



Proposed Cavan Agri Services, Warehouse and Workshop Buildings Development

County Road 10 Township of Cavan Monaghan County of Peterborough

Traffic Brief

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April, 2021

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April 23, 2021

Mr. Murray Davenport
c/o MJ Davenport & Associates Ltd.
2010 Keene Road
Otonabee, ON
K9J 6X7

Dear Mr. Davenport

Re: Traffic Study for Proposed Cavan Agri Services Addition of Warehouse and Workshop Buildings Development on County Road 10, Township of Cavan Monaghan, County of Peterborough

Enclosed please find our final Traffic Brief report for the proposed *Cavan Agri Services Addition of Warehouse and Workshop Buildings Development on County Road 10, Township of Cavan Monaghan, County of Peterborough*.

The study carried out a detailed examination of the impacts of existing, future background and the impact of the site-generated traffic on the future total traffic for 2026 planning horizon. The study found that the study site driveway will maintain their current level of good Level of Service with no significant additional delay or queue at the study site as a result of the proposed Cavan Agri Services addition of warehouse and workshop buildings development. The proposed site driveway design will accommodate County of Peterborough standards for warehouse/industrial uses with truck access will serve the proposed development well.

If you should require further information on the study, please do not hesitate to contact us at your convenience.

Yours truly,

Seo-Woon (Swan) Im, B.E.S
Tranplan Associates, Senior Transportation Planner

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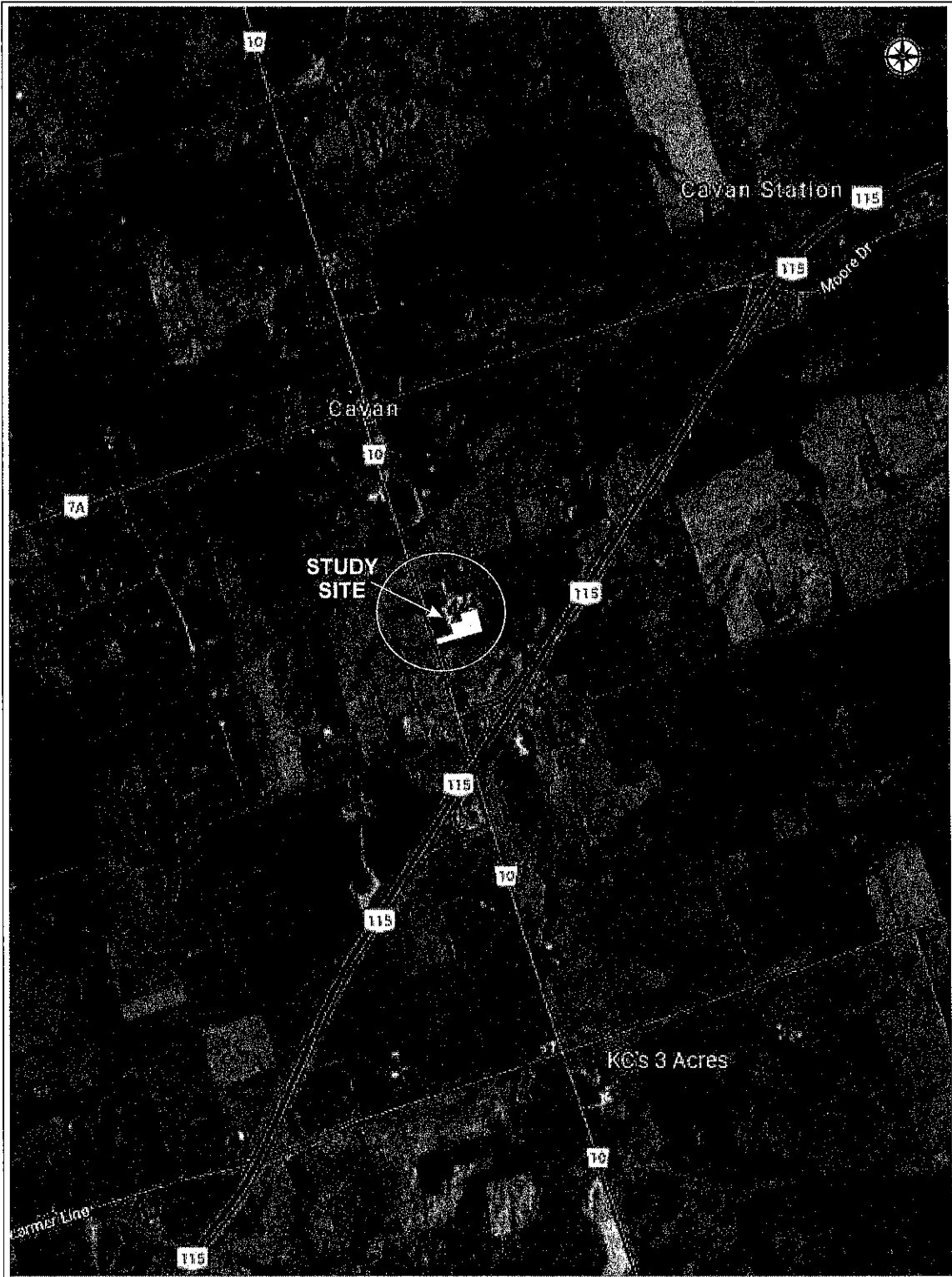
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1. INTRODUCTION

Tranplan Associates is pleased to present the results of a traffic impact study in support of the proposed *Warehouse and Workshop Addition* development to the existing Cavan Agri Services Ltd. located at 1377 Peterborough County Road 10, just north of Highway 115 in Cavan, in the Township of Cavan Monaghan, County of Peterborough, see **Exhibit 1.1:** Key Map. The proposed development is two additional buildings on site, a warehouse building (approximately 20,000 sq. ft.) where the supplies will be stored and a small workshop building (approximately 6,720 sq. ft.) where the equipment/materials will be stored and fixed. **Exhibit 1.2:** Proposed Site Plan, illustrates the general layout of the proposed development and the existing site access location, which will be upgraded to the County of Peterborough standards. As part of the planning application process, the County of Peterborough has requested that the owners carry out a traffic study to assess the impact of the proposed development with particular emphasis on the site entrance requirements.

Tranplan Associates (Tranplan) was retained by the owners to assess the traffic impact of the proposed development. The study has been prepared for use by the study team to assess the overall impact of the proposed development and to assess what the additional impact of the proposed additional site generated traffic volume will have on the adjacent road network and site access driveway. It contains objective technical information to assess potential entrance requirements and options for the study site. This report describes the study analysis and presents the findings. A detailed set of intersection capacity analyses have been carried out for present and planned site development represented by a 2026 planning horizon.

EXHIBIT 1.1: KEY PLAN



2. EXISTING CONDITIONS

2.1 Study Site

The Cavan Agri Services site fronts on County Road 10 (east side), which is under the jurisdiction of the County of Peterborough. The study site has a small office (approximately 1,270 sq. ft.) and a warehouse building (approximately 19,728 sq. ft.). Lands immediately to the north, adjacent and connected to the study site is Masterfeeds operation with two driveways on County Road 10. Surrounding the study site are mainly farmlands.

2.2 Access to the Study Site

Exhibit 2.1 – Existing Traffic Control and Lane Configurations shows the study area, surrounding land uses, existing lane configurations and traffic control type at the study site driveway.

County Road 10 provides direct access to the study site. In the vicinity of the site, County Road 10 has a two-lane rural cross section with gravel shoulders. The posted speed limit on County Road 10 is 80 km/h.

2.3 Peak Hour Traffic Volumes

Exhibit 2.2(A) describes the peak hour traffic volumes to represent the balanced 2021 traffic volumes at the study site driveway. The County of Peterborough provided seasonal ATR traffic data along County Road 10 and MTO provided Turning Movement Counts for the Highway 115 exit ramps at County Road 10 (see **Appendix A**). The County data was used as an overall control total for two-way volumes on County Road 10 and MTO data was used to split the two-way traffic by direction and bring it up to reflect the County data control totals. The study applied 4% growth rate to balanced 2019 data to bring it up to 2021 levels.

EXHIBIT 2.1: EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROLS

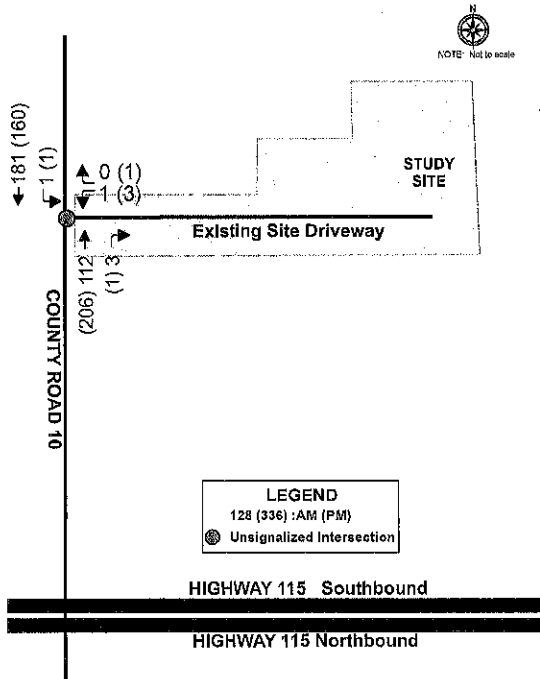


LEGEND

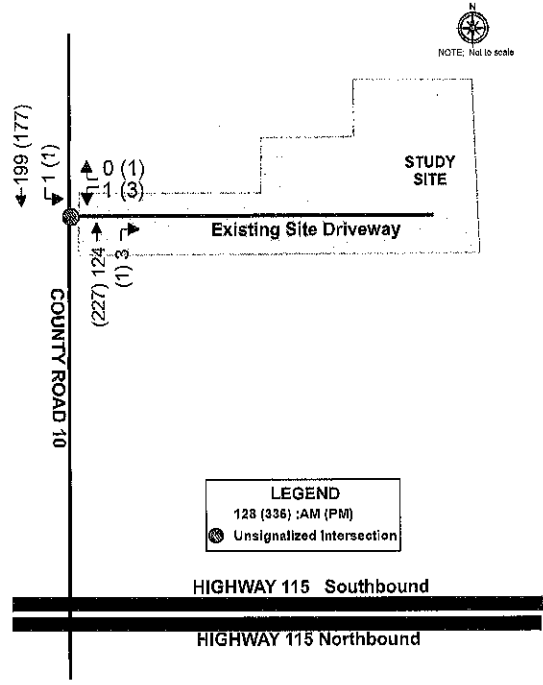
	Shared Left and Right Turn Lane		Shared Through and Left Turn Lane
	Dedicated Through Lane		Dedicated Left Turn Lane
	Shared Through and Right Turn Lane		Dedicated Right Turn Lane

