East Road Subdivision, Port Stanley

Transportation Impact Study

Paradigm Transportation Solutions Limited

October 2024
240539

Project Summary

Project Number:

240539

Date and Version:

October 2024
1.0.0

Client:

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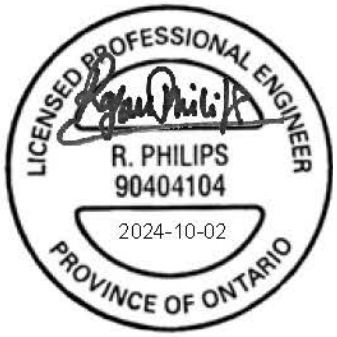
East Road Subdivision, Port Stanley Transportation Impact Study



Rajan Philips, M.Sc. (PI), P.Eng.

Disclaimer

Executive Summary

Content

Paradigm Transportation Solutions Limited has been retained to conduct this Transportation Impact Study (TIS) for a proposed residential subdivision located at East Road and Dexter Line in Port Stanley, Municipality of Central Elgin, Elgin County.

This TIS includes an analysis of existing traffic conditions, a description of the proposed development, traffic forecasts for a five-year horizon from full build-out (2031), and assessment of traffic impacts with recommendations to accommodate the proposed development as appropriate.

Development Concept

The subject lands are located on the west side of East Road (CR 23) across from Dexter Line (CR 24) and at the northerly limits of Beamish Street.

The development is proposed to consist of 32 single-family units, 63 street townhouse units and a medium density block.

Vehicular access is proposed via the northeast extension of Beamish Street, connecting to East Road north of Dexter Line.

The development is anticipated to be completed by 2026.

TIS Scope

The scope of the Transportation Impact Study includes the following:

- **Study Area Intersections:**
  - East Road and Dexter Line (unsignalized);
  - East Road and Hill Street (unsignalized); and
  - Beamish Street Extension to East Road (future).
- **Analysis Periods:** Weekday AM and PM peak hours.
- **Background Developments:**
  - 4980 Sunset Road (commercial/restaurant);
  - Little Creek West Lands (224 units);
  - 279 Hill Street (27 units);

  - 5098-5184 East Road (177 units);
  - Lakeview (60 units); and
  - West Harbour Area (178 units).
- **Traffic Conditions:** Existing (2024) and five-year horizon from full build-out (2031).

Conclusions

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

- **Existing Traffic Conditions:** The study area intersections are operating with acceptable levels of service.
- **Development Trip Generation:** The development is forecast to generate 89 and 107 trips during the AM and PM peak hours, respectively.
- **Background Traffic Conditions:** The study area intersections are forecast to operate with acceptable levels of service.
- **Total Traffic Conditions:** The study area intersections are forecast to operate with acceptable levels of service. The Beamish Street Extension connection to East Road is forecast to operate with LOS B or better during the AM and PM peak hours.
- **Auxiliary Turn-Lanes:** A northbound left-turn lane is not warranted on at the Beamish Street Extension connection to East Road under forecast total traffic conditions.

Recommendations

Based on the findings of this study, it is recommended that the development be considered for approval as proposed, with no transportation related improvements.

Contents

Appendices

Figures

Tables

1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited has been retained to conduct this Transportation Impact Study (TIS) for a proposed residential subdivision located at East Road and Dexter Line in Port Stanley, Municipality of Central Elgin, Elgin County.

The subject lands are located on the west side of East Road (CR 23) across from Dexter Line (CR 24) and at the northerly limits of Beamish Street. **Figure 1.1** illustrates the subject development location.

The development is proposed to consist of 32 single-family units, 63 street townhouse units and a medium density block.

Vehicular access is proposed via the northeast extension of Beamish Street, connecting to East Road north of Dexter Line.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impact resulting from the proposed development. The scope of the study, developed in consultation with Elgin County and Municipality of Central Elgin staff via e-mail in September 2024, includes:

- Assessment of the current traffic and site conditions within the study area;
- Estimates of background traffic growth for a five-year horizon from full build-out (2031);
- Estimates of additional traffic generated by the subject site;
- Analyses of the impact of future traffic on the surrounding road network, including the following study area intersections:
  - East Road and Dexter Line (unsignalized);
  - East Road and Hill Street (unsignalized); and
  - Beamish Street Extension to East Road (future).
- Recommendations necessary to mitigate the site generated traffic in a satisfactory manner.

Appendix A contains the pre-study consultation material and responses from the County and Municipality.

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Location of Subject Site

East Road Subdivision, Port Stanley TIS
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Figure 1.1

2 Existing Conditions

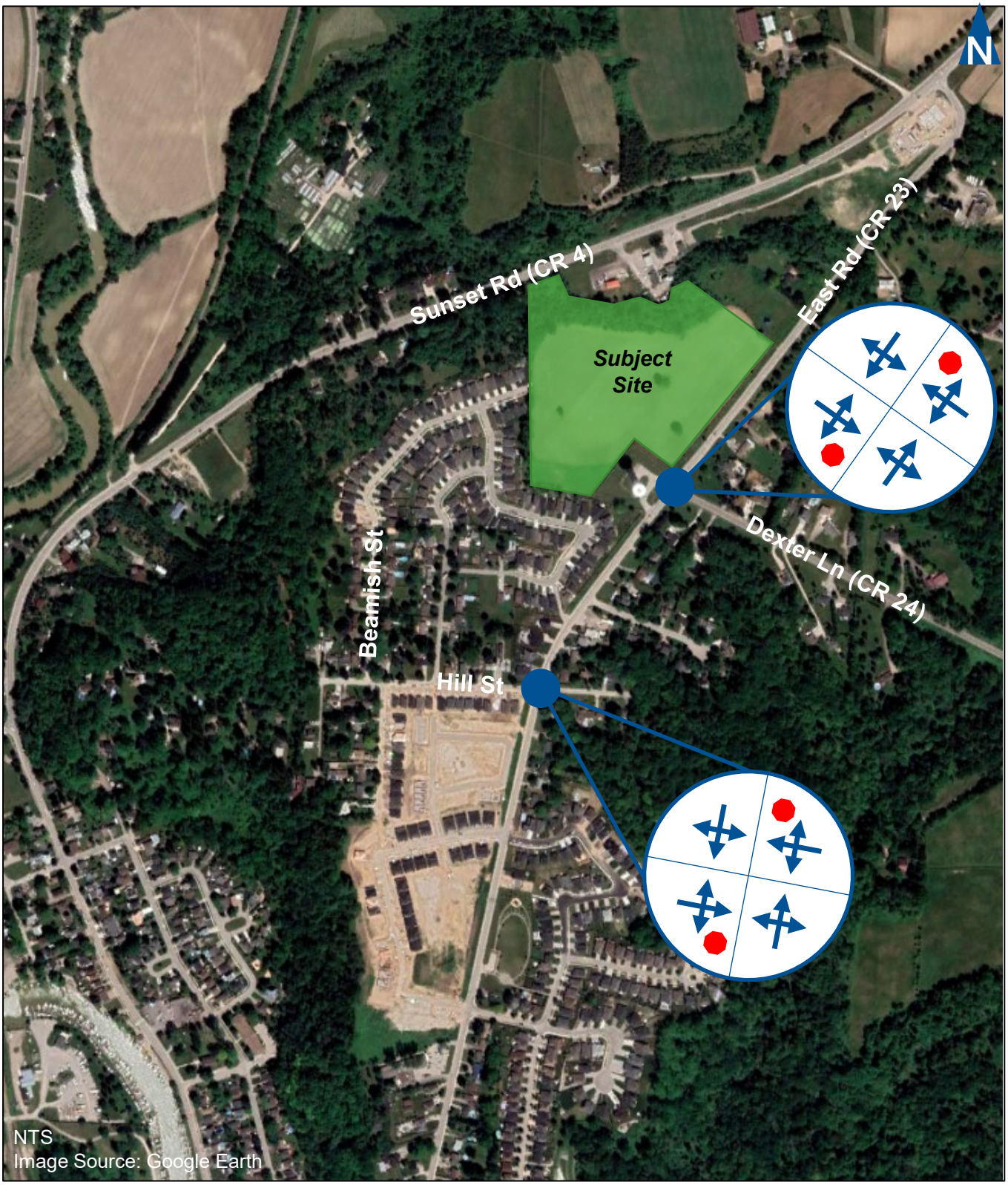
2.1 Existing Roadways

The main roadways near the subject site considered in assessing the traffic impacts of the development include:

- **East Road (County Road 23)** is a north-south county[1] road with a two-lane cross section and a posted speed limit of 50 km/h. Bike lanes are provided on both sides of the roadway.
- **Dexter Line (County Road 24)** is an east-west county road with a two-lane cross section and a posted speed limit of 60 km/h. Bike lanes are provided on both sides of the roadway.
- **Hill Street** is an east-west collector road between East Road and Larry Street, and a local road elsewhere. The roadway has a posted speed limit of 40 km/h. Sidewalks are provided on the south side of the roadway west of East Road.

Figure 2.1 displays the traffic control and lane configuration at the study area intersections.

[1] The Municipality of Central Elgin, *Official Plan – Community of Port Stanley Roads Classification and Widening,* August 2022.



Existing Lane Configuration and Traffic Control

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Figure 2.1

2.2 Traffic Volumes

Turning movement counts were collected by Paradigm on 11 September 2024 and 8 February 2023. **Table 2.1** summarizes the traffic count date and peak hour start times for each intersection.

TABLE 2.1: EXISTING TURNING MOVEMENT COUNT SUMMARY

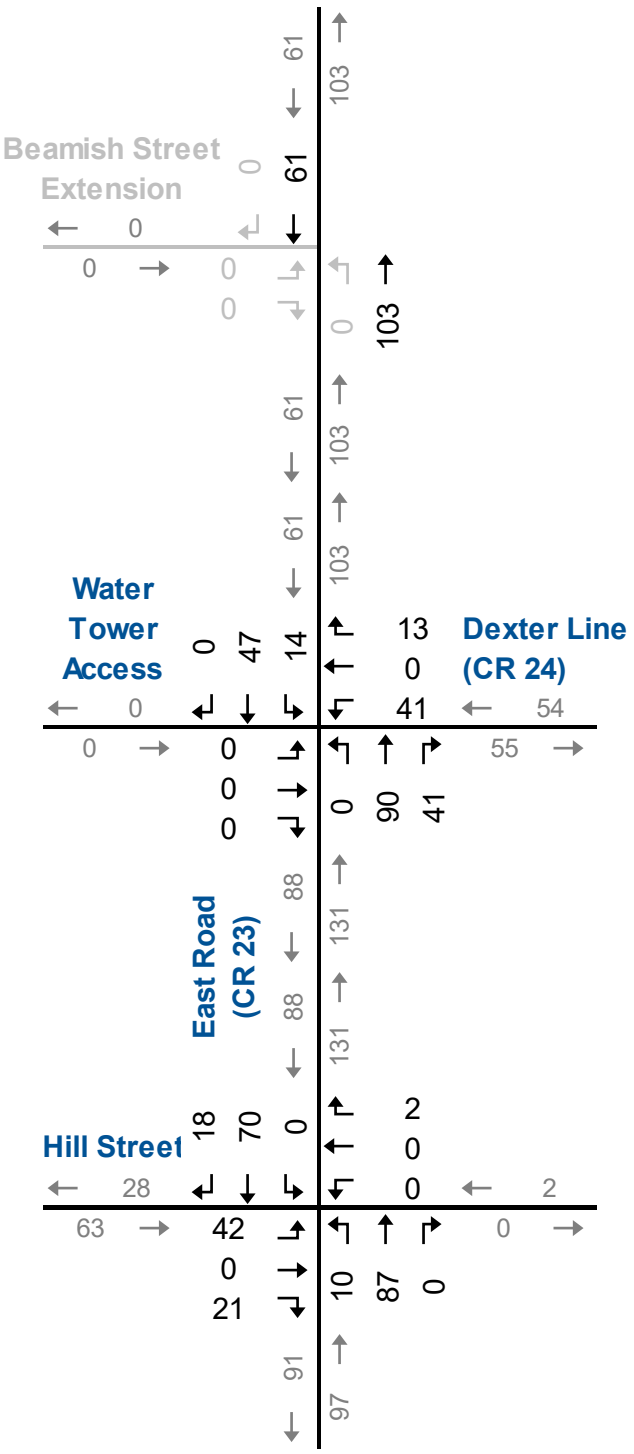
Intersection	Count Date	AM Peak	PM Peak
East Road and Dexter Line	February 8, 2023	9:00 AM	3:30 PM
East Road and Hill Street	September 11, 2024	8:15 AM	3:30 PM

Although the intersection count at East Road and Hill Street was collected in September, it appears that the volumes are comparable or greater than summer data provided by the County/Municipality and collected by Paradigm in Summer 2022/2023. The intersection count at East Road and Dexter Line was conducted under winter conditions and has been adjusted to account for summer peak conditions based on the traffic volumes at the East Road and Hill Street intersection.

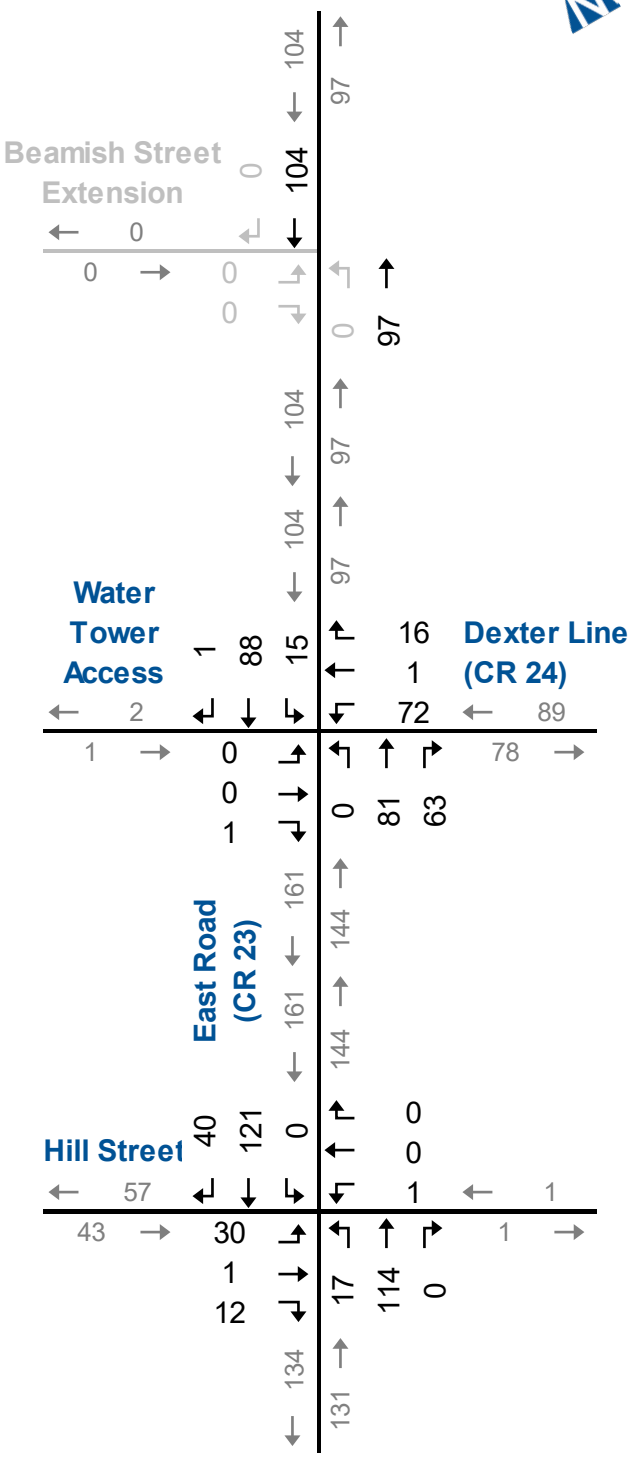
Figure 2.2 illustrates the existing AM and PM weekday peak hour traffic volumes.

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

AM Peak Hour



PM Peak Hour



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Existing Traffic Volumes

2.3 Traffic Operations

The operations at the study area intersections have been assessed using Synchro 11. TIS guidelines are not available for either Elgin County or Municipality of Central Elgin. In the absence of TIS guidelines, this study considers guidelines for the nearby City of St. Thomas[2] which classifies movements as 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;
- v/c ratios for dedicated turning movements of 0.95 or above;
- Level of service (LOS) F for existing geometrics with existing and future traffic volumes; or
- 95th percentile queue lengths for individual movements exceeds available lane storage.

Intersection 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 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 to 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.

Table 2.2 summarizes the results of the intersection operational analysis under existing conditions, including the AM and PM peak hour LOS, v/c ratios, and 95th percentile queues.

The results indicate that the study area intersections are operating with acceptable levels of service, and with no problem movements.

[2] City of St. Thomas, *Design Guidelines Manual Section 5.4*, 2019.

Appendix C contains the detailed Synchro 11 reports.

TABLE 2.2: EXISTING TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach															
				Eastbound				Westbound				Northbound				Southbound			
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach
AM Peak Hour	East Road & Dexter Line	TWSC	LOS	<	A	>	**A**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	0	>	**0**	<	10	>	**10**	<	0	>	**0**	<	8	>	**2**
			V/C	<	0.00	>		<	0.08	>		<	0.00	>		<	0.01	>	
			Q	<	0	>		<	2	>		<	0	>		<	0	>	
	East Road & Hill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**
			Delay	<	10	>	**10**	<	9	>	**9**	<	7	>	**1**	<	0	>	**0**
			V/C	<	0.09	>		<	0.00	>		<	0.01	>		<	0.00	>	
			Q	<	2	>		<	0	>		<	0	>		<	0	>	
PM Peak Hour	East Road & Dexter Line	TWSC	LOS	<	A	>	**A**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	9	>	**9**	<	11	>	**11**	<	0	>	**0**	<	8	>	**1**
			V/C	<	0.00	>		<	0.13	>		<	0.00	>		<	0.01	>	
			Q	<	0	>		<	4	>		<	0	>		<	0	>	
	East Road & Hill Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	11	>	**11**	<	11	>	**11**	<	8	>	**1**	<	0	>	**0**
			V/C	<	0.07	>		<	0.00	>		<	0.01	>		<	0.00	>	
			Q	<	2	>		<	0	>		<	0	>		<	0	>	

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 lands are located on the west side of East Road (CR 23) across from Dexter Line (CR 24) and at the northerly limits of Beamish Street.

The development is proposed to consist of 32 single-family units, 63 street townhouse units and a medium density block. The medium density block contemplates 72 apartment units or 47 townhouse units. For the purpose of this impact assessment, 47 townhouse units has been used as this represents a more conservative trip generation.

Vehicular access is proposed via the northeast extension of Beamish Street, connecting to East Road north of Dexter Line.

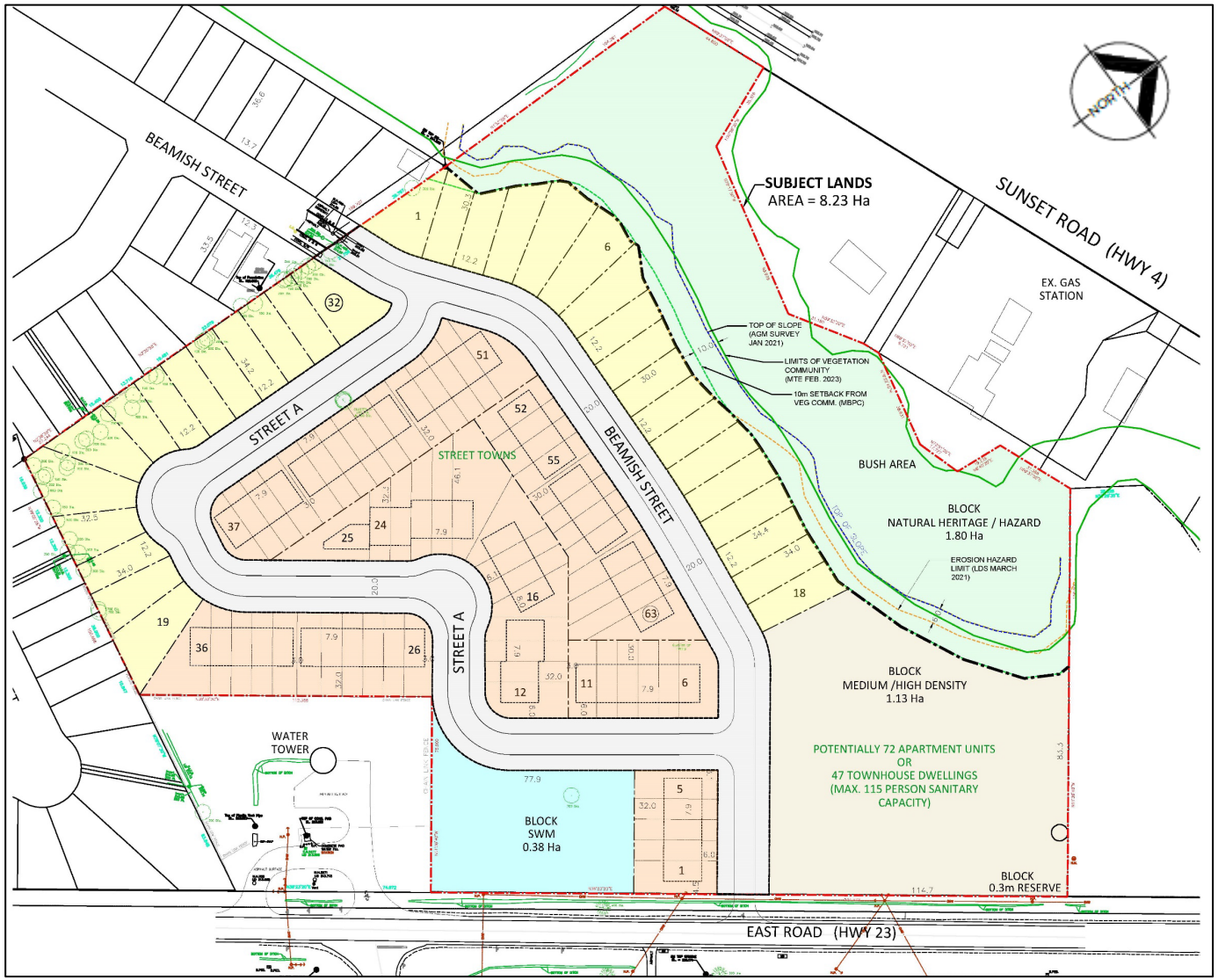
The development is anticipated to be completed by 2026.

