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10 February 2022
Project: 210351

Breymark Homes
1315 Bishop Street North
Cambridge, ON N1R 6Z2

RE: RESIDENTIAL DEVELOPMENT, MAIN STREET & LORNE STREET, PALMERSTON ON, TRANSPORTATION IMPACT BRIEF

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this Transportation Impact Brief for a proposed residential subdivision located on the north side of Main Street and west of Lorne Street in the community of Palmerston, Wellington County. **Figure 1** illustrates the subject site location.

Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impact resulting from the subdivision. The scope, as reviewed with Wellington County staff via email in July 2021, includes:

- Assessment of the current traffic and site conditions within the study area;
- Estimates of background traffic growth for five years from the study date (2026);
- Analyses of the impact of future traffic on the surrounding road network, including the study area intersection of Main Street (Wellington Road 123) and Ontario Street; and
- Recommendations necessary to mitigate the future traffic in a satisfactory manner, if necessary.

Existing Conditions

Road Characteristics

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

- **Main Street (Wellington Road 123)** is an east-west County collector road with a posted speed limit of 50 km/h within the study area. A sidewalk is provided along the southern side of the road throughout the study area. No visible cycling infrastructure is provided along Main Street.

- **Ontario Street** is a north-south laneway with no posted speed limit; therefore, it is assumed the statutory speed limit of 50 km/h governs. Neither sidewalks nor cycling facilities are provided on either side of the road.

Figure 2 details the existing traffic control and lane configurations at the study area intersections.

Traffic Volumes

Paradigm conducted an eight-hour turning movement count at the intersection of Main Street and Ontario Street on Wednesday, 7 July 2021.

Figure 3 displays the existing traffic volumes for the AM and PM peak hours.

Appendix A contains the detailed turning movement counts for the study area intersections.

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 to or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for a signalized intersection, 50 seconds for an unsignalized intersection or when the volume to capacity (v/c) ratio is greater than 1.00, the movement is classified as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations of the study area intersections were evaluated using the existing lane configuration, traffic controls, and the existing traffic AM and PM peak hour volumes. The LOS conditions on the existing road network have been assessed using Synchro 10.

Table 1 summarizes the existing intersection operations with the entries in the table indicating the AM and PM peak hour LOS, v/c ratios, and 95th percentile queues experienced.

The study area intersections are currently operating with acceptable levels of service and within capacity. **Appendix B** contains the detailed Synchro 10 reports.

TABLE 1: EXISTING TRAFFIC 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	Private Driveway/Ontario Street & Main Street West	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	<	9	>	**9**	
			V/C	<	0.00	>		<	0.00	>		<	0.00	>		<	0.00	>		
			Q	<	0	>		<	0	>		<	0	>		<	0	>		
PM Peak Hour	Private Driveway/Ontario Street & Main Street West	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	
			V/C	<	0.00	>		<	0.00	>		<	0.00	>		<	0.00	>		
			Q	<	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 with through movement

Development Concept

Development Description

The subject site is located on the north side of Main Street, west of Lorne Street in Palmerston, Ontario. The property owner is proposing to construct 71 townhouse units.

Vehicle access is proposed via Ontario Street. An additional access will be provided to Mary Street for emergency vehicles only.

Figure 4 illustrates the proposed draft plan of subdivision.

Development Trip Generation

The Institute of Transportation Engineers (ITE) trip generation rates were used to estimate the weekday AM and PM peak hour trip generation of the proposed development. The fitted curve equations of Land Use Code (LUC) 220, Multifamily Housing (Low-Rise), have been used.

Table 2 summarizes the forecast number of trips generated by the proposed development. As shown, the site is expected to generate approximately 34 trips during the AM peak hour and 44 trips during the PM peak hour.

TABLE 2: TRIP GENERATION

Land Use	Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
Multifamily Housing (Low-Rise) - LUC 220	71	Eq[1]	8	26	**34**	Eq[2]	28	16	**44**
Total Trip Generation			**8**	**26**	**34**		**28**	**16**	**44**

[1] $Ln(T) = 0.95\ Ln(X) - 0.51$ [2] $Ln(T) = 0.89\ Ln(X) - 0.02$

Development Trip Distribution and Assignment

The site-generated trips were assigned to the road network using the existing trip distribution and most logical routing to and from the site. The site trips are expected to follow similar routing to the exiting distribution within the study area due to the similar land uses surrounding the subject site.

Table 3 summarizes the estimated trip distribution for the development.

Figure 5 illustrates the site-generated trip assignments for the weekday AM and PM peak hour trips.

TABLE 3: TRIP DISTRIBUTION

Distribution	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
West via Main Street	46%	52%	48%	49%
East via Main Street	52%	46%	49%	49%
Total	**100%**	**100%**	**100%**	**100%**

Future Traffic Conditions

The assessment of future traffic conditions includes background and total traffic five years after the date of this study (2026), as agreed upon with County staff during pre-study consultation.

Background Traffic Volumes

The 2026 future traffic volumes reflect a compounded growth rate of 2.0% per annum applied to the existing through volumes on Main Street. The growth rate was not applied to movements along, to, or from Ontario Street because the road terminates approximately 40 metres north of Main Street, and its volumes are not expected to significantly change within the horizon year.

No other background developments were provided or included in the background traffic volumes. It is assumed that the generalized growth rate would capture the traffic generated by any other development constructed within the horizon year.

Figure 6 illustrates the 2026 forecast background traffic volumes for the weekday AM and PM peak hours.

Background Traffic Operations

Based on the estimated background traffic volumes, level of service analyses have been conducted using Synchro 10 with HCM procedures for the weekday AM and PM peak hour conditions at the study area intersections. The same parameters as in the analysis of the base year conditions were used.

Table 4 summarizes the results of the 2026 background traffic operations. Similar to base year traffic operations, the results indicate that all study area intersections are forecast to operate at acceptable levels of service and within capacity.

Appendix C contains the supporting detailed Synchro 10 reports.

TABLE 4: BACKGROUND TRAFFIC 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	Private Driveway/Ontario Street & Main Street West	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	<	9	>	**9**	
			V/C	<	0.00	>		<	0.00	>		<	0.00	>		<	0.00	>		
			Q	<	0	>		<	0	>		<	0	>		<	0	>		
PM Peak Hour	Private Driveway/Ontario Street & Main Street West	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	<	0	>	**0**	
			V/C	<	0.00	>		<	0.00	>		<	0.00	>		<	0.00	>		
			Q	<	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 with through movement

Total Traffic Volumes

Total traffic volumes include the background forecasts added to the site-generated forecasts. **Figure 7** illustrates the weekday AM and PM peak hour forecast total traffic volumes for the 2026 horizon.

Total Traffic Operations

Based on the estimated total traffic volumes, level of service analyses have been conducted using Synchro 10 with HCM procedures for the weekday AM and PM peak hour conditions at the study area intersections. The same parameters as in the analysis of the base year and background conditions were used.

Table 5 summarizes the results of the 2026 total horizon operations. Similar to background traffic operations, the results indicate that all study area intersections are forecast to operate at acceptable levels of service and within capacity.

Appendix D contains the supporting detailed Synchro 10 reports.

TABLE 5: TOTALTRAFFIC 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	Private Driveway/Ontario Street & Main Street West	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	B	>	**B**	
			Delay	<	8	>	**0**	<	0	>	**0**	<	0	>	**0**	<	11	>	**11**	
			V/C	<	0.00	>		<	0.00	>		<	0.00	>		<	0.04	>		
			Q	<	0	>		<	0	>		<	0	>		<	1	>		
PM Peak Hour	Private Driveway/Ontario Street & Main Street West	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	B	>	**B**	
			Delay	<	8	>	**0**	<	0	>	**0**	<	0	>	**0**	<	12	>	**12**	
			V/C	<	0.01	>		<	0.00	>		<	0.00	>		<	0.03	>		
			Q	<	0	>		<	0	>		<	0	>		<	1	>		

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

Auxiliary Left-Turn Lanes

The intersection of Main Street and Ontario Street was assessed to determine if the forecast future traffic volumes warrant installation of an eastbound left-turn lane. The warrants for left-turn lanes follow the requirements in the Ministry of Transportation of Ontario's (MTO) Design Supplement for Transportation Association of Canada's (TAC) Geometric Design Guide for Canada Roads[1] (TAC-GDGCR). A design speed of 60 km/h (10 km/h over the posted speed limit) was used for the analysis.

The percentages of left-turning vehicles in the approaching volume were rounded to the nearest 5%, as nomographs are provided in 5% increments. This apparent requirement is due to the nature of the warrant procedure that assumes a minimum of 5% of left turning vehicles in the advancing volume.

Table 6 summarizes the left-turn lane warrants for the intersection of Main Street and Ontario Street. The warrant analysis suggests that an eastbound left-turn lane is not warranted under 2026 total traffic conditions.

[1] Ministry of Transportation, Ontario, Design Supplement for TAC Geometric Design Guide for Canadian Roads, June 2017.

TABLE 6: LEFT-TURN LANE WARRANT SUMMARY

Roadway	Eastbound at Main Street and Ontario Street	
Design Speed	60 km/h	
Peak Hour	AM	PM
Advancing Volume	177	275
Opposing Volume	202	277
Left Turning Volume	4	14
% of Left Turning Traffic	2.3%	5.1%
Warranted	No	No
Storage Length	-	-

Based on MTO Design Supplement for TAC-GDGCR

Traffic Signal Warrant

The requirement for traffic signal control at the intersection of Main Street and Ontario Street was assessed using the Ontario Traffic Manual (OTM) signal warrant guidelines[2].

Based on the warrant analysis, traffic signal control is not warranted under the 2026 forecast total traffic conditions at Main Street and Ontario Street.

Appendix E contains the warrant analysis worksheets.

Conclusions & Recommendations

Based on the above analysis, the following is concluded:

- The subject site is forecast to generate 34 AM peak hour trips and 44 PM peak hour trips;
- The existing, forecast background, and forecast total traffic conditions show good operations with no problem movements;
- The addition of the site-generated traffic volumes does not result in the need for an eastbound left-turn storage lane on Main Street at Ontario Street; and
- No changes to the existing lane geometrics are recommended at this time.