EXHIBIT 2.2: TRAFFIC VOLUMES

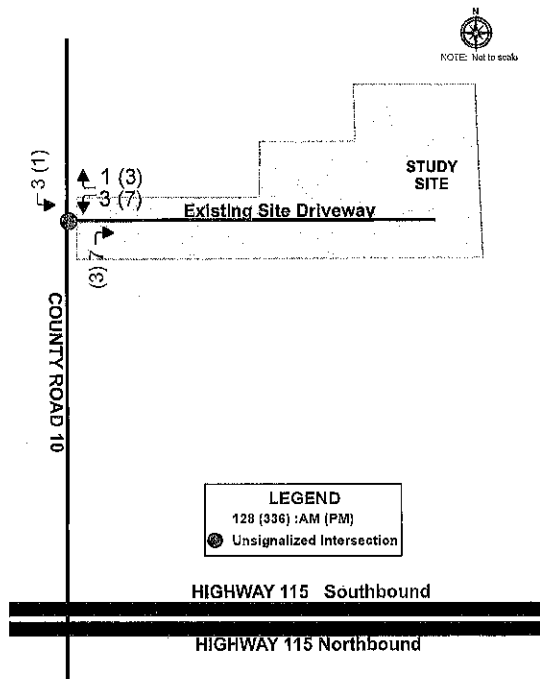
A) Existing Traffic



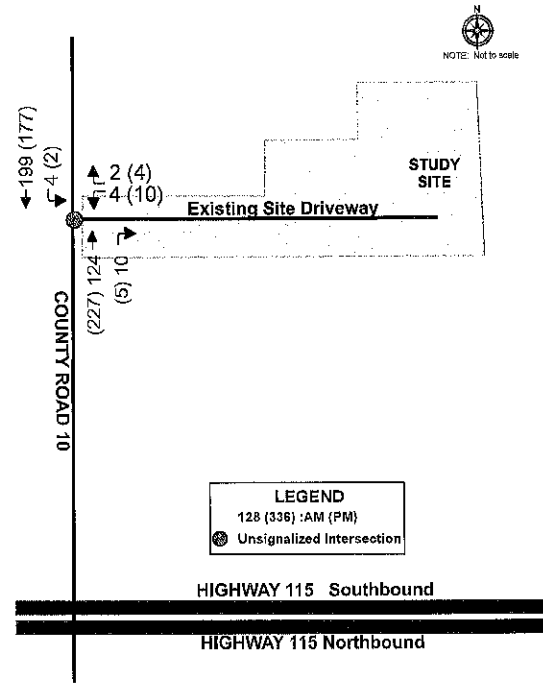
B) 2026 Background Traffic



C) Site Traffic



D) 2026 Total Traffic



2.4 Existing Conditions/Level of Service (LOS)¹

Detailed intersection capacity analysis of the existing conditions was carried out using *Trafficware Traffic Signal Timing Software -Synchro Version 9.0*. The results are summarized in **Table 2.1: Summary of Intersection Analysis**. Detailed reports from the analysis are contained in **Appendix B Intersection Capacity Analysis**.

Table 2.1: Summary of Intersection Capacity Analysis: Existing Conditions

Intersection	Existing (2021) Conditions							
	Weekday AM Peak				Weekday PM Peak			
County Road 10/ Site Driveway (Unsignalized)	LOS	Delay	95th Queue	v/c	LOS	Delay	95th Queue	v/c
WB - LR	A	9.6	0.0	0.00	B	10.6	0.0	0.01
SB - L	A	7.5	0.0	0.00	A	7.7	0.0	0.00

NOTE: Delay in seconds; 95th percentile queue in vehicles (unsignalized intersection) as provided in Synchro detail output, see Appendix B

The site driveway currently operates as a Two-Way-Stop-Control (TWSC) with stop signs facing the site driveway. The worst operation movement at a TWSC is associated with traffic to/from the site driveway by way of a left turn movement. The intersection capacity analysis indicates that all movements at the study site driveways currently provide very good Levels of Service.

¹ Level of Service (LOS) is commonly used in traffic engineering to describe the level of congestion along a roadway or at an intersection. Levels from "A" to "F" denote increasing amounts of congestion with "F" representing a complete breakdown in traffic flow. Level of Service "C" and "D" are commonly used as design standards. However, many individual turning movements at TWSC intersections and commercial entrances along urban arterial corridors operate at LOS "F" during peak periods.

3. THE PROPOSED DEVELOPMENT

3.1 Future Background Traffic

Background traffic is defined as all traffic within the study area that is not related to the proposed development. The future background traffic forecasts were developed for a planning horizon to 2026 (five years after the projected build-out of the study site in 2021). To account for other developments in the study area, the background traffic was increased by 2% per annum, compounded (from 2021 – 2026) for a total of 10.4% growth in traffic within the study intersections (see **Exhibit 2.2B**).

3.2 Traffic Generation by the Proposed Development

The forecast site trip generation for the proposed expansion of Cavan Agri Services Ltd. operation at the study site was based on the following:

- Observed/calculated peak hour trip rates at the study site
- Current Institute of Transportation Engineers (ITE) *Trip Generation Manual*² land use category *Warehousing (LU 150)*, *Small office (LU 712)* and *General Light Industrial (LU 110)* average rate AM and PM Peak Hour Adjacent Road Peak Hour Rates, calculated on the basis of the Gross Floor Area (GFA) as the independent variable; and
- The future expansion “first principles” information provided by the owners of the business.

The full build-out of the study site is projected to generate approximately 20 vehicle trips during AM peak period and approximately 21 vehicle trips during the

² The Institute of Transportation Engineers, based in the United States, is an international association for traffic engineers and transportation planners. The organization publishes a number of handbooks and manuals, including the Trip Generation Manual which is based on American and Canadian experience. The tenth edition of this publication was used.

PM peak hour and considered the “worst case” scenario. The forecast peak hour vehicular trip generation by the proposed development is provided in **Table 3.1** below:

Table 3.1: Projected Trip Generation by Proposed Development

LAND USE	WEEKDAY AM PEAK HOUR				WEEKDAY PM PEAK HOUR			
	ITE Trip Generation Manual - 10 th Edition	Vehicle Trips			ITE Trip Generation Manual - 10 th Edition	Vehicle Trips		
		Total	In	Out		Total	In	Out
Existing Conditions								
Warehousing (LU150) 19,728 ft² GFA	Average Rate = 0.17	3	77% 3	23% 1	Average Rate = 0.19	4	27% 1	73% 3
Office (LU 712) 1,271 ft² GFA	Average Rate = 1.92	2	83% 2	17% 0	Average Rate = 2.45	3	32% 1	68% 2
Total Existing		6	5	1		7	2	5
Future Conditions								
Warehousing (LU150) 20,000 ft² GFA	Average Rate = 0.17	3	77% 3	23% 1	Average Rate = 0.19	4	27% 1	73% 3
Workshop (LU 110) 6,721 ft² GFA	Average Rate = 0.70	5	88% 4	11% 1	Average Rate = 0.63	4	13% 1	87% 4
Total Addition		8	7	1		8	2	6
Add Customers		4	2	2		4	2	2
Add Deliveries		2	1	1		2	1	1
Total Addition		14	10	4		14	5	9
Future Total w/ Addition		20	14	6		21	7	14

Note: numbers do not add up exactly due to rounding

3.3 Directional Orientation of Site Traffic

The directional orientation of the site traffic is expected to be similar to the trip patterns observed at the proposed site entrance and similar to the trip patterns observed at the study site intersection and consistent with population distribution within commuting distance. **Exhibit 2.2 (C)**, describes the distribution of the traffic to/from the study site. In general, 70% of the site traffic was assumed to be travelling north on County Road 10 and 30% of the site traffic was assumed to be travelling south on County Road 10. **Exhibit 2.2 (D)** presents projected total traffic volumes in 2026 with the proposed additional buildings on site.

4. ANALYSIS OF PROJECTED TRAFFIC VOLUMES

Detailed intersection capacity analysis of conditions in 2026 with and without the proposed development was carried out using *Trafficware Traffic Signal Timing Software -Synchro Version 9.0*. The results are summarized in **Table 4.1** and **Table 4.2**. Detailed reports from the analysis are contained in **Appendix B Intersection Capacity Analysis**.

4.1 Background Traffic Volume Analysis

Table 4.1: Summary of Intersection Capacity Analysis: Background Conditions

Intersection	Future (2026) Background Conditions							
	Weekday AM Peak				Weekday PM Peak			
	LOS	Delay	95th Queue	v/c	LOS	Delay	95th Queue	v/c
County Road 10/ Site Driveway (Unsignalized)								
WB - LR	A	9.8	0.0	0.00	B	10.9	0.0	0.01
SB - L	A	7.5	0.0	0.00	A	7.7	0.0	0.00

NOTE: Delay in seconds; 95th percentile queue in vehicles (unsignalized intersection) as provided in Synchro detail output, see Appendix B

Under the 2026 background traffic conditions, the intersection capacity analysis results indicate that the site driveways will continue to operate at very good Levels of Service during the study peak hour periods. The outbound movement (westbound), during PM peak hour, is forecast to continue to operate at very good LOS "B" with minimum delay, no meaningful queue and ample residual capacity at the site driveways.

4.2 Future Total Traffic and Site Access Analysis

With the addition of the site traffic to the 2026 background conditions, the intersection capacity analysis indicates that the study site will have no significant impacts to the operations of the study intersections during the morning and the afternoon peak hour conditions.

