



Sinclair Avenue, St. Thomas Traffic Impact Brief

Paradigm Transportation Solutions Limited

March 2021
200407



Project Summary



Project Number
200407

March 2021

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Sinclair Avenue, St. Thomas Traffic Impact Brief



Signing Licence/Engineer, P.Eng.

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Version 1.0.0

Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Traffic Impact Brief (TIB) for a proposed residential development located on Sinclair Avenue in St. Thomas.

This Traffic Impact Brief (TIB) includes an analysis of existing traffic conditions, a description of the proposed development, traffic forecasts for a five-year horizon from the date of TIB submission (2025), and assessment of the potential traffic impacts on the adjacent road system.

Proposed Development

The subject lands are located on the north side of Sinclair Avenue, in the southeast corner of the intersection of Fairview Avenue and Talbot Street. The development is proposed to consist of 19 single family units and each unit will have direct access to Sinclair Avenue.

The development is anticipated to be completed within the next one to two years.

TIB Scope

The scope of the Traffic Impact Brief for the proposed development includes:

- ▶ **Study Area intersections:**
 - Sinclair Avenue and Manor Road;
 - Sinclair Avenue and Ripley Lane; and
 - Ripley Lane and Highview Drive.
- ▶ **Analysis Periods:** Weekday AM and PM peak hours.
- ▶ **Traffic Conditions:** Existing (2020), Five-Year Horizon (2025).

Conclusions

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

- ▶ **Existing Traffic Conditions:** All study area intersections are currently operating with high levels of service.



- ▶ **Development Trip Generation:** The development is forecast to generate 18 and 20 trips during the AM and PM peak hours, respectively.
- ▶ **2025 Future Traffic Conditions:** All study area intersections are forecast to operate with high levels of service.
- ▶ **Study Area Roadways:** The future total traffic volumes on Sinclair Avenue, Ripley Lane, Highview Drive and Manor Road, are projected to be well within the respective roadway capacities, as under current traffic conditions.

Recommendations

Based on the findings and conclusions of this study, it is recommended that the subject development be considered for approval as proposed.



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1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Traffic Impact Brief (TIB) for a proposed residential development located on Sinclair Avenue in St. Thomas. **Figure 1.1** details the subject development location.

The subject lands are located on the north side of Sinclair Avenue, in the southeast corner of the intersection of Fairview Avenue and Talbot Street. The development is proposed to consist of 18 single family units and each unit will have direct access to Sinclair Avenue.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impacts resulting from the proposed development. The scope of the study, developed in consultation with City of St. Thomas staff via e-mail in September 2020, includes:

- ▶ Assessment of the current traffic and site conditions within the study area;
- ▶ Estimates of background traffic growth for a five-year horizon (2025);
- ▶ Estimates of additional traffic generated by the subject site;
- ▶ Assessment of the impact of the future traffic on the surrounding road network, including the following study area intersections:
 - Sinclair Avenue and Manor Road;
 - Sinclair Avenue and Ripley Lane; and
 - Ripley Lane and Highview Drive.

Appendix A contains the pre-study consultation material and responses from the City of St. Thomas.

This study has been prepared in accordance with the requirements detailed by the City of St. Thomas Traffic Impact Assessment Guidelines¹.

¹ The Corporation of the City of St. Thomas, Design Guidelines Manual Section 5.4: Traffic Impact Assessment (TIA), 2019.





Location of Subject Site

Sinclair Avenue, St. Thomas TIB
200407

Figure 1.1

2 Existing Conditions

2.1 Existing Roadways

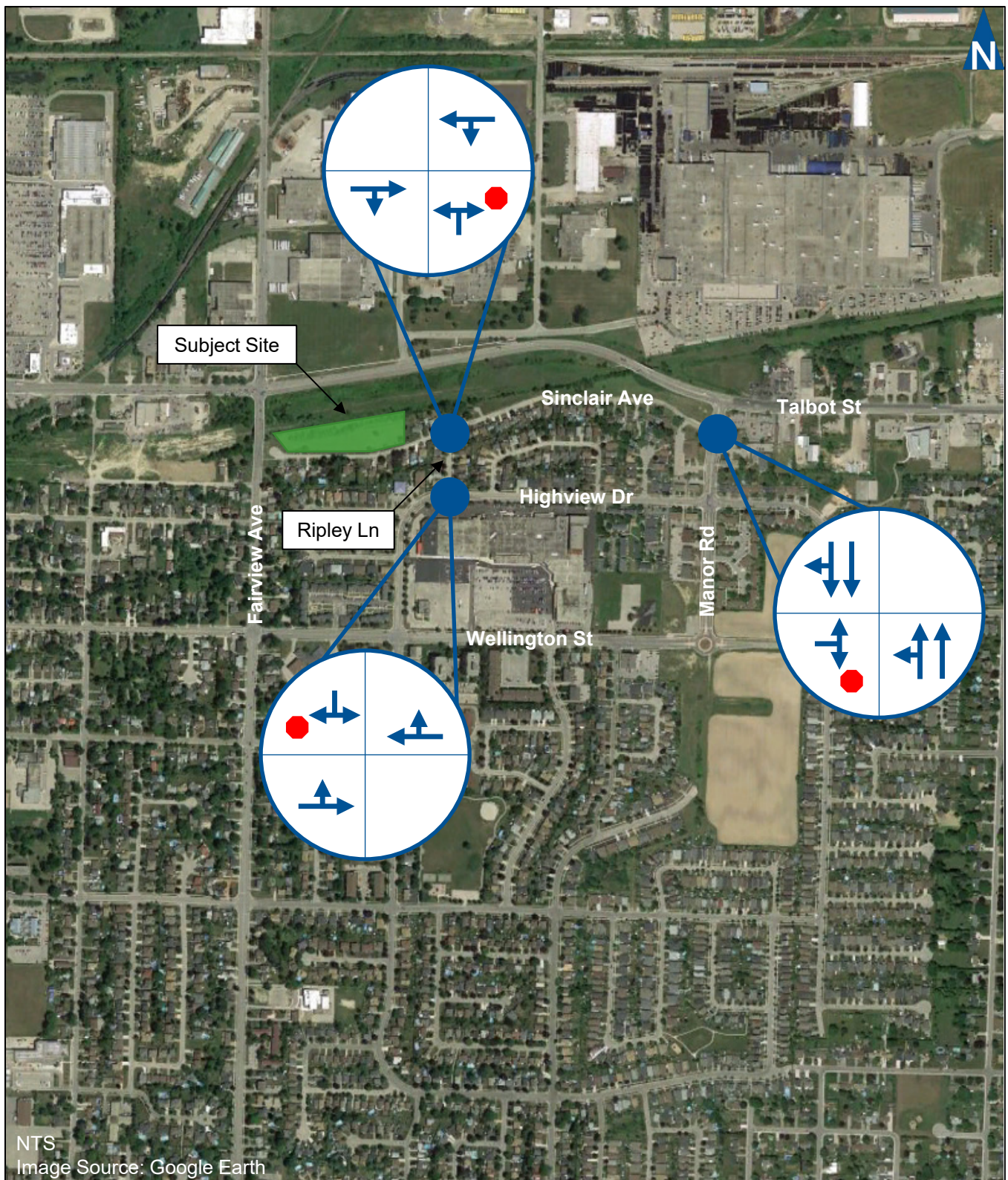
The main roadways near the subject site considered in assessing the traffic impacts of the development include:

- ▶ **Sinclair Street** is an east-west local road² with a two-lane cross section and a posted speed limit of 50 km/h. No sidewalks are provided along this roadway.
- ▶ **Manor Road** is a north-south major arterial road with a four-lane cross section north of Highview Drive and an assumed speed limit of 50 km/h. Sidewalks are provided on both sides of this roadway and bike lanes are provided on both sides south of Highview Drive.
- ▶ **Ripley Lane** is a north-south local road with a two-lane cross section and an assumed speed limit of 50 km/h. Sidewalks are provided on the east side of this roadway.
- ▶ **Highview Drive** is a major collector road with a two-lane cross section and a posted speed limit of 50 km/h. Sidewalks are provided on both sides of this roadway. Bike lanes are provided on both sides of the roadway west of Manor Road.

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

² City of St. Thomas Official Plan, Schedule B: Roads Plan, June 2018.





2.2 Transit Service

St. Thomas Transit operates two routes in the study area. **Figure 2.2** illustrates the transit network within proximity to the subject site. **Route 5A – Express Commercial** travels along Manor Road and Highview Drive with major stops at Elgin Mall and Smart Centres St. Thomas. **Route 2 – Elgin Mall** travels along Fairview Avenue with major stops at Smart Centres St. Thomas and Fanshawe College. These routes operate Monday to Friday (7:15AM to 6:45PM) with 30-minute headways and Saturdays (9:15AM to 6:45PM) with 30-minute headways. The nearest stop on Route 5A is located at the Elgin Mall (less than 200 metres from the subject site) and the nearest stop on Route 2 is located on Fairview Avenue at Steele Street (140 metres from the subject site).

2.3 Traffic Volumes

Traffic counts were collected by Paradigm on September 24, 2020. **Table 2.1** summarizes the peak hour start times for each study area intersection.

TABLE 2.1: INTERSECTION TRAFFIC COUNTS SUMMARY

Intersection	Date	AM Peak Hour	PM Peak Hour
Manor Road & Sinclair Avenue	September 24, 2020	7:30AM	3:45PM
Sinclair Avenue & Ripley Lane	September 24, 2020	7:00AM	3:30PM
Ripley Lane & Highview Drive	September 24, 2020	8:00AM	3:30PM

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

The peak hour traffic volumes on the four study area roadways are low, not exceeding 10/15 vehicles per hour (vph) on Sinclair Avenue and Ripley Lane, in either direction, 75 vph on Highview Drive, and 200 vph (during the AM peak hour) and 250 vph (during the PM peak hour) on Manor Road.

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

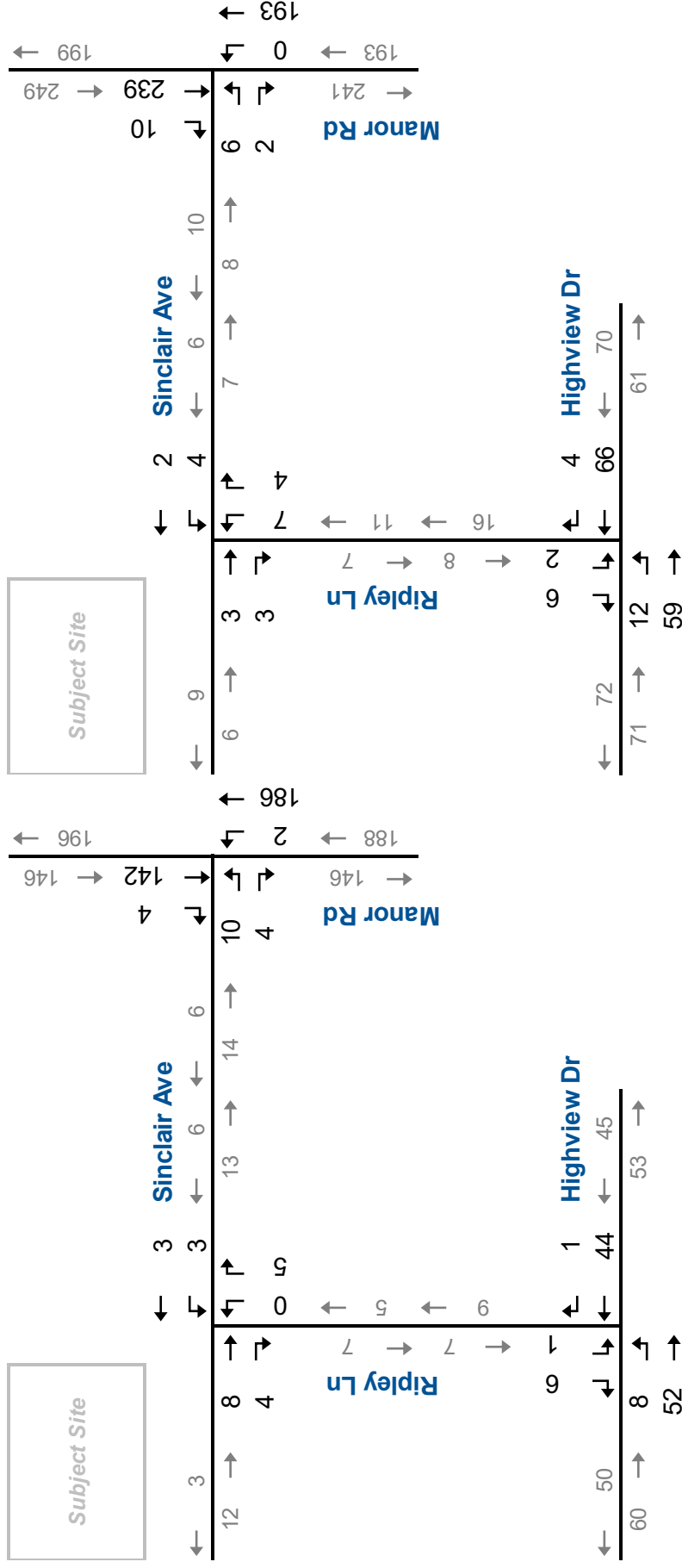






AM Peak Hour

PM Peak Hour



NTS



Existing (2020) Traffic Volumes

Sinclair Avenue, St. Thomas T1B
200407

Figure 2.3

2.4 Traffic Operations

The level of service conditions at the study area intersections have been assessed using Synchro 10. Movements are considered critical under the following conditions:

- ▶ Volume/capacity (V/C) ratios for through movements exceeding 0.85;
- ▶ V/C ratios for left-turn turn movements at signalized intersections with left-turn phasing, exceeding 0.95;
- ▶ Level of Service (LOS) on individual movements that exceeds LOS “E” for existing intersections; and/or
- ▶ 95th percentile queue lengths for individual movements exceeds available lane storage.