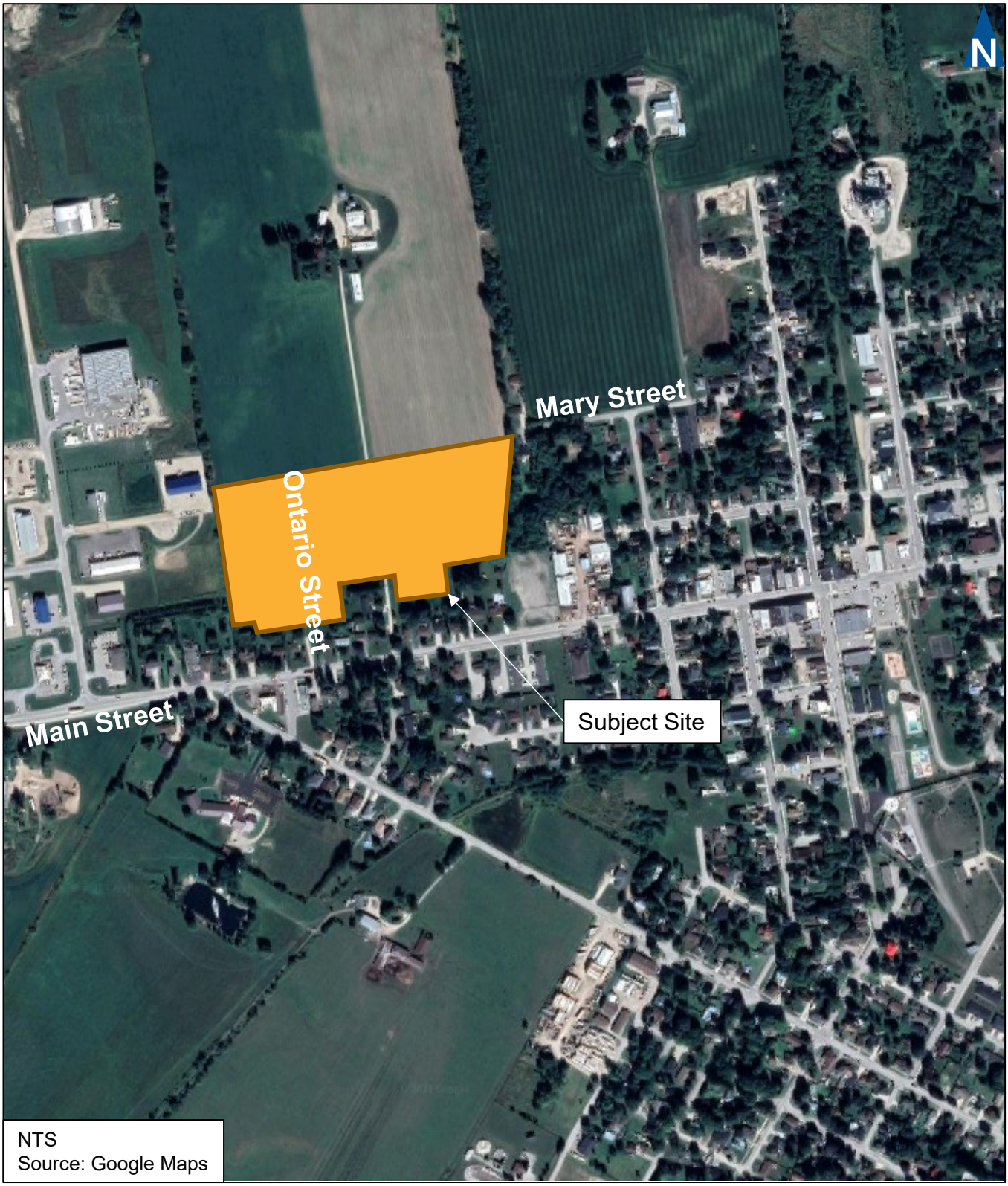
[2] Ontario Traffic Manual Book 12: Traffic Signals, March 2012.

We trust that this letter sufficiently outlines the impacts of the proposed development and its impacts on the surrounding road network.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Erica Bayley
P.Eng.
Senior Project Manager



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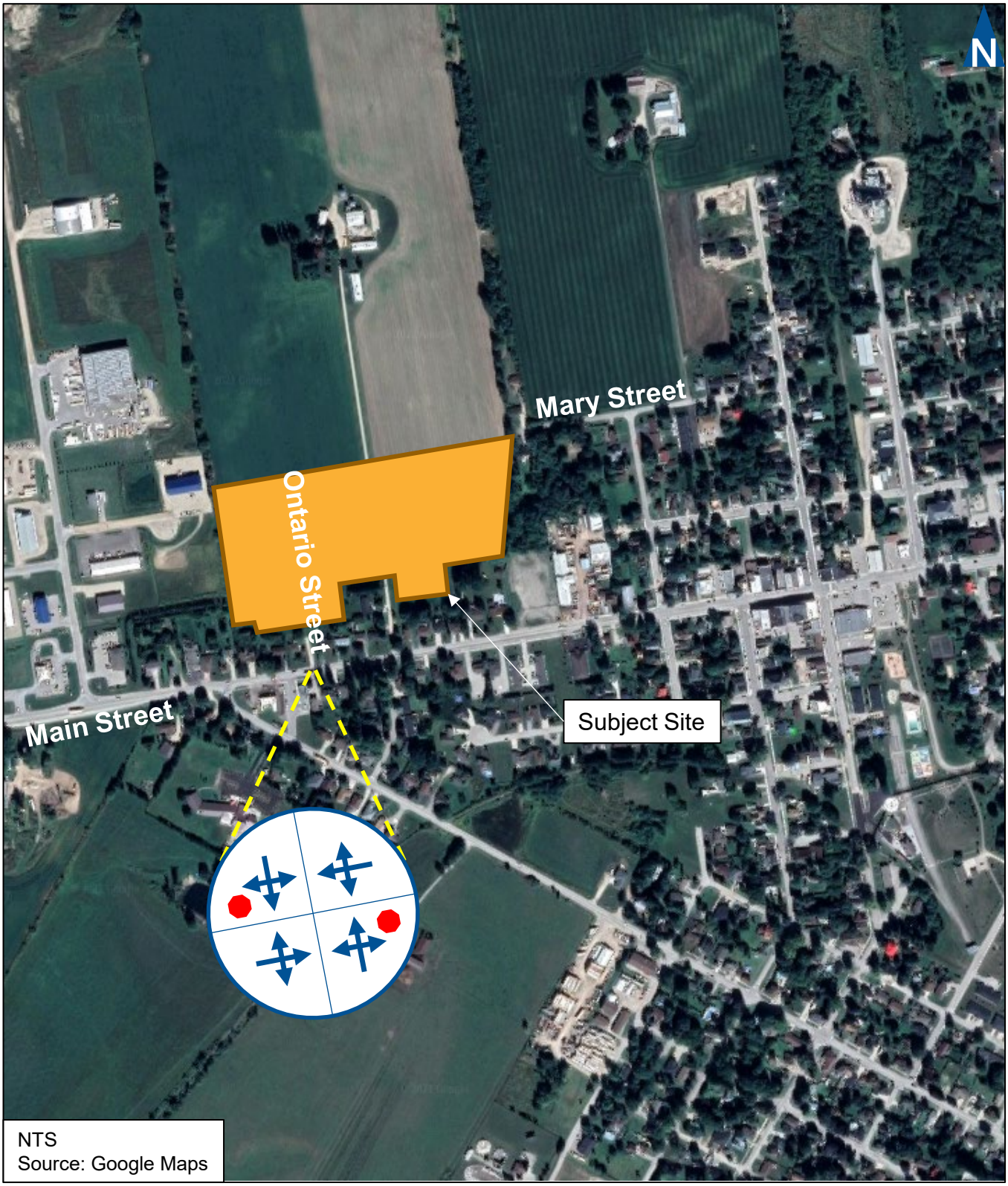
Subject Site Location

Residential Development Palmerston TIB
210351

Figure 1

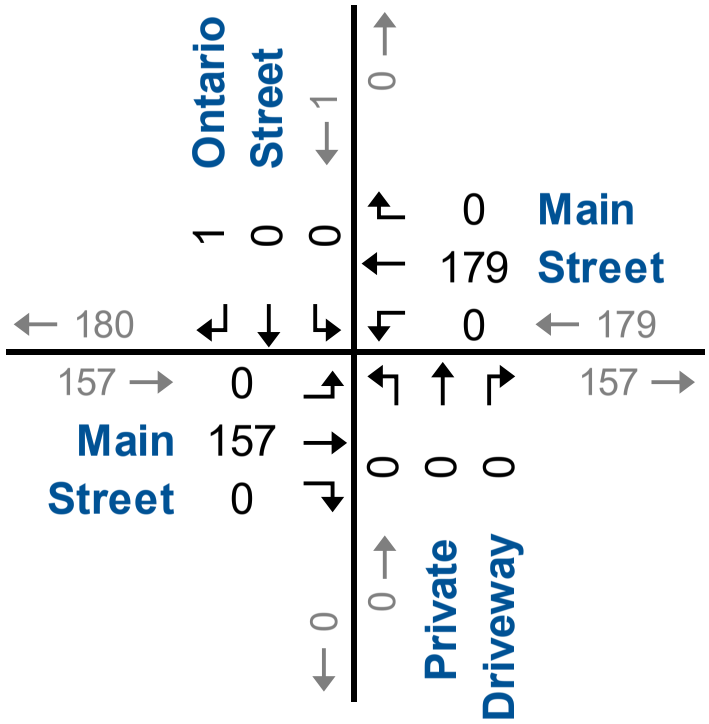


Existing Lane Configuration and Traffic Control

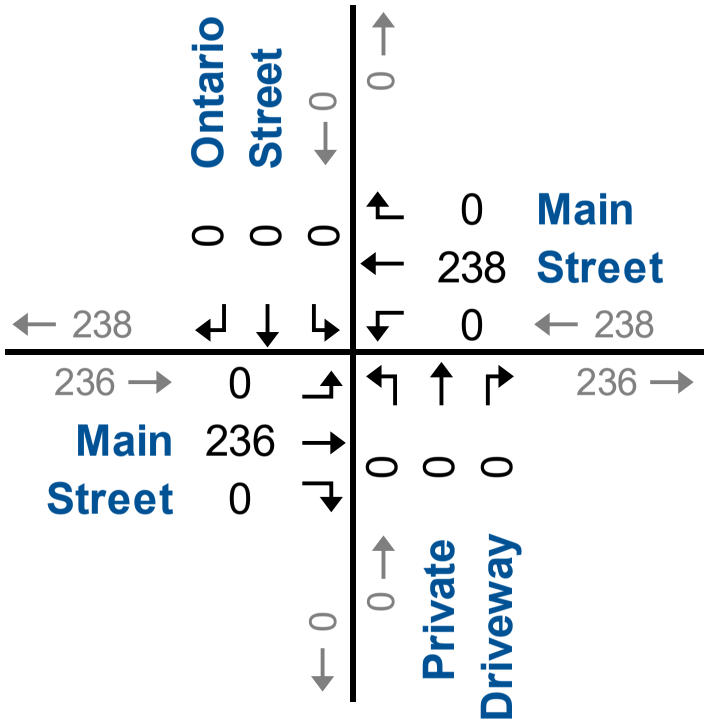
Residential Development Palmerston TIB
210351

