260 Waydom Drive

Transportation Impact Study

Paradigm Transportation Solutions Limited

2025-10
250591

ptsl.com

Project Summary

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Client:

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260 Waydom Drive
Transportation Impact Study

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Executive Summary

Content

Tacoma Engineers Inc. retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for a commercial greenhouse/cannabis cultivation facility at 260 Waydom Drive (east of Industrial Road and along the north side of Waydom Drive) in Ayr. The site was historically used as trucking and logistics facility, but has recently been renovated to support a commercial greenhouse/cannabis cultivation facility. The property owner is submitting a Zoning By-law Amendment to permit this use on the site.

The purpose of this study is to estimate the transportation impact(s) of the proposed development on the adjacent transportation network and identify how those impacts, if any, might be mitigated. This TIS includes an analysis of existing traffic conditions, a description of the development, traffic forecasts for two horizon years: five- and ten-years from the date of study, and the identification of any recommendations to manage future traffic conditions.

Development Concept

The subject site is on the north side of Waydom Drive east of Industrial Road and is occupied by a 1,125 m^2 building. Vehicle access is provided via an all moves driveway connection to Waydom Drive. The site was historically used as trucking and logistics facility, but has since been renovated to support a commercial greenhouse/cannabis cultivation facility. The existing site operates with three employes but has capacity for five employees.

Findings

Based on the analyses contained herein, the findings of this study are as follows:

- **Base Year Traffic Conditions:** The study intersection (Industrial Drive and Waydom Drive/Wanless Court) is operating at acceptable levels of service with no critical movements in both the weekday AM peak hour and weekday PM peak hour.
- **Additional Site Trip Generation:** With an additional two employees and one customer, the site is forecast to generate an additional four trips in both the weekday AM peak hour and weekday PM peak hour.

- **Future Background and Total Traffic Conditions:** The study intersection and site driveway are forecast to operate at acceptable levels of service and with no critical movements during the weekday AM peak hour and weekday PM peak hour.
- **Left-Turn Lane Warrant:** An eastbound left-turn lane is not warranted at the intersection of Waydom Drive and the Site Driveway.
- **Traffic Control Signal Warrant:** The need for traffic control signals is considered to be unlikely at the intersection of Industrial Road and Waydom Drive/Wanless Court under ten-year total traffic conditions.
- **All-Way Stop Control Warrant:** All-way stop control is not warranted at the intersection of Industrial Road and Waydom Drive/Wanless Court under both future total or future background traffic conditions.

Conclusions and Recommendations

Based on the findings of this study it is concluded that the proposed use of the site is forecast to have a negligible impact on traffic operations. It is recommended that the development be considered for approval with no requirement for off-site transportation improvements.

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1 Introduction

1.1 Overview

Tacoma Engineers Inc. retained Paradigm Transportation Solutions Limited (Paradigm) to conduct this Transportation Impact Study (TIS) for a commercial greenhouse/cannabis cultivation facility at 260 Waydom Drive (east of Industrial Road and along the north side of Waydom Drive) in Ayr. **Figure 1.1** illustrates the location of the subject site on the north side of Waydom Drive.

The site was historically used as trucking and logistics facility, but has recently been renovated to support a commercial greenhouse/cannabis cultivation facility. The property owner is submitting a Zoning By-law Amendment to permit this use on the site.

1.2 Purpose and Scope

The purpose of this study is to estimate the transportation impact(s) of the proposed development on the adjacent transportation network and identify how those impacts, if any, might be mitigated.

The scope of this study, developed by email with the Region of Waterloo and the Township of North Dumfries in September 2025, includes:

- The assessment of current traffic volumes and operations at Industrial Road and Waydom Drive/Wanless Court, and Industrial Road and the site driveway;
- Estimates of future non-development (background) traffic and site-generated traffic;
- Analyses of future traffic operations (with and without the development) at two horizon years: five and ten years from the date of this study; and
- The identification of any necessary mitigation to manage future traffic conditions.

Appendix A contains the pre-study consultation material and responses from the Region and Township.

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Location of Subject Site

260 Waydom Drive, Ayr TIS
250591

Figure 1.1

2 Existing Conditions

2.1 Road Characteristics

The study area roads comprise Industrial Road, Waydom Drive, and Wanless Court. Each road operates under the jurisdiction of the Township of North Dumfries[1] and is generally described as follows:

- **Industrial Road** is a north-south two-lane primary township road connecting Cedar Creek Road and Roseville Road. The road has a rural cross-section and operates with a posted speed limit of 60 km/h.
- **Waydom Drive** is an east-west two-lane local road that terminates to the east of Industrial Road. The road's only connection to the municipal road network is via the intersection with Industrial Road opposite Wanless Court. The road has a rural cross-section and operates with a posted speed limit of 50 km/h.
- **Wanless Court** is an east-west two-lane local road that terminates to the west of Industrial Road. The road's only connection to the municipal road network is via the intersection with Industrial Road opposite Waydom Drive. The road has a rural cross-section and operates with a posted speed limit of 50 km/h.

Figure 2.1 illustrates the existing traffic control and lane configurations at the study area intersection and site driveway.

2.2 Active Transportation

Figure 2.2 illustrates the existing and proposed cycling network near the subject site based on mapping in the 2018 Region of Waterloo *Transportation Master Plan*.[2] The study area includes paved shoulders along Cedar Creek Road and Roseville Road. Sidewalks are not provided on either side of Industrial Road, Wanless Court, or Waydom Drive.

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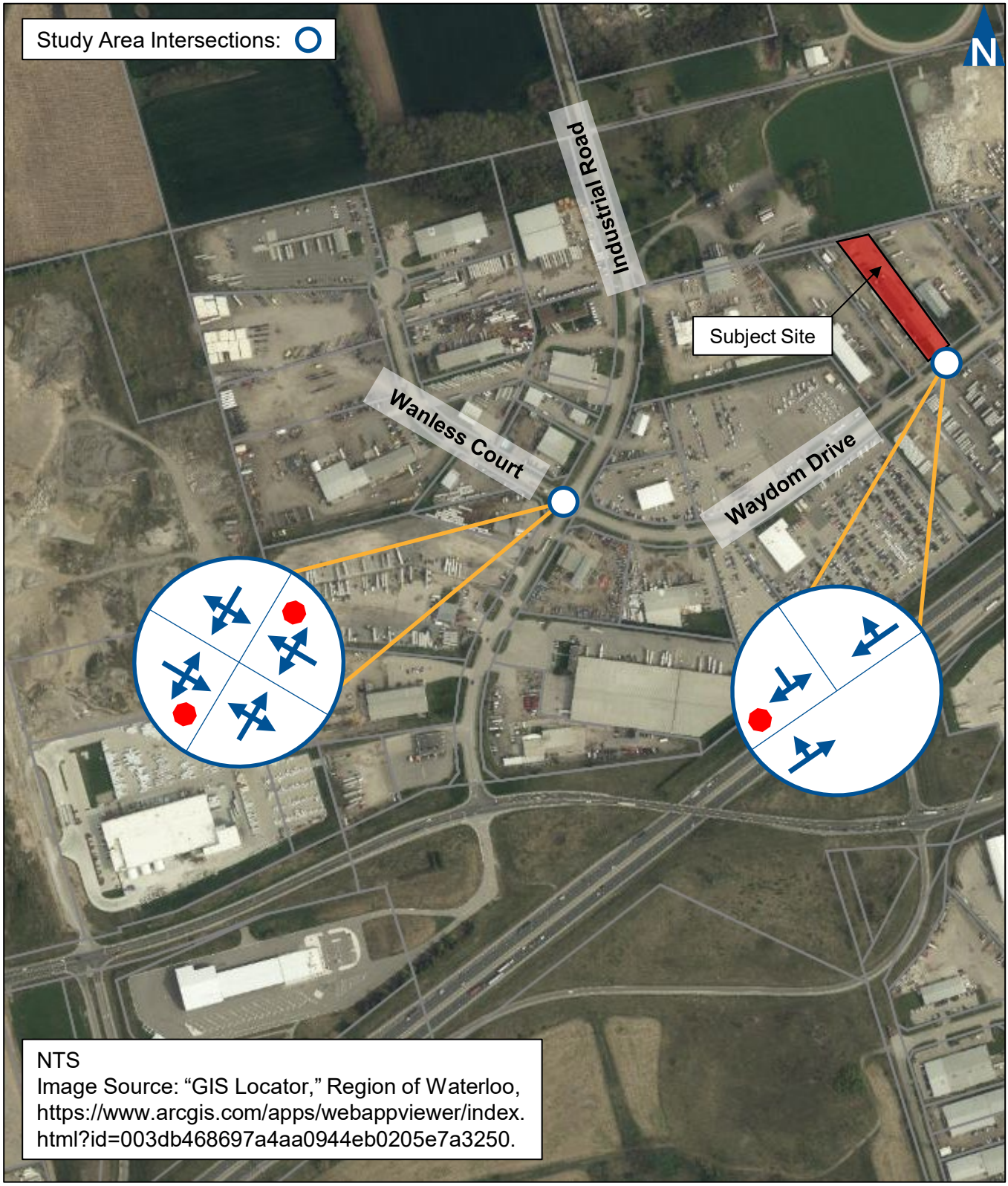
1 Township of North Dumfries, *Official Plan Map 3A Transportation,* (Ayr: Township of North Dumfries, 2013).

2 IBI Group and Region of Waterloo, *Moving Forward 2018 Transportation Master Plan: Exhibit 5.6: 2041 Waterloo Region Active Transportation Network*, (Kitchener: Region of Waterloo, 2019).



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Existing Lane Configuration and Traffic Control

260 Waydom Drive, Ayr TIS
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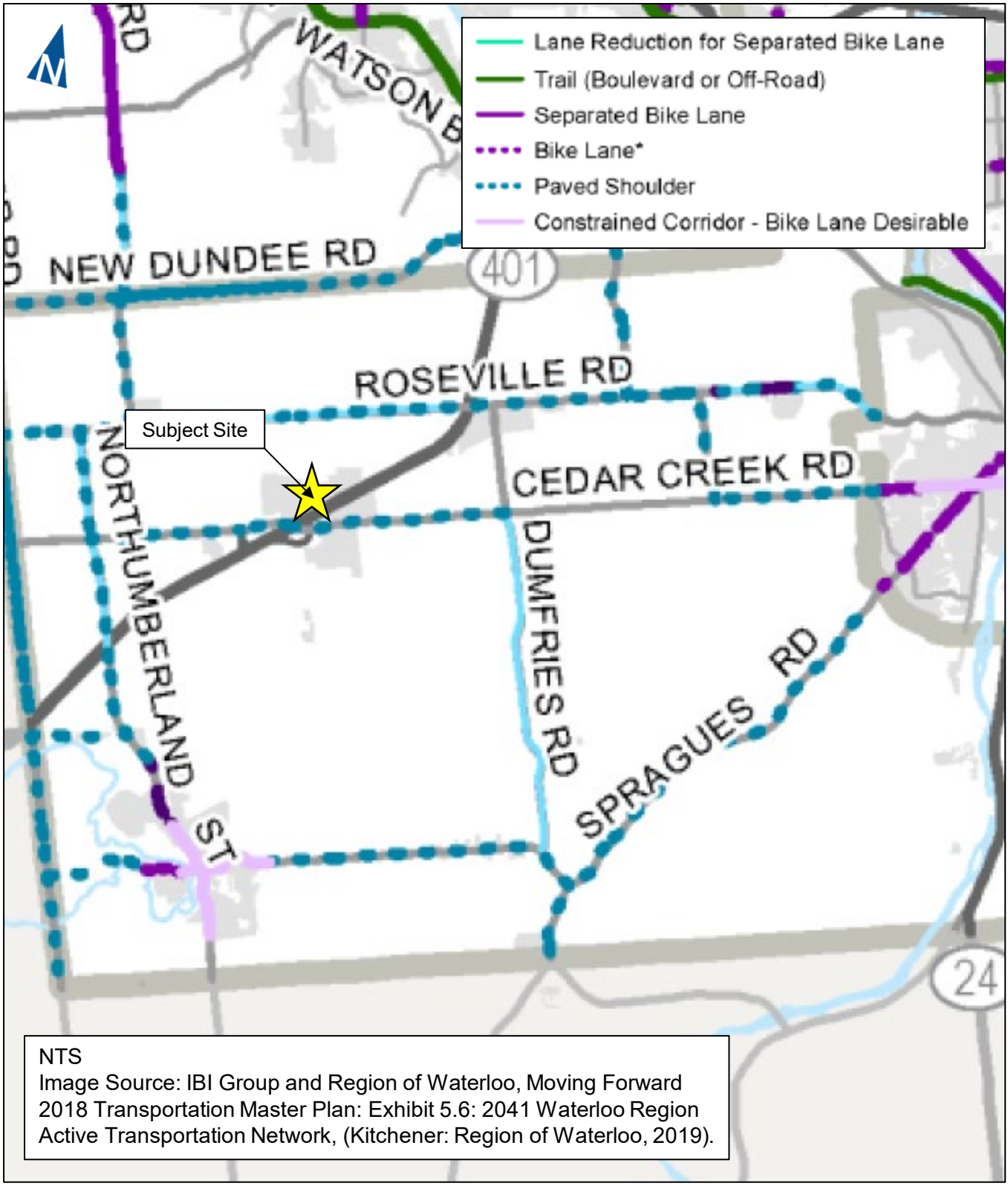
Figure 2.1



NTS
Image Source: IBI Group and Region of Waterloo, Moving Forward 2018 Transportation Master Plan: Exhibit 5.6: 2041 Waterloo Region Active Transportation Network, (Kitchener: Region of Waterloo, 2019).

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Cycling Network

2.3 Transit Services

Grand River Transit[3] is the public transit operator in the Region of Waterloo and provides specialized on-demand transit services in Cambridge and North Dumfries via their **MobilityPLUS-North Dumfries** service. Service is restricted to eligible customers and is available Monday to Friday from 6 AM to 6 PM, and on Saturdays from 7 AM to 5 PM. Service is not provided on Sundays.

2.4 Traffic Volumes

The traffic volume data referenced in this study is based on turning movement counts conducted by Paradigm at the study intersection and site driveway on Tuesday, April 1, 2025 (7:00 AM to 7:00 PM) and Tuesday September 9, 2025 (6:00 AM to 6:00 PM), respectively. **Appendix B** contains the raw traffic data.

It is noted that access to the existing site driveway was gated off on September 9, 2025; therefore the count did not observe any vehicular traffic entering or exiting the subject site. Nevertheless, the September 2025 TMC does account for existing traffic generated by other businesses along Waydom Drive, and the observed two-way traffic volumes are consistent with the volumes documented at Industrial Road and Wanless/Waydom Drive in April 2025.

In the absence of observed traffic volumes at the site driveway, Paradigm has estimated the existing site trip generation activity based on the number of employees understood to be at the site (three), and potential customer (pick-up) activity during each of the weekday AM peak hour and weekday PM peak hour. **Table 2.1** summarizes the estimated peak hour site traffic, which assume

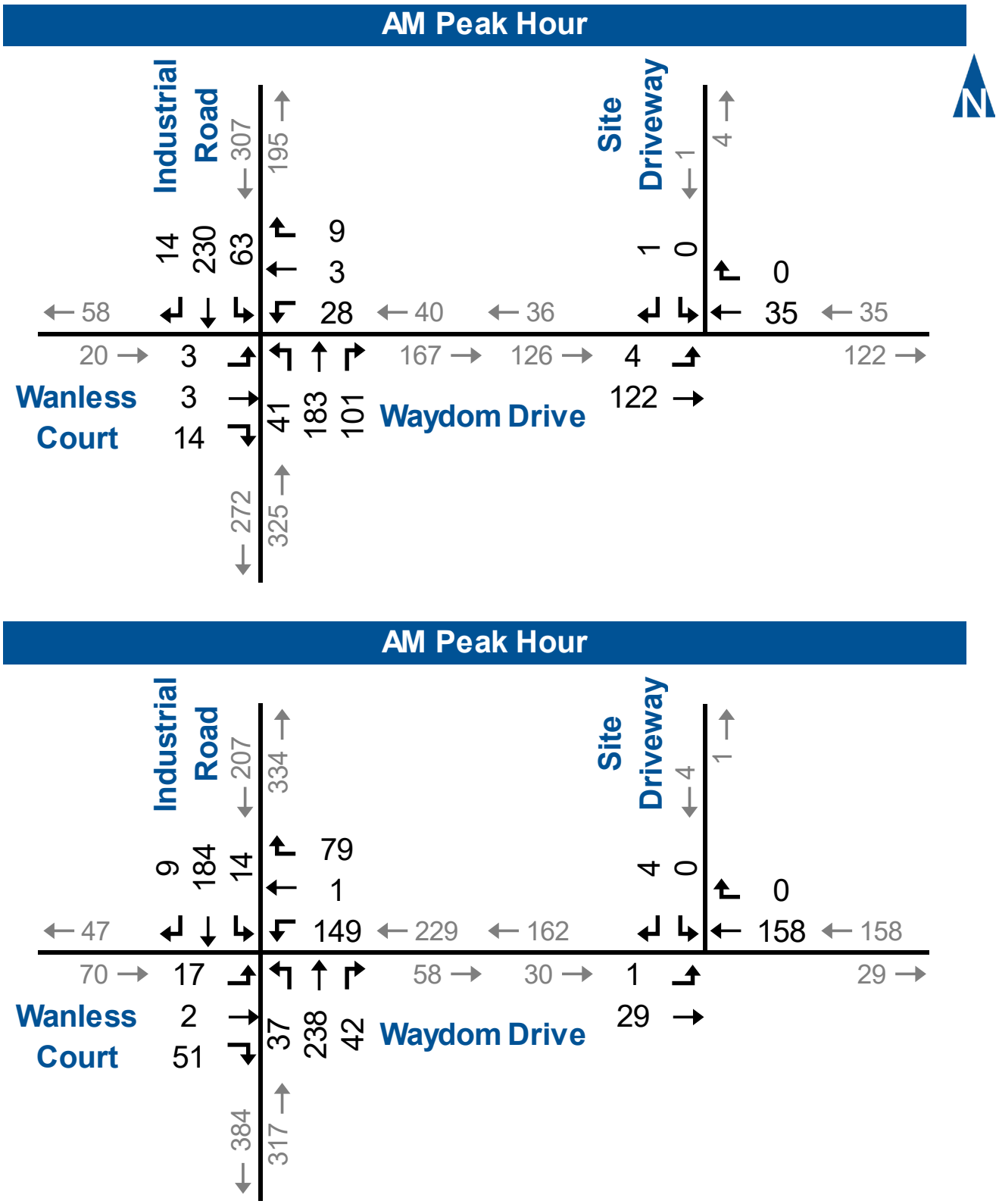
- One inbound trip per employee during the AM peak hour and one outbound trip per employee during the PM peak hour; and
- One inbound customer trip and one outbound customer trip during both the AM peak hour and PM peak hour.

[3] "Township Services," Grand River Transit, https://www.grt.ca/en/rider-information/township-services.aspx.

TABLE 2.1: EXISTING SITE TRIP GENERATION ACTIVITY

Site Conditions	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Current Operations (Three Employees and One Customer)	4	1	5	1	4	5

Traffic volumes on Waydom Drive between Industrial Road and the site driveway have not been balanced because the observed net change in traffic between Industrial Road and the site driveway is representative of traffic entering and exiting neighbouring industrial properties. Observed volumes show a decrease in eastbound traffic as one travels east along Waydom Drive (towards its terminus) and an increase in volumes as one travels towards Industrial Road. **Figure 2.3** illustrates the base year traffic volumes in the weekday AM peak hour and weekday PM peak hour.



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Base Year Traffic Volumes

260 Waydom Drive, Ayr TIS
250591

Figure 2.3

2.5 Traffic Operations

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

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.00, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible.

The Region of Waterloo *Transportation Impact Study Guidelines* identify critical intersections as those where the average control delay per vehicle is greater than 55 seconds (for signalized intersections) or 35 seconds (for unsignalized intersections). Both delays correspond to LOS E.[4]

Specific movements are considered critical where the

- Estimated 95th percentile queue length for an exclusive movement exceeds the available storage space;
- Exclusive turning lanes are inaccessible because of queue lengths in adjacent through lanes;
- Estimated 95th percentile queue lengths for an individual movement will block an existing access; or
- The average control delay for individual movements is greater that 55 seconds.