Table 4.2: Summary of Intersection Capacity Analysis: Total Conditions

Intersection	Future (2026) Total Conditions							
	Weekday AM Peak				Weekday PM Peak			
County Road 10/ Site Driveway (Unsignalized)	LOS	Delay	95th Queue	v/c	LOS	Delay	95th Queue	v/c
WB - LR	B	10.2	0.0	0.01	B	11.0	0.1	0.03
SB - L	A	7.5	0.0	0.00	A	7.7	0.0	0.00

NOTE: Delay in seconds; 95th percentile queue in metres (signalized intersection) and in vehicles (unsignalized intersection) as provided in Synchro detail output, see Appendix B

Under the 2026 total traffic conditions, the intersection capacity analysis results indicate that the site driveways will continue to operate at very good Levels of Service during the study peak hour periods. The outbound movement (westbound), during PM peak hour, is forecast to continue to operate at very good LOS “B” with minimum delay, no meaningful queue and ample residual capacity at the site driveways. The impact of the traffic from the additional buildings on site “under the worst case” scenario is less than one second of additional delay, increase in queue of less than one metre and no meaningful increase in the v/c ratio at the site driveway. No significant changes in the Levels of Service is expected as a result of the traffic from the expansion of the Cavan Agri Services warehouse and workshop additional buildings.

In assessing the three principal components of intersection measures of effectiveness (MOE’s - delay, queue length and v/c ratio), it indicates that there will be sufficient capacity in County Road 10 and in the existing site driveway to accommodate the traffic from the study site operating with acceptable delay and queuing of less than one vehicle on site.

4.3 Site Driveway on County Road 10

The study site will be served by an existing single full-moves driveway, serving all uses proposed/existing on study site, onto County Road 10. The future proposed driveway will be designed to Peterborough/MTO CSAS – 23 Design standards replacing the current gravel access driveway with pavement.

4.4 Left Turn Lane Analysis

A Ministry of Transportation (MTO) left turn lane warrant analysis was carried out to assess the need for a southbound left turn lane on County Road 10 at the site entrance using the “worst case” scenario site traffic volumes for both AM and PM peak periods. Based on 2026 peak hour total traffic conditions, there is no warrant for this left turn lane on County Road 10.

4.5 Right Turn Lane Analysis

The right turn lane analysis is based on County of Peterborough right turn lane warrant guidelines (based on Virginia State Department of Transportation Guidelines). Right turn analysis is based on PM peak hour volumes (highest approach volumes occur during PM peak hour) presented in **Exhibit 2.2(D)**. The right turn lane analysis indicates that no right turn taper or right turn lane is warranted on County Road 1) at site driveway (see **Appendix C**).

5. CONCLUSIONS AND RECOMMENDATIONS

This traffic impact assessment was carried out in support of the proposed *Warehouse and Workshop Addition* development to the existing Cavan Agri Services Ltd. located at 1377 Peterborough County Road 10, just north of Highway 115 in Cavan, in the Township of Cavan Monaghan, County of Peterborough.

The following are the principal findings and recommendations of the study.

- Under the existing conditions, the intersection capacity analysis indicates that all movements at the study site are operating at good Level of Service.
- By 2026 background conditions (applied annual growth rate of 2%), the intersection capacity analysis indicates that all movements at the study site will continue to provide good Level of Service during both peak periods.
- The projected new peak hour trip generation by the proposed Industrial Building under the “worst case” scenario is projected to generate approximately 14 additional (2-way) site traffic during AM peak hour and 14 (2-way) site traffic during PM peak hour. The total site traffic with the additional buildings on site is forecast to be 20 vehicle trips during AM peak period and approximately 21 vehicle trips during the PM peak hour.
- The left turn lane analysis indicate that the projected volumes do not meet the left turn lane warranted on County Road 10 at the site entrance driveway.
- The right turn lane analyses indicate that no right turn taper or right turn lane is warranted on County Road 10 at the site entrance driveway.
- The addition of traffic the study site traffic on the local road network

during the peak hour periods has very minor impact on the adjacent road network and no mitigation measures will be necessary to accommodate the projected site traffic volumes. The capacity analysis indicates that there is residual capacity available in the study road network to accommodate the traffic from the proposed development.

TECHNICAL APPENDIX

APPENDIX A: Traffic Data



TVIS II - Traffic Volume Information System

Turning Movement Total Count and Peak Summary Report

Ministry of Transportation

Description: Hwy 115 @ Peterborough City Rd 10 (SRT)

Region: EASTERN

Survey Type: TM - Interchange

Hwy: 115

Start Date: 30-Oct-2018 (Tue)

I/C Side: S

LHRS: 42245

End Date: 30-Oct-2018 (Tue)

Int. Type: Four Leg

Offset: 0

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

Total Count

Number of hours: 8

AM Peak Hour Report

Start Time: 07:30

		Peterborough City Rd 10					
Ped. 0	Total Vehicles	137	1195	94	1111	Ped. 0	
		16% (T+LT)	4% (T+LT)	4% (T+LT)	↑		Syer Line; none
←	779	←	↓	→	↑	82	4% (T+LT)
6% (T+LT)	398	↑		←		24	4% (T+LT)
3% (T+LT)	33	→		↓		55	2% (T+LT)
19% (T+LT)	113	↓	←	↑	→	188	→
Hwy 115; 12, 21	1363	818	631	61	Total Vehicles	Ped. 0	
Ped. 0		↓	5% (T+LT)	9% (T+LT)	0% (T+LT)		
							Peterborough City Rd 10

		Peterborough City Rd 10					
Ped. 0	Total Vehicles	16	181	12	130	Ped. 0	
		19% (T+LT)	6% (T+LT)	8% (T+LT)	↑		Syer Line; none
←	156	←	↓	→	↑	8	0% (T+LT)
7% (T+LT)	28	↑		←		3	0% (T+LT)
0% (T+LT)	0	→		↓		8	0% (T+LT)
23% (T+LT)	13	↓	←	↑	→	18	→
Hwy 115; 12, 21	202	137	94	6	Total Vehicles	Ped. 0	
Ped. 0		↓	4% (T+LT)	11% (T+LT)	0% (T+LT)		
							Peterborough City Rd 10

Midday Peak Hour Report

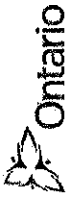
Start Time: 13:00

PM Peak Hour Report

Start Time: 16:15

		Peterborough City Rd 10					
Ped. 0	Total Vehicles	18	112	13	114	Ped. 0	
		28% (T+LT)	6% (T+LT)	0% (T+LT)	↑		Syer Line; none
←	94	←	↓	→	↑	15	7% (T+LT)
11% (T+LT)	27	↑		←		5	0% (T+LT)
0% (T+LT)	5	→		↓		5	0% (T+LT)
50% (T+LT)	6	↓	←	↑	→	31	→
Hwy 115; 12, 21	123	71	72	13	Total Vehicles	Ped. 0	
Ped. 0		↓	1% (T+LT)	13% (T+LT)	0% (T+LT)		
							Peterborough City Rd 10

		Peterborough City Rd 10					
Ped. 0	Total Vehicles	27	227	8	220	Ped. 0	
		22% (T+LT)	2% (T+LT)	0% (T+LT)	↑		Syer Line; none
←	106	←	↓	→	↑	7	0% (T+LT)
4% (T+LT)	104	↑		←		5	0% (T+LT)
0% (T+LT)	8	→		↓		3	0% (T+LT)
9% (T+LT)	32	↓	←	↑	→	24	→
Hwy 115; 12, 21	282	73	109	8	Total Vehicles	Ped. 0	
Ped. 0		↓	1% (T+LT)	6% (T+LT)	0% (T+LT)		
							Peterborough City Rd 10



TVIS II - Traffic Volume Information System
 Turning Movement 15 Minute Report

Description: Hwy 115 @ Peterborough City Rd 10 (SRT)

Hwy: 115

Region: EASTERN

LHRS: 42245

Survey Type: TM - Interchange

Offset: 0

I/C Side: S

Int. Type: Four Leg

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

Start Time	Major Road Approaches												Minor Road Approaches												Total Veh.
	North						South						East						West						
	Peterborough City Rd 10			Peterborough City Rd 10			Peterborough City Rd 10			Syer Line: Ramp(s): none			Hwy 115			Hwy 115			Hwy 115						
	Cars	Trucks	Long Trucks	Cars	Trucks	Long Trucks	Cars	Trucks	Long Trucks	Cars	Trucks	Long Trucks	Cars	Trucks	Heavy Trucks	Cars	Trucks	Heavy Trucks	Cars	Trucks	Heavy Trucks	Per			
15:30	6	45	6	0	0	0	17	17	3	1	0	0	3	1	3	0	0	0	25	0	0	0	0		
15:45	3	27	1	0	3	0	12	16	3	0	1	0	3	1	4	0	0	0	22	2	2	0	0		
16:00	4	29	6	0	1	0	12	16	0	0	0	0	3	0	3	0	0	0	18	3	6	1	0		
16:15	1	44	4	0	0	0	16	26	2	0	0	0	1	0	4	0	0	0	28	2	7	1	0		
16:30	3	57	10	0	1	3	22	31	1	1	0	0	0	1	1	0	0	0	19	0	4	0	0		
16:45	4	63	4	0	0	0	17	25	3	0	2	0	2	2	2	0	0	0	20	3	11	0	0		
17:00	0	58	3	0	0	1	17	20	2	0	0	0	0	2	0	0	0	0	33	3	7	0	0		
17:15	0	62	4	0	0	0	14	17	0	0	0	0	0	1	2	0	0	0	24	2	4	0	0		
17:30	4	48	3	0	0	0	17	18	0	0	0	0	2	0	5	0	0	0	26	1	5	1	0		
17:45	1	40	6	0	0	0	12	16	2	1	0	0	0	1	1	0	0	0	31	2	4	0	0		



Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement Total Count and Peak Summary Report

Description: HWY 115 @ PETERBOROUGH RD 10 / SYER LINE (NRT)