Figure 2

AM Peak Hour



PM Peak Hour



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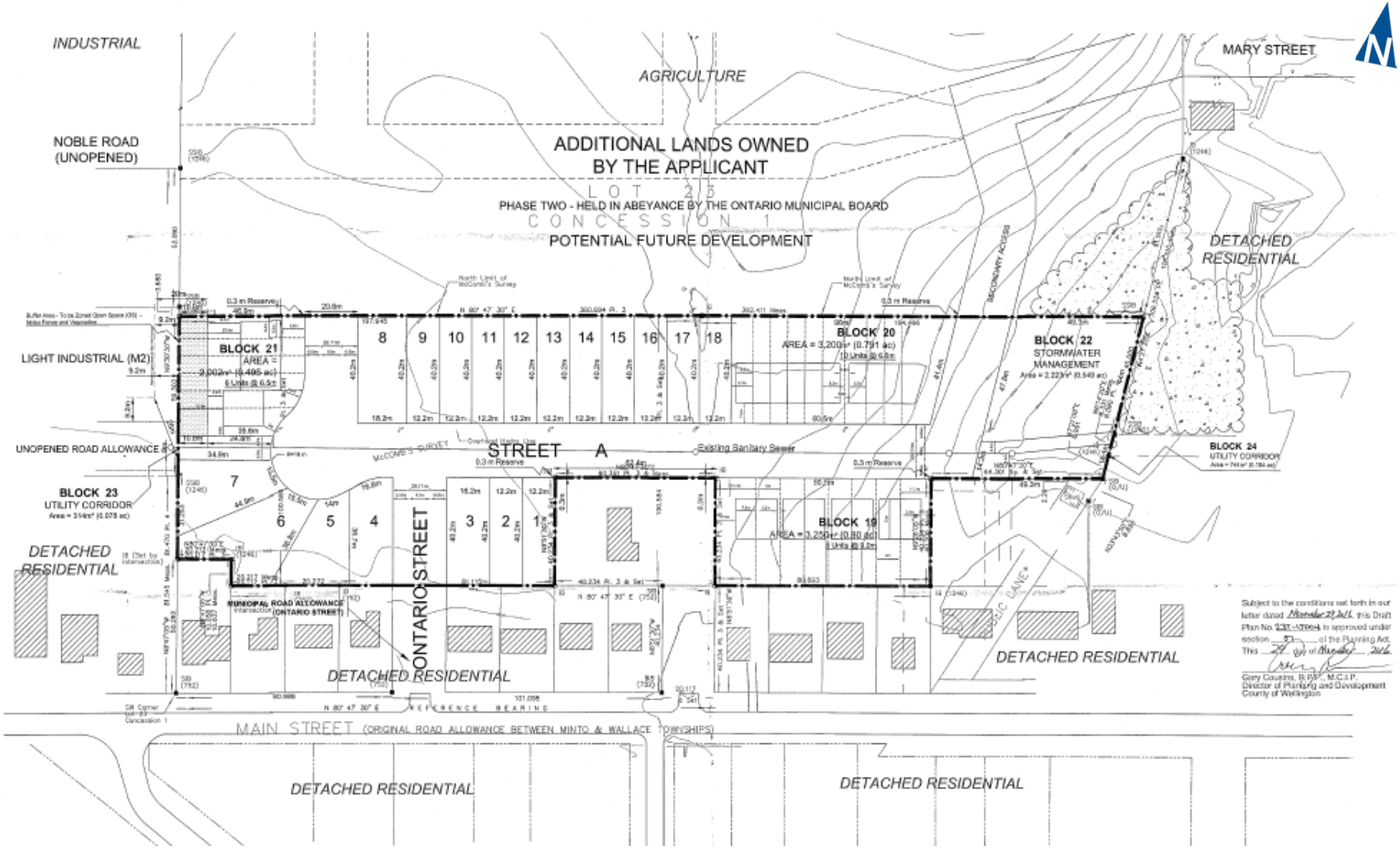
Existing Traffic Volumes



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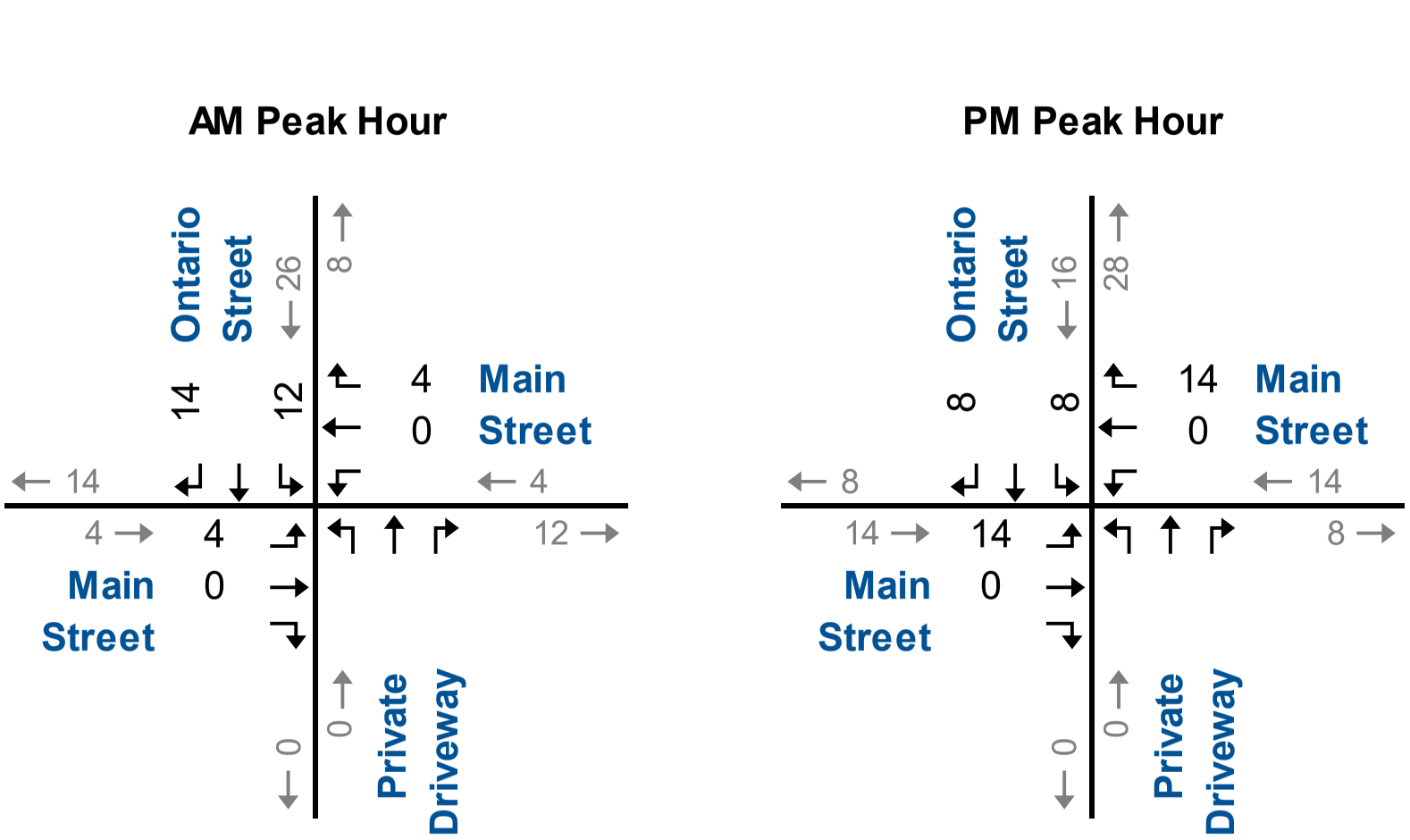
Draft Plan of Subdivision

Residential Development Palmerston TIB
210351

Figure 4



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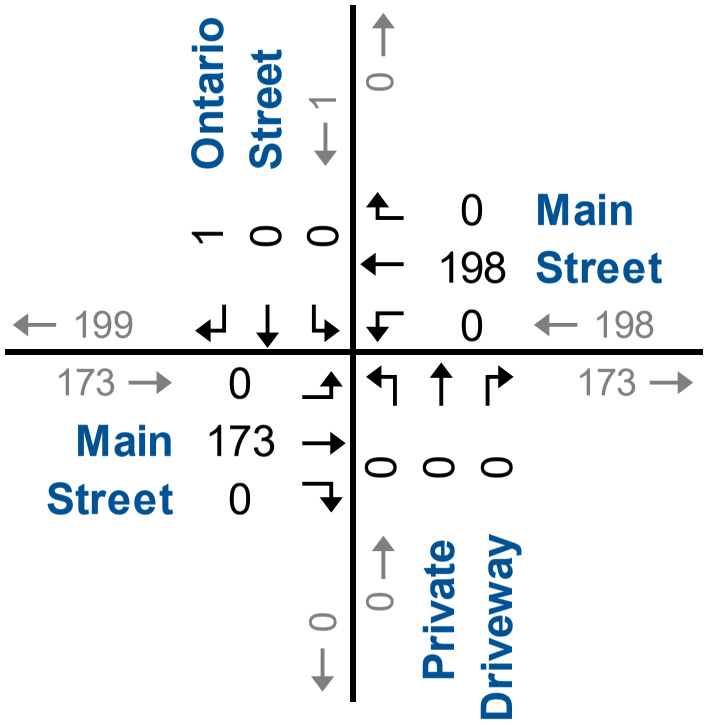
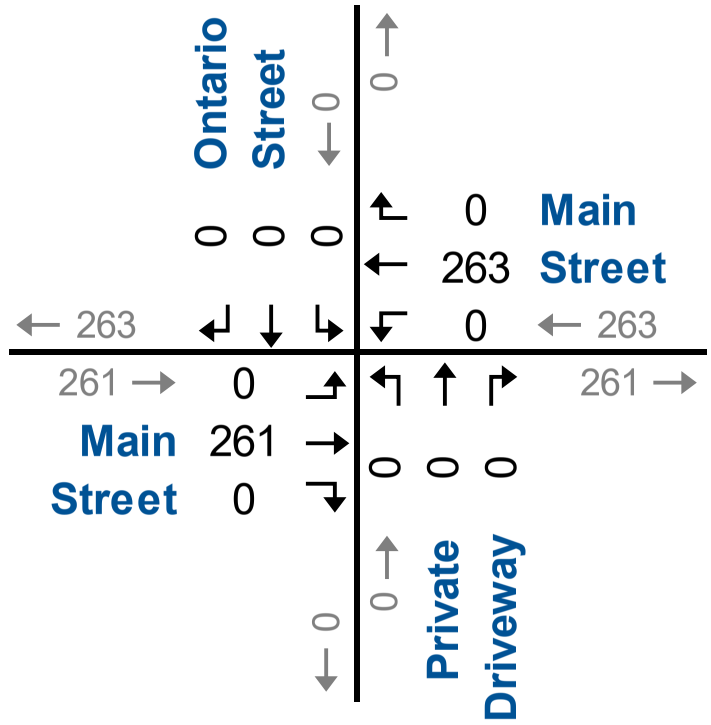
Site-Generated Traffic Volumes

