.0	-	-	100.0	96.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	7	0	0	-	7	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	13
% Single-Unit Trucks	0.0	4.2	-	-	-	4.1	0.0	3.6	0.0	-	-	3.3	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	3.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
Page No: 8

Turning Movement Peak Hour Data (3:00 PM)

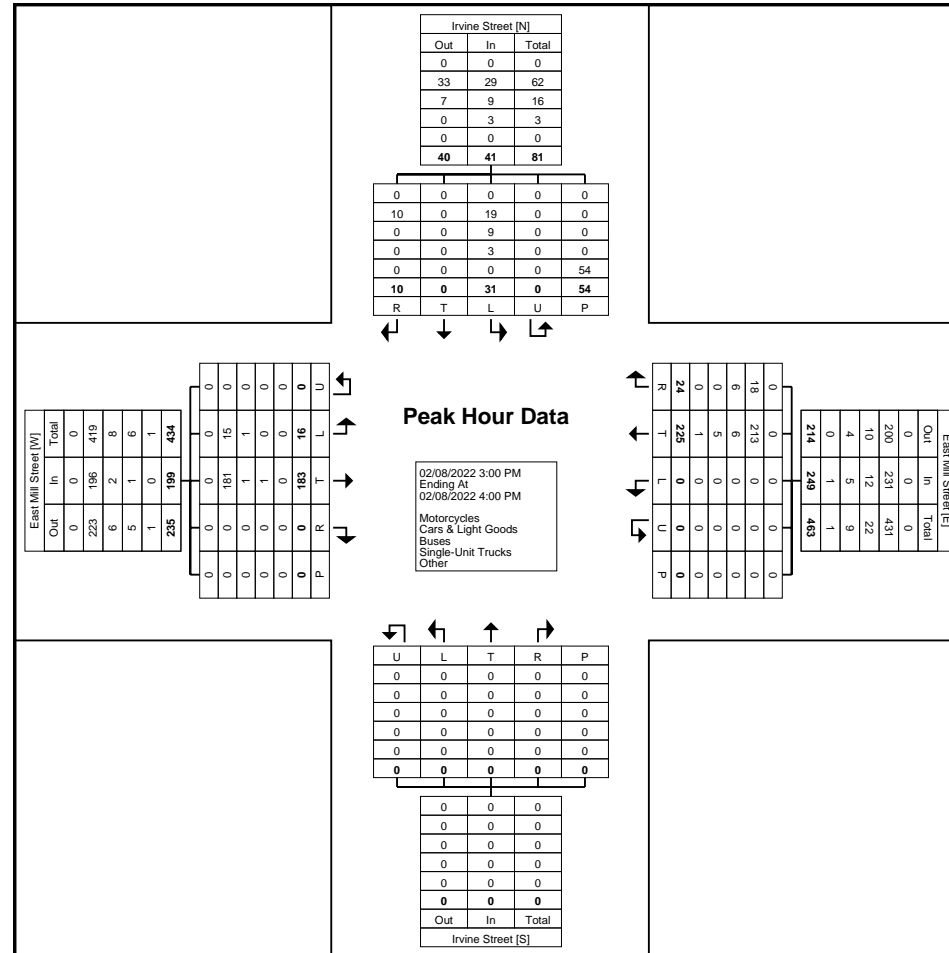
Start Time	East Mill Street Eastbound						East Mill Street Westbound						Irvine Street Northbound						Irvine Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	1	66	0	0	0	67	0	41	2	0	0	43	0	0	0	0	0	0	13	0	3	0	2	16	126
3:15 PM	3	44	0	0	0	47	0	85	10	0	0	95	0	0	0	0	0	0	9	0	1	0	35	10	152
3:30 PM	9	38	0	0	0	47	0	51	8	0	0	59	0	0	0	0	0	0	4	0	5	0	16	9	115
3:45 PM	3	35	0	0	0	38	0	48	4	0	0	52	0	0	0	0	0	0	5	0	1	0	1	6	96
Total	16	183	0	0	0	199	0	225	24	0	0	249	0	0	0	0	0	0	31	0	10	0	54	41	489
Approach %	8.0	92.0	0.0	0.0	-	-	0.0	90.4	9.6	0.0	-	-	0.0	0.0	0.0	0.0	-	-	75.6	0.0	24.4	0.0	-	-	-
Total %	3.3	37.4	0.0	0.0	-	40.7	0.0	46.0	4.9	0.0	-	50.9	0.0	0.0	0.0	0.0	-	0.0	6.3	0.0	2.0	0.0	-	8.4	-
PHF	0.444	0.693	0.000	0.000	-	0.743	0.000	0.662	0.600	0.000	-	0.655	0.000	0.000	0.000	0.000	-	0.000	0.596	0.000	0.500	0.000	-	0.641	0.804
Motorcycles	0	0	0	0	-	0	0	0	0	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	0.0
Cars & Light Goods	15	181	0	0	-	196	0	213	18	0	-	231	0	0	0	0	-	0	19	0	10	0	-	29	456
% Cars & Light Goods	93.8	98.9	-	-	-	98.5	-	94.7	75.0	-	-	92.8	-	-	-	-	-	-	61.3	-	100.0	-	-	70.7	93.3
Buses	1	1	0	0	-	2	0	6	6	0	-	12	0	0	0	0	-	0	9	0	0	0	-	9	23
% Buses	6.3	0.5	-	-	-	1.0	-	2.7	25.0	-	-	4.8	-	-	-	-	-	-	29.0	-	0.0	-	-	22.0	4.7
Single-Unit Trucks	0	1	0	0	-	1	0	5	0	0	-	5	0	0	0	0	-	0	3	0	0	0	-	3	9
% Single-Unit Trucks	0.0	0.5	-	-	-	0.5	-	2.2	0.0	-	-	2.0	-	-	-	-	-	-	9.7	-	0.0	-	-	7.3	1.8
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	-	0.0	-	0.4	0.0	-	-	0.4	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	54	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: Irvine Street & East Mill Street
Site Code: 210662
Start Date: 02/08/2022
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Turning Movement Peak Hour Data Plot (3:00 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Geddes Street & Mill Street
Site Code: 220311
Start Date: 05/19/2022
Page No: 1

