The Corporation of the Township of Laurentian Valley
By-law Number 2025-02-008

Being a By-Law to Authorize the Adoption of the Township of Laurentian Valley/City of Pembroke Transportation Master Plan – East West Traffic

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WHEREAS, Section 9 of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under the Municipal Act or any other Act;

AND WHEREAS, Section 5 (3) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, provides that a municipal power, including a municipality's capacity, rights, powers and privileges under Section 9, shall be exercised by by-law unless the municipality is specifically authorized to do otherwise;

AND WHEREAS, the Township of Laurentian Valley and the City of Pembroke embarked on the preparation of a joint Transportation Master Plan to provide a strategic planning document designed to enhance a strategic policy document to help guide how the municipality's transportation system may grow and develop over the long term. The Transportation Master Plans examined current transportation issues within the community, assessed existing and future growth patterns, determined the need for transportation improvements, and recommended policies to consider to support the plan and maintain the transportation network;

NOW THEREFORE, the Council of the Corporation of the Township of Laurentian Valley enacts as follows:

1. That the Township of Laurentian Valley/City of Pembroke Transportation Master Plan for East-West Traffic prepared by Paradigm Transportation Solutions Limited, dated January 2025, and Appendices, attached hereto as Schedule "A", be adopted.

2. This by-law shall come into force and take effect upon the date of the final passing thereof.

READ A FIRST AND SECOND TIME THIS 18TH DAY OF FEBRUARY, 2025.

READ A THIRD TIME AND FINALLY PASSED THIS 18TH DAY OF FEBRUARY, 2025.

Steve Bennett, Mayor

Dean Sauriol, CAO/Clerk

Township of Laurentian Valley
City of Pembroke

Transportation Master Plan for East-West Traffic

FINAL REPORT

January 2025

Laurentian Valley

Pembroke
the heart of the ottawa valley

paradigm
TRANSPORTATION SOLUTIONS LIMITED

Executive Summary

A Transportation Master Plan (TMP) is a strategic policy document that guides how a municipality's transportation system will grow and develop over the long term. The plan works together with a municipality's Official Plan, which directs land use and development patterns, as well as other master plans such as those concerning municipal servicing, parks and recreation, and economic development.

TMP's are an important part of the Environmental Assessment process that all municipalities have to follow as they plan and deliver infrastructure projects. By examining current transportation issues and needs across the entire community, a Master Plan establishes a series of actions and priorities that are intended to work together to support growth while managing the performance of the system and minimizing the adverse environmental impacts that can arise from larger infrastructure projects.

A TMP is meant to be used by several different transportation stakeholders as both a reference and a guiding document for developing strategies and making investment decisions. For the City of Pembroke and the Township of Laurentian Valley this TMP establishes the transportation initiatives and projects needed to support growth in a co-ordinated fashion, provides estimates of project costs and timing to support future capital budgeting, recommends policies to assist with managing the transportation system, and identifies implementation priorities and a process to monitor and adapt the plan as conditions change.

Engaging the public in decision making

A fundamental objective of the land use and environmental planning processes in Ontario is to involve the public in the planning for how our communities develop over time. Public engagement is therefore a key element of the Municipal Class Environmental Assessment process and guides how TMP's are undertaken.

The Engagement Program included a number of opportunities for residents to learn about the study and provide feedback to help shape the recommendations. An online survey was provided at the outset of the study to collect input from residents and visitors to the area about how they travel; thoughts on various transportation options such as transit, walking, cycling, and traveling by car; and ideas for improvements and priorities. From the 164 survey participants there was strong support to improving the conditions of roads, making intersections work better, adding new roads where needed to support growth, and implementing measures such as public transit service, separated cycling facilities, and traffic calming to improve safety.

The Township and the City both provided webpages on their corporate internet sites to provide information about the study, notices of public meetings, contact information for project team members and copies of display materials presented at the formal public open house event, held in December 2023.

The open house was attended by 12 residents; however, comments were received from a total of 41 individuals – many of whom were able to access the information from the municipal websites. Comments received were reviewed by the project team and many of them were used to modify the initial study recommendations.

Setting the context

The Township of Laurentian Valley and City of Pembroke are growing, with new commercial uses emerging along the Highway 148/Pembroke Street East corridor and plans for residential development to the south and west edges of Pembroke - on lands within the City and along its boundary with the Township.

As the largest municipality in the broader area, Pembroke is also a regional hub for jobs, services, and commercial opportunities in the area. External travel demands from adjacent areas impacts the performance of the road network within and immediately adjacent to the City.

With the Township and City poised for continued prosperity and growth, a strategy to address existing traffic concerns and a plan to meet future transportation needs is required.

The policy environment guiding the preparation of the plan includes provincial and federal policies along with Renfrew County and local polices all of which promote sustainable travel and strongly recommend that:

- Transportation and land use should be planned together to accommodate long term growth,
- Planning should identify needs and protect future corridors,
- Abandoned linear corridors should be protected,
- There is a need to consider integrated facilities across boundaries; and
- The opportunity for transit in Pembroke/adjacent areas should be explored.

Travel during a typical summer day

Approximately 95,000 auto trips made each day

- 40% of trips travel within Pembroke / LV
- 21% of trips travel within Petawawa
- 13% of trips travel between Petawawa and Pembroke / LV
- 22% travel to / from external areas
- 3% pass through the study area

Growth is driving the need for improvements

Growth in the study area is driving the need to take an integrated approach to planning the transportation system. Based on active and planned developments in various stages of the land use planning process, the City and Township are anticipating approximately 4,100 new dwellings and 9,400 new residents over the next 20 years. Much of this growth is anticipated to occur on vacant lands on the east and west sides of the City boundary.

Jurisdiction	2021 Population	2041 Population	Population Growth Rate
City of Pembroke	14,364	19,152	1.45%
Town of Petawawa	18,160	22,272	1.03%
Laurentian Valley	9,450	14,131	2.03%

Due to the limited number of crossings of the Muskrat and Indian Rivers, additional east-west traffic is forecast for main roads through the downtown and additional traffic can be expected to divert to local roads serving the crossings, adding traffic to neighbourhood streets. While these streets do not exceed their planning capacities, corridors like Mary Street / Alfred Street, and Bell Street / Angus Campbell Drive can be expected to see increased travel demand.

Higher summer volumes due to increases in external and recreational traffic currently creates congestion downtown and on Pembroke Street / Highway 148 during peak summer weekends. With planned growth to 2041, this congestion is expected to become more frequent, with congestion being experienced on typical summer weekdays, not just weekends.

The planned improvements to Highway 148 will improve conditions between Drive-In Road and the City of Pembroke boundary. However, increased volumes through the downtown can be expected to increase the extent and frequency of congestion on Pembroke Street during summer peak periods without improvements to direct traffic away from the downtown.

A Plan to Support Growth

Travel by automobile is expected to continue to dominate despite the opportunity for some increase in the share of trips made by walking and cycling and on transit – once the City implements the planned transit service recommended in the 2022 Transit Feasibility Study.

The recommended road network improvement plan features 19 projects which have been carefully selected based on their ability to serve new traffic generated in growth areas, limit the increase in traffic on Pembroke Street, and limit the increase in traffic on local City streets. An additional 13 intersection improvement projects have also been identified to support the larger road improvement projects or as stand alone improvements designed to optimize the performance of existing roads and avoid the need for costly road widening.