Region: EASTERN

Survey Type: TM - Interchange

Hwy: 115

Start Date: 30-Oct-2018 (Tue)

I/C Side: N

LHRS: 42245

End Date: 30-Oct-2018 (Tue)

Int. Type: Four Leg

Offset: 0

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

Total Count

Number of hours: 8

		PETERBOROUGH RD 10						
Ped. 0	Total Vehicles	0% (T +LT)	7% (T +LT)	3% (T +LT)	↑	Ped. 0		
		42	602	362	996	HWY 115 RAMP; 13, 31		
	← 188	↙	↓	↘	↑	60	8% (T +LT)	
	2% (T +LT)	41	↗	←	67	7% (T +LT)		
	14% (T +LT)	29	→	↓	685	4% (T+LT)		
	7% (T +LT)	135	↖	↑	↗	523	→	
	SYER LINE; 0	1422	79	905	132	Total Vehicles	Ped. 0	
	Ped. 0	↓	10% (T +LT)	8% (T +LT)	18% (T +LT)			
			PETERBOROUGH RD 10					

AM Peak Hour Report

Start Time: 07:15

		PETERBOROUGH RD 10						
Ped. 0	Total Vehicles	0% (T +LT)	8% (T +LT)	3% (T +LT)	↑	Ped. 0		
		4	89	74	104	HWY 115 RAMP; 13, 31		
	← 25	↙	↓	↘	↑	7	0% (T +LT)	
	0% (T +LT)	5	↗	←	11	9% (T +LT)		
	0% (T +LT)	4	→	↓	85	8% (T+LT)		
	9% (T +LT)	23	↖	↑	↗	105	→	
	SYER LINE; 0	197	10	92	27	Total Vehicles	Ped. 0	
	Ped. 0	↓	30% (T +LT)	11% (T +LT)	0% (T +LT)			
			PETERBOROUGH RD 10					

Midday Peak Hour Report

Start Time: 13:00

		PETERBOROUGH RD 10						
Ped. 0	Total Vehicles	0% (T +LT)	11% (T +LT)	5% (T +LT)	↑	Ped. 0		
		6	68	37	96	HWY 115 RAMP; 13, 31		
	← 20	↙	↓	↘	↑	3	0% (T +LT)	
	0% (T +LT)	7	↗	←	5	0% (T +LT)		
	0% (T +LT)	3	→	↓	64	5% (T+LT)		
	8% (T +LT)	12	↖	↑	↗	59	→	
	SYER LINE; 0	142	9	86	19	Total Vehicles	Ped. 0	
	Ped. 0	↓	11% (T +LT)	9% (T +LT)	21% (T +LT)			
			PETERBOROUGH RD 10					

PM Peak Hour Report

Start Time: 16:30

		PETERBOROUGH RD 10						
Ped. 0	Total Vehicles	0% (T +LT)	8% (T +LT)	2% (T +LT)	↑	Ped. 0		
		9	90	49	190	HWY 115 RAMP; 13, 31		
	← 47	↙	↓	↘	↑	7	14% (T +LT)	
	0% (T +LT)	16	↗	←	20	5% (T +LT)		
	17% (T +LT)	6	→	↓	160	0% (T+LT)		
	15% (T +LT)	27	↖	↑	↗	70	→	
	SYER LINE; 0	277	18	167	15	Total Vehicles	Ped. 0	
	Ped. 0	↓	8% (T +LT)	2% (T +LT)	20% (T +LT)			
			PETERBOROUGH RD 10					

Basic Volume Report: 010105

Station ID : 010105

Info Line 1 : CR-10, nb Maple Leaf Park
 Info Line 2 : entr sign s of Hwy. 7A

GPS Lat/Lon :

DB File : 010105.DB

Last Connected Device Type : TT-8-BT

Version Number : 1.07

Serial Number : 98673

Number of Lanes : 1

Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.		Normal	Axle	Yes	

Lane #1 Basic Volume Data From: 00:00 - 09/19/2019 To: 23:59 - 09/19/2019

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
09/19/19	T	18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604
Month Total :		18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604
Percent :		0%	0%	0%	0%	1%	3%	4%	5%	5%	6%	6%	6%	6%	7%	6%	7%	9%	8%	6%	5%	4%	3%	1%	1%	
ADT :		18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	3604	0	0	Weekday (Mon-Fri) :	3604 100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	3604
ADT :	0	0	0	0	3604	0	0	Weekend (Sat-Sun) :	0 0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0

Basic Volume Summary: 010105

Grand Total For Data From: 00:00 - 09/19/2019 To: 23:59 - 09/19/2019

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604
TOTAL	18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604
Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Lane #1	0%	0%	0%	0%	1%	3%	4%	5%	5%	6%	6%	6%	6%	7%	6%	7%	9%	8%	6%	5%	4%	3%	1%	1%	
TOTAL	0%	0%	0%	0%	1%	3%	4%	5%	5%	6%	6%	6%	6%	7%	6%	7%	9%	8%	6%	5%	4%	3%	1%	1%	
ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604
TOTAL	18	9	13	4	46	126	153	171	183	203	214	205	199	244	224	261	314	285	227	175	143	102	52	33	3604

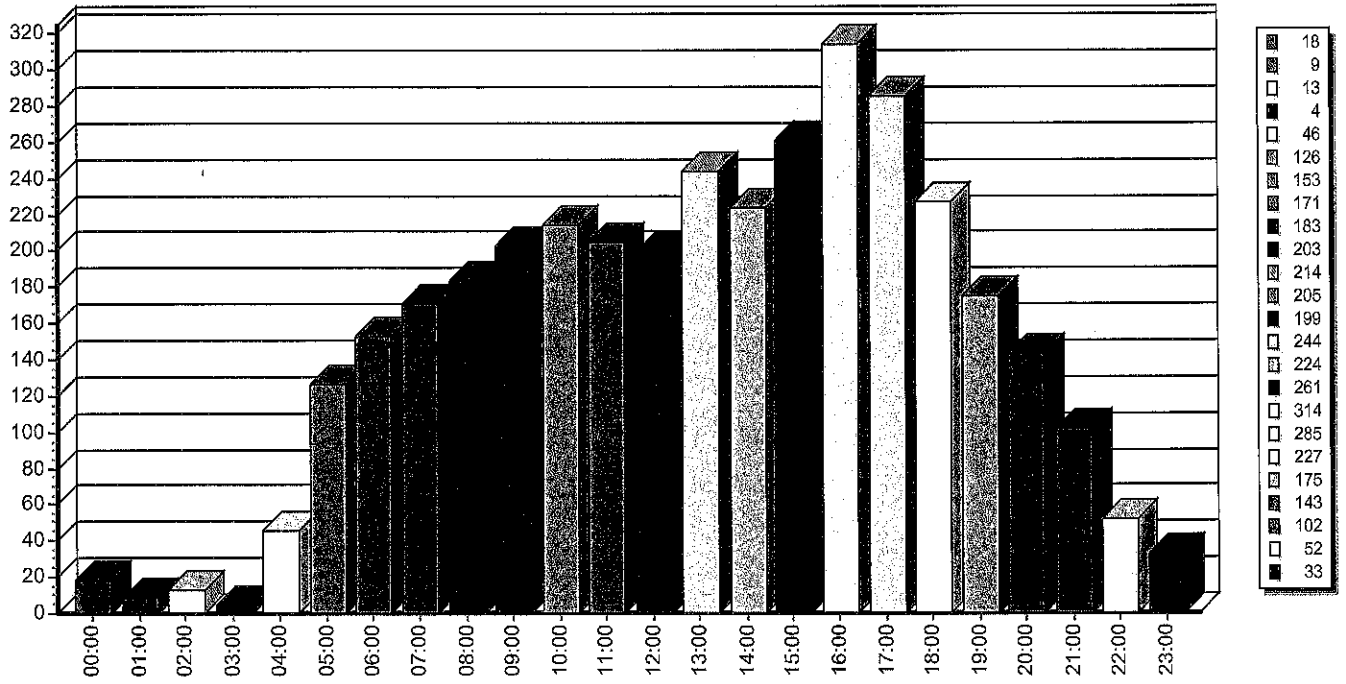
LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	3604	0	0	Weekday (Mon-Fri) :	3604 100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	3604
ADT :	0	0	0	0	3604	0	0	Weekend (Sat-Sun) :	0 0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0

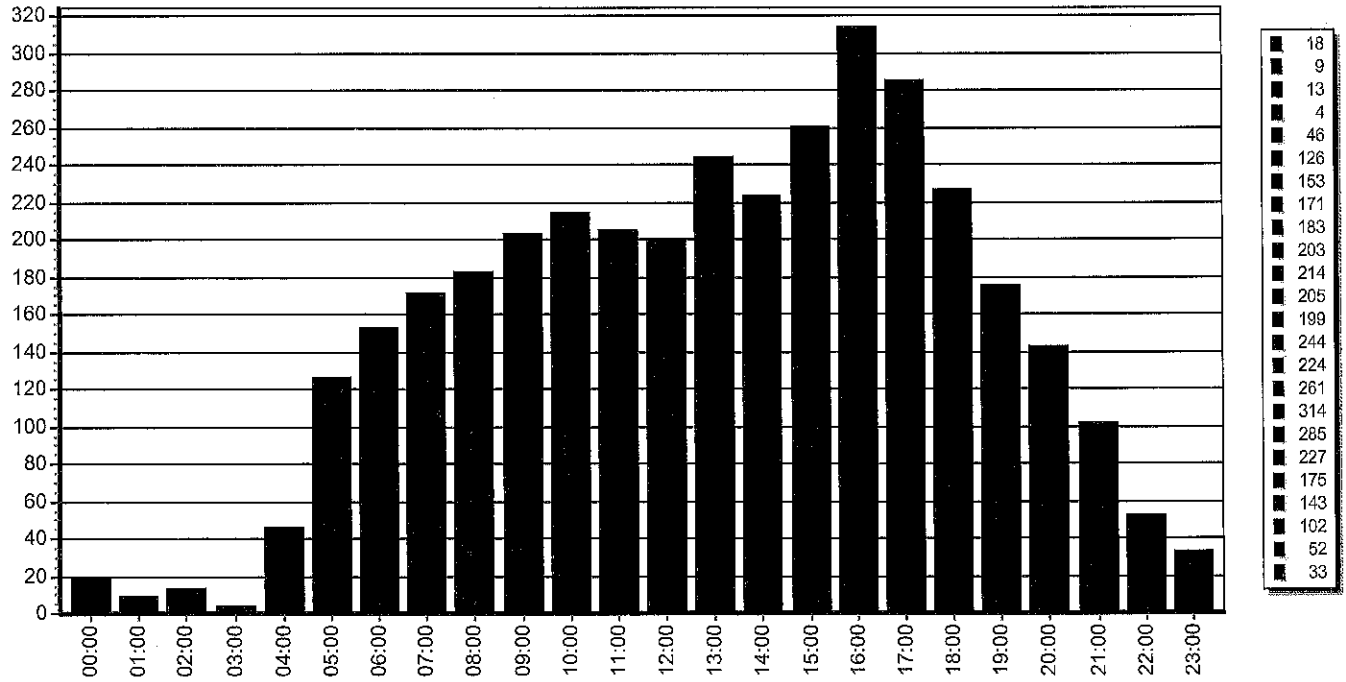
ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	3604	0	0	Weekday (Mon-Fri) :	3604 100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	3604
ADT :	0	0	0	0	3604	0	0	Weekend (Sat-Sun) :	0 0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0