AM Peak Hour



PM Peak Hour

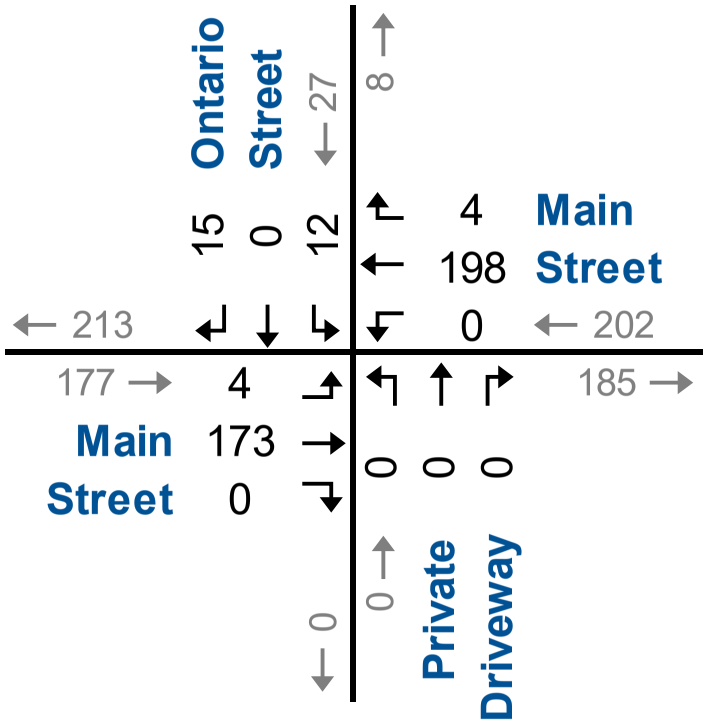


2026 Background Traffic Volumes

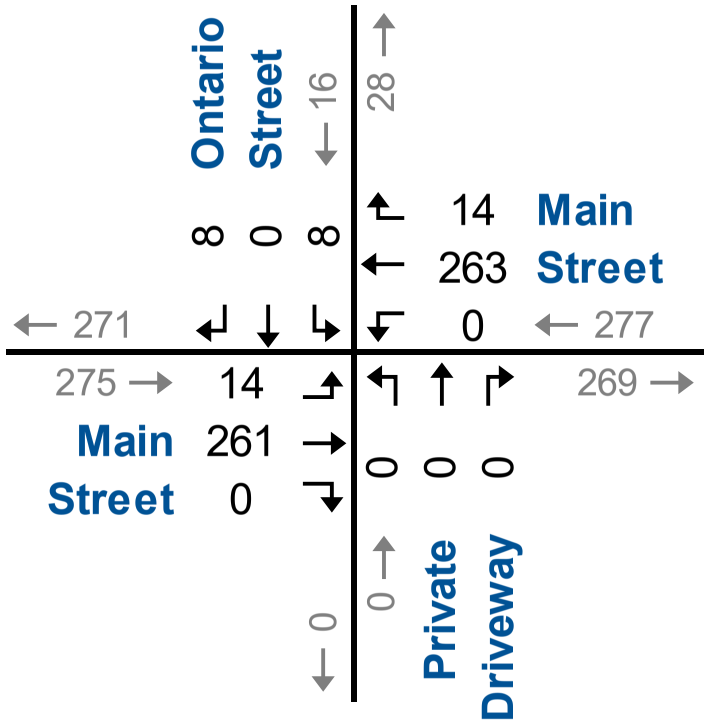
Residential Development Palmerston TIB
210351

Figure 6

AM Peak Hour



PM Peak Hour



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2026 Total Traffic Volumes

Appendix A

Existing Traffic Volumes

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021

Turning Movement Data

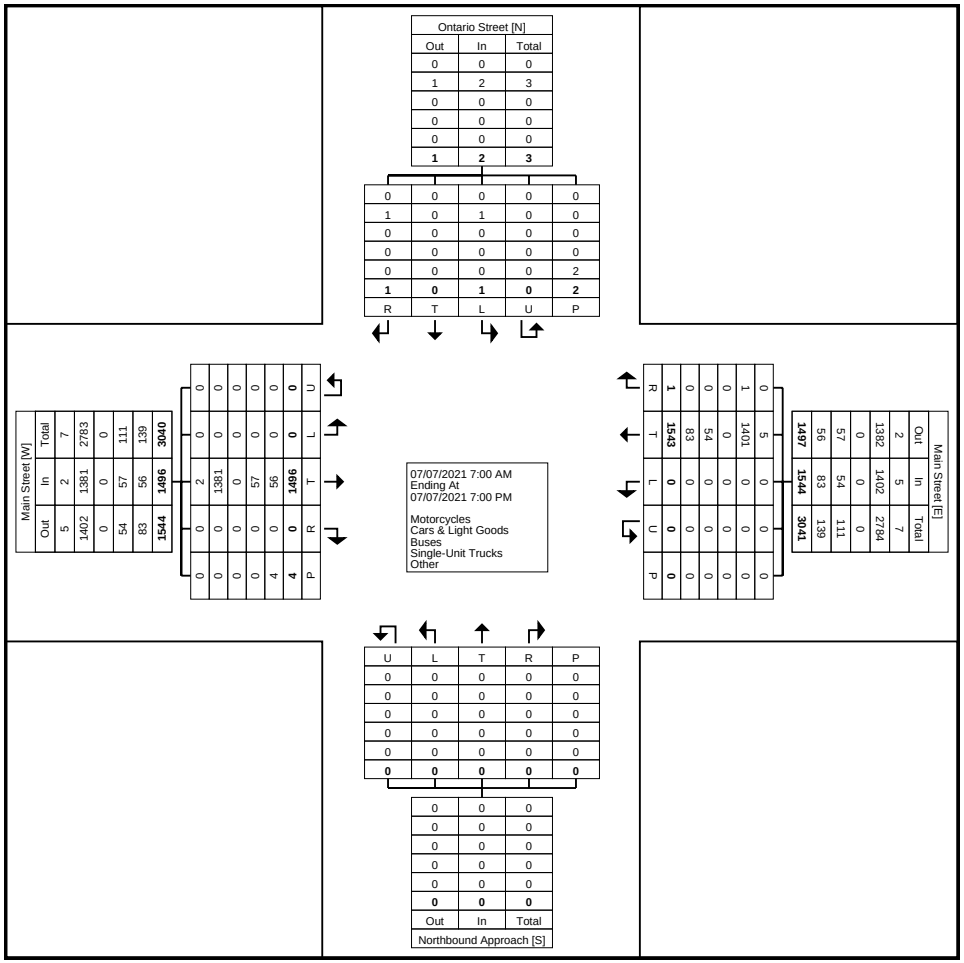
Start Time	Main Street Eastbound						Main Street Westbound						Northbound Approach Northbound						Ontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	26	0	0	0	26	0	34	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	60
7:15 AM	0	40	0	0	0	40	0	37	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	77
7:30 AM	0	51	0	0	0	51	0	40	0	0	0	40	0	0	0	0	0	0	0	0	1	0	0	1	92
7:45 AM	0	39	0	0	0	39	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	79
Hourly Total	0	156	0	0	0	156	0	151	0	0	0	151	0	0	0	0	0	0	0	0	1	0	0	1	308
8:00 AM	0	30	0	0	0	30	0	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	77
8:15 AM	0	37	0	0	0	37	0	52	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	89
8:30 AM	0	37	0	0	0	37	0	33	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	70
8:45 AM	0	36	0	0	0	36	0	38	0	0	0	38	0	0	0	0	0	0	1	0	0	0	0	1	75
Hourly Total	0	140	0	0	0	140	0	170	0	0	0	170	0	0	0	0	0	0	1	0	0	0	0	1	311
9:00 AM	0	46	0	0	0	46	0	43	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0	89
9:15 AM	0	33	0	0	0	33	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	73
9:30 AM	0	41	0	0	0	41	0	43	0	0	0	43	0	0	0	0	0	0	0	0	0	0	1	0	84
9:45 AM	0	42	0	0	0	42	0	42	0	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	84
Hourly Total	0	162	0	0	0	162	0	168	0	0	0	168	0	0	0	0	0	0	0	0	0	0	1	0	330
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	57	0	0	0	57	0	55	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	112
11:15 AM	0	50	0	0	0	50	0	55	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	105
11:30 AM	0	62	0	0	0	62	0	49	0	0	0	49	0	0	0	0	0	0	0	0	0	0	0	0	111
11:45 AM	0	50	0	0	0	50	0	48	0	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	98
Hourly Total	0	219	0	0	0	219	0	207	0	0	0	207	0	0	0	0	0	0	0	0	0	0	0	0	426
12:00 PM	0	52	0	0	0	52	0	57	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	109
12:15 PM	0	47	0	0	0	47	0	55	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	102
12:30 PM	0	46	0	0	0	46	0	62	1	0	0	63	0	0	0	0	0	0	0	0	0	0	0	0	109
12:45 PM	0	76	0	0	0	76	0	56	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	132
Hourly Total	0	221	0	0	0	221	0	230	1	0	0	231	0	0	0	0	0	0	0	0	0	0	0	0	452
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	77	0	0	0	77	0	62	0	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	139
4:15 PM	0	65	0	0	0	65	0	63	0	0	0	63	0	0	0	0	0	0	0	0	0	0	0	0	128
4:30 PM	0	43	0	0	0	43	0	63	0	0	0	63	0	0	0	0	0	0	0	0	0	0	1	0	106
4:45 PM	0	51	0	0	0	51	0	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	101
Hourly Total	0	236	0	0	0	236	0	238	0	0	0	238	0	0	0	0	0	0	0	0	0	0	1	0	474
5:00 PM	0	61	0	0	0	61	0	65	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	126
5:15 PM	0	75	0	0	0	75	0	62	0	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	137
5:30 PM	0	44	0	0	0	44	0	48	0	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	92

5:45 PM	0	46	0	0	0	46	0	56	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	102
Hourly Total	0	226	0	0	0	226	0	231	0	0	0	231	0	0	0	0	0	0	0	0	0	0	0	0	457
6:00 PM	0	42	0	0	4	42	0	44	0	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	86
6:15 PM	0	30	0	0	0	30	0	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	65
6:30 PM	0	34	0	0	0	34	0	37	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	71
6:45 PM	0	30	0	0	0	30	0	32	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	62
Hourly Total	0	136	0	0	4	136	0	148	0	0	0	148	0	0	0	0	0	0	0	0	0	0	0	0	284
Grand Total	0	1496	0	0	4	1496	0	1543	1	0	0	1544	0	0	0	0	0	0	1	0	1	0	2	2	3042
Approach %	0.0	100.0	0.0	0.0	-	-	0.0	99.9	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	50.0	0.0	50.0	0.0	-	-	-
Total %	0.0	49.2	0.0	0.0	-	49.2	0.0	50.7	0.0	0.0	-	50.8	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.1	-
Motorcycles	0	2	0	0	-	2	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	7
% Motorcycles	-	0.1	-	-	-	0.1	-	0.3	0.0	-	-	0.3	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	0.2
Cars & Light Goods	0	1381	0	0	-	1381	0	1401	1	0	-	1402	0	0	0	0	-	0	1	0	1	0	-	2	2785
% Cars & Light Goods	-	92.3	-	-	-	92.3	-	90.8	100.0	-	-	90.8	-	-	-	-	-	-	100.0	-	100.0	-	-	100.0	91.6
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	57	0	0	-	57	0	54	0	0	-	54	0	0	0	0	-	0	0	0	0	0	-	0	111
% Single-Unit Trucks	-	3.8	-	-	-	3.8	-	3.5	0.0	-	-	3.5	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	3.6
Articulated Trucks	0	55	0	0	-	55	0	83	0	0	-	83	0	0	0	0	-	0	0	0	0	0	-	0	138
% Articulated Trucks	-	3.7	-	-	-	3.7	-	5.4	0.0	-	-	5.4	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	4.5
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	-	0.1	-	-	-	0.1	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% 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: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021



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: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021