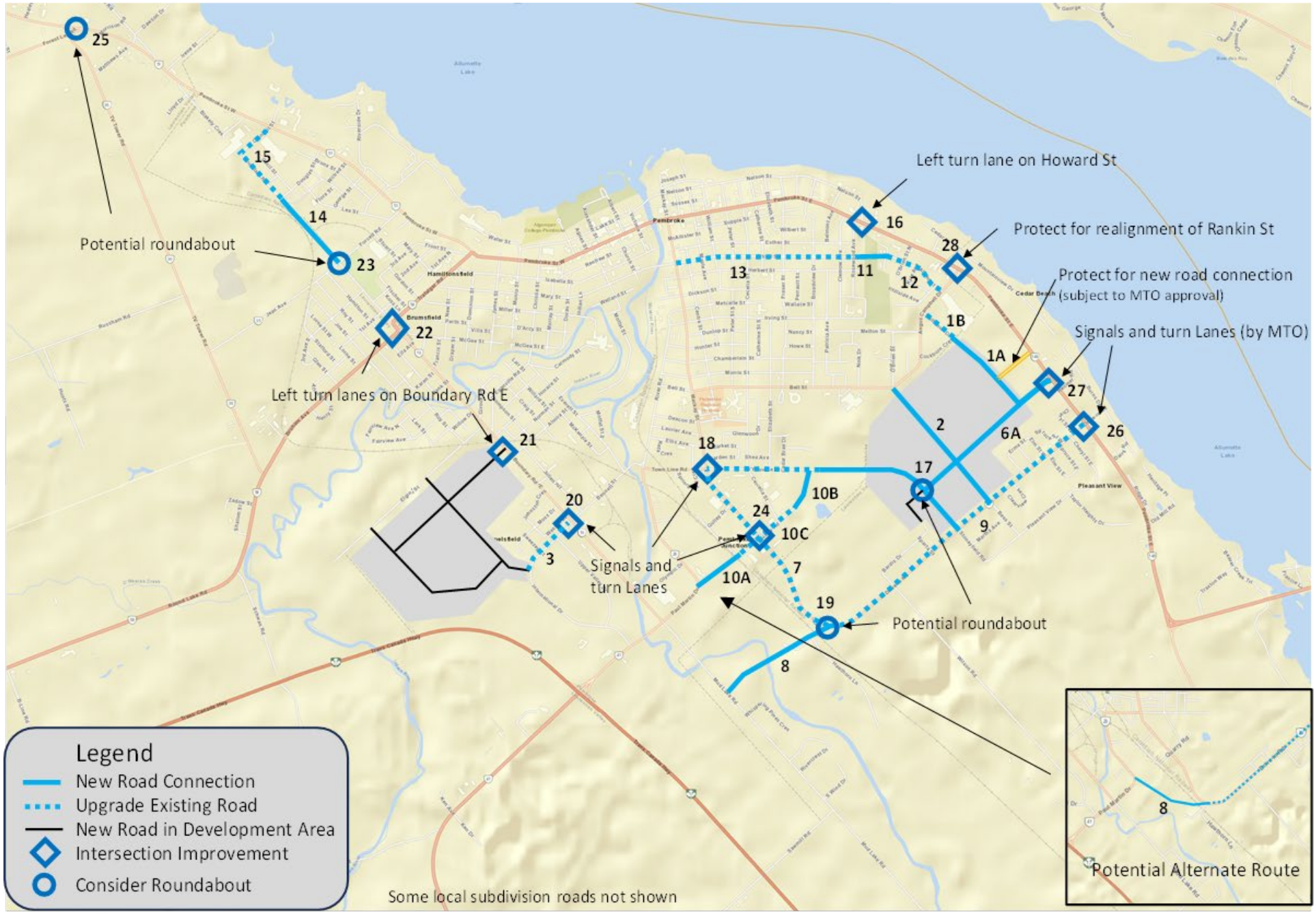
The road network improvement plan is estimated to cost $95,000,000 in 2024$ but is designed to be implemented over a 20 year planning horizon. The final timing of implementation should be tied to actual growth in new residential units, so if growth proceeds slower than forecast – some of the recommended road improvements can be deferred until the need is demonstrated.

Proponent	Estimated Cost	0-5 Year	5-10 year	10-20 year
City	$ 24,200,000	$ 4,000,000	$ 13,600,000	$ 6,600,000
Township	$ 29,900,000	$ 17,500,000	$ -	$ 12,400,000
County	$ 13,000,000	$ -	$ 7,800,000	$ 5,200,000
City / Township	$ 17,900,000	$ -	$ -	$ 17,900,000
County / Township	$ 10,000,000	$ -	$ -	$ 10,000,000
Total	**$ 95,000,000**	**$ 21,500,000**	**$ 21,400,000**	**$ 52,100,000**

Cost estimates prepared for the road improvement projects identified in the TMP, represent the total estimated project cost (excluding property), however **some of the anticipated costs will be shared with developers and will be split between the City, Township and the County**. Developers will provide some of the base road improvements within their planned subdivisions and will also contribute development charges to help fund area-wide road improvements needed to support growth.

With careful coordination, the cost for road and intersection improvements can be reduced if they are coordinated with rehabilitation work already planned by the County and as part of City and Township asset management programs. For larger projects, the TMP can position the City and Township to apply for future federal and provincial infrastructure funding programs.

Figure ES-1 illustrates the recommended road improvement program, and **Table ES – 1** provides a summary of the road network improvements, their estimated cost and timing and identifies key projects requiring additional planning and design work through the Municipal Class Environmental Assessment process.



Recommended Road Network Improvements

Figure ES-1

Project #	Major Road Projects	Limits	MCEA Schedule	Length (km)	Cost Estimate	Time Period	Notes	Proponent
1A	Matheson Drive - new road connection A	Cockburn Crescent to Robinson Lane	by developer	0.7	$ 4,500,000	0-5	1	Developer / Township
1B	Matheson Drive upgrade	Angus Campbell Drive to Cockburn Crescent	Exempt (21)	0.28	$ 1,400,000	0-5		City
2	New Road connection B	Drive-In Road to Angus Campbell Drive / Bell Street	by developer	1.1	$ 6,200,000	0-5	1	Developer / Township
3	Upgrade / Urbanize International Drive	Boundary Road E to New Subdivision Road	Exempt (21)	0.47	$ 2,600,000	0-5		City
6A	Robinson Lane Extension / Upgrade	Highway 148 to D'Youville Drive	by developer	1.1	$ 6,800,000	0-5	1 / 3	Developer / Township
9	Drive-In Road Upgrade	Highway 148 to MacKay Street	Exempt (19a)	2.2	$ 6,900,000	5-10	3	County
10A	Quarry Road Extension	Paul Martin Drive to CN Rail Corridor	Schedule C	0.7	$ 4,900,000	5-10	4	City
10C	Quarry Road Upgrade	CN Rail Corrdior to Existing Limit	Exempt (21)	0.5	$ 2,700,000	5-10	5	City
11	Alfred Street Extension (new road)	Rosewood Avenue to O'Brien Street N	Schedule C	0.22	$ 2,100,000	5-10		City
12	Alfred Street Upgrade	O'Brien Street to Angus Campbell Drive	Exempt (21)	0.48	$ 2,900,000	5-10		City
13	Alfred Street Traffic Calming	Rosewood Avenue to MacKay Street	Exempt (28a)	1.3	$ 600,000	5-10	6	City
4	D'Youville Drive Extension (new road)	Existing Limit to Drive-In Road	by developer	1.2	$ 9,300,000	10-20	1	Developer / Township
5A	D'Youville Drive Urbanization	MacKay Steet to Existing Limit	Exempt (21)	0.8	$ 3,800,000	10-20		City
6B	Robinson Lane Extension / Upgrade	D'Youville Drive to Bardis Drive	by developer	0.5	$ 3,100,000	10-20	1	Developer / Township
7	MacKay Street Upgrade / Urbanization	Townline Road / D'Youville Drive to Drive-In Road	Exempt (21)	1.5	$ 7,600,000	10-20		City / Township
8	Drive-In Road Extension (new road)	MacKay Street to Mud Lake Road	Schedule C	1.1	$ 10,000,000	10-20	2	County / Township
10B	Quarry Road Extension	Existing Limit to D'Youville Drive	Schedule C	0.4	$ 2,800,000	10-20	5	City
14	Boundary Road East Extension (new road)	Forced Road to Douglas Street	Schedule C	0.67	$ 6,300,000	10-20	7	City / Township
15	Boundary Road West / Crandal Street Upgrade	Douglas Street to Pembroke Street West	Exempt (21)	0.75	$ 4,000,000	10-20	7	City / Township
	Total Major Road Projects				**$ 88,500,000**			