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

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

Table 2.2 summarizes the results of the intersection operational analysis under existing conditions, including the AM and PM peak hour level of service (LOS), volume to capacity ratios (V/C), and 95th percentile queues experienced.

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

Appendix C contains the detailed Synchro 10 reports.



TABLE 2.2: EXISTING TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				OVERALL
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Manor Road & Sinclair Avenue	TWSC	LOS Delay V/C 95th	B 10 0.02 1	> > >	B 10	< < <	A 4 0.00 0	> > >	A 4	< < <	A 9 0.01 0	> > >	A 9	< < <	A 0 0.06 0	> > >	A 0		
	Sinclair Avenue & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 0 0.02 0	> > >	A 0	< < <	A 4 0.00 0	> > >	A 4	< < <	A 9 0.01 0	> > >	A 9	< < <	> > >			
	Highview Drive & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 1 0.01 0	> > >	A 1	< < <	A 0 0.03 0	> > >	A 0	< < <	A 9 0.01 0	> > >	A 9	< < <	> > >	A 9		
PM Peak Hour	Manor Road & Sinclair Avenue	TWSC	LOS Delay V/C 95th	B 11 0.01 0	> > >	B 11	< < <	A 5 0.00 0	> > >	A 5	< < <	A 9 0.01 0	> > >	A 9	< < <	A 0 0.10 0	> > >	A 0		
	Sinclair Avenue & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 0 0.00 0	> > >	A 0	< < <	A 5 0.00 0	> > >	A 5	< < <	A 9 0.01 0	> > >	A 9	< < <	> > >			
	Highview Drive & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 1 0.01 0	> > >	A 1	< < <	A 0 0.04 0	> > >	A 0	< < <	A 9 0.01 0	> > >	A 9	< < <	> > >	A 9		

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

95th - 95th Percentile Queue Length

TWSC - Two-Way Stop Control

> - Shared Right-Turn Lane

< - Shared Left-Turn Lane



3 Development Concept

3.1 Development Description

The subject lands are located on the north side of Sinclair Avenue, in the southeast corner of the intersection of Fairview Avenue and Talbot Street. The development is proposed to consist of 19 single family units and each unit will have direct access to Sinclair Avenue.

Figure 3.1 shows the proposed Draft Plan of subdivision. The subdivision is anticipated to be fully developed within the next one to two years.

3.2 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual³ provides rates and equations used to estimate the peak hour traffic volumes generated by Land Use Code (LUC) 210 (Single Family Housing).

Table 3.1 summarizes the forecast number of net new trips generated by the proposed development⁴.

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	18	Eq	4	14	18	Eq	12	8	20
Total Trip Generation			4	14	18		12	8	20

AM: $T = 0.71(X) + 4.80$ | PM: $\ln(T) = 0.96\ln(X) + 0.20$

3.3 Development Trip Distribution and Assignment

The trip distribution was determined based on existing travel patterns within the study area. **Table 3.2** displays the breakdown of trip distributions used in this study.

³ Institute of Transportation Engineers, Trip Generation Manual 10th Edition, 2017.

⁴ The site trip generation in Table 3.1 is based on an earlier version of the Draft Plan (18 units). The number of units in the updated Draft Plan (Figure 3.1) includes an additional one unit (from 18 to 19 units). The corresponding trip generation changes are not significant.

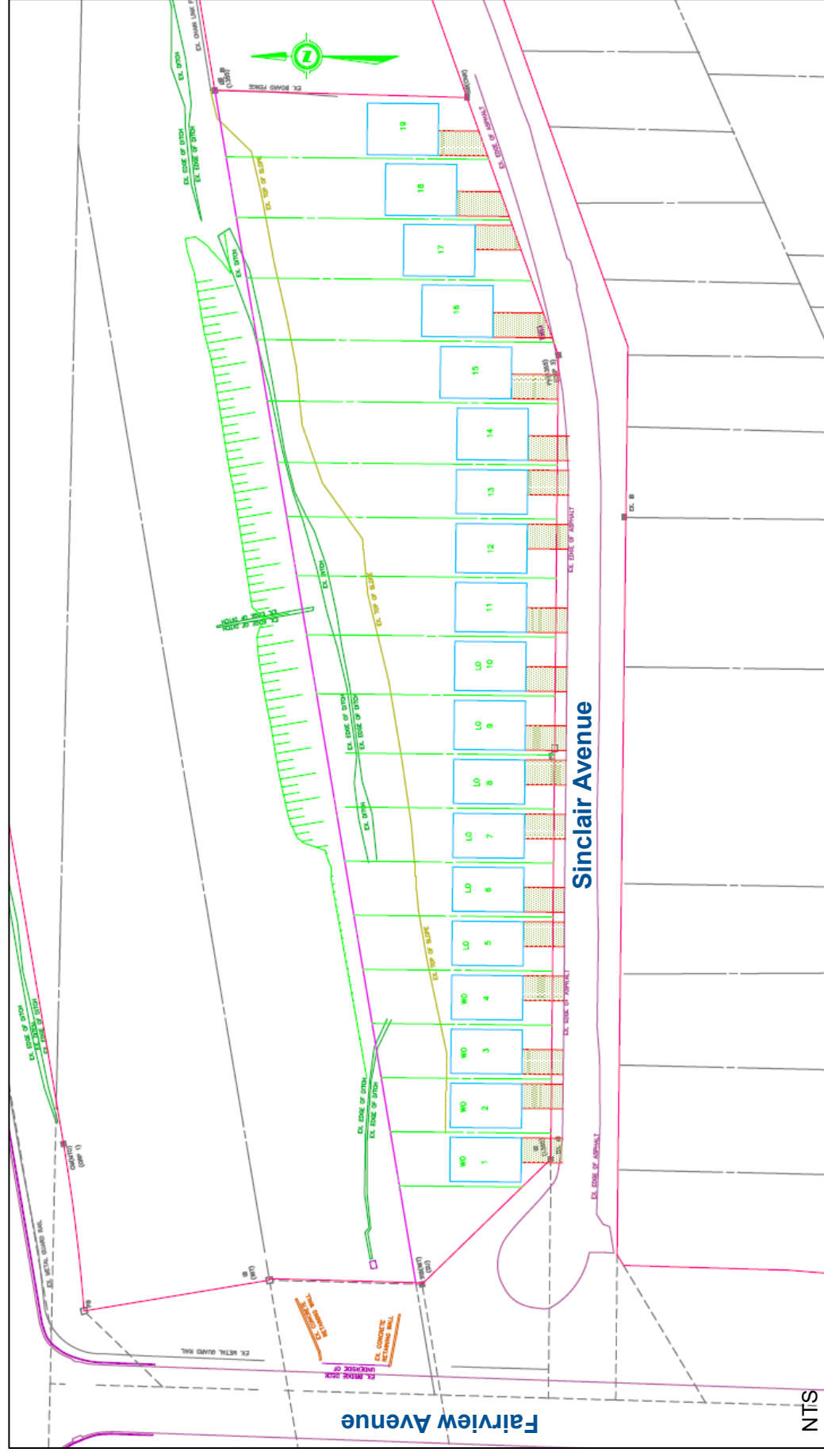


TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	Percentage
North via Manor Rd	40%
South via Manor Rd	15%
East via Highview Dr	5%
West via Highview Dr	40%
Total	100%

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

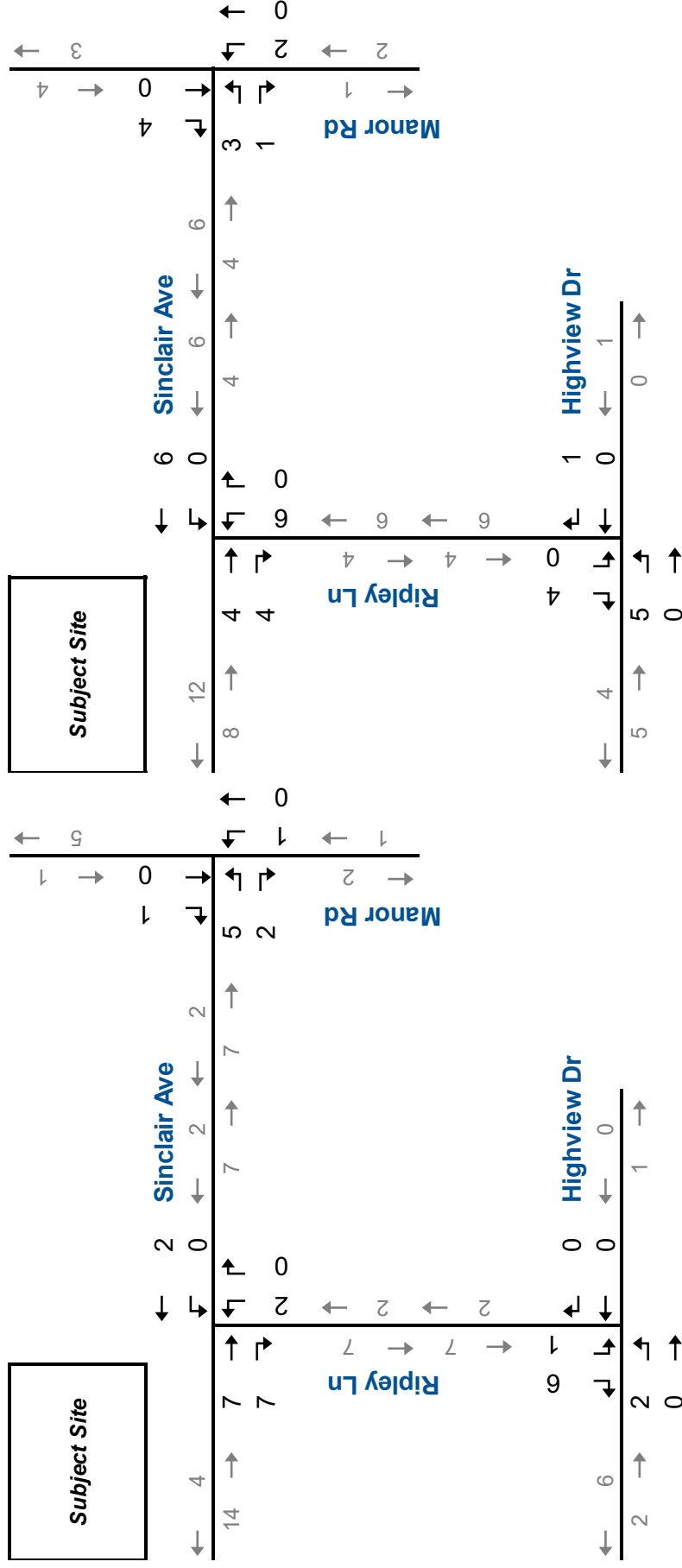






AM Peak Hour

PM Peak Hour



NTS



Site Generated Traffic Volumes

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions contained in this section includes estimates of future background and total traffic volumes, and the analyses for the 2025 horizon.

4.1 Background Traffic Forecasts

In order to derive the 2025 generalized background traffic volumes, a growth rate of 2% was applied to the existing roadway traffic volumes, as outlined in the TIA guidelines.

4.2 2025 Background Traffic Operations

Figure 4.1 illustrates the 2025 background traffic volumes.

Table 4.1 summarizes the results of the operational analysis under 2025 background traffic conditions, indicating that the study area intersections are forecast to operate with high levels of service during the AM and PM peak hours, as under existing traffic conditions.