Figure 3.1 shows the development concept.

3.1.1 Sight Distance

The Beamish Street Extension connection to East Road has over 300 metres of visibility in either direction along East Road. As per the *Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads*, this exceeds the minimum intersection sight distance of 130 metres to the south and 110 metres to the north, based on a design speed of 60 km/h[3].

[3] Transportation Association of Canada, *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017).



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Concept Plan

East Road Subdivision, Port Stanley TIS
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Figure 3.1

3.2 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual[4] provides rates and equations used to estimate the peak hour traffic volumes generated by the Land Use Codes (LUC) of this development:

- LUC 210 - Single-Family Detached Housing;
- LUC 215 - Single-Family Attached Housing; and
- LUC 220 - Multifamily Housing (Low-Rise)

Table 3.1 summarizes the forecast number of net new trips generated by the proposed development.

TABLE 3.1: TRIP GENERATION

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 210 - Single-Family Detached Housing	32	Eq	7	19	**26**	Eq	21	13	**34**
LUC 215 - Single-Family Attached Housing	63	Eq	7	20	**27**	Eq	20	14	**34**
LUC 220 - Multifamily Housing (Low-Rise)	47	Eq	9	28	**37**	Eq	26	15	**41**
Total Trip Generation			**23**	**67**	**90**		**67**	**42**	**109**

LUC 210 - AM: Ln(T) = 0.91Ln(X) + 0.12 | PM: Ln(T) = 0.94Ln(X) + 0.27
LUC 215 - AM: T = 0.52(X) - 5.70 | PM: T = 0.60(X) - 3.93
LUC 220 - AM: T = 0.31(X) + 22.85 | PM: T = 0.43(X) + 20.55

3.3 Development Trip Distribution and Assignment

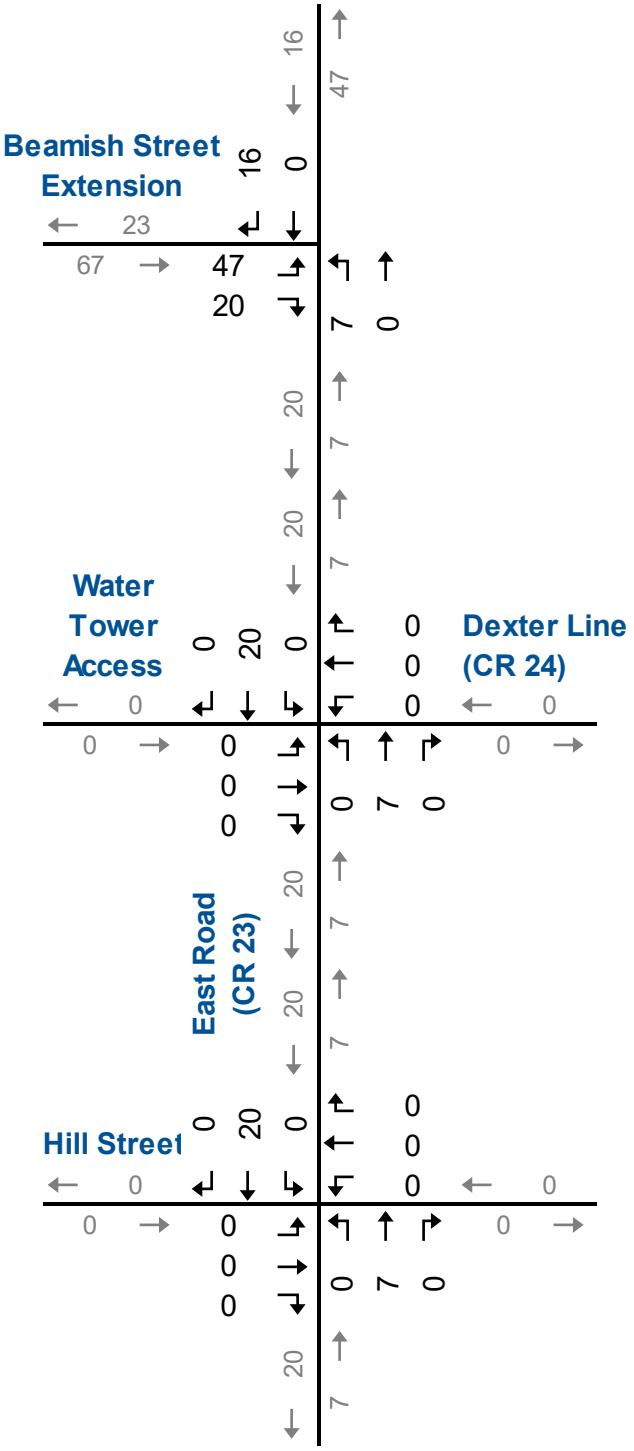
The trip distribution was determined based on existing travel patterns within the study area and is consistent with other area studies. The majority of trips (70%) have been distributed north on East Road.

Given the location of the development and proximity to East Road, trips generated by the development are likely to use the new connection to East Road instead of the Hill Street connection.

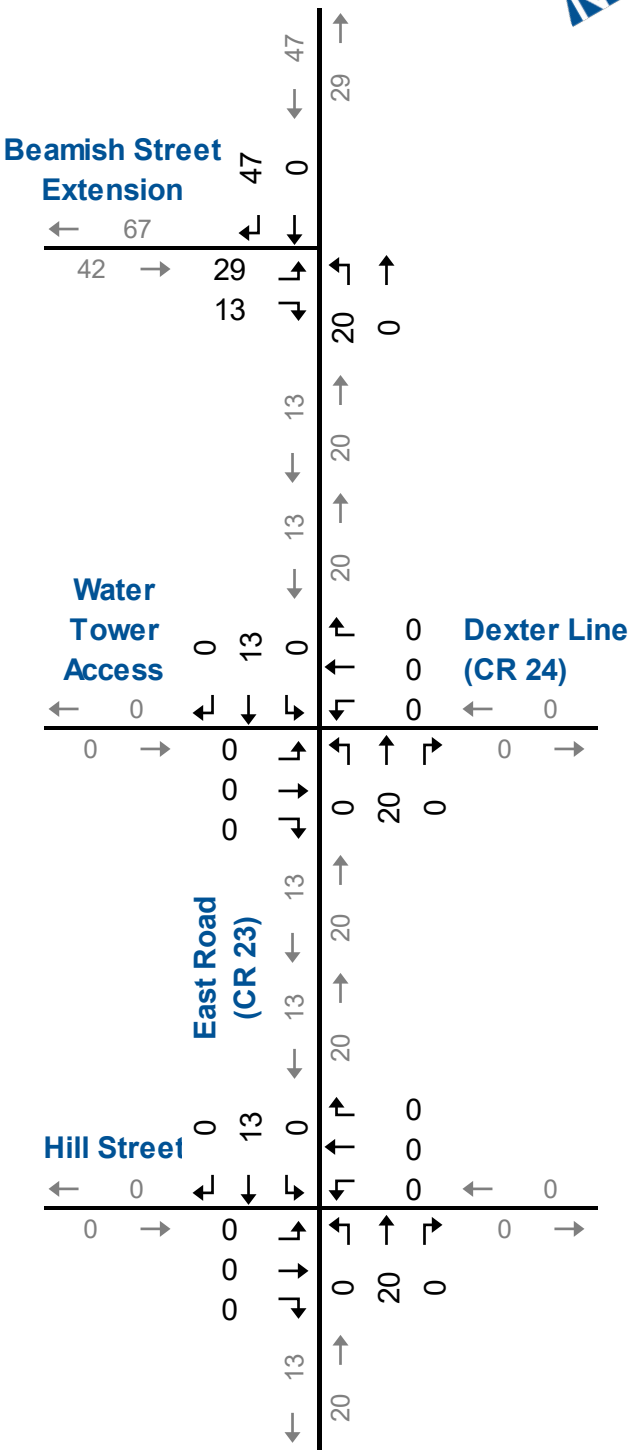
Figure 3.2 illustrate the site-generated traffic volumes for the AM and PM peak hours.

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

AM Peak Hour



PM Peak Hour



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Site Generated Traffic Volumes

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Figure 3.2

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions in this section includes estimates of future background and total traffic volumes, and the analyses for the 2031 horizon.

4.1 Background Traffic Forecasts

4.1.1 General Growth

To derive the 2031 generalized background traffic volumes, a growth rate of 2% was applied to the existing roadway traffic volumes. This growth rate was confirmed with Elgin County and Central Elgin staff during pre-study consultation.

4.1.2 Other Area Developments

In addition to the above general traffic growth, the following developments have been included in background traffic forecasts:

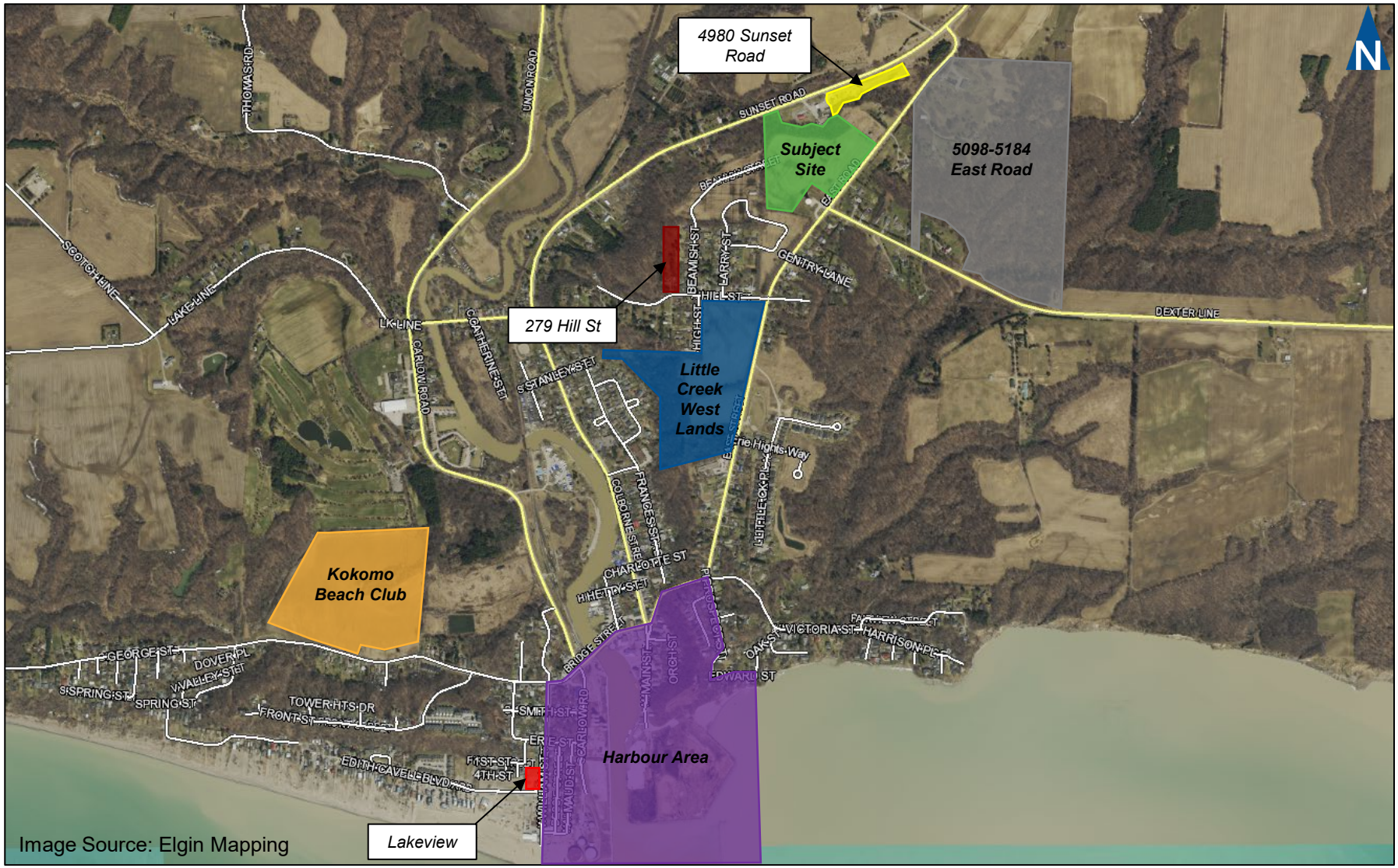
- **4980 Sunset Road**: A commercial development located on the south side of Sunset Road west of East Road. The development proposes a total of 1,120 m^2 of commercial uses and 250 m^2 restaurant with drive-through facility. The TIS prepared in September 2022[5] indicates a total trip generation of 88 AM peak hour trips and 120 PM peak hour trips.
- **Little Creek West Lands**: A residential development located at the southwest corner of East Road and Hill Street. At the time of this report, 49 single-family units, 38 semi-detached units and 52 townhouse units have been completed. The remaining development includes 36 townhouse units, 120 retirement/long-term care units and 68 apartment units. Based on the number of trips estimated in the March 2019 TIS[6], the remaining units are forecast to generate 62 AM peak hour trips and 79 AM peak hour trips.
- **279 Hill Street**: A 27-unit residential development located at the westerly end of Hill Street. Based on ITE rates, the development is forecast to generate approximately 31 AM peak hour trips and 32 PM peak hour trips. **Appendix D** contains the trip generation calculations.

[5] Paradigm Transportation Solutions Limited, *4980 Sunset Drive Port Stanley Transportation Impact Study*, September 2022.
[6] Dillon Consulting, *Municipality of Central Elgin Port Stanley – Little Creek West Lands Residential Development – Transportation Impact Study*, March 2019.

- **5098-5184 East Road:** A 177-unit residential development located on the east side of East Road. Based on ITE rates, the development is forecast to generate 86 AM peak hour trips and 102 PM peak hour trips. **Appendix D** contains the trip generation calculations.
- **Lakeview Development (146-156 William Street):** A mixed-use development located on the northwest corner of William Street and Edith Cavell Boulevard. The development was included in the Little Creek West Lands TIS as a background development and was estimated to accommodate 60 residential units and 1,800 sq. ft. of retail, generating approximately 47 AM peak hour trips and 81 PM peak hour trips.
- **West Harbour:** Phase 1 of the Port Stanley Secondary Plan was included in the Little Creek West Lands TIS as a background development and was estimated to accommodate 178 residential units and 20,274 sq. ft. of retail, generating approximately 185 AM peak hour trips and 366 PM peak hour trips.
- **Kokomo Beach Club**: A residential development located between George Street to the south and Kettle Creek Golf Club to the north. The development was included in the Little Creek West Lands TIS as a background development and was estimated to accommodate 510 residential units generating approximately 258 AM peak hour trips and 323 PM peak hour trips. At the time this of this report, the development is generally completed. The background development traffic volumes within the Little Creek West Lands TIS have been reduced based on the percentage of Kokomo Beach Club trips within the overall background development trip generation.

Figure 4.1 illustrates the location of the other area developments.

Appendix D contains the other area development traffic volumes.



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Other Area Development Locations

4.2 Background Traffic Operations

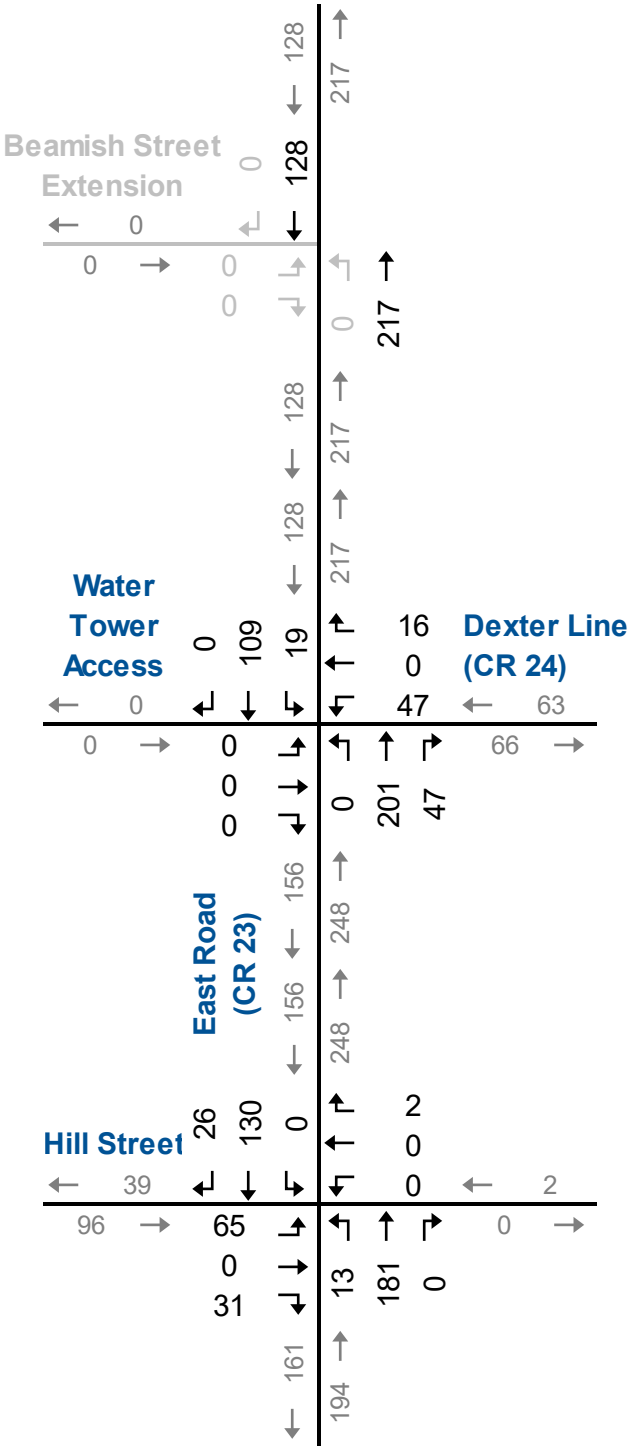
Figure 4.2 illustrates the 2031 background traffic volumes, including road traffic growth and other area development traffic.

The 2031 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions.

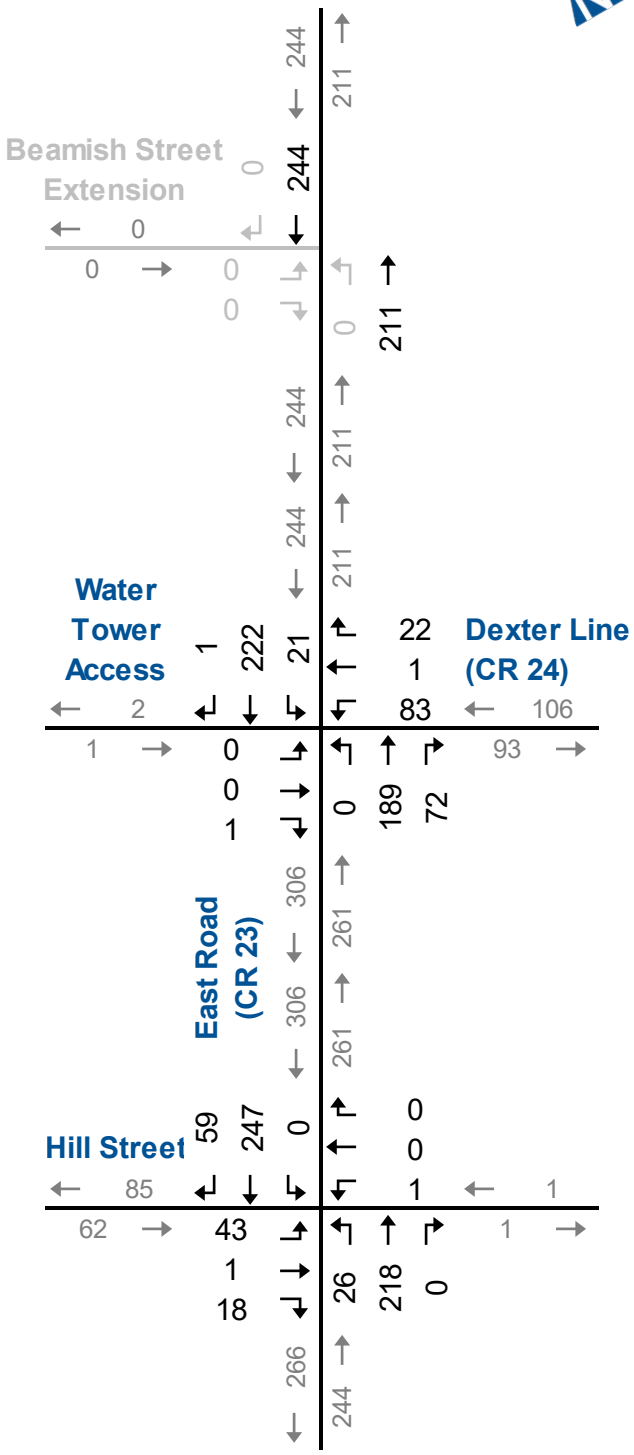
Table 4.1 summarizes the results of the 2031 background traffic operations. The results indicate that the study area intersections are forecast to operate with acceptable levels of service during the AM and PM peak hours.

Appendix E contains the supporting detailed Synchro 11 reports.