Project #	Intersection Improvements	Intersecting Road	MCEA Schedule		Total Cost Estimate	Time Period
16	Howard Street - Left Turn Lane	Pembroke Street East	Exempt (19a)		$ 400,000	5-10
17	D'Youville Drive - Roundabout	Robinson Lane			included in Proj 4	
18	D'Youville Drive / Townline Road - turn lanes and signals	MacKay Street			included in Proj 5A	
19	Drive-In Road - roundabout	MackKay Street / Mud Lake Road Connection			included in Proj 8	
20	Boundary Road - turn lanes and signals	International Drive			included in Proj 3	
21	Boundary Road - turn lanes and signals	New Subdivision Entrance Road	Exempt (19a)		$ -	5-10
22	Boundary Road E - Left Turn Lanes	Bruham Avenue and Trafalgar Road	Exempt (19a)		$ 900,000	5-10
23	Boundary Road E - roundabout	Forced Road			included in Proj 14	
24	MacKay Street - turn lanes and signals	Quarry Road			included in Proj 7	
25	TV Tower Road - roundabout	Foreast Lea Road / Pembroke Street West	Schedule B		$ 5,200,000	10-20
26	Highway 148 - Turn Lanes and Signals (by MTO)	Drive-In Road	By Others			
27	Highway 148 - Turn Lanes and Signals (by MTO)	Robinson Lane	By Others			
28	Rankin Street Realignment	Highway 148 / Angus Campbell Drive	Corridor Protection Only			
	Total Intersection Improvements				**$ 6,500,000**	

Notes:

1 Assumes developer will pay for the typical cost for a local road standard, Township to pay for oversizing to Collector Road. Cost shown reflects totalcost before cost sharing
2 Assumes new structure across Muskrat River - 75 m span x 11.75 m width - to be confirmed during Class EA study
3 Excludesintersection work at Highway 148 to be completed by MTO
4 Assumes at grade trail crossing on former CN Rail Line
5 Projectshould be completed with Project 10A as combined Schedule C Class EA for entire connection
6 PreliminaryTraffic Calming Cost Estimate
7 Assumed to be a joint City-Township project- within City boundary

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Recommended Road Network Improvements

Table ES-1

Policies to support the plan

In addition to the road network improvements identified, the City and Township can take steps to improve transportation options for residents and manage the transportation system to support growth though the implementation of various programs and policies.

Transit

The need for transit services in the study area was identified by a number of residents as a key issue during the public consultation process for the study. The City has recently initiated the process to implement the recommendations of the 2022 Transit Feasibility Study which recommended the establishment of a demand responsive transit service covering the whole City – with service extending to the Walmart Plaza, within the Township.

The Township should consider entering into a partnership with the City to provide transit service beyond the City boundary.

Walking and Cycling

The compact nature of the City of Pembroke means that many trips are short enough to be viable for active travel modes such as walking and cycling. The Township recently approved an Active Transportation and Trails Plan containing recommendations for new infrastructure and policy measures to support walking and cycling – with various different approaches identified for suburban areas on the periphery of the City of Pembroke, rural settlement areas, and along rural roads.

To support increased opportunities for residents to chose active forms of travel **it is recommended that the City prepare a similar Active Transportation Plan** to identify new trail opportunities, potential cycling infrastructure, and priorities for completing missing sidewalk links on City streets.

To enhance safety for trail users **it is also recommend that the City work with the County to review and update trail crossing designs, pavement marking treatments and signage at key crossings along the Algonquin Trail**.

Building on the popularity of the Algonquin Trail and the Kiwanis Waterfront Trail, **there is an opportunity for the City to work with the Township to acquire the property and develop a new trail facility on the abandoned portion of the CN Rail corridor** running through the southwest portion of the City.

Road Classification and Traffic Management

Roadway classifications establish a hierarchy of roadways that serve different needs within a community – with priorities that range from moving traffic to providing local property access and supporting walking and cycling in neighbourhoods. The City of Pembroke has a road classification system in their Official Plan and have operational policies that further designate different roadways by the role they play in the network.

Increasingly, municipalities have been updating their design guideline documents to better reflect the needs of all road users and all modes of travel using a Complete Streets approach to guide design decisions and trade-offs. A Complete Streets approach focuses on creating safe and convenient streets for pedestrians and cyclists of all ages and abilities, transit vehicles and users, automobiles and trucks - while recognizing how users of the street are influenced by surrounding land use and urban form. In a rural context, street users could also include farming equipment, equestrian riders, and equestrian vehicles.

It is recommended that the City and Township develop design guidelines for their roads tied to the existing roadway classification system (in the case of the City) or a new roadway classification system (in the Township) using a Complete Streets approach.

Many municipalities are facing growing requests from residents to address speeding on local roads to provide a safe environment for pedestrians and cyclists. In some urban areas, requests for traffic calming measures are also growing to address aggressive driver behaviour and protect neighbourhoods from infiltration of cut through traffic.

Safety was cited by residents who completed the online survey as a key barrier that makes them avoid walking and cycling in their neighborhoods, and the implementation of traffic calming measures was also suggested as an initiative that could improve safety.

In Pembroke the City has already implemented reduced speed limits on a number of streets, Community Safety Zones have been established on Angus Campbell Drive and Bell Street and various speed management techniques are used to try to encourage residents to follow posted speed limits. The Township also has a range of posted speed limits designated for roads under their jurisdiction with lower speed limits on some seasonal roads and local roads, and six areas designated as Community Safety Zones in the vicinity of parks, recreation centres and in some neighbourhoods.

In many communities, Speed Management or Traffic Management protocols have been developed to assist in responding to traffic and safety concerns received from residents.

A sample Speed Management / Traffic Calming policy, based on an extensive best practices review, could form the basis for local policies designed to address the specific context and preferred traffic calming techniques within the City of Pembroke and the Township of Laurentian Valley.