Turning Movement Data

Start Time	Mill Street Eastbound						Mill Street Westbound						Geddes Street Northbound						Geddes Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	1	14	0	0	0	15	0	26	0	0	0	26	0	0	0	0	0	0	1	0	0	0	0	1	42
7:15 AM	0	16	0	0	0	16	0	32	0	0	0	32	0	0	0	0	0	0	1	0	2	0	2	3	51
7:30 AM	1	25	0	0	0	26	0	34	2	0	0	36	0	0	0	0	0	0	3	0	3	0	1	6	68
7:45 AM	3	35	0	0	0	38	0	43	3	0	0	46	1	0	0	0	0	1	4	0	1	0	1	5	90
Hourly Total	5	90	0	0	0	95	0	135	5	0	0	140	1	0	0	0	0	1	9	0	6	0	4	15	251
8:00 AM	2	34	0	0	0	36	0	40	1	0	0	41	0	0	0	0	0	0	1	0	3	0	0	4	81
8:15 AM	1	51	0	0	0	52	1	37	1	0	0	39	0	0	0	0	0	0	4	0	5	0	0	9	100
8:30 AM	0	68	1	0	1	69	2	54	4	0	0	60	0	0	0	0	0	0	8	0	8	0	2	16	145
8:45 AM	3	53	1	0	0	57	0	70	9	0	0	79	0	0	1	0	0	1	5	0	5	1	0	11	148
Hourly Total	6	206	2	0	1	214	3	201	15	0	0	219	0	0	1	0	0	1	18	0	21	1	2	40	474
9:00 AM	0	35	0	0	0	35	0	40	4	0	0	44	0	0	0	0	0	0	5	0	3	0	0	8	87
9:15 AM	0	24	0	0	0	24	0	48	2	0	2	50	1	0	0	0	2	1	3	0	4	0	0	7	82
9:30 AM	0	38	1	0	0	39	0	30	0	0	0	30	1	0	0	0	0	1	5	0	2	0	1	7	77
9:45 AM	0	36	0	0	2	36	2	41	2	0	0	45	0	0	0	0	0	0	4	0	5	0	4	9	90
Hourly Total	0	133	1	0	2	134	2	159	8	0	2	169	2	0	0	0	2	2	17	0	14	0	5	31	336
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	3	25	1	0	2	29	0	67	2	0	0	69	0	0	0	0	0	0	4	0	14	0	2	18	116
11:45 AM	4	56	1	0	1	61	1	62	3	0	0	66	1	0	2	0	0	3	5	1	3	0	3	9	139
Hourly Total	7	81	2	0	3	90	1	129	5	0	0	135	1	0	2	0	0	3	9	1	17	0	5	27	255
12:00 PM	3	51	3	0	1	57	0	67	3	0	0	70	1	0	0	0	1	1	3	0	4	0	0	7	135
12:15 PM	3	49	0	1	7	53	2	56	6	0	0	64	2	0	0	0	0	2	4	0	3	0	3	7	126
12:30 PM	4	55	1	0	0	60	0	52	2	0	0	54	0	0	1	0	0	1	8	0	11	0	7	19	134
12:45 PM	5	59	1	0	0	65	0	58	7	0	1	65	1	0	0	0	1	1	4	0	7	0	1	11	142
Hourly Total	15	214	5	1	8	235	2	233	18	0	1	253	4	0	1	0	2	5	19	0	25	0	11	44	537
1:00 PM	2	44	1	0	0	47	0	37	3	0	2	40	0	0	1	0	3	1	1	0	1	0	7	2	90
1:15 PM	1	53	2	0	0	56	1	62	1	0	0	64	0	0	4	0	0	4	5	0	7	0	6	12	136
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	3	97	3	0	0	103	1	99	4	0	2	104	0	0	5	0	3	5	6	0	8	0	13	14	226
3:00 PM	4	69	0	0	0	73	0	63	2	0	1	65	2	0	1	0	1	3	4	0	7	0	5	11	152
3:15 PM	2	65	2	0	0	69	0	77	6	0	1	83	0	0	0	0	1	0	0	0	7	0	3	7	159
3:30 PM	1	51	0	1	1	53	0	61	3	0	0	64	1	0	3	0	3	4	5	0	8	1	9	14	135
3:45 PM	4	74	0	0	1	78	3	65	4	0	1	72	0	0	1	0	1	1	6	0	6	0	1	12	163
Hourly Total	11	259	2	1	2	273	3	266	15	0	3	284	3	0	5	0	6	8	15	0	28	1	18	44	609
4:00 PM	3	58	0	0	0	61	0	52	3	0	0	55	1	0	0	0	0	1	1	0	6	0	1	7	124
4:15 PM	5	69	1	0	2	75	0	59	5	0	0	64	3	3	0	0	0	6	5	0	5	0	10	10	155

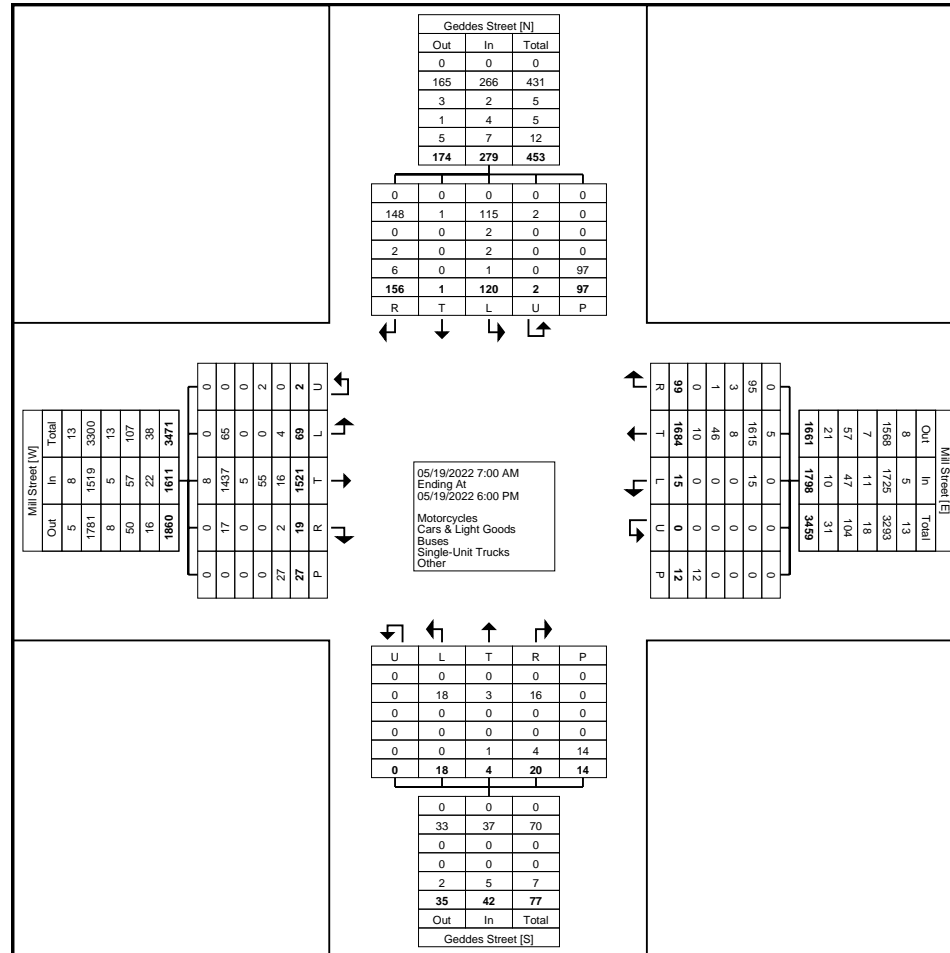
4:30 PM	5	55	0	0	4	60	1	77	4	0	1	82	0	0	1	0	0	1	3	0	4	0	5	7	150
4:45 PM	5	61	0	0	0	66	0	57	4	0	3	61	0	0	0	0	0	0	5	0	5	0	11	10	137
Hourly Total	18	243	1	0	6	262	1	245	16	0	4	262	4	3	1	0	0	8	14	0	20	0	27	34	566
5:00 PM	0	60	0	0	0	60	1	64	5	0	0	70	1	1	0	0	1	2	5	0	5	0	2	10	142
5:15 PM	1	43	2	0	2	46	0	62	1	0	0	63	2	0	2	0	0	4	2	0	3	0	4	5	118
5:30 PM	0	53	0	0	1	53	1	39	4	0	0	44	0	0	3	0	0	3	6	0	5	0	5	11	111
5:45 PM	3	42	1	0	2	46	0	52	3	0	0	55	0	0	0	0	0	0	0	0	4	0	1	4	105
Hourly Total	4	198	3	0	5	205	2	217	13	0	0	232	3	1	5	0	1	9	13	0	17	0	12	30	476
Grand Total	69	1521	19	2	27	1611	15	1684	99	0	12	1798	18	4	20	0	14	42	120	1	156	2	97	279	3730
Approach %	4.3	94.4	1.2	0.1	-	-	0.8	93.7	5.5	0.0	-	-	42.9	9.5	47.6	0.0	-	-	43.0	0.4	55.9	0.7	-	-	-
Total %	1.8	40.8	0.5	0.1	-	43.2	0.4	45.1	2.7	0.0	-	48.2	0.5	0.1	0.5	0.0	-	1.1	3.2	0.0	4.2	0.1	-	7.5	-
Motorcycles	0	8	0	0	-	8	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	13
% Motorcycles	0.0	0.5	0.0	0.0	-	0.5	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.3
Cars & Light Goods	65	1437	17	0	-	1519	15	1615	95	0	-	1725	18	3	16	0	-	37	115	1	148	2	-	266	3547
% Cars & Light Goods	94.2	94.5	89.5	0.0	-	94.3	100.0	95.9	96.0	-	-	95.9	100.0	75.0	80.0	-	-	88.1	95.8	100.0	94.9	100.0	-	95.3	95.1
Buses	0	5	0	0	-	5	0	8	3	0	-	11	0	0	0	0	-	0	2	0	0	0	-	2	18
% Buses	0.0	0.3	0.0	0.0	-	0.3	0.0	0.5	3.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	1.7	0.0	0.0	0.0	-	0.7	0.5
Single-Unit Trucks	0	55	0	2	-	57	0	46	1	0	-	47	0	0	0	0	-	0	2	0	2	0	-	4	108
% Single-Unit Trucks	0.0	3.6	0.0	100.0	-	3.5	0.0	2.7	1.0	-	-	2.6	0.0	0.0	0.0	-	-	0.0	1.7	0.0	1.3	0.0	-	1.4	2.9
Articulated Trucks	1	10	0	0	-	11	0	9	0	0	-	9	0	0	0	0	-	0	1	0	0	0	-	1	21
% Articulated Trucks	1.4	0.7	0.0	0.0	-	0.7	0.0	0.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.8	0.0	0.0	0.0	-	0.4	0.6
Bicycles on Road	3	6	2	0	-	11	0	1	0	0	-	1	0	1	4	0	-	5	0	0	6	0	-	6	23
% Bicycles on Road	4.3	0.4	10.5	0.0	-	0.7	0.0	0.1	0.0	-	-	0.1	0.0	25.0	20.0	-	-	11.9	0.0	0.0	3.8	0.0	-	2.2	0.6
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	7.4	-	-	-	-	-	0.0	-	-	-	-	-	14.3	-	-	-	-	-	1.0	-	-
Pedestrians	-	-	-	-	25	-	-	-	-	-	12	-	-	-	-	-	12	-	-	-	-	-	96	-	-
% Pedestrians	-	-	-	-	92.6	-	-	-	-	-	100.0	-	-	-	-	-	85.7	-	-	-	-	-	99.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Geddes Street & Mill Street
Site Code: 220311
Start Date: 05/19/2022
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Geddes Street & Mill Street
Site Code: 220311
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Turning Movement Peak Hour Data (8:15 AM)