The analysis of existing traffic operations is based on the existing lane configurations, traffic control, and the base year traffic peak hour volumes illustrated in **Figure 2.3**. The existing level of service conditions have been assessed using Synchro 12 and reflect model parameters as specified in the Region of Waterloo *Transportation Impact Study Requirements for Capacity Analysis, Roundabouts, and Signal Warrants.*[5]

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[4] Region of Waterloo, *Transportation Impact Study Guidelines*, (Kitchener: Region of Waterloo, 2014), 12.

[5] Region of Waterloo, *Transportation Impact Studies, Requirements for Capacity Analysis, Roundabouts, and Signal Warrants*, (Kitchener: Region of Waterloo, n.d.).

Table 2.2 summarizes the existing intersection operations highlighting the level of service (LOS), volume to capacity ratio (V/C), and 95th percentile queues for each movement as applicable. All study area intersections are operating at acceptable levels of service in both the weekday AM peak hour and weekday PM peak hour. There are no critical movements noted. **Appendix C** contains the detailed Synchro reports.

TABLE 2.2: BASE YEAR OPERATIONS

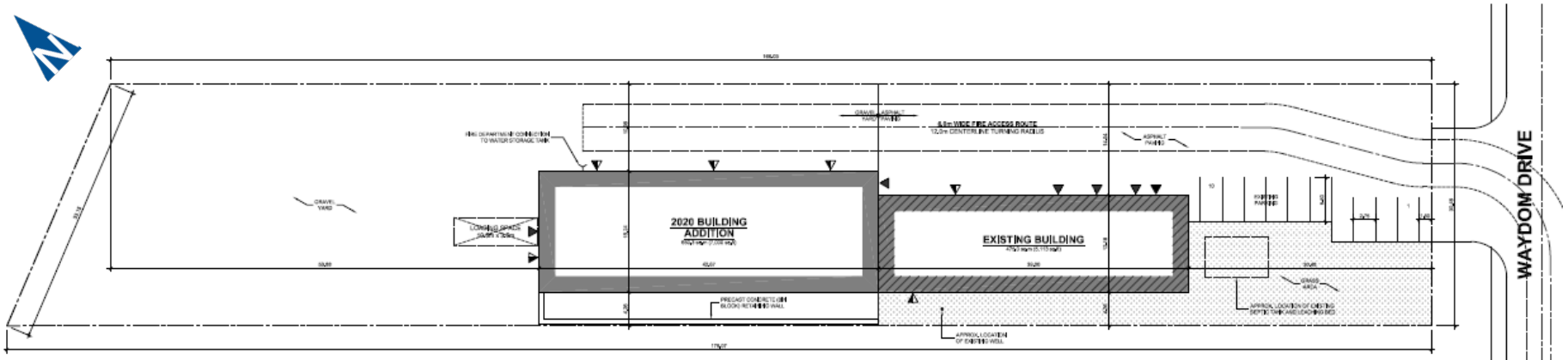
Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	A	A	A	**A**	A	A	A	**A**	
			Delay	<	12	>	**12**	<	18	>	**18**	8	0	0	**1**	8	0	0	**2**	
			V/C	<	0.04	>		<	0.13	>		0.03	0.00	0.00		0.05	0.00	0.00		
			Q	<	1	>		<	3	>		1	0	0		2	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		**A**		A	A	**A**					A		>	**A**	
			Delay	7	0		**0**		0	0	**0**					8		>	**8**	
			V/C	0.00	0.00				0.00	0.00						0.00		>		
			Q	0	0				0	0						0		>		
PM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	A	A	A	**A**	A	A	A	**A**	
			Delay	<	12	>	**12**	<	20	>	**20**	8	0	0	**1**	8	0	0	**1**	
			V/C	<	0.11	>		<	0.49	>		0.03	0.00	0.00		0.01	0.00	0.00		
			Q	<	3	>		<	20	>		1	0	0		0	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		**A**		A	A	**A**					A		>	**A**	
			Delay	8	0		**0**		0	0	**0**					9		>	**9**	
			V/C	0.00	0.00				0.00	0.00						0.01		>		
			Q	0	0				0	0						0		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TWSC - Two-Way Stop Control
< / > - Shared Movement

3 Development Concept

The subject site is on the north side of Waydom Drive east of Industrial Road and is occupied by a 1,125 m^2 building that was historically used as a trucking and logistics facility. Vehicle access is provided via an all moves driveway connection to Waydom Drive. The surrounding land uses on Waydom Drive are exclusively industrial with each site provided vehicular access to Waydom Drive.

The subject site has recently been renovated to support a commercial greenhouse/cannabis cultivation facility. Vehicle access remains via the all moves driveway connection to Waydom Drive. The existing site operates with three employes but has capacity for five employees. **Figure 3.1** illustrates the site plan.



SITE PLAN

BUILDING DATA:

BUILDING AREA	1,125.0 SM
MEZZANINE AREA	114.0 SM
GROSS FLOOR AREA	1,340.4 SM
MAJOR OCCUPANCY	"F2" INDUSTRIAL
NO. OF STOREYS	1
NO. OF STOREYS	1
SPRINKLERED	NO
STANDPIPE & HOSE SYSTEM	NO
FIRE ALARM	NO
OCCUPANT LOAD	6
PARKING REQUIRED (SLTD)	
INDUSTRY = 1 PARKING SPACE FOR EACH 2 EMPLOYEES	
# OF EMPLOYEES = MAX.19	
PARKING REQUIRED	9 SPACES
PARKING REQUIRED	10 SPACES
TYPICAL PARKING SPACE	2.75m x 5.2m
LOADING REQUIRED (SLTD)	
1 SPACE / 2000 SM	1 SPACE
LOADING PROVIDED	4 SPACES
TYPICAL LOADING SPACE	3.0m x 16.2m x 4.6m HIGH

SITE DATA:

PROPERTY AREA:	5358.0 SM (1.26 ACRES)
ZONING:	ZONE 11 - INDUSTRIAL
MUNICIPAL ADDRESS:	260 WAYDOM DRIVE AYR, ONTARIO, CANADA
LEGAL DESCRIPTION:	LOT 31 REGISTERED PLAN 1456 TOWNSHIP OF NORTH DUMFRIES REGIONAL MUNICIPALITY OF WATERLOO

LEGEND

- EXIT MAN DOOR
- MAIN ENTRANCE DOOR (PRINCIPLE ENTRANCE)
- GIN DRIVEWAY DOOR

ZONING REGULATION (ZONE 11):

REGULATION	REQUIRED	ACTUAL	CONFORMS
MIN. LOT AREA	2023 sm	5358.0 sm	YES
MIN. LOT FRONTAGE	30.0 m (w/o radius)	30.48 m	YES
MIN. FRONT YARD	7.5 m	30.48 m	YES
MIN. EXTERIOR SIDE YARD	7.5 m	N/A	YES
MIN. REAR YARD	7.5m / 1/2 BUILDING HEIGHT BUT NOT LESS THAN 7.5m	7.5 m / 10.66m	YES
MIN. REAR YARD	7.5 m	45.66 m	YES
MAX. BUILDING HEIGHT	15.0 m	9.0 m	YES
LOT COVERAGE	50%	21.4%	YES
BUFFER STRIPS	REQ'D WHEN ABUTTING S 2, 3a, 3, 4, 4a, 4b, 4c, 4d, 5, 5a, 6 or 7	N/A	YES
OFFSTREET PARKING	SECTION 6.3 (9 SPACES)	10	YES
OFFSTREET LOADING	SECTION 6.4 (1 SPACE)	1	YES

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Site Plan

260 Waydom Drive, Ayr TIS
250591

Figure 3.1

4 Future Conditions

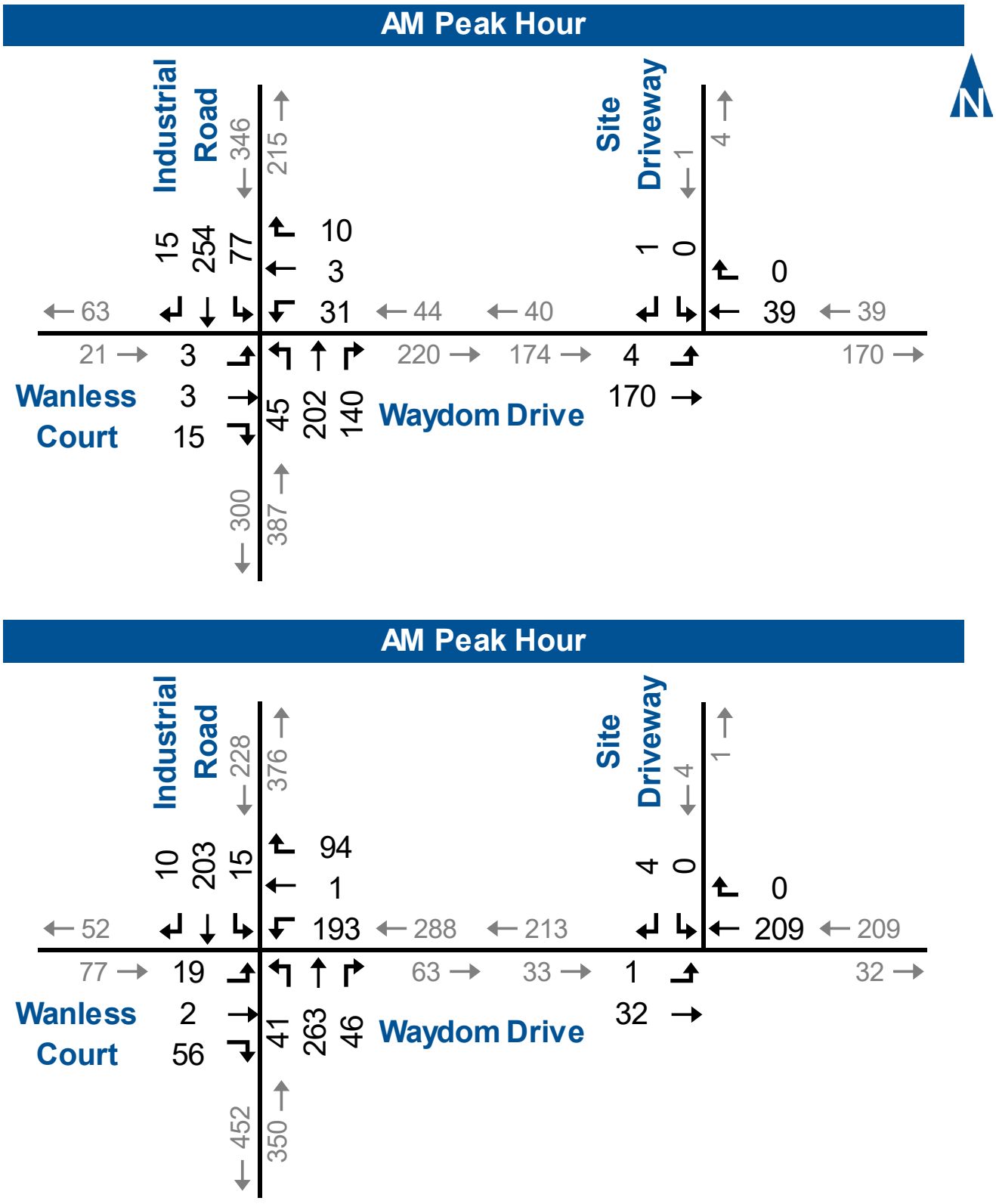
4.1 Forecast Background Traffic

The assessment of future traffic conditions is confined to two horizon years: five and ten years form the date of study (2030 and 2035). The estimated future background traffic volumes in the study area reflect an annual growth rate of 2.0% applied to all the base year volumes. This growth rate is based on direction from Region and Township staff during pre-study consultation and is intended to account for general increases in traffic outside of potential development activity near the study area.

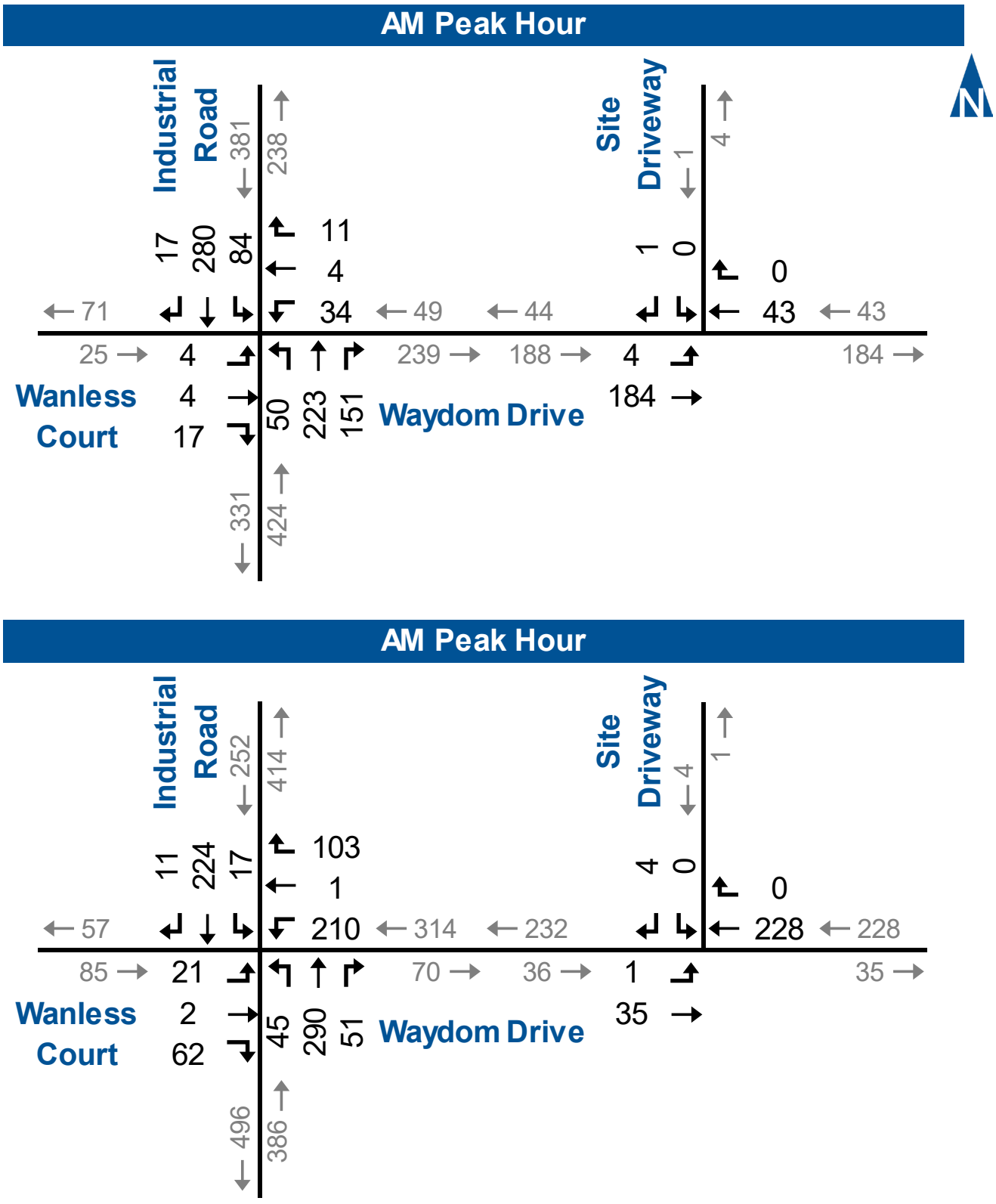
The future background traffic volumes also include estimates of trip generation for a proposed expansion of 535-655 Waydom Drive. The Traffic Impact Study[6] for this site indicates an expansion of 12,292 m^2 to the existing industrial facility, which is estimated to generate 35 trips during both the AM peak hour and PM peak hour. **Appendix D** contains the future background development traffic volumes for this planned expansion.

Figure 4.1 and **Figure 4.2** illustrate the respective five-year and ten-year background traffic volumes, in both the weekday AM peak hour and weekday PM peak hour.

[6] Paradigm Transportation Solutions Limited, *535-655 Waydom Drive, Ayr, Proposed Industrial Expansion,* (Cambridge: PTSL, 2025).



Five-Year Background Traffic Volumes



Ten-Year Background Traffic Volumes

260 Waydom Drive, Ayr TIS
250591

Figure 4.2

4.2 Forecast Site Traffic

4.2.1 Trip Generation

The trip generation for the site is based on a first principles approach given the small sample size (two or fewer sample sites) for this land use type in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*.[7] A first principles approach has also been used because of the small scale of the proposed facility which is inconsistent with proxy site data collected by Paradigm at a site in Grimsby, for another transportation impact study.

Based on information provided by the client, it is understood the number of employees could expand from three to five under future conditions. Consistent with the estimates of existing site trip activity, Paradigm has assumed

- One inbound trip per employee during the AM peak hour and one outbound trip per employee during the PM peak hour; and
- One inbound customer trip and one outbound customer trip during both the AM peak hour and PM peak hour.

Table 4.1 summarizes the estimated trip generation assuming five employees and two customers within each of the weekday AM peak hour and weekday PM peak hour. If the total employment increases to five individuals and the site receives an additional customer in both the morning and afternoon, an additional four trips are forecast during both the AM peak hour and PM peak hour.

TABLE 4.1: ESTIMATED TRIP GENERATION

Site Conditions	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Current Operations (Three Employees and One Customer)	4	1	5	1	4	5
Future Operations (Five Employees and Two Customers)	7	2	9	2	7	9
Net Change	**+3**	**+1**	**+4**	**+1**	**+3**	**+4**

[7] Institute of Transportation Engineers, *Trip Generation Manual,* 12th ed., (Washington DC: ITE, 2025).

4.2.2 Trip Distribution and Assignment

The trip distribution used for this study is based on existing travel patterns as noted in the traffic impact study for 535-655 Waydom Drive. Use of the trip distribution from this TIS is considered appropriate for this study because it is reflective of the surrounding industrial land uses and employees of these businesses likely travelling to/from their place of residence. **Table 4.2** summarizes the trip distribution. **Figure 4.3** illustrates the additional site-generated trips during the AM and PM peak hours.

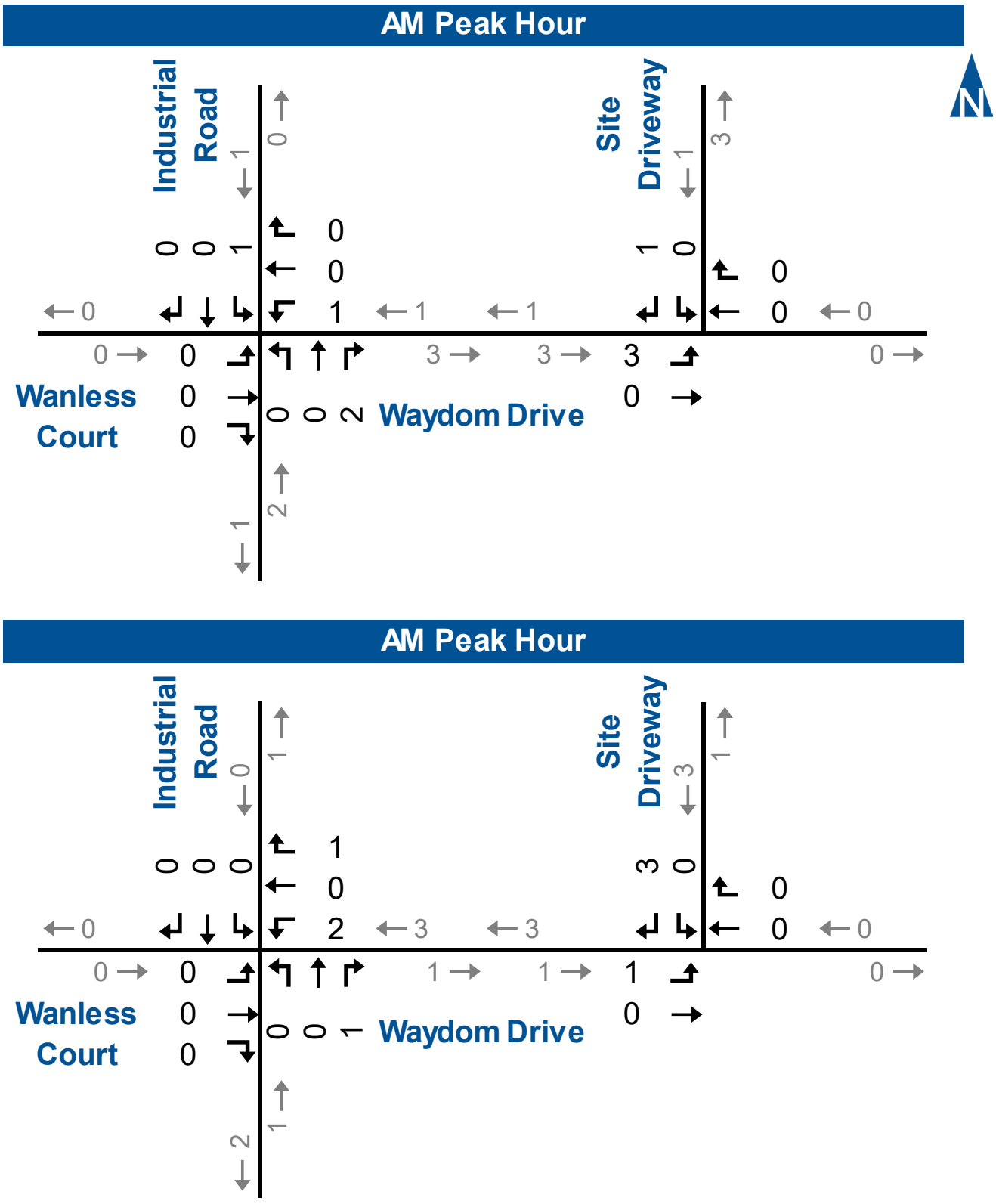
TABLE 4.2: TRIP DISTRIBUTION

Origin/Destination	Distribution
North via Industrial Road	20%
South via Industrial Road	80%
Total	**100%**

4.3 Future Total Traffic

The future total traffic volumes represent the summation of the additional site generated traffic volumes and the background traffic volumes.