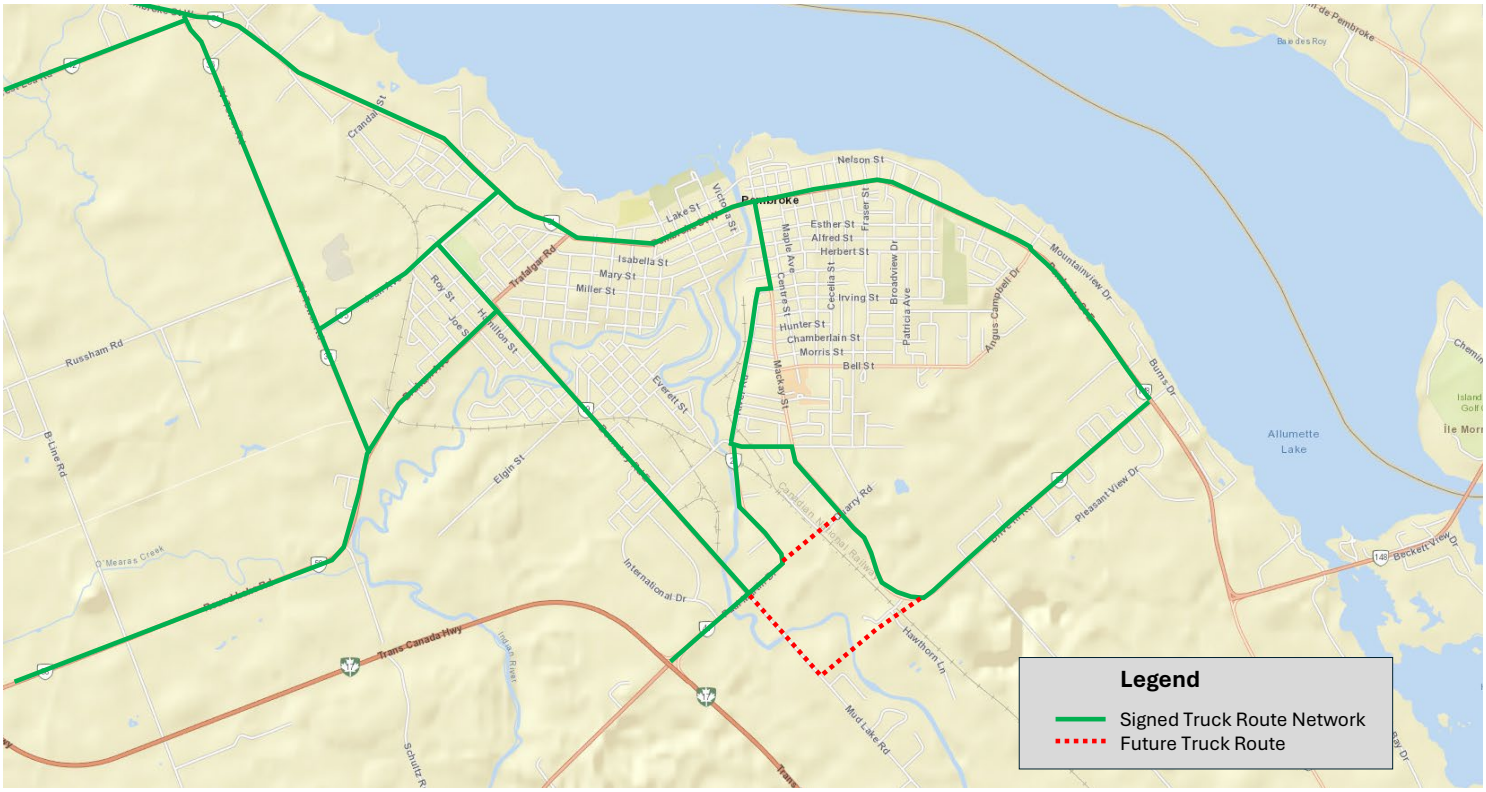
Pembroke and Laurentian Valley should consider adopting policies and processes for reviewing requests for speed management / traffic calming on City and Township roads.

Truck Route Planning

Managing truck traffic and the routes trucks use to access commercial and industrial areas is often also a key concern of residents. Some municipalities have adopted formal truck routes to try to intercept trucks coming into the built-up area and direct them to roads that are better suited for truck traffic. The use of permissive routes are often combined with heavy truck restrictions as a means to provide positive guidance to trucks entering the community. Concerns have been expressed in the past about truck traffic using Angus Campbell Drive and Bell Street, which resulted in the local truck prohibitions on these streets.

A conceptual truck route network for the periphery of Pembroke has been developed as part of the TMP to illustrate the key routes that could form part of a signed truck route network. Many of these road segments are County Roads and or Provincial Highways which allow trucks. Future road connections identified in the Recommended Road Network Plan should also be incorporated into this truck route network once they are constructed.

Pembroke and Laurentian Valley should work with the County and MTO to implement a Truck Route Network using signage that directs heavy vehicles to preferred routes.



Highway 148

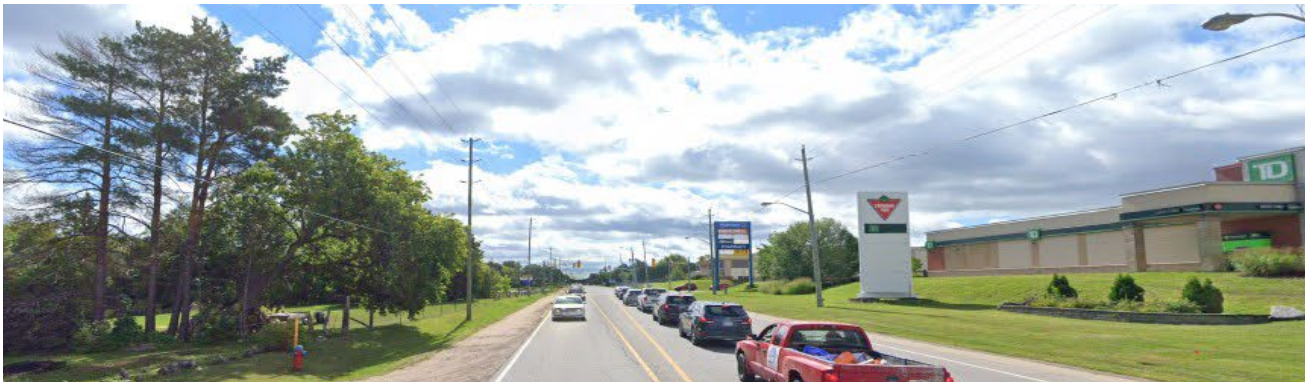
Highway 148 plays a critical role in the serving the travel demands in the study area along with longer distance travel needs. As part of the Transportation Master Plan a review of the current Highway 148 improvement project being planned by the Ministry of Transportation was undertaken to assess the proposed improvement plan, the recommended design, and the proposed traffic management plan to ensure that the interests of the Township and City are considered.

Between Angus Campbell Drive and Drive-In Road the proposed improvements include widening the road surface to provide a continuous two-way left turn lane; urbanizing the cross section including installation of curb with gutter, storm sewer and sidewalks; and installation of traffic signals and turning lanes at the Highway 148/Drive-in Road intersection. Between Drive-in Road and Greenwood Road rehabilitation of the existing pavement is planned along with providing a 2.5 m wide paved shoulder; modifying the westbound right turn channelization at the Greenwood Road intersection and extending the length of the merge lane; and widening Highway 148 to provide a left-turn slip around lane at the Old Mill Road intersection.

The review findings noted that the forecasts of future growth are in line with historical background growth on Highway 148, but they do not consider the additional traffic that is forecast to be generated as local development adjacent to the corridor is built out. The recommended design for Highway 148 should provide noticeable improvements to the operation and safety of this important corridor in the medium term, however, capacity deficiencies can be expected on Highway 148 during summer peak periods in the absence of other road network improvements.

Recommended improvement projects identified in the Transportation Master Plan will assist in managing the growth of traffic due to new developments adjacent to the Highway 148 corridor and will also reduce anticipated congestion, between Drive-In Road and Angus Campbell Drive.

Between Drive-In Road and Greenwood Road, Highway 148 can be expected to experience increasing levels of congestion during summer peak periods, not just on summer weekends. None of the projects identified to support growth in the City and Township have any impact on traffic using this rural portion of Highway 148.



Highway 148 Access Management

In the original MTO Transportation Environmental Study Report (TESR) a number of access management issues were identified on Highway 148, particularly through the built-up area between Angus Campbell Drive and Drive-in Road. Intersection spacing and driveway density were identified as key concerns, and as a result new entrances would generally not be permitted if there are other alternatives to provide access to properties.

Given the level of potential growth anticipated in this area of the City and Township, the access management policies of the Ministry are bound to conflict with the development objectives of the local municipalities.

It is recommended that all parties work cooperatively to consider the benefits of permitting the development of additional strategic intersections on the Highway 148 corridor, combined with a parallel local road network to link future development areas and take pressure off of Highway 148.

To facilitate future development approvals the Township should investigate the feasibility of assuming Highway 148, between Drive-In Road and Angus Campbell Drive, from the MTO under the connecting link program after MTO has finished their planned improvements.