AM Peak Hour



PM Peak Hour



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Background Traffic Volumes

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Figure 4.2

TABLE 4.1: BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach															
				Eastbound				Westbound				Northbound				Southbound			
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach
AM Peak Hour	East Road & Dexter Line	TWSC	LOS	<	A	>	**A**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	0	>	**0**	<	12	>	**12**	<	0	>	**0**	<	8	>	**1**
			V/C	<	0.00	>		<	0.12	>		<	0.00	>		<	0.02	>	
			Q	<	0	>		<	3	>		<	0	>		<	1	>	
	East Road & Hill Street	TWSC	LOS	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**
			Delay	<	12	>	**12**	<	9	>	**9**	<	8	>	**0**	<	0	>	**0**
			V/C	<	0.17	>		<	0.00	>		<	0.01	>		<	0.00	>	
			Q	<	4	>		<	0	>		<	0	>		<	0	>	
PM Peak Hour	East Road & Dexter Line	TWSC	LOS	<	A	>	**A**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	10	>	**10**	<	14	>	**14**	<	0	>	**0**	<	8	>	**1**
			V/C	<	0.00	>		<	0.23	>		<	0.00	>		<	0.02	>	
			Q	<	0	>		<	7	>		<	0	>		<	1	>	
	East Road & Hill Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	14	>	**14**	<	14	>	**14**	<	8	>	**1**	<	0	>	**0**
			V/C	<	0.14	>		<	0.00	>		<	0.02	>		<	0.00	>	
			Q	<	4	>		<	0	>		<	1	>		<	0	>	

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

4.3 Total Traffic Operations

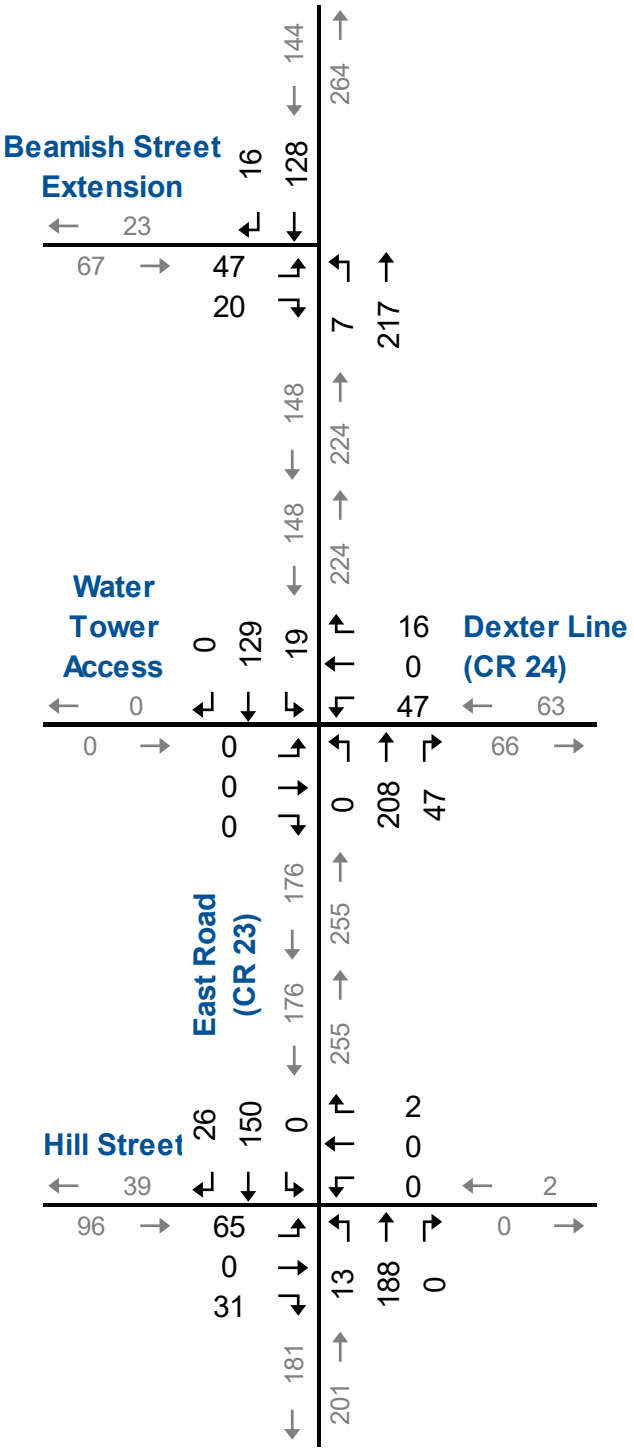
Figure 4.3 illustrates the 2031 total traffic volumes, including trips generated by the proposed development.

The 2031 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions.

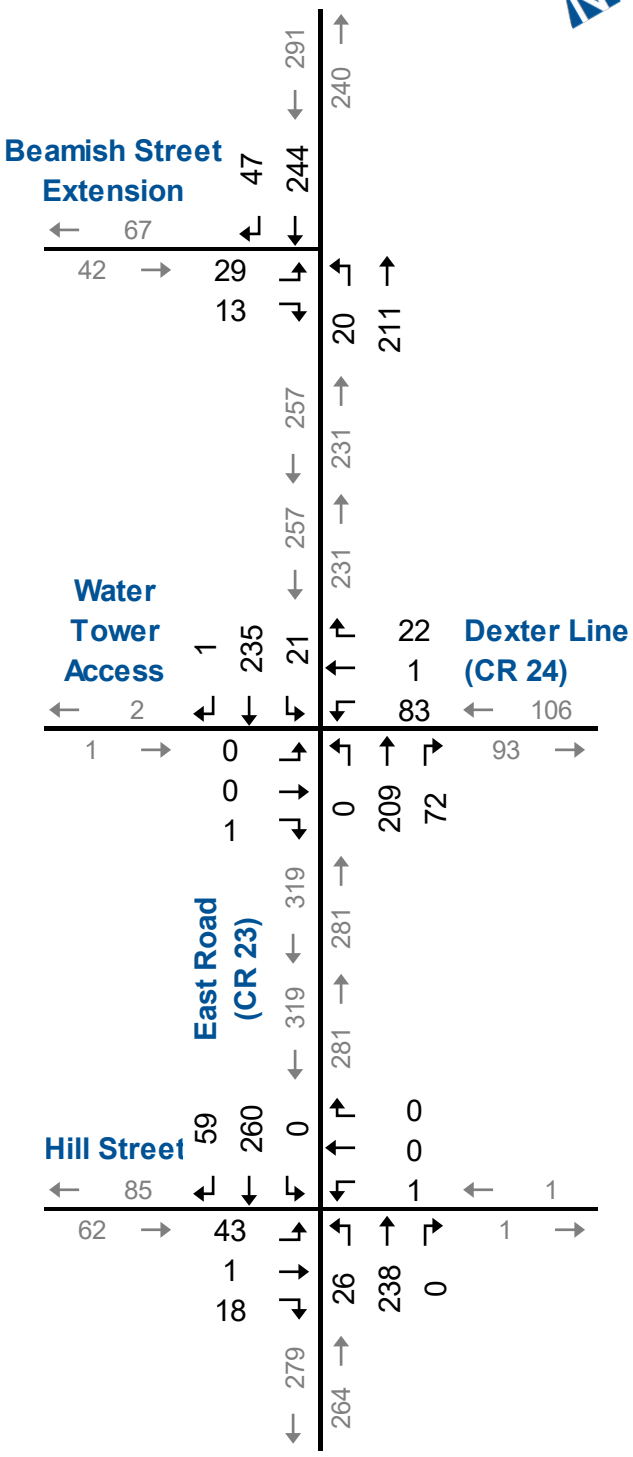
Table 4.2 summarizes the results of the 2031 total traffic operations. The results indicate that the study area intersections are forecast to operate with acceptable levels of service during the AM and PM peak hours. The Beamish Street Extension connection to East Road is forecast to operate with LOS B or better during the AM and PM peak hours.

Appendix F contains the supporting detailed Synchro 11 reports.

AM Peak Hour



PM Peak Hour



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Total Traffic Volumes

TABLE 4.2: TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach															
				Eastbound				Westbound				Northbound				Southbound			
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach
AM Peak Hour	East Road & Dexter Line	TWSC	LOS	<	A	>	**A**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	0	>	**0**	<	12	>	**12**	<	0	>	**0**	<	8	>	**1**
			V/C	<	0.00	>		<	0.12	>		<	0.00	>		<	0.02	>	
			Q	<	0	>		<	3	>		<	0	>		<	1	>	
	East Road & Hill Street	TWSC	LOS	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**
			Delay	<	12	>	**12**	<	9	>	**9**	<	8	>	**0**	<	0	>	**0**
			V/C	<	0.17	>		<	0.00	>		<	0.01	>		<	0.00	>	
			Q	<	4	>		<	0	>		<	0	>		<	0	>	
	East Road & Beamish Street Extension	TWSC	LOS	B		>	**B**					<	A		**A**		A	>	**A**
			Delay	11		>	**11**					<	8		**0**		0	>	**0**
			V/C	0.11		>						<	0.01				0.00	>	
			Q	3		>						<	0				0	>	
PM Peak Hour	East Road & Dexter Line	TWSC	LOS	<	A	>	**A**	<	C	>	**C**	<	A	>	**A**	<	A	>	**A**
			Delay	<	10	>	**10**	<	15	>	**15**	<	0	>	**0**	<	8	>	**1**
			V/C	<	0.00	>		<	0.25	>		<	0.00	>		<	0.02	>	
			Q	<	0	>		<	8	>		<	0	>		<	1	>	
	East Road & Hill Street	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**
			Delay	<	14	>	**14**	<	15	>	**15**	<	8	>	**1**	<	0	>	**0**
			V/C	<	0.15	>		<	0.00	>		<	0.02	>		<	0.00	>	
			Q	<	4	>		<	0	>		<	1	>		<	0	>	
	East Road & Beamish Street Extension	TWSC	LOS	B		>	**B**					<	A		**A**		A	>	**A**
			Delay	12		>	**12**					<	8		**1**		0	>	**0**
			V/C	0.08		>						<	0.02				0.00	>	
			Q	2		>						<	1				0	>	

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

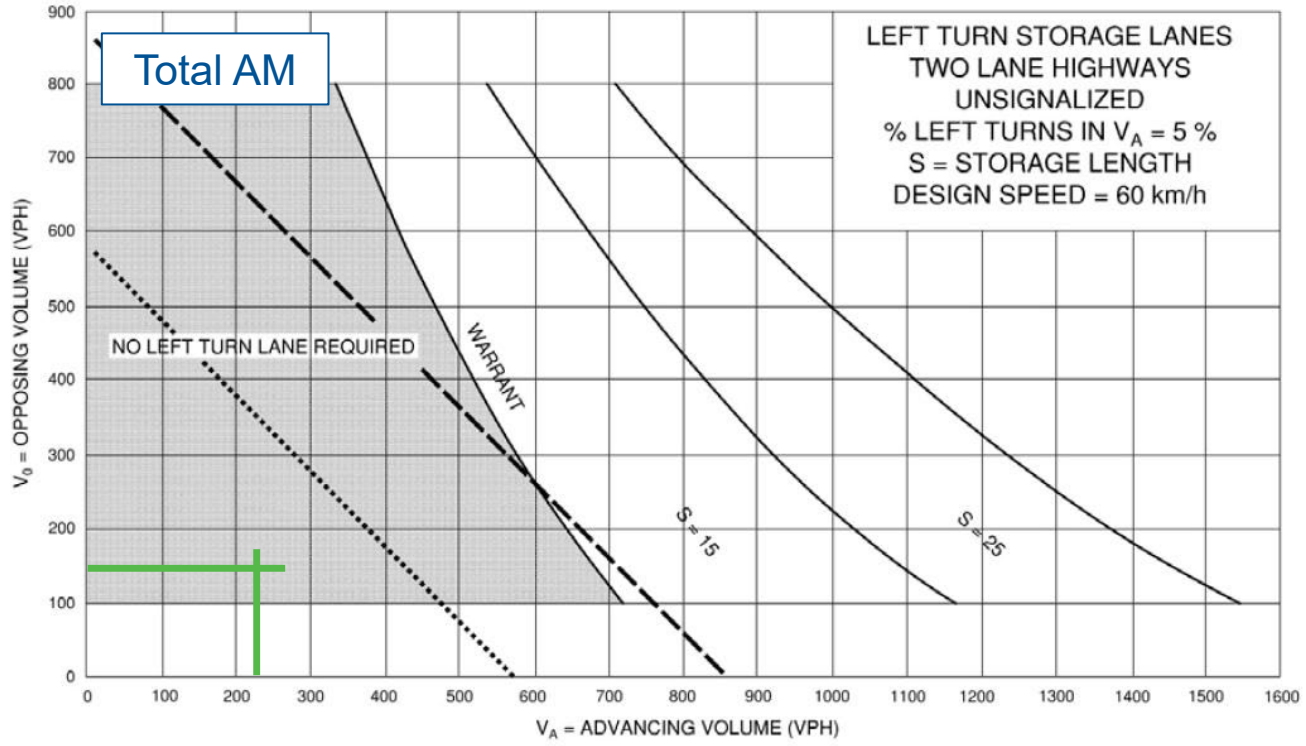
4.4 Left-Turn Lanes

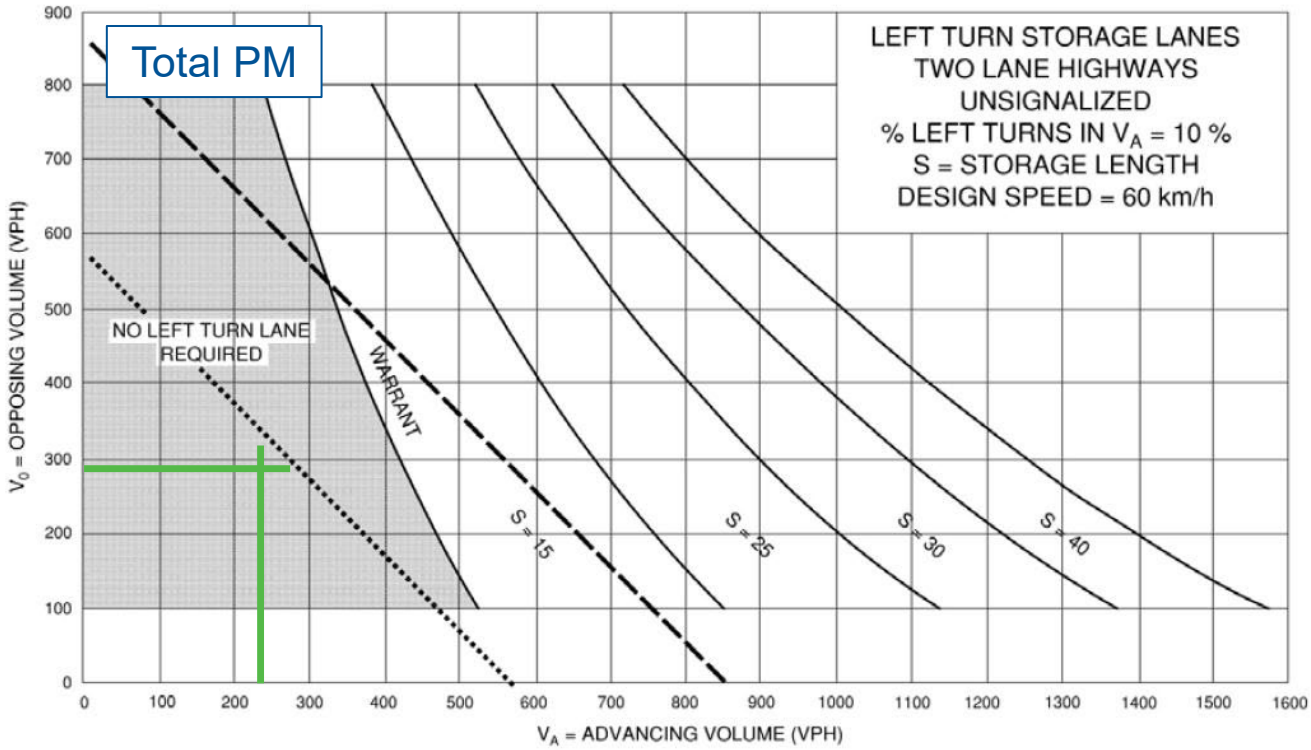
The Ministry of Transportation Design Supplement for the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads[7] provides guidance on the assessment and/or need for auxiliary left-turn lanes.

Warrants have been calculated for northbound left-turns at East Road and the Beamish Street Extension. The warrant was calculated using the nomographs for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 60 km/h (10 km/h over the posted speed limit). Based on this criterion, a northbound left-turn lane is not warranted under total traffic conditions.

Figure 4.4 illustrates the warrant nomographs.

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





Northbound Left-Turn Lane Warrants
East Road & Beamish Street Extension

5 Conclusions and Recommendations

5.1 Conclusions

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

- **Existing Traffic Conditions:** The study area intersections are operating with acceptable levels of service.
- **Development Trip Generation:** The development is forecast to generate 89 and 107 trips during the AM and PM peak hours, respectively.
- **Background Traffic Conditions:** The study area intersections are forecast to operate with acceptable levels of service.
- **Total Traffic Conditions:** The study area intersections are forecast to operate with acceptable levels of service. The Beamish Street Extension connection to East Road is forecast to operate with LOS B or better during the AM and PM peak hours.
- **Auxiliary Turn-Lanes:** A northbound left-turn lane is not warranted on at the Beamish Street Extension connection to East Road under forecast total traffic conditions.

5.2 Recommendations

Based on the findings of this study, it is recommended that the development be considered for approval as proposed, with no transportation related improvements.

Appendix A

Pre-Study Consultation

Outlook

RE: (240539) East Rd Subdivision, Port Stanley TIS Pre-Study Consultation

From Peter Dutchak <pdutchak@elgin.ca>
Date Wed 2024-09-04 5:12 PM
To Alex Piggott <APiggott@centralelgin.org>; Maddison Murch <mmurch@ptsl.com>
Cc Geoff Brooks <GBrooks@centralelgin.org>; Julian N. Novick <julian@wastell.ca>; Rajan Philips <rphilips@ptsl.com>; Jeremy Siddall <jsiddall@centralelgin.org>

1 attachments (341 KB)
#23 South of #4.xlsx;

Hello Maddison,

Nothing more to add to Alex's email except for attaching traffic data collected this year on East Road north of Dexter Line for your reference.

Peter

Peter Dutchak, CET, CRS
Director, Engineering Services

519-631-1460 ext. 124 (Main Office)
www.elgincounty.ca
450 Sunset Drive, St. Thomas, ON N5R 5V1

From: Alex Piggott <APiggott@centralelgin.org>
Sent: Wednesday, September 4, 2024 2:26 PM
To: 'mmurch@ptsl.com' <mmurch@ptsl.com>
Cc: Peter Dutchak <pdutchak@elgin.ca>; Geoff Brooks <GBrooks@centralelgin.org>; Julian N. Novick <julian@wastell.ca>; 'rphilips@ptsl.com' <rphilips@ptsl.com>; Jeremy Siddall <jsiddall@centralelgin.org>
Subject: FW: (240539) East Rd Subdivision, Port Stanley TIS Pre-Study Consultation

Hi Maddison:

Just looking at your scope of work in the email below. We have some traffic counts on East Road from the summer of 2023 from some other monitoring we did in the area. See attached.

In Port Stanley, when we see residential building we tend to see 2% growth rate. The area has had some updates and continues to see some new developments. There is a 70 unit apartment at the south west corner of East Road and Compass, a long term care home being proposed (almost at the building permit stage) for a 128 bed long term care facility and a 36 condo development proposal on Compass

that will add traffic volumes to East Road. Plus, at the end of Hill Street (279 Hill Street) there is a 27 unit condo development is currently under construction.

The only road improvements made in the area is a multi use path on East Road that extends from the long term home (Extendicare) to the southerly limits of this subdivision. We do not have any pedestrian counts on this trail.

I am not sure if the County has any further comments to add to this.

Alex Piggott, C.E.T. CRS-S
Manager of Development and Compliance

From: Geoff Brooks <GBrooks@centralelgin.org>
Sent: Thursday, August 29, 2024 4:06 PM
To: Jeremy Siddall <jsiddall@centralelgin.org>; Alex Piggott <APiggott@centralelgin.org>
Subject: Fwd: (240539) East Rd Subdivision, Port Stanley TIS Pre-Study Consultation

Sent from my iPhone

Begin forwarded message:

> **From:** Maddison Murch <mmurch@ptsl.com>
> **Date:** August 29, 2024 at 12:30:55 PM EDT
> **To:** pdutchak@elgin.ca, Geoff Brooks <GBrooks@centralelgin.org>
> **Cc:** Rajan Philips <rphilips@ptsl.com>, "Julian N. Novick" <julian@wastell.ca>
> **Subject: (240539) East Rd Subdivision, Port Stanley TIS Pre-Study Consultation**
>
> Hi Peter and Geoff,
>
> In February 2021 we started a Transportation Impact Study (TIS) for the proposed residential development on East Road along the extension of Beamish Street. However, the TIS was not completed at that time.
>
> We are starting up on the TIS again based on an updated plan which includes 32 single detached units, 63 street townhouse units and 42 townhouse units in a medium density block. Access is proposed via the extension of Beamish Street to East Road. A preliminary concept is attached.
>
> Based on the above, we have prepared the following scope of work for your review/approval:
>
> 1. Weekday AM and PM peak hour of adjacent street for analysis.
> 2. Study Area Intersections:
>   1. East Road and Dexter Line (unsignalized) counts collected in February 2023;
>   2. East Road and Hill Street (unsignalized) new counts to be collected in September 2024; and
>   3. East Road and Beamish Street Extension (unsignalized).
>
>   The February 2023 counts at East Road/Dexter Line and new counts at East Road/Hill Street will be adjusted to summer conditions.
> 1. Horizon Year: existing conditions and five years from full build-out.
> 2. Background Growth Rate: 1% per annum, **please confirm**.
> 3. Background Developments: **please confirm the following:**

1. 4980 Sunset Road Commercial Plaza;
2. 5098-5184 East Road residential development;
3. Remaining Little Creek West Lands; and
4. Background developments included in the 2019 Dillon Little Creek West Lands TIS.

4. Background roadway improvements: **Please confirm**
5. Trip Generation: ITE Trip Generation Manual 11th Edition
6. Trip Distribution: Existing traffic patterns.

Please let us know if you have any comments or questions.

Regards,

Maddison Murch, P.Eng.
Transportation Engineer

5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 519.896.3163 x205
m: 226.268.3697
e: mmurch@ptsl.com
w: www.ptsl.com

Paradigm is operating on a 4-day workweek. Our offices are closed Fridays.