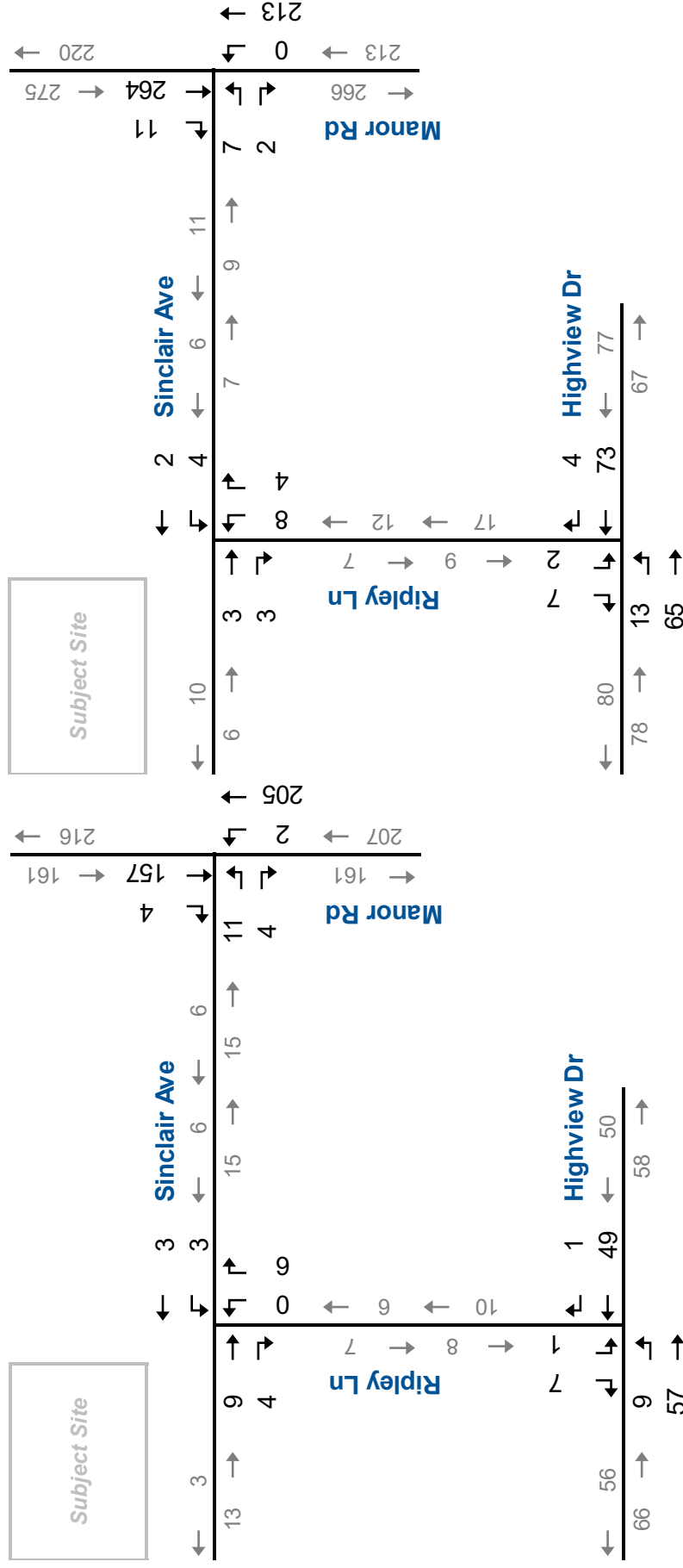
Appendix D contains the supporting detailed Synchro 10 reports.





AM Peak Hour

PM Peak Hour



NTS



2025 Background Traffic Volumes

Figure 4.1

TABLE 4.1: 2025 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				OVERALL
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Manor Road & Sinclair Avenue	TWSC	LOS Delay V/C 95th	B 11 0.03 1	>>>>	B 11	<<<<	A 4 0.00 0	>>>>	A 4	<<<<	A 9 0.01 0	>>>>	A 9	<<<<	A 0 0.07 0	>>>>	A 0		
	Sinclair Avenue & Ripley Lane	TWSC	LOS Delay V/C 95th	<<<<	A 0 0.02 0	>>>>	A 0	<<<<	A 4 0.00 0	>>>>	A 9 0.01 0	>>>>	A 9	<<<<	<<<<	<<<<	<<<<			
	Highview Drive & Ripley Lane	TWSC	LOS Delay V/C 95th	<<<<	A 1 0.01 0	>>>>	A 1	<<<<	A 0 0.04 0	>>>>	A 0	<<<<	A 9 0.01 0	>>>>	>>>>	>>>>	A 9			
PM Peak Hour	Manor Road & Sinclair Avenue	TWSC	LOS Delay V/C 95th	B 11 0.02 0	>>>>	B 11	<<<<	A 5 0.00 0	>>>>	A 5	<<<<	A 9 0.01 0	>>>>	A 9	<<<<	A 0 0.11 0	>>>>	A 0		
	Sinclair Avenue & Ripley Lane	TWSC	LOS Delay V/C 95th	<<<<	A 0 0.00 0	>>>>	A 0	<<<<	A 5 0.00 0	>>>>	A 5	<<<<	A 9 0.01 0	>>>>	<<<<	<<<<	<<<<			
	Highview Drive & Ripley Lane	TWSC	LOS Delay V/C 95th	<<<<	A 1 0.01 0	>>>>	A 1	<<<<	A 0 0.05 0	>>>>	A 0	<<<<	A 9 0.01 0	>>>>	>>>>	>>>>	A 9			

MOE - Measure of Effectiveness

LOS - Level of Service

Delay - Average Delay per Vehicle in Seconds

V/C - Volume to Capacity Ratio

95th - 95th Percentile Queue Length

TWSC - Two-Way Stop Control

> - Shared Right-Turn Lane

< - Shared Left-Turn Lane



4.3 2025 Total Traffic Operations

Figure 4.2 illustrates the 2025 total traffic volumes, including future background and development traffic volumes.

The total traffic volumes on the four study area roadways are well within their traffic capacities. In addition, the study area intersections are projected to operate at high levels of service, as under existing traffic conditions.

Table 4.2 summarizes the results of the intersection operational analysis, indicating the levels of service during the AM and PM peak hours.

Appendix E contains the supporting detailed Synchro 10 reports.





TABLE 4.2: 2025 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction / Movement / Approach																
				Eastbound				Westbound				Northbound				Southbound				OVERALL
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Manor Road & Sinclair Avenue	TWSC	LOS Delay V/C 95th	B 11 0.04 1	> > >	> > >	B 11	< < <	A 3 0.00 0	> > >	A 3	< < <	A 9 0.02 1	> > >	A 9	< < <	A 0 0.07 0	> > >	A 0	
	Sinclair Avenue & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 0 0.03 0	> > >	A 0	< < <	A 3 0.00 0	> > >	A 3	< < <	A 9 0.02 1	> > >	A 9	< < <	< < <	< < <	< < <	
	Highview Drive & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 1 0.01 0	> > >	A 1	< < <	A 0 0.04 0	> > >	A 0	< < <	< < <	A 9 0.02 1	> > >	A 9	< < <	< < <	< < <	< < <
PM Peak Hour	Manor Road & Sinclair Avenue	TWSC	LOS Delay V/C 95th	B 11 0.02 1	> > >	> > >	B 11	< < <	A 3 0.00 0	> > >	A 3	< < <	A 9 0.02 1	> > >	A 9	< < <	A 0 0.11 0	> > >	A 0	
	Sinclair Avenue & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 0 0.01 0	> > >	A 0	< < <	A 3 0.00 0	> > >	A 3	< < <	< < <	A 9 0.02 1	> > >	A 9	< < <	< < <	< < <	
	Highview Drive & Ripley Lane	TWSC	LOS Delay V/C 95th	< < <	A 2 0.01 0	> > >	A 2	< < <	A 0 0.05 0	> > >	A 0	< < <	< < <	A 9 0.01 0	> > >	A 9	< < <	< < <	< < <	

MOE - Measure of Effectiveness

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V/C - Volume to Capacity Ratio

95th - 95th Percentile Queue Length

TWSC - Two-Way Stop Control

> - Shared Right-Turn Lane

< - Shared Left-Turn Lane



5 Conclusions and Recommendations

5.1 Conclusions

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

- ▶ **Existing Traffic Conditions:** All study area intersections are currently operating with high levels of service.
- ▶ **Development Trip Generation:** The development is forecast to generate 18 and 20 trips during the AM and PM peak hours, respectively.
- ▶ **2025 Future Traffic Conditions:** All study area intersections are forecast to operate with high levels of service.
- ▶ **Study Area Roadways:** The future total traffic volumes on Sinclair Avenue, Ripley Lane, Highview Drive and Manor Road, are projected to be well within the respective roadway capacities, as under current traffic conditions.

5.2 Recommendations

Based on the findings and conclusions of this study, it is recommended that the subject development be considered for approval as proposed.



Appendix A

Pre-Study Consultation



Maddison Murch

From: Bokma, Nathan <nbokma@stthomas.ca>
Sent: September 10, 2020 2:14 PM
To: Maddison Murch
Cc: Rajan Philips; Shawn Duncan; Chris Doering; Al Ruggero
Subject: RE: 200407: Sinclair Avenue, St. Thomas Pre-Study Consultation

Maddison,

I believe your terms of reference includes this, but please confirm analysis to include the intersection of Ripley/Highview and Sinclair/Manor.

Other than, the terms of reference are acceptable.

Nathan Bokma, P.Eng.

Manager of Development and Compliance
City of St. Thomas

From: Maddison Murch
Sent: Thursday, September 10, 2020 11:00 AM
To: Bokma, Nathan <nbokma@stthomas.ca>
Cc: Rajan Philips <rphilips@ptsl.com>; Shawn Duncan <sduncan@deveng.net>; Chris Doering <CDoering@deveng.net>; Al Ruggero <plan@rogers.com>
Subject: 200407: Sinclair Avenue, St. Thomas Pre-Study Consultation

CAUTION:

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Nathan,

Paradigm has been retained to complete a "Letter Report on Potential Traffic Impacts" for a proposed residential subdivision development on Sinclair Avenue in St. Thomas. The subject lands are located on the north side of Sinclair Avenue in the southeast corner of Fairview Avenue and Talbot Street. The proposed subdivision consists of 18 single family units. See attached preliminary subdivision plan.

The City has indicated that a full Traffic Impact Study is not required, but a Letter-Report addressing the potential impacts of the development on the adjacent road system.

We have prepared the following scope of work for the letter-report, for review and approval:

Existing Conditions – Review existing road conditions including:

- The study area road network and traffic controls, including Sinclair Avenue, Ripley Lane and Manor Road;
- Existing traffic volumes on Sinclair Avenue and Ripley Lane; and
- Existing traffic volumes on other road based on available traffic data.
- Please provide us with available intersection counts in the study area - Sinclair Avenue, Ripley Lane and Manor Road.

Traffic Generation/Impacts:

- Vehicle trips generated by the proposed development will be estimated based on trip generation rates in the ITE Trip Generation Manual 10th Edition;
- Distribution of development traffic based on existing distribution at the intersection of Sinclair Avenue and Ripley Lane;
- The proportional addition of development traffic on the study area road network will be assessed for each road for AM and PM peak hours; and
- The projected traffic increases will be assessed in relation to roadway capacity for each road.

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

Regards,

Maddison Murch, EIT

Transportation Consultant

**Paradigm Transportation Solutions Limited**

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w: www.ptsl.com

Since 1998, our unique “work at home” business model has enabled us to harness technology, offer high quality service and strong communication with our clients and now allows us to carry on our work for you during COVID-19.

Let's stay safe and look out for each other. We will get through this together.

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Appendix B

Existing Traffic Counts





Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
Page No: 1

Turning Movement Data

Start Time	Highview Drive Eastbound					Highview Drive Westbound					Ripley Lane Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	2	11	0	0	13	4	0	0	0	4	0	4	0	1	4	21
7:15 AM	0	16	0	0	16	9	1	0	0	10	1	1	0	0	2	28
7:30 AM	1	9	0	0	10	8	1	1	0	10	0	1	0	2	1	21
7:45 AM	0	7	0	0	7	9	1	0	0	10	1	3	0	1	4	21
Hourly Total	3	43	0	0	46	30	3	1	0	34	2	9	0	4	11	91
8:00 AM	2	15	0	0	17	15	1	0	0	16	0	3	0	0	3	36
8:15 AM	4	11	0	0	15	11	0	0	0	11	0	0	0	0	0	26
8:30 AM	2	11	0	0	13	5	0	0	0	5	1	1	0	3	2	20
8:45 AM	0	15	0	0	15	13	0	0	0	13	0	2	0	1	2	30
Hourly Total	8	52	0	0	60	44	1	0	0	45	1	6	0	4	7	112
9:00 AM	2	5	0	0	7	15	0	0	1	15	1	0	0	0	1	23
9:15 AM	2	5	0	0	7	5	0	0	0	5	1	1	0	2	2	14
9:30 AM	2	6	0	0	8	16	0	0	0	16	0	2	0	1	2	26
9:45 AM	1	9	0	0	10	11	0	0	0	11	1	2	0	3	3	24
Hourly Total	7	25	0	0	32	47	0	0	1	47	3	5	0	6	8	87
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	1	11	0	0	12	14	0	0	0	14	1	2	0	0	3	29
11:45 AM	2	12	0	0	14	13	1	0	0	14	0	0	0	0	0	28
Hourly Total	3	23	0	0	26	27	1	0	0	28	1	2	0	0	3	57
12:00 PM	1	14	0	0	15	12	0	0	0	12	0	0	0	0	0	27
12:15 PM	2	8	0	0	10	16	0	0	0	16	0	3	0	0	3	29
12:30 PM	1	16	0	0	17	20	0	0	0	20	0	2	0	0	2	39
12:45 PM	2	12	0	0	14	17	1	0	0	18	1	1	0	0	2	34
Hourly Total	6	50	0	0	56	65	1	0	0	66	1	6	0	0	7	129
1:00 PM	1	8	0	0	9	13	2	0	0	15	0	2	0	3	2	26
1:15 PM	1	6	0	0	7	11	1	0	0	12	1	3	0	0	4	23
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	2	14	0	0	16	24	3	0	0	27	1	5	0	3	6	49
3:00 PM	2	10	0	0	12	18	0	0	1	18	0	0	0	0	0	30
3:15 PM	2	13	0	0	15	17	1	0	0	18	0	1	0	0	1	34
3:30 PM	4	13	0	0	17	15	2	0	0	17	2	1	0	0	3	37
3:45 PM	0	14	0	0	14	22	1	0	0	23	0	1	0	0	1	38
Hourly Total	8	50	0	0	58	72	4	0	1	76	2	3	0	0	5	139
4:00 PM	3	19	0	0	22	9	0	0	0	9	0	4	0	0	4	35
4:15 PM	5	13	0	0	18	20	1	0	0	21	0	0	0	2	0	39
4:30 PM	0	12	0	0	12	15	0	0	2	15	1	2	0	1	3	30