Highway 148 – Greenwood Road Intersection

The review also recommended that the recommended design for the Highway 148 / Greenwood Road intersection be reassessed to consider the potential benefits of a roundabout design treatment for this location. The original Class EA study completed by the Ministry identified 5 design and operational issues with the Greenwood Road intersection as noted in **Table ES.2**.

TABLE ES.1: GREENWOOD ROAD / HIGHWAY 148 DEFICIENCIES

Issue	Resolved by Proposed Design	Resolved by Traffic Signal	Resolved by Roundabout
1. Delays for traffic turning left from Highway 148 WB	No	**Yes**	**Yes**
2. Collision risk on merge lane due to traffic stopping to turn left at Esso gas station	**Yes**	**If right turn channelization removed**	**Yes**
3. SB left turn lane is too short	No	No	**Yes**
4. NB merge lane is a direct taper and is also too short	**Yes**	**If right turn channelization removed**	**Yes**
5. SB left turn collisions	No	**Partially** – with advance green	**Yes**

Note: Deficiencies noted were identified in the original Traffic Reports prepared in support of the MTO TESR.

The review noted that the proposed design for this intersection only addresses 2 of the identified issues, while signalization of the intersection may address up to 4 of the issues, while a roundabout would address all the issues.

The Ministry position with respect to the intersection design is that a roundabout design configuration would only be considered if the intersection met the warrants for traffic signals, where the roundabout could be an alternative to providing full traffic signals.

At the time of the Ministry studies, and in subsequent counts taken during the design of the Highway 148 project, the minimum requirements for signalization have not been fully satisfied – however the intersection is now very close to meeting the signal warrants and the Ministry is planning this infrastructure to accommodate growth for the next 20 years.

It is recommended that the Ministry undertake a review of the Highway 148 / Greenwood Road intersection considering updated forecasts of future growth to determine the need for signalization of the intersection and the benefits of considering a roundabout design treatment.

Implementing the Plan

The TMP introduces key recommendations that should be incorporated into the Township and City Official Plans, as these documents represent the guiding land use and policy documents for both municipalities.

Policy initiatives such as the Road Classification System, road widening and right-of-way requirements, entrance spacing policies, active transportation routes and polices, and policies for protection and acquisition of new corridors recommended in this plan should be considered for inclusion in the City and Township Official Plans.

The City of Pembroke and the Township of Laurentian Valley should incorporate the recommended policy measures in Chapter 6 into their next update to their respective Official plans.

Corridor protection is a planning process intended to protect lands that may be required for future public uses and provides greater clarity of public intentions regarding the location and timing of future roadway improvements. Coordinating transportation corridor planning with land use planning within and adjacent to proposed facilities also helps to avoid incompatible land development or development within or so close to a future right-of-way that it precludes its use as a future transportation corridor.

While the Township and City Official Plans include general policy direction regarding the protection of transportation corridors, the documents do not fully articulate the methods and guidance for protecting and/or acquiring rights-of-way.

The recommended road network plan includes a number of projects identified as long-term initiatives or for corridor protection, in anticipation of a future need. The alignments of the corridors shown, are approximate and subject to more detailed planning and engineering studies to determine their final size and location. These studies will identify community, private property, and environmental impacts and measures to mitigate any such concerns.

The following corridor protection areas are recommended with more detailed corridor protection maps illustrated in Section 6 of the report:

- **Angus Campbell Drive / Rankin Street**
- **New Roadway Connection to Highway 148**
- **Drive-In Road Extension**
- **Quarry Road Extension**
- **Boundary Road Extension**

Angus Campbell Dr / Rankin St

Drive-In Road Extension

Quarry Rd Extension

Boundary Rd Extension

Transportation infrastructure improvements identified in the TMP may be implemented through the development approval process if the improvements are directly related to the subject development. Where a roadway through a proposed development area has been identified for a higher classification (collector or arterial road), the municipality would typically be responsible for paying for the additional costs to oversize the roadway (beyond what is needed for a local road).

The City of Pembroke and the Township of Laurentian Valley should prepare design guidelines that can be shared with developers implementing projects in areas that overlap with the projects identified in the TMP.

Where projects identified in the TMP will require right-of-way widths beyond the existing right-of-way or the typical right-of-way for a new local street, the City and Township should incorporate the right-of-way requirements into their respective Official Plans to ensure lands can be secured at the time of development approval.

Funding

Property taxes, development charges, and Federal Gas Tax funds represent the most reliable and consistent sources of financing for the Municipality. Although availability is less certain, other funding sources such as infrastructure grants will likely be needed to implement some TMP recommendations, particularly higher cost items.

The City of Pembroke and the Township of Laurentian Valley should update their respective Development Charge By-Laws to incorporate the capital costs for eligible portions of the recommend projects.

Monitoring and Plan Updates

Regular reviews and updates of the TMP allow for the ongoing assessment of the performance and effectiveness of the plan. Establishing this stable transportation planning cycle ensures the strategies can respond to unforeseen conditions and imprecise assumptions, remain relevant, and fulfil the Township and City's transportation objectives.

Generally, Master Plans should be reviewed every five years to determine the need for a detailed formal update. The need to renew the TMP should be examined in conjunction with reviews of the Official Plan and updates to the Development Charges Background Study, which are also required to be regularly updated per the *Planning Act* and *Development Charges Act*, respectively.

The development growth patterns assumed in the TMP are based on best estimates of where growth will occur and the magnitude of potential growth that could occur in each area. However, these forecasts are often a best estimate based on preliminary information and plans, which often change as market conditions and the planning framework in a community changes. Changes to planned growth and the type and magnitude of growth may occur during the plan horizon, and if the changes are significant a review of the plan recommendations may be warranted.

The City and Township should review the Transportation Master Plan every five years, ideally in conjunction with updates to the Official Plan and Development Charges Background Study.

Project Summary

Project Number:
220694

Date and Version:
2025-01
2.0.0

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City of Pembroke

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Township of Laurentian Valley/ City of Pembroke

Transportation Master Plan for East-West Traffic

<< Original Signed By >>

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1 Introduction

1.1 Purpose of the Plan

The Township of Laurentian Valley and City of Pembroke are growing, with new commercial uses emerging along the Highway 148/Pembroke Street East corridor and plans for residential development to the south and west edges of Pembroke - on lands within the City and along its boundary with the Township.

The Town of Petawawa, while outside the immediate study area, is also experiencing growth, putting pressure on the Pembroke Street West (Renfrew County Road 51) corridor leading into the City. Over the longer term, this pattern of growth may put additional strain on the existing east-west road network within the Township and City – a network bisected by the Muskrat River and Indian Rivers, with few major road crossings.

With the Town and City poised for continued prosperity and growth, a strategy to address existing traffic concerns and a plan to meet future transportation needs is required. The Township of Laurentian Valley and City of Pembroke Official Plans set out broad transportation system objectives, but do not identify the specific transportation improvement projects needed to serve planned growth.

The Transportation Master Plan for East-West Traffic provides important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure needs. As a collaborative project between the City of Pembroke and the Township of Laurentian Valley, the Master Plan provides the opportunity to ensure a holistic approach to future decisions on transportation.

The Transportation Master Plan (TMP) assessed the existing transportation network to identify potential improvements to meet current and future needs. The integrated plan also provides a policy framework to support sustainable transportation practices and livable communities as Laurentian Valley and Pembroke grow over time. In delivering this infrastructure plan and policy framework, the following objectives guided the scope of the study:

- Review Highway 148 as it relates to traffic management and future development;
- Review the performance of the existing road network based on existing traffic and new data collected;

- Develop projections of future traffic from Provincial highways, County roads, and local growth;
- Evaluate the ability of existing infrastructure to meet future needs;
- Identify and propose ways to address current and future road needs;
- Create a balanced transportation system that supports active and alternative transportation options, including sustainable choices like walking and cycling;
- Provide supporting policies on matters related to the design and operation of the transportation network, including matters such as safety, traffic management and pedestrian crossings;
- Identify infrastructure priorities for building and maintaining the transportation network in the short, medium and long-term, including anticipated costs; and
- Identify potential funding sources for future works.