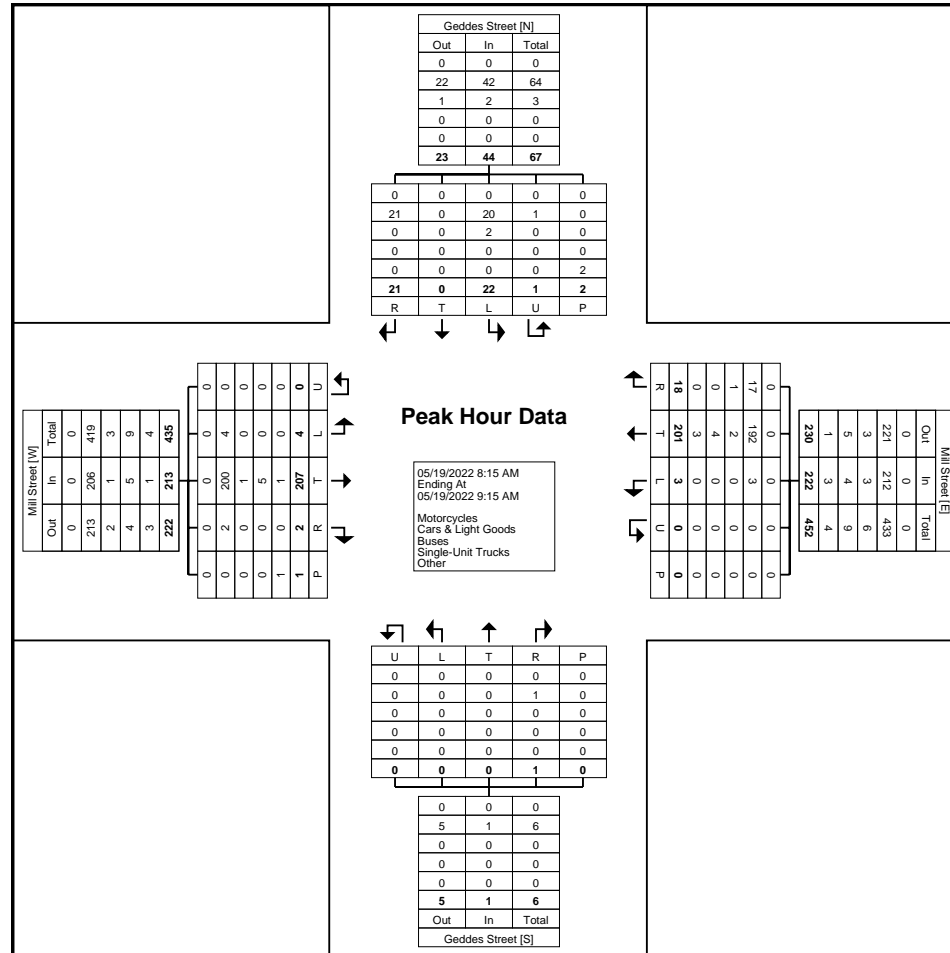
Start Time	Mill Street Eastbound						Mill Street Westbound						Geddes Street Northbound						Geddes Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:15 AM	1	51	0	0	0	52	1	37	1	0	0	39	0	0	0	0	0	0	4	0	5	0	0	9	100
8:30 AM	0	68	1	0	1	69	2	54	4	0	0	60	0	0	0	0	0	0	8	0	8	0	2	16	145
8:45 AM	3	53	1	0	0	57	0	70	9	0	0	79	0	0	1	0	0	1	5	0	5	1	0	11	148
9:00 AM	0	35	0	0	0	35	0	40	4	0	0	44	0	0	0	0	0	0	5	0	3	0	0	8	87
Total	4	207	2	0	1	213	3	201	18	0	0	222	0	0	1	0	0	1	22	0	21	1	2	44	480
Approach %	1.9	97.2	0.9	0.0	-	-	1.4	90.5	8.1	0.0	-	-	0.0	0.0	100.0	0.0	-	-	50.0	0.0	47.7	2.3	-	-	-
Total %	0.8	43.1	0.4	0.0	-	44.4	0.6	41.9	3.8	0.0	-	46.3	0.0	0.0	0.2	0.0	-	0.2	4.6	0.0	4.4	0.2	-	9.2	-
PHF	0.333	0.761	0.500	0.000	-	0.772	0.375	0.718	0.500	0.000	-	0.703	0.000	0.000	0.250	0.000	-	0.250	0.688	0.000	0.656	0.250	-	0.688	0.811
Motorcycles	0	0	0	0	-	0	0	0	0	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	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0
Cars & Light Goods	4	200	2	0	-	206	3	192	17	0	-	212	0	0	1	0	-	1	20	0	21	1	-	42	461
% Cars & Light Goods	100.0	96.6	100.0	-	-	96.7	100.0	95.5	94.4	-	-	95.5	-	-	100.0	-	-	100.0	90.9	-	100.0	100.0	-	95.5	96.0
Buses	0	1	0	0	-	1	0	2	1	0	-	3	0	0	0	0	-	0	2	0	0	0	-	2	6
% Buses	0.0	0.5	0.0	-	-	0.5	0.0	1.0	5.6	-	-	1.4	-	-	0.0	-	-	0.0	9.1	-	0.0	0.0	-	4.5	1.3
Single-Unit Trucks	0	5	0	0	-	5	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	9
% Single-Unit Trucks	0.0	2.4	0.0	-	-	2.3	0.0	2.0	0.0	-	-	1.8	-	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	1.9
Articulated Trucks	0	1	0	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.5	0.0	-	-	0.5	0.0	1.5	0.0	-	-	1.4	-	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data Plot (8:15 AM)