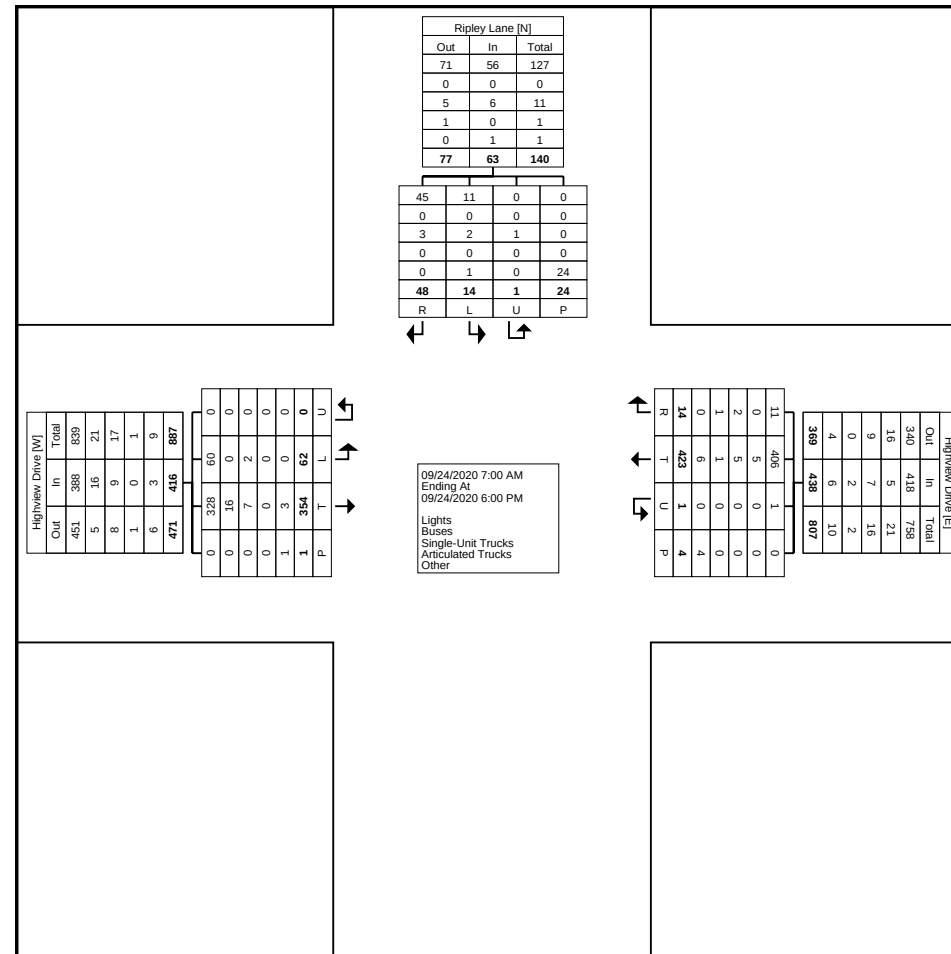
4:45 PM	2	11	0	0	13	14	0	0	0	14	0	2	0	1	2	29
Hourly Total	10	55	0	0	65	58	1	0	2	59	1	8	0	4	9	133
5:00 PM	2	16	0	0	18	16	0	0	0	16	2	1	0	1	3	37
5:15 PM	5	11	0	0	16	19	0	0	0	19	0	1	1	0	2	37
5:30 PM	2	7	0	0	9	12	0	0	0	12	0	1	0	1	1	22
5:45 PM	6	8	0	1	14	9	0	0	0	9	0	1	0	1	1	24
Hourly Total	15	42	0	1	57	56	0	0	0	56	2	4	1	3	7	120
Grand Total	62	354	0	1	416	423	14	1	4	438	14	48	1	24	63	917
Approach %	14.9	85.1	0.0	-	-	96.6	3.2	0.2	-	-	22.2	76.2	1.6	-	-	-
Total %	6.8	38.6	0.0	-	45.4	46.1	1.5	0.1	-	47.8	1.5	5.2	0.1	-	6.9	-
Lights	60	328	0	-	388	406	11	1	-	418	11	45	0	-	56	862
% Lights	96.8	92.7	-	-	93.3	96.0	78.6	100.0	-	95.4	78.6	93.8	0.0	-	88.9	94.0
Buses	0	16	0	-	16	5	0	0	-	5	0	0	0	-	0	21
% Buses	0.0	4.5	-	-	3.8	1.2	0.0	0.0	-	1.1	0.0	0.0	0.0	-	0.0	2.3
Single-Unit Trucks	2	7	0	-	9	5	2	0	-	7	2	3	1	-	6	22
% Single-Unit Trucks	3.2	2.0	-	-	2.2	1.2	14.3	0.0	-	1.6	14.3	6.3	100.0	-	9.5	2.4
Articulated Trucks	0	0	0	-	0	1	1	0	-	2	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.2	7.1	0.0	-	0.5	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	3	0	-	3	6	0	0	-	6	1	0	0	-	1	10
% Bicycles on Road	0.0	0.8	-	-	0.7	1.4	0.0	0.0	-	1.4	7.1	0.0	0.0	-	1.6	1.1
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	0.0	-	-	-	-	4.2	-	-
Pedestrians	-	-	-	0	-	-	-	-	4	-	-	-	-	23	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	100.0	-	-	-	-	95.8	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
Page No: 4

Turning Movement Peak Hour Data (8:00 AM)

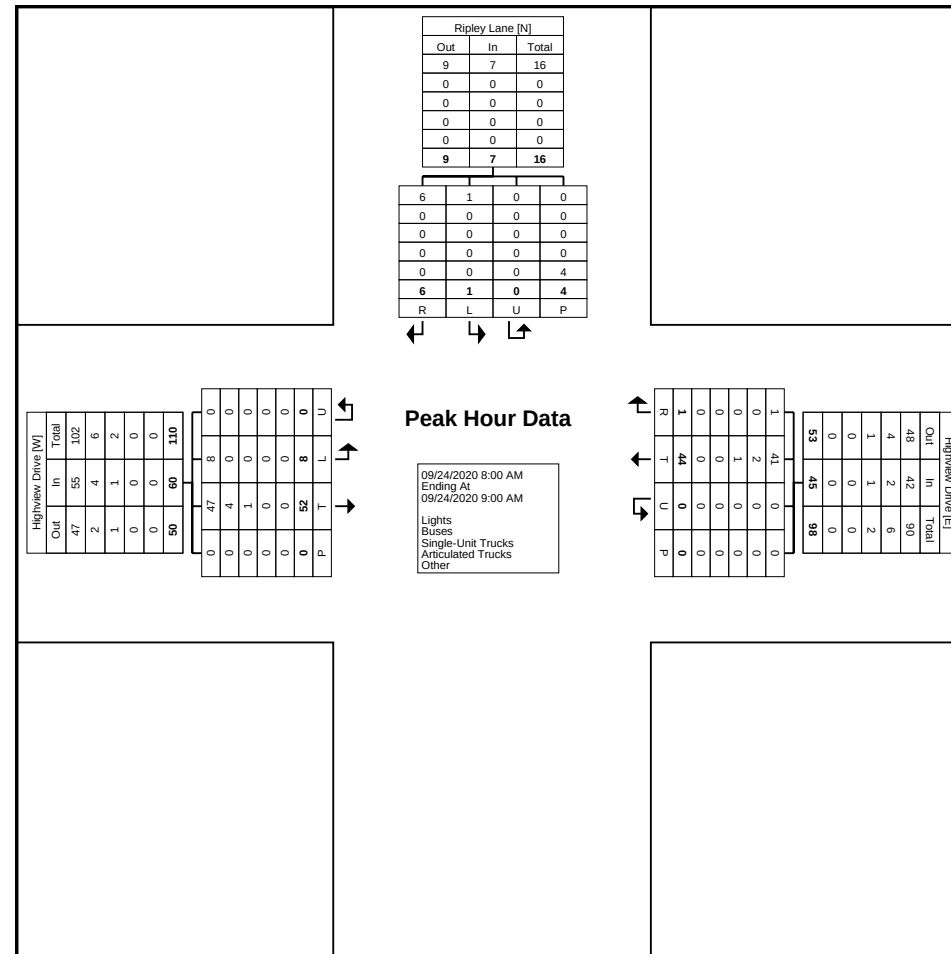
Start Time	Highview Drive Eastbound					Highview Drive Westbound					Ripley Lane Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
8:00 AM	2	15	0	0	17	15	1	0	0	16	0	3	0	0	3	36
8:15 AM	4	11	0	0	15	11	0	0	0	11	0	0	0	0	0	26
8:30 AM	2	11	0	0	13	5	0	0	0	5	1	1	0	3	2	20
8:45 AM	0	15	0	0	15	13	0	0	0	13	0	2	0	1	2	30
Total	8	52	0	0	60	44	1	0	0	45	1	6	0	4	7	112
Approach %	13.3	86.7	0.0	-	-	97.8	2.2	0.0	-	-	14.3	85.7	0.0	-	-	-
Total %	7.1	46.4	0.0	-	53.6	39.3	0.9	0.0	-	40.2	0.9	5.4	0.0	-	6.3	-
PHF	0.500	0.867	0.000	-	0.882	0.733	0.250	0.000	-	0.703	0.250	0.500	0.000	-	0.583	0.778
Lights	8	47	0	-	55	41	1	0	-	42	1	6	0	-	7	104
% Lights	100.0	90.4	-	-	91.7	93.2	100.0	-	-	93.3	100.0	100.0	-	-	100.0	92.9
Buses	0	4	0	-	4	2	0	0	-	2	0	0	0	-	0	6
% Buses	0.0	7.7	-	-	6.7	4.5	0.0	-	-	4.4	0.0	0.0	-	-	0.0	5.4
Single-Unit Trucks	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Single-Unit Trucks	0.0	1.9	-	-	1.7	2.3	0.0	-	-	2.2	0.0	0.0	-	-	0.0	1.8
Articulated Trucks	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
% 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	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
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Turning Movement Peak Hour Data Plot (8:00 AM)

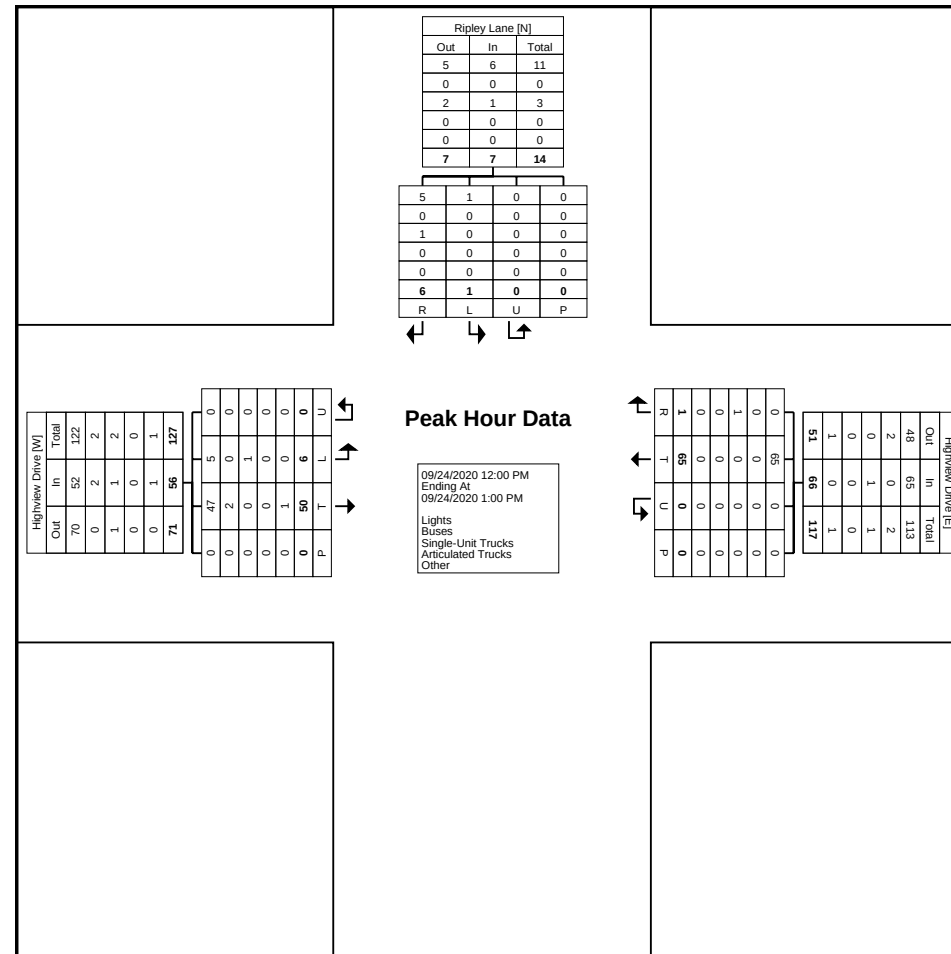
[illegible]