1.2 Using the TMP

A Transportation Master Plan (TMP) is a strategic policy document that guides how a municipality's transportation system will grow and develop over the long term. The plan works together with a municipality's Official Plan, which directs land use and development patterns, as well as other master plans such as those concerning municipal servicing, parks and recreation, and economic development.

Generally, Transportation Master Plans examine current transportation issues within a community, assess existing and future growth patterns, determine the need for transportation improvements, and establish policies to support the plan and maintain the transportation network.

The TMP is meant to be used by several different transportation stakeholders as both a reference and a guiding document for developing strategies and making investment decisions.

As the TMP process is strategic in nature, projects that are identified in the plan are shown at a conceptual level of detail, and additional planning and design work will be needed to finalize alignments or prepare detailed plans for construction. A TMP is intended to be used as a starting point for initiating subsequent steps of the project planning and design process for larger projects that are subject to the requirements of the Environmental Assessment Act.

City and Township staff may incorporate some of the policy recommendations and long term corridor protection recommendations into their respective Official Plans and associated development review processes, to ensure the land use planning process is integrated with transportation planning.

The TMP can also be used to position the City and Township to apply for external funding through federal or provincial infrastructure programs, as funding becomes available.

Section 1 of the TMP report introduces the study, the study process, and the consultation activities undertaken to develop the TMP. Section 2 of the report outlines the policy framework guiding the review of transportation needs for the study area, including Federal, Provincial, County and local perspectives. Section 3 of the report provides an overview of the existing state of the transportation system and its users, while Section 4 summarizes historical and planned growth for the area, and the impact of growth on existing and future transportation needs. Section 5 describes the process used to develop and evaluate different transportation improvement options, and Section 6 presents a multi-modal Transportation Plan covering road, transit, walking and cycling improvement strategies to accommodate future growth, along with key policy directions to assist the City and Township in managing their infrastructure. Section 7 of the report provides an implementation and monitoring plan including a summary of project costs, funding opportunities and follow up work required.

1.3 The Environmental Assessment Process

The work undertaken in completing the TMP Update followed the Municipal Class Environmental Assessment (MCEA) [1], an approved process under the *Environmental Assessment Act* for planning municipal infrastructure projects in Ontario. The study incorporated the key principles of environmental assessment planning, which include:

- Consulting with affected parties throughout the study;
- Considering a reasonable range of alternatives;
- Identifying and considering the effects of each alternative on all aspects of the environment;
- Evaluating the alternatives systematically to determine their net environmental effects; and

[1] Municipal Engineers Association. *Municipal Class Environmental Assessment (Class EA).* October 2000, last amended in 2023.

- Providing clear, complete, and traceable documentation of the planning process.

The Municipal Class EA defines different approaches to conducting master plans. The TMP Update followed **Approach #1**, with preparation of this report at the conclusion of Phases 1 and 2 of the Municipal Class EA Planning and Design Process, which comprise:

- Identifying the problem or opportunity (Phase 1); and
- Identifying alternative solutions to address the problem or opportunity (taking into consideration the existing environment) and establishing the preferred solution (taking into consideration public and review agency input) (Phase 2).

Consistent with this approach, the TMP Update was completed at a broad level of assessment, allowing the plan to serve as the basis for more detailed future investigations required to fulfil the remaining environmental assessment requirements for recommended Schedule B and Schedule C projects. Schedule B projects will still require the preparation of a project file, while Schedule C projects will need to fulfill Phases 3 and 4 of the MCEA process prior to filing an Environmental Study Report (ESR).

The TMP Update also recommends several projects, which are considered exempt under the Act. Projects of this nature, such as minor intersection improvements, pose limited potential for environmental effects, with routine measures typically utilized to mitigate any effects.

Table 1.1 provides examples of transportation projects included within each schedule of environmental assessment.

Figure 1.1 illustrates the 5 phases of the MCEA process for infrastructure projects and how the Master Plan addresses the requirements under Phases 1 and 2.