Figure 4.4 and **Figure 4.5** illustrate the forecast five-year and ten-year traffic volumes, respectively during the weekday AM and weekday PM peak hours.



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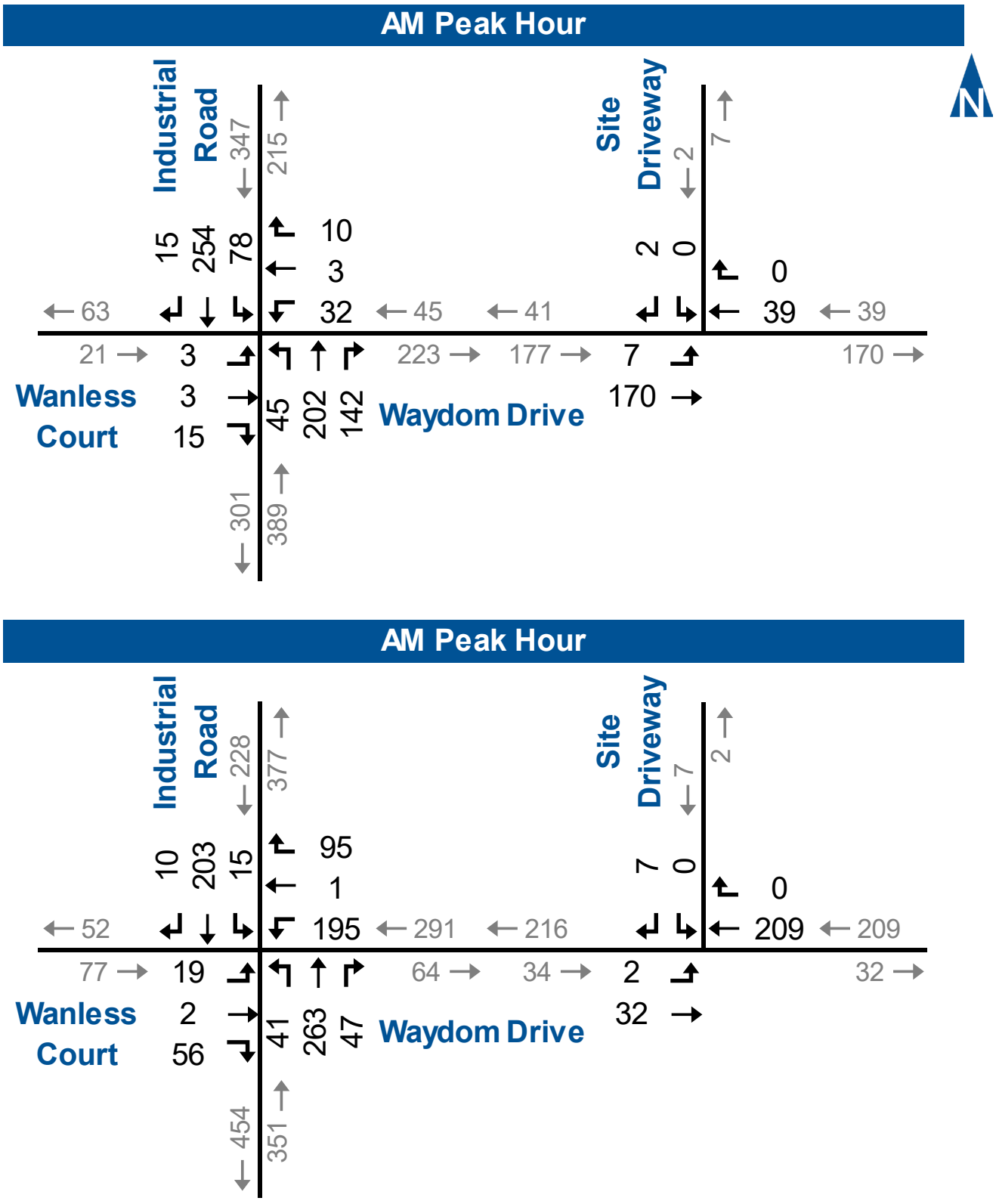
Additional Site-Generated Traffic Volumes



Five-Year Total Traffic Volumes

260 Waydom Drive, Ayr TIS
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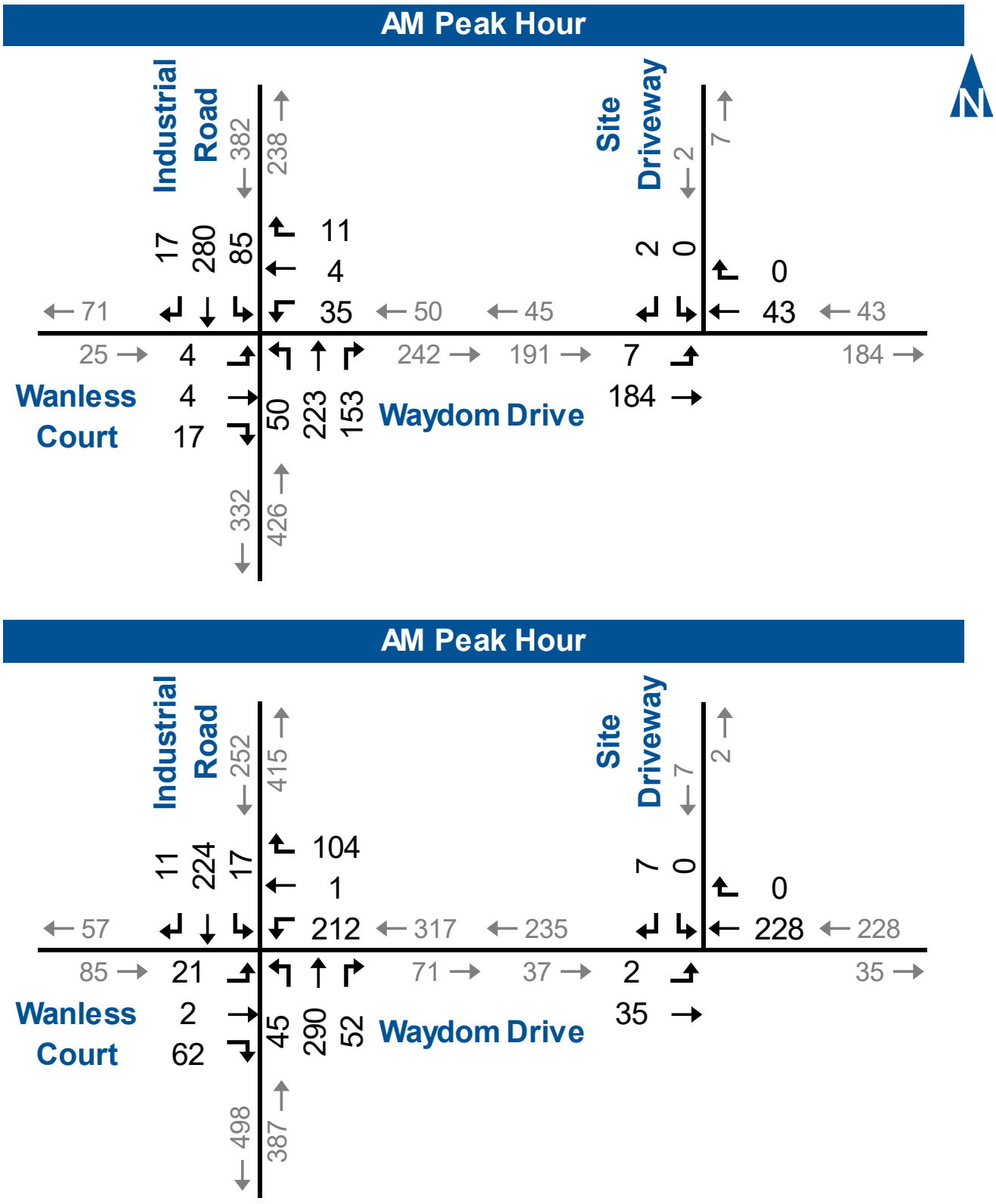
Figure 4.4



Ten-Year Total Traffic Volumes

260 Waydom Drive, Ayr TIS
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Figure 4.5

5 Traffic Operations Assessment

The analysis of future background and future total traffic conditions under each horizon year uses the same methodology as existing traffic conditions to enable a direct comparison between scenarios and to identify the net impact of the development on the transportation network.

5.1 Background Traffic Operations

Table 5.1 and **Table 5.2** summarize the estimated traffic operations under five- and ten-year background traffic conditions, respectively. Under both horizon years the study intersection and site driveway are forecast to operate at acceptable levels of service, and within capacity, during both the weekday AM peak hour and weekday PM peak hour.

Appendix E and **Appendix F** contain the detailed Synchro reports for five-year and ten-year background conditions, respectively.

5.2 Total Traffic Operations

Table 5.3 and **Table 5.4** summarize the five- and ten-year total traffic level of service conditions, respectively. The analyses indicate the study intersection and site driveway are forecast to operate at acceptable levels of service in both the weekday AM peak hour and the weekday PM peak hour. No critical movements are forecast.

With the addition of the site generated traffic volumes, the approach delays at the study area intersections are forecast to increase by no more than one second during either of the weekday AM peak hour or the weekday PM peak hour as compared to background traffic conditions of the same horizon year. **Appendix G** and **Appendix H** contain the detailed Synchro reports for five-year and ten-year total conditions, respectively.

TABLE 5.1: FIVE-YEAR BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	**B**	<	C	>	**C**	A	A	A	**A**	A	A	A	**A**	
			Delay	<	13	>	**13**	<	22	>	**22**	8	0	0	**1**	8	0	0	**2**	
			V/C	<	0.04	>		<	0.17	>		0.04	0.00	0.00		0.07	0.00	0.00		
			Q	<	1	>		<	4	>		1	0	0		2	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		**A**		A	A	**A**					A		>	**A**	
			Delay	7	0		**0**		0	0	**0**					9		>	**9**	
			V/C	0.00	0.00				0.00	0.00						0.00		>		
			Q	0	0				0	0						0		>		
PM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	**B**	<	D	>	**D**	A	A	A	**A**	A	A	A	**A**	
			Delay	<	12	>	**12**	<	30	>	**30**	8	0	0	**1**	8	0	0	**1**	
			V/C	<	0.13	>		<	0.69	>		0.04	0.00	0.00		0.01	0.00	0.00		
			Q	<	4	>		<	38	>		1	0	0		0	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		**A**		A	A	**A**					A		>	**A**	
			Delay	8	0		**0**		0	0	**0**					9		>	**9**	
			V/C	0.00	0.00				0.00	0.00						0.01		>		
			Q	0	0				0	0						0		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TWSC - Two-Way Stop Control
< / > - Shared Movement

TABLE 5.2: TEN-YEAR BACKGROUND OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	**B**	<	D	>	**D**	A	A	A	**A**	A	A	A	**A**	
			Delay	<	14	>	**14**	<	26	>	**26**	8	0	0	**1**	8	0	0	**2**	
			V/C	<	0.06	>		<	0.22	>		0.04	0.00	0.00		0.07	0.00	0.00		
			Q	<	2	>		<	6	>		1	0	0		2	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		**A**		A	A	**A**					A		>	**A**	
			Delay	7	0		**0**		0	0	**0**					9		>	**9**	
			V/C	0.00	0.00				0.00	0.00						0.00		>		
			Q	0	0				0	0						0		>		
PM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	**B**	<	E	>	**E**	A	A	A	**A**	A	A	A	**A**	
			Delay	<	13	>	**13**	<	47	>	**47**	8	0	0	**1**	8	0	0	**1**	
			V/C	<	0.16	>		<	0.83	>		0.04	0.00	0.00		0.01	0.00	0.00		
			Q	<	4	>		<	56	>		1	0	0		0	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		**A**		A	A	**A**					A		>	**A**	
			Delay	8	0		**0**		0	0	**0**					10		>	**10**	
			V/C	0.00	0.00				0.00	0.00						0.01		>		
			Q	0	0				0	0						0		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TWSC - Two-Way Stop Control
< / > - Shared Movement

TABLE 5.3: FIVE-YEAR TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	B	<	C	>	C	A	A	A	A	A	A	A	A	
			Delay	<	13	>	13	<	22	>	22	8	0	0	1	8	0	0	2	
			V/C	<	0.04	>		<	0.18	>		0.04	0.00	0.00		0.07	0.00	0.00		
			Q	<	1	>		<	4	>		1	0	0		2	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		A		A	A	A					A		>	A	
			Delay	7	0		0		0	0	0					9		>	9	
			V/C	0.00	0.00				0.00	0.00						0.00		>		
			Q	0	0				0	0						0		>		
PM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	B	<	D	>	D	A	A	A	A	A	A	A	A	
			Delay	<	12	>	12	<	31	>	31	8	0	0	1	8	0	0	1	
			V/C	<	0.13	>		<	0.69	>		0.04	0.00	0.00		0.01	0.00	0.00		
			Q	<	4	>		<	38	>		1	0	0		0	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		A		A	A	A					A		>	A	
			Delay	8	0		0		0	0	0					9		>	9	
			V/C	0.00	0.00				0.00	0.00						0.01		>		
			Q	0	0				0	0						0		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TWSC - Two-Way Stop Control
< / > - Shared Movement

TABLE 5.4: TEN-YEAR TOTAL OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	B	<	D	>	D	A	A	A	A	A	A	A	A	
			Delay	<	14	>	14	<	26	>	26	8	0	0	1	8	0	0	2	
			V/C	<	0.06	>		<	0.23	>		0.04	0.00	0.00		0.07	0.00	0.00		
			Q	<	2	>		<	6	>		1	0	0		2	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		A		A	A	A					A		>	A	
			Delay	7	0		0		0	0	0					9		>	9	
			V/C	0.00	0.00				0.00	0.00						0.00		>		
			Q	0	0				0	0						0		>		
PM Peak Hour	Industrial Road & Wanless Court/Waydom Drive	TWSC	LOS	<	B	>	B	<	E	>	E	A	A	A	A	A	A	A	A	
			Delay	<	13	>	13	<	48	>	48	8	0	0	1	8	0	0	1	
			V/C	<	0.16	>		<	0.84	>		0.04	0.00	0.00		0.01	0.00	0.00		
			Q	<	4	>		<	58	>		1	0	0		0	0	0		
	Waydom Drive & Site Driveway	TWSC	LOS	A	A		A		A	A	A					A		>	A	
			Delay	8	0		0		0	0	0					10		>	10	
			V/C	0.00	0.00				0.00	0.00						0.01		>		
			Q	0	0				0	0						0		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TWSC - Two-Way Stop Control
< / > - Shared Movement

5.3 Remedial Measures

The operational analyses presented in **Section 5.1** and **Section 5.2** indicate the study intersection and site driveway are forecast to operate at acceptable levels of service and within capacity with or without the development of 260 Waydom Drive. The westbound approach on Waydom Drive at Industrial Drive is forecast to operate at LOS E, but with delays less than 55 seconds, and v/c ratios no greater than 0.84. Overall development of the site is forecast to have a negligible impact on traffic operations.

For completeness, Paradigm has reviewed the need for an eastbound left-turn lane at the site driveway, and the need for intersection control improvements to improve traffic operations on Waydom Drive at Industrial Road.

5.3.1 Left-Turn Lane Warrant

Exclusive left-turn lanes provide a dedicated lane for left-turning vehicles to complete their movement. The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* states, "when the number of left-turning vehicles at intersections is such that it creates a hazard and reduces capacity, consideration should be given to the provision of a separate left-turn lane."[8]

The Ministry of Transportation's (MTO) *Design Supplement*[9] to the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*[10] contains the warrants for left-turn lanes. For two-lane roads, the warrant is based on a combination of the advancing and opposing design hour volumes, the design speed of the road, and the percentage of left-turning vehicles in the advancing volume. Left-turn lanes are not typically warranted where the left-turning volume is less than 5% of the advancing volume.

Table 5.5 summarizes the left-turn lane warrant for the intersection of Waydom Drive at the Site Driveway, which is based on a design speed of 60 km/h, 10 km/h over the posted speed limit on Waydom Drive. **Appendix I** contains the left-turn lane warrant nomographs which indicate that an eastbound left-turn lane is not warranted under 2035 future total traffic conditions.

---

8 Transportation Association of Canada, "Left-Turn Lanes," chap. 9.17 in *Geometric Design Guide for Canadian Roads,* (Ottawa: TAC, 2017), 122.

9 Ministry of Transportation, Ontario, *Design Supplement for the TAC Geometric Design Guide for Canadian Roads, Appendix 9A for Section 9.17 (Left-Turn Lanes)*, (Toronto: MTO, 2017).

10 Transportation Association of Canada, "Left-Turn Lanes," chap 9.17 in *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017), 122-152.

TABLE 5.5: LEFT-TURN LANE WARRANT SUMMARY – WAYDOM DRIVE

Roadway	Waydom Drive	
Intersection	Site Driveway	
Approach Direction	Eastbound	
Design Speed	60 km/h	
Horizon	Total 2035	
Peak Hour	AM	PM
Advancing Volume	191	37
Opposing Volume	43	228
Left Turning Traffic	7	2
% of Left Turning Traffic	4%	5%
Figure Used*	9A-7	9A-7
Warranted	No	No
Storage Length Required	-	-

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

5.3.2 Intersection Control Review – Traffic Control Signal Warrant

Under existing and future traffic conditions, no critical movements are forecast at Industrial Road and Waydom Drive. However, the westbound approach at the intersection is forecast to operate at LOS E under the 10-year future background and future total traffic horizons. This indicates the movement is approaching the critical threshold.

Paradigm has assessed the need for traffic control signals at the intersection based on Justification 7 (Projected Volumes) as published in *Ontario Traffic Manual (OTM) Book 12*.[11] **Appendix J** contains the warrant analysis and indicates traffic control signals are unlikely to be warranted at the intersection under ten-year total traffic conditions.

5.3.3 Intersection Control Review – All-Way Stop Control Warrant

As an alternative to providing traffic control signals, Paradigm has assessed the need for all-way stop control using the warrant for all-way stop control defined in OTM Book 5[12].

Appendix K contains the warrant analysis and indicates that all-way stop control is not warranted at the intersection of Industrial Road and Waydom Drive/Wanless Court based on future total ten-year horizon traffic volumes.

[11] Ontario Ministry of Transportation, *Ontario Traffic Manual Book 12: Traffic Signals*, (Toronto: Queen's Printer for Ontario, 2024).

[12] Ontario Ministry of Transportation, *Ontario Traffic Manual Book 5: Regulatory Signs,* (Toronto: Queen's Printer for Ontario, 2021).