Appendix B

Existing Traffic Data

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023

Turning Movement Data

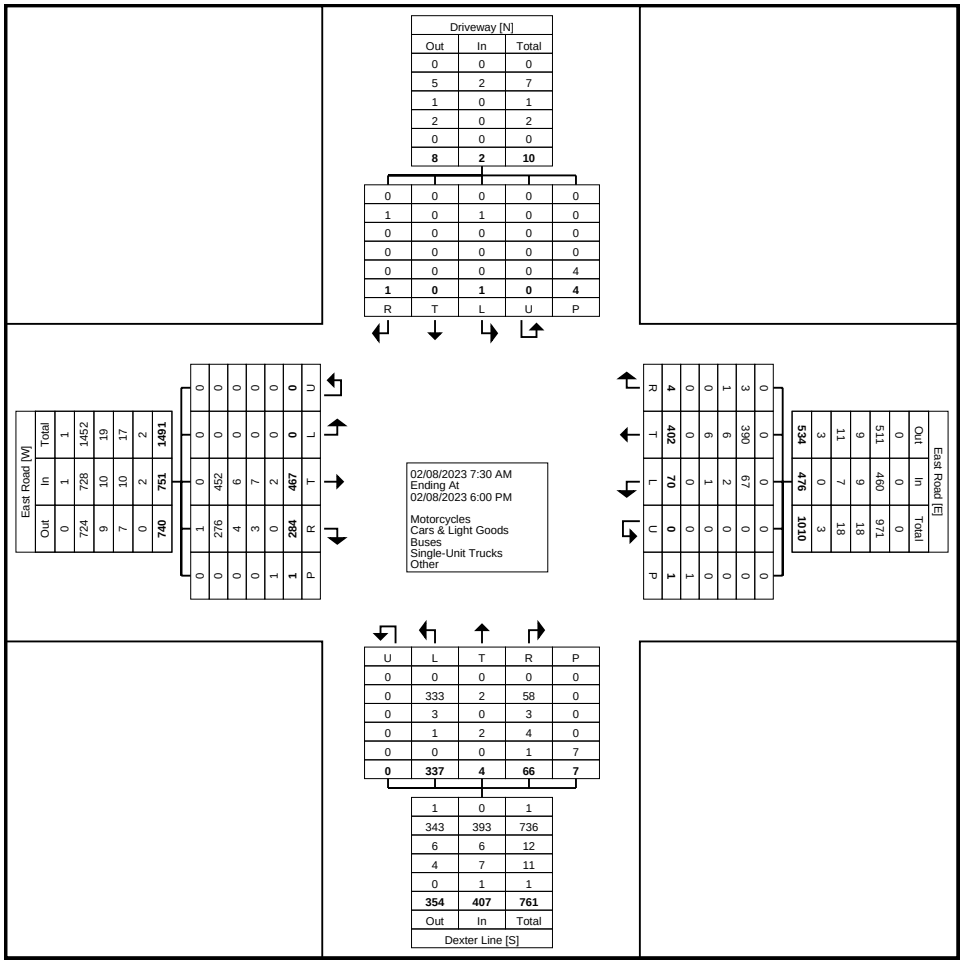
Start Time	East Road Eastbound						East Road Westbound						Dexter Line Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	0	24	11	0	0	35	1	6	1	0	0	8	2	0	2	0	0	4	0	0	0	0	0	0	47
7:45 AM	0	20	9	0	0	29	1	9	0	0	0	10	4	0	3	0	0	7	0	0	0	0	0	0	46
Hourly Total	0	44	20	0	0	64	2	15	1	0	0	18	6	0	5	0	0	11	0	0	0	0	0	0	93
8:00 AM	0	21	11	0	0	32	4	9	0	0	0	13	7	0	1	0	0	8	0	0	0	0	0	0	53
8:15 AM	0	15	10	0	0	25	1	11	0	0	0	12	5	2	3	0	0	10	0	0	0	0	0	0	47
8:30 AM	0	18	7	0	0	25	1	9	0	0	0	10	6	0	3	0	0	9	0	0	0	0	0	0	44
8:45 AM	0	18	8	0	1	26	1	8	0	0	0	9	5	0	3	0	1	8	0	0	0	0	0	0	43
Hourly Total	0	72	36	0	1	108	7	37	0	0	0	44	23	2	10	0	1	35	0	0	0	0	0	0	187
9:00 AM	0	18	6	0	0	24	3	10	0	0	0	13	11	0	5	0	0	16	0	0	0	0	0	0	53
9:15 AM	0	13	8	0	0	21	4	10	0	0	0	14	6	0	1	0	1	7	0	0	0	0	0	0	42
9:30 AM	0	24	10	0	0	34	3	8	0	0	1	11	11	0	2	0	0	13	0	0	0	0	0	0	58
9:45 AM	0	13	7	0	0	20	2	14	0	0	0	16	8	0	2	0	1	10	0	0	0	0	0	0	46
Hourly Total	0	68	31	0	0	99	12	42	0	0	1	54	36	0	10	0	2	46	0	0	0	0	0	0	199
10:00 AM	0	11	8	0	0	19	2	12	0	0	0	14	3	0	3	0	0	6	0	0	0	0	0	0	39
10:15 AM	0	20	11	0	0	31	1	9	0	0	0	10	5	0	0	0	0	5	0	0	0	0	0	0	46
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	31	19	0	0	50	3	21	0	0	0	24	8	0	3	0	0	11	0	0	0	0	0	0	85
12:00 PM	0	11	7	0	0	18	1	7	0	0	0	8	8	0	1	0	1	9	0	0	0	0	0	0	35
12:15 PM	0	10	9	0	0	19	1	13	0	0	0	14	12	0	1	0	0	13	0	0	0	0	0	0	46
12:30 PM	0	12	9	0	0	21	1	10	0	0	0	11	17	1	3	0	0	21	0	0	0	0	2	0	53
12:45 PM	0	10	6	0	0	16	2	8	0	0	0	10	13	0	0	0	1	13	0	0	0	0	0	0	39
Hourly Total	0	43	31	0	0	74	5	38	0	0	0	43	50	1	5	0	2	56	0	0	0	0	2	0	173
1:00 PM	0	14	10	0	0	24	3	6	0	0	0	9	9	0	1	0	1	10	0	0	0	0	0	0	43
1:15 PM	0	9	5	0	0	14	5	10	1	0	0	16	9	0	0	0	0	9	0	0	0	0	0	0	39
1:30 PM	0	20	14	0	0	34	1	8	0	0	0	9	14	0	1	0	0	15	0	0	0	0	0	0	58
1:45 PM	0	7	16	0	0	23	1	16	0	0	0	17	21	0	1	0	0	22	0	0	0	0	0	0	62
Hourly Total	0	50	45	0	0	95	10	40	1	0	0	51	53	0	3	0	1	56	0	0	0	0	0	0	202
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	16	10	0	0	26	1	15	0	0	0	16	23	0	1	0	0	24	0	0	0	0	0	0	66
3:15 PM	0	10	5	0	0	15	4	13	0	0	0	17	16	0	4	0	0	20	1	0	0	0	0	1	53
3:30 PM	0	11	9	0	0	20	4	19	0	0	0	23	16	1	2	0	1	19	0	0	0	0	0	0	62
3:45 PM	0	18	15	0	0	33	4	12	1	0	0	17	8	0	3	0	0	11	0	0	0	0	1	0	61
Hourly Total	0	55	39	0	0	94	13	59	1	0	0	73	63	1	10	0	1	74	1	0	0	0	1	1	242
4:00 PM	0	14	13	0	0	27	4	20	0	0	0	24	17	0	3	0	0	20	0	0	0	0	0	0	71
4:15 PM	0	14	7	0	0	21	0	19	0	0	0	19	16	0	3	0	0	19	0	0	1	0	0	1	60

4:30 PM	0	17	5	0	0	22	1	20	0	0	0	21	11	0	4	0	0	15	0	0	0	0	0	0	58
4:45 PM	0	13	5	0	0	18	2	27	0	0	0	29	15	0	1	0	0	16	0	0	0	0	1	0	63
Hourly Total	0	58	30	0	0	88	7	86	0	0	0	93	59	0	11	0	0	70	0	0	1	0	1	1	252
5:00 PM	0	12	10	0	0	22	6	18	0	0	0	24	6	0	2	0	0	8	0	0	0	0	0	0	54
5:15 PM	0	15	6	0	0	21	1	21	0	0	0	22	14	0	3	0	0	17	0	0	0	0	0	0	60
5:30 PM	0	8	9	0	0	17	2	10	0	0	0	12	10	0	4	0	0	14	0	0	0	0	0	0	43
5:45 PM	0	11	8	0	0	19	2	15	1	0	0	18	9	0	0	0	0	9	0	0	0	0	0	0	46
Hourly Total	0	46	33	0	0	79	11	64	1	0	0	76	39	0	9	0	0	48	0	0	0	0	0	0	203
Grand Total	0	467	284	0	1	751	70	402	4	0	1	476	337	4	66	0	7	407	1	0	1	0	4	2	1636
Approach %	0.0	62.2	37.8	0.0	-	-	14.7	84.5	0.8	0.0	-	-	82.8	1.0	16.2	0.0	-	-	50.0	0.0	50.0	0.0	-	-	-
Total %	0.0	28.5	17.4	0.0	-	45.9	4.3	24.6	0.2	0.0	-	29.1	20.6	0.2	4.0	0.0	-	24.9	0.1	0.0	0.1	0.0	-	0.1	-
Motorcycles	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	-	0.0	0.4	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Cars & Light Goods	0	452	276	0	-	728	67	390	3	0	-	460	333	2	58	0	-	393	1	0	1	0	-	2	1583
% Cars & Light Goods	-	96.8	97.2	-	-	96.9	95.7	97.0	75.0	-	-	96.6	98.8	50.0	87.9	-	-	96.6	100.0	-	100.0	-	-	100.0	96.8
Buses	0	6	4	0	-	10	2	6	1	0	-	9	3	0	3	0	-	6	0	0	0	0	-	0	25
% Buses	-	1.3	1.4	-	-	1.3	2.9	1.5	25.0	-	-	1.9	0.9	0.0	4.5	-	-	1.5	0.0	-	0.0	-	-	0.0	1.5
Single-Unit Trucks	0	7	3	0	-	10	1	6	0	0	-	7	1	2	4	0	-	7	0	0	0	0	-	0	24
% Single-Unit Trucks	-	1.5	1.1	-	-	1.3	1.4	1.5	0.0	-	-	1.5	0.3	50.0	6.1	-	-	1.7	0.0	-	0.0	-	-	0.0	1.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.5	-	-	0.2	0.0	-	0.0	-	-	0.0	0.1
Bicycles on Road	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	-	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023

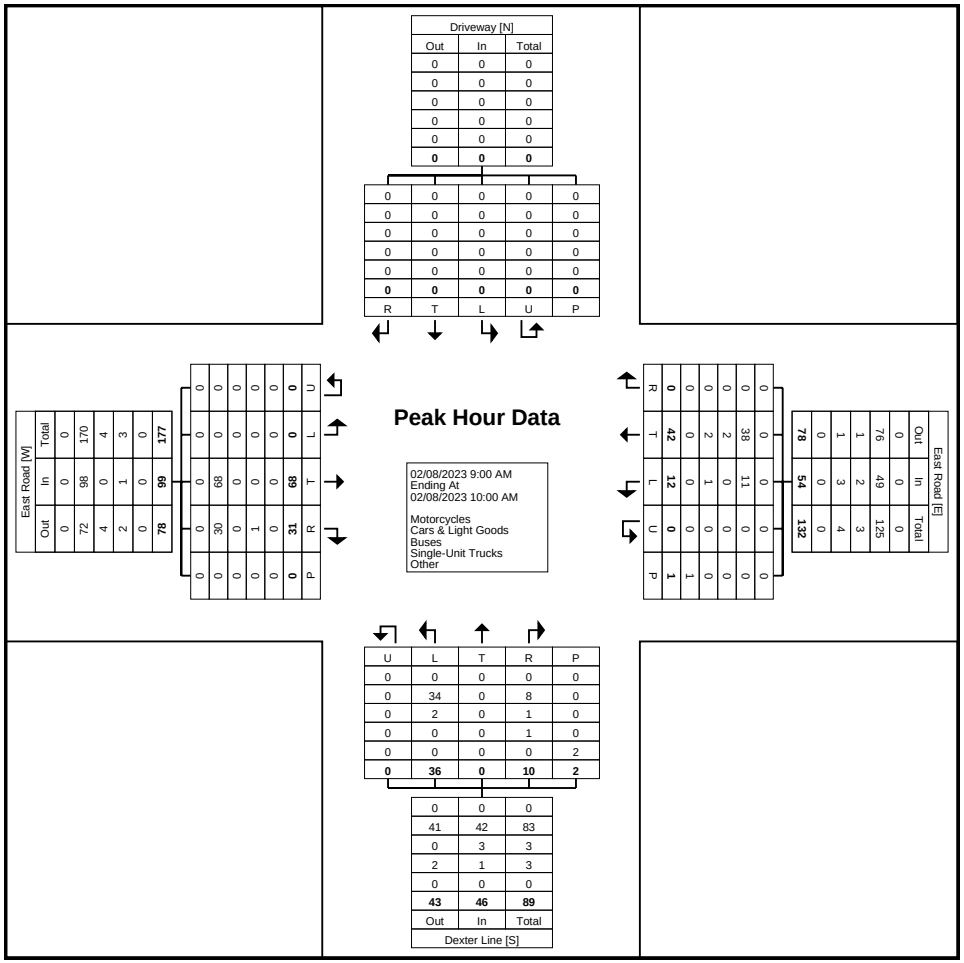
Turning Movement Peak Hour Data (9:00 AM)

Start Time	East Road Eastbound						East Road Westbound						Dexter Line Northbound						Driveway 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	
9:00 AM	0	18	6	0	0	24	3	10	0	0	0	13	11	0	5	0	0	16	0	0	0	0	0	0	53
9:15 AM	0	13	8	0	0	21	4	10	0	0	0	14	6	0	1	0	1	7	0	0	0	0	0	0	42
9:30 AM	0	24	10	0	0	34	3	8	0	0	1	11	11	0	2	0	0	13	0	0	0	0	0	0	58
9:45 AM	0	13	7	0	0	20	2	14	0	0	0	16	8	0	2	0	1	10	0	0	0	0	0	0	46
Total	0	68	31	0	0	99	12	42	0	0	1	54	36	0	10	0	2	46	0	0	0	0	0	0	199
Approach %	0.0	68.7	31.3	0.0	-	-	22.2	77.8	0.0	0.0	-	-	78.3	0.0	21.7	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	34.2	15.6	0.0	-	49.7	6.0	21.1	0.0	0.0	-	27.1	18.1	0.0	5.0	0.0	-	23.1	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.708	0.775	0.000	-	0.728	0.750	0.750	0.000	0.000	-	0.844	0.818	0.000	0.500	0.000	-	0.719	0.000	0.000	0.000	0.000	-	0.000	0.858
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	0	68	30	0	-	98	11	38	0	0	-	49	34	0	8	0	-	42	0	0	0	0	-	0	189
% Cars & Light Goods	-	100.0	96.8	-	-	99.0	91.7	90.5	-	-	-	90.7	94.4	-	80.0	-	-	91.3	-	-	-	-	-	-	95.0
Buses	0	0	0	0	-	0	0	2	0	0	-	2	2	0	1	0	-	3	0	0	0	0	-	0	5
% Buses	-	0.0	0.0	-	-	0.0	0.0	4.8	-	-	-	3.7	5.6	-	10.0	-	-	6.5	-	-	-	-	-	-	2.5
Single-Unit Trucks	0	0	1	0	-	1	1	2	0	0	-	3	0	0	1	0	-	1	0	0	0	0	-	0	5
% Single-Unit Trucks	-	0.0	3.2	-	-	1.0	8.3	4.8	-	-	-	5.6	0.0	-	10.0	-	-	2.2	-	-	-	-	-	-	2.5
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
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	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023



Turning Movement Peak Hour Data Plot (9:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023

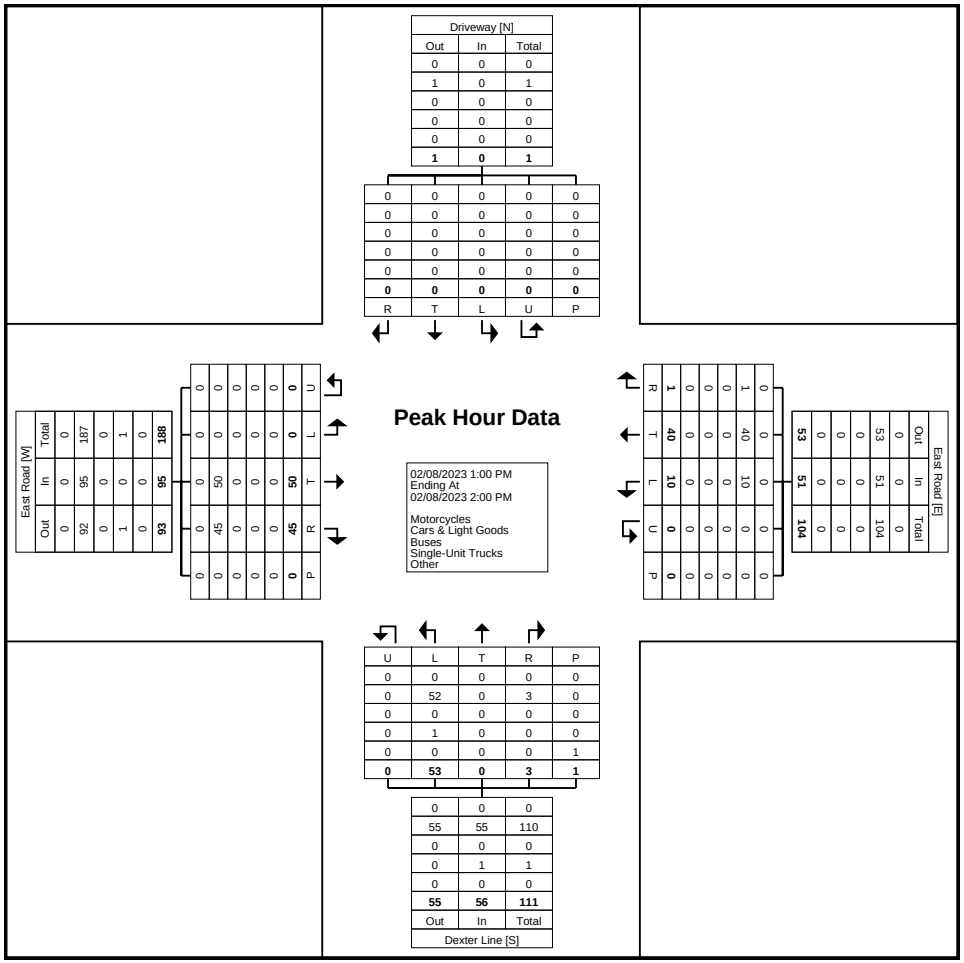
Turning Movement Peak Hour Data (1:00 PM)

Start Time	East Road Eastbound						East Road Westbound						Dexter Line Northbound						Driveway Southbound						
	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	Int. Total
1:00 PM	0	14	10	0	0	24	3	6	0	0	0	9	9	0	1	0	1	10	0	0	0	0	0	0	43
1:15 PM	0	9	5	0	0	14	5	10	1	0	0	16	9	0	0	0	0	9	0	0	0	0	0	0	39
1:30 PM	0	20	14	0	0	34	1	8	0	0	0	9	14	0	1	0	0	15	0	0	0	0	0	0	58
1:45 PM	0	7	16	0	0	23	1	16	0	0	0	17	21	0	1	0	0	22	0	0	0	0	0	0	62
Total	0	50	45	0	0	95	10	40	1	0	0	51	53	0	3	0	1	56	0	0	0	0	0	0	202
Approach %	0.0	52.6	47.4	0.0	-	-	19.6	78.4	2.0	0.0	-	-	94.6	0.0	5.4	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	24.8	22.3	0.0	-	47.0	5.0	19.8	0.5	0.0	-	25.2	26.2	0.0	1.5	0.0	-	27.7	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.625	0.703	0.000	-	0.699	0.500	0.625	0.250	0.000	-	0.750	0.631	0.000	0.750	0.000	-	0.636	0.000	0.000	0.000	0.000	-	0.000	0.815
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
Cars & Light Goods	0	50	45	0	-	95	10	40	1	0	-	51	52	0	3	0	-	55	0	0	0	0	-	0	201
% Cars & Light Goods	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	98.1	-	100.0	-	-	98.2	-	-	-	-	-	-	99.5
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
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Single-Unit Trucks	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.9	-	0.0	-	-	1.8	-	-	-	-	-	-	0.5
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
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023



Turning Movement Peak Hour Data Plot (1:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023

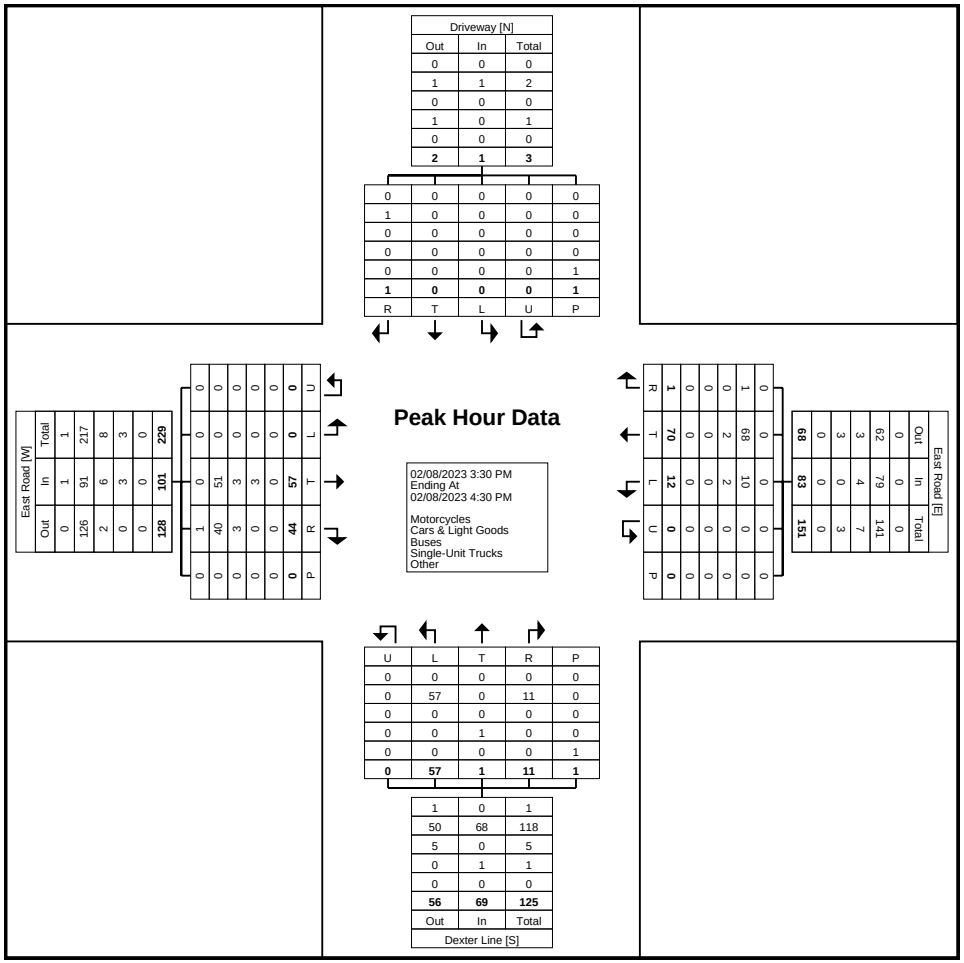
Turning Movement Peak Hour Data (3:30 PM)