Figure 1.1: Master Plan Relationship to Class EA Process

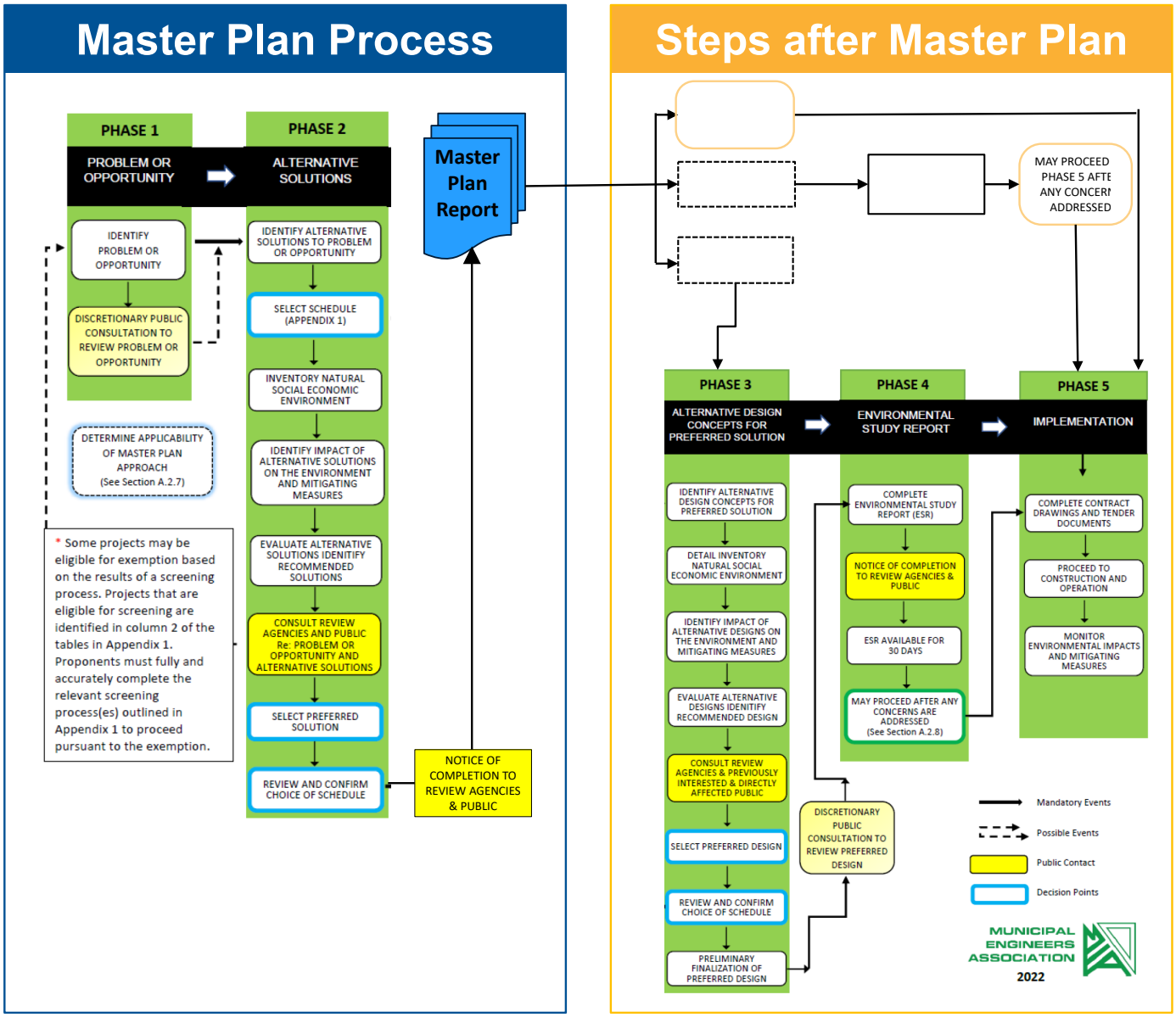


TABLE 1.1: MCEA PROJECT SCHEDULES

EA SCHEDULE	Types of Road Projects
Exempt Projects	Most maintenance activities, localized operational improvements (turn lanes or new traffic signals) within the existing right-of-way, and reconstruction projects where there is no change to the use or number of traffic lanes.
Schedule B	Improvements and minor expansions to existing roads such as reconstruction or widening or new collector roads that may have some adverse environmental impact requiring environmental screening and notification of those affected (cost less than $3M)
Schedule C	Construction of new facilities and major expansions that increase capacity or number of travel lanes and have the potential for more significant environmental impacts, requiring the full five-step EA process and public consultation (cost greater than $3M)
Projects Eligible for Screening	Some Schedule B or Schedule C projects may be exempt from the Environmental Assessment Act subject to the completion of an Archaeological Screening (that identifies no known potential for encountering archaeological resources) or the Collector Road screening process for projects that may have been approved through a similar level of study under the Planning Act.

1.4 Public Engagement During the TMP

Consultation is a core component of the Municipal Class EA process and a vital element of a master planning study. The **Engagement Program** for the study offered the public, review agencies, other municipalities, and First Nations a variety of opportunities to learn about the TMP and provide input into the update of the long-range transportation strategy for the Township of Laurentian Valley and the City of Pembroke.

The Engagement Program featured a range of consultation, outreach, and communication initiatives to involve a broad spectrum of participants, focused on the following key messages:

- The Township and City are planning for population and employment growth in the coming years;

- The Township and City want to provide users with a range of safe, efficient, and accessible mobility choices; and
- Involving residents, businesses, agencies, and other stakeholders throughout the study would ensure the updated plan is pragmatic and meets community needs now and into the future.

The Township and City conducted three points of contact and one formal round of engagement as part of the TMP, as summarized below.

Appendix A contains additional detail on the engagement program, summarizing the consultation approach, outreach methods, engaged stakeholders, and program milestones for engagement, with supporting documentation of the feedback received.

Notice of Study Commencement (May 29, 2023)

At the first point of contact, a Notice of Study Commencement was prepared and advertised in the local media and published on the Township and City websites.

The Township issued the Notice of Study Commencement to the public, agencies, utilities, stakeholders, and First Nations through local newspaper ads, emailed electronic copies, and through posting the notice on the City and Township websites.

The Township received 1 email, and 1 phone call in response to the Notice of Commencement.

Public Survey (May 29, 2023 to October 30, 2023)

The second point of contact involved the creation of a public survey to invite feedback from residents and stakeholder groups on their issues, concerns, and opinions regarding a host of transportation topics.

The online survey was hosted on the SurveyMonkey web platform, and a link to access the survey was provided on the Township and City websites. Printed copies of the survey were made available at the Township and City municipal offices for those without computer access. Social media notifications were also sent via the Township and City's accounts.

Table 1.1 summarizes participation in the survey.

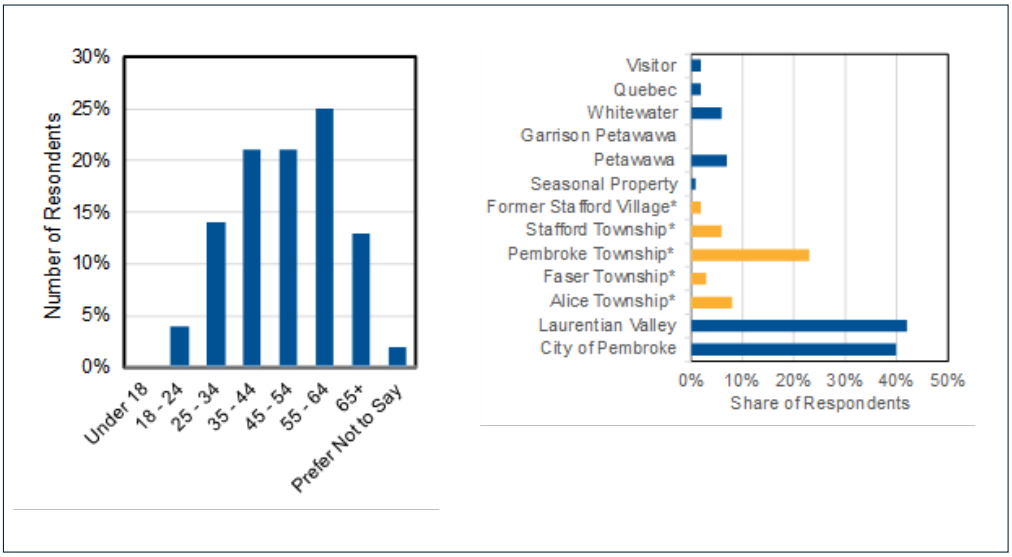
TABLE 1.2: PARTICIPATION IN PUBLIC SURVEY

Number of Completed Surveys
164

The survey included 15 questions in total, with 12 structured questions asking users to select from various responses and 3 open-ended questions, where participants could identify the issues of most interest to them.

As illustrated in **Figure 1.2**, there was a good age distribution of respondents, although those over the age of 34 tended to be more inclined or aware of the survey and those in the 18-24 age range represented less than 5% of respondents. Most of the respondents were residents of the City of Pembroke or the Township of Laurentian Valley, with some respondents living in neighbouring communities such as Petawawa, or Whitewater. Within Laurentian Valley respondents were primarily from the former Pembroke Township, although there were some responses from the other former townships that make up Laurentian Valley.

Figure 1.2: Age and Geographic Distribution of Respondents

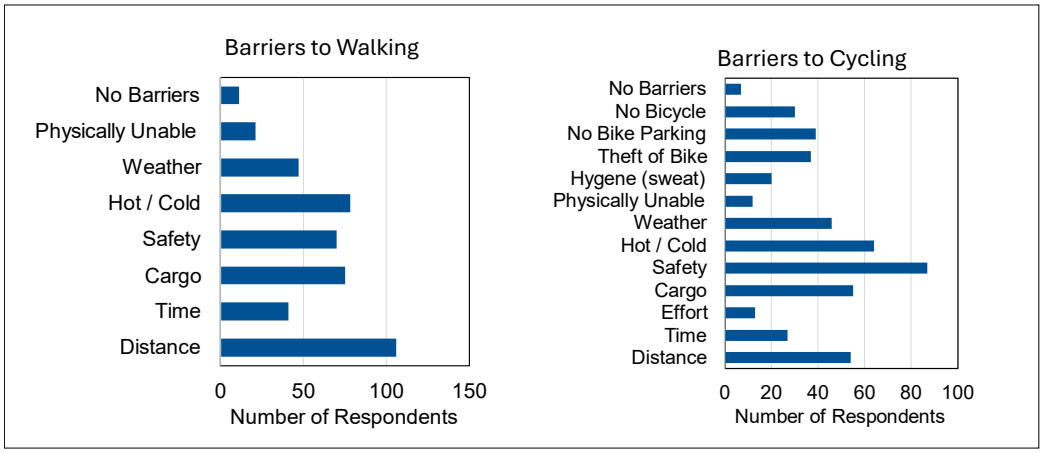


Survey respondents, when asked how they travel around the study area, indicated an overwhelming preference for auto oriented travel, with 87% indicating this is their primary mode of travel for trips, with 84% as the driver and 3% as passenger. Approximately 11% of respondents indicated that they travel using active transportation modes, with 8% selecting walking and 3% cycling, however these choices were more popular amongst residents living within the City of

Pembroke. Approximately 2% identified other modes of travel, such as school buses. With no public transit in the area, no respondents selected this as a primary mode of travel.