6 Findings, Conclusions and Recommendations

6.1 Findings

Based on the analyses contained herein, the findings of this study are as follows:

- **Base Year Traffic Conditions:** The study intersection (Industrial Drive and Waydom Drive/Wanless Court) is operating at acceptable levels of service with no critical movements in both the weekday AM peak hour and weekday PM peak hour.
- **Additional Site Trip Generation:** With an additional two employees and one customer, the site is forecast to generate an additional four trips in both the weekday AM peak hour and weekday PM peak hour.
- **Future Background and Total Traffic Conditions:** The study intersection and site driveway are forecast to operate at acceptable levels of service and with no critical movements during the weekday AM peak hour and weekday PM peak hour.
- **Left-Turn Lane Warrant:** An eastbound left-turn lane is not warranted at the intersection of Waydom Drive and the Site Driveway.
- **Traffic Control Signal Warrant:** The need for traffic control signals is considered to be unlikely at the intersection of Industrial Road and Waydom Drive/Wanless Court under ten-year total traffic conditions.
- **All-Way Stop Control Warrant:** All-way stop control is not warranted at the intersection of Industrial Road and Waydom Drive/Wanless Court under both future total or future background traffic conditions.

6.2 Conclusions and Recommendations

Based on the findings of this study it is concluded that the proposed use of the site is forecast to have a negligible impact on traffic operations. It is recommended that the development be considered for approval with no requirement for off-site transportation improvements.

Appendix A

Pre-Study Consultation Material

From: Cheryl Marcy <CMarcy@regionofwaterloo.ca>
Sent: September 18, 2025 3:34 PM
To: Andrew Orr; Joshua Beech Falshaw
Cc: Andrew Steinsky; 'sbucholtz@northdumfries.ca'
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Hello Andrew,

My apologies on the delay getting back to you.

The Region has no additional comments to the terms of reference.

Thanks,
Cheryl Marcy, C.E.T.
Manager, Corridor Development | Region of Waterloo
150 Frederick Street, 8th Floor, Kitchener, ON N2G 4J3
P: 226-753-1093 | TTY: 519-575-4608
E: cmarcy@regionofwaterloo.ca
Web: www.regionofwaterloo.ca

From: Andrew Orr <aorr@ptsl.com>
Sent: September 4, 2025 3:04 PM
To: Cheryl Marcy <CMarcy@regionofwaterloo.ca>; Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>
Cc: Andrew Steinsky <asteinsky@ptsl.com>; 'sbucholtz@northdumfries.ca' <sbucholtz@northdumfries.ca>
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Hi Cheryl and Josh,

Does the Region have any comments to add to the terms of reference below? The township already provided their response (see the attached email).

Best Regards,

Andrew Orr, M.A.Sc., EIT

Transportation Consultant, Associate
(He/Him)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 519.896.3163 x210
m: 289-808-8997
e: aorr@ptsl.com
w: www.ptsl.com

From: Katrina Fluit <KFluit@regionofwaterloo.ca>
Sent: August 28, 2025 12:29 PM
To: Andrew Orr <aorr@ptsl.com>
Cc: Cheryl Marcy <CMarcy@regionofwaterloo.ca>; Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>; Andrew Steinsky <asteinsky@ptsl.com>; 'sbucholtz@northdumfries.ca' <sbucholtz@northdumfries.ca>
Subject: FW: 250591 (260 Waydom Drive, Ayr) TIS

Hello Andrew,

Thanks for sending this along to us. I have moved to a new position in the Region and am no longer processing development applications, but Joshua and Cheryl (cc'd) will be able to redirect your email as needed.

Josh and Cheryl – please see the email from Andrew below.

Thank you,

Katrina Fluit (She/Her)
Senior Development Planner

From: Andrew Orr <aorr@ptsl.com>
Sent: August 28, 2025 12:12 PM
To: Katrina Fluit <KFluit@regionofwaterloo.ca>; sbucholtz@northdumfries.ca
Cc: Andrew Steinsky <asteinsky@ptsl.com>
Subject: 250591 (260 Waydom Drive, Ayr) TIS

Hello Sandy and Katrina,

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Study (TIS) for a development located at 260 Waydom Drive (east of industrial Road and along the north side of Waydom Drive) in Ayr, Ontario. The subject site is currently occupied by 1,125 square meter building hosting a commercial greenhouse/cannabis cultivation facility. Vehicle access is proposed via an existing all-moves driveway connection to Waydom Drive. (site plan attached).

We'd like to prepare our report based on the following scope, subject to your comments. If the Region is interested in this study, a PSC form will be issued:

PROPOSED TERMS OF REFERENCE

Study Area Intersections:

- Industrial Road at Waydom Drive (unsignalized); and
- Existing driveway connection to Waydom Drive.

Analysis Periods:

- Weekday AM peak hour
- Weekday PM peak hour

Existing Data:

- TMC data collected by Paradigm in April 2025 for Industrial Road at Waydom Drive
- TMC data to be collected by Paradigm in September/October 2025 at the existing site driveway

Horizon Year:

- Five-years from the date the study is commissioned (2029)

Analysis:

- Synchro 12, HCM 7 analysis

Background Traffic:

- Background traffic annual growth rate: 2% **Please confirm**
- Proposed industrial expansion at 535-655 Waydom Drive
- Additional developments to include in background. **Please confirm**

Future Road Improvements:

- **Please confirm**

Trip Generation:

- First Principles approach/existing facility operations;
- Proxy site data; and
- ITE Trip Generation Data 12th Edition.

Site Traffic Distribution:

- Existing Traffic Patterns

Best Regards,

Andrew Orr, M.A.Sc., EIT
Transportation Consultant, Associate
(He/Him)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 519.896.3163 x210
m: 289-808-8997
e: aorr@ptsl.com
w: www.ptsl.com

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From: Andrew Orr
Sent: September 16, 2025 12:12 PM
To: Joshua Beech Falshaw
Cc: Chris Clary-Lemon; Andrew Steinsky
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Hi Josh,

I'm following up to see if the Region will be providing any comments on the terms of reference for the 260 Waydom Drive TIS?

Best Regards,

Andrew Orr, M.A.Sc., EIT
Transportation Consultant, Associate
(He/Him)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 519.896.3163 x210
m: 289-808-8997
e: aorr@ptsl.com
w: www.ptsl.com

From: Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>
Sent: September 9, 2025 1:11 PM
To: Andrew Orr <aorr@ptsl.com>
Cc: Chris Clary-Lemon <cclarylemon@regionofwaterloo.ca>; Andrew Steinsky <asteinsky@ptsl.com>
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Hi Andrew,

Thanks for sending that over.

We are still dividing up points of contact by geography, however things have been changing rather rapidly with staff coming and going on our end. Currently the review areas are as follows

Waterloo/Woolwich/Kitchener East of King St – Tanikia Kinear (tkinear@regionofwaterloo.ca)
Cambridge/Wilmot/Wellesley/Kitchener West of King St – Myself
North Dumfries – Cheryl Marcy (cmarcy@regionofwaterloo.ca)

Hope that helps

Cheers,

Josh Falshaw (he/him)
Transportation Planner | Regional Growth, Development, and Sustainability Services
Planning, Development, and Legislative Services | Region of Waterloo
150 Frederick Street, 8th Floor, Kitchener, ON
Phone: 519-897-1309
Email: jbeechfalshaw@regionofwaterloo.ca

From: Andrew Orr <aorr@ptsl.com>
Sent: September 9, 2025 12:55 PM
To: Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>
Cc: Chris Clary-Lemon <cclarylemon@regionofwaterloo.ca>; Andrew Steinsky <asteinsky@ptsl.com>
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Hi Josh,

Attached to this email is the site plan for 260 Waydom Drive.

Moving forward with other projects in Waterloo Region, are you the contact for all traffic studies in Waterloo Region? Or is there other regional contacts for traffic studies depending on the city/township the project is located in?

Previously, its been my understanding that the Region has different contacts depending on township/city. If that's still the case, would you be able to provide me with the updated regional contacts list? The current list I have is likely out of date.

Best Regards,

Andrew Orr, M.A.Sc., EIT
Transportation Consultant, Associate
(He/Him)

paradigm TRANSPORTATION SOLUTIONS LIMITED

Great Place To Work. Certified DEC 2024 - DEC 2025 CANADA

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 519.896.3163 x210
m: 289-808-8997
e: aorr@ptsl.com
w: www.ptsl.com

From: Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>
Sent: September 9, 2025 12:41 PM
To: Andrew Orr <aorr@ptsl.com>
Cc: Chris Clary-Lemon <cclarylemon@regionofwaterloo.ca>
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Good afternoon Andrew,

Would you be able to send me a copy of the site plan for 260 Waydom Drive. I have realized that Katrina did not send that my way and she is on vacation at the moment.

Cheers,

Josh Falshaw (he/him)
Transportation Planner | Regional Growth, Development, and Sustainability Services
Planning, Development, and Legislative Services | Region of Waterloo
150 Frederick Street, 8th Floor, Kitchener, ON
Phone: 519-897-1309
Email: jbeechfalshaw@regionofwaterloo.ca

From: Andrew Orr <aorr@ptsl.com>
Sent: September 4, 2025 3:04 PM
To: Cheryl Marcy <CMarcy@regionofwaterloo.ca>; Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>
Cc: Andrew Steinsky <asteinsky@ptsl.com>; 'sbucholtz@northdumfries.ca' <sbucholtz@northdumfries.ca>
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Hi Cheryl and Josh,

Does the Region have any comments to add to the terms of reference below? The township already provided their response (see the attached email).

Best Regards,

Andrew Orr, M.A.Sc., EIT
Transportation Consultant, Associate
(He/Him)

paradigm TRANSPORTATION SOLUTIONS LIMITED

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5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 519.896.3163 x210
m: 289-808-8997
e: aorr@ptsl.com

From: Katrina Fluit <KFluit@regionofwaterloo.ca>
Sent: August 28, 2025 12:29 PM
To: Andrew Orr <aorr@ptsl.com>
Cc: Cheryl Marcy <CMarcy@regionofwaterloo.ca>; Joshua Beech Falshaw <jbeechfalshaw@regionofwaterloo.ca>; Andrew Steinsky <asteinsky@ptsl.com>; 'sbucholtz@northdumfries.ca' <sbucholtz@northdumfries.ca>
Subject: FW: 250591 (260 Waydom Drive, Ayr) TIS

Hello Andrew,

Thanks for sending this along to us. I have moved to a new position in the Region and am no longer processing development applications, but Joshua and Cheryl (cc'd) will be able to redirect your email as needed.

Josh and Cheryl – please see the email from Andrew below.

Thank you,

Katrina Fluit (She/Her)
Senior Development Planner

From: Andrew Orr <aorr@ptsl.com>
Sent: August 28, 2025 12:12 PM
To: Katrina Fluit <KFluit@regionofwaterloo.ca>; sbucholtz@northdumfries.ca
Cc: Andrew Steinsky <asteinsky@ptsl.com>
Subject: 250591 (260 Waydom Drive, Ayr) TIS

Hello Sandy and Katrina,

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Study (TIS) for a development located at 260 Waydom Drive (east of industrial Road and along the north side of Waydom Drive) in Ayr, Ontario. The subject site is currently occupied by 1,125 square meter building hosting a commercial greenhouse/cannabis cultivation facility. Vehicle access is proposed via an existing all-moves driveway connection to Waydom Drive. (site plan attached).

We'd like to prepare our report based on the following scope, subject to your comments. If the Region is interested in this study, a PSC form will be issued:

PROPOSED TERMS OF REFERENCE

Study Area Intersections:

- Industrial Road at Waydom Drive (unsignalized); and
- Existing driveway connection to Waydom Drive.

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- Weekday AM peak hour

- Weekday PM peak hour

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- TMC data collected by Paradigm in April 2025 for Industrial Road at Waydom Drive
- TMC data to be collected by Paradigm in September/October 2025 at the existing site driveway

Horizon Year:

- Five-years from the date the study is commissioned (2029)

Analysis:

- Synchro 12, HCM 7 analysis

Background Traffic:

- Background traffic annual growth rate: 2% **Please confirm**
- Proposed industrial expansion at 535-655 Waydom Drive
- Additional developments to include in background. **Please confirm**

Future Road Improvements:

- **Please confirm**

Trip Generation:

- First Principles approach/existing facility operations;
- Proxy site data; and
- ITE Trip Generation Data 12th Edition.

Site Traffic Distribution:

- Existing Traffic Patterns

Best Regards,

Andrew Orr, M.A.Sc., EIT
Transportation Consultant, Associate
(He/Him)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 519.896.3163 x210
m: 289-808-8997
e: aorr@ptsl.com
w: www.ptsl.com

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From: Sandy Bucholtz <sbucholtz@northdumfries.ca>
Sent: August 28, 2025 2:43 PM
To: Andrew Orr; Katrina Fluit
Cc: Andrew Steinsky
Subject: RE: 250591 (260 Waydom Drive, Ayr) TIS

Andrew
The only thing we would ask is that the horizon year be 10 yrs from the date of study.

Sandy Bucholtz
Engineering Technologist

The Corporation of the Township of North Dumfries
106 Earl Thompson Road, 3rd Floor
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sbucholtz@northdumfries.ca

From: Andrew Orr <aorr@ptsl.com>
Sent: Thursday, August 28, 2025 12:12 PM
To: Katrina Fluit <kfluit@regionofwaterloo.ca>; Sandy Bucholtz <sbucholtz@northdumfries.ca>
Cc: Andrew Steinsky <asteinsky@ptsl.com>
Subject: 250591 (260 Waydom Drive, Ayr) TIS

Hello Sandy and Katrina,

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Study (TIS) for a development located at 260 Waydom Drive (east of industrial Road and along the north side of Waydom Drive) in Ayr, Ontario. The subject site is currently occupied by 1,125 square meter building hosting a commercial greenhouse/cannabis cultivation facility. Vehicle access is proposed via an existing all-moves driveway connection to Waydom Drive. (site plan attached).

We'd like to prepare our report based on the following scope, subject to your comments. If the Region is interested in this study, a PSC form will be issued:

PROPOSED TERMS OF REFERENCE

Study Area Intersections:
- Industrial Road at Waydom Drive (unsignalized); and
- Existing driveway connection to Waydom Drive.

Analysis Periods:
- Weekday AM peak hour
- Weekday PM peak hour

Existing Data:

- TMC data collected by Paradigm in April 2025 for Industrial Road at Waydom Drive
- TMC data to be collected by Paradigm in September/October 2025 at the existing site driveway

Horizon Year:

- Five-years from the date the study is commissioned (2029)

Analysis:

- Synchro 12, HCM 7 analysis

Background Traffic:

- Background traffic annual growth rate: 2% **Please confirm**
- Proposed industrial expansion at 535-655 Waydom Drive
- Additional developments to include in background. **Please confirm**

Future Road Improvements:

- **Please confirm**

Trip Generation:

- First Principles approach/existing facility operations;
- Proxy site data; and
- ITE Trip Generation Data 12th Edition.

Site Traffic Distribution:

- Existing Traffic Patterns

Best Regards,

Andrew Orr, M.A.Sc., EIT
Transportation Consultant, Associate
(He/Him)

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

Turning Movement Count Data

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Wydom Drive & Industrial Road
Site Code: 250109
Start Date: 04/01/2025

Turning Movement Data

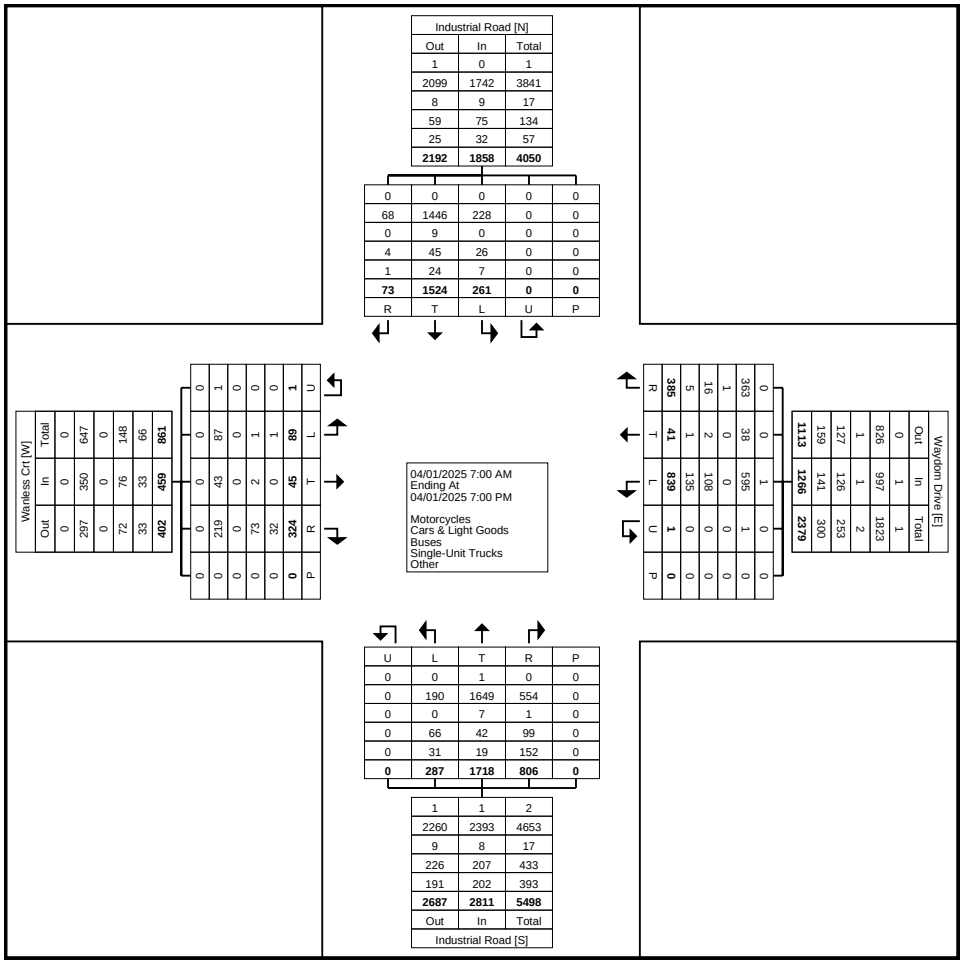
Start Time	Wanless Crt Eastbound						Waydom Drive Westbound						Industrial Road Northbound						Industrial Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	3	2	0	0	5	8	0	2	0	0	10	8	35	24	0	0	67	7	41	4	0	0	52	134
7:15 AM	0	1	2	0	0	3	10	0	0	0	0	10	9	42	18	0	0	69	4	48	3	0	0	55	137
7:30 AM	2	0	3	0	0	5	7	0	3	0	0	10	6	42	19	0	0	67	17	66	1	0	0	84	166
7:45 AM	0	3	3	0	0	6	5	1	3	0	0	9	19	42	36	0	0	97	17	76	9	0	0	102	214
Hourly Total	2	7	10	0	0	19	30	1	8	0	0	39	42	161	97	0	0	300	45	231	17	0	0	293	651
8:00 AM	0	0	4	0	0	4	7	0	1	0	0	8	9	54	22	0	0	85	15	37	2	0	0	54	151
8:15 AM	1	0	4	0	0	5	8	2	2	0	0	12	7	45	21	0	0	73	13	51	2	0	0	66	156
8:30 AM	0	2	5	0	0	7	12	1	1	0	0	14	8	43	27	0	0	78	8	43	1	0	0	52	151
8:45 AM	0	1	2	0	0	3	10	0	2	0	0	12	6	40	23	0	0	69	5	39	1	0	0	45	129
Hourly Total	1	3	15	0	0	19	37	3	6	0	0	46	30	182	93	0	0	305	41	170	6	0	0	217	587
9:00 AM	1	0	6	0	0	7	12	0	8	0	0	20	5	30	20	0	0	55	3	35	1	0	0	39	121
9:15 AM	2	1	4	0	0	7	16	0	0	0	0	16	2	14	16	0	0	32	5	26	1	0	0	32	87
9:30 AM	1	2	0	0	0	3	14	0	2	0	0	16	7	21	11	0	0	39	3	24	2	0	0	29	87
9:45 AM	0	4	6	0	0	10	16	2	1	0	0	19	6	20	19	0	0	45	14	24	2	0	0	40	114
Hourly Total	4	7	16	0	0	27	58	2	11	0	0	71	20	85	66	0	0	171	25	109	6	0	0	140	409
10:00 AM	1	1	5	0	0	7	27	3	1	0	0	31	7	19	15	0	0	41	4	20	0	0	0	24	103
10:15 AM	1	2	7	0	0	10	13	1	5	0	0	19	3	23	23	0	0	49	4	20	1	0	0	25	103
10:30 AM	0	1	2	0	0	3	20	0	3	0	0	23	4	20	18	0	0	42	4	17	0	0	0	21	89
10:45 AM	2	0	1	0	0	3	17	3	2	0	0	22	5	22	16	0	0	43	3	23	1	0	0	27	95
Hourly Total	4	4	15	0	0	23	77	7	11	0	0	95	19	84	72	0	0	175	15	80	2	0	0	97	390
11:00 AM	0	1	6	0	0	7	22	3	5	0	0	30	2	22	21	0	0	45	1	21	1	0	0	23	105
11:15 AM	0	1	1	0	0	2	11	1	4	0	0	16	3	17	15	0	0	35	4	18	0	0	0	22	75
11:30 AM	2	2	4	0	0	8	12	1	3	0	0	16	4	21	20	0	0	45	6	19	0	0	0	25	94
11:45 AM	2	2	6	0	0	10	16	1	3	0	0	20	3	24	22	0	0	49	3	17	0	0	0	20	99
Hourly Total	4	6	17	0	0	27	61	6	15	0	0	82	12	84	78	0	0	174	14	75	1	0	0	90	373
12:00 PM	3	2	11	0	0	16	20	0	9	1	0	30	2	21	19	0	0	42	5	18	3	0	0	26	114
12:15 PM	2	1	10	0	0	13	16	1	9	0	0	26	11	23	18	0	0	52	2	16	2	0	0	20	111
12:30 PM	2	1	6	1	0	10	14	1	3	0	0	18	3	18	19	0	0	40	5	22	2	0	0	29	97
12:45 PM	0	0	9	0	0	9	16	2	3	0	0	21	8	23	21	0	0	52	3	22	3	0	0	28	110
Hourly Total	7	4	36	1	0	48	66	4	24	1	0	95	24	85	77	0	0	186	15	78	10	0	0	103	432
1:00 PM	2	1	8	0	0	11	27	1	10	0	0	38	2	18	13	0	0	33	4	22	2	0	0	28	110
1:15 PM	0	1	1	0	0	2	12	2	4	0	0	18	8	30	17	0	0	55	12	29	0	0	0	41	116
1:30 PM	1	2	4	0	0	7	15	2	5	0	0	22	7	26	38	0	0	71	28	24	2	0	0	54	154
1:45 PM	1	0	3	0	0	4	19	1	2	0	0	22	9	30	23	0	0	62	17	24	1	0	0	42	130
Hourly Total	4	4	16	0	0	24	73	6	21	0	0	100	26	104	91	0	0	221	61	99	5	0	0	165	510