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
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Turning Movement Peak Hour Data Plot (12:00 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
Page No: 8

Turning Movement Peak Hour Data (3:30 PM)

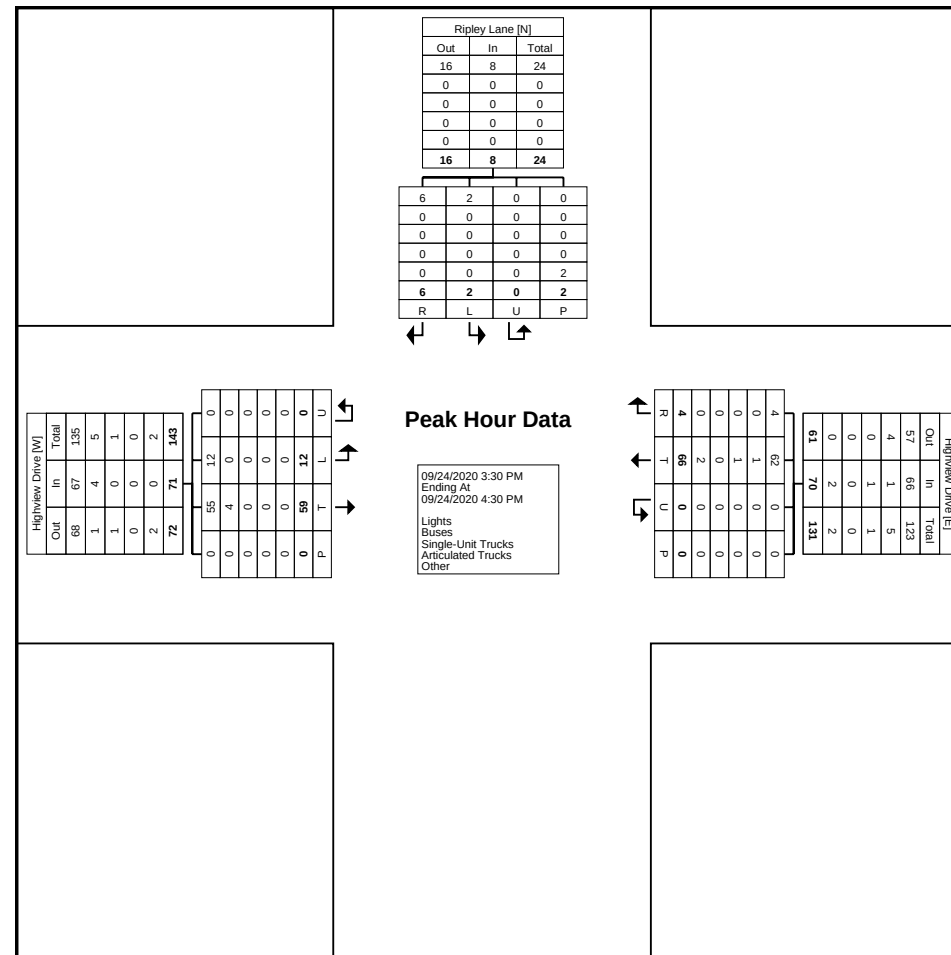
Start Time	Highview Drive Eastbound					Highview Drive Westbound					Ripley Lane Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:30 PM	4	13	0	0	17	15	2	0	0	17	2	1	0	0	3	37
3:45 PM	0	14	0	0	14	22	1	0	0	23	0	1	0	0	1	38
4:00 PM	3	19	0	0	22	9	0	0	0	9	0	4	0	0	4	35
4:15 PM	5	13	0	0	18	20	1	0	0	21	0	0	0	2	0	39
Total	12	59	0	0	71	66	4	0	0	70	2	6	0	2	8	149
Approach %	16.9	83.1	0.0	-	-	94.3	5.7	0.0	-	-	25.0	75.0	0.0	-	-	-
Total %	8.1	39.6	0.0	-	47.7	44.3	2.7	0.0	-	47.0	1.3	4.0	0.0	-	5.4	-
PHF	0.600	0.776	0.000	-	0.807	0.750	0.500	0.000	-	0.761	0.250	0.375	0.000	-	0.500	0.955
Lights	12	55	0	-	67	62	4	0	-	66	2	6	0	-	8	141
% Lights	100.0	93.2	-	-	94.4	93.9	100.0	-	-	94.3	100.0	100.0	-	-	100.0	94.6
Buses	0	4	0	-	4	1	0	0	-	1	0	0	0	-	0	5
% Buses	0.0	6.8	-	-	5.6	1.5	0.0	-	-	1.4	0.0	0.0	-	-	0.0	3.4
Single-Unit Trucks	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.0	-	-	0.0	1.5	0.0	-	-	1.4	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	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	2	0	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	0.0	3.0	0.0	-	-	2.9	0.0	0.0	-	-	0.0	1.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
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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@ptsI.com

Count Name: Ripley Lane & Highview Drive
Site Code: 200407
Start Date: 09/24/2020
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Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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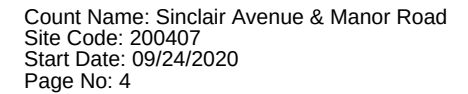
Count Name: Sinclair Avenue & Manor Road
Site Code: 200407
Start Date: 09/24/2020
Page No: 1

Turning Movement Data

Start Time	Sinclair Avenue Eastbound						Tim Hortons Driveway Westbound						Manor Road Northbound						Manor Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	4	0	0	0	0	4	4	0	2	0	0	6	0	18	25	0	0	43	0	20	3	0	0	23	76
7:15 AM	2	0	2	0	0	4	2	0	2	0	0	4	0	26	19	0	0	45	0	22	2	0	0	24	77
7:30 AM	1	0	2	0	0	3	6	0	0	0	0	6	0	26	12	0	0	38	1	27	1	0	0	29	76
7:45 AM	3	0	0	0	0	3	8	0	1	0	0	9	1	26	28	0	0	55	0	29	1	0	0	30	97
Hourly Total	10	0	4	0	0	14	20	0	5	0	0	25	1	96	84	0	0	181	1	98	7	0	0	106	326
8:00 AM	5	0	1	0	0	6	11	0	2	0	0	13	1	27	20	0	0	48	0	31	2	0	0	33	100
8:15 AM	1	0	1	0	0	2	7	0	1	0	1	8	0	32	15	0	0	47	1	23	0	0	0	24	81
8:30 AM	0	0	0	0	0	0	4	0	1	0	1	5	0	32	17	0	0	49	2	18	0	0	0	20	74
8:45 AM	3	1	2	0	0	6	7	1	1	0	0	9	0	28	22	0	0	50	1	16	2	0	0	19	84
Hourly Total	9	1	4	0	0	14	29	1	5	0	2	35	1	119	74	0	0	194	4	88	4	0	0	96	339
9:00 AM	3	1	2	0	0	6	11	0	2	0	1	13	0	22	12	0	1	34	2	28	3	0	0	33	86
9:15 AM	1	0	0	0	0	1	4	0	1	0	0	5	0	26	18	0	0	44	1	22	0	0	0	23	73
9:30 AM	2	0	0	0	0	2	4	0	3	0	0	7	0	21	14	0	0	35	2	24	2	0	0	28	72
9:45 AM	0	0	1	0	0	1	6	0	1	0	0	7	1	15	14	0	0	30	1	32	0	0	0	33	71
Hourly Total	6	1	3	0	0	10	25	0	7	0	1	32	1	84	58	0	1	143	6	106	5	0	0	117	302
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	2	0	0	0	0	2	4	0	3	0	0	7	0	32	10	0	0	42	0	41	1	0	0	42	93
11:45 AM	1	0	1	0	0	2	5	0	0	0	2	5	0	32	10	0	0	42	1	26	3	0	0	30	79
Hourly Total	3	0	1	0	0	4	9	0	3	0	2	12	0	64	20	0	0	84	1	67	4	0	0	72	172
12:00 PM	0	0	0	0	0	0	4	0	0	0	3	4	0	31	10	0	0	41	2	47	4	0	0	53	98
12:15 PM	1	0	0	0	0	1	6	0	1	0	1	7	0	36	14	0	0	50	1	37	1	0	0	39	97
12:30 PM	1	0	0	0	1	1	6	0	1	0	0	7	0	32	10	0	0	42	3	32	1	0	1	36	86
12:45 PM	2	0	0	0	0	2	7	0	1	0	0	8	0	39	6	0	0	45	0	42	2	0	0	44	99
Hourly Total	4	0	0	0	1	4	23	0	3	0	4	26	0	138	40	0	0	178	6	158	8	0	1	172	380
1:00 PM	1	0	1	0	0	2	5	0	1	0	1	6	0	38	8	0	0	46	1	42	0	0	0	43	97
1:15 PM	0	0	0	0	1	0	6	0	1	0	2	7	0	38	6	0	0	44	1	21	6	0	0	28	79
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	1	0	1	0	1	2	11	0	2	0	3	13	0	76	14	0	0	90	2	63	6	0	0	71	176
3:00 PM	2	0	2	0	0	4	4	0	0	0	0	4	0	32	10	0	0	42	0	53	3	0	0	56	106
3:15 PM	1	0	1	0	1	2	2	1	1	0	1	4	0	35	6	0	1	41	0	52	0	0	1	52	99
3:30 PM	1	0	0	0	0	1	5	0	1	0	1	6	0	33	11	0	0	44	1	49	1	0	2	51	102
3:45 PM	1	1	1	0	0	3	9	0	1	0	1	10	0	46	6	0	0	52	1	55	5	0	0	61	126
Hourly Total	5	1	4	0	1	10	20	1	3	0	3	24	0	146	33	0	1	179	2	209	9	0	3	220	433
4:00 PM	2	0	0	0	0	2	6	0	1	0	1	7	0	45	11	0	0	56	1	48	2	0	0	51	116
4:15 PM	1	0	0	0	0	1	7	1	5	0	4	13	0	28	4	0	0	32	1	56	1	1	0	59	105

4:30 PM	1	0	1	0	0	2	2	0	1	0	5	3	0	49	4	0	0	53	0	55	2	0	0	57	115
4:45 PM	1	0	0	0	0	1	3	0	0	0	4	3	0	34	1	0	0	35	3	47	2	0	0	52	91
Hourly Total	5	0	1	0	0	6	18	1	7	0	14	26	0	156	20	0	0	176	5	206	7	1	0	219	427
5:00 PM	0	0	0	0	0	0	3	0	1	0	2	4	0	36	6	0	0	42	0	55	1	0	0	56	102
5:15 PM	2	0	2	0	0	4	4	0	0	0	5	4	0	37	5	0	1	42	1	61	4	0	0	66	116
5:30 PM	0	0	1	0	0	1	1	0	0	0	1	1	1	22	6	0	0	29	1	56	1	0	0	58	89
5:45 PM	0	0	0	0	0	0	7	0	0	0	0	7	0	22	6	0	0	28	0	25	3	0	0	28	63
Hourly Total	2	0	3	0	0	5	15	0	1	0	8	16	1	117	23	0	1	141	2	197	9	0	0	208	370
Grand Total	45	3	21	0	3	69	170	3	36	0	37	209	4	996	366	0	3	1366	29	1192	59	1	4	1281	2925
Approach %	65.2	4.3	30.4	0.0	-	-	81.3	1.4	17.2	0.0	-	-	0.3	72.9	26.8	0.0	-	-	2.3	93.1	4.6	0.1	-	-	-
Total %	1.5	0.1	0.7	0.0	-	2.4	5.8	0.1	1.2	0.0	-	7.1	0.1	34.1	12.5	0.0	-	46.7	1.0	40.8	2.0	0.0	-	43.8	-
Lights	42	3	11	0	-	56	169	3	34	0	-	206	4	928	364	0	-	1296	28	1137	54	1	-	1220	2778
% Lights	93.3	100.0	52.4	-	-	81.2	99.4	100.0	94.4	-	-	98.6	100.0	93.2	99.5	-	-	94.9	96.6	95.4	91.5	100.0	-	95.2	95.0
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	21	0	0	-	21	0	9	0	0	-	9	30
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.1	0.0	-	-	1.5	0.0	0.8	0.0	0.0	-	0.7	1.0
Single-Unit Trucks	2	0	1	0	-	3	0	0	2	0	-	2	0	41	2	0	-	43	1	37	4	0	-	42	90
% Single-Unit Trucks	4.4	0.0	4.8	-	-	4.3	0.0	0.0	5.6	-	-	1.0	0.0	4.1	0.5	-	-	3.1	3.4	3.1	6.8	0.0	-	3.3	3.1
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	5	0	0	-	5	0	5	1	0	-	6	12
% Articulated Trucks	2.2	0.0	0.0	-	-	1.4	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.4	1.7	0.0	-	0.5	0.4
Bicycles on Road	0	0	9	0	-	9	1	0	0	0	-	1	0	1	0	0	-	1	0	4	0	0	-	4	15
% Bicycles on Road	0.0	0.0	42.9	-	-	13.0	0.6	0.0	0.0	-	-	0.5	0.0	0.1	0.0	-	-	0.1	0.0	0.3	0.0	0.0	-	0.3	0.5
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	21.6	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	29	-	-	-	-	-	2	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	78.4	-	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-