Start Time	East Road Eastbound						East Road Westbound						Dexter Line Northbound						Driveway 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	
3:30 PM	0	11	9	0	0	20	4	19	0	0	0	23	16	1	2	0	1	19	0	0	0	0	0	0	62
3:45 PM	0	18	15	0	0	33	4	12	1	0	0	17	8	0	3	0	0	11	0	0	0	0	1	0	61
4:00 PM	0	14	13	0	0	27	4	20	0	0	0	24	17	0	3	0	0	20	0	0	0	0	0	0	71
4:15 PM	0	14	7	0	0	21	0	19	0	0	0	19	16	0	3	0	0	19	0	0	1	0	0	1	60
Total	0	57	44	0	0	101	12	70	1	0	0	83	57	1	11	0	1	69	0	0	1	0	1	1	254
Approach %	0.0	56.4	43.6	0.0	-	-	14.5	84.3	1.2	0.0	-	-	82.6	1.4	15.9	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.0	22.4	17.3	0.0	-	39.8	4.7	27.6	0.4	0.0	-	32.7	22.4	0.4	4.3	0.0	-	27.2	0.0	0.0	0.4	0.0	-	0.4	-
PHF	0.000	0.792	0.733	0.000	-	0.765	0.750	0.875	0.250	0.000	-	0.865	0.838	0.250	0.917	0.000	-	0.863	0.000	0.000	0.250	0.000	-	0.250	0.894
Motorcycles	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	-	0.0	2.3	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.4
Cars & Light Goods	0	51	40	0	-	91	10	68	1	0	-	79	57	0	11	0	-	68	0	0	1	0	-	1	239
% Cars & Light Goods	-	89.5	90.9	-	-	90.1	83.3	97.1	100.0	-	-	95.2	100.0	0.0	100.0	-	-	98.6	-	-	100.0	-	-	100.0	94.1
Buses	0	3	3	0	-	6	2	2	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	10
% Buses	-	5.3	6.8	-	-	5.9	16.7	2.9	0.0	-	-	4.8	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	3.9
Single-Unit Trucks	0	3	0	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	4
% Single-Unit Trucks	-	5.3	0.0	-	-	3.0	0.0	0.0	0.0	-	-	0.0	0.0	100.0	0.0	-	-	1.4	-	-	0.0	-	-	0.0	1.6
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	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	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Dexter Line
Site Code: 220759
Start Date: 02/08/2023



Turning Movement Peak Hour Data Plot (3:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Hill Street
Site Code: 240539
Start Date: 09/11/2024

Turning Movement Data

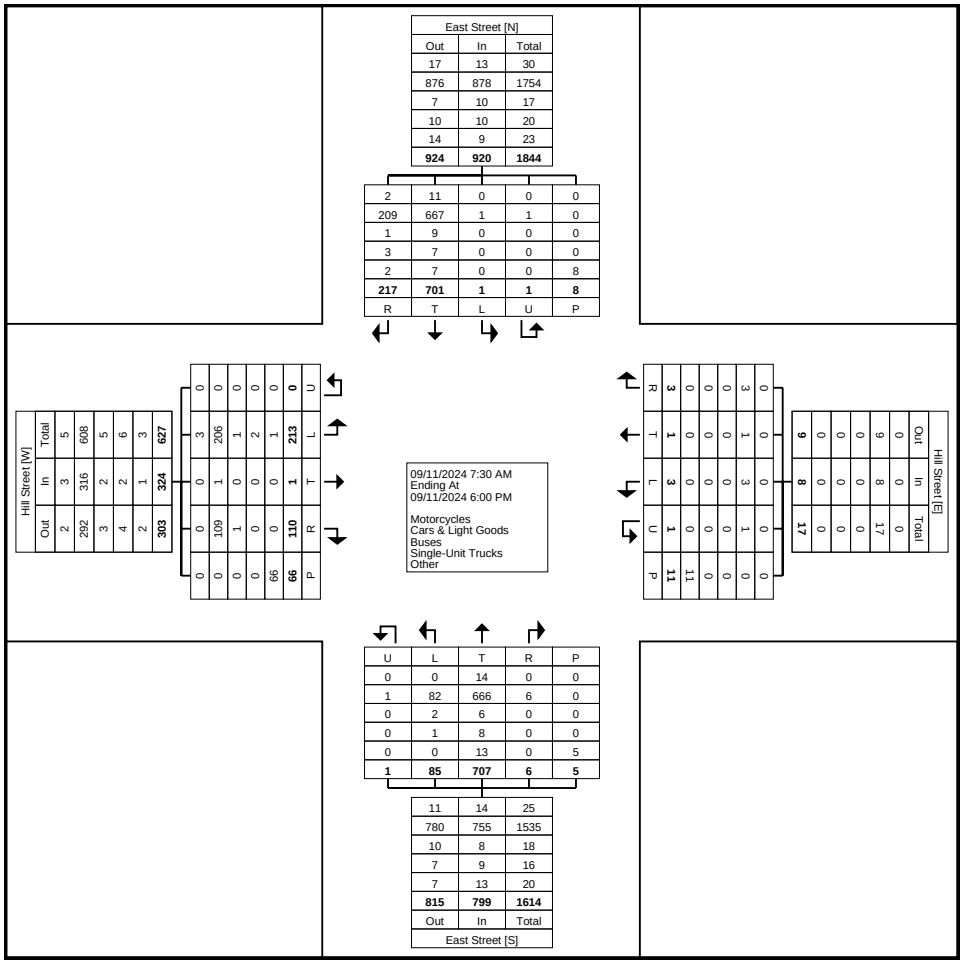
Start Time	Hill Street Eastbound						Hill Street Westbound						East Street Northbound						East Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	7	0	2	0	0	9	0	0	0	0	5	0	0	22	0	0	0	22	0	9	3	0	1	12	43
7:45 AM	8	0	1	0	1	9	0	0	0	0	0	0	0	31	0	0	0	31	0	14	1	0	0	15	55
Hourly Total	15	0	3	0	1	18	0	0	0	0	5	0	0	53	0	0	0	53	0	23	4	0	1	27	98
8:00 AM	14	0	1	0	6	15	0	0	0	0	0	0	2	22	0	0	0	24	0	12	4	0	0	16	55
8:15 AM	10	0	5	0	4	15	0	0	0	0	0	0	1	20	0	0	0	21	0	17	3	0	0	20	56
8:30 AM	8	0	3	0	1	11	0	0	2	0	0	2	2	28	0	0	0	30	0	14	1	0	0	15	58
8:45 AM	10	0	7	0	1	17	0	0	0	0	0	0	6	10	0	0	0	16	0	20	5	0	0	25	58
Hourly Total	42	0	16	0	12	58	0	0	2	0	0	2	11	80	0	0	0	91	0	63	13	0	0	76	227
9:00 AM	14	0	6	0	2	20	0	0	0	0	0	0	1	29	0	0	0	30	0	19	9	0	0	28	78
9:15 AM	8	0	3	0	6	11	0	0	0	0	0	0	1	23	0	0	0	24	0	11	2	0	0	13	48
9:30 AM	5	0	4	0	2	9	0	0	0	0	0	0	0	25	0	1	0	26	0	15	1	0	0	16	51
9:45 AM	6	0	5	0	0	11	0	0	0	0	1	0	1	18	0	0	1	19	0	13	2	0	0	15	45
Hourly Total	33	0	18	0	10	51	0	0	0	0	1	0	3	95	0	1	1	99	0	58	14	0	0	72	222
10:00 AM	4	0	3	0	1	7	0	0	0	0	0	0	3	21	0	0	0	24	0	17	5	0	0	22	53
10:15 AM	6	0	2	0	2	8	0	0	0	0	1	0	1	22	0	0	0	23	0	17	8	0	1	25	56
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	10	0	5	0	3	15	0	0	0	0	1	0	4	43	0	0	0	47	0	34	13	0	1	47	109
12:00 PM	6	0	3	0	4	9	2	0	0	0	0	2	5	24	0	0	0	29	0	24	7	0	0	31	71
12:15 PM	8	0	2	0	4	10	0	0	0	0	0	0	2	24	0	0	0	26	0	21	12	0	0	33	69
12:30 PM	7	0	3	0	1	10	0	0	0	0	0	0	1	26	0	0	0	27	0	25	7	0	0	32	69
12:45 PM	9	0	7	0	1	16	0	1	0	0	1	1	4	15	3	0	0	22	0	26	3	0	0	29	68
Hourly Total	30	0	15	0	10	45	2	1	0	0	1	3	12	89	3	0	0	104	0	96	29	0	0	125	277
1:00 PM	3	0	1	0	3	4	0	0	1	0	0	1	1	21	0	0	0	22	0	22	9	0	5	31	58
1:15 PM	5	0	1	0	6	6	0	0	0	0	2	0	5	26	1	0	2	32	0	16	9	0	0	25	63
1:30 PM	7	0	2	0	4	9	0	0	0	0	0	0	3	16	0	0	0	19	0	21	5	0	0	26	54
1:45 PM	6	0	6	0	1	12	0	0	0	0	0	0	2	28	0	0	0	30	0	22	3	0	0	25	67
Hourly Total	21	0	10	0	14	31	0	0	1	0	2	1	11	91	1	0	2	103	0	81	26	0	5	107	242
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	0	1	0	1	4	0	0	0	0	0	0	1	23	0	0	0	24	0	22	12	0	0	34	62
3:15 PM	6	0	4	0	2	10	0	0	0	1	0	1	5	14	1	0	0	20	0	25	6	0	0	31	62
3:30 PM	7	0	4	0	0	11	0	0	0	0	1	0	2	23	0	0	0	25	0	32	10	0	0	42	78
3:45 PM	8	1	4	0	3	13	1	0	0	0	0	1	8	20	0	0	0	28	0	32	15	0	0	47	89
Hourly Total	24	1	13	0	6	38	1	0	0	1	1	2	16	80	1	0	0	97	0	111	43	0	0	154	291
4:00 PM	6	0	3	0	0	9	0	0	0	0	0	0	4	45	0	0	0	49	0	30	7	1	0	38	96
4:15 PM	9	0	1	0	0	10	0	0	0	0	0	0	3	26	0	0	2	29	0	27	8	0	0	35	74

4:30 PM	2	0	1	0	4	3	0	0	0	0	0	0	6	14	0	0	0	20	0	35	11	0	0	46	69
4:45 PM	5	0	7	0	2	12	0	0	0	0	0	0	2	21	0	0	0	23	0	33	12	0	0	45	80
Hourly Total	22	0	12	0	6	34	0	0	0	0	0	0	15	106	0	0	2	121	0	125	38	1	0	164	319
5:00 PM	5	0	4	0	0	9	0	0	0	0	0	0	3	16	1	0	0	20	0	37	13	0	0	50	79
5:15 PM	5	0	5	0	1	10	0	0	0	0	0	0	5	18	0	0	0	23	0	35	10	0	1	45	78
5:30 PM	3	0	2	0	3	5	0	0	0	0	0	0	1	14	0	0	0	15	0	17	6	0	0	23	43
5:45 PM	3	0	7	0	0	10	0	0	0	0	0	0	4	22	0	0	0	26	1	21	8	0	0	30	66
Hourly Total	16	0	18	0	4	34	0	0	0	0	0	0	13	70	1	0	0	84	1	110	37	0	1	148	266
Grand Total	213	1	110	0	66	324	3	1	3	1	11	8	85	707	6	1	5	799	1	701	217	1	8	920	2051
Approach %	65.7	0.3	34.0	0.0	-	-	37.5	12.5	37.5	12.5	-	-	10.6	88.5	0.8	0.1	-	-	0.1	76.2	23.6	0.1	-	-	-
Total %	10.4	0.0	5.4	0.0	-	15.8	0.1	0.0	0.1	0.0	-	0.4	4.1	34.5	0.3	0.0	-	39.0	0.0	34.2	10.6	0.0	-	44.9	-
Motorcycles	3	0	0	0	-	3	0	0	0	0	-	0	0	14	0	0	-	14	0	11	2	0	-	13	30
% Motorcycles	1.4	0.0	0.0	-	-	0.9	0.0	0.0	0.0	0.0	-	0.0	0.0	2.0	0.0	0.0	-	1.8	0.0	1.6	0.9	0.0	-	1.4	1.5
Cars & Light Goods	206	1	109	0	-	316	3	1	3	1	-	8	82	666	6	1	-	755	1	667	209	1	-	878	1957
% Cars & Light Goods	96.7	100.0	99.1	-	-	97.5	100.0	100.0	100.0	100.0	-	100.0	96.5	94.2	100.0	100.0	-	94.5	100.0	95.1	96.3	100.0	-	95.4	95.4
Buses	1	0	1	0	-	2	0	0	0	0	-	0	2	6	0	0	-	8	0	9	1	0	-	10	20
% Buses	0.5	0.0	0.9	-	-	0.6	0.0	0.0	0.0	0.0	-	0.0	2.4	0.8	0.0	0.0	-	1.0	0.0	1.3	0.5	0.0	-	1.1	1.0
Single-Unit Trucks	2	0	0	0	-	2	0	0	0	0	-	0	1	8	0	0	-	9	0	7	3	0	-	10	21
% Single-Unit Trucks	0.9	0.0	0.0	-	-	0.6	0.0	0.0	0.0	0.0	-	0.0	1.2	1.1	0.0	0.0	-	1.1	0.0	1.0	1.4	0.0	-	1.1	1.0
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	0	3	1	0	-	4	7
% Articulated Trucks	0.5	0.0	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	0.0	-	0.3	0.0	0.4	0.5	0.0	-	0.4	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	11	0	0	-	11	0	4	1	0	-	5	16
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	1.6	0.0	0.0	-	1.4	0.0	0.6	0.5	0.0	-	0.5	0.8
Bicycles on Crosswalk	-	-	-	-	16	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	24.2	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	50	-	-	-	-	-	11	-	-	-	-	-	5	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	75.8	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Hill Street
Site Code: 240539
Start Date: 09/11/2024



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Hill Street
Site Code: 240539
Start Date: 09/11/2024

Turning Movement Peak Hour Data (8:15 AM)

Start Time	Hill Street Eastbound						Hill Street Westbound						East Street Northbound						East 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	10	0	5	0	4	15	0	0	0	0	0	0	1	20	0	0	0	21	0	17	3	0	0	20	56
8:30 AM	8	0	3	0	1	11	0	0	2	0	0	2	2	28	0	0	0	30	0	14	1	0	0	15	58
8:45 AM	10	0	7	0	1	17	0	0	0	0	0	0	6	10	0	0	0	16	0	20	5	0	0	25	58
9:00 AM	14	0	6	0	2	20	0	0	0	0	0	0	1	29	0	0	0	30	0	19	9	0	0	28	78
Total	42	0	21	0	8	63	0	0	2	0	0	2	10	87	0	0	0	97	0	70	18	0	0	88	250
Approach %	66.7	0.0	33.3	0.0	-	-	0.0	0.0	100.0	0.0	-	-	10.3	89.7	0.0	0.0	-	-	0.0	79.5	20.5	0.0	-	-	-
Total %	16.8	0.0	8.4	0.0	-	25.2	0.0	0.0	0.8	0.0	-	0.8	4.0	34.8	0.0	0.0	-	38.8	0.0	28.0	7.2	0.0	-	35.2	-
PHF	0.750	0.000	0.750	0.000	-	0.788	0.000	0.000	0.250	0.000	-	0.250	0.417	0.750	0.000	0.000	-	0.808	0.000	0.875	0.500	0.000	-	0.786	0.801
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	1.1	-	-	-	1.0	-	0.0	0.0	-	-	0.0	0.4
Cars & Light Goods	40	0	20	0	-	60	0	0	2	0	-	2	9	84	0	0	-	93	0	66	14	0	-	80	235
% Cars & Light Goods	95.2	-	95.2	-	-	95.2	-	-	100.0	-	-	100.0	90.0	96.6	-	-	-	95.9	-	94.3	77.8	-	-	90.9	94.0
Buses	1	0	1	0	-	2	0	0	0	0	-	0	1	0	0	0	-	1	0	2	1	0	-	3	6
% Buses	2.4	-	4.8	-	-	3.2	-	-	0.0	-	-	0.0	10.0	0.0	-	-	-	1.0	-	2.9	5.6	-	-	3.4	2.4
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	0	1	3	0	-	4	6
% Single-Unit Trucks	2.4	-	0.0	-	-	1.6	-	-	0.0	-	-	0.0	0.0	1.1	-	-	-	1.0	-	1.4	16.7	-	-	4.5	2.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	-	1.4	0.0	-	-	1.1	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	1.1	-	-	-	1.0	-	0.0	0.0	-	-	0.0	0.4
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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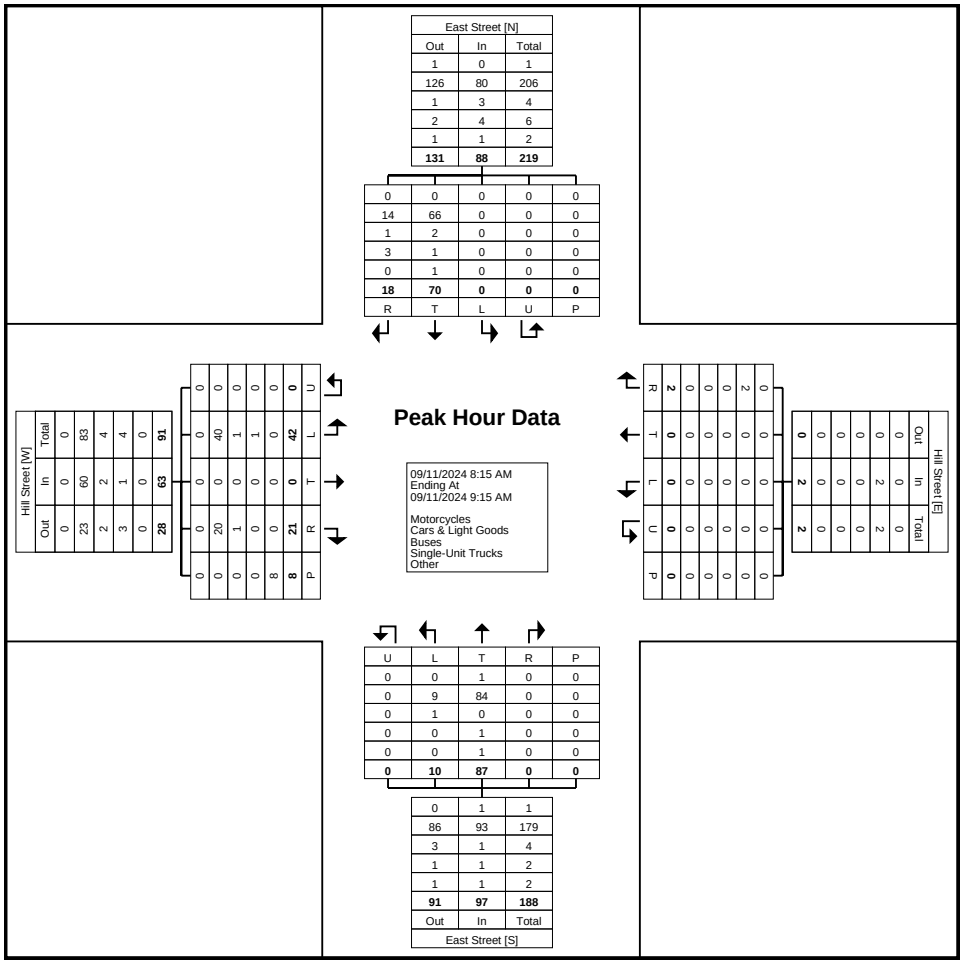

Turning Movement Peak Hour Data Plot (8:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: East Road & Hill Street
Site Code: 240539
Start Date: 09/11/2024