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Count Name: Geddes Street & Mill Street
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Turning Movement Peak Hour Data (12:00 PM)

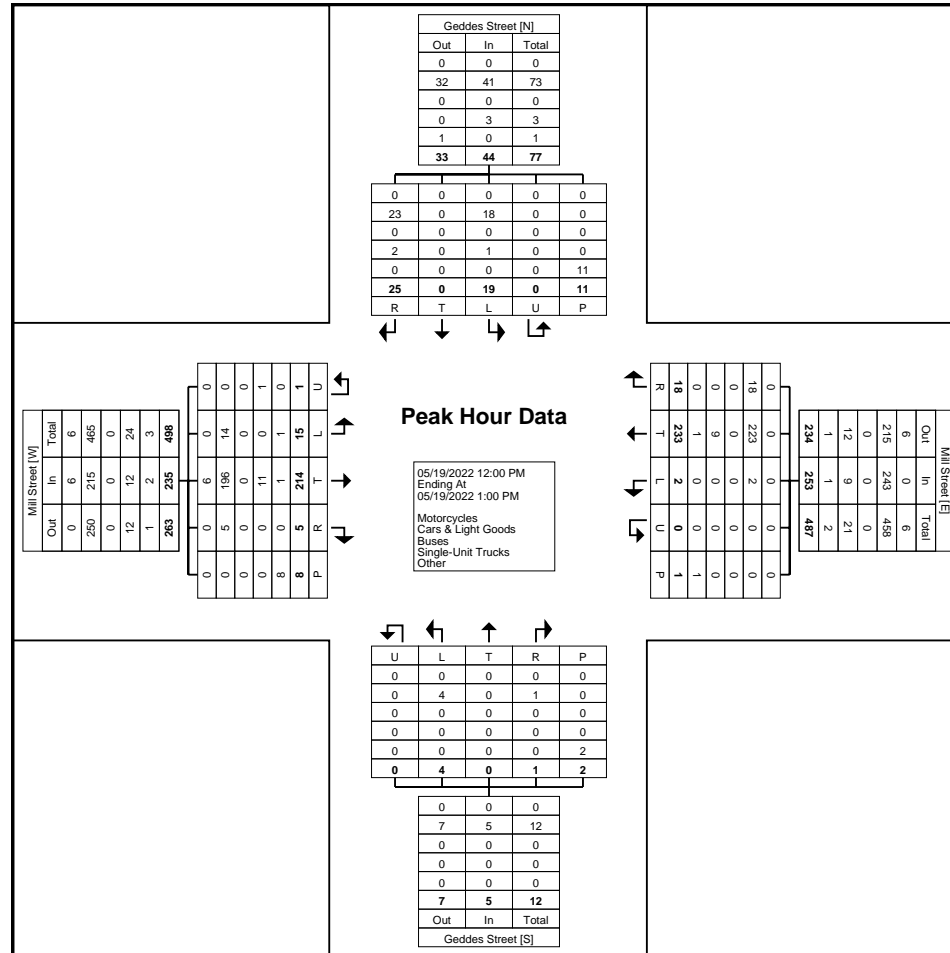
Start Time	Mill Street Eastbound						Mill Street Westbound						Geddes Street Northbound						Geddes Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	3	51	3	0	1	57	0	67	3	0	0	70	1	0	0	0	1	1	3	0	4	0	0	7	135
12:15 PM	3	49	0	1	7	53	2	56	6	0	0	64	2	0	0	0	0	2	4	0	3	0	3	7	126
12:30 PM	4	55	1	0	0	60	0	52	2	0	0	54	0	0	1	0	0	1	8	0	11	0	7	19	134
12:45 PM	5	59	1	0	0	65	0	58	7	0	1	65	1	0	0	0	1	1	4	0	7	0	1	11	142
Total	15	214	5	1	8	235	2	233	18	0	1	253	4	0	1	0	2	5	19	0	25	0	11	44	537
Approach %	6.4	91.1	2.1	0.4	-	-	0.8	92.1	7.1	0.0	-	-	80.0	0.0	20.0	0.0	-	-	43.2	0.0	56.8	0.0	-	-	-
Total %	2.8	39.9	0.9	0.2	-	43.8	0.4	43.4	3.4	0.0	-	47.1	0.7	0.0	0.2	0.0	-	0.9	3.5	0.0	4.7	0.0	-	8.2	-
PHF	0.750	0.907	0.417	0.250	-	0.904	0.250	0.869	0.643	0.000	-	0.904	0.500	0.000	0.250	0.000	-	0.625	0.594	0.000	0.568	0.000	-	0.579	0.945
Motorcycles	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	6
% Motorcycles	0.0	2.8	0.0	0.0	-	2.6	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.1
Cars & Light Goods	14	196	5	0	-	215	2	223	18	0	-	243	4	0	1	0	-	5	18	0	23	0	-	41	504
% Cars & Light Goods	93.3	91.6	100.0	0.0	-	91.5	100.0	95.7	100.0	-	-	96.0	100.0	-	100.0	-	-	100.0	94.7	-	92.0	-	-	93.2	93.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	11	0	1	-	12	0	9	0	0	-	9	0	0	0	0	-	0	1	0	2	0	-	3	24
% Single-Unit Trucks	0.0	5.1	0.0	100.0	-	5.1	0.0	3.9	0.0	-	-	3.6	0.0	-	0.0	-	-	0.0	5.3	-	8.0	-	-	6.8	4.5
Articulated Trucks	1	1	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	6.7	0.5	0.0	0.0	-	0.9	0.0	0.4	0.0	-	-	0.4	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data Plot (12:00 PM)



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Site Code: 220311
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Page No: 8

Turning Movement Peak Hour Data (3:00 PM)