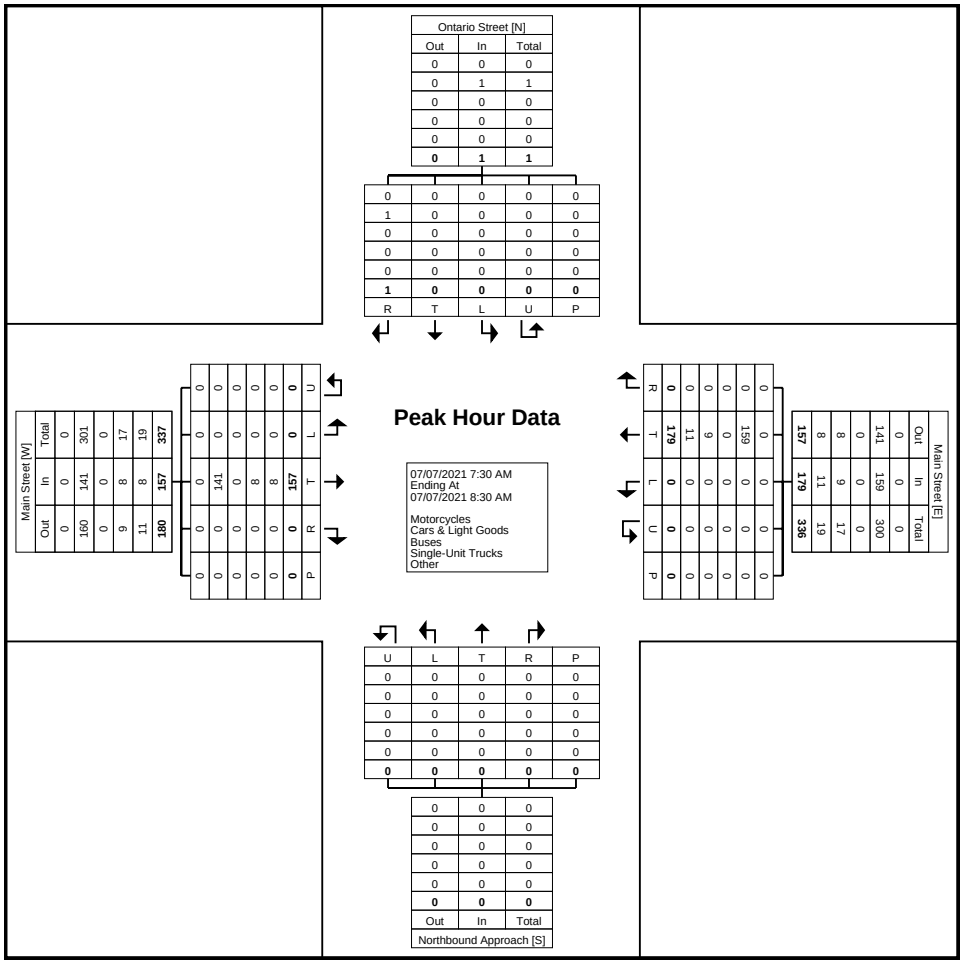
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Main Street Eastbound						Main Street Westbound						Northbound Approach Northbound						Ontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	0	51	0	0	0	51	0	40	0	0	0	40	0	0	0	0	0	0	0	0	1	0	0	1	92
7:45 AM	0	39	0	0	0	39	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	79
8:00 AM	0	30	0	0	0	30	0	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	77
8:15 AM	0	37	0	0	0	37	0	52	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	89
Total	0	157	0	0	0	157	0	179	0	0	0	179	0	0	0	0	0	0	0	0	1	0	0	1	337
Approach %	0.0	100.0	0.0	0.0	-	-	0.0	100.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.0	46.6	0.0	0.0	-	46.6	0.0	53.1	0.0	0.0	-	53.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.3	0.0	-	0.3	-
PHF	0.000	0.770	0.000	0.000	-	0.770	0.000	0.861	0.000	0.000	-	0.861	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.250	0.000	-	0.250	0.916
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
Cars & Light Goods	0	141	0	0	-	141	0	159	0	0	-	159	0	0	0	0	-	0	0	0	1	0	-	1	301
% Cars & Light Goods	-	89.8	-	-	-	89.8	-	88.8	-	-	-	88.8	-	-	-	-	-	-	-	-	100.0	-	-	100.0	89.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	-	0.0	-	0.0	-	-	-	0.0	-	-	-	-	-	-	-	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	8	0	0	-	8	0	9	0	0	-	9	0	0	0	0	-	0	0	0	0	0	-	0	17
% Single-Unit Trucks	-	5.1	-	-	-	5.1	-	5.0	-	-	-	5.0	-	-	-	-	-	-	-	-	0.0	-	-	0.0	5.0
Articulated Trucks	0	8	0	0	-	8	0	11	0	0	-	11	0	0	0	0	-	0	0	0	0	0	-	0	19
% Articulated Trucks	-	5.1	-	-	-	5.1	-	6.1	-	-	-	6.1	-	-	-	-	-	-	-	-	0.0	-	-	0.0	5.6
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
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 cbowness@ptsl.com

Count Name: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021



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 cbowness@ptsl.com

Count Name: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021

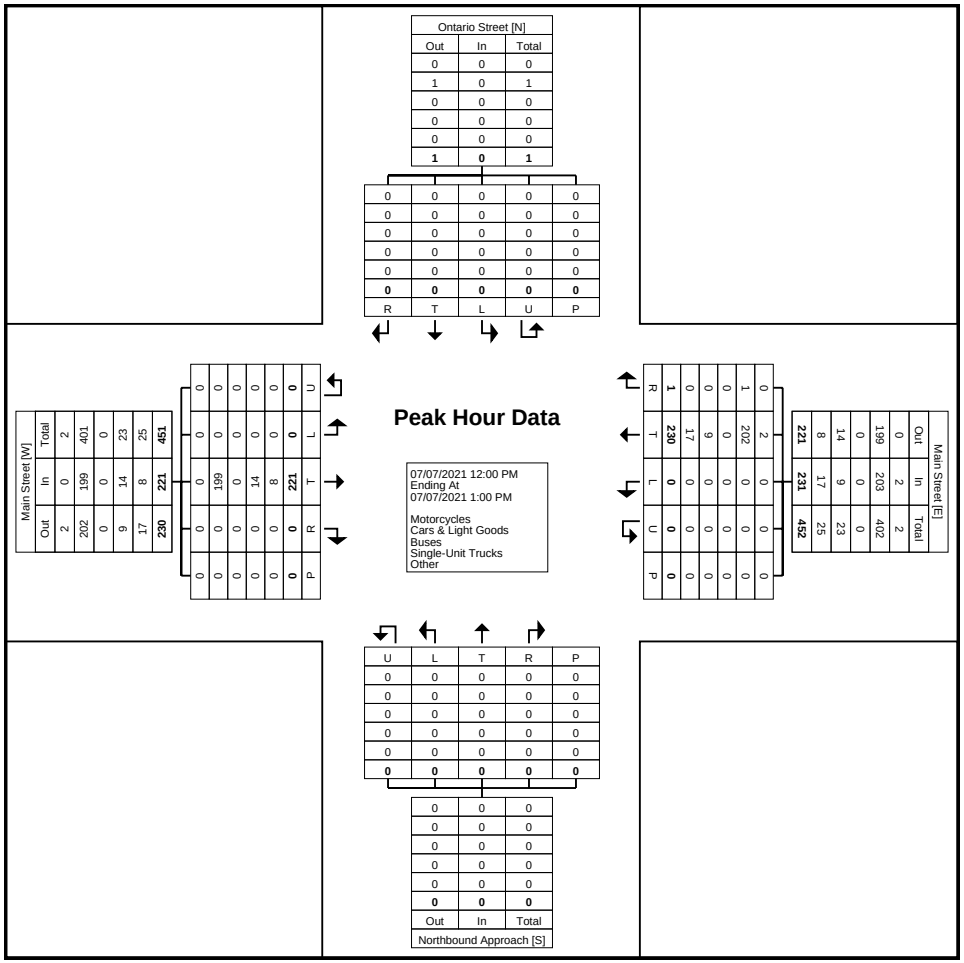
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Main Street Eastbound						Main Street Westbound						Northbound Approach Northbound						Ontario Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	52	0	0	0	52	0	57	0	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	109
12:15 PM	0	47	0	0	0	47	0	55	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	102
12:30 PM	0	46	0	0	0	46	0	62	1	0	0	63	0	0	0	0	0	0	0	0	0	0	0	0	109
12:45 PM	0	76	0	0	0	76	0	56	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	132
Total	0	221	0	0	0	221	0	230	1	0	0	231	0	0	0	0	0	0	0	0	0	0	0	0	452
Approach %	0.0	100.0	0.0	0.0	-	-	0.0	99.6	0.4	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	48.9	0.0	0.0	-	48.9	0.0	50.9	0.2	0.0	-	51.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.727	0.000	0.000	-	0.727	0.000	0.927	0.250	0.000	-	0.917	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	0.000	0.856
Motorcycles	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Motorcycles	-	0.0	-	-	-	0.0	-	0.9	0.0	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	0.4
Cars & Light Goods	0	199	0	0	-	199	0	202	1	0	-	203	0	0	0	0	-	0	0	0	0	0	-	0	402
% Cars & Light Goods	-	90.0	-	-	-	90.0	-	87.8	100.0	-	-	87.9	-	-	-	-	-	-	-	-	-	-	-	-	88.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Single-Unit Trucks	0	14	0	0	-	14	0	9	0	0	-	9	0	0	0	0	-	0	0	0	0	0	-	0	23
% Single-Unit Trucks	-	6.3	-	-	-	6.3	-	3.9	0.0	-	-	3.9	-	-	-	-	-	-	-	-	-	-	-	-	5.1
Articulated Trucks	0	8	0	0	-	8	0	17	0	0	-	17	0	0	0	0	-	0	0	0	0	0	-	0	25
% Articulated Trucks	-	3.6	-	-	-	3.6	-	7.4	0.0	-	-	7.4	-	-	-	-	-	-	-	-	-	-	-	-	5.5
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
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 cbowness@ptsl.com