2:00 PM	2	0	7	0	0	9	49	2	88	0	0	139	9	22	22	0	0	53	3	17	0	0	0	20	221
2:15 PM	2	0	8	0	0	10	37	0	20	0	0	57	7	32	22	0	0	61	2	20	1	0	0	23	151
2:30 PM	4	0	13	0	0	17	14	3	7	0	0	24	15	41	15	0	0	71	1	27	1	0	0	29	141
2:45 PM	1	3	10	0	0	14	19	1	6	0	0	26	11	31	23	0	0	65	5	27	6	0	0	38	143
Hourly Total	9	3	38	0	0	50	119	6	121	0	0	246	42	126	82	0	0	250	11	91	8	0	0	110	656
3:00 PM	6	0	16	0	0	22	26	0	18	0	0	44	2	36	14	0	0	52	1	34	2	0	0	37	155
3:15 PM	3	2	12	0	0	17	16	1	5	0	0	22	6	43	13	0	0	62	2	37	1	0	0	40	141
3:30 PM	1	1	10	0	0	12	23	3	13	0	0	39	5	53	17	0	0	75	5	36	3	0	0	44	170
3:45 PM	1	0	4	0	0	5	20	0	10	0	0	30	6	38	11	0	0	55	1	63	1	0	0	65	155
Hourly Total	11	3	42	0	0	56	85	4	46	0	0	135	19	170	55	0	0	244	9	170	7	0	0	186	621
4:00 PM	7	2	15	0	0	24	33	1	22	0	0	56	15	51	14	0	0	80	6	56	2	0	0	64	224
4:15 PM	2	0	10	0	0	12	34	0	11	0	0	45	7	53	10	0	0	70	3	45	2	0	0	50	177
4:30 PM	6	0	15	0	0	21	58	0	36	0	0	94	9	64	8	0	0	81	3	38	5	0	0	46	242
4:45 PM	2	0	11	0	0	13	21	0	9	0	0	30	6	70	9	0	0	85	2	45	0	0	0	47	175
Hourly Total	17	2	51	0	0	70	146	1	78	0	0	225	37	238	41	0	0	316	14	184	9	0	0	207	818
5:00 PM	10	0	23	0	0	33	16	0	10	0	0	26	1	96	9	0	0	106	2	34	0	0	0	36	201
5:15 PM	4	0	15	0	0	19	16	0	8	0	0	24	2	62	11	0	0	75	4	49	0	0	0	53	171
5:30 PM	2	1	10	0	0	13	14	1	7	0	0	22	2	58	6	0	0	66	3	48	1	0	0	52	153
5:45 PM	2	0	2	0	0	4	11	0	8	0	0	19	2	49	5	0	0	56	0	33	1	0	0	34	113
Hourly Total	18	1	50	0	0	69	57	1	33	0	0	91	7	265	31	0	0	303	9	164	2	0	0	175	638
6:00 PM	5	0	5	0	0	10	9	0	4	0	0	13	4	35	5	0	0	44	0	24	0	0	0	24	91
6:15 PM	1	1	2	0	0	4	9	0	3	0	0	12	2	40	6	0	0	48	0	17	0	0	0	17	81
6:30 PM	1	0	8	0	0	9	6	0	1	0	0	7	2	27	7	0	0	36	1	17	0	0	0	18	70
6:45 PM	1	0	3	0	0	4	6	0	3	0	0	9	1	32	5	0	0	38	1	15	0	0	0	16	67
Hourly Total	8	1	18	0	0	27	30	0	11	0	0	41	9	134	23	0	0	166	2	73	0	0	0	75	309
Grand Total	89	45	324	1	0	459	839	41	385	1	0	1266	287	1718	806	0	0	2811	261	1524	73	0	0	1858	6394
Approach %	19.4	9.8	70.6	0.2	-	-	66.3	3.2	30.4	0.1	-	-	10.2	61.1	28.7	0.0	-	-	14.0	82.0	3.9	0.0	-	-	-
Total %	1.4	0.7	5.1	0.0	-	7.2	13.1	0.6	6.0	0.0	-	19.8	4.5	26.9	12.6	0.0	-	44.0	4.1	23.8	1.1	0.0	-	29.1	-
Motorcycles	0	0	0	0	-	0	1	0	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0	-	0.1	0.0	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	87	43	219	1	-	350	595	38	363	1	-	997	190	1649	554	0	-	2393	228	1446	68	0	-	1742	5482
% Cars & Light Goods	97.8	95.6	67.6	100.0	-	76.3	70.9	92.7	94.3	100.0	-	78.8	66.2	96.0	68.7	-	-	85.1	87.4	94.9	93.2	-	-	93.8	85.7
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	7	1	0	-	8	0	9	0	0	-	9	18
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	0.0	-	0.1	0.0	0.4	0.1	-	-	0.3	0.0	0.6	0.0	-	-	0.5	0.3
Single-Unit Trucks	1	2	73	0	-	76	108	2	16	0	-	126	66	42	99	0	-	207	26	45	4	0	-	75	484
% Single-Unit Trucks	1.1	4.4	22.5	0.0	-	16.6	12.9	4.9	4.2	0.0	-	10.0	23.0	2.4	12.3	-	-	7.4	10.0	3.0	5.5	-	-	4.0	7.6
Articulated Trucks	1	0	32	0	-	33	135	1	5	0	-	141	31	19	152	0	-	202	7	24	1	0	-	32	408
% Articulated Trucks	1.1	0.0	9.9	0.0	-	7.2	16.1	2.4	1.3	0.0	-	11.1	10.8	1.1	18.9	-	-	7.2	2.7	1.6	1.4	-	-	1.7	6.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Wydom Drive & Industrial Road
Site Code: 250109
Start Date: 04/01/2025



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Wydom Drive & Industrial Road
Site Code: 250109
Start Date: 04/01/2025

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Wanless Crt Eastbound						Waydom Drive Westbound						Industrial Road Northbound						Industrial 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	2	0	3	0	0	5	7	0	3	0	0	10	6	42	19	0	0	67	17	66	1	0	0	84	166
7:45 AM	0	3	3	0	0	6	5	1	3	0	0	9	19	42	36	0	0	97	17	76	9	0	0	102	214
8:00 AM	0	0	4	0	0	4	7	0	1	0	0	8	9	54	22	0	0	85	15	37	2	0	0	54	151
8:15 AM	1	0	4	0	0	5	8	2	2	0	0	12	7	45	21	0	0	73	13	51	2	0	0	66	156
Total	3	3	14	0	0	20	27	3	9	0	0	39	41	183	98	0	0	322	62	230	14	0	0	306	687
Approach %	15.0	15.0	70.0	0.0	-	-	69.2	7.7	23.1	0.0	-	-	12.7	56.8	30.4	0.0	-	-	20.3	75.2	4.6	0.0	-	-	-
Total %	0.4	0.4	2.0	0.0	-	2.9	3.9	0.4	1.3	0.0	-	5.7	6.0	26.6	14.3	0.0	-	46.9	9.0	33.5	2.0	0.0	-	44.5	-
PHF	0.375	0.250	0.875	0.000	-	0.833	0.844	0.375	0.750	0.000	-	0.813	0.539	0.847	0.681	0.000	-	0.830	0.912	0.757	0.389	0.000	-	0.750	0.803
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	3	3	5	0	-	11	9	3	7	0	-	19	35	171	85	0	-	291	58	225	13	0	-	296	617
% Cars & Light Goods	100.0	100.0	35.7	-	-	55.0	33.3	100.0	77.8	-	-	48.7	85.4	93.4	86.7	-	-	90.4	93.5	97.8	92.9	-	-	96.7	89.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	1	0	0	-	1	3
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	0.6	0.0	0.4	0.0	-	-	0.3	0.4
Single-Unit Trucks	0	0	6	0	-	6	11	0	2	0	-	13	6	5	6	0	-	17	4	1	1	0	-	6	42
% Single-Unit Trucks	0.0	0.0	42.9	-	-	30.0	40.7	0.0	22.2	-	-	33.3	14.6	2.7	6.1	-	-	5.3	6.5	0.4	7.1	-	-	2.0	6.1
Articulated Trucks	0	0	3	0	-	3	7	0	0	0	-	7	0	5	7	0	-	12	0	3	0	0	-	3	25
% Articulated Trucks	0.0	0.0	21.4	-	-	15.0	25.9	0.0	0.0	-	-	17.9	0.0	2.7	7.1	-	-	3.7	0.0	1.3	0.0	-	-	1.0	3.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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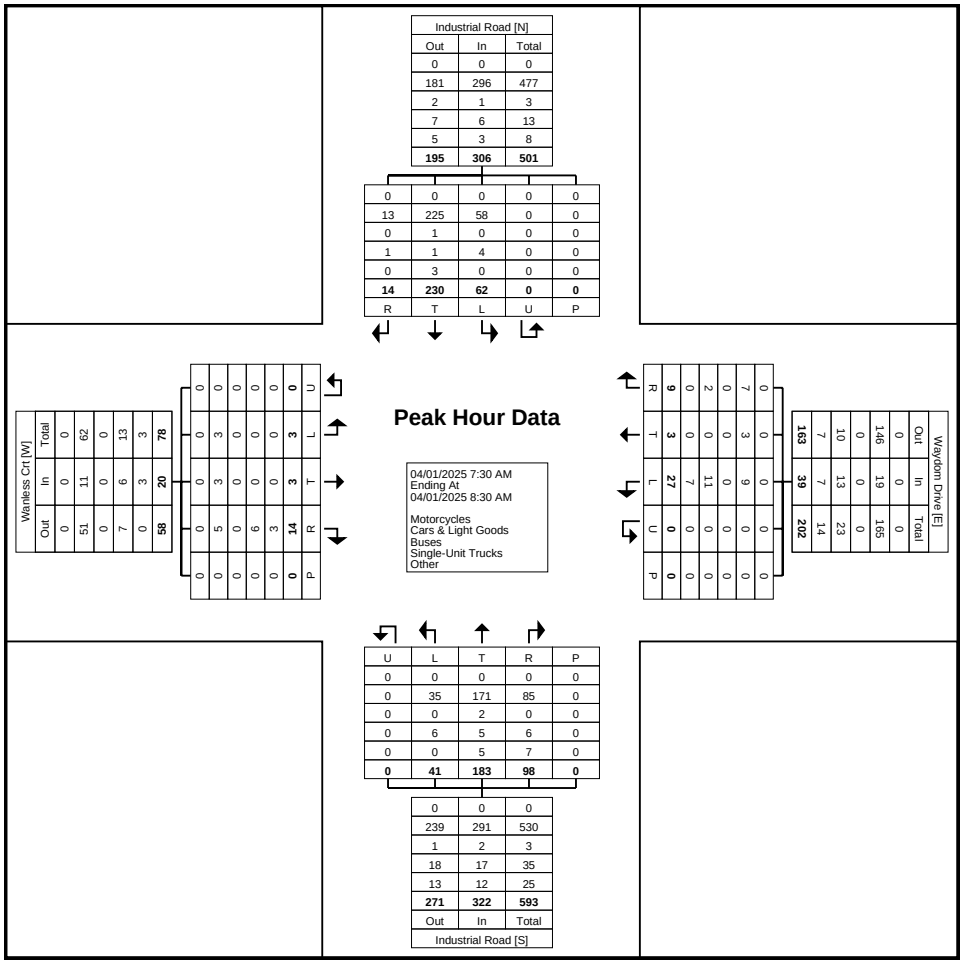


Turning Movement Peak Hour Data Plot (7:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Wydom Drive & Industrial Road
Site Code: 250109
Start Date: 04/01/2025

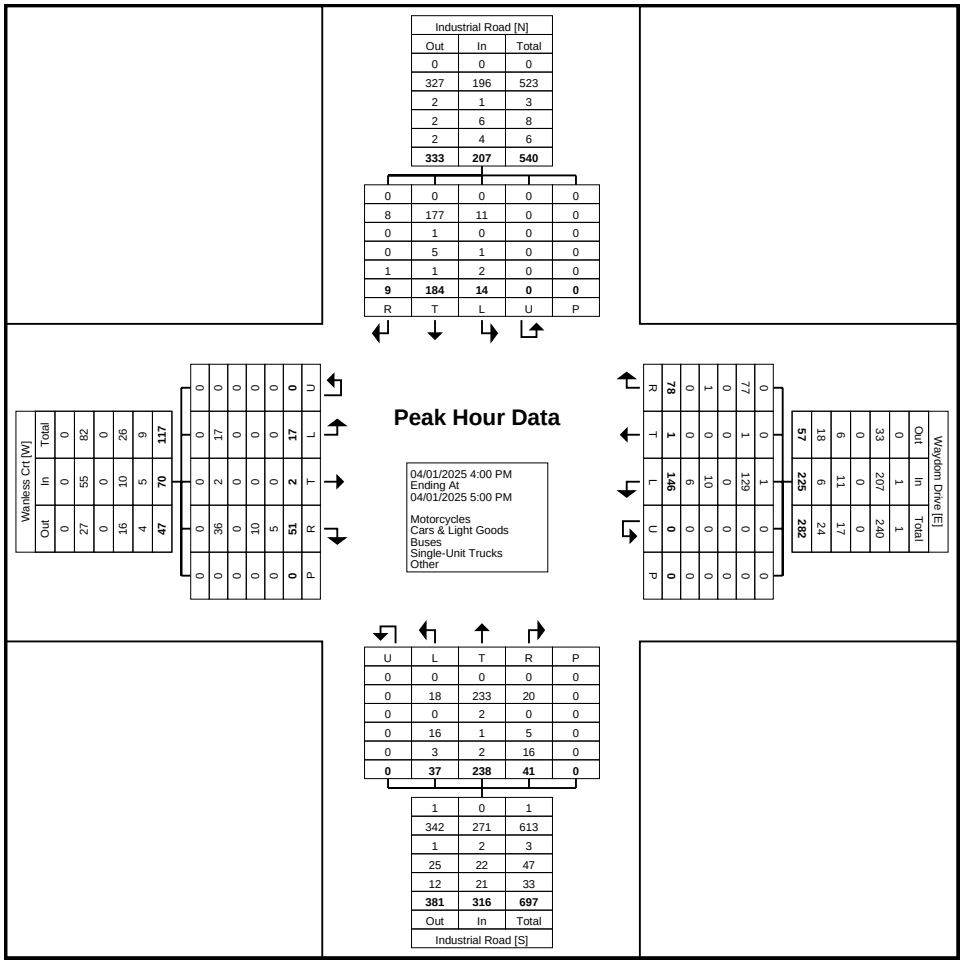
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Wanless Crt Eastbound						Waydom Drive Westbound						Industrial Road Northbound						Industrial 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	
4:00 PM	7	2	15	0	0	24	33	1	22	0	0	56	15	51	14	0	0	80	6	56	2	0	0	64	224
4:15 PM	2	0	10	0	0	12	34	0	11	0	0	45	7	53	10	0	0	70	3	45	2	0	0	50	177
4:30 PM	6	0	15	0	0	21	58	0	36	0	0	94	9	64	8	0	0	81	3	38	5	0	0	46	242
4:45 PM	2	0	11	0	0	13	21	0	9	0	0	30	6	70	9	0	0	85	2	45	0	0	0	47	175
Total	17	2	51	0	0	70	146	1	78	0	0	225	37	238	41	0	0	316	14	184	9	0	0	207	818
Approach %	24.3	2.9	72.9	0.0	-	-	64.9	0.4	34.7	0.0	-	-	11.7	75.3	13.0	0.0	-	-	6.8	88.9	4.3	0.0	-	-	-
Total %	2.1	0.2	6.2	0.0	-	8.6	17.8	0.1	9.5	0.0	-	27.5	4.5	29.1	5.0	0.0	-	38.6	1.7	22.5	1.1	0.0	-	25.3	-
PHF	0.607	0.250	0.850	0.000	-	0.729	0.629	0.250	0.542	0.000	-	0.598	0.617	0.850	0.732	0.000	-	0.929	0.583	0.821	0.450	0.000	-	0.809	0.845
Motorcycles	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.7	0.0	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	17	2	36	0	-	55	129	1	77	0	-	207	18	233	20	0	-	271	11	177	8	0	-	196	729
% Cars & Light Goods	100.0	100.0	70.6	-	-	78.6	88.4	100.0	98.7	-	-	92.0	48.6	97.9	48.8	-	-	85.8	78.6	96.2	88.9	-	-	94.7	89.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	1	0	0	-	1	3
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.6	0.0	0.5	0.0	-	-	0.5	0.4
Single-Unit Trucks	0	0	10	0	-	10	10	0	1	0	-	11	16	1	5	0	-	22	1	5	0	0	-	6	49
% Single-Unit Trucks	0.0	0.0	19.6	-	-	14.3	6.8	0.0	1.3	-	-	4.9	43.2	0.4	12.2	-	-	7.0	7.1	2.7	0.0	-	-	2.9	6.0
Articulated Trucks	0	0	5	0	-	5	6	0	0	0	-	6	3	2	16	0	-	21	2	1	1	0	-	4	36
% Articulated Trucks	0.0	0.0	9.8	-	-	7.1	4.1	0.0	0.0	-	-	2.7	8.1	0.8	39.0	-	-	6.6	14.3	0.5	11.1	-	-	1.9	4.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Wydom Drive & Industrial Road
Site Code: 250109
Start Date: 04/01/2025



Turning Movement Peak Hour Data Plot (4:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: 260 Waydom Drive
Site Code: 250591
Start Date: 09/10/2025