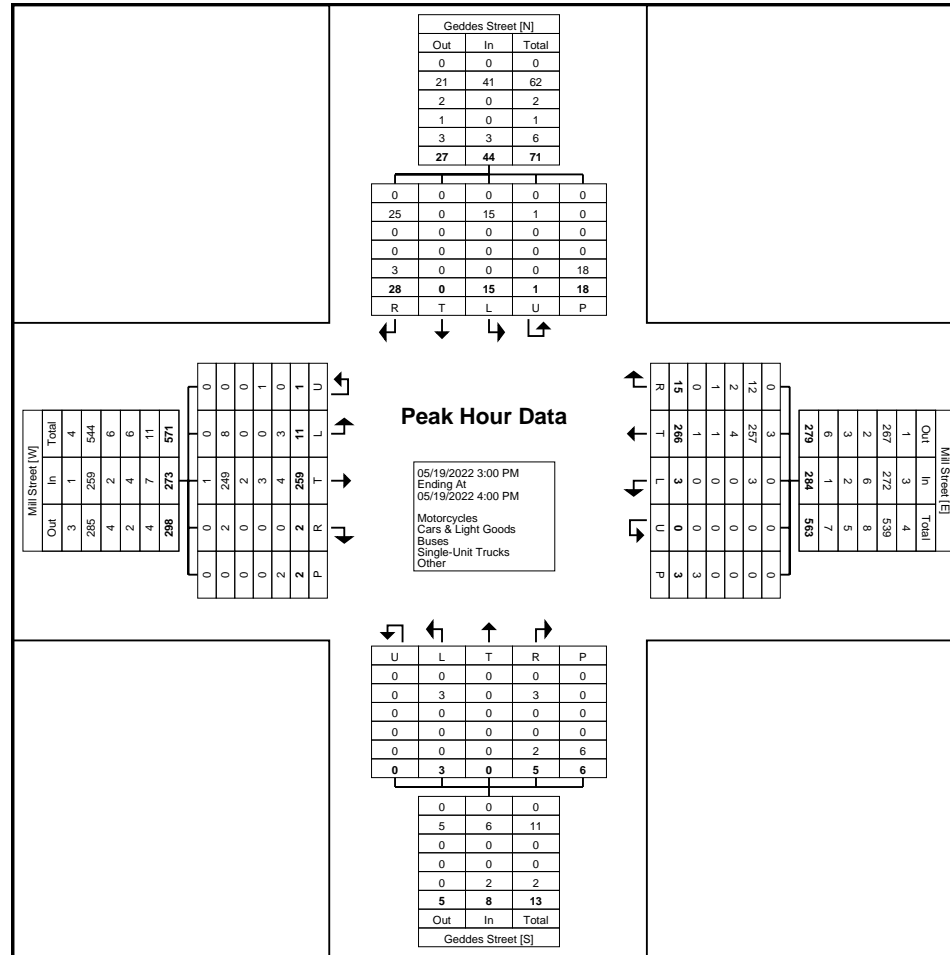
Start Time	Mill Street Eastbound						Mill Street Westbound						Geddes Street Northbound						Geddes Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	4	69	0	0	0	73	0	63	2	0	1	65	2	0	1	0	1	3	4	0	7	0	5	11	152
3:15 PM	2	65	2	0	0	69	0	77	6	0	1	83	0	0	0	0	1	0	0	0	7	0	3	7	159
3:30 PM	1	51	0	1	1	53	0	61	3	0	0	64	1	0	3	0	3	4	5	0	8	1	9	14	135
3:45 PM	4	74	0	0	1	78	3	65	4	0	1	72	0	0	1	0	1	1	6	0	6	0	1	12	163
Total	11	259	2	1	2	273	3	266	15	0	3	284	3	0	5	0	6	8	15	0	28	1	18	44	609
Approach %	4.0	94.9	0.7	0.4	-	-	1.1	93.7	5.3	0.0	-	-	37.5	0.0	62.5	0.0	-	-	34.1	0.0	63.6	2.3	-	-	-
Total %	1.8	42.5	0.3	0.2	-	44.8	0.5	43.7	2.5	0.0	-	46.6	0.5	0.0	0.8	0.0	-	1.3	2.5	0.0	4.6	0.2	-	7.2	-
PHF	0.688	0.875	0.250	0.250	-	0.875	0.250	0.864	0.625	0.000	-	0.855	0.375	0.000	0.417	0.000	-	0.500	0.625	0.000	0.875	0.250	-	0.786	0.934
Motorcycles	0	1	0	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Motorcycles	0.0	0.4	0.0	0.0	-	0.4	0.0	1.1	0.0	-	-	1.1	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.7
Cars & Light Goods	8	249	2	0	-	259	3	257	12	0	-	272	3	0	3	0	-	6	15	0	25	1	-	41	578
% Cars & Light Goods	72.7	96.1	100.0	0.0	-	94.9	100.0	96.6	80.0	-	-	95.8	100.0	-	60.0	-	-	75.0	100.0	-	89.3	100.0	-	93.2	94.9
Buses	0	2	0	0	-	2	0	4	2	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	8
% Buses	0.0	0.8	0.0	0.0	-	0.7	0.0	1.5	13.3	-	-	2.1	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	1.3
Single-Unit Trucks	0	3	0	1	-	4	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	6
% Single-Unit Trucks	0.0	1.2	0.0	100.0	-	1.5	0.0	0.4	6.7	-	-	0.7	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	1.0
Articulated Trucks	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	0.0	0.8	0.0	0.0	-	0.7	0.0	0.4	0.0	-	-	0.4	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.5
Bicycles on Road	3	2	0	0	-	5	0	0	0	0	-	0	0	0	2	0	-	2	0	0	3	0	-	3	10
% Bicycles on Road	27.3	0.8	0.0	0.0	-	1.8	0.0	0.0	0.0	-	-	0.0	0.0	-	40.0	-	-	25.0	0.0	-	10.7	0.0	-	6.8	1.6
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-	-	-	-	5.6	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-	-	-	-	94.4	-	-



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Turning Movement Peak Hour Data Plot (3:00 PM)

Appendix C

Base Year Operation Reports



Lanes, Volumes, Timings
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	4	207	2	3	201	18	0	0	1	23	0	21
Future Volume (vph)	4	207	2	3	201	18	0	0	1	23	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.989			0.865			0.935	
Flt Protected		0.999			0.999						0.975	
Satd. Flow (prot)	0	1842	0	0	1788	0	0	1644	0	0	1655	0
Flt Permitted		0.999			0.999						0.975	
Satd. Flow (perm)	0	1842	0	0	1788	0	0	1644	0	0	1655	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		123.8			272.2			49.2			125.1	
Travel Time (s)		11.1			24.5			3.5			9.0	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	3%	0%	0%	5%	6%	0%	0%	0%	9%	0%	0%
Adj. Flow (vph)	5	256	2	4	248	22	0	0	1	28	0	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	263	0	0	274	0	0	1	0	0	54	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.4%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base AM

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	207	2	3	201	18	0	0	1	23	0	21
Future Vol, veh/h	4	207	2	3	201	18	0	0	1	23	0	21
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	3	0	0	5	6	0	0	0	9	0	0
Mvmt Flow	5	256	2	4	248	22	0	0	1	28	0	26

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	272	0	0	258
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	1303	-	-	1318
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1301	-	-	1318
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	9.6	12.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	787	1301	-	-	1318	-	-	556
HCM Lane V/C Ratio	0.002	0.004	-	-	0.003	-	-	0.098
HCM Control Delay (s)	9.6	7.8	0	0	7.7	0	0	12.2
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Lanes, Volumes, Timings
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	4	237	1	1	162	22	1	2	0	44	0	11
Future Volume (vph)	4	237	1	1	162	22	1	2	0	44	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.984						0.973	
Flt Protected		0.999						0.988			0.962	
Satd. Flow (prot)	0	1809	0	0	1722	0	0	1365	0	0	1458	0
Flt Permitted		0.999						0.988			0.962	
Satd. Flow (perm)	0	1809	0	0	1722	0	0	1365	0	0	1458	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		151.5			155.3			23.5			176.8	
Travel Time (s)		13.6			14.0			1.7			12.7	
Confl. Peds. (#/hr)	42						42					
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	0%	100%	3%	46%	0%	50%	0%	23%	0%	18%
Adj. Flow (vph)	5	320	1	1	219	30	1	3	0	59	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	326	0	0	250	0	0	4	0	0	74	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base AM

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	237	1	1	162	22	1	2	0	44	0	11
Future Vol, veh/h	4	237	1	1	162	22	1	2	0	44	0	11
Conflicting Peds, #/hr	42	0	0	0	0	42	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	5	0	100	3	46	0	50	0	23	0	18
Mvmt Flow	5	320	1	1	219	30	1	3	0	59	0	15

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	291	0	0	321
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	5.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	3.1
Pot Cap-1 Maneuver	1282	-	-	844
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1236	-	-	844
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	15.2	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	1236	-	-	844	-	-	400
HCM Lane V/C Ratio	0.011	0.004	-	-	0.002	-	-	0.186
HCM Control Delay (s)	15.2	7.9	0	-	9.3	0	-	16
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.7