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Hill Street Eastbound						Hill Street Westbound						East Street Northbound						East 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	6	0	3	0	4	9	2	0	0	0	0	2	5	24	0	0	0	29	0	24	7	0	0	31	71
12:15 PM	8	0	2	0	4	10	0	0	0	0	0	0	2	24	0	0	0	26	0	21	12	0	0	33	69
12:30 PM	7	0	3	0	1	10	0	0	0	0	0	0	1	26	0	0	0	27	0	25	7	0	0	32	69
12:45 PM	9	0	7	0	1	16	0	1	0	0	1	1	4	15	3	0	0	22	0	26	3	0	0	29	68
Total	30	0	15	0	10	45	2	1	0	0	1	3	12	89	3	0	0	104	0	96	29	0	0	125	277
Approach %	66.7	0.0	33.3	0.0	-	-	66.7	33.3	0.0	0.0	-	-	11.5	85.6	2.9	0.0	-	-	0.0	76.8	23.2	0.0	-	-	-
Total %	10.8	0.0	5.4	0.0	-	16.2	0.7	0.4	0.0	0.0	-	1.1	4.3	32.1	1.1	0.0	-	37.5	0.0	34.7	10.5	0.0	-	45.1	-
PHF	0.833	0.000	0.536	0.000	-	0.703	0.250	0.250	0.000	0.000	-	0.375	0.600	0.856	0.250	0.000	-	0.897	0.000	0.923	0.604	0.000	-	0.947	0.975
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	0	2	0	0	-	2	6
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	4.5	0.0	-	-	3.8	-	2.1	0.0	-	-	1.6	2.2
Cars & Light Goods	28	0	15	0	-	43	2	1	0	0	-	3	11	81	3	0	-	95	0	90	29	0	-	119	260
% Cars & Light Goods	93.3	-	100.0	-	-	95.6	100.0	100.0	-	-	-	100.0	91.7	91.0	100.0	-	-	91.3	-	93.8	100.0	-	-	95.2	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
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	0	2	0	0	-	2	4
% Single-Unit Trucks	3.3	-	0.0	-	-	2.2	0.0	0.0	-	-	-	0.0	8.3	0.0	0.0	-	-	1.0	-	2.1	0.0	-	-	1.6	1.4
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	2
% Articulated Trucks	3.3	-	0.0	-	-	2.2	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	1.0	0.0	-	-	0.8	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	0	1	0	0	-	1	5
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	4.5	0.0	-	-	3.8	-	1.0	0.0	-	-	0.8	1.8
Bicycles on Crosswalk	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	70.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	30.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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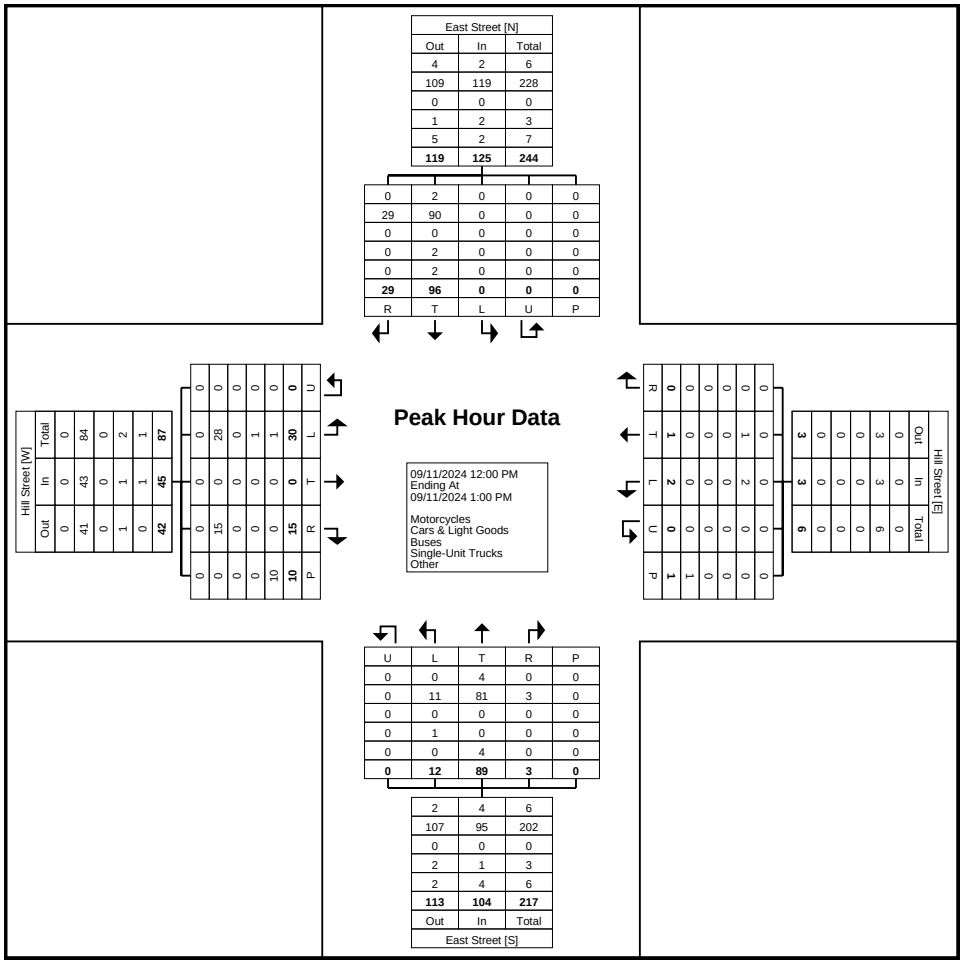

Turning Movement Peak Hour Data Plot (12:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: East Road & Hill Street
Site Code: 240539
Start Date: 09/11/2024

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Hill Street Eastbound						Hill Street Westbound						East Street Northbound						East 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	
3:30 PM	7	0	4	0	0	11	0	0	0	0	1	0	2	23	0	0	0	25	0	32	10	0	0	42	78
3:45 PM	8	1	4	0	3	13	1	0	0	0	0	1	8	20	0	0	0	28	0	32	15	0	0	47	89
4:00 PM	6	0	3	0	0	9	0	0	0	0	0	0	4	45	0	0	0	49	0	30	7	1	0	38	96
4:15 PM	9	0	1	0	0	10	0	0	0	0	0	0	3	26	0	0	2	29	0	27	8	0	0	35	74
Total	30	1	12	0	3	43	1	0	0	0	1	1	17	114	0	0	2	131	0	121	40	1	0	162	337
Approach %	69.8	2.3	27.9	0.0	-	-	100.0	0.0	0.0	0.0	-	-	13.0	87.0	0.0	0.0	-	-	0.0	74.7	24.7	0.6	-	-	-
Total %	8.9	0.3	3.6	0.0	-	12.8	0.3	0.0	0.0	0.0	-	0.3	5.0	33.8	0.0	0.0	-	38.9	0.0	35.9	11.9	0.3	-	48.1	-
PHF	0.833	0.250	0.750	0.000	-	0.827	0.250	0.000	0.000	0.000	-	0.250	0.531	0.633	0.000	0.000	-	0.668	0.000	0.945	0.667	0.250	-	0.862	0.878
Motorcycles	1	0	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	0	1	1	0	-	2	4
% Motorcycles	3.3	0.0	0.0	-	-	2.3	0.0	-	-	-	-	0.0	0.0	0.9	-	-	-	0.8	-	0.8	2.5	0.0	-	1.2	1.2
Cars & Light Goods	29	1	12	0	-	42	1	0	0	0	-	1	16	107	0	0	-	123	0	118	39	1	-	158	324
% Cars & Light Goods	96.7	100.0	100.0	-	-	97.7	100.0	-	-	-	-	100.0	94.1	93.9	-	-	-	93.9	-	97.5	97.5	100.0	-	97.5	96.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	1	4	0	0	-	5	0	2	0	0	-	2	7
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	5.9	3.5	-	-	-	3.8	-	1.7	0.0	0.0	-	1.2	2.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	2
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	1.8	-	-	-	1.5	-	0.0	0.0	0.0	-	0.0	0.6
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	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	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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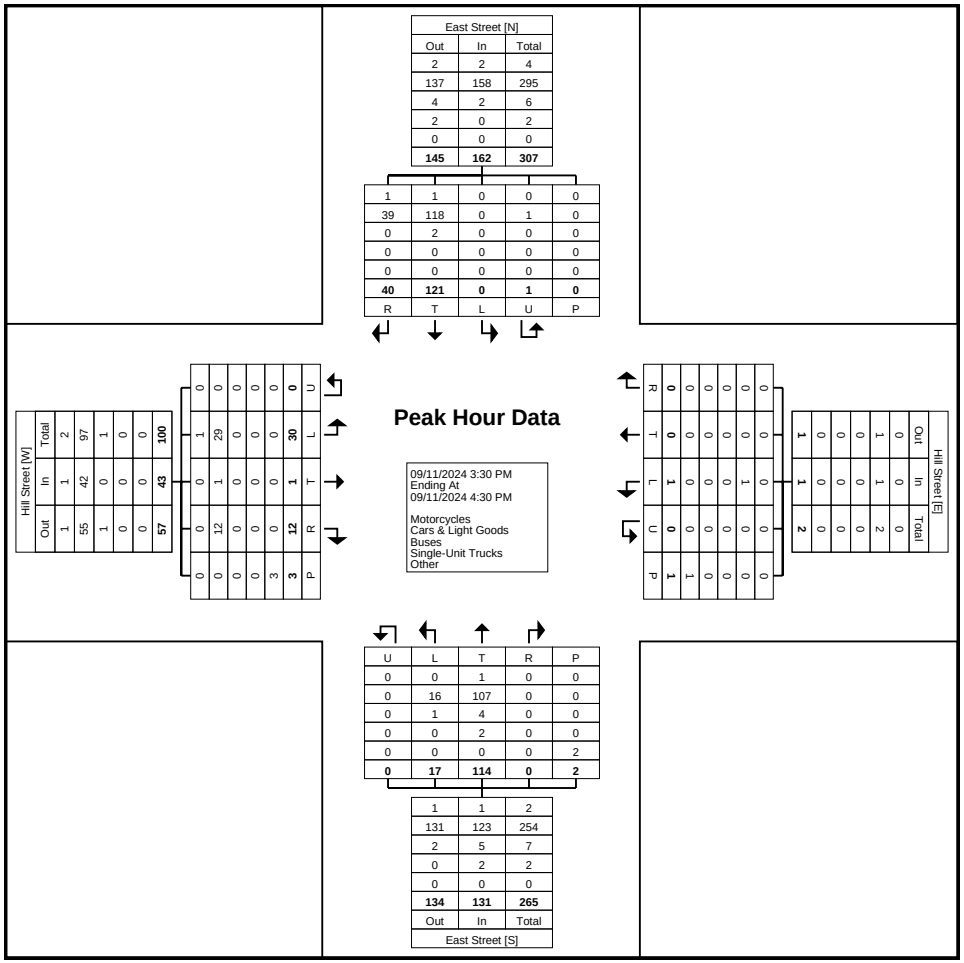


Turning Movement Peak Hour Data Plot (3:30 PM)

Appendix C

Existing Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	0	0	0	41	0	13	0	90	41	14	47	0
Future Volume (vph)	0	0	0	41	0	13	0	90	41	14	47	0
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					0.968			0.958				
Flt Protected					0.963						0.989	
Satd. Flow (prot)	0	1900	0	0	1620	0	0	1803	0	0	1715	0
Flt Permitted					0.963						0.989	
Satd. Flow (perm)	0	1900	0	0	1620	0	0	1803	0	0	1715	0
Link Speed (k/h)		50			60			50			50	
Link Distance (m)		62.0			367.4			363.5			345.1	
Travel Time (s)		4.5			22.0			26.2			24.8	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	6%	0%	20%	0%	0%	3%	8%	10%	0%
Adj. Flow (vph)	0	0	0	45	0	14	0	98	45	15	51	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	59	0	0	143	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	0	0	0	41	0	13	0	90	41	14	47	0
Future Vol, veh/h	0	0	0	41	0	13	0	90	41	14	47	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	6	0	20	0	0	3	8	10	0
Mvmt Flow	0	0	0	45	0	14	0	98	45	15	51	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	210	226	51	204	204	124	51	0	0	145	0	0
Stage 1	81	81	-	123	123	-	-	-	-	-	-	-
Stage 2	129	145	-	81	81	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.16	6.5	6.4	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.16	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.16	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.554	4	3.48	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	752	677	1023	745	696	881	1568	-	-	1401	-	-
Stage 1	932	832	-	872	798	-	-	-	-	-	-	-
Stage 2	880	781	-	918	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	733	668	1023	738	687	879	1568	-	-	1399	-	-
Mov Cap-2 Maneuver	733	668	-	738	687	-	-	-	-	-	-	-
Stage 1	932	823	-	870	796	-	-	-	-	-	-	-
Stage 2	865	779	-	908	823	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	10.1	0	1.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	-	768	1399	-	-
HCM Lane V/C Ratio	-	-	-	-	0.076	0.011	-	-
HCM Control Delay (s)	0	-	-	0	10.1	7.6	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	0	21	0	0	2	10	87	0	0	70	18
Future Volume (vph)	42	0	21	0	0	2	10	87	0	0	70	18
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		0.955			0.865						0.972	
Flt Protected		0.968						0.995				
Satd. Flow (prot)	0	1673	0	0	1644	0	0	1874	0	0	1689	0
Flt Permitted		0.968						0.995				
Satd. Flow (perm)	0	1673	0	0	1644	0	0	1874	0	0	1689	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		148.6			141.6			218.9			363.5	
Travel Time (s)		13.4			12.7			15.8			26.2	
Confl. Peds. (#/hr)							8					8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	5%	0%	0%	0%	0%	1%	0%	0%	6%	22%
Adj. Flow (vph)	46	0	23	0	0	2	11	95	0	0	76	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	2	0	0	106	0	0	96	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	0	21	0	0	2	10	87	0	0	70	18
Future Vol, veh/h	42	0	21	0	0	2	10	87	0	0	70	18
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	0	5	0	0	0	0	1	0	0	6	22
Mvmt Flow	46	0	23	0	0	2	11	95	0	0	76	20

Major/Minor	Minor2			Minor1				Major1			Major2	
Conflicting Flow All	212	211	94	215	221	95	104	0	0	95	0	0
Stage 1	94	94	-	117	117	-	-	-	-	-	-	-
Stage 2	118	117	-	98	104	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.25	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.345	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	739	690	955	746	681	967	1500	-	-	1512	-	-
Stage 1	906	821	-	892	803	-	-	-	-	-	-	-
Stage 2	879	803	-	913	813	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	728	680	949	724	671	967	1490	-	-	1512	-	-
Mov Cap-2 Maneuver	728	680	-	724	671	-	-	-	-	-	-	-
Stage 1	892	815	-	885	797	-	-	-	-	-	-	-
Stage 2	870	797	-	891	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	8.7	0.8	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1490	-	-	789	967	1512	-	-
HCM Lane V/C Ratio	0.007	-	-	0.087	0.002	-	-	-
HCM Control Delay (s)	7.4	0	-	10	8.7	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	1	72	1	16	0	81	63	15	88	1
Future Volume (vph)	0	0	1	72	1	16	0	81	63	15	88	1
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		0.865			0.976			0.941			0.999	
Flt Protected					0.961						0.993	
Satd. Flow (prot)	0	1644	0	0	1764	0	0	1636	0	0	1796	0
Flt Permitted					0.961						0.993	
Satd. Flow (perm)	0	1644	0	0	1764	0	0	1636	0	0	1796	0
Link Speed (k/h)		50			60			50			50	
Link Distance (m)		62.0			367.4			363.5			345.1	
Travel Time (s)		4.5			22.0			26.2			24.8	
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	11%	7%	17%	3%	0%
Adj. Flow (vph)	0	0	1	78	1	17	0	88	68	16	96	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	96	0	0	156	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	72	1	16	0	81	63	15	88	1
Future Vol, veh/h	0	0	1	72	1	16	0	81	63	15	88	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	100	0	0	11	7	17	3	0
Mvmt Flow	0	0	1	78	1	17	0	88	68	16	96	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	261	287	98	252	253	123	98	0	0	157	0	0
Stage 1	130	130	-	123	123	-	-	-	-	-	-	-
Stage 2	131	157	-	129	130	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	7.5	6.2	4.1	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.9	3.3	2.2	-	-	2.353	-	-
Pot Cap-1 Maneuver	696	626	963	706	513	933	1508	-	-	1336	-	-
Stage 1	878	792	-	886	639	-	-	-	-	-	-	-
Stage 2	877	772	-	880	634	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	674	617	962	698	505	932	1507	-	-	1335	-	-
Mov Cap-2 Maneuver	674	617	-	698	505	-	-	-	-	-	-	-
Stage 1	877	781	-	885	638	-	-	-	-	-	-	-
Stage 2	859	771	-	868	625	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	10.7	0	1.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1507	-	-	962	728	1335	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.133	0.012	-	-
HCM Control Delay (s)	0	-	-	8.7	10.7	7.7	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	1	12	1	0	0	17	114	0	0	121	40
Future Volume (vph)	30	1	12	1	0	0	17	114	0	0	121	40
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		0.963									0.967	
Flt Protected		0.966			0.950			0.994				
Satd. Flow (prot)	0	1767	0	0	1805	0	0	1796	0	0	1810	0
Flt Permitted		0.966			0.950			0.994				
Satd. Flow (perm)	0	1767	0	0	1805	0	0	1796	0	0	1810	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		148.6			141.6			218.9			363.5	
Travel Time (s)		13.4			12.7			15.8			26.2	
Confl. Peds. (#/hr)			2	2			3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	6%	5%	0%	0%	2%	0%
Adj. Flow (vph)	33	1	13	1	0	0	18	124	0	0	132	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	1	0	0	142	0	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

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	30	1	12	1	0	0	17	114	0	0	121	40
Future Vol, veh/h	30	1	12	1	0	0	17	114	0	0	121	40
Conflicting Peds, #/hr	0	0	2	2	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	6	5	0	0	2	0
Mvmt Flow	33	1	13	1	0	0	18	124	0	0	132	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	317	318	159	324	339	125	178	0	0	125	0	0
Stage 1	157	157	-	161	161	-	-	-	-	-	-	-
Stage 2	160	161	-	163	178	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	640	602	892	633	586	931	1374	-	-	1474	-	-
Stage 1	850	772	-	846	769	-	-	-	-	-	-	-
Stage 2	847	769	-	844	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	632	591	888	615	575	930	1371	-	-	1473	-	-
Mov Cap-2 Maneuver	632	591	-	615	575	-	-	-	-	-	-	-
Stage 1	836	770	-	833	757	-	-	-	-	-	-	-
Stage 2	835	757	-	829	754	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	10.9	1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1371	-	-	686	615	1473	-	-
HCM Lane V/C Ratio	0.013	-	-	0.068	0.002	-	-	-
HCM Control Delay (s)	7.7	0	-	10.6	10.9	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Appendix D

Other Area Development Traffic Volumes

5098-5184 East Rd

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 215 - Single Family Attached Housing	177	Eq	22	64	**86**	Eq	60	42	**102**
Total Trip Generation			**22**	**64**	**86**		**60**	**42**	**102**

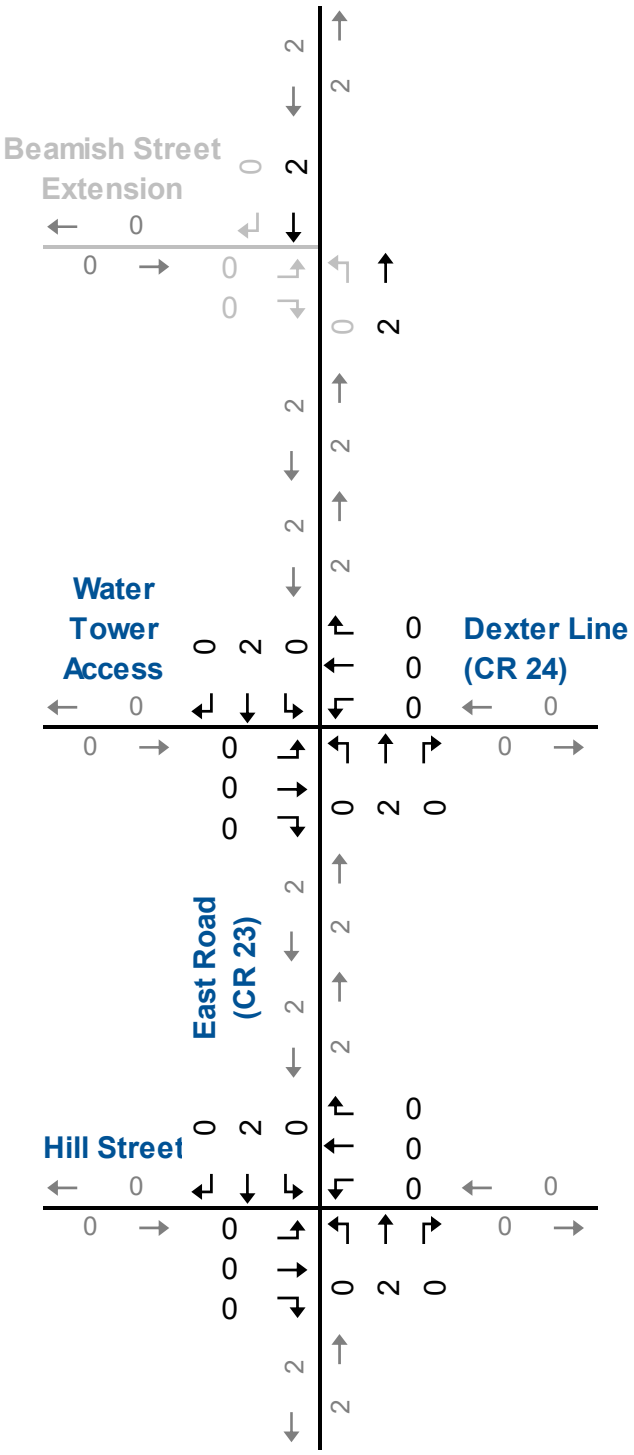
LUC 215 - AM: T = 0.52(X) - 5.70 | PM: T = 0.60(X) - 3.93