Survey participants were asked about some of the reasons why they choose not to walk or cycle more often. Key barriers identified, as illustrated in **Figure 1.3**, include travel distance (particularly for those living in the township), the need to transport cargo with them, safety (particularly for cycling), weather and climatic conditions, and physical limitations. Almost 24% of respondents also noted a lack of bike parking and the fear of theft of their bikes as reasons for not cycling more often.

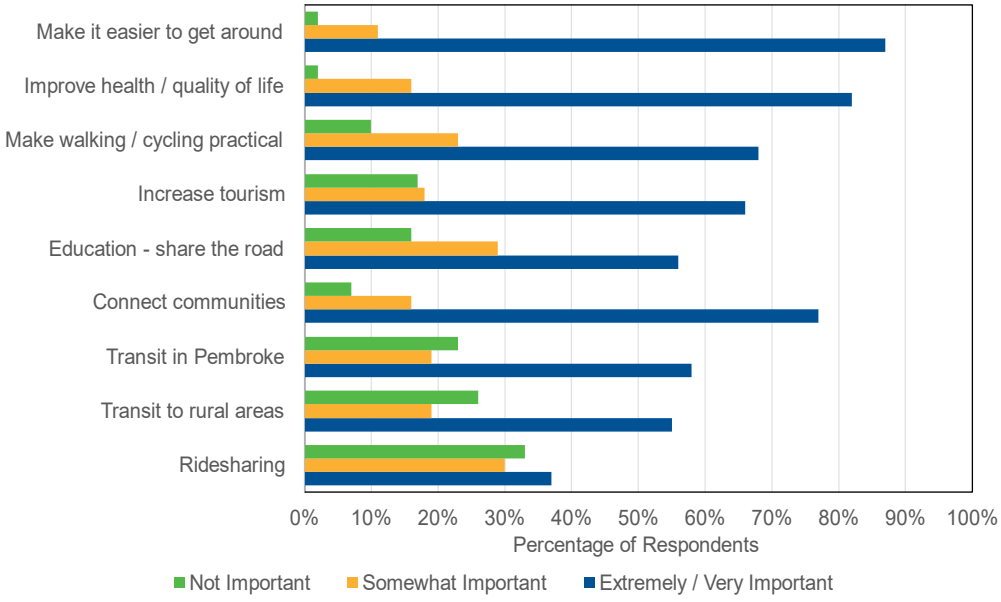
Figure 1.3: Barriers to Walking and Cycling



When residents were asked about their priorities for investment in the transportation system, most identified the need to make it easier to get around, primarily through road improvements - but a number of respondents also identified the need for transit service in Pembroke, and to a slightly lesser extent, transit service to rural areas.

As illustrated in **Figure 1.4**, measures that improve health or quality of life was the second most important consideration for respondents, which would typically include investments in active transportation infrastructure (walking and cycling facilities) that promote health, exercise and outdoor activities.

Figure 1.4: Respondent Priorities for Improvements



A full summary of the survey questions and responses is included in **Appendix B**. In summary residents who completed the survey expressed strong support for improving the condition of roads and improving how roads in the study area work. Co-ordinating signals, adding turn lanes, and widening or building new roads were supported as measures to improve convenience and make it easier to get around the area.

Separating cyclists, adding pedestrian crossings, and traffic calming were also viewed as positive safety measures

Round #1 (December 5, 2023 to January 31, 2024)

The first round of engagement presented information and invited feedback on the study background and TMP review and update process. The Township and City issued the Notice of Public Information Centre (PIC) 1 to the public, agencies, utilities, stakeholders, and First Nations through local newspaper ads, mailed hardcopies, and emailed electronic copies. Social media notifications were also sent via the Township and City's accounts.

A Public Open House was hosted at the Shady Nook Recreation Centre, within the Township, and display materials were provided on both the Township and City websites for those who were unable to attend the open house meeting (https://www.lvtownship.ca/en/invest-and-build/lvpembroketmp).

Study team contact information was also provided on the PIC notice and study website for individuals with questions or wishing to offer further input. **Table 1.3** summarizes community participation in the engagement efforts.

TABLE 1.3: ROUND #1 ENGAGEMENT STATISTICS

Details	Number of Participants
Open House Attendees	12
Comments Received	4
Website Comments	36
Email Comments	1
Total	**53**

The Township and City received 40 comment forms and 1 email during Round #1. Key comment themes included:

- Should consider Quarry Road extension (suggested by 3 respondents
- Should consider one way system downtown (Pembroke St & Nelson / Lake St) – suggested by 4
- Support for Alfred St connection – 5 respondents
- Support for Mary St connection – 3 respondents
- Support Boundary Road extension without Pembroke St widening – 2 respondents
- Need Public Transit – 6 respondents
- Need to develop cycling plan in Pembroke – 3 respondents
- More focus on sidewalks in Pembroke – 2 respondents).

From the 41 responses received, 36 out of 41 expressed support for the road improvement recommendations presented at the PIC and 36 of the 41 also expressed support for the recommended policy recommendations.

Indigenous Consultation

The Township sent the Notice of Study Commencement and Request to Consult, and the Notice of PIC 1 to the following Indigenous communities via mail and email: Algonquins Consultation Office and the Algonquins of Pikwakanagan First Nation.

In response to the request to consult, the Algonquins Consultation Office provided a response email, dated June 19, 2023 indicating a desire to be apprised of how transportation needs and deficiencies are being identified, reaffirming that the study area falls within the Settlement Area of the Algonquins of Ontario, and requesting that they be contacted for all future Environmental Assessment undertakings so that they can provide comments on those projects.

Subsequent to this response the Township communicated with the Algonquins and the Pikwakanagan First Nation by email on January 9, 2024 and provided a copy of the display material from the Public Information Centre on December 13, 2023 along with an invitation to meet in person to discuss the project and any comments they may have. There was no response to this request for consultation.

2 Planning Context

2.1 Study Area Structure

The Township of Laurentian Valley and the City of Pembroke are located within lands under claim by the Algonquins of Ontario - an area which covers approximately 9 million acres within the Kichisippi (Ottawa River) and Mattawa River watersheds. There are 84 municipal jurisdictions fully and partially located within the Settlement Area lands, including 75 lower and single tier municipalities and 9 upper tier counties. The Algonquins of Ontario are now comprised of 10 Algonquin communities including:

- Antoine
- Algonquins of Pikwakanagan First nation
- Bonnechere
- Greater Golden Lake
- Kijicho Manito Madaouskarini (Bancroft)
- Mattawa / North Bay
- Ottawa
- Shabot Obaadjiwan (Sharbot Lake)
- Snimikobi (Ardoch) and
- Whitney and Area

The Algonquins of Ontario (AOO) and the Governments of Canada and Ontario are working together to resolve this land claim through a negotiated settlement.

The Study Area for the TMP is located northwest of the Greater Ottawa Area in eastern Ontario and the Township of Laurentian Valley is one of 17 lower tier municipalities within the County of Renfrew. The Township is bordered by the City of Pembroke, the Town of Petawawa, the Town of Laurentian Hills, and the Townships of Killaloe Hagarty Richards, North Algona Wilberforce, Admaston/Bromley, and Whitewater Region.

The City of Pembroke is a separate municipality adjacent to the Township and is bordered by the Township to the west and south, the Town of Petawawa to the north, and the Ottawa River to the East. The City of Pembroke lies within the County's geographical boundaries but is separated for municipal governance purposes.