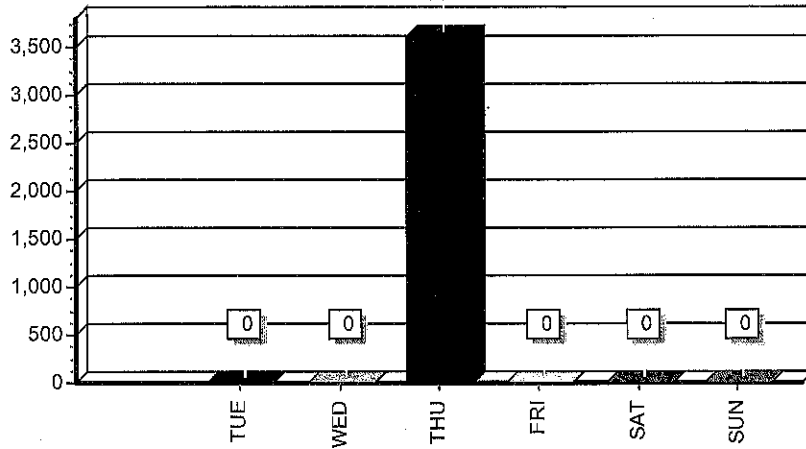
ADT Volume vs. Time (all lanes combined)



ADT Volume vs. Time (lane comparison)

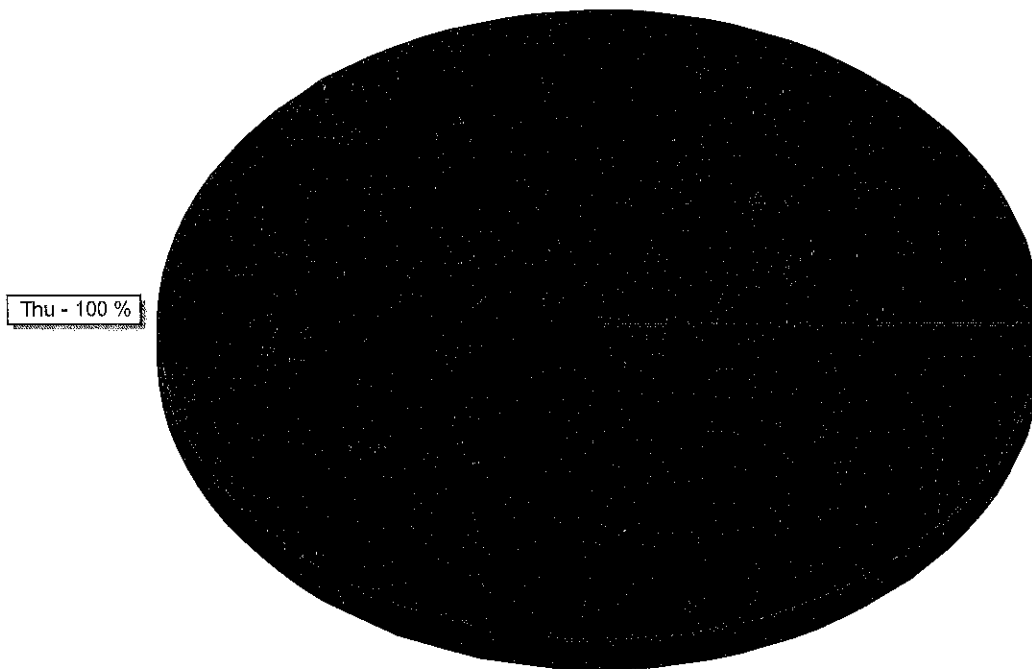


ADT By Day of 3,604 (all lanes)



DAY	ADT	TOTAL	# DAYS
Mon	-	-	-
Tue	-	-	-
Wed	-	-	-
Thu	3604	3604	1.0
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-

Percent of Totals by Day of Week



Basic Volume Report: 010105

Station ID : 010105

Info Line 1 : CR-10, nb Maple Leaf Park
 Info Line 2 : entr sign s of Hwy. 7A

GPS Lat/Lon :

DB File : DBFILE 070619 - 40.DB

Last Connected Device Type : Phoenix

Version Number : 2.94

Serial Number : 37558

Number of Lanes : 2

Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	N NB	Normal	Veh.	No	

Lane #1 Basic Volume Data From: 00:00 - 07/04/2019 To: 23:59 - 07/04/2019

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
070419	T	17	9	4	4	3	20	49	83	106	81	122	160	154	185	206	186	203	198	134	103	151	60	64	17	2319
Month Total :		17	9	4	4	3	20	49	83	106	81	122	160	154	185	206	186	203	198	134	103	151	60	64	17	2319
Percent :		1%	0%	0%	0%	0%	1%	2%	4%	5%	3%	5%	7%	7%	8%	9%	8%	9%	9%	6%	4%	7%	3%	3%	1%	
ADT :		17	9	4	4	3	20	49	83	106	81	122	160	154	185	206	186	203	198	134	103	151	60	64	17	2319

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	0	0	2319	0	0	Weekday (Mon-Fri) :	2319 100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	2319
ADT :	0	0	0	0	2319	0	0	Weekend (Sat-Sun) :	0 0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0

Lane #2 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	S SB	Normal	Veh.	No	

Lane #2 Basic Volume Data From: 00:00 - 07/04/2019 To: 23:59 - 07/04/2019

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
070419	T	3	5	0	4	29	82	118	127	134	106	141	143	156	137	121	121	134	158	140	95	62	50	27	14	2107
Month Total :		3	5	0	4	29	82	118	127	134	106	141	143	156	137	121	121	134	158	140	95	62	50	27	14	2107
Percent :		0%	0%	0%	0%	1%	4%	6%	6%	6%	5%	7%	7%	7%	7%	6%	6%	6%	7%	7%	5%	3%	2%	1%	1%	
ADT :		3	5	0	4	29	82	118	127	134	106	141	143	156	137	121	121	134	158	140	95	62	50	27	14	2107

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	0	0	2107	0	0	Weekday (Mon-Fri) :	2107	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	2107	
ADT :	0	0	0	0	2107	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

Basic Volume Summary: 010105

Grand Total For Data From: 00:00 - 07/04/2019 To: 23:59 - 07/04/2019

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	17	9	4	4	3	20	49	83	106	81	122	160	154	185	206	186	203	198	134	103	151	60	64	17	2319
Lane #2	3	5	0	4	29	82	118	127	134	106	141	143	156	137	121	121	134	158	140	95	62	50	27	14	2107
TOTAL	20	14	4	8	32	102	167	210	240	187	263	303	310	322	327	307	337	356	274	198	213	110	91	31	4426

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	1%	0%	0%	0%	0%	1%	2%	4%	5%	3%	5%	7%	7%	6%	9%	8%	9%	9%	6%	4%	7%	3%	3%	1%	
Lane #2	0%	0%	0%	0%	1%	4%	6%	6%	6%	5%	7%	7%	7%	7%	6%	6%	6%	7%	7%	5%	3%	2%	1%	1%	
TOTAL	0%	0%	0%	0%	1%	2%	4%	5%	5%	4%	6%	7%	7%	7%	7%	7%	8%	8%	6%	4%	5%	2%	2%	1%	

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	17	9	4	4	3	20	49	83	106	81	122	160	154	185	206	186	203	198	134	103	151	60	64	17	2319
Lane #2	3	5	0	4	29	82	118	127	134	106	141	143	156	137	121	121	134	158	140	95	62	50	27	14	2107
TOTAL	20	14	4	8	32	102	167	210	240	187	263	303	310	322	327	307	337	356	274	198	213	110	91	31	4426

LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	2319	0	0	Weekday (Mon-Fri) :	2319	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	2319	
ADT :	0	0	0	0	2319	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