Turning Movement Data

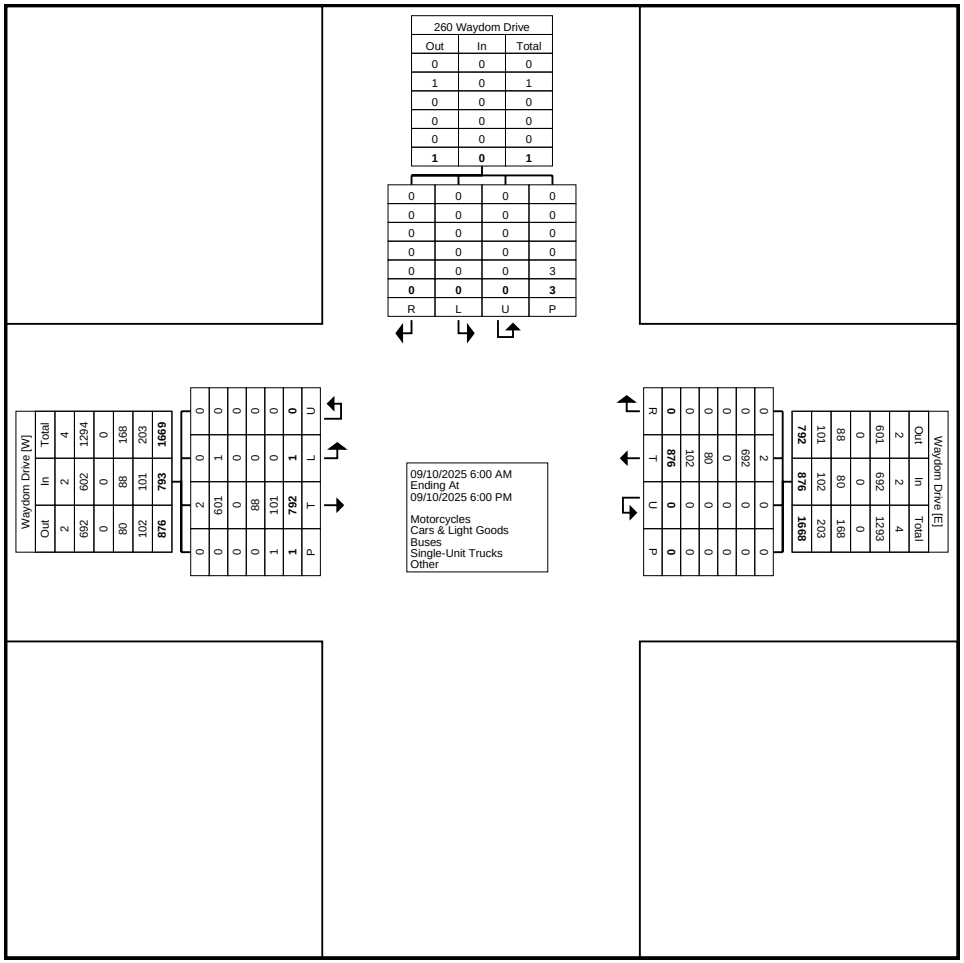
Start Time	Waydom Drive Eastbound					Waydom Drive Westbound					260 Waydom Drive Driveway Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
6:00 AM	0	16	0	0	16	20	0	0	0	20	0	0	0	0	0	36
6:15 AM	0	22	0	0	22	8	0	0	0	8	0	0	0	0	0	30
6:30 AM	0	20	0	0	20	5	0	0	0	5	0	0	0	0	0	25
6:45 AM	0	14	0	0	14	6	0	0	0	6	0	0	0	0	0	20
Hourly Total	0	72	0	0	72	39	0	0	0	39	0	0	0	0	0	111
7:00 AM	0	20	0	0	20	11	0	0	0	11	0	0	0	0	0	31
7:15 AM	0	14	0	0	14	3	0	0	0	3	0	0	0	0	0	17
7:30 AM	0	14	0	0	14	4	0	0	0	4	0	0	0	0	0	18
7:45 AM	0	48	0	1	48	14	0	0	0	14	0	0	0	2	0	62
Hourly Total	0	96	0	1	96	32	0	0	0	32	0	0	0	2	0	128
8:00 AM	0	31	0	0	31	9	0	0	0	9	0	0	0	0	0	40
8:15 AM	0	29	0	0	29	8	0	0	0	8	0	0	0	0	0	37
8:30 AM	0	18	0	0	18	8	0	0	0	8	0	0	0	0	0	26
8:45 AM	0	16	0	0	16	14	0	0	0	14	0	0	0	0	0	30
Hourly Total	0	94	0	0	94	39	0	0	0	39	0	0	0	0	0	133
9:00 AM	0	18	0	0	18	18	0	0	0	18	0	0	0	0	0	36
9:15 AM	0	12	0	0	12	10	0	0	0	10	0	0	0	0	0	22
9:30 AM	0	11	0	0	11	8	0	0	0	8	0	0	0	0	0	19
9:45 AM	0	15	0	0	15	7	0	0	0	7	0	0	0	0	0	22
Hourly Total	0	56	0	0	56	43	0	0	0	43	0	0	0	0	0	99
10:00 AM	0	13	0	0	13	11	0	0	0	11	0	0	0	0	0	24
10:15 AM	0	10	0	0	10	13	0	0	0	13	0	0	0	0	0	23
10:30 AM	0	14	0	0	14	12	0	0	0	12	0	0	0	0	0	26
10:45 AM	1	8	0	0	9	6	0	0	0	6	0	0	0	0	0	15
Hourly Total	1	45	0	0	46	42	0	0	0	42	0	0	0	0	0	88
11:00 AM	0	13	0	0	13	13	0	0	0	13	0	0	0	0	0	26
11:15 AM	0	17	0	0	17	10	0	0	0	10	0	0	0	0	0	27
11:30 AM	0	8	0	0	8	16	0	0	0	16	0	0	0	0	0	24
11:45 AM	0	14	0	0	14	19	0	0	0	19	0	0	0	0	0	33
Hourly Total	0	52	0	0	52	58	0	0	0	58	0	0	0	0	0	110
12:00 PM	0	13	0	0	13	25	0	0	0	25	0	0	0	0	0	38
12:15 PM	0	11	0	0	11	10	0	0	0	10	0	0	0	1	0	21
12:30 PM	0	25	0	0	25	12	0	0	0	12	0	0	0	0	0	37
12:45 PM	0	16	0	0	16	12	0	0	0	12	0	0	0	0	0	28
Hourly Total	0	65	0	0	65	59	0	0	0	59	0	0	0	1	0	124
1:00 PM	0	19	0	0	19	11	0	0	0	11	0	0	0	0	0	30

1:15 PM	0	23	0	0	23	11	0	0	0	11	0	0	0	0	0	34
1:30 PM	0	50	0	0	50	18	0	0	0	18	0	0	0	0	0	68
1:45 PM	0	50	0	0	50	12	0	0	0	12	0	0	0	0	0	62
Hourly Total	0	142	0	0	142	52	0	0	0	52	0	0	0	0	0	194
2:00 PM	0	18	0	0	18	137	0	0	0	137	0	0	0	0	0	155
2:15 PM	0	6	0	0	6	45	0	0	0	45	0	0	0	0	0	51
2:30 PM	0	11	0	0	11	19	0	0	0	19	0	0	0	0	0	30
2:45 PM	0	28	0	0	28	18	0	0	0	18	0	0	0	0	0	46
Hourly Total	0	63	0	0	63	219	0	0	0	219	0	0	0	0	0	282
3:00 PM	0	8	0	0	8	11	0	0	0	11	0	0	0	0	0	19
3:15 PM	0	13	0	0	13	20	0	0	0	20	0	0	0	0	0	33
3:30 PM	0	14	0	0	14	27	0	0	0	27	0	0	0	0	0	41
3:45 PM	0	13	0	0	13	26	0	0	0	26	0	0	0	0	0	39
Hourly Total	0	48	0	0	48	84	0	0	0	84	0	0	0	0	0	132
4:00 PM	0	2	0	0	2	35	0	0	0	35	0	0	0	0	0	37
4:15 PM	0	15	0	0	15	18	0	0	0	18	0	0	0	0	0	33
4:30 PM	0	4	0	0	4	76	0	0	0	76	0	0	0	0	0	80
4:45 PM	0	8	0	0	8	29	0	0	0	29	0	0	0	0	0	37
Hourly Total	0	29	0	0	29	158	0	0	0	158	0	0	0	0	0	187
5:00 PM	0	8	0	0	8	19	0	0	0	19	0	0	0	0	0	27
5:15 PM	0	8	0	0	8	11	0	0	0	11	0	0	0	0	0	19
5:30 PM	0	7	0	0	7	15	0	0	0	15	0	0	0	0	0	22
5:45 PM	0	7	0	0	7	6	0	0	0	6	0	0	0	0	0	13
Hourly Total	0	30	0	0	30	51	0	0	0	51	0	0	0	0	0	81
Grand Total	1	792	0	1	793	876	0	0	0	876	0	0	0	3	0	1669
Approach %	0.1	99.9	0.0	-	-	100.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-
Total %	0.1	47.5	0.0	-	47.5	52.5	0.0	0.0	-	52.5	0.0	0.0	0.0	-	0.0	-
Motorcycles	0	2	0	-	2	2	0	0	-	2	0	0	0	-	0	4
% Motorcycles	0.0	0.3	-	-	0.3	0.2	-	-	-	0.2	-	-	-	-	-	0.2
Cars & Light Goods	1	601	0	-	602	692	0	0	-	692	0	0	0	-	0	1294
% Cars & Light Goods	100.0	75.9	-	-	75.9	79.0	-	-	-	79.0	-	-	-	-	-	77.5
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
Single-Unit Trucks	0	88	0	-	88	80	0	0	-	80	0	0	0	-	0	168
% Single-Unit Trucks	0.0	11.1	-	-	11.1	9.1	-	-	-	9.1	-	-	-	-	-	10.1
Articulated Trucks	0	101	0	-	101	102	0	0	-	102	0	0	0	-	0	203
% Articulated Trucks	0.0	12.8	-	-	12.7	11.6	-	-	-	11.6	-	-	-	-	-	12.2
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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	3	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: 260 Waydom Drive
Site Code: 250591
Start Date: 09/10/2025



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: 260 Waydom Drive
Site Code: 250591
Start Date: 09/10/2025

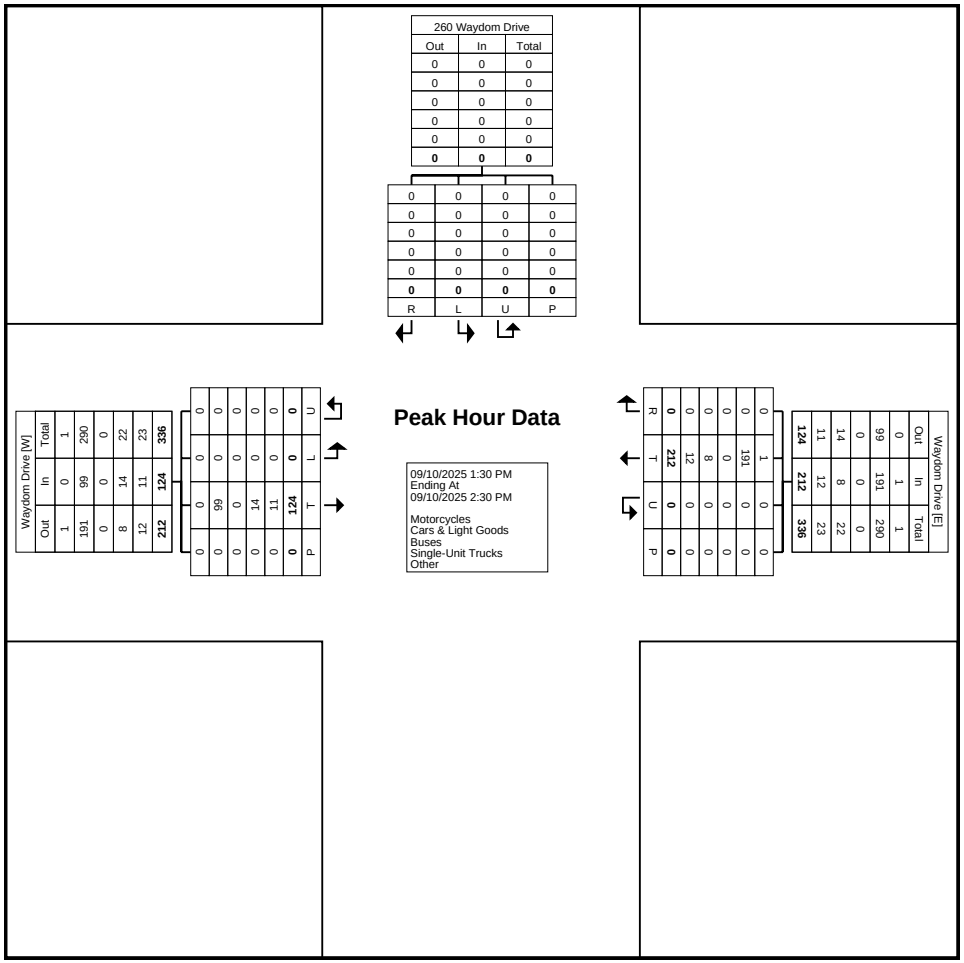
Turning Movement Peak Hour Data (1:30 PM)

Start Time	Waydom Drive Eastbound					Waydom Drive Westbound					260 Waydom Drive Driveway Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
1:30 PM	0	50	0	0	50	18	0	0	0	18	0	0	0	0	0	68
1:45 PM	0	50	0	0	50	12	0	0	0	12	0	0	0	0	0	62
2:00 PM	0	18	0	0	18	137	0	0	0	137	0	0	0	0	0	155
2:15 PM	0	6	0	0	6	45	0	0	0	45	0	0	0	0	0	51
Total	0	124	0	0	124	212	0	0	0	212	0	0	0	0	0	336
Approach %	0.0	100.0	0.0	-	-	100.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	36.9	0.0	-	36.9	63.1	0.0	0.0	-	63.1	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.620	0.000	-	0.620	0.387	0.000	0.000	-	0.387	0.000	0.000	0.000	-	0.000	0.542
Motorcycles	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Motorcycles	-	0.0	-	-	0.0	0.5	-	-	-	0.5	-	-	-	-	-	0.3
Cars & Light Goods	0	99	0	-	99	191	0	0	-	191	0	0	0	-	0	290
% Cars & Light Goods	-	79.8	-	-	79.8	90.1	-	-	-	90.1	-	-	-	-	-	86.3
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
Single-Unit Trucks	0	14	0	-	14	8	0	0	-	8	0	0	0	-	0	22
% Single-Unit Trucks	-	11.3	-	-	11.3	3.8	-	-	-	3.8	-	-	-	-	-	6.5
Articulated Trucks	0	11	0	-	11	12	0	0	-	12	0	0	0	-	0	23
% Articulated Trucks	-	8.9	-	-	8.9	5.7	-	-	-	5.7	-	-	-	-	-	6.8
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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: 260 Waydom Drive
Site Code: 250591
Start Date: 09/10/2025



Turning Movement Peak Hour Data Plot (1:30 PM)

Appendix C

Base Year Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	3	14	28	3	9	41	183	101	63	230	14
Future Volume (vph)	3	3	14	28	3	9	41	183	101	63	230	14
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.905			0.970			0.958			0.994	
Flt Protected		0.993			0.966			0.994			0.990	
Satd. Flow (prot)	0	951	0	0	946	0	0	1328	0	0	1461	0
Flt Permitted		0.993			0.966			0.994			0.990	
Satd. Flow (perm)	0	951	0	0	946	0	0	1328	0	0	1461	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	64%	67%	0%	22%	15%	7%	13%	7%	2%	7%
Adj. Flow (vph)	3	3	14	28	3	9	41	183	101	63	230	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	40	0	0	325	0	0	307	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			

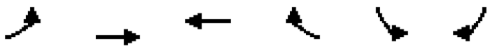
Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	14	28	3	9	41	183	101	63	230	14
Future Vol, veh/h	3	3	14	28	3	9	41	183	101	63	230	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	64	67	0	22	15	7	13	7	2	7
Mvmt Flow	3	3	14	28	3	9	41	183	101	63	230	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	630	729	237	673	686	234	244	0	0	284	0	0
Stage 1	363	363	-	316	316	-	-	-	-	-	-	-
Stage 2	267	366	-	358	370	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.84	7.77	6.5	6.42	4.25	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.876	4.103	4	3.498	2.335	-	-	2.263	-	-
Pot Cap-1 Maneuver	397	352	671	294	373	759	1250	-	-	1250	-	-
Stage 1	660	628	-	577	659	-	-	-	-	-	-	-
Stage 2	743	626	-	545	624	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	352	318	671	258	337	759	1250	-	-	1250	-	-
Mov Cap-2 Maneuver	352	318	-	258	337	-	-	-	-	-	-	-
Stage 1	621	591	-	554	633	-	-	-	-	-	-	-
Stage 2	702	601	-	500	587	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.27	18.35	1.01	1.65
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	212	-	-	515	310	365	-	-
HCM Lane V/C Ratio	0.033	-	-	0.039	0.129	0.05	-	-
HCM Ctrl Dly (s/v)	8	0	-	12.3	18.3	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.2	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	122	35	0	0	1
Future Volume (vph)	4	122	35	0	0	1
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1433	1165	0	1480	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1433	1165	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Confl. Peds. (#/hr)	2			2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	14%	40%	2%	2%	2%
Adj. Flow (vph)	4	122	35	0	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	126	35	0	1	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	122	35	0	0	1
Future Vol, veh/h	4	122	35	0	0	1
Conflicting Peds, #/hr	2	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	14	40	2	2	2
Mvmt Flow	4	122	35	0	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	167	38
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	130	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1574	-	-	-	823	1034
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	818	1031
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.23	0	8.49
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	57	-	-	-	1031
HCM Lane V/C Ratio	0.003	-	-	-	0.001
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	2	51	149	1	79	37	238	42	14	184	9
Future Volume (vph)	17	2	51	149	1	79	37	238	42	14	184	9
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.953			0.982			0.994	
Flt Protected		0.988			0.968			0.994			0.997	
Satd. Flow (prot)	0	1128	0	0	1315	0	0	1310	0	0	1440	0
Flt Permitted		0.988			0.968			0.994			0.997	
Satd. Flow (perm)	0	1128	0	0	1315	0	0	1310	0	0	1440	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	29%	11%	0%	1%	51%	2%	51%	21%	4%	11%
Adj. Flow (vph)	17	2	51	149	1	79	37	238	42	14	184	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	0	229	0	0	317	0	0	207	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

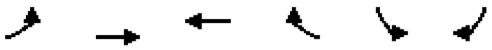
Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	2	51	149	1	79	37	238	42	14	184	9
Future Vol, veh/h	17	2	51	149	1	79	37	238	42	14	184	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	29	11	0	1	51	2	51	21	4	11
Mvmt Flow	17	2	51	149	1	79	37	238	42	14	184	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	529	571	189	546	554	259	193	0	0	280	0	0
Stage 1	217	217	-	333	333	-	-	-	-	-	-	-
Stage 2	313	354	-	213	221	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.21	6.5	6.21	4.61	-	-	4.31	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.599	4	3.309	2.659	-	-	2.389	-	-
Pot Cap-1 Maneuver	463	434	789	435	443	782	1135	-	-	1181	-	-
Stage 1	790	727	-	662	647	-	-	-	-	-	-	-
Stage 2	702	634	-	769	724	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	394	411	789	384	420	782	1135	-	-	1181	-	-
Mov Cap-2 Maneuver	394	411	-	384	420	-	-	-	-	-	-	-
Stage 1	780	718	-	636	622	-	-	-	-	-	-	-
Stage 2	606	609	-	708	715	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.53	19.96	0.97	0.55
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	204	-	-	622	466	121	-	-
HCM Lane V/C Ratio	0.033	-	-	0.113	0.491	0.012	-	-
HCM Ctrl Dly (s/v)	8.3	0	-	11.5	20	8.1	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	2.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	29	158	0	0	4
Future Volume (vph)	1	29	158	0	0	4
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1083	1554	0	1480	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1083	1554	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	52%	5%	2%	2%	2%
Adj. Flow (vph)	1	29	158	0	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	30	158	0	4	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	29	158	0	0	4
Future Vol, veh/h	1	29	158	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	52	5	2	2	2
Mvmt Flow	1	29	158	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	158	0	-	0	189	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1422	-	-	-	800	887
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	992	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1422	-	-	-	799	887
Mov Cap-2 Maneuver	-	-	-	-	799	-
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	992	-