Count Name: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021

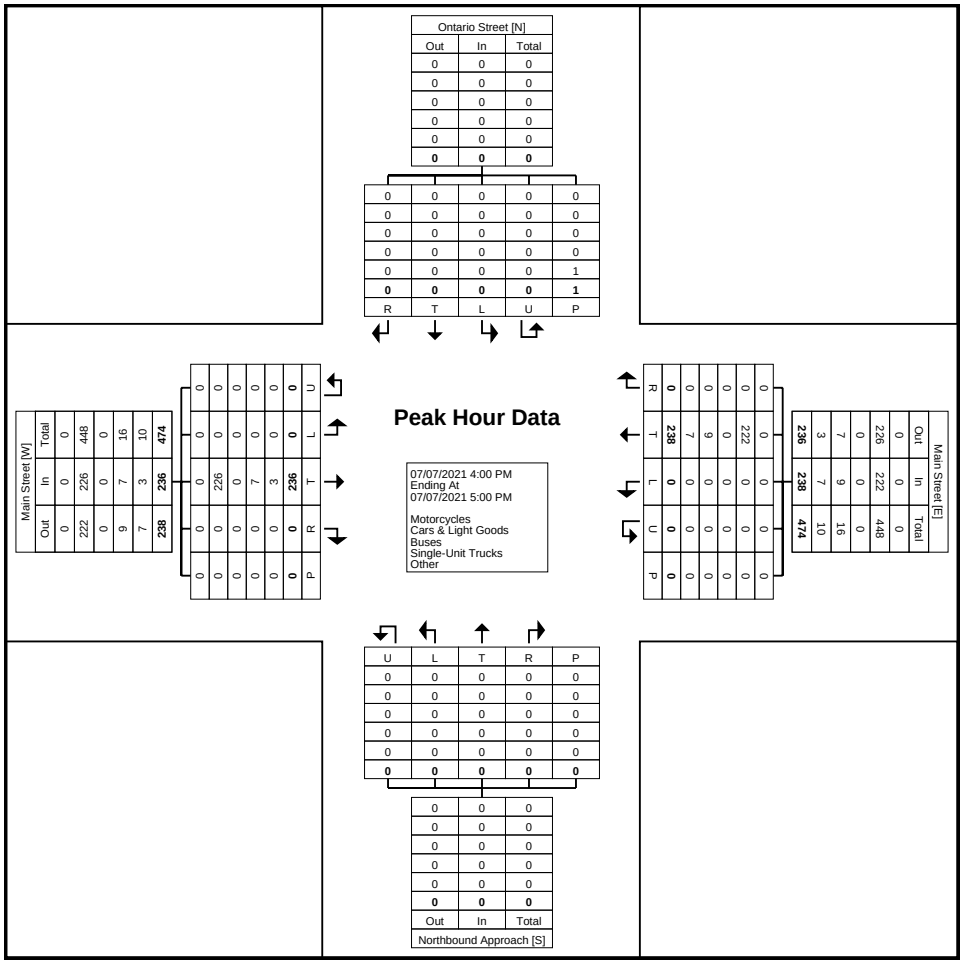
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Main Street Eastbound						Main Street Westbound						Northbound Approach Northbound						Ontario Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	0	77	0	0	0	77	0	62	0	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	139
4:15 PM	0	65	0	0	0	65	0	63	0	0	0	63	0	0	0	0	0	0	0	0	0	0	0	0	128
4:30 PM	0	43	0	0	0	43	0	63	0	0	0	63	0	0	0	0	0	0	0	0	0	0	1	0	106
4:45 PM	0	51	0	0	0	51	0	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	101
Total	0	236	0	0	0	236	0	238	0	0	0	238	0	0	0	0	0	0	0	0	0	0	1	0	474
Approach %	0.0	100.0	0.0	0.0	-	-	0.0	100.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	49.8	0.0	0.0	-	49.8	0.0	50.2	0.0	0.0	-	50.2	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.766	0.000	0.000	-	0.766	0.000	0.944	0.000	0.000	-	0.944	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	0.000	0.853
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
Cars & Light Goods	0	226	0	0	-	226	0	222	0	0	-	222	0	0	0	0	-	0	0	0	0	0	-	0	448
% Cars & Light Goods	-	95.8	-	-	-	95.8	-	93.3	-	-	-	93.3	-	-	-	-	-	-	-	-	-	-	-	-	94.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	-	0.0	-	0.0	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Single-Unit Trucks	0	7	0	0	-	7	0	9	0	0	-	9	0	0	0	0	-	0	0	0	0	0	-	0	16
% Single-Unit Trucks	-	3.0	-	-	-	3.0	-	3.8	-	-	-	3.8	-	-	-	-	-	-	-	-	-	-	-	-	3.4
Articulated Trucks	0	3	0	0	-	3	0	7	0	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	10
% Articulated Trucks	-	1.3	-	-	-	1.3	-	2.9	-	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	-	2.1
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Main Street & Ontario Street
Site Code: 210351
Start Date: 07/07/2021



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: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021

Turning Movement Data

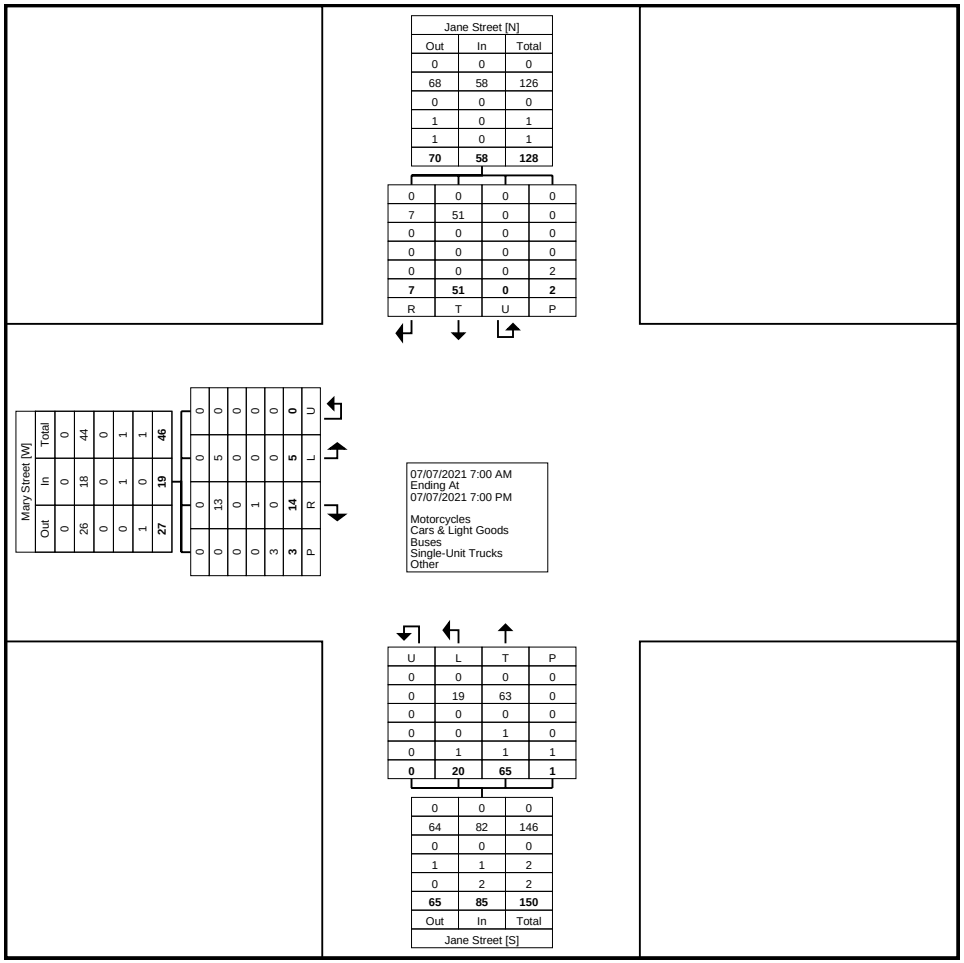
Start Time	Mary Street Eastbound					Jane Street Northbound					Jane Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
7:15 AM	1	1	0	0	2	0	2	0	0	2	2	0	0	0	2	6
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	1	1	0	0	2	0	3	0	0	3	6	1	0	0	7	12
8:00 AM	0	0	0	0	0	0	1	0	0	1	1	1	0	0	2	3
8:15 AM	0	0	0	0	0	0	1	0	0	1	2	1	0	0	3	4
8:30 AM	1	1	0	0	2	1	1	0	0	2	1	0	0	0	1	5
8:45 AM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
Hourly Total	1	2	0	0	3	1	4	0	0	5	4	3	0	0	7	15
9:00 AM	0	1	0	0	1	1	1	0	0	2	1	1	0	0	2	5
9:15 AM	0	0	0	1	0	0	3	0	0	3	2	0	0	0	2	5
9:30 AM	0	0	0	0	0	0	2	0	1	2	2	0	0	2	2	4
9:45 AM	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	3
Hourly Total	0	1	0	1	1	2	7	0	1	9	6	1	0	2	7	17
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	1	0	0	1	0	3	0	0	3	2	0	0	0	2	6
11:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
11:30 AM	0	1	0	1	1	1	2	0	0	3	1	0	0	0	1	5
11:45 AM	0	1	0	0	1	3	2	0	0	5	1	0	0	0	1	7
Hourly Total	0	3	0	1	3	4	7	0	0	11	6	0	0	0	6	20
12:00 PM	1	1	0	1	2	0	1	0	0	1	2	0	0	0	2	5
12:15 PM	0	0	0	0	0	2	4	0	0	6	4	1	0	0	5	11
12:30 PM	0	0	0	0	0	1	3	0	0	4	4	0	0	0	4	8
12:45 PM	1	0	0	0	1	1	7	0	0	8	1	0	0	0	1	10
Hourly Total	2	1	0	1	3	4	15	0	0	19	11	1	0	0	12	34
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
4:15 PM	1	1	0	0	2	0	4	0	0	4	1	0	0	0	1	7
4:30 PM	0	1	0	0	1	3	0	0	0	3	2	0	0	0	2	6
4:45 PM	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1	3
Hourly Total	1	3	0	0	4	3	7	0	0	10	5	0	0	0	5	19
5:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
5:15 PM	0	1	0	0	1	2	5	0	0	7	2	1	0	0	3	11
5:30 PM	0	0	0	0	0	2	3	0	0	5	2	0	0	0	2	7
5:45 PM	0	0	0	0	0	0	1	0	0	1	3	0	0	0	3	4

Hourly Total	0	1	0	0	1	5	11	0	0	16	7	1	0	0	8	25
6:00 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	3
6:15 PM	0	1	0	0	1	0	1	0	0	1	4	0	0	0	4	6
6:30 PM	0	0	0	0	0	1	5	0	0	6	1	0	0	0	1	7
6:45 PM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	4
Hourly Total	0	2	0	0	2	1	11	0	0	12	6	0	0	0	6	20
Grand Total	5	14	0	3	19	20	65	0	1	85	51	7	0	2	58	162
Approach %	26.3	73.7	0.0	-	-	23.5	76.5	0.0	-	-	87.9	12.1	0.0	-	-	-
Total %	3.1	8.6	0.0	-	11.7	12.3	40.1	0.0	-	52.5	31.5	4.3	0.0	-	35.8	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	5	13	0	-	18	19	63	0	-	82	51	7	0	-	58	158
% Cars & Light Goods	100.0	92.9	-	-	94.7	95.0	96.9	-	-	96.5	100.0	100.0	-	-	100.0	97.5
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	-	1	0	1	0	-	1	0	0	0	-	0	2
% Single-Unit Trucks	0.0	7.1	-	-	5.3	0.0	1.5	-	-	1.2	0.0	0.0	-	-	0.0	1.2
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	1	1	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	0.0	5.0	1.5	-	-	2.4	0.0	0.0	-	-	0.0	1.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	3	-	-	-	-	1	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021



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: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021