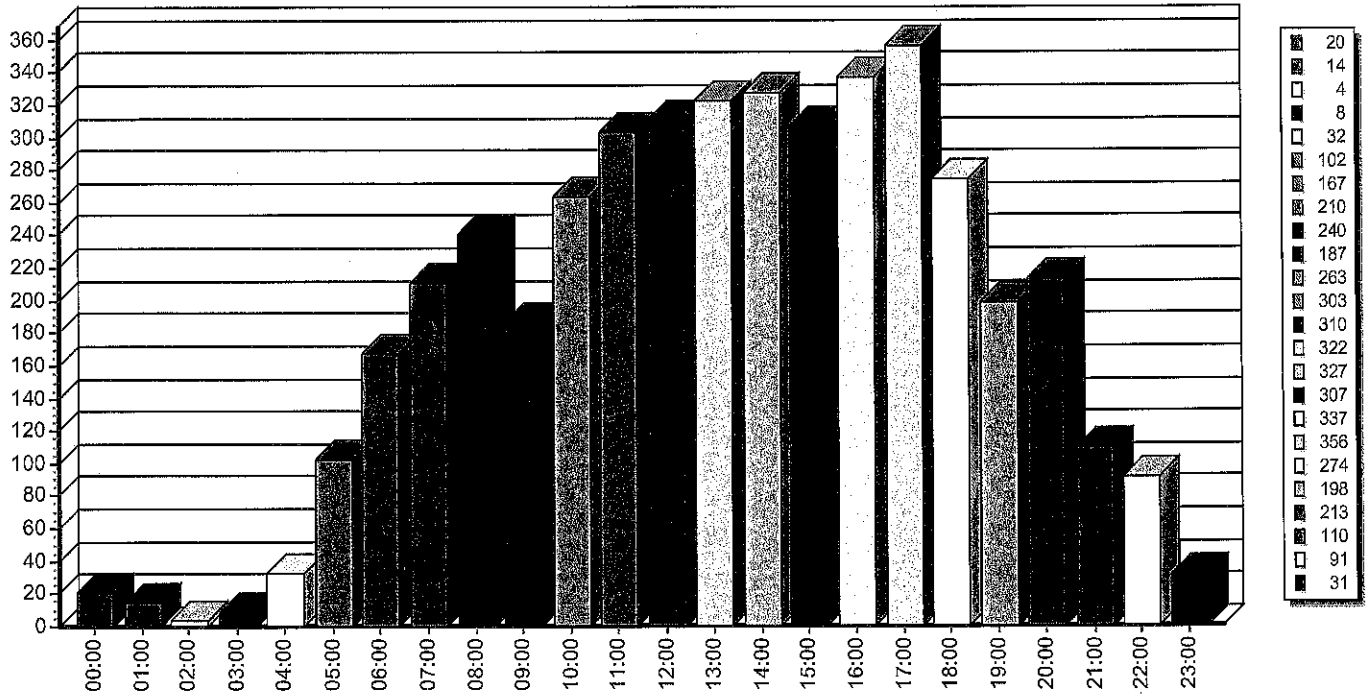
LANE #2

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	2107	0	0	Weekday (Mon-Fri) :	2107	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	2107	
ADT :	0	0	0	0	2107	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

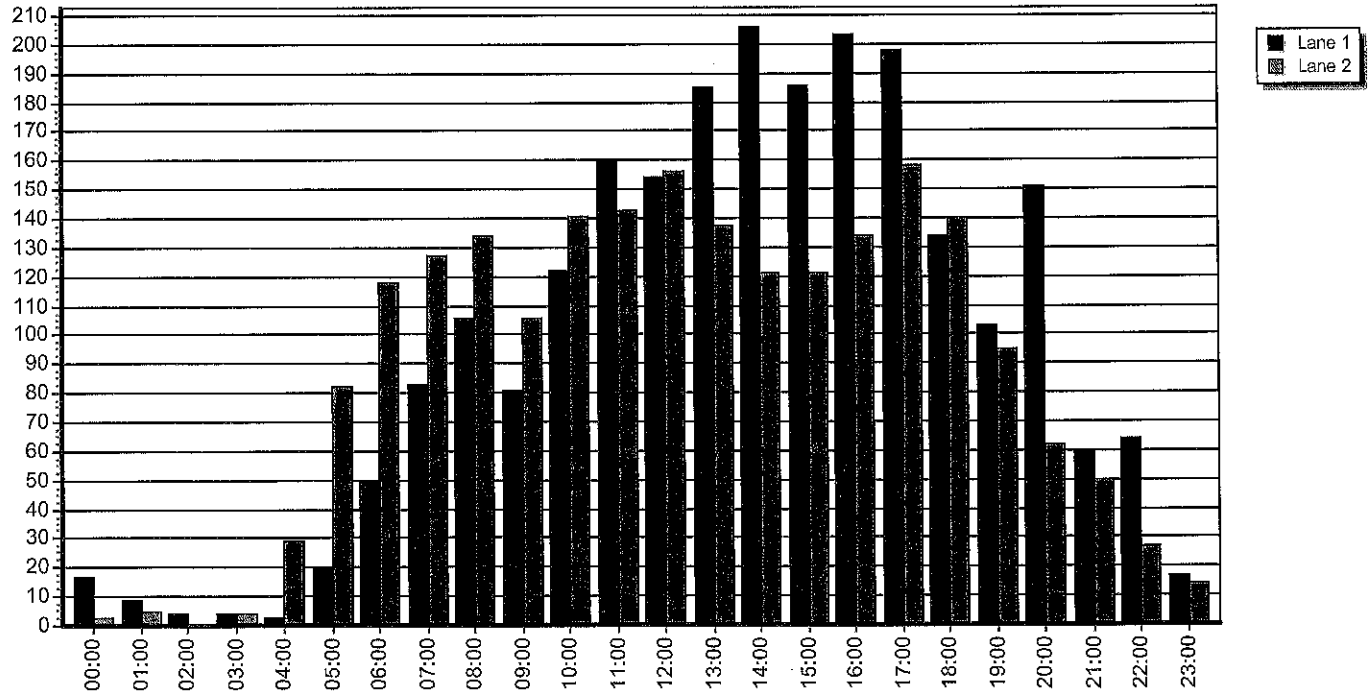
ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent	
DW Totals :	0	0	0	0	4426	0	0	Weekday (Mon-Fri) :	4426	100%
# Days :	0.0	0.0	0.0	0.0	1.0	0.0	0.0	ADT :	4426	
ADT :	0	0	0	0	4426	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	0%	0%	100%	0%	0%	ADT :	0	

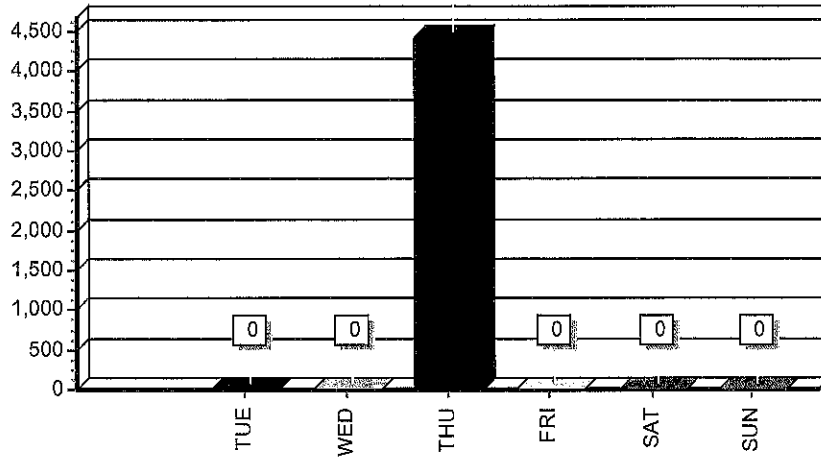
ADT Volume vs. Time (all lanes combined)



ADT Volume vs. Time (lane comparison)

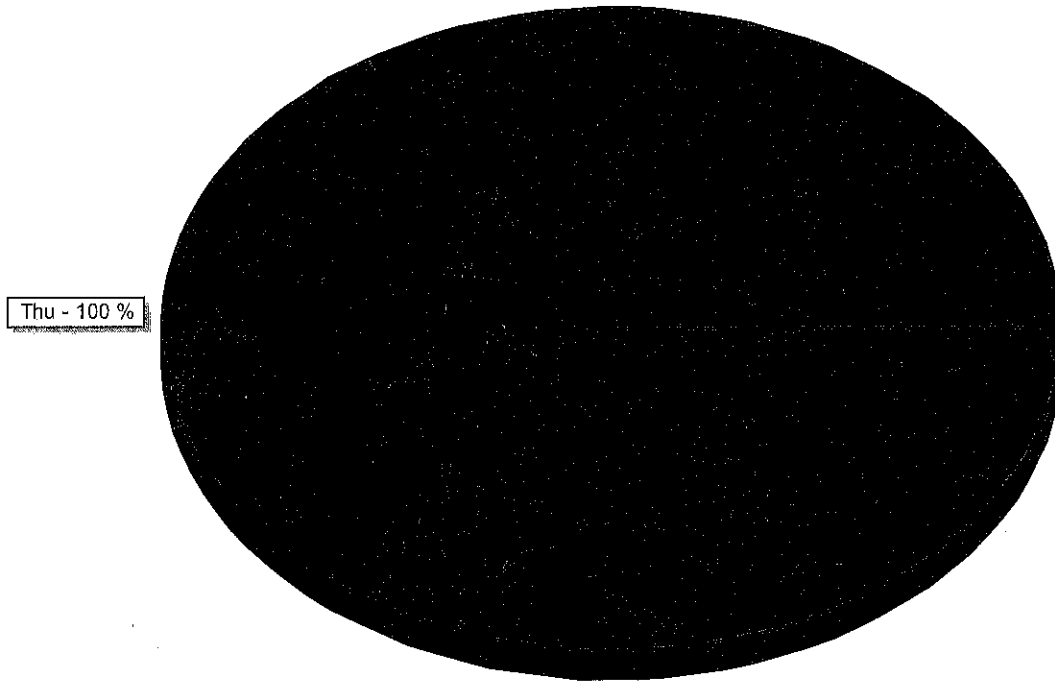


ADT By Day of 4,426 (all lanes)



DAY	ADT	TOTAL	# DAYS
Mon	-	-	-
Tue	-	-	-
Wed	-	-	-
Thu	4426	4426	1.0
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-

Percent of Totals by Day of Week



Basic Volume Report: 01010400

Station ID : 01010400

Info Line 1 : CR-10, nb Maple Leaf Park
 Info Line 2 : entr sign s of Hwy. 7A

GPS Lat/Lon :

DB File : 01010400.DB

Last Connected Device Type : Phoenix

Version Number : 3.00

Serial Number : HPR#3094

Number of Lanes : 1

Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir. Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.		Normal	Axle	Yes	

Lane #1 Basic Volume Data From: 00:00 - 05/14/2019 To: 23:59 - 05/14/2019

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
051419	T	10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712
Month Total :		10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712
Percent :		0%	0%	0%	0%	1%	3%	6%	7%	7%	5%	5%	5%	5%	6%	6%	8%	9%	9%	6%	4%	3%	2%	1%	1%	
ADT :		10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	3712	0	0	0	0	Weekday (Mon-Fri) :	3712	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	3712	
ADT :	0	0	3712	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