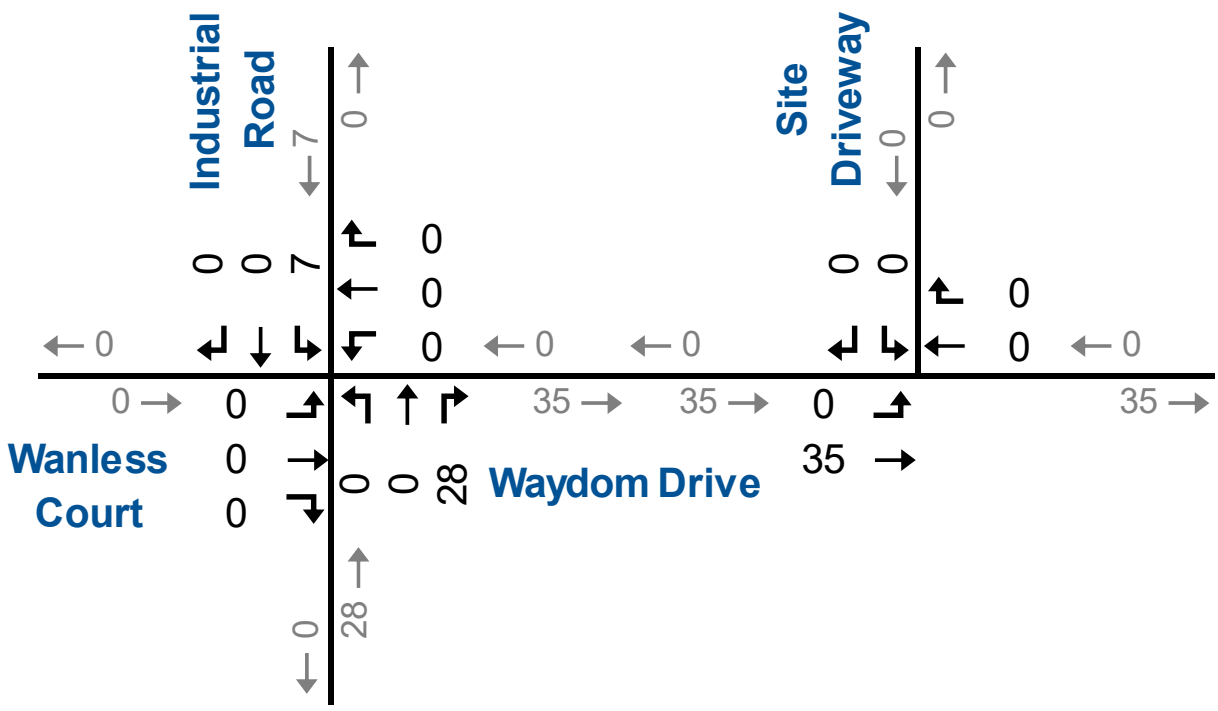
Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.25	0	9.08
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	60	-	-	-	887
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

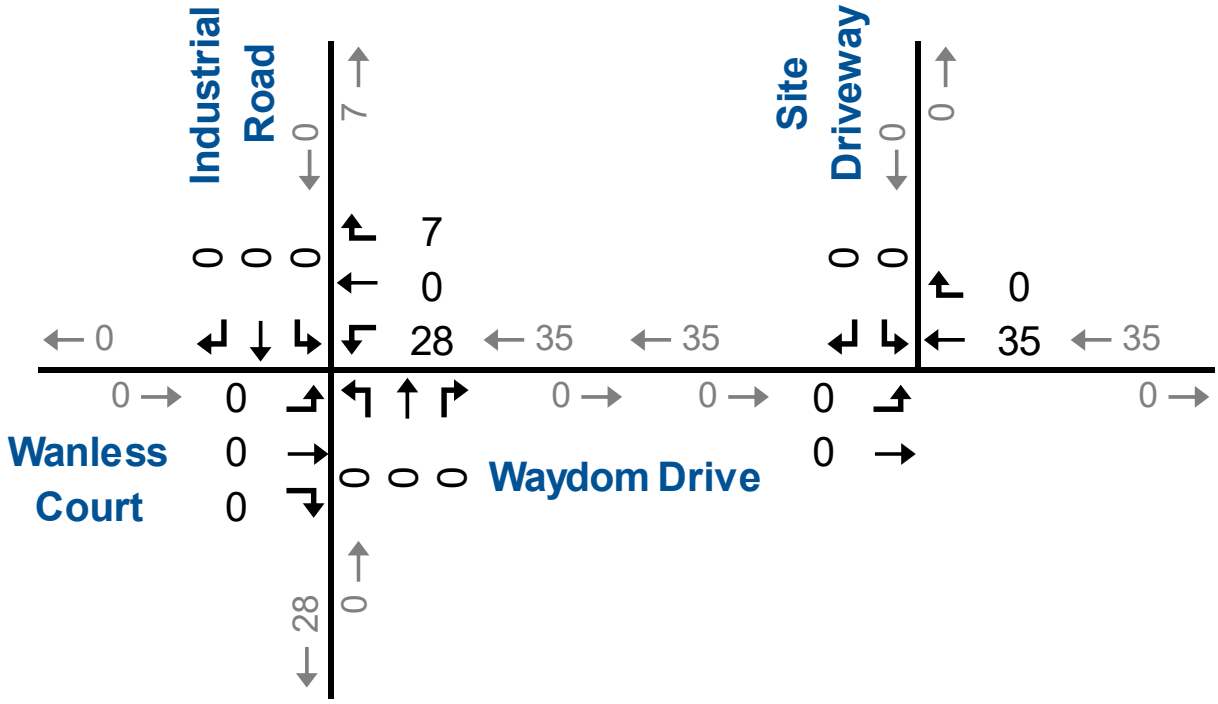
Appendix D

Background Development Traffic Volumes

AM Peak Hour



AM Peak Hour



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Background Development Traffic Volumes

Appendix E

Five-Year Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	3	15	31	3	10	45	202	140	77	254	15
Future Volume (vph)	3	3	15	31	3	10	45	202	140	77	254	15
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.904			0.969			0.951			0.994	
Flt Protected		0.993			0.966			0.994			0.989	
Satd. Flow (prot)	0	944	0	0	943	0	0	1316	0	0	1458	0
Flt Permitted		0.993			0.966			0.994			0.989	
Satd. Flow (perm)	0	944	0	0	943	0	0	1316	0	0	1458	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	64%	67%	0%	22%	15%	7%	13%	7%	2%	7%
Adj. Flow (vph)	3	3	15	31	3	10	45	202	140	77	254	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	44	0	0	387	0	0	346	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

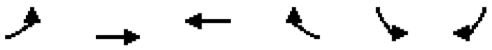
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	15	31	3	10	45	202	140	77	254	15
Future Vol, veh/h	3	3	15	31	3	10	45	202	140	77	254	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	64	67	0	22	15	7	13	7	2	7
Mvmt Flow	3	3	15	31	3	10	45	202	140	77	254	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	709	848	262	772	785	272	269	0	0	342	0	0
Stage 1	416	416	-	362	362	-	-	-	-	-	-	-
Stage 2	294	432	-	410	423	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.84	7.77	6.5	6.42	4.25	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.876	4.103	4	3.498	2.335	-	-	2.263	-	-
Pot Cap-1 Maneuver	352	301	648	249	327	721	1223	-	-	1190	-	-
Stage 1	618	596	-	542	629	-	-	-	-	-	-	-
Stage 2	719	586	-	508	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	303	265	648	213	288	721	1223	-	-	1190	-	-
Mov Cap-2 Maneuver	303	265	-	213	288	-	-	-	-	-	-	-
Stage 1	571	550	-	517	600	-	-	-	-	-	-	-
Stage 2	673	559	-	456	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.96	21.75	0.94	1.83
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	193	-	-	473	259	396	-	-
HCM Lane V/C Ratio	0.037	-	-	0.044	0.17	0.065	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	13	21.8	8.2	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.6	0.2	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	170	39	0	0	1
Future Volume (vph)	4	170	39	0	0	1
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.999				
Satd. Flow (prot)	0	1433	1165	0	1480	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1433	1165	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Confl. Peds. (#/hr)	2			2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	14%	40%	2%	2%	2%
Adj. Flow (vph)	4	170	39	0	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	174	39	0	1	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	170	39	0	0	1
Future Vol, veh/h	4	170	39	0	0	1
Conflicting Peds, #/hr	2	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	14	40	2	2	2
Mvmt Flow	4	170	39	0	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	219	42
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	769	1029
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1565	-	-	-	764	1026
Mov Cap-2 Maneuver	-	-	-	-	764	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.17	0	8.51
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	41	-	-	-	1026
HCM Lane V/C Ratio	0.003	-	-	-	0.001
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	2	56	193	1	94	41	263	46	15	203	10
Future Volume (vph)	19	2	56	193	1	94	41	263	46	15	203	10
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.956			0.982			0.994	
Flt Protected		0.988			0.968			0.994			0.997	
Satd. Flow (prot)	0	1128	0	0	1317	0	0	1310	0	0	1441	0
Flt Permitted		0.988			0.968			0.994			0.997	
Satd. Flow (perm)	0	1128	0	0	1317	0	0	1310	0	0	1441	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	29%	11%	0%	1%	51%	2%	51%	21%	4%	11%
Adj. Flow (vph)	19	2	56	193	1	94	41	263	46	15	203	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	0	0	288	0	0	350	0	0	228	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.5%		ICU Level of Service C	
Analysis Period (min) 15			

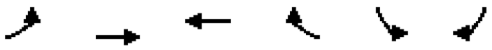
Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	2	56	193	1	94	41	263	46	15	203	10
Future Vol, veh/h	19	2	56	193	1	94	41	263	46	15	203	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	29	11	0	1	51	2	51	21	4	11
Mvmt Flow	19	2	56	193	1	94	41	263	46	15	203	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	584	629	208	602	611	286	213	0	0	309	0	0
Stage 1	238	238	-	368	368	-	-	-	-	-	-	-
Stage 2	346	391	-	234	243	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.21	6.5	6.21	4.61	-	-	4.31	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.599	4	3.309	2.659	-	-	2.389	-	-
Pot Cap-1 Maneuver	426	402	769	399	411	755	1114	-	-	1151	-	-
Stage 1	770	712	-	634	625	-	-	-	-	-	-	-
Stage 2	674	611	-	749	708	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	351	378	769	346	387	755	1114	-	-	1151	-	-
Mov Cap-2 Maneuver	351	378	-	346	387	-	-	-	-	-	-	-
Stage 1	758	701	-	605	597	-	-	-	-	-	-	-
Stage 2	563	583	-	682	698	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.13	30.18	0.98	0.54
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	205	-	-	582	421	117	-	-
HCM Lane V/C Ratio	0.037	-	-	0.132	0.685	0.013	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	12.1	30.2	8.2	0	-
HCM Lane LOS	A	A	-	B	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	32	209	0	0	4
Future Volume (vph)	1	32	209	0	0	4
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1082	1554	0	1480	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1082	1554	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	52%	5%	2%	2%	2%
Adj. Flow (vph)	1	32	209	0	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	33	209	0	4	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	32	209	0	0	4
Future Vol, veh/h	1	32	209	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	52	5	2	2	2
Mvmt Flow	1	32	209	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	209	0	-	0	243	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1362	-	-	-	745	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1362	-	-	-	745	831
Mov Cap-2 Maneuver	-	-	-	-	745	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	988	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.23	0	9.35
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	55	-	-	-	831
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix F

Ten-Year Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	4	17	34	4	11	50	223	151	84	280	17
Future Volume (vph)	4	4	17	34	4	11	50	223	151	84	280	17
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.908			0.970			0.952			0.994	
Flt Protected		0.992			0.966			0.994			0.989	
Satd. Flow (prot)	0	962	0	0	948	0	0	1318	0	0	1458	0
Flt Permitted		0.992			0.966			0.994			0.989	
Satd. Flow (perm)	0	962	0	0	948	0	0	1318	0	0	1458	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	64%	67%	0%	22%	15%	7%	13%	7%	2%	7%
Adj. Flow (vph)	4	4	17	34	4	11	50	223	151	84	280	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	49	0	0	424	0	0	381	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

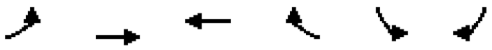
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	4	17	34	4	11	50	223	151	84	280	17
Future Vol, veh/h	4	4	17	34	4	11	50	223	151	84	280	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	64	67	0	22	15	7	13	7	2	7
Mvmt Flow	4	4	17	34	4	11	50	223	151	84	280	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	782	931	289	849	864	299	297	0	0	374	0	0
Stage 1	457	457	-	399	399	-	-	-	-	-	-	-
Stage 2	325	474	-	450	465	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.84	7.77	6.5	6.42	4.25	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.876	4.103	4	3.498	2.335	-	-	2.263	-	-
Pot Cap-1 Maneuver	314	269	625	219	294	696	1194	-	-	1158	-	-
Stage 1	588	571	-	516	606	-	-	-	-	-	-	-
Stage 2	692	561	-	481	566	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	264	232	625	181	254	696	1194	-	-	1158	-	-
Mov Cap-2 Maneuver	264	232	-	181	254	-	-	-	-	-	-	-
Stage 1	536	522	-	488	573	-	-	-	-	-	-	-
Stage 2	639	531	-	424	517	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.13	25.53	0.96	1.84
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	196	-	-	419	224	392	-	-
HCM Lane V/C Ratio	0.042	-	-	0.06	0.219	0.073	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	14.1	25.5	8.4	0	-
HCM Lane LOS	A	A	-	B	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.8	0.2	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	184	43	0	0	1
Future Volume (vph)	4	184	43	0	0	1
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.999				
Satd. Flow (prot)	0	1433	1165	0	1480	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1433	1165	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Confl. Peds. (#/hr)	2			2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	14%	40%	2%	2%	2%
Adj. Flow (vph)	4	184	43	0	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	188	43	0	1	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	184	43	0	0	1
Future Vol, veh/h	4	184	43	0	0	1
Conflicting Peds, #/hr	2	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	14	40	2	2	2
Mvmt Flow	4	184	43	0	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	45	0	-	0	237	46
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	192	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1563	-	-	-	751	1023
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	841	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1560	-	-	-	746	1021
Mov Cap-2 Maneuver	-	-	-	-	746	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	839	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.16	0	8.53
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	38	-	-	-	1021
HCM Lane V/C Ratio	0.003	-	-	-	0.001
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	2	62	210	1	103	45	290	51	17	224	11
Future Volume (vph)	21	2	62	210	1	103	45	290	51	17	224	11
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.956			0.982			0.994	
Flt Protected		0.988			0.968			0.994			0.997	
Satd. Flow (prot)	0	1127	0	0	1317	0	0	1310	0	0	1440	0
Flt Permitted		0.988			0.968			0.994			0.997	
Satd. Flow (perm)	0	1127	0	0	1317	0	0	1310	0	0	1440	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	29%	11%	0%	1%	51%	2%	51%	21%	4%	11%
Adj. Flow (vph)	21	2	62	210	1	103	45	290	51	17	224	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	314	0	0	386	0	0	252	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

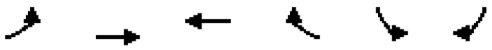
Intersection	
Int Delay, s/veh	15.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	2	62	210	1	103	45	290	51	17	224	11
Future Vol, veh/h	21	2	62	210	1	103	45	290	51	17	224	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	29	11	0	1	51	2	51	21	4	11
Mvmt Flow	21	2	62	210	1	103	45	290	51	17	224	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	644	695	230	665	675	316	235	0	0	341	0	0
Stage 1	264	264	-	406	406	-	-	-	-	-	-	-
Stage 2	381	431	-	259	269	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.21	6.5	6.21	4.61	-	-	4.31	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.599	4	3.309	2.659	-	-	2.389	-	-
Pot Cap-1 Maneuver	389	369	747	362	378	727	1092	-	-	1119	-	-
Stage 1	746	694	-	604	602	-	-	-	-	-	-	-
Stage 2	646	586	-	726	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	310	344	747	308	353	727	1092	-	-	1119	-	-
Mov Cap-2 Maneuver	310	344	-	308	353	-	-	-	-	-	-	-
Stage 1	733	682	-	574	571	-	-	-	-	-	-	-
Stage 2	525	556	-	652	678	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.85	46.61	0.98	0.56
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	204	-	-	543	380	120	-	-
HCM Lane V/C Ratio	0.041	-	-	0.157	0.827	0.015	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	12.9	46.6	8.3	0	-
HCM Lane LOS	A	A	-	B	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	7.5	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	35	228	0	0	4
Future Volume (vph)	1	35	228	0	0	4
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.999				
Satd. Flow (prot)	0	1082	1554	0	1480	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1082	1554	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	52%	5%	2%	2%	2%
Adj. Flow (vph)	1	35	228	0	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	36	228	0	4	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	35	228	0	0	4
Future Vol, veh/h	1	35	228	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	52	5	2	2	2
Mvmt Flow	1	35	228	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	228	0	-	0	265	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1340	-	-	-	724	811
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1340	-	-	-	724	811
Mov Cap-2 Maneuver	-	-	-	-	724	-
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.21	0	9.46
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	50	-	-	-	811
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.7	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix G

Five-Year Total Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	3	15	32	3	10	45	202	142	78	254	15
Future Volume (vph)	3	3	15	32	3	10	45	202	142	78	254	15
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.904			0.970			0.951			0.994	
Flt Protected		0.993			0.966			0.994			0.989	
Satd. Flow (prot)	0	944	0	0	942	0	0	1316	0	0	1458	0
Flt Permitted		0.993			0.966			0.994			0.989	
Satd. Flow (perm)	0	944	0	0	942	0	0	1316	0	0	1458	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	64%	67%	0%	22%	15%	7%	13%	7%	2%	7%
Adj. Flow (vph)	3	3	15	32	3	10	45	202	142	78	254	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	45	0	0	389	0	0	347	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

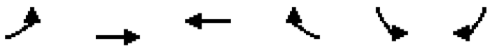
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	15	32	3	10	45	202	142	78	254	15
Future Vol, veh/h	3	3	15	32	3	10	45	202	142	78	254	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	64	67	0	22	15	7	13	7	2	7
Mvmt Flow	3	3	15	32	3	10	45	202	142	78	254	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	711	852	262	775	788	273	269	0	0	344	0	0
Stage 1	418	418	-	363	363	-	-	-	-	-	-	-
Stage 2	294	434	-	412	425	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.84	7.77	6.5	6.42	4.25	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.876	4.103	4	3.498	2.335	-	-	2.263	-	-
Pot Cap-1 Maneuver	351	299	648	248	326	720	1223	-	-	1188	-	-
Stage 1	617	594	-	541	628	-	-	-	-	-	-	-
Stage 2	719	585	-	507	590	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	301	263	648	211	286	720	1223	-	-	1188	-	-
Mov Cap-2 Maneuver	301	263	-	211	286	-	-	-	-	-	-	-
Stage 1	569	548	-	516	599	-	-	-	-	-	-	-
Stage 2	673	557	-	454	544	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.98	22.05	0.93	1.85
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	192	-	-	472	256	400	-	-
HCM Lane V/C Ratio	0.037	-	-	0.044	0.176	0.066	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	13	22	8.2	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.6	0.2	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	170	39	0	0	2
Future Volume (vph)	7	170	39	0	0	2
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1434	1165	0	1480	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1434	1165	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Confl. Peds. (#/hr)	2			2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	14%	40%	2%	2%	2%
Adj. Flow (vph)	7	170	39	0	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	177	39	0	2	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	170	39	0	0	2
Future Vol, veh/h	7	170	39	0	0	2
Conflicting Peds, #/hr	2	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	14	40	2	2	2
Mvmt Flow	7	170	39	0	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	225	42
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	763	1029
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1565	-	-	-	757	1026
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.29	0	8.52
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	71	-	-	-	1026
HCM Lane V/C Ratio	0.004	-	-	-	0.002
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	2	56	195	1	95	41	263	47	15	203	10
Future Volume (vph)	19	2	56	195	1	95	41	263	47	15	203	10
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.956			0.982			0.994	
Flt Protected		0.988			0.968			0.994			0.997	
Satd. Flow (prot)	0	1128	0	0	1317	0	0	1309	0	0	1441	0
Flt Permitted		0.988			0.968			0.994			0.997	
Satd. Flow (perm)	0	1128	0	0	1317	0	0	1309	0	0	1441	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	29%	11%	0%	1%	51%	2%	51%	21%	4%	11%
Adj. Flow (vph)	19	2	56	195	1	95	41	263	47	15	203	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	0	0	291	0	0	351	0	0	228	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