Turning Movement Data Plot



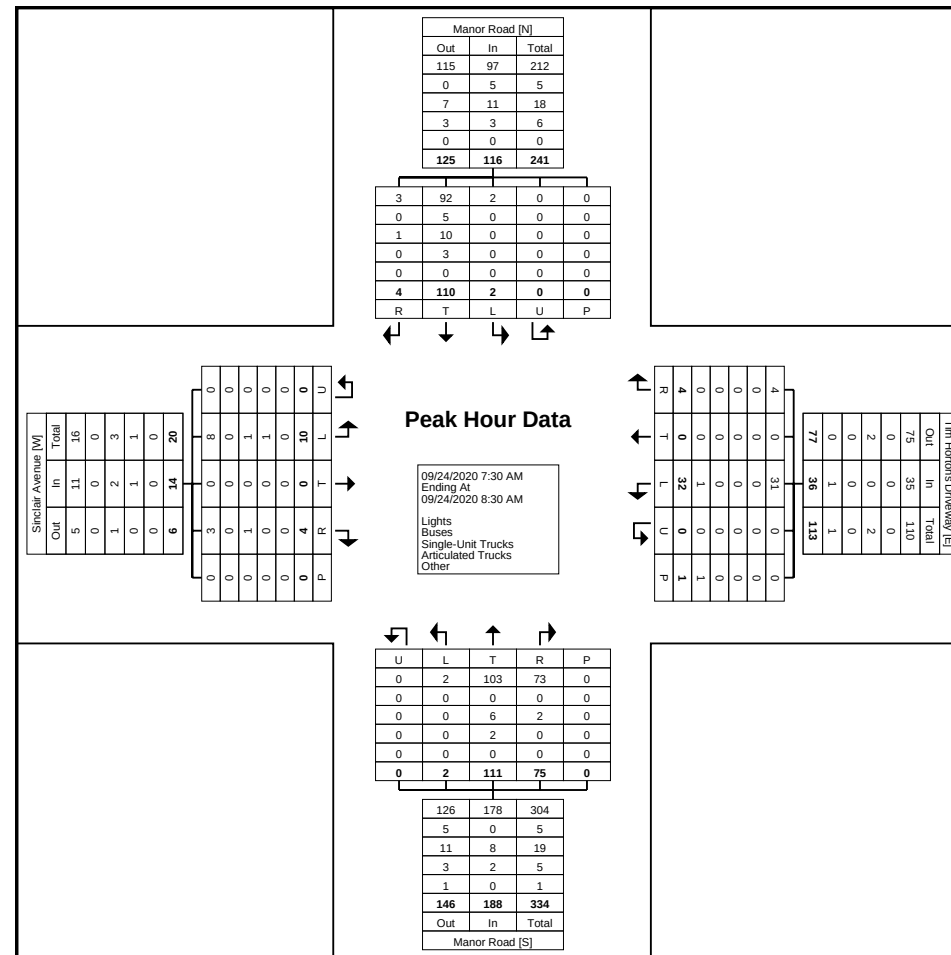
Start Time	Sinclair Avenue Eastbound						Tim Hortons Driveway Westbound						Manor Road Northbound						Manor Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	1	0	2	0	0	3	6	0	0	0	0	6	0	26	12	0	0	38	1	27	1	0	0	29	76
7:45 AM	3	0	0	0	0	3	8	0	1	0	0	9	1	26	28	0	0	55	0	29	1	0	0	30	97
8:00 AM	5	0	1	0	0	6	11	0	2	0	0	13	1	27	20	0	0	48	0	31	2	0	0	33	100
8:15 AM	1	0	1	0	0	2	7	0	1	0	1	8	0	32	15	0	0	47	1	23	0	0	0	24	81
Total	10	0	4	0	0	14	32	0	4	0	1	36	2	111	75	0	0	188	2	110	4	0	0	116	354
Approach %	71.4	0.0	28.6	0.0	-	-	88.9	0.0	11.1	0.0	-	-	1.1	59.0	39.9	0.0	-	-	1.7	94.8	3.4	0.0	-	-	-
Total %	2.8	0.0	1.1	0.0	-	4.0	9.0	0.0	1.1	0.0	-	10.2	0.6	31.4	21.2	0.0	-	53.1	0.6	31.1	1.1	0.0	-	32.8	-
PHF	0.500	0.000	0.500	0.000	-	0.583	0.727	0.000	0.500	0.000	-	0.692	0.500	0.867	0.670	0.000	-	0.855	0.500	0.887	0.500	0.000	-	0.879	0.885
Lights	8	0	3	0	-	11	31	0	4	0	-	35	2	103	73	0	-	178	2	92	3	0	-	97	321
% Lights	80.0	-	75.0	-	-	78.6	96.9	-	100.0	-	-	97.2	100.0	92.8	97.3	-	-	94.7	100.0	83.6	75.0	-	-	83.6	90.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	5	0	0	-	5	5
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	4.5	0.0	-	-	4.3	1.4
Single-Unit Trucks	1	0	1	0	-	2	0	0	0	0	-	0	0	6	2	0	-	8	0	10	1	0	-	11	21
% Single-Unit Trucks	10.0	-	25.0	-	-	14.3	0.0	-	0.0	-	-	0.0	0.0	5.4	2.7	-	-	4.3	0.0	9.1	25.0	-	-	9.5	5.9
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	0	3	0	0	-	3	6
% Articulated Trucks	10.0	-	0.0	-	-	7.1	0.0	-	0.0	-	-	0.0	0.0	1.8	0.0	-	-	1.1	0.0	2.7	0.0	-	-	2.6	1.7
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	-	0.0	-	-	0.0	3.1	-	0.0	-	-	2.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Sinclair Avenue & Manor Road
Site Code: 200407
Start Date: 09/24/2020
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Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

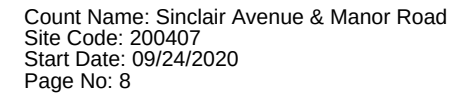
Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Sinclair Avenue & Manor Road
Site Code: 200407
Start Date: 09/24/2020
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Turning Movement Peak Hour Data (12:00 PM)

Start Time	Sinclair Avenue Eastbound						Tim Hortons Driveway Westbound						Manor Road Northbound						Manor Road 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	0	0	0	0	0	0	4	0	0	0	3	4	0	31	10	0	0	41	2	47	4	0	0	53	98
12:15 PM	1	0	0	0	0	1	6	0	1	0	1	7	0	36	14	0	0	50	1	37	1	0	0	39	97
12:30 PM	1	0	0	0	1	1	6	0	1	0	0	7	0	32	10	0	0	42	3	32	1	0	1	36	86
12:45 PM	2	0	0	0	0	2	7	0	1	0	0	8	0	39	6	0	0	45	0	42	2	0	0	44	99
Total	4	0	0	0	1	4	23	0	3	0	4	26	0	138	40	0	0	178	6	158	8	0	1	172	380
Approach %	100.0	0.0	0.0	0.0	-	-	88.5	0.0	11.5	0.0	-	-	0.0	77.5	22.5	0.0	-	-	3.5	91.9	4.7	0.0	-	-	-
Total %	1.1	0.0	0.0	0.0	-	1.1	6.1	0.0	0.8	0.0	-	6.8	0.0	36.3	10.5	0.0	-	46.8	1.6	41.6	2.1	0.0	-	45.3	-
PHF	0.500	0.000	0.000	0.000	-	0.500	0.821	0.000	0.750	0.000	-	0.813	0.000	0.885	0.714	0.000	-	0.890	0.500	0.840	0.500	0.000	-	0.811	0.960
Lights	3	0	0	0	-	3	23	0	3	0	-	26	0	127	40	0	-	167	6	150	6	0	-	162	358
% Lights	75.0	-	-	-	-	75.0	100.0	-	100.0	-	-	100.0	-	92.0	100.0	-	-	93.8	100.0	94.9	75.0	-	-	94.2	94.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	2
% Buses	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	1.4	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.5
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	8	0	0	-	8	0	6	1	0	-	7	16
% Single-Unit Trucks	25.0	-	-	-	-	25.0	0.0	-	0.0	-	-	0.0	-	5.8	0.0	-	-	4.5	0.0	3.8	12.5	-	-	4.1	4.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	1	0	-	3	3
% Articulated Trucks	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	1.3	12.5	-	-	1.7	0.8
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	-	0.7	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	25.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	75.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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

[illegible]

Turning Movement Peak Hour Data Plot (3:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Sinclair Avenue & Manor Road
Site Code: 200407
Start Date: 09/24/2020
Page No: 10



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Sinclair Avenue & Ripley Lane
Site Code: 200407
Start Date: 09/24/2020
Page No: 1

Turning Movement Data

Start Time	Sinclair Avenue Eastbound					Sinclair Avenue Westbound					Ripley Lane Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	6	3	0	0	9	1	2	0	0	3	0	1	0	0	1	13
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
7:30 AM	1	0	0	0	1	0	0	1	0	1	0	2	0	0	2	4
7:45 AM	1	0	0	0	1	2	1	0	0	3	0	1	0	0	1	5
Hourly Total	8	4	0	0	12	3	3	1	0	7	0	5	0	0	5	24
8:00 AM	0	1	0	0	1	2	2	0	0	4	0	3	0	0	3	8
8:15 AM	1	0	0	0	1	0	0	0	0	0	2	2	0	0	4	5
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	1	1	1	1	0	3	1	0	0	0	1	5
Hourly Total	2	1	0	0	3	3	3	1	0	7	3	5	0	0	8	18
9:00 AM	1	0	0	0	1	1	1	0	0	2	0	1	0	0	1	4
9:15 AM	0	1	0	0	1	0	0	0	0	0	2	0	0	1	2	3
9:30 AM	0	0	0	0	0	2	0	0	0	2	0	1	0	0	1	3
9:45 AM	1	0	0	0	1	3	0	0	0	3	0	2	0	0	2	6
Hourly Total	2	1	0	0	3	6	1	0	0	7	2	4	0	1	6	16
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	1	1	0	0	2	2	0	0	0	2	1	0	0	0	1	5
11:45 AM	0	0	0	0	0	0	2	0	0	2	3	2	0	0	5	7
Hourly Total	1	1	0	0	2	2	2	0	0	4	4	2	0	0	6	12
12:00 PM	1	0	0	0	1	1	1	1	0	3	0	0	0	0	0	4
12:15 PM	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	3
12:30 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
12:45 PM	1	1	0	0	2	1	1	0	0	2	0	1	0	0	1	5
Hourly Total	3	2	0	0	5	4	2	1	0	7	1	1	0	0	2	14
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	3
1:15 PM	0	2	0	0	2	1	1	0	1	2	0	1	0	0	1	5
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	2	0	0	2	1	1	0	1	2	0	3	1	0	4	8
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
3:15 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	2
3:30 PM	0	0	0	0	0	1	0	0	0	1	4	0	1	0	5	6
3:45 PM	1	1	0	0	2	0	1	0	0	1	1	1	0	0	2	5
Hourly Total	2	1	0	0	3	2	2	0	0	4	5	3	1	0	9	16
4:00 PM	0	1	0	0	1	3	1	0	0	4	1	1	0	0	2	7
4:15 PM	2	1	0	0	3	0	0	0	0	0	1	2	0	2	3	6
4:30 PM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0	4