Basic Volume Summary: 01010400

Grand Total For Data From: 00:00 - 05/14/2019 To: 23:59 - 05/14/2019

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712
TOTAL	10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Lane #1	0%	0%	0%	0%	1%	3%	6%	7%	7%	5%	5%	5%	5%	6%	6%	8%	9%	9%	6%	4%	3%	2%	1%	1%	
TOTAL	0%	0%	0%	0%	1%	3%	6%	7%	7%	5%	5%	5%	5%	6%	6%	8%	9%	9%	6%	4%	3%	2%	1%	1%	

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712
TOTAL	10	8	5	4	47	124	205	246	246	202	199	171	192	235	219	284	352	348	219	146	103	76	41	30	3712

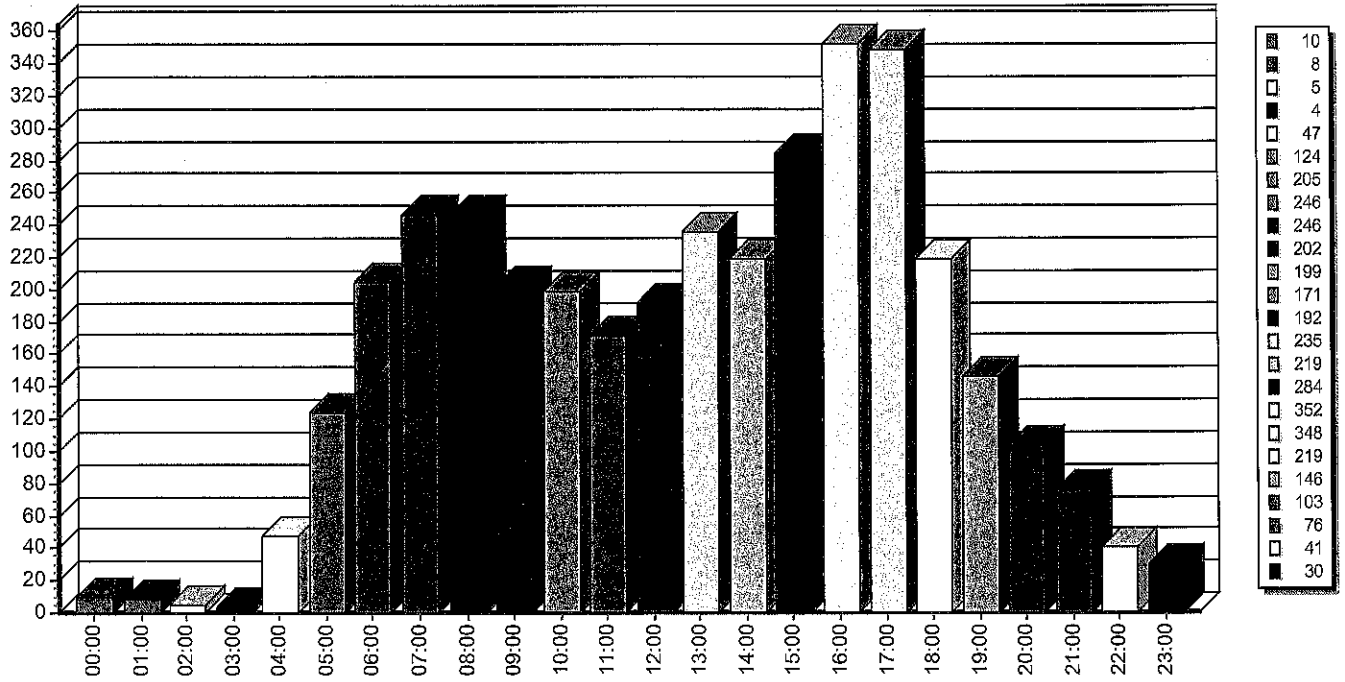
LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	3712	0	0	0	0	Weekday (Mon-Fri) :	3712 100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	3712
ADT :	0	0	3712	0	0	0	0	Weekend (Sat-Sun) :	0 0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0

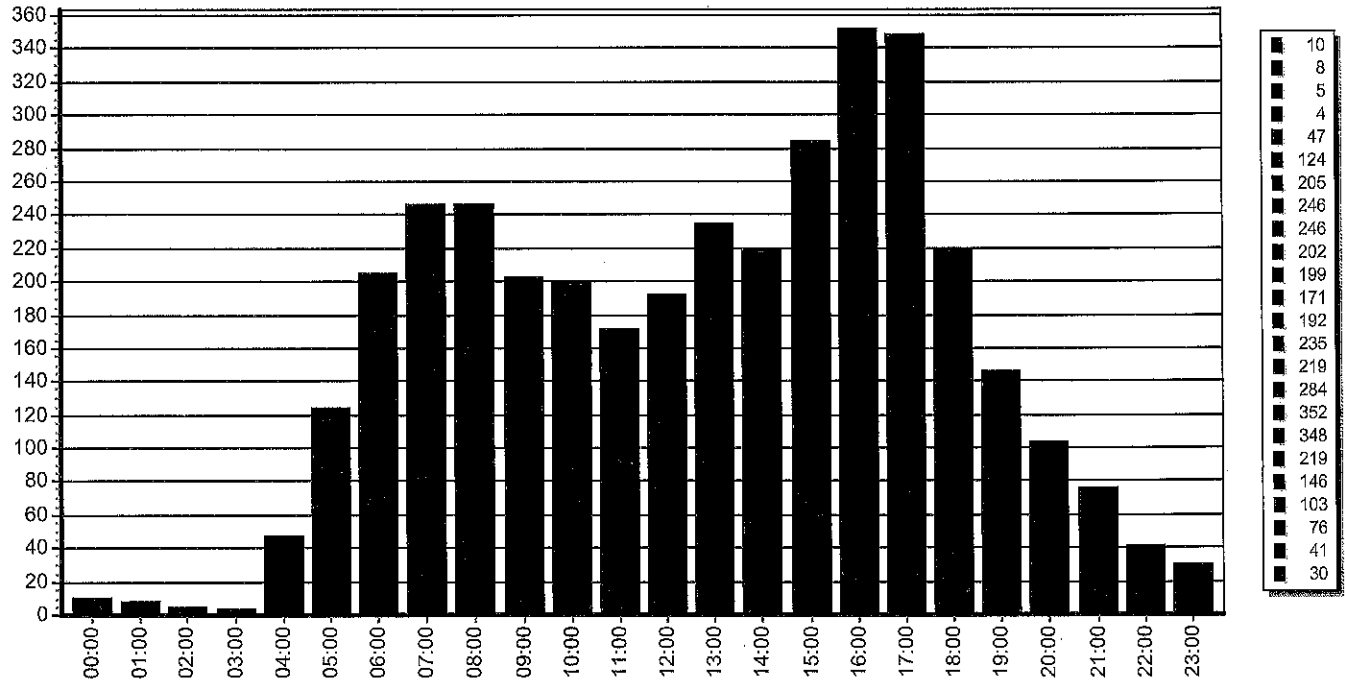
ALL LANES

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals :	0	0	3712	0	0	0	0	Weekday (Mon-Fri) :	3712 100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	3712
ADT :	0	0	3712	0	0	0	0	Weekend (Sat-Sun) :	0 0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0

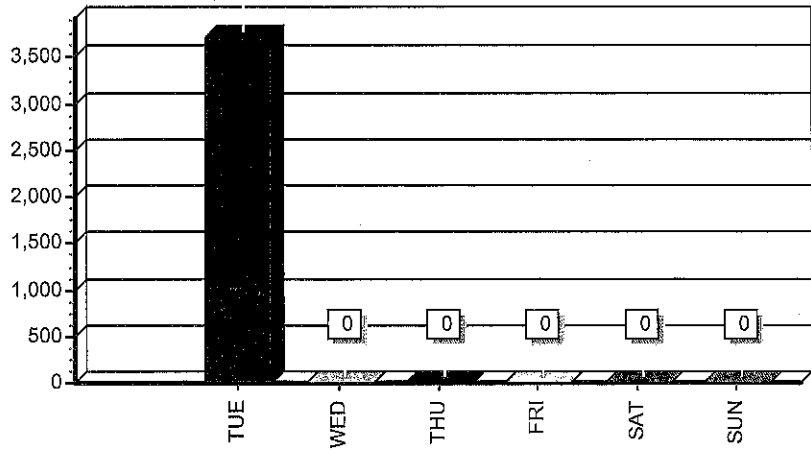
ADT Volume vs. Time (all lanes combined)



ADT Volume vs. Time (lane comparison)

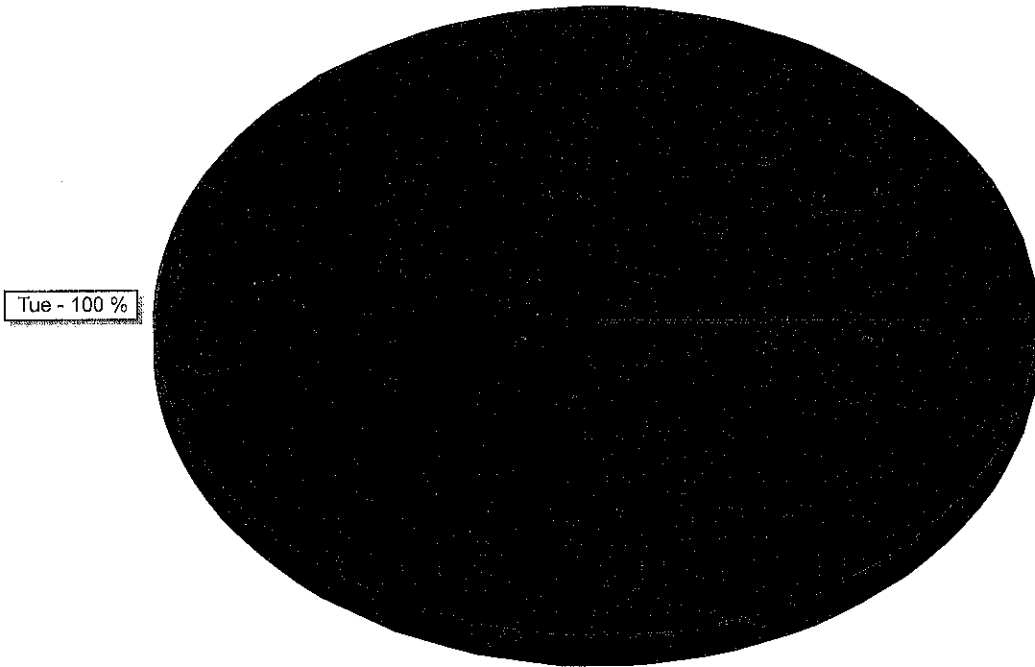


3,712 by Day of Week (all lanes)