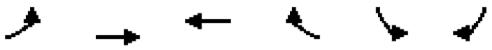
Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	2	56	195	1	95	41	263	47	15	203	10
Future Vol, veh/h	19	2	56	195	1	95	41	263	47	15	203	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	29	11	0	1	51	2	51	21	4	11
Mvmt Flow	19	2	56	195	1	95	41	263	47	15	203	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	584	630	208	603	612	287	213	0	0	310	0	0
Stage 1	238	238	-	369	369	-	-	-	-	-	-	-
Stage 2	346	392	-	234	243	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.21	6.5	6.21	4.61	-	-	4.31	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.599	4	3.309	2.659	-	-	2.389	-	-
Pot Cap-1 Maneuver	426	401	769	398	411	755	1114	-	-	1150	-	-
Stage 1	770	712	-	633	625	-	-	-	-	-	-	-
Stage 2	674	610	-	749	708	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	350	378	769	346	387	755	1114	-	-	1150	-	-
Mov Cap-2 Maneuver	350	378	-	346	387	-	-	-	-	-	-	-
Stage 1	758	701	-	605	597	-	-	-	-	-	-	-
Stage 2	562	583	-	682	698	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.13	30.7	0.98	0.54
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	204	-	-	581	420	117	-	-
HCM Lane V/C Ratio	0.037	-	-	0.132	0.692	0.013	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	12.1	30.7	8.2	0	-
HCM Lane LOS	A	A	-	B	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	5.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	32	209	0	0	7
Future Volume (vph)	2	32	209	0	0	7
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.997				
Satd. Flow (prot)	0	1091	1554	0	1480	0
Flt Permitted		0.997				
Satd. Flow (perm)	0	1091	1554	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	52%	5%	2%	2%	2%
Adj. Flow (vph)	2	32	209	0	0	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	34	209	0	7	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	32	209	0	0	7
Future Vol, veh/h	2	32	209	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	52	5	2	2	2
Mvmt Flow	2	32	209	0	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	209	0	-	0	245	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	36	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1362	-	-	-	743	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1362	-	-	-	742	831
Mov Cap-2 Maneuver	-	-	-	-	742	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	986	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.45	0	9.37
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	106	-	-	-	831
HCM Lane V/C Ratio	0.001	-	-	-	0.008
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix H

Ten-Year Total Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	4	17	35	4	11	50	223	153	85	280	17
Future Volume (vph)	4	4	17	35	4	11	50	223	153	85	280	17
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.908			0.970			0.952			0.994	
Flt Protected		0.992			0.966			0.994			0.989	
Satd. Flow (prot)	0	962	0	0	947	0	0	1317	0	0	1458	0
Flt Permitted		0.992			0.966			0.994			0.989	
Satd. Flow (perm)	0	962	0	0	947	0	0	1317	0	0	1458	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	64%	67%	0%	22%	15%	7%	13%	7%	2%	7%
Adj. Flow (vph)	4	4	17	35	4	11	50	223	153	85	280	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	50	0	0	426	0	0	382	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.7%		ICU Level of Service B	
Analysis Period (min) 15			

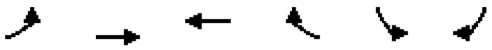
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	4	17	35	4	11	50	223	153	85	280	17
Future Vol, veh/h	4	4	17	35	4	11	50	223	153	85	280	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	64	67	0	22	15	7	13	7	2	7
Mvmt Flow	4	4	17	35	4	11	50	223	153	85	280	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	784	935	289	852	867	300	297	0	0	376	0	0
Stage 1	459	459	-	400	400	-	-	-	-	-	-	-
Stage 2	325	476	-	452	467	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.84	7.77	6.5	6.42	4.25	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.77	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.876	4.103	4	3.498	2.335	-	-	2.263	-	-
Pot Cap-1 Maneuver	313	268	625	218	293	695	1194	-	-	1156	-	-
Stage 1	586	570	-	515	605	-	-	-	-	-	-	-
Stage 2	692	560	-	480	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	262	231	625	180	253	695	1194	-	-	1156	-	-
Mov Cap-2 Maneuver	262	231	-	180	253	-	-	-	-	-	-	-
Stage 1	534	520	-	487	573	-	-	-	-	-	-	-
Stage 2	639	530	-	422	515	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.16	25.93	0.96	1.86
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	195	-	-	418	221	396	-	-
HCM Lane V/C Ratio	0.042	-	-	0.06	0.226	0.074	-	-
HCM Ctrl Dly (s/v)	8.1	0	-	14.2	25.9	8.4	0	-
HCM Lane LOS	A	A	-	B	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.8	0.2	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	184	43	0	0	2
Future Volume (vph)	7	184	43	0	0	2
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected		0.998				
Satd. Flow (prot)	0	1434	1165	0	1480	0
Flt Permitted		0.998				
Satd. Flow (perm)	0	1434	1165	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Confl. Peds. (#/hr)	2			2		1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	14%	40%	2%	2%	2%
Adj. Flow (vph)	7	184	43	0	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	191	43	0	2	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	184	43	0	0	2
Future Vol, veh/h	7	184	43	0	0	2
Conflicting Peds, #/hr	2	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	14	40	2	2	2
Mvmt Flow	7	184	43	0	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	45	0	-	0	243	46
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1563	-	-	-	745	1023
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1560	-	-	-	739	1021
Mov Cap-2 Maneuver	-	-	-	-	739	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.27	0	8.53
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	66	-	-	-	1021
HCM Lane V/C Ratio	0.004	-	-	-	0.002
HCM Ctrl Dly (s/v)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	2	62	212	1	104	45	290	52	17	224	11
Future Volume (vph)	21	2	62	212	1	104	45	290	52	17	224	11
Ideal Flow (vphpl)	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.956			0.982			0.994	
Flt Protected		0.988			0.968			0.994			0.997	
Satd. Flow (prot)	0	1127	0	0	1317	0	0	1309	0	0	1440	0
Flt Permitted		0.988			0.968			0.994			0.997	
Satd. Flow (perm)	0	1127	0	0	1317	0	0	1309	0	0	1440	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		130.9			140.2			159.0			134.6	
Travel Time (s)		9.4			10.1			9.5			8.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	29%	11%	0%	1%	51%	2%	51%	21%	4%	11%
Adj. Flow (vph)	21	2	62	212	1	104	45	290	52	17	224	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	317	0	0	387	0	0	252	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			

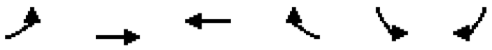
Intersection	
Int Delay, s/veh	16.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	2	62	212	1	104	45	290	52	17	224	11
Future Vol, veh/h	21	2	62	212	1	104	45	290	52	17	224	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	29	11	0	1	51	2	51	21	4	11
Mvmt Flow	21	2	62	212	1	104	45	290	52	17	224	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	644	696	230	665	675	316	235	0	0	342	0	0
Stage 1	264	264	-	406	406	-	-	-	-	-	-	-
Stage 2	381	432	-	259	269	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.21	6.5	6.21	4.61	-	-	4.31	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.21	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.599	4	3.309	2.659	-	-	2.389	-	-
Pot Cap-1 Maneuver	389	368	747	361	378	727	1092	-	-	1118	-	-
Stage 1	746	694	-	604	601	-	-	-	-	-	-	-
Stage 2	646	586	-	726	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	310	343	747	307	352	727	1092	-	-	1118	-	-
Mov Cap-2 Maneuver	310	343	-	307	352	-	-	-	-	-	-	-
Stage 1	733	682	-	573	571	-	-	-	-	-	-	-
Stage 2	524	556	-	652	678	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.86	47.79	0.98	0.56
HCM LOS	B	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	203	-	-	543	379	120	-	-
HCM Lane V/C Ratio	0.041	-	-	0.157	0.836	0.015	-	-
HCM Ctrl Dly (s/v)	8.4	0	-	12.9	47.8	8.3	0	-
HCM Lane LOS	A	A	-	B	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	7.7	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	35	228	0	0	7
Future Volume (vph)	2	35	228	0	0	7
Ideal Flow (vphpl)	1650	1650	1650	1650	1765	1765
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected		0.997				
Satd. Flow (prot)	0	1090	1554	0	1480	0
Flt Permitted		0.997				
Satd. Flow (perm)	0	1090	1554	0	1480	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		384.9	196.9		50.8	
Travel Time (s)		27.7	14.2		3.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	52%	5%	2%	2%	2%
Adj. Flow (vph)	2	35	228	0	0	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	37	228	0	7	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	35	228	0	0	7
Future Vol, veh/h	2	35	228	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	52	5	2	2	2
Mvmt Flow	2	35	228	0	0	7

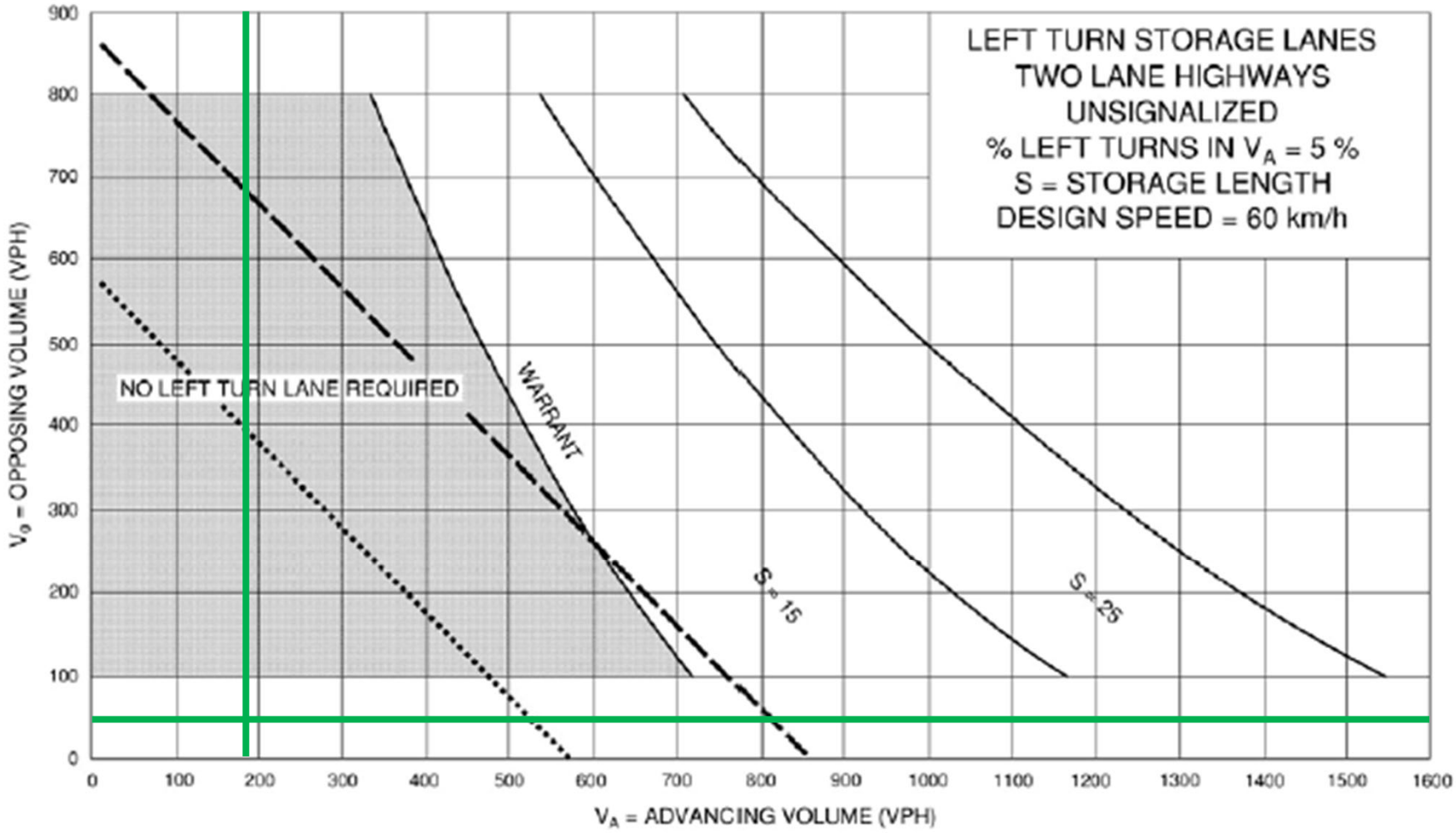
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	228	0	-	0	267	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1340	-	-	-	722	811
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1340	-	-	-	721	811
Mov Cap-2 Maneuver	-	-	-	-	721	-
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	983	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.42	0	9.48
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	97	-	-	-	811
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Ctrl Dly (s/v)	7.7	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Appendix I

Left-Turn Lane Warrant

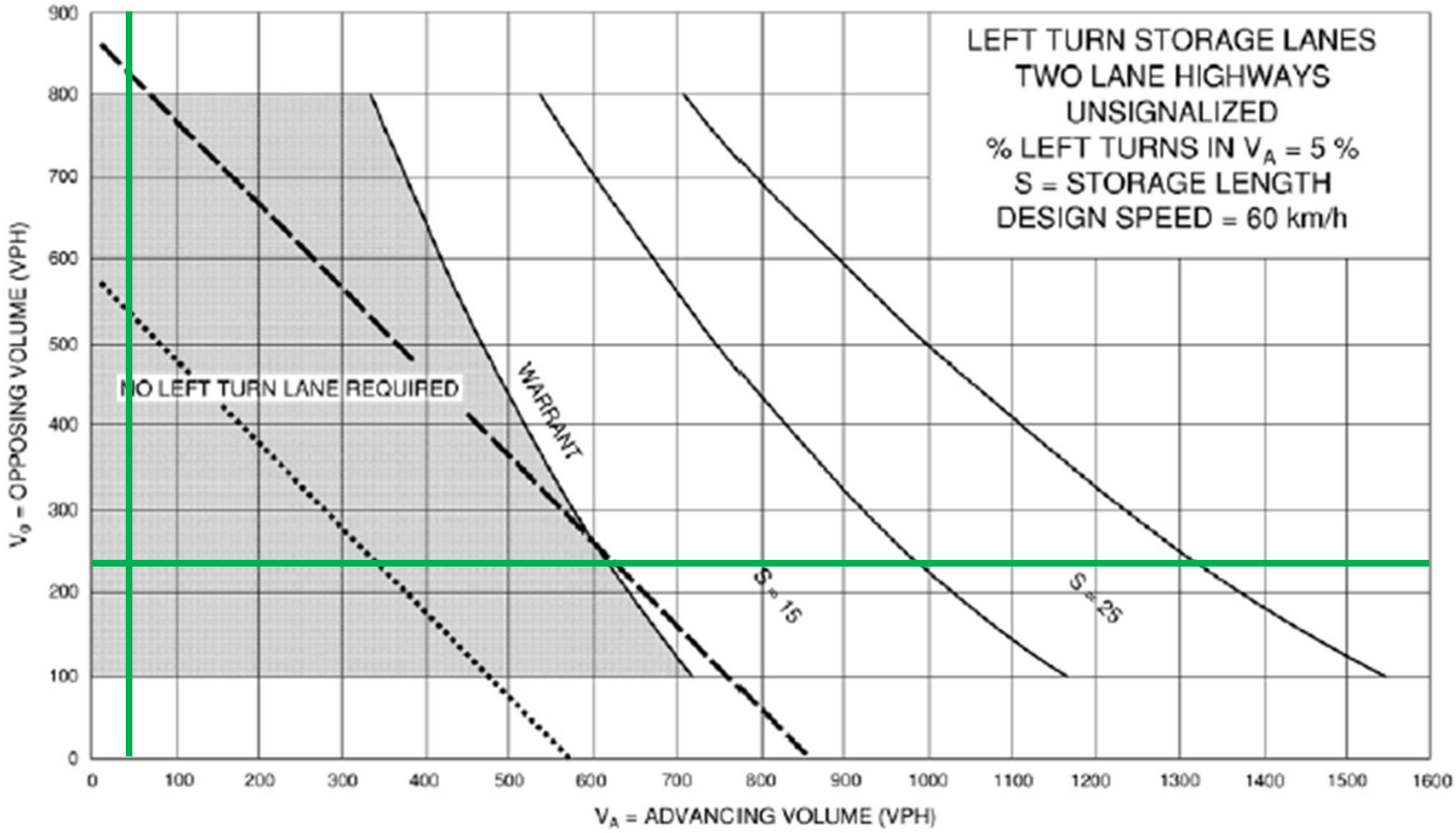


paradigm TRANSPORTATION SOLUTIONS LIMITED

Waydom Drive at Site Driveway
Left-Turn Lane Warrant

260 Waydom Drive, Ayr TIS
250591

Total 2035 (AM Peak Hour)



Waydom Drive at Site Driveway
Left-Turn Lane Warrant

Total 2035 (PM Peak Hour)

260 Waydom Drive, Ayr TIS
250591

Appendix J

Traffic Control Signal Warrant

Signal Justification Calculation for Forecast Volumes
(OTM Book 12 - Justification 7)

Horizon Year: Total 2035
Municipality: Ayr
Project number: 250591

Major Street: Industrial Road
Minor Street: Waydom Drive/Wanless Court
North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
200% Satisfied	No	Case 1: Signal is undoubtedly warranted
100% Satisfied	No	Case 2: Signal might be warranted
		Case 3: Signal warrant is unlikely

	Major Street						Minor Street						
	Industrial Road						Waydom Drive/Wanless Court						
	Northbound			Southbound			Eastbound			Westbound			Peds
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Crossing
AM Peak Hour	50	223	153	85	280	17	4	4	17	35	4	11	0
PM Peak Hour	45	290	52	17	224	11	21	2	62	212	1	104	0
verage Hourly Volum	24	128	51	26	126	7	6	2	20	62	1	29	0

Warrant	AHV
1A - All	481
1B - Minor	119
2A - Major	362
2B - Cross	70

Warrant 1 - Minimum Vehicular Volume

	Approach Lanes	1		2 or more		Average Hourly Volume
1A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	481
					% Fulfilled	66.8%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	119
					% Fulfilled	70.1%

Warrant 2 - Delay To Cross Traffic

	Approach Lanes	1		2 or more		Average Hourly Volume
2A	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	362
					% Fulfilled	50.2%

	Approach Lanes	1		2 or more		Average Hourly Volume
2B	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	70
					% Fulfilled	92.7%

Appendix K

All-Way Stop Control Warrant

All-Way Stop Control - Minimum Volume Warrant Calculation
(OTM Book 5 - Local Roads)

Horizon Year: Total 2035
Region/City/Township: Ayr

Major Street: Industrial Road
Minor Street: Waydom Drive/Wanless Court
3-legged Intersection? No

Time Period	Major Street: Industrial Road						Minor Street: Waydom Drive/Wanless Court						Hourly Total	Peds Crossing Minor Street	Minor Street Veh. + Peds
	Northbound			Southbound			Eastbound			Westbound					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
7:30-8:30 AM	50	223	153	85	280	17	4	4	17	35	4	11	883	0	75
2:00-3:00 PM	51	154	102	13	111	10	11	4	46	179	7	157	845	0	404
4:00-5:00 PM	45	290	52	17	224	11	21	2	62	212	1	104	1041	0	402
5:00-6:00 PM	9	323	40	11	200	2	22	1	61	103	1	49	822	0	237
Total 4-hour Volumes	**155**	**990**	**347**	**126**	**815**	**40**	**58**	**11**	**186**	**529**	**13**	**321**	**3591**	**0**	**1118**

Warrant	AHV
200 vehicles per hour on all approaches?	TRUE
75 vehicles + pedestrians on minor street approach?	FALSE
70/30 vehicle split on major to minor road?	TRUE

major	minor	Split
	2473	1118 68.87%
		31%

Warrant Results		
200 veh/h Satisfied	**Yes**	Justification for all traffic entering intersection
Minor Road 75 units/h Satisfied	**No**	Justification for minor road traffic (vehicles plus pedestrians)
70/30 Volume Split Satisfied	**Yes**	Justification for major road to minor road traffic proportion

An ALL WAY STOP condition WOULD NOT BE recommended for this location under the Local Road Arterial Warrants.