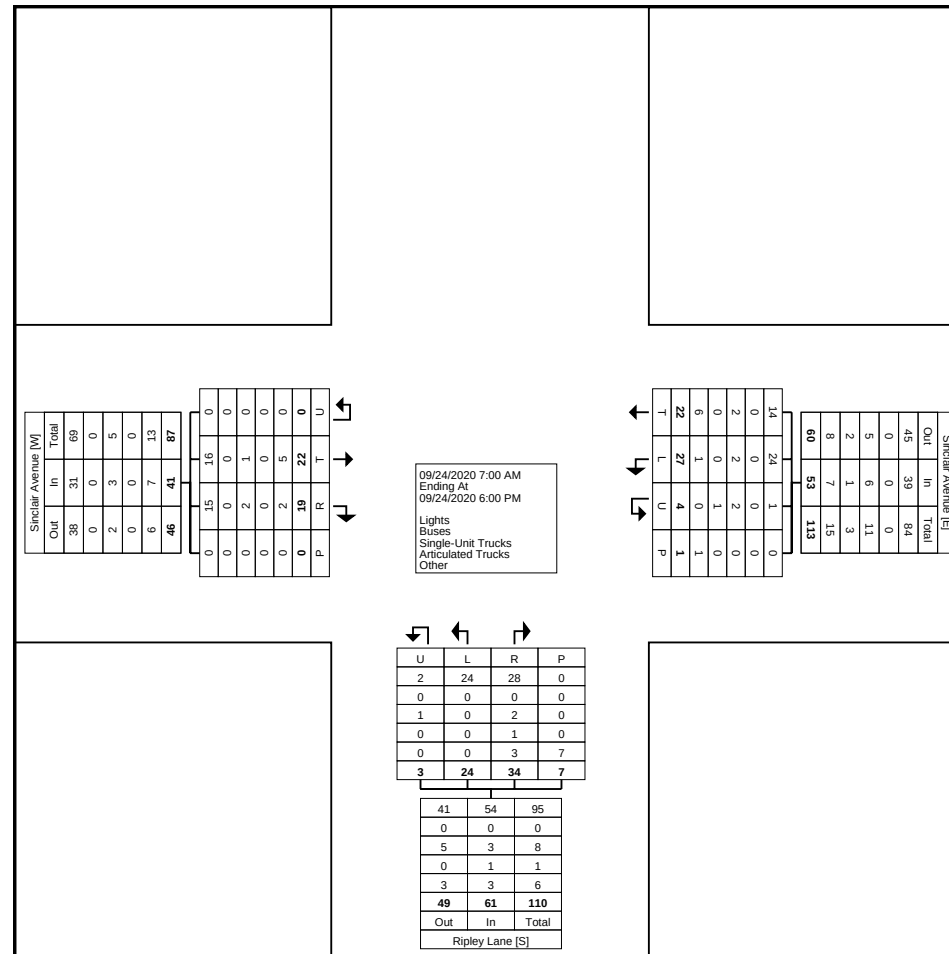
4:45 PM	0	1	0	0	1	0	3	0	0	3	1	1	0	0	2	6
Hourly Total	3	4	0	0	7	4	5	0	0	9	3	4	0	2	7	23
5:00 PM	1	1	0	0	2	2	0	0	0	2	2	0	0	0	2	6
5:15 PM	0	0	0	0	0	0	2	0	0	2	3	2	0	0	5	7
5:30 PM	0	1	0	0	1	0	0	1	0	1	0	1	1	4	2	4
5:45 PM	0	1	0	0	1	0	1	0	0	1	1	4	0	0	5	7
Hourly Total	1	3	0	0	4	2	3	1	0	6	6	7	1	4	14	24
Grand Total	22	19	0	0	41	27	22	4	1	53	24	34	3	7	61	155
Approach %	53.7	46.3	0.0	-	-	50.9	41.5	7.5	-	-	39.3	55.7	4.9	-	-	-
Total %	14.2	12.3	0.0	-	26.5	17.4	14.2	2.6	-	34.2	15.5	21.9	1.9	-	39.4	-
Lights	16	15	0	-	31	24	14	1	-	39	24	28	2	-	54	124
% Lights	72.7	78.9	-	-	75.6	88.9	63.6	25.0	-	73.6	100.0	82.4	66.7	-	88.5	80.0
Buses	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
Single-Unit Trucks	1	2	0	-	3	2	2	2	-	6	0	2	1	-	3	12
% Single-Unit Trucks	4.5	10.5	-	-	7.3	7.4	9.1	50.0	-	11.3	0.0	5.9	33.3	-	4.9	7.7
Articulated Trucks	0	0	0	-	0	0	0	1	-	1	0	1	0	-	1	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	25.0	-	1.9	0.0	2.9	0.0	-	1.6	1.3
Bicycles on Road	5	2	0	-	7	1	6	0	-	7	0	3	0	-	3	17
% Bicycles on Road	22.7	10.5	-	-	17.1	3.7	27.3	0.0	-	13.2	0.0	8.8	0.0	-	4.9	11.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	14.3	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	85.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Sinclair Avenue & Ripley Lane
Site Code: 200407
Start Date: 09/24/2020
Page No: 3



Turning Movement Data Plot

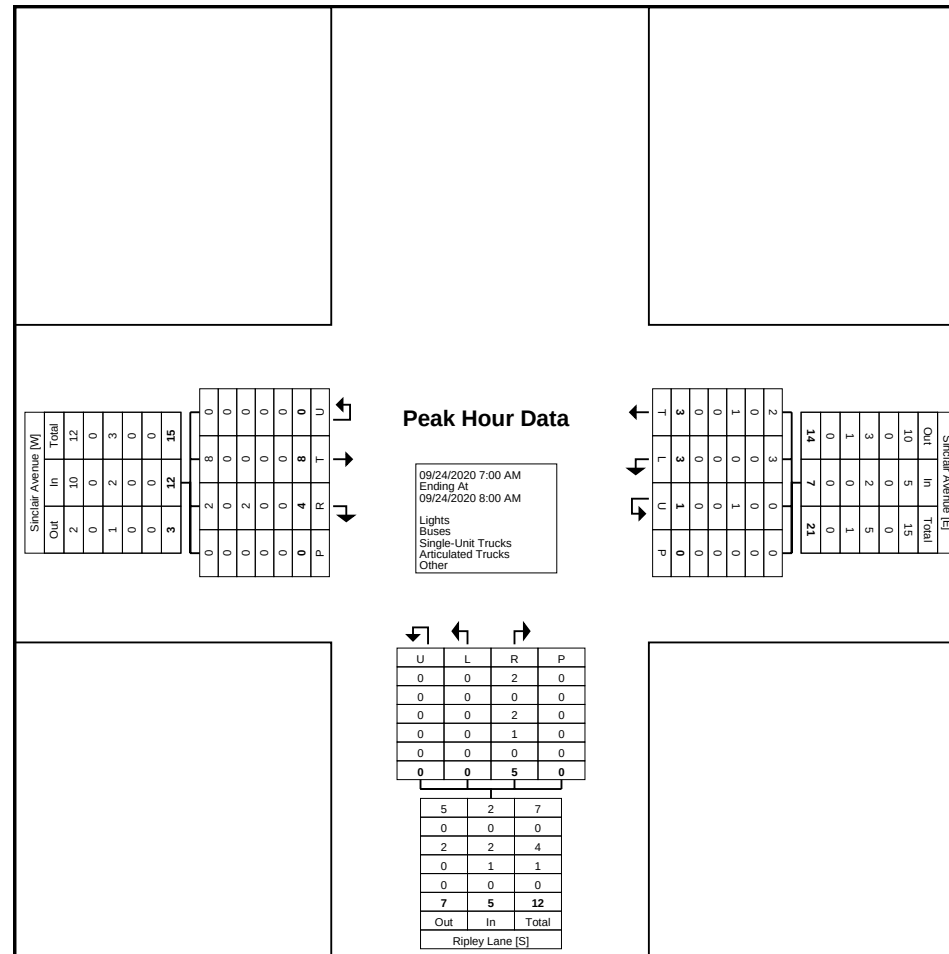
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Paradigm Transportation Solutions Limited
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Cambridge, Ontario, Canada N1R 8J8
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Count Name: Sinclair Avenue & Ripley Lane
Site Code: 200407
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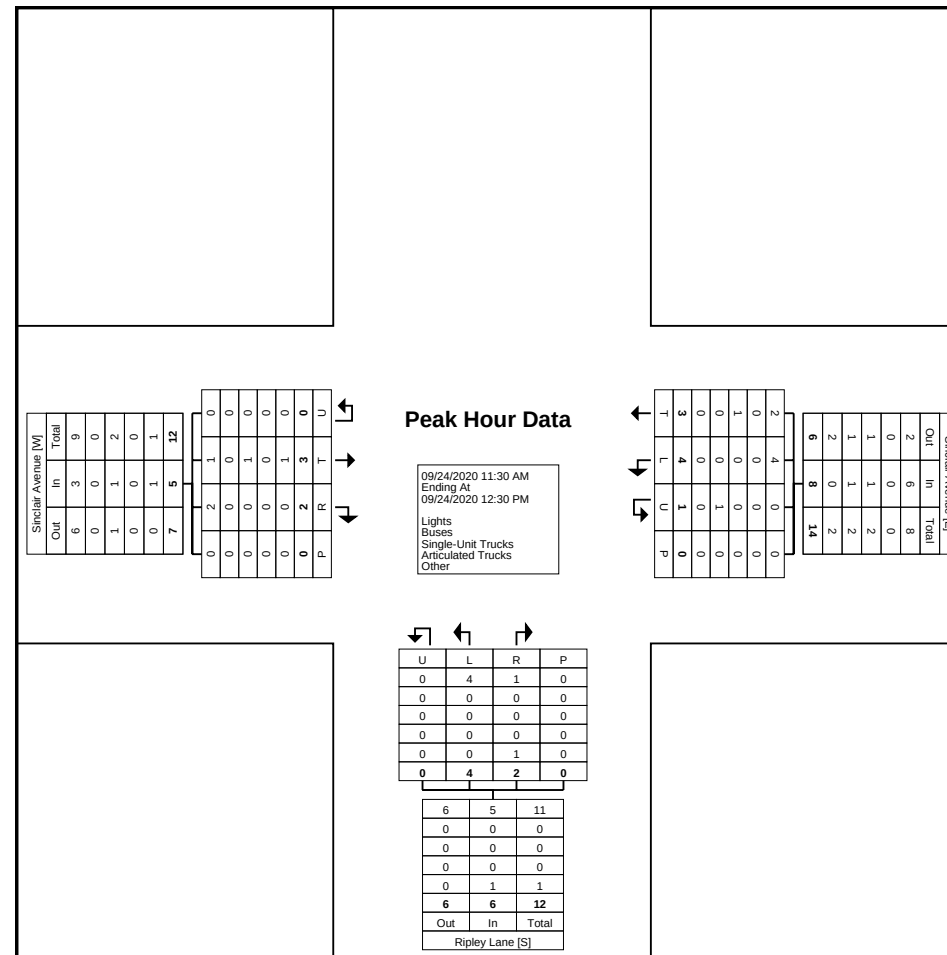
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519-896-3163 cbowness@pts1.com

Count Name: Sinclair Avenue & Ripley Lane
Site Code: 200407
Start Date: 09/24/2020
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Turning Movement Peak Hour Data Plot (11:30 AM)

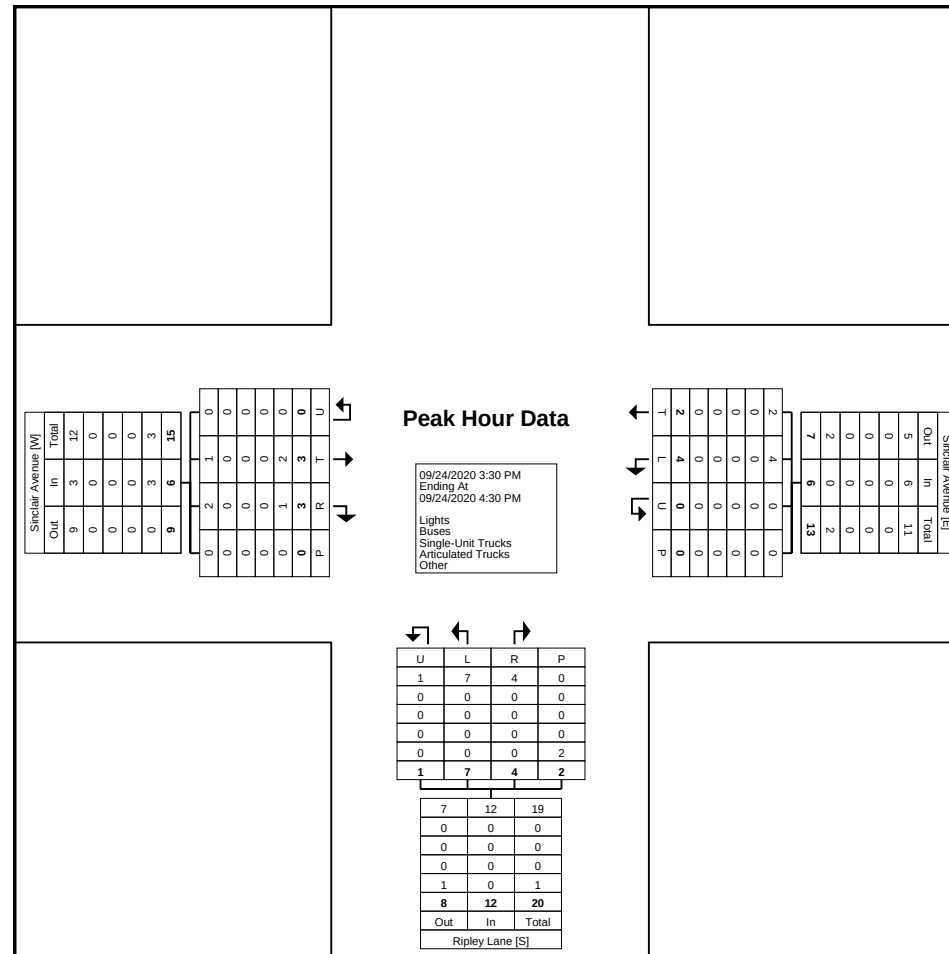
Start Time	Sinclair Avenue Eastbound					Sinclair Avenue Westbound					Ripley Lane Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:30 PM	0	0	0	0	0	1	0	0	0	1	4	0	1	0	5	6
3:45 PM	1	1	0	0	2	0	1	0	0	1	1	1	0	0	2	5
4:00 PM	0	1	0	0	1	3	1	0	0	4	1	1	0	0	2	7
4:15 PM	2	1	0	0	3	0	0	0	0	0	1	2	0	2	3	6
Total	3	3	0	0	6	4	2	0	0	6	7	4	1	2	12	24
Approach %	50.0	50.0	0.0	-	-	66.7	33.3	0.0	-	-	58.3	33.3	8.3	-	-	-
Total %	12.5	12.5	0.0	-	25.0	16.7	8.3	0.0	-	25.0	29.2	16.7	4.2	-	50.0	-
PHF	0.375	0.750	0.000	-	0.500	0.333	0.500	0.000	-	0.375	0.438	0.500	0.250	-	0.600	0.857
Lights	1	2	0	-	3	4	2	0	-	6	7	4	1	-	12	21
% Lights	33.3	66.7	-	-	50.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	87.5
Buses	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	0	-	0	0
% Single-Unit Trucks	0.0	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
% 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	2	1	0	-	3	0	0	0	-	0	0	0	0	-	0	3
% Bicycles on Road	66.7	33.3	-	-	50.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	12.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@pts1.com