Lanes, Volumes, Timings
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	12	259	2	3	266	15	3	0	5	16	0	28
Future Volume (vph)	12	259	2	3	266	15	3	0	5	16	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.993			0.916			0.914	
Flt Protected		0.998						0.982			0.982	
Satd. Flow (prot)	0	1836	0	0	1833	0	0	1709	0	0	1705	0
Flt Permitted		0.998						0.982			0.982	
Satd. Flow (perm)	0	1836	0	0	1833	0	0	1709	0	0	1705	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		123.8			272.2			49.2			125.1	
Travel Time (s)		11.1			24.5			3.5			9.0	
Confl. Peds. (#/hr)	18		6	6		18	2		3	3		2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	3%	0%	0%	2%	20%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	13	278	2	3	286	16	3	0	5	17	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	293	0	0	305	0	0	8	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.2%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base PM

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	12	259	2	3	266	15	3	0	5	16	0	28
Future Vol, veh/h	12	259	2	3	266	15	3	0	5	16	0	28
Conflicting Peds, #/hr	18	0	6	6	0	18	2	0	3	3	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	8	3	0	0	2	20	0	0	0	0	0	0
Mvmt Flow	13	278	2	3	286	16	3	0	5	17	0	30

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	320	0	0	286
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.18	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.272	-	-	2.2
Pot Cap-1 Maneuver	1207	-	-	1288
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1189	-	-	1281
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	11.7	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	545	1189	-	-	1281	-	-	545
HCM Lane V/C Ratio	0.016	0.011	-	-	0.003	-	-	0.087
HCM Control Delay (s)	11.7	8.1	0	0	7.8	0	0	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Lanes, Volumes, Timings
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	16	183	0	0	225	24	0	0	0	31	0	10
Future Volume (vph)	16	183	0	0	225	24	0	0	0	31	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.987						0.966	
Flt Protected		0.996									0.964	
Satd. Flow (prot)	0	1866	0	0	1754	0	0	1900	0	0	1369	0
Flt Permitted		0.996									0.964	
Satd. Flow (perm)	0	1866	0	0	1754	0	0	1900	0	0	1369	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		151.5			155.3			23.5			176.8	
Travel Time (s)		13.6			14.0			1.7			12.7	
Confl. Peds. (#/hr)	54					54						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	1%	0%	0%	5%	25%	0%	0%	0%	39%	0%	0%
Adj. Flow (vph)	20	229	0	0	281	30	0	0	0	39	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	311	0	0	0	0	52	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.9%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
2022 Base PM

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	16	183	0	0	225	24	0	0	0	31	0	10
Future Vol, veh/h	16	183	0	0	225	24	0	0	0	31	0	10
Conflicting Peds, #/hr	54	0	0	0	0	54	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	6	1	0	0	5	25	0	0	0	39	0	0
Mvmt Flow	20	229	0	0	281	30	0	0	0	39	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	365	0	0	229
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.16	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.254	-	-	2.2
Pot Cap-1 Maneuver	1172	-	-	1351
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1118	-	-	1351
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	0	16
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1118	-	-	1351	-	-	378
HCM Lane V/C Ratio	-	0.018	-	-	-	-	-	0.136
HCM Control Delay (s)	0	8.3	0	-	0	-	-	16
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.5

Appendix D

2028 Background Operation Reports



Lanes, Volumes, Timings
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
Background AM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	5	233	2	3	226	20	0	0	1	26	0	24
Future Volume (vph)	5	233	2	3	226	20	0	0	1	26	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.989			0.865			0.935	
Flt Protected		0.999			0.999						0.975	
Satd. Flow (prot)	0	1842	0	0	1788	0	0	1644	0	0	1655	0
Flt Permitted		0.999			0.999						0.975	
Satd. Flow (perm)	0	1842	0	0	1788	0	0	1644	0	0	1655	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		123.8			272.2			49.2			125.1	
Travel Time (s)		11.1			24.5			3.5			9.0	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	3%	0%	0%	5%	6%	0%	0%	0%	9%	0%	0%
Adj. Flow (vph)	6	288	2	4	279	25	0	0	1	32	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	0	308	0	0	1	0	0	62	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.8%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
Background AM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	233	2	3	226	20	0	0	1	26	0	24
Future Vol, veh/h	5	233	2	3	226	20	0	0	1	26	0	24
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	3	0	0	5	6	0	0	0	9	0	0
Mvmt Flow	6	288	2	4	279	25	0	0	1	32	0	30

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	306	0	290	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	2.2	-
Pot Cap-1 Maneuver	1266	-	1283	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1264	-	1283	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	9.8	13
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	755	1264	-	-	1283	-	-	511
HCM Lane V/C Ratio	0.002	0.005	-	-	0.003	-	-	0.121
HCM Control Delay (s)	9.8	7.9	0	0	7.8	0	0	13
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

Lanes, Volumes, Timings
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Background AM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	5	267	1	1	182	25	1	2	0	50	0	12
Future Volume (vph)	5	267	1	1	182	25	1	2	0	50	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt				0.984							0.974	
Flt Protected		0.999						0.988			0.961	
Satd. Flow (prot)	0	1810	0	0	1722	0	0	1365	0	0	1457	0
Flt Permitted		0.999						0.988			0.961	
Satd. Flow (perm)	0	1810	0	0	1722	0	0	1365	0	0	1457	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		151.5			155.3			23.5			176.8	
Travel Time (s)		13.6			14.0			1.7			12.7	
Confl. Peds. (#/hr)	42						42					
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	0%	100%	3%	46%	0%	50%	0%	23%	0%	18%
Adj. Flow (vph)	7	361	1	1	246	34	1	3	0	68	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	281	0	0	4	0	0	84	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Background AM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	267	1	1	182	25	1	2	0	50	0	12
Future Vol, veh/h	5	267	1	1	182	25	1	2	0	50	0	12
Conflicting Peds, #/hr	42	0	0	0	0	42	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	5	0	100	3	46	0	50	0	23	0	18
Mvmt Flow	7	361	1	1	246	34	1	3	0	68	0	16

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	322	0	0	362
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	5.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	3.1
Pot Cap-1 Maneuver	1249	-	-	809
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1205	-	-	809
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	16.5	18.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	318	1205	-	-	809	-	-	356
HCM Lane V/C Ratio	0.013	0.006	-	-	0.002	-	-	0.235
HCM Control Delay (s)	16.5	8	0	-	9.5	0	-	18.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.9

Lanes, Volumes, Timings
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
Background PM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	14	292	2	3	300	17	3	0	6	18	0	32
Future Volume (vph)	14	292	2	3	300	17	3	0	6	18	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.993			0.910			0.913	
Flt Protected		0.998						0.984			0.982	
Satd. Flow (prot)	0	1835	0	0	1833	0	0	1701	0	0	1703	0
Flt Permitted		0.998						0.984			0.982	
Satd. Flow (perm)	0	1835	0	0	1833	0	0	1701	0	0	1703	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		123.8			272.2			49.2			125.1	
Travel Time (s)		11.1			24.5			3.5			9.0	
Confl. Peds. (#/hr)	18		6	6		18	2		3	3		2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	3%	0%	0%	2%	20%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	314	2	3	323	18	3	0	6	19	0	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	331	0	0	344	0	0	9	0	0	53	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS
Background PM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	14	292	2	3	300	17	3	0	6	18	0	32
Future Vol, veh/h	14	292	2	3	300	17	3	0	6	18	0	32
Conflicting Peds, #/hr	18	0	6	6	0	18	2	0	3	3	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	8	3	0	0	2	20	0	0	0	0	0	0
Mvmt Flow	15	314	2	3	323	18	3	0	6	19	0	34