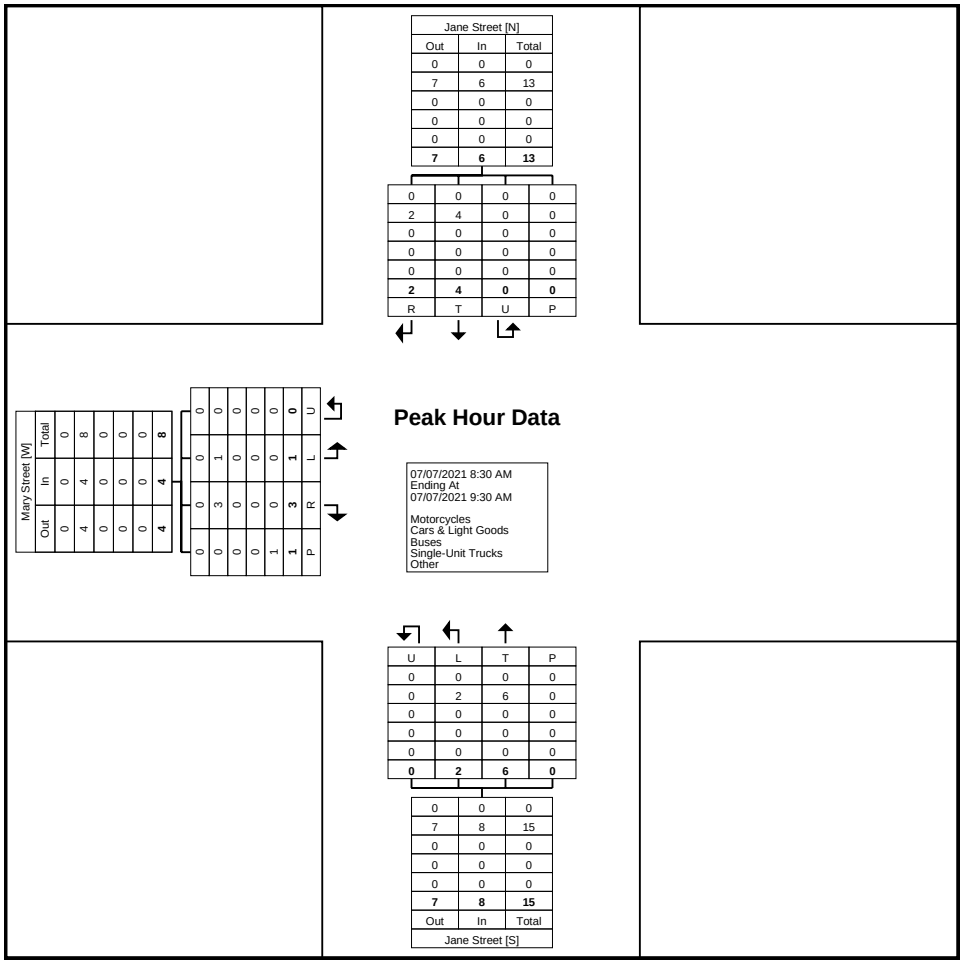
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Mary Street Eastbound					Jane Street Northbound					Jane Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:30 AM	1	1	0	0	2	1	1	0	0	2	1	0	0	0	1	5
8:45 AM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
9:00 AM	0	1	0	0	1	1	1	0	0	2	1	1	0	0	2	5
9:15 AM	0	0	0	1	0	0	3	0	0	3	2	0	0	0	2	5
Total	1	3	0	1	4	2	6	0	0	8	4	2	0	0	6	18
Approach %	25.0	75.0	0.0	-	-	25.0	75.0	0.0	-	-	66.7	33.3	0.0	-	-	-
Total %	5.6	16.7	0.0	-	22.2	11.1	33.3	0.0	-	44.4	22.2	11.1	0.0	-	33.3	-
PHF	0.250	0.750	0.000	-	0.500	0.500	0.500	0.000	-	0.667	0.500	0.500	0.000	-	0.750	0.900
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1	3	0	-	4	2	6	0	-	8	4	2	0	-	6	18
% Cars & Light Goods	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021



Turning Movement Peak Hour Data Plot (8:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021

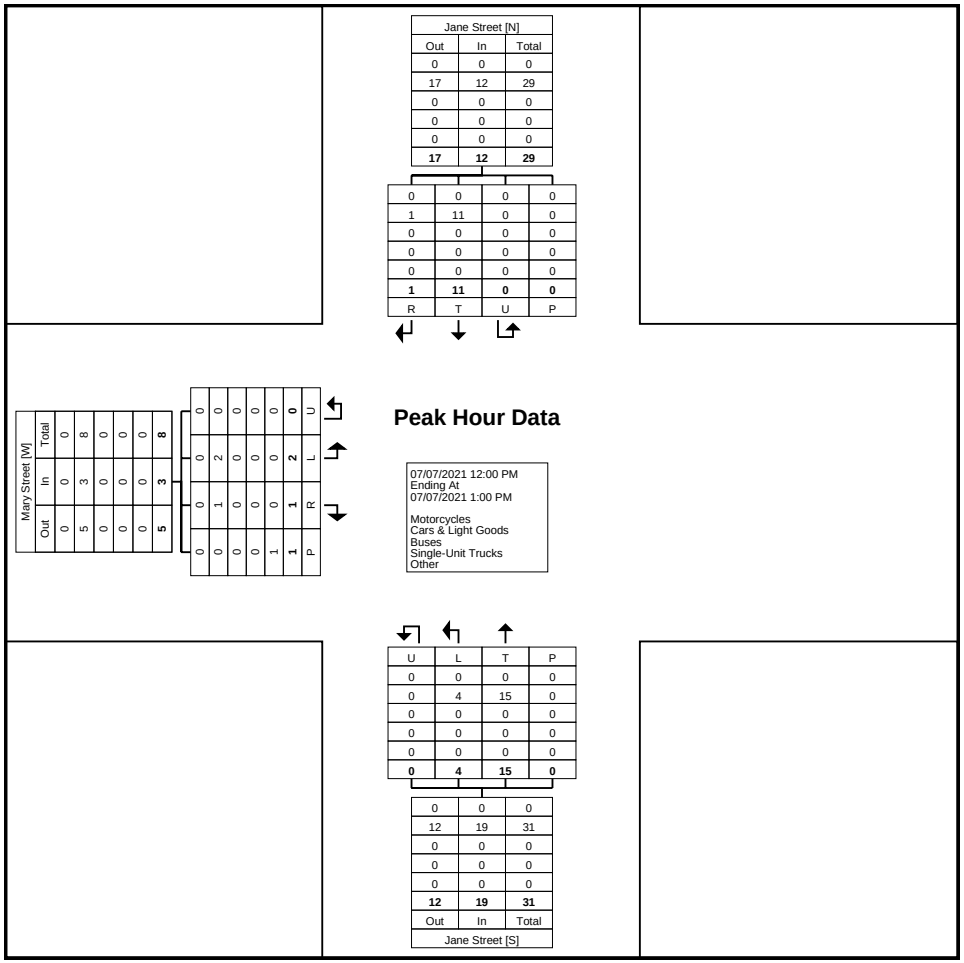
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Mary Street Eastbound					Jane Street Northbound					Jane Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	1	1	0	1	2	0	1	0	0	1	2	0	0	0	2	5
12:15 PM	0	0	0	0	0	2	4	0	0	6	4	1	0	0	5	11
12:30 PM	0	0	0	0	0	1	3	0	0	4	4	0	0	0	4	8
12:45 PM	1	0	0	0	1	1	7	0	0	8	1	0	0	0	1	10
Total	2	1	0	1	3	4	15	0	0	19	11	1	0	0	12	34
Approach %	66.7	33.3	0.0	-	-	21.1	78.9	0.0	-	-	91.7	8.3	0.0	-	-	-
Total %	5.9	2.9	0.0	-	8.8	11.8	44.1	0.0	-	55.9	32.4	2.9	0.0	-	35.3	-
PHF	0.500	0.250	0.000	-	0.375	0.500	0.536	0.000	-	0.594	0.688	0.250	0.000	-	0.600	0.773
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	2	1	0	-	3	4	15	0	-	19	11	1	0	-	12	34
% Cars & Light Goods	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021

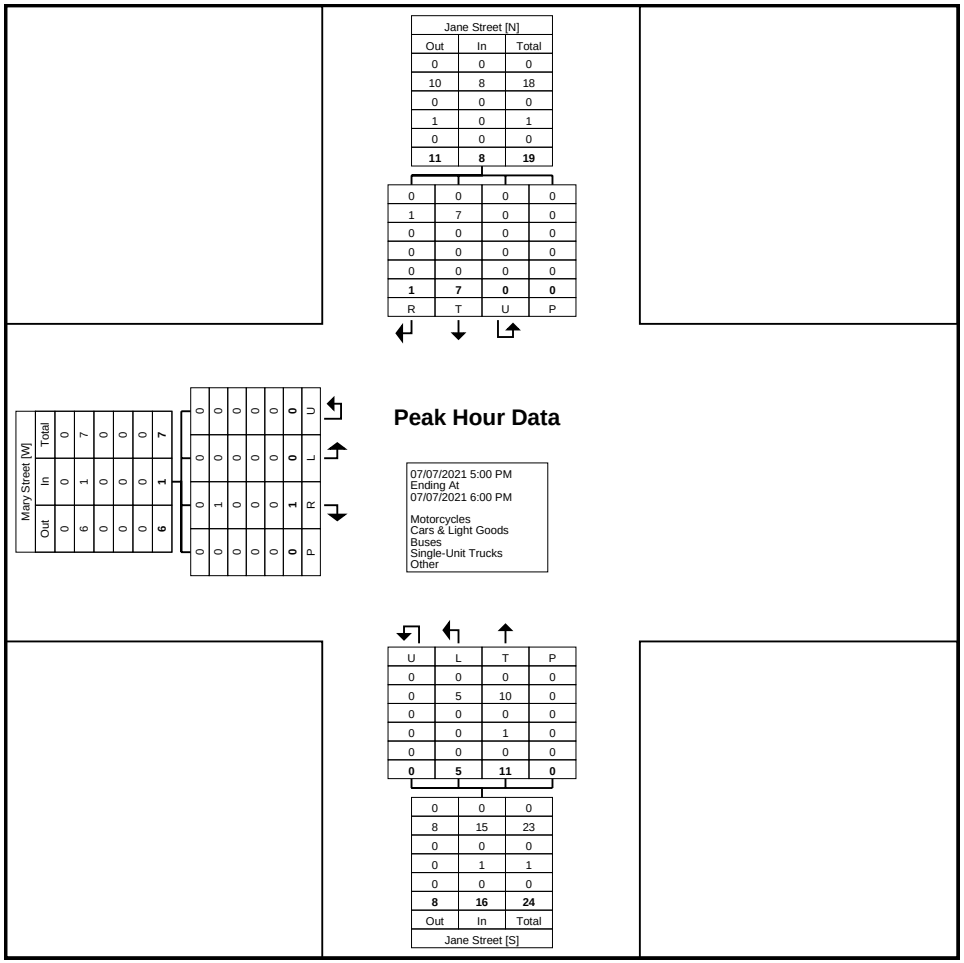
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Mary Street Eastbound					Jane Street Northbound					Jane Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
5:15 PM	0	1	0	0	1	2	5	0	0	7	2	1	0	0	3	11
5:30 PM	0	0	0	0	0	2	3	0	0	5	2	0	0	0	2	7
5:45 PM	0	0	0	0	0	0	1	0	0	1	3	0	0	0	3	4
Total	0	1	0	0	1	5	11	0	0	16	7	1	0	0	8	25
Approach %	0.0	100.0	0.0	-	-	31.3	68.8	0.0	-	-	87.5	12.5	0.0	-	-	-
Total %	0.0	4.0	0.0	-	4.0	20.0	44.0	0.0	-	64.0	28.0	4.0	0.0	-	32.0	-
PHF	0.000	0.250	0.000	-	0.250	0.625	0.550	0.000	-	0.571	0.583	0.250	0.000	-	0.667	0.568
Motorcycles	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
Cars & Light Goods	0	1	0	-	1	5	10	0	-	15	7	1	0	-	8	24
% Cars & Light Goods	-	100.0	-	-	100.0	100.0	90.9	-	-	93.8	100.0	100.0	-	-	100.0	96.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Single-Unit Trucks	-	0.0	-	-	0.0	0.0	9.1	-	-	6.3	0.0	0.0	-	-	0.0	4.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
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