Count Name: Sinclair Avenue & Ripley Lane
Site Code: 200407
Start Date: 09/24/2020
Page No: 9



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



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Sinclair Avenue & Ripley Lane
Site Code: 200407
Start Date: 09/24/2020
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Appendix C

Existing Traffic Operations Reports



HCM Unsignalized Intersection Capacity Analysis
1: Manor Road & Sinclair Avenue

Existing AM
Sinclair Avenue, St. Thomas

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	10	4	2	186	142	4
Future Volume (Veh/h)	10	4	2	186	142	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	5	2	216	165	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	280	85	170			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	280	85	170			
tC, single (s)	7.2	7.4	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	639	888	1420			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	17	74	144	110	60	
Volume Left	12	2	0	0	0	
Volume Right	5	0	0	0	5	
cSH	697	1420	1700	1700	1700	
Volume to Capacity	0.02	0.00	0.08	0.06	0.04	
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	
Control Delay (s)	10.3	0.2	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.3	0.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		17.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
2: Ripley Lane & Sinclair Avenue

Existing AM
Sinclair Avenue, St. Thomas

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	8	4	3	3	0	5
Future Volume (Veh/h)	8	4	3	3	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.46	0.46	0.46	0.46	0.46	0.46
Hourly flow rate (vph)	17	9	7	7	0	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			26		42	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			26		42	22
tC, single (s)			4.1		6.4	6.8
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.8
p0 queue free %			100		100	99
cM capacity (veh/h)			1601		969	911
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	26	14	11			
Volume Left	0	7	0			
Volume Right	9	0	11			
cSH	1700	1601	911			
Volume to Capacity	0.02	0.00	0.01			
Queue Length 95th (m)	0.0	0.1	0.3			
Control Delay (s)	0.0	3.6	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.6	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 3: Highview Drive & Ripley Lane

Existing AM
Sinclair Avenue, St. Thomas

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	52	44	1	1	6
Future Volume (Veh/h)	8	52	44	1	1	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	10	67	56	1	1	8
Pedestrians					4	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	61				148	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	61				148	60
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1550				841	1007
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	77	57	9			
Volume Left	10	0	1			
Volume Right	0	1	8			
cSH	1550	1700	985			
Volume to Capacity	0.01	0.03	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	1.0	0.0	8.7			
Lane LOS	A		A			
Approach Delay (s)	1.0	0.0	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			20.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 1: Manor Road & Sinclair Avenue

Existing PM
Sinclair Avenue, St. Thomas

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	2	0	193	239	10
Future Volume (Veh/h)	6	2	0	193	239	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	2	0	210	260	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	370	136	271			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370	136	271			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	608	895	1304			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	9	70	140	173	98	
Volume Left	7	0	0	0	0	
Volume Right	2	0	0	0	11	
cSH	655	1304	1700	1700	1700	
Volume to Capacity	0.01	0.00	0.08	0.10	0.06	
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	
Control Delay (s)	10.6	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.6	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			17.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Ripley Lane & Sinclair Avenue

Existing PM
Sinclair Avenue, St. Thomas

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	4	2	7	4
Future Volume (Veh/h)	3	3	4	2	7	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	3	3	5	2	8	5
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			8		18	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		18	6
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1623		1000	1080
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	6	7	13			
Volume Left	0	5	8			
Volume Right	3	0	5			
cSH	1700	1623	1029			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (m)	0.0	0.1	0.3			
Control Delay (s)	0.0	5.2	8.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	5.2	8.5			
Approach LOS			A			
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization			14.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 3: Highview Drive & Ripley Lane

Existing PM
Sinclair Avenue, St. Thomas

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	59	66	4	2	6
Future Volume (Veh/h)	12	59	66	4	2	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	13	61	69	4	2	6
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	75				160	73
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				160	73
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1535				827	993
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	74	73	8			
Volume Left	13	0	2			
Volume Right	0	4	6			
cSH	1535	1700	946			
Volume to Capacity	0.01	0.04	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	1.3	0.0	8.8			
Lane LOS	A		A			
Approach Delay (s)	1.3	0.0	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization		21.0%		ICU Level of Service	A	
Analysis Period (min)		15				

Appendix D

2025 Background Traffic Operations Reports



HCM Unsignalized Intersection Capacity Analysis 1: Manor Road & Sinclair Avenue

Background AM
Sinclair Avenue, St. Thomas

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	11	4	2	205	157	4
Future Volume (Veh/h)	11	4	2	205	157	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	13	5	2	238	183	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	308	94	188			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	94	188			
tC, single (s)	7.2	7.4	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	612	875	1398			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	18	81	159	122	66	
Volume Left	13	2	0	0	0	
Volume Right	5	0	0	0	5	
cSH	668	1398	1700	1700	1700	
Volume to Capacity	0.03	0.00	0.09	0.07	0.04	
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	
Control Delay (s)	10.5	0.2	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.5	0.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		17.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 2: Ripley Lane & Sinclair Avenue

Background AM
Sinclair Avenue, St. Thomas

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	9	4	3	3	0	6
Future Volume (Veh/h)	9	4	3	3	0	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.46	0.46	0.46	0.46	0.46	0.46
Hourly flow rate (vph)	20	9	7	7	0	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			29		46	24
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			29		46	24
tC, single (s)			4.1		6.4	6.8
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.8
p0 queue free %			100		100	99
cM capacity (veh/h)			1597		966	907
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	29	14	13			
Volume Left	0	7	0			
Volume Right	9	0	13			
cSH	1700	1597	907			
Volume to Capacity	0.02	0.00	0.01			
Queue Length 95th (m)	0.0	0.1	0.3			
Control Delay (s)	0.0	3.6	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.6	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 3: Highview Drive & Ripley Lane

Background AM
Sinclair Avenue, St. Thomas

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	57	49	1	1	7
Future Volume (Veh/h)	9	57	49	1	1	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	12	73	63	1	1	9
Pedestrians					4	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	68				164	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68				164	68
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1541				822	998
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	85	64	10			
Volume Left	12	0	1			
Volume Right	0	1	9			
cSH	1541	1700	977			
Volume to Capacity	0.01	0.04	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	1.1	0.0	8.7			
Lane LOS	A		A			
Approach Delay (s)	1.1	0.0	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			20.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 1: Manor Road & Sinclair Avenue

Background PM
Sinclair Avenue, St. Thomas

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	7	2	0	213	264	11
Future Volume (Veh/h)	7	2	0	213	264	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	0	232	287	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	409	150	299			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	409	150	299			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	576	877	1274			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	10	77	155	191	108	
Volume Left	8	0	0	0	0	
Volume Right	2	0	0	0	12	
cSH	618	1274	1700	1700	1700	
Volume to Capacity	0.02	0.00	0.09	0.11	0.06	
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	10.9	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			18.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Ripley Lane & Sinclair Avenue

Background PM
Sinclair Avenue, St. Thomas

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	4	2	8	4
Future Volume (Veh/h)	3	3	4	2	8	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	3	3	5	2	9	5
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			8		18	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		18	6
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1623		1000	1080
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	6	7	14			
Volume Left	0	5	9			
Volume Right	3	0	5			
cSH	1700	1623	1027			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (m)	0.0	0.1	0.3			
Control Delay (s)	0.0	5.2	8.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	5.2	8.6			
Approach LOS			A			
Intersection Summary						
Average Delay			5.8			
Intersection Capacity Utilization			14.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 3: Highview Drive & Ripley Lane

Background PM
Sinclair Avenue, St. Thomas

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	65	73	4	2	7
Future Volume (Veh/h)	13	65	73	4	2	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	68	76	4	2	7
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	82				176	80
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82				176	80
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1526				810	984
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	82	80	9			
Volume Left	14	0	2			
Volume Right	0	4	7			
cSH	1526	1700	939			
Volume to Capacity	0.01	0.05	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	1.3	0.0	8.9			
Lane LOS	A		A			
Approach Delay (s)	1.3	0.0	8.9			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization		21.4%		ICU Level of Service	A	
Analysis Period (min)		15				

Appendix E

2025 Total Traffic Operations Reports



HCM Unsignalized Intersection Capacity Analysis 1: Manor Road & Sinclair Avenue

Total AM
Sinclair Avenue, St. Thomas

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	16	6	3	205	157	5
Future Volume (Veh/h)	16	6	3	205	157	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	19	7	3	238	183	6
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	311	94	189			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311	94	189			
tC, single (s)	7.2	7.4	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	609	875	1397			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	26	82	159	122	67	
Volume Left	19	3	0	0	0	
Volume Right	7	0	0	0	6	
cSH	663	1397	1700	1700	1700	
Volume to Capacity	0.04	0.00	0.09	0.07	0.04	
Queue Length 95th (m)	1.0	0.1	0.0	0.0	0.0	
Control Delay (s)	10.6	0.3	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.6	0.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			18.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Ripley Lane & Sinclair Avenue

Total AM
Sinclair Avenue, St. Thomas

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	16	11	3	5	2	6
Future Volume (Veh/h)	16	11	3	5	2	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.46	0.46	0.46	0.46	0.46	0.46
Hourly flow rate (vph)	35	24	7	11	4	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			59		72	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		72	47
tC, single (s)			4.1		6.4	6.8
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.8
p0 queue free %			100		100	99
cM capacity (veh/h)			1558		933	880
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	59	18	17			
Volume Left	0	7	4			
Volume Right	24	0	13			
cSH	1700	1558	892			
Volume to Capacity	0.03	0.00	0.02			
Queue Length 95th (m)	0.0	0.1	0.5			
Control Delay (s)	0.0	2.9	9.1			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.1			
Approach LOS			A			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			13.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 3: Highview Drive & Ripley Lane

Total AM
Sinclair Avenue, St. Thomas

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	57	49	1	2	13
Future Volume (Veh/h)	11	57	49	1	2	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	14	73	63	1	3	17
Pedestrians					4	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	68				168	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68				168	68
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	98
cM capacity (veh/h)	1541				816	998
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	87	64	20			
Volume Left	14	0	3			
Volume Right	0	1	17			
cSH	1541	1700	966			
Volume to Capacity	0.01	0.04	0.02			
Queue Length 95th (m)	0.2	0.0	0.5			
Control Delay (s)	1.2	0.0	8.8			
Lane LOS	A		A			
Approach Delay (s)	1.2	0.0	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			20.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 1: Manor Road & Sinclair Avenue

Total PM
Sinclair Avenue, St. Thomas

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	3	2	213	264	15
Future Volume (Veh/h)	10	3	2	213	264	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	3	2	232	287	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	415	152	303			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	415	152	303			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	570	874	1269			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	14	79	155	191	112	
Volume Left	11	2	0	0	0	
Volume Right	3	0	0	0	16	
cSH	616	1269	1700	1700	1700	
Volume to Capacity	0.02	0.00	0.09	0.11	0.07	
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	
Control Delay (s)	11.0	0.2	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	11.0	0.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			18.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 2: Ripley Lane & Sinclair Avenue

Total PM
Sinclair Avenue, St. Thomas

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations					 	
Traffic Volume (veh/h)	7	7	4	8	14	4
Future Volume (Veh/h)	7	7	4	8	14	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	8	8	5	9	16	5
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			18		33	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		33	14
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1609		981	1070
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	16	14	21			
Volume Left	0	5	16			
Volume Right	8	0	5			
cSH	1700	1609	1001			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.0	0.1	0.5			
Control Delay (s)	0.0	2.6	8.7			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.6	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			14.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 3: Highview Drive & Ripley Lane

Total PM
Sinclair Avenue, St. Thomas

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	65	73	5	2	11
Future Volume (Veh/h)	18	65	73	5	2	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	19	68	76	5	2	11
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	83				186	80
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	83				186	80
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	99
cM capacity (veh/h)	1524				796	984
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	87	81	13			
Volume Left	19	0	2			
Volume Right	0	5	11			
cSH	1524	1700	949			
Volume to Capacity	0.01	0.05	0.01			
Queue Length 95th (m)	0.3	0.0	0.3			
Control Delay (s)	1.7	0.0	8.8			
Lane LOS	A		A			
Approach Delay (s)	1.7	0.0	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		21.8%		ICU Level of Service		A
Analysis Period (min)			15			