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	359	0	0	322
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.18	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.272	-	-	2.2
Pot Cap-1 Maneuver	1167	-	-	1249
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1149	-	-	1243
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	12.2	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	513	1149	-	-	1243	-	-	501
HCM Lane V/C Ratio	0.019	0.013	-	-	0.003	-	-	0.107
HCM Control Delay (s)	12.2	8.2	0	-	7.9	0	-	13
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Lanes, Volumes, Timings
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Background PM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	18	206	0	0	253	27	0	0	0	35	0	11
Future Volume (vph)	18	206	0	0	253	27	0	0	0	35	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.987						0.967	
Flt Protected		0.996									0.963	
Satd. Flow (prot)	0	1866	0	0	1754	0	0	1900	0	0	1365	0
Flt Permitted		0.996									0.963	
Satd. Flow (perm)	0	1866	0	0	1754	0	0	1900	0	0	1365	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		151.5			155.3			23.5			176.8	
Travel Time (s)		13.6			14.0			1.7			12.7	
Confl. Peds. (#/hr)	54					54						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	1%	0%	0%	5%	25%	0%	0%	0%	39%	0%	0%
Adj. Flow (vph)	23	258	0	0	316	34	0	0	0	44	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	281	0	0	350	0	0	0	0	58	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.7%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Background PM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	18	206	0	0	253	27	0	0	0	35	0	11
Future Vol, veh/h	18	206	0	0	253	27	0	0	0	35	0	11
Conflicting Peds, #/hr	54	0	0	0	0	54	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	6	1	0	0	5	25	0	0	0	39	0	0
Mvmt Flow	23	258	0	0	316	34	0	0	0	44	0	14

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	404	0	258	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.16	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.254	-	2.2	-
Pot Cap-1 Maneuver	1133	-	1318	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1081	-	1318	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	0	17.9
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1081	-	-	1318	-	-	337
HCM Lane V/C Ratio	-	0.021	-	-	-	-	-	0.171
HCM Control Delay (s)	0	8.4	0	-	0	-	-	17.9
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.6

Appendix E

2028 Total Operation Reports



Lanes, Volumes, Timings

1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS

Total AM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	5	233	8	14	226	20	11	0	17	26	0	24
Future Volume (vph)	5	233	8	14	226	20	11	0	17	26	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.989			0.919			0.935	
Frt Protected		0.999			0.997			0.980			0.975	
Satd. Flow (prot)	0	1838	0	0	1787	0	0	1711	0	0	1655	0
Frt Permitted		0.999			0.997			0.980			0.975	
Satd. Flow (perm)	0	1838	0	0	1787	0	0	1711	0	0	1655	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		123.8			272.2			49.2			125.1	
Travel Time (s)		11.1			24.5			3.5			9.0	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	3%	0%	0%	5%	6%	0%	0%	0%	9%	0%	0%
Adj. Flow (vph)	6	288	10	17	279	25	14	0	21	32	0	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	304	0	0	321	0	0	35	0	0	62	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.7%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS

Total AM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	233	8	14	226	20	11	0	17	26	0	24
Future Vol, veh/h	5	233	8	14	226	20	11	0	17	26	0	24
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	3	0	0	5	6	0	0	0	9	0	0
Mvmt Flow	6	288	10	17	279	25	14	0	21	32	0	30

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	306	0	0	298
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	1266	-	-	1275
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1264	-	-	1275
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.4	12.3	13.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	531	1264	-	-	1275	-	-	478
HCM Lane V/C Ratio	0.065	0.005	-	-	0.014	-	-	0.129
HCM Control Delay (s)	12.3	7.9	0	-	7.9	0	-	13.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

Lanes, Volumes, Timings
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Total AM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (vph)	5	283	1	1	192	25	1	2	0	50	0	13
Future Volume (vph)	5	283	1	1	192	25	1	2	0	50	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.984						0.972	
Frt Protected		0.999						0.988			0.962	
Satd. Flow (prot)	0	1809	0	0	1726	0	0	1365	0	0	1457	0
Frt Permitted		0.999						0.988			0.962	
Satd. Flow (perm)	0	1809	0	0	1726	0	0	1365	0	0	1457	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		151.5			155.3			23.5			176.8	
Travel Time (s)		13.6			14.0			1.7			12.7	
Confl. Peds. (#/hr)	42					42						
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	5%	0%	100%	3%	46%	0%	50%	0%	23%	0%	18%
Adj. Flow (vph)	7	382	1	1	259	34	1	3	0	68	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	390	0	0	294	0	0	4	0	0	86	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM 6th TWSC
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Total AM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	283	1	1	192	25	1	2	0	50	0	13
Future Vol, veh/h	5	283	1	1	192	25	1	2	0	50	0	13
Conflicting Peds, #/hr	42	0	0	0	0	42	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	5	0	100	3	46	0	50	0	23	0	18
Mvmt Flow	7	382	1	1	259	34	1	3	0	68	0	18

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	335	0	0	383
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	5.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	3.1
Pot Cap-1 Maneuver	1236	-	-	792
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1192	-	-	792
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	17.1	19.1
HCM LOS			C	C

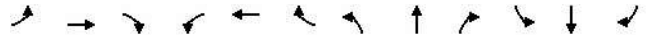
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	302	1192	-	-	792	-	-	340
HCM Lane V/C Ratio	0.013	0.006	-	-	0.002	-	-	0.25
HCM Control Delay (s)	17.1	8	0	-	9.6	0	-	19.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1

Lanes, Volumes, Timings

1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS

Total PM (Five-Year Horizon)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	14	292	23	21	300	17	19	0	23	18	1	32
Future Volume (vph)	14	292	23	21	300	17	19	0	23	18	1	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.993			0.925			0.915	
Frt Protected		0.998			0.997			0.978			0.983	
Satd. Flow (prot)	0	1823	0	0	1830	0	0	1719	0	0	1709	0
Frt Permitted		0.998			0.997			0.978			0.983	
Satd. Flow (perm)	0	1823	0	0	1830	0	0	1719	0	0	1709	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		123.8			272.2			49.2			125.1	
Travel Time (s)		11.1			24.5			3.5			9.0	
Confl. Peds. (#/hr)	18		6	6		18	2		3	3		2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	8%	3%	0%	0%	2%	20%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	314	25	23	323	18	20	0	25	19	1	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	354	0	0	364	0	0	45	0	0	54	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.1%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC

1: Geddes Street & East Mill Street

19 East Mill Street, Elora TIS

Total PM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	292	23	21	300	17	19	0	23	18	1	32
Future Vol, veh/h	14	292	23	21	300	17	19	0	23	18	1	32
Conflicting Peds, #/hr	18	0	6	6	0	18	2	0	3	3	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	8	3	0	0	2	20	0	0	0	0	0	0
Mvmt Flow	15	314	25	23	323	18	20	0	25	19	1	34

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	359	0	0	345
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.18	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.272	-	-	2.2
Pot Cap-1 Maneuver	1167	-	-	1225
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1149	-	-	1219
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	14.2	13.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	435	1149	-	-	1219	-	-	460
HCM Lane V/C Ratio	0.104	0.013	-	-	0.019	-	-	0.119
HCM Control Delay (s)	14.2	8.2	0	-	8	0	-	13.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4

Lanes, Volumes, Timings
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Total PM (Five-Year Horizon)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	19	222	0	0	270	27	0	0	0	35	0	12
Future Volume (vph)	19	222	0	0	270	27	0	0	0	35	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.988						0.966	
Frt Protected		0.996									0.964	
Satd. Flow (prot)	0	1866	0	0	1757	0	0	1900	0	0	1371	0
Frt Permitted		0.996									0.964	
Satd. Flow (perm)	0	1866	0	0	1757	0	0	1900	0	0	1371	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		151.5			155.3			23.5			176.8	
Travel Time (s)		13.6			14.0			1.7			12.7	
Confl. Peds. (#/hr)	54					54						
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	1%	0%	0%	5%	25%	0%	0%	0%	39%	0%	0%
Adj. Flow (vph)	24	278	0	0	338	34	0	0	0	44	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	302	0	0	372	0	0	0	0	59	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.4%
ICU Level of Service A	
Analysis Period (min)	15