279 Hill Street

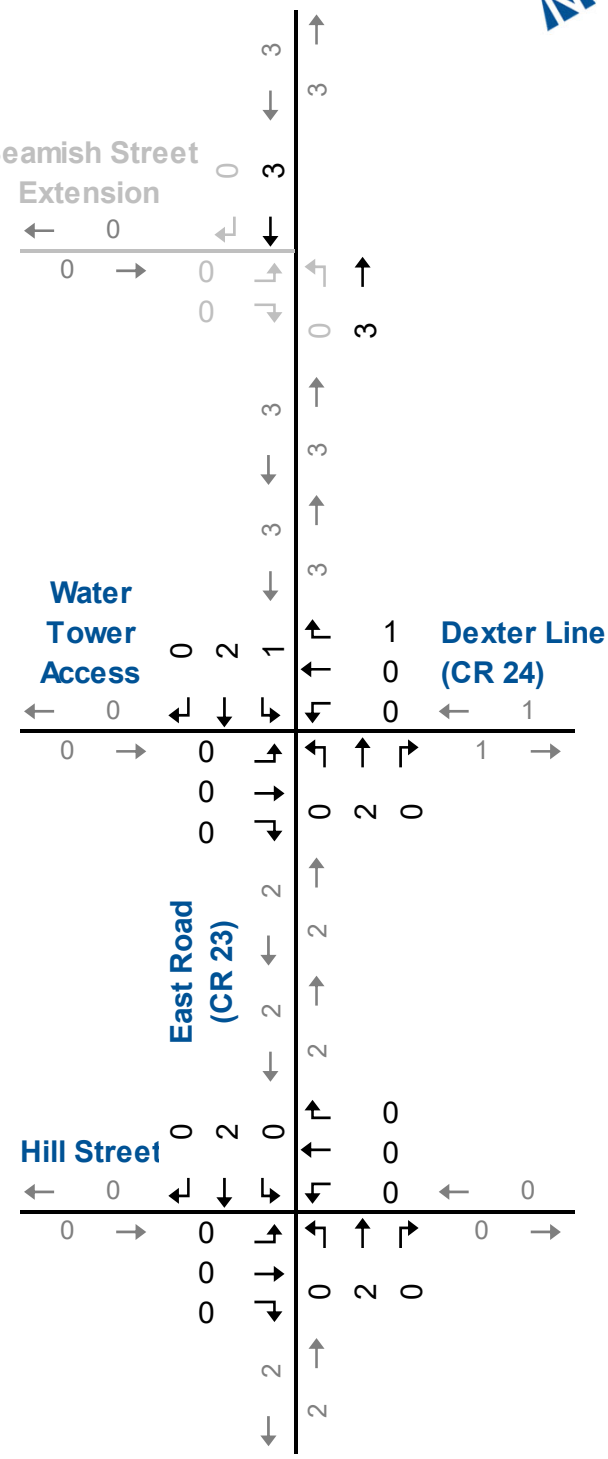
Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 220 - Multifamily Housing (Low-Rise)	27	Eq	7	24	**31**	Eq	19	13	**32**
Total Trip Generation			**7**	**24**	**31**		**19**	**13**	**32**

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

AM Peak Hour



PM Peak Hour



NTS

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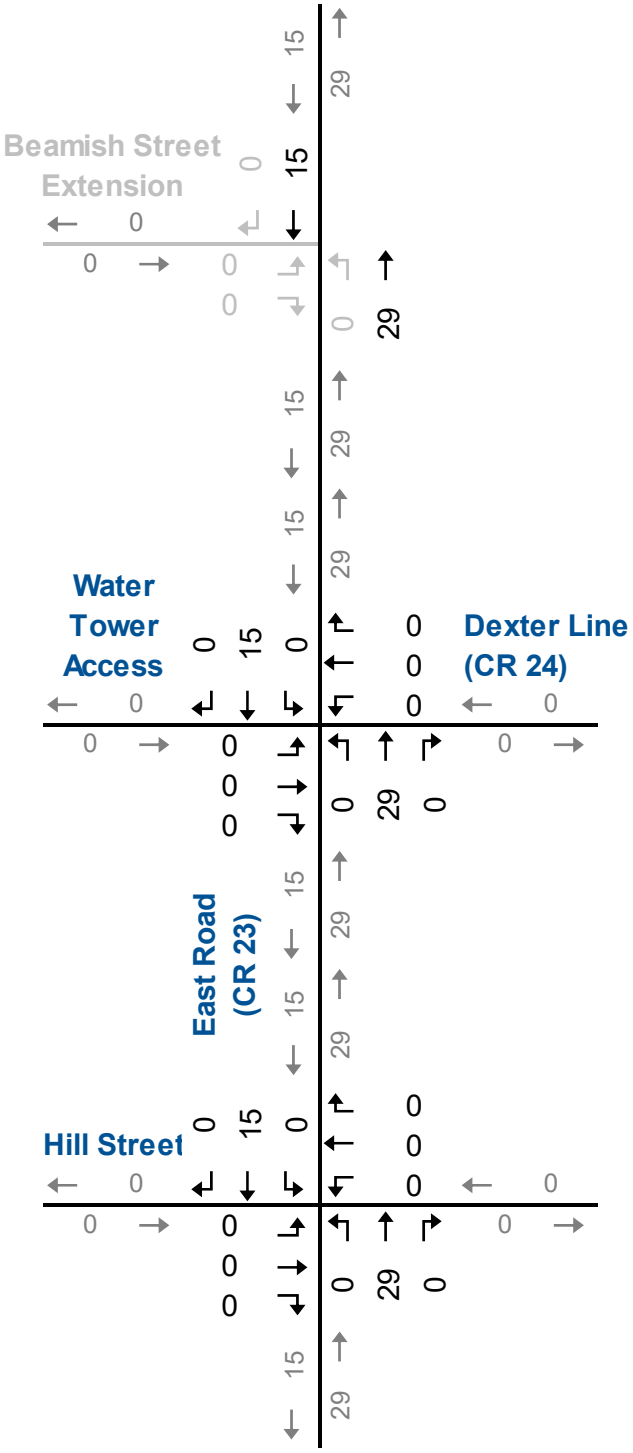
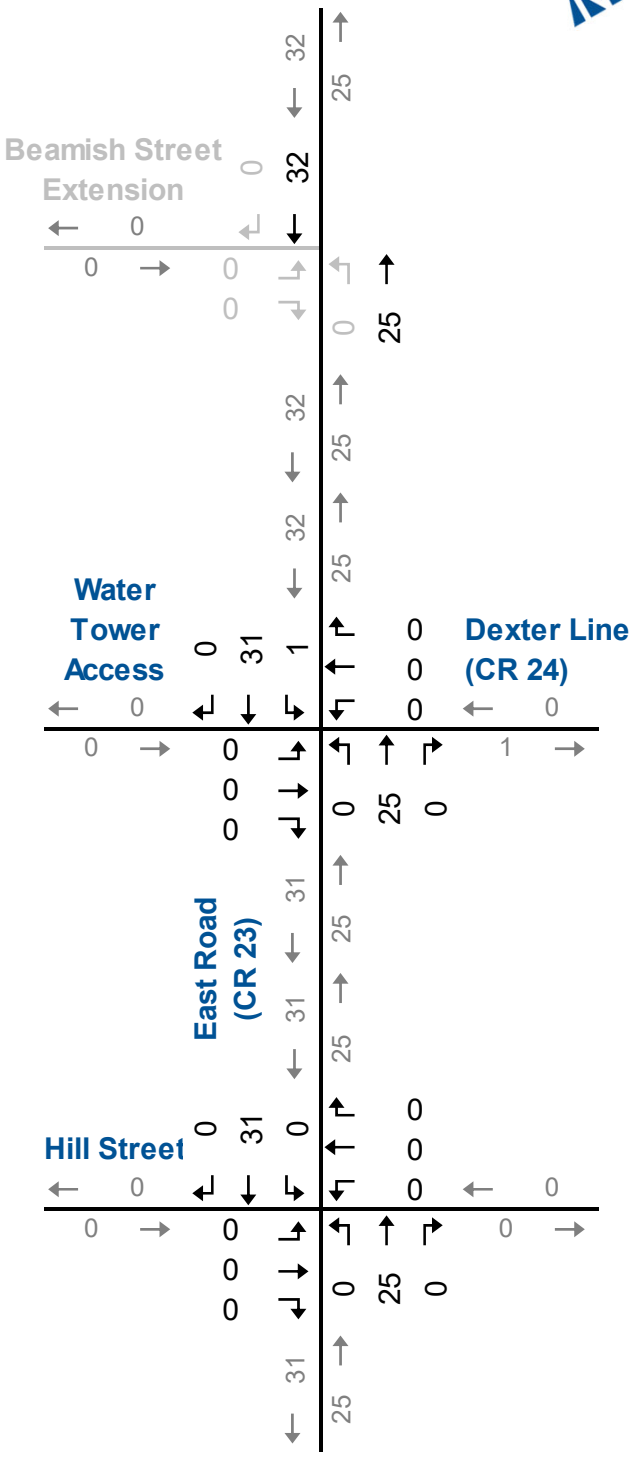
Other Area Development Traffic Volumes
4980 Sunset Road