DAY	ADT	TOTAL	#DAYS
Mon	-	-	-
Tue	3712	3712	1.0
Wed	-	-	-
Thu	-	-	-
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-

Percent of Totals by Day of Week



APPENDIX B: Intersection Analyses Summaries

Cavan Agri Services Warehouse/Workshop Addition
 3: County Road 10 & Site Driveway

Traffic Volumes
 Existing 2021 AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	1	1	112	3	1	181
Future Vol, veh/h	1	1	112	3	1	181
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, %	2	2	2	2	2	2
Mvmt Flow	1	1	122	3	1	197

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	323	124	0	0	125
Stage 1	124	-	-	-	-
Stage 2	199	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	671	927	-	-	1462
Stage 1	902	-	-	-	-
Stage 2	835	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	670	927	-	-	1462
Mov Cap-2 Maneuver	670	-	-	-	-
Stage 1	902	-	-	-	-
Stage 2	834	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1462
HCM Lane V/C Ratio	-	-	0.003	0.001
HCM Control Delay (s)	-	-	9.6	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Cavan Agri Services Warehouse/Workshop Addition
 3: County Road 10 & Site Driveway

Traffic Volumes
 Existing 2021 PM Peak Hour

Intersection

Int Delay, s/veh 0.1

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations	↕		↕		↕	
Traffic Vol, veh/h	3	1	206	1	1	160
Future Vol, veh/h	3	1	206	1	1	160
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, %	2	2	2	2	2	2
Mvmt Flow	3	1	224	1	1	174

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	401	225	0	0	225	0
Stage 1	225	-	-	-	-	-
Stage 2	176	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	605	814	-	-	1344	-
Stage 1	812	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	604	814	-	-	1344	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt NBT NBR/WBLn1 SBL SBT

Capacity (veh/h)	-	-	646	1344	-
HCM Lane V/C Ratio	-	-	0.007	0.001	-
HCM Control Delay (s)	-	-	10.6	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Cavan Agri Services Warehouse/Workshop Addition
 3: County Road 10 & Site Driveway

Traffic Volumes
 Future 2026 AM Background Peak Hour

Intersection:

Int Delay, s/veh 0.1

Movement

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	1	1	124	3	1	199
Future Vol, veh/h	1	1	124	3	1	199
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, %	2	2	2	2	2	2
Mvmt Flow	1	1	135	3	1	216

Major/Minor

	Minor1	Major1	Major2
Conflicting Flow All	355	137	0
Stage 1	137	-	-
Stage 2	218	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	643	911	-
Stage 1	890	-	-
Stage 2	818	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	642	911	-
Mov Cap-2 Maneuver	642	-	-
Stage 1	890	-	-
Stage 2	817	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt

	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1446	-
HCM Lane V/C Ratio	-	-	0.003	0.001	-
HCM Control Delay (s)	-	-	9.8	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Cavan Agri Services Warehouse/Workshop Addition
 3: County Road 10 & Site Driveway

Traffic Volumes
 Future 2021 Background PM Peak Hour

Intersection

Int Delay, s/veh 0.1

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	3	1	227	1	1	177
Future Vol, veh/h	3	1	227	1	1	177
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, %	2	2	2	2	2	2
Mvmt Flow	3	1	247	1	1	192

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	442	248	0	0	248	0
Stage 1	248	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	573	791	-	-	1318	-
Stage 1	793	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	572	791	-	-	1318	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Capacity (veh/h)	-	-	615	1318	-
HCM Lane V/C Ratio	-	-	0.007	0.001	-
HCM Control Delay (s)	-	-	10.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Cavan Agri Services Warehouse/Workshop Addition
 3: County Road 10 & Site Driveway

Traffic Volumes
 Future 2026 AM Total Peak Hour

Intersection

Int Delay, s/veh 0.2

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations	Y		Y		Y	
Traffic Vol, veh/h	4	2	124	10	4	199
Future Vol, veh/h	4	2	124	10	4	199
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, %	2	2	2	2	2	2
Mvmt Flow	4	2	135	11	4	216

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	365	141	0	0	146	0
Stage 1	141	-	-	-	-	-
Stage 2	224	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	635	907	-	-	1436	-
Stage 1	886	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	633	907	-	-	1436	-
Mov Cap-2 Maneuver	633	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	10.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt NBT NBR/WBLn1 SBL SBT

Capacity (veh/h)	-	-	704	1436	-
HCM Lane V/C Ratio	-	-	0.009	0.003	-
HCM Control Delay (s)	-	-	10.2	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Cavan Agri Services Warehouse/Workshop Addition
 3: County Road 10 & Site Driveway

Traffic Volumes
 Future 2021 Total PM Peak Hour

Intersection

Int Delay, s/veh 0.4

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	10	4	227	5	2	177
Future Vol, veh/h	10	4	227	5	2	177
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, %	2	2	2	2	2	2
Mvmt Flow	11	4	247	5	2	192

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	446	250	0	0	252	0
Stage 1	250	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	570	789	-	-	1313	-
Stage 1	792	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	569	789	-	-	1313	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	11	0	0.1
HCM LOS	B		

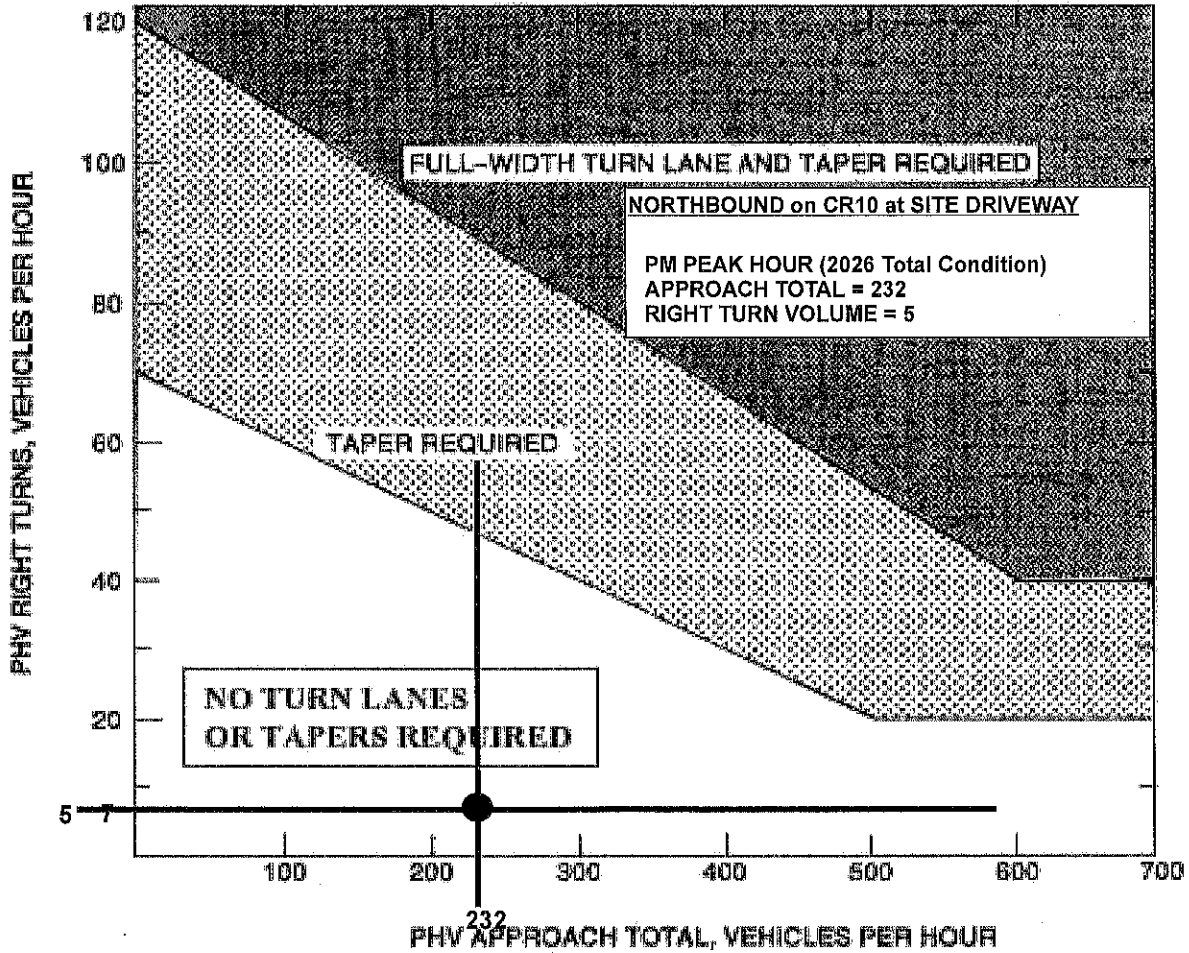
Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Capacity (veh/h)	-	-	618	1313	-
HCM Lane V/C Ratio	-	-	0.025	0.002	-
HCM Control Delay (s)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX C:
Right Turn Lane Analysis

RIGHT TURN LANE ANALYSIS

NORTHBOUND RIGHT TURN LANE ON CR 10 AT SITE DRIVEWAY



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.

Adjusted right turns = PHV Right Turns - 20

If PHV is not known use formula: $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.

FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)