HCM 6th TWSC
2: Irvine Street & East Mill Street

19 East Mill Street, Elora TIS
Total PM (Five-Year Horizon)

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	222	0	0	270	27	0	0	0	35	0	12
Future Vol, veh/h	19	222	0	0	270	27	0	0	0	35	0	12
Conflicting Peds, #/hr	54	0	0	0	0	54	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	6	1	0	0	5	25	0	0	0	39	0	0
Mvmt Flow	24	278	0	0	338	34	0	0	0	44	0	15

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	426	0	0	278
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.16	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2,254	-	-	2.2
Pot Cap-1 Maneuver	1112	-	-	1296
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1061	-	-	1296
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

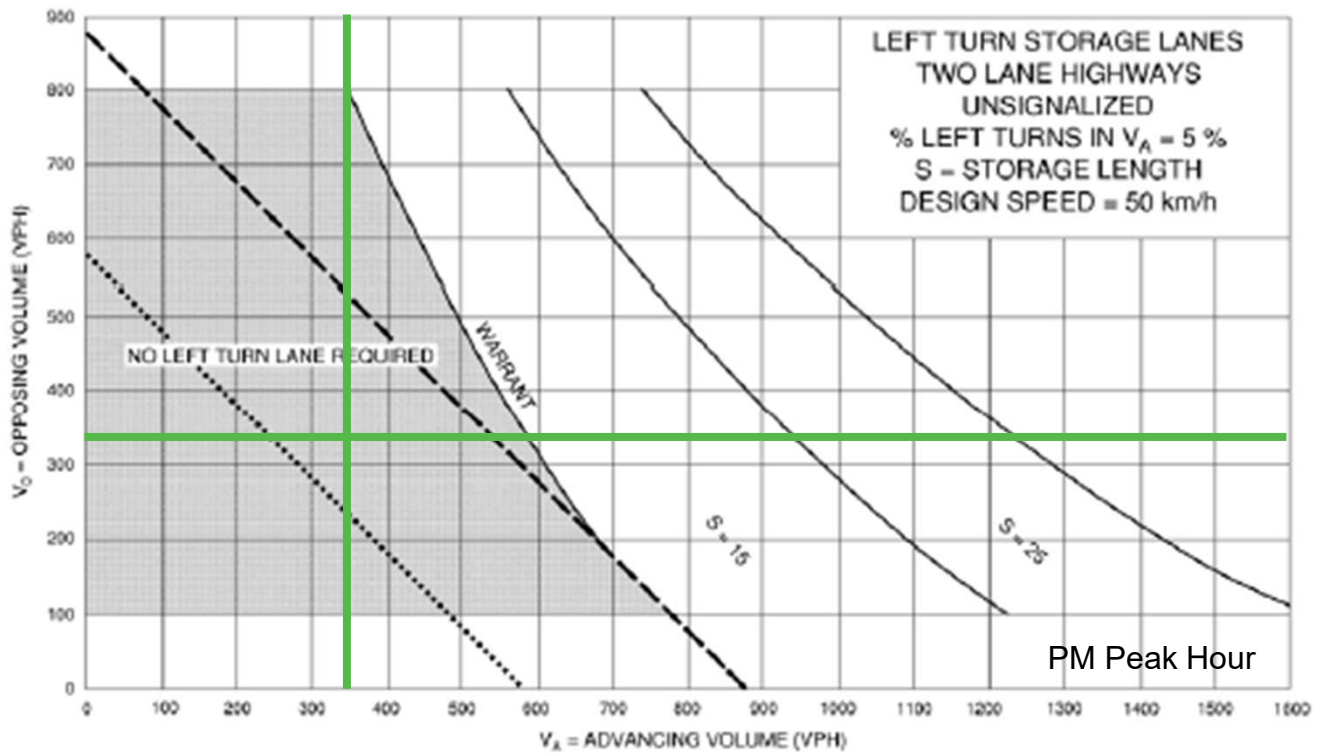
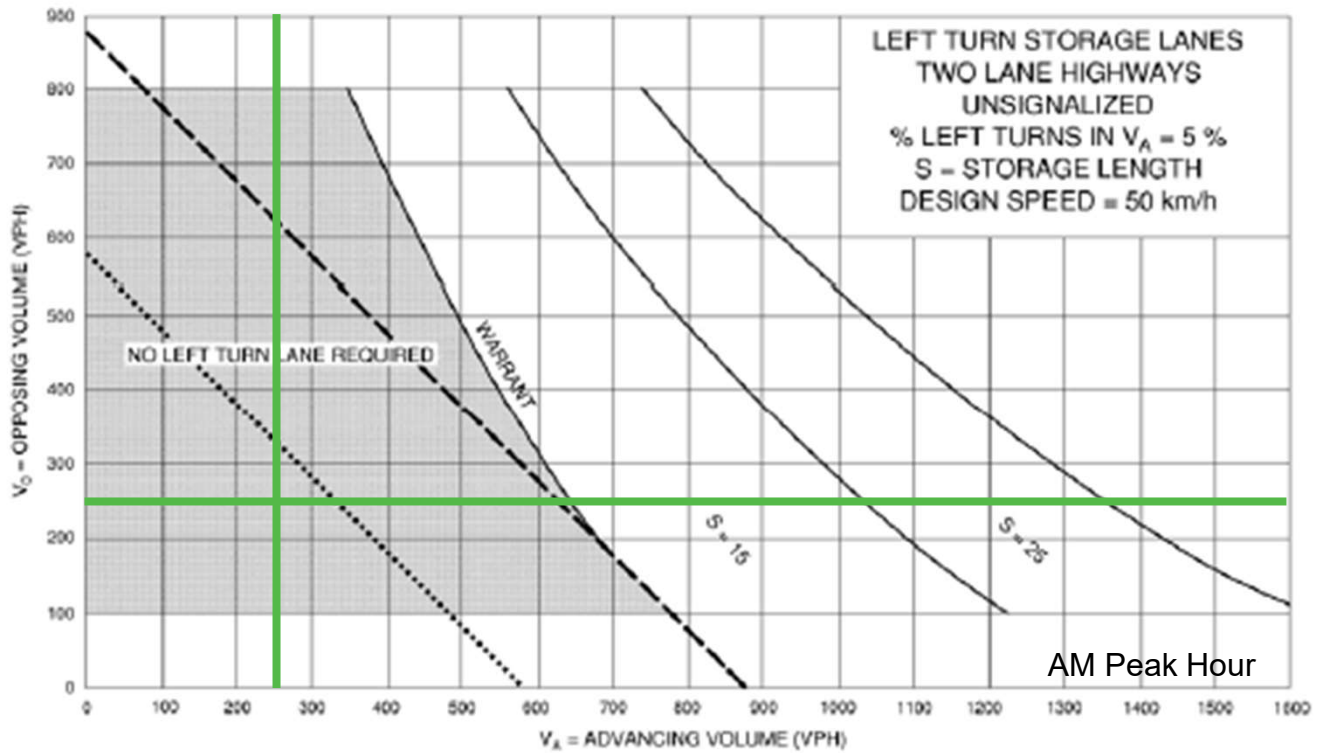
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	0	18.8
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1061	-	-	1296	-	-	319
HCM Lane V/C Ratio	-	0.022	-	-	-	-	-	0.184
HCM Control Delay (s)	0	8.5	0	-	0	-	-	18.8
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.7

Appendix F

Left-Turn Lane Warrant Nomographs





Left-Turn Lane Warrant (Total 2028)