AM Peak Hour



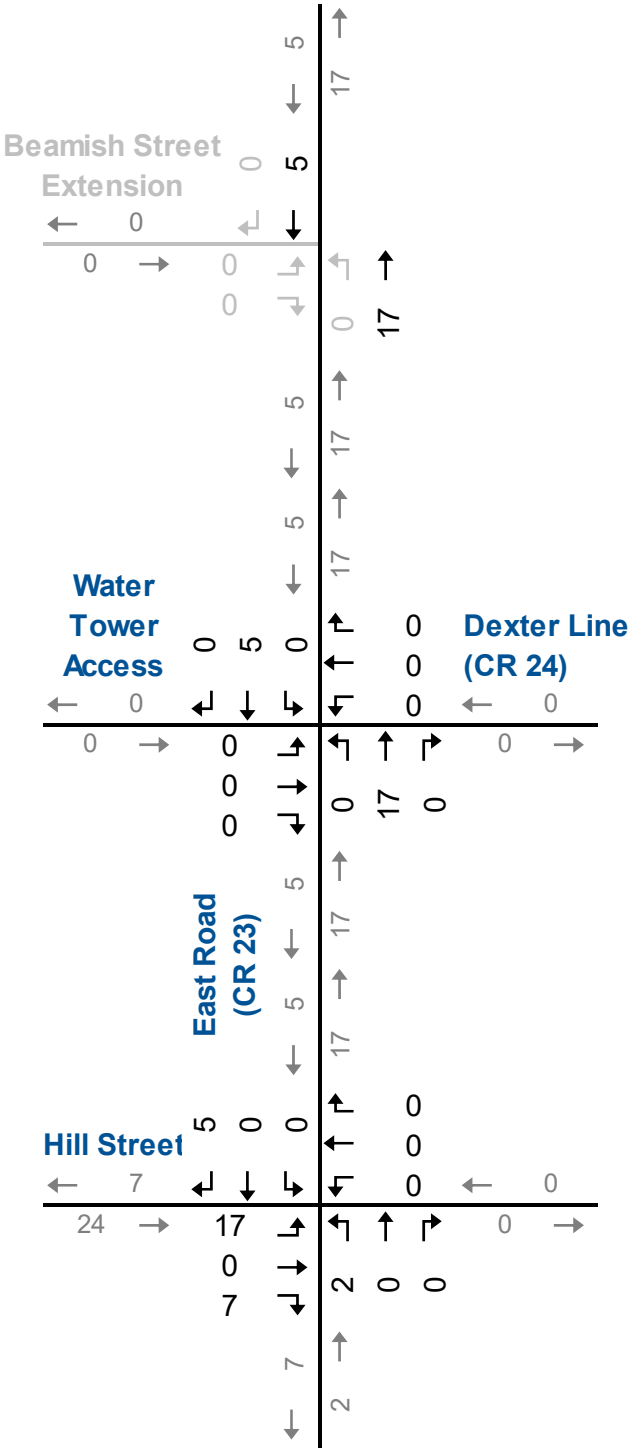
PM Peak Hour



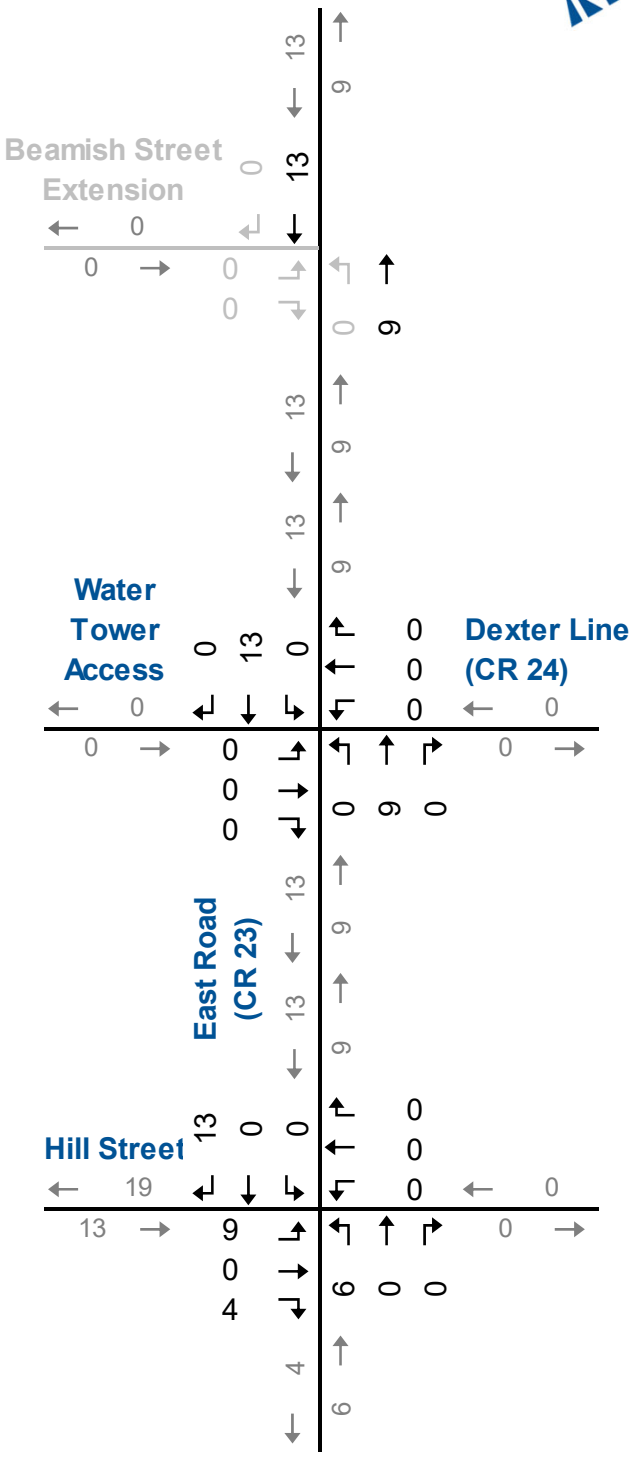
NTS

Other Area Development Traffic Volumes
Little Creek West Lands

AM Peak Hour



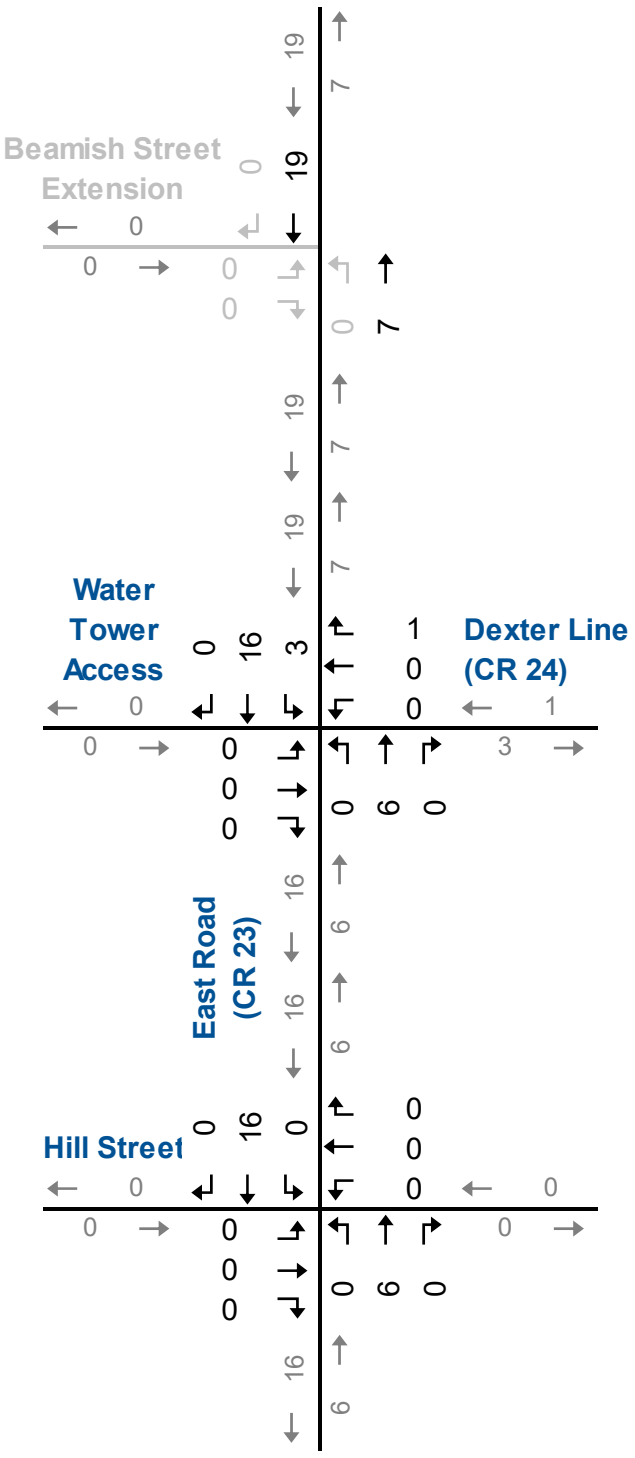
PM Peak Hour



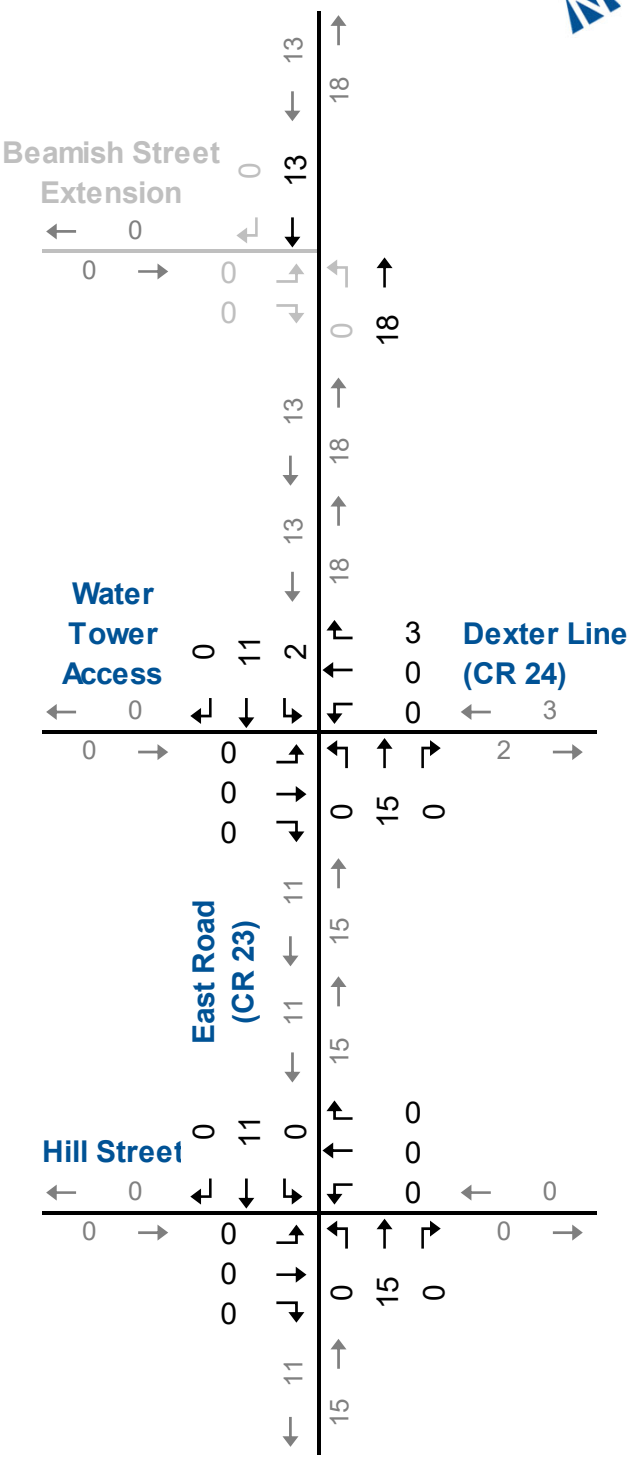
NTS

Other Area Development Traffic Volumes
279 Hill Street

AM Peak Hour



PM Peak Hour



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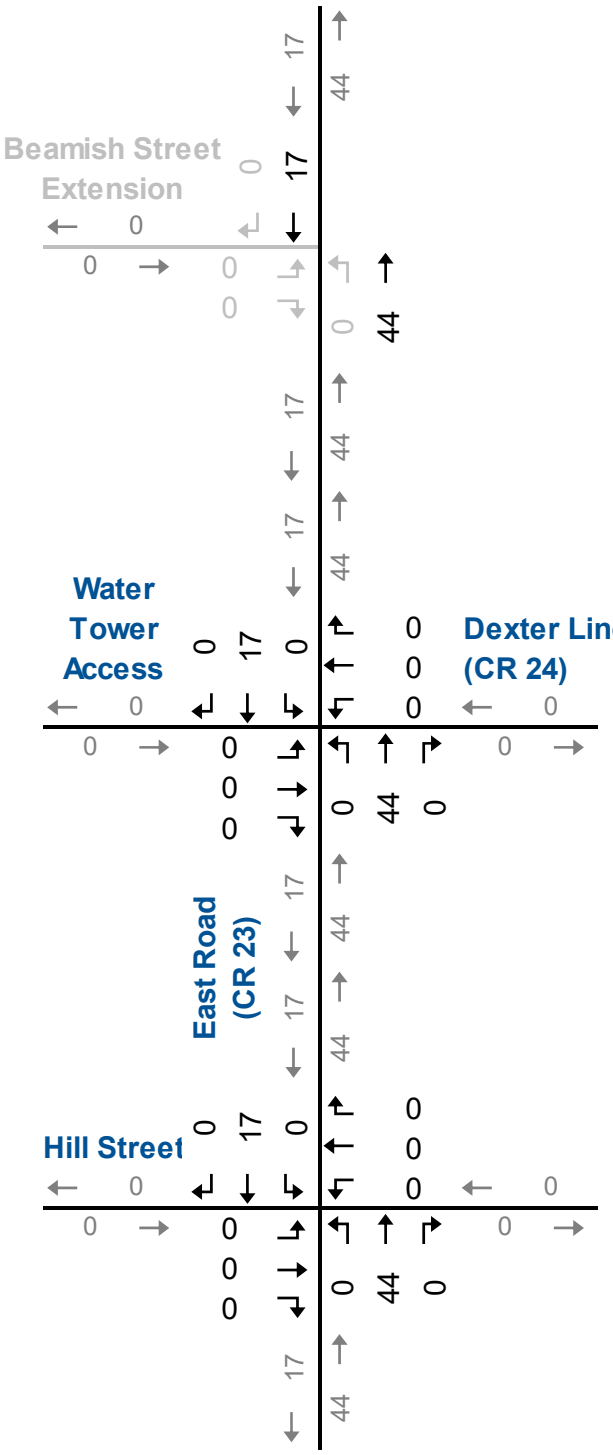
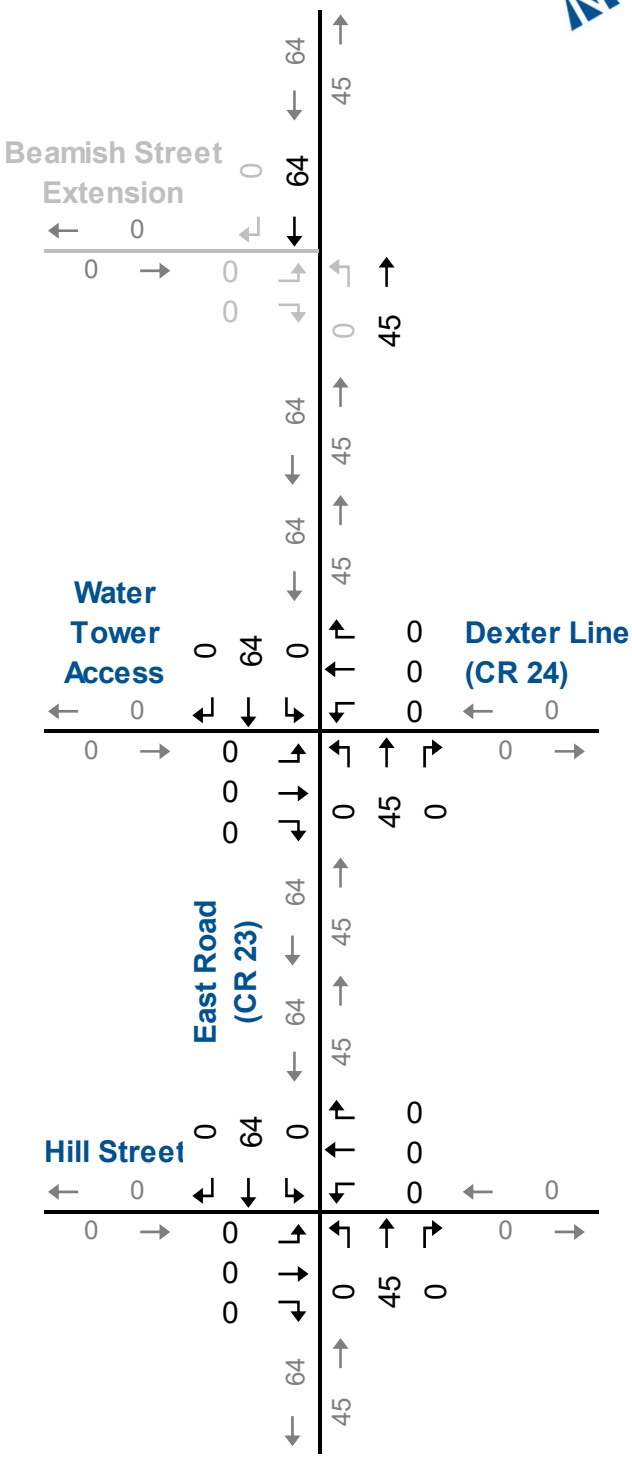
Other Area Development Traffic Volumes
5098-5184 East Road

AM Peak Hour



PM Peak Hour



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Other Area Development Traffic Volumes
Lakeview and West Harbour

Appendix E

Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	0	0	0	47	0	16	0	201	47	19	109	0
Future Volume (vph)	0	0	0	47	0	16	0	201	47	19	109	0
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					0.966			0.974				
Flt Protected					0.964						0.993	
Satd. Flow (prot)	0	1900	0	0	1616	0	0	1840	0	0	1720	0
Flt Permitted					0.964						0.993	
Satd. Flow (perm)	0	1900	0	0	1616	0	0	1840	0	0	1720	0
Link Speed (k/h)		50			60			50			50	
Link Distance (m)		62.0			367.4			363.5			345.1	
Travel Time (s)		4.5			22.0			26.2			24.8	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	6%	0%	20%	0%	0%	3%	8%	10%	0%
Adj. Flow (vph)	0	0	0	51	0	17	0	218	51	21	118	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	68	0	0	269	0	0	139	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

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	0	0	0	47	0	16	0	201	47	19	109	0
Future Vol, veh/h	0	0	0	47	0	16	0	201	47	19	109	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	6	0	20	0	0	3	8	10	0
Mvmt Flow	0	0	0	51	0	17	0	218	51	21	118	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	413	431	118	406	406	247	118	0	0	271	0	0
Stage 1	160	160	-	246	246	-	-	-	-	-	-	-
Stage 2	253	271	-	160	160	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.16	6.5	6.4	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.16	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.16	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.554	4	3.48	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	553	520	939	548	537	750	1483	-	-	1258	-	-
Stage 1	847	769	-	749	706	-	-	-	-	-	-	-
Stage 2	756	689	-	833	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	533	510	939	540	526	748	1483	-	-	1256	-	-
Mov Cap-2 Maneuver	533	510	-	540	526	-	-	-	-	-	-	-
Stage 1	847	755	-	748	705	-	-	-	-	-	-	-
Stage 2	738	688	-	818	755	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	12	0	1.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1483	-	-	-	581	1256	-	-
HCM Lane V/C Ratio	-	-	-	-	0.118	0.016	-	-
HCM Control Delay (s)	0	-	-	0	12	7.9	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	31	0	0	2	13	181	0	0	130	26
Future Volume (vph)	65	0	31	0	0	2	13	181	0	0	130	26
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		0.956			0.865						0.978	
Flt Protected		0.967						0.997				
Satd. Flow (prot)	0	1673	0	0	1644	0	0	1877	0	0	1710	0
Flt Permitted		0.967						0.997				
Satd. Flow (perm)	0	1673	0	0	1644	0	0	1877	0	0	1710	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		148.6			141.6			218.9			363.5	
Travel Time (s)		13.4			12.7			15.8			26.2	
Confl. Peds. (#/hr)							8					8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	5%	0%	0%	0%	0%	1%	0%	0%	6%	22%
Adj. Flow (vph)	71	0	34	0	0	2	14	197	0	0	141	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	2	0	0	211	0	0	169	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	39.0%	ICU Level of Service A	
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	1	83	1	22	0	189	72	21	222	1
Future Volume (vph)	0	0	1	83	1	22	0	189	72	21	222	1
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		0.865			0.972			0.963			0.999	
Flt Protected					0.962						0.996	
Satd. Flow (prot)	0	1644	0	0	1761	0	0	1665	0	0	1814	0
Flt Permitted					0.962						0.996	
Satd. Flow (perm)	0	1644	0	0	1761	0	0	1665	0	0	1814	0
Link Speed (k/h)		50			60			50			50	
Link Distance (m)		62.0			367.4			363.5			345.1	
Travel Time (s)		4.5			22.0			26.2			24.8	
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	11%	7%	17%	3%	0%
Adj. Flow (vph)	0	0	1	90	1	24	0	205	78	23	241	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	115	0	0	283	0	0	265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.5%	ICU Level of Service A	
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	1	83	1	22	0	189	72	21	222	1
Future Vol, veh/h	0	0	1	83	1	22	0	189	72	21	222	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	100	0	0	11	7	17	3	0
Mvmt Flow	0	0	1	90	1	24	0	205	78	23	241	1

Major/Minor	Minor2			Minor1				Major1			Major2	
Conflicting Flow All	546	573	243	533	534	245	243	0	0	284	0	0
Stage 1	289	289	-	245	245	-	-	-	-	-	-	-
Stage 2	257	284	-	288	289	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	7.5	6.2	4.1	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.9	3.3	2.2	-	-	2.353	-	-
Pot Cap-1 Maneuver	452	432	801	461	340	799	1335	-	-	1197	-	-
Stage 1	723	677	-	763	555	-	-	-	-	-	-	-
Stage 2	752	680	-	724	527	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	430	422	800	452	332	798	1334	-	-	1196	-	-
Mov Cap-2 Maneuver	430	422	-	452	332	-	-	-	-	-	-	-
Stage 1	722	661	-	762	554	-	-	-	-	-	-	-
Stage 2	728	679	-	707	515	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	14.5	0	0.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1334	-	-	800	495	1196	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.233	0.019	-	-
HCM Control Delay (s)	0	-	-	9.5	14.5	8.1	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.9	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	43	1	18	1	0	0	26	218	0	0	247	59
Future Volume (vph)	43	1	18	1	0	0	26	218	0	0	247	59
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		0.960									0.974	
Flt Protected		0.967			0.950			0.995				
Satd. Flow (prot)	0	1764	0	0	1805	0	0	1799	0	0	1821	0
Flt Permitted		0.967			0.950			0.995				
Satd. Flow (perm)	0	1764	0	0	1805	0	0	1799	0	0	1821	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		148.6			141.6			218.9			363.5	
Travel Time (s)		13.4			12.7			15.8			26.2	
Confl. Peds. (#/hr)			2	2			3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	6%	5%	0%	0%	2%	0%
Adj. Flow (vph)	47	1	20	1	0	0	28	237	0	0	268	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	1	0	0	265	0	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

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	43	1	18	1	0	0	26	218	0	0	247	59
Future Vol, veh/h	43	1	18	1	0	0	26	218	0	0	247	59
Conflicting Peds, #/hr	0	0	2	2	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	6	5	0	0	2	0
Mvmt Flow	47	1	20	1	0	0	28	237	0	0	268	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	596	597	305	607	629	238	335	0	0	238	0	0
Stage 1	303	303	-	294	294	-	-	-	-	-	-	-
Stage 2	293	294	-	313	335	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	740	411	402	806	1202	-	-	1341	-	-
Stage 1	711	667	-	719	673	-	-	-	-	-	-	-
Stage 2	719	673	-	702	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	408	406	737	390	390	805	1199	-	-	1340	-	-
Mov Cap-2 Maneuver	408	406	-	390	390	-	-	-	-	-	-	-
Stage 1	690	665	-	699	654	-	-	-	-	-	-	-
Stage 2	700	654	-	681	644	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	14.3	0.9	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1199	-	-	469	390	1340	-	-
HCM Lane V/C Ratio	0.024	-	-	0.144	0.003	-	-	-
HCM Control Delay (s)	8.1	0	-	14	14.3	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	65	0	31	0	0	2	13	181	0	0	130	26
Future Vol, veh/h	65	0	31	0	0	2	13	181	0	0	130	26
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	0	5	0	0	0	0	1	0	0	6	22
Mvmt Flow	71	0	34	0	0	2	14	197	0	0	141	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	389	388	163	397	402	197	177	0	0	197	0	0
Stage 1	163	163	-	225	225	-	-	-	-	-	-	-
Stage 2	226	225	-	172	177	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.25	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.345	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	565	550	874	567	540	849	1411	-	-	1388	-	-
Stage 1	832	767	-	782	721	-	-	-	-	-	-	-
Stage 2	770	721	-	835	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	555	540	868	540	530	849	1401	-	-	1388	-	-
Mov Cap-2 Maneuver	555	540	-	540	530	-	-	-	-	-	-	-
Stage 1	817	762	-	773	713	-	-	-	-	-	-	-
Stage 2	760	713	-	803	751	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	9.3	0.5	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1401	-	-	628	849	1388	-	-
HCM Lane V/C Ratio	0.01	-	-	0.166	0.003	-	-	-
HCM Control Delay (s)	7.6	0	-	11.9	9.3	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-

Appendix F

Total Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	0	0	0	47	0	16	0	208	47	19	129	0
Future Volume (vph)	0	0	0	47	0	16	0	208	47	19	129	0
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					0.966			0.975				
Flt Protected					0.964						0.994	
Satd. Flow (prot)	0	1900	0	0	1616	0	0	1842	0	0	1721	0
Flt Permitted					0.964						0.994	
Satd. Flow (perm)	0	1900	0	0	1616	0	0	1842	0	0	1721	0
Link Speed (k/h)		50			60			50			50	
Link Distance (m)		62.0			367.4			363.5			154.0	
Travel Time (s)		4.5			22.0			26.2			11.1	
Confl. Peds. (#/hr)	1					1			2	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	6%	0%	20%	0%	0%	3%	8%	10%	0%
Adj. Flow (vph)	0	0	0	51	0	17	0	226	51	21	140	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	68	0	0	277	0	0	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

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	0	0	0	47	0	16	0	208	47	19	129	0
Future Vol, veh/h	0	0	0	47	0	16	0	208	47	19	129	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	6	0	20	0	0	3	8	10	0
Mvmt Flow	0	0	0	51	0	17	0	226	51	21	140	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	443	461	140	436	436	255	140	0	0	279	0	0
Stage 1	182	182	-	254	254	-	-	-	-	-	-	-
Stage 2	261	279	-	182	182	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.16	6.5	6.4	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.16	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.16	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.554	4	3.48	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	528	500	913	524	517	742	1456	-	-	1250	-	-
Stage 1	824	753	-	742	701	-	-	-	-	-	-	-
Stage 2	748	683	-	811	753	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	508	490	913	516	507	740	1456	-	-	1248	-	-
Mov Cap-2 Maneuver	508	490	-	516	507	-	-	-	-	-	-	-
Stage 1	824	739	-	741	700	-	-	-	-	-	-	-
Stage 2	730	682	-	796	739	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	12.3	0	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1456	-	-	-	559	1248	-	-
HCM Lane V/C Ratio	-	-	-	-	0.123	0.017	-	-
HCM Control Delay (s)	0	-	-	0	12.3	7.9	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	31	0	0	2	13	188	0	0	150	26
Future Volume (vph)	65	0	31	0	0	2	13	188	0	0	150	26
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		0.956			0.865						0.980	
Flt Protected		0.967						0.997				
Satd. Flow (prot)	0	1673	0	0	1644	0	0	1877	0	0	1719	0
Flt Permitted		0.967						0.997				
Satd. Flow (perm)	0	1673	0	0	1644	0	0	1877	0	0	1719	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		148.6			141.6			218.9			363.5	
Travel Time (s)		13.4			12.7			15.8			26.2	
Confl. Peds. (#/hr)							8					8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	0%	5%	0%	0%	0%	0%	1%	0%	0%	6%	22%
Adj. Flow (vph)	71	0	34	0	0	2	14	204	0	0	163	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	0	0	2	0	0	218	0	0	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	0	31	0	0	2	13	188	0	0	150	26
Future Vol, veh/h	65	0	31	0	0	2	13	188	0	0	150	26
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	0	5	0	0	0	0	1	0	0	6	22
Mvmt Flow	71	0	34	0	0	2	14	204	0	0	163	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	418	417	185	426	431	204	199	0	0	204	0	0
Stage 1	185	185	-	232	232	-	-	-	-	-	-	-
Stage 2	233	232	-	194	199	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.25	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.345	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	540	530	850	542	520	842	1385	-	-	1380	-	-
Stage 1	810	751	-	775	716	-	-	-	-	-	-	-
Stage 2	763	716	-	812	740	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	530	520	844	516	511	842	1376	-	-	1380	-	-
Mov Cap-2 Maneuver	530	520	-	516	511	-	-	-	-	-	-	-
Stage 1	795	746	-	766	708	-	-	-	-	-	-	-
Stage 2	753	708	-	780	735	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	9.3	0.5	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1376	-	-	602	842	1380	-	-
HCM Lane V/C Ratio	0.01	-	-	0.173	0.003	-	-	-
HCM Control Delay (s)	7.6	0	-	12.2	9.3	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	47	20	7	217	128	16
Future Volume (vph)	47	20	7	217	128	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959				0.985	
Flt Protected	0.966			0.998		
Satd. Flow (prot)	1760	0	0	1843	1733	0
Flt Permitted	0.966			0.998		
Satd. Flow (perm)	1760	0	0	1843	1733	0
Link Speed (k/h)	40			50	50	
Link Distance (m)	76.4			154.0	191.2	
Travel Time (s)	6.9			11.1	13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	9%	0%
Adj. Flow (vph)	51	22	8	236	139	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	244	156	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	20	7	217	128	16
Future Vol, veh/h	47	20	7	217	128	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	9	0
Mvmt Flow	51	22	8	236	139	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	400	148	156	0	-	0
Stage 1	148	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	610	904	1436	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	606	904	1436	-	-	-
Mov Cap-2 Maneuver	606	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	795	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	672	-	-
HCM Lane V/C Ratio	0.005	-	0.108	-	-
HCM Control Delay (s)	7.5	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	0	0	1	83	1	22	0	209	72	21	235	1
Future Volume (vph)	0	0	1	83	1	22	0	209	72	21	235	1
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		0.865			0.972			0.965				
Flt Protected					0.962						0.996	
Satd. Flow (prot)	0	1644	0	0	1761	0	0	1667	0	0	1817	0
Flt Permitted					0.962						0.996	
Satd. Flow (perm)	0	1644	0	0	1761	0	0	1667	0	0	1817	0
Link Speed (k/h)		50			60			50			50	
Link Distance (m)		62.0			367.4			363.5			154.0	
Travel Time (s)		4.5			22.0			26.2			11.1	
Confl. Peds. (#/hr)							1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%	0%	11%	7%	17%	3%	0%
Adj. Flow (vph)	0	0	1	90	1	24	0	227	78	23	255	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	115	0	0	305	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	0	0	1	83	1	22	0	209	72	21	235	1
Future Vol, veh/h	0	0	1	83	1	22	0	209	72	21	235	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	100	0	0	11	7	17	3	0
Mvmt Flow	0	0	1	90	1	24	0	227	78	23	255	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	582	609	257	569	570	267	257	0	0	306	0	0
Stage 1	303	303	-	267	267	-	-	-	-	-	-	-
Stage 2	279	306	-	302	303	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	7.5	6.2	4.1	-	-	4.27	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.9	3.3	2.2	-	-	2.353	-	-
Pot Cap-1 Maneuver	427	412	787	436	322	777	1320	-	-	1174	-	-
Stage 1	711	667	-	743	541	-	-	-	-	-	-	-
Stage 2	732	665	-	712	519	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	405	402	786	427	314	776	1319	-	-	1173	-	-
Mov Cap-2 Maneuver	405	402	-	427	314	-	-	-	-	-	-	-
Stage 1	710	651	-	742	540	-	-	-	-	-	-	-
Stage 2	708	664	-	695	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	15.2	0	0.7
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1319	-	-	786	469	1173	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.246	0.019	-	-
HCM Control Delay (s)	0	-	-	9.6	15.2	8.1	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	43	1	18	1	0	0	26	238	0	0	260	59
Future Volume (vph)	43	1	18	1	0	0	26	238	0	0	260	59
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		0.960									0.975	
Flt Protected		0.967			0.950			0.995				
Satd. Flow (prot)	0	1764	0	0	1805	0	0	1799	0	0	1823	0
Flt Permitted		0.967			0.950			0.995				
Satd. Flow (perm)	0	1764	0	0	1805	0	0	1799	0	0	1823	0
Link Speed (k/h)		40			40			50			50	
Link Distance (m)		148.6			141.6			218.9			363.5	
Travel Time (s)		13.4			12.7			15.8			26.2	
Confl. Peds. (#/hr)			2	2			3		1	1		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	6%	5%	0%	0%	2%	0%
Adj. Flow (vph)	47	1	20	1	0	0	28	259	0	0	283	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	1	0	0	287	0	0	347	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	43	1	18	1	0	0	26	238	0	0	260	59
Future Vol, veh/h	43	1	18	1	0	0	26	238	0	0	260	59
Conflicting Peds, #/hr	0	0	2	2	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	6	5	0	0	2	0
Mvmt Flow	47	1	20	1	0	0	28	259	0	0	283	64

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	633	634	320	644	666	260	350	0	0	260	0	0
Stage 1	318	318	-	316	316	-	-	-	-	-	-	-
Stage 2	315	316	-	328	350	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	395	399	725	389	383	784	1187	-	-	1316	-	-
Stage 1	698	657	-	699	659	-	-	-	-	-	-	-
Stage 2	700	659	-	689	636	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	386	386	722	369	371	783	1184	-	-	1315	-	-
Mov Cap-2 Maneuver	386	386	-	369	371	-	-	-	-	-	-	-
Stage 1	677	655	-	679	640	-	-	-	-	-	-	-
Stage 2	680	640	-	668	634	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	14.8	0.8	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1184	-	-	446	369	1315	-	-
HCM Lane V/C Ratio	0.024	-	-	0.151	0.003	-	-	-
HCM Control Delay (s)	8.1	0	-	14.5	14.8	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	13	20	211	244	47
Future Volume (vph)	29	13	20	211	244	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959				0.978	
Flt Protected	0.966			0.996		
Satd. Flow (prot)	1760	0	0	1749	1783	0
Flt Permitted	0.966			0.996		
Satd. Flow (perm)	1760	0	0	1749	1783	0
Link Speed (k/h)	40			50	50	
Link Distance (m)	76.4			154.0	191.2	
Travel Time (s)	6.9			11.1	13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	9%	5%	0%
Adj. Flow (vph)	32	14	22	229	265	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	0	251	316	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100	100	100			100
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	13	20	211	244	47
Future Vol, veh/h	29	13	20	211	244	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	9	5	0
Mvmt Flow	32	14	22	229	265	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	564	291	316	0	-	0
Stage 1	291	-	-	-	-	-
Stage 2	273	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	490	753	1256	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	480	753	1256	-	-	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1256	-	541	-	-
HCM Lane V/C Ratio	0.017	-	0.084	-	-
HCM Control Delay (s)	7.9	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-