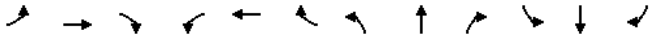
Count Name: Mary Street & Jane Street
Site Code: 210351
Start Date: 07/07/2021



Turning Movement Peak Hour Data Plot (5:00 PM)

Appendix B

Existing Traffic Operations Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	157	0	0	179	0	0	0	0	0	0	1
Future Volume (vph)	0	157	0	0	179	0	0	0	0	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.865	
Flt Protected												
Satd. Flow (prot)	0	1727	0	0	1712	0	0	1900	0	0	1644	0
Flt Permitted												
Satd. Flow (perm)	0	1727	0	0	1712	0	0	1900	0	0	1644	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		186.9			251.4			141.3			170.4	
Travel Time (s)		13.5			18.1			10.2			12.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	171	0	0	195	0	0	0	0	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	195	0	0	0	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	157	0	0	179	0	0	0	0	0	0	1
Future Vol, veh/h	0	157	0	0	179	0	0	0	0	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	10	0	0	11	0	0	0	0	0	0	0
Mvmt Flow	0	171	0	0	195	0	0	0	0	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	195	0	0	171	0	0	367	366	171	366	366	195
Stage 1	-	-	-	-	-	-	171	171	-	195	195	-
Stage 2	-	-	-	-	-	-	196	195	-	171	171	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1390	-	-	1418	-	-	593	566	878	594	566	851
Stage 1	-	-	-	-	-	-	836	761	-	811	743	-
Stage 2	-	-	-	-	-	-	810	743	-	836	761	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1390	-	-	1418	-	-	592	566	878	594	566	851
Mov Cap-2 Maneuver	-	-	-	-	-	-	592	566	-	594	566	-
Stage 1	-	-	-	-	-	-	836	761	-	811	743	-
Stage 2	-	-	-	-	-	-	809	743	-	836	761	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1390	-	-	1418	-	-	851
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.001
HCM Control Delay (s)	0	0	-	-	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	236	0	0	238	0	0	0	0	0	0	0
Future Volume (vph)	0	236	0	0	238	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1827	0	0	1776	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1827	0	0	1776	0	0	1900	0	0	1900	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		186.9			251.4			141.3			170.4	
Travel Time (s)		13.5			18.1			10.2			12.3	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	257	0	0	259	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	257	0	0	259	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	236	0	0	238	0	0	0	0	0	0	0
Future Vol, veh/h	0	236	0	0	238	0	0	0	0	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	0	7	0	0	0	0	0	0	0
Mvmt Flow	0	257	0	0	259	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	260	0	0	257	0	0	516	517	257	517	517	260
Stage 1	-	-	-	-	-	-	257	257	-	260	260	-
Stage 2	-	-	-	-	-	-	259	260	-	257	257	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1316	-	-	1320	-	-	473	465	787	472	465	784
Stage 1	-	-	-	-	-	-	752	699	-	749	697	-
Stage 2	-	-	-	-	-	-	750	697	-	752	699	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1315	-	-	1320	-	-	473	465	787	472	465	783
Mov Cap-2 Maneuver	-	-	-	-	-	-	473	465	-	472	465	-
Stage 1	-	-	-	-	-	-	752	699	-	748	696	-
Stage 2	-	-	-	-	-	-	750	696	-	752	699	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1315	-	-	1320	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Appendix C

Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	173	0	0	198	0	0	0	0	0	0	1
Future Volume (vph)	0	173	0	0	198	0	0	0	0	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.865	
Flt Protected												
Satd. Flow (prot)	0	1727	0	0	1712	0	0	1900	0	0	1644	0
Flt Permitted												
Satd. Flow (perm)	0	1727	0	0	1712	0	0	1900	0	0	1644	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		186.9			251.4			141.3			170.4	
Travel Time (s)		13.5			18.1			10.2			12.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	188	0	0	215	0	0	0	0	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	0	0	215	0	0	0	0	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	173	0	0	198	0	0	0	0	0	0	1
Future Vol, veh/h	0	173	0	0	198	0	0	0	0	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	10	0	0	11	0	0	0	0	0	0	0
Mvmt Flow	0	188	0	0	215	0	0	0	0	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	188	0	0	404	403	188	403	403	215
Stage 1	-	-	-	-	-	-	188	188	-	215	215	-
Stage 2	-	-	-	-	-	-	216	215	-	188	188	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1367	-	-	1398	-	-	561	539	859	562	539	830
Stage 1	-	-	-	-	-	-	818	748	-	792	729	-
Stage 2	-	-	-	-	-	-	791	729	-	818	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1367	-	-	1398	-	-	560	539	859	562	539	830
Mov Cap-2 Maneuver	-	-	-	-	-	-	560	539	-	562	539	-
Stage 1	-	-	-	-	-	-	818	748	-	792	729	-
Stage 2	-	-	-	-	-	-	790	729	-	818	748	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1367	-	-	1398	-	-	830
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.001
HCM Control Delay (s)	0	0	-	-	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	0	261	0	0	263	0	0	0	0	0	0	0
Future Volume (vph)	0	261	0	0	263	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1827	0	0	1776	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1827	0	0	1776	0	0	1900	0	0	1900	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		186.9			251.4			141.3			170.4	
Travel Time (s)		13.5			18.1			10.2			12.3	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	284	0	0	286	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	284	0	0	286	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	261	0	0	263	0	0	0	0	0	0	0
Future Vol, veh/h	0	261	0	0	263	0	0	0	0	0	0	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	0	7	0	0	0	0	0	0	0
Mvmt Flow	0	284	0	0	286	0	0	0	0	0	0	0

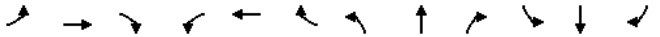
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	287	0	0	284	0	0	570	571	284	571	571	287
Stage 1	-	-	-	-	-	-	284	284	-	287	287	-
Stage 2	-	-	-	-	-	-	286	287	-	284	284	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1287	-	-	1290	-	-	435	434	760	435	434	757
Stage 1	-	-	-	-	-	-	727	680	-	725	678	-
Stage 2	-	-	-	-	-	-	726	678	-	727	680	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1286	-	-	1290	-	-	435	434	760	435	434	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	435	434	-	435	434	-
Stage 1	-	-	-	-	-	-	727	680	-	724	677	-
Stage 2	-	-	-	-	-	-	726	677	-	727	680	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1286	-	-	1290	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Appendix D

Total Traffic Operations Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	173	0	0	198	4	0	0	0	12	0	15
Future Volume (vph)	4	173	0	0	198	4	0	0	0	12	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.926	
Flt Protected		0.999									0.978	
Satd. Flow (prot)	0	1729	0	0	1711	0	0	1900	0	0	1721	0
Flt Permitted		0.999									0.978	
Satd. Flow (perm)	0	1729	0	0	1711	0	0	1900	0	0	1721	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		186.9			251.4			141.3			170.4	
Travel Time (s)		13.5			18.1			10.2			12.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	188	0	0	215	4	0	0	0	13	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	219	0	0	0	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	173	0	0	198	4	0	0	0	12	0	15
Future Vol, veh/h	4	173	0	0	198	4	0	0	0	12	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	10	0	0	11	0	0	0	0	0	0	0
Mvmt Flow	4	188	0	0	215	4	0	0	0	13	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	219	0	0	188	0	0	421	415	188	413	413	217
Stage 1	-	-	-	-	-	-	196	196	-	217	217	-
Stage 2	-	-	-	-	-	-	225	219	-	196	196	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1362	-	-	1398	-	-	546	531	859	553	532	828
Stage 1	-	-	-	-	-	-	810	742	-	790	727	-
Stage 2	-	-	-	-	-	-	782	726	-	810	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1398	-	-	534	529	859	552	530	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	529	-	552	530	-
Stage 1	-	-	-	-	-	-	808	740	-	788	727	-
Stage 2	-	-	-	-	-	-	767	726	-	808	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1362	-	-	1398	-	-	677
HCM Lane V/C Ratio	-	0.003	-	-	-	-	-	0.043
HCM Control Delay (s)	0	7.7	0	-	0	-	-	10.6
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	261	0	0	263	14	0	0	0	8	0	8
Future Volume (vph)	14	261	0	0	263	14	0	0	0	8	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.993						0.932	
Flt Protected		0.997									0.976	
Satd. Flow (prot)	0	1825	0	0	1769	0	0	1900	0	0	1728	0
Flt Permitted		0.997									0.976	
Satd. Flow (perm)	0	1825	0	0	1769	0	0	1900	0	0	1728	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		186.9			251.4			141.3			170.4	
Travel Time (s)		13.5			18.1			10.2			12.3	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	284	0	0	286	15	0	0	0	9	0	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	0	0	301	0	0	0	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	261	0	0	263	14	0	0	0	8	0	8
Future Vol, veh/h	14	261	0	0	263	14	0	0	0	8	0	8
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	0	0	7	0	0	0	0	0	0	0
Mvmt Flow	15	284	0	0	286	15	0	0	0	9	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	302	0	0	284	0	0	612	616	284	609	609	295
Stage 1	-	-	-	-	-	-	314	314	-	295	295	-
Stage 2	-	-	-	-	-	-	298	302	-	314	314	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1270	-	-	1290	-	-	408	409	760	410	412	749
Stage 1	-	-	-	-	-	-	701	660	-	718	673	-
Stage 2	-	-	-	-	-	-	715	668	-	701	660	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1269	-	-	1290	-	-	399	403	760	405	406	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	399	403	-	405	406	-
Stage 1	-	-	-	-	-	-	691	651	-	707	672	-
Stage 2	-	-	-	-	-	-	707	667	-	691	651	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	0	12.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1269	-	-	1290	-	-	525
HCM Lane V/C Ratio	-	0.012	-	-	-	-	-	0.033
HCM Control Delay (s)	0	7.9	0	-	0	-	-	12.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Appendix E

OTM Signal Warrants

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

Horizon Year: 2026
Region/City/Township: Wellington County

Major Street: Main Street
Minor Street: Ontario Street

North/South?: N

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

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

	Major Street						Minor Street						
	Main Street						Ontario Street						
	Eastbound			Westbound			Northbound			Southbound			Peds Crossing
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Main Road
AM Peak Hour	4	173	0	0	198	4	0	0	0	12	0	15	0
PM Peak Hour	14	261	0	0	263	14	0	0	0	8	0	8	0
Average Hourly Volume	5	109	0	0	115	5	0	0	0	5	0	6	0

Warrant	AHV
1A - All	244
1B - Minor	11
2A - Major	233
2B - Cross	5

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	244
					% Fulfilled	50.7%

	Approach Lanes	1		2 or more		Average Hourly Volume
1B	Flow Conditions	Free	Restricted	Free	Restricted	
		X				
	Minor Street Approaches	120	170	120	170	11
					% Fulfilled	9.0%

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	233
					% Fulfilled	48.5%

	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	5
					% Fulfilled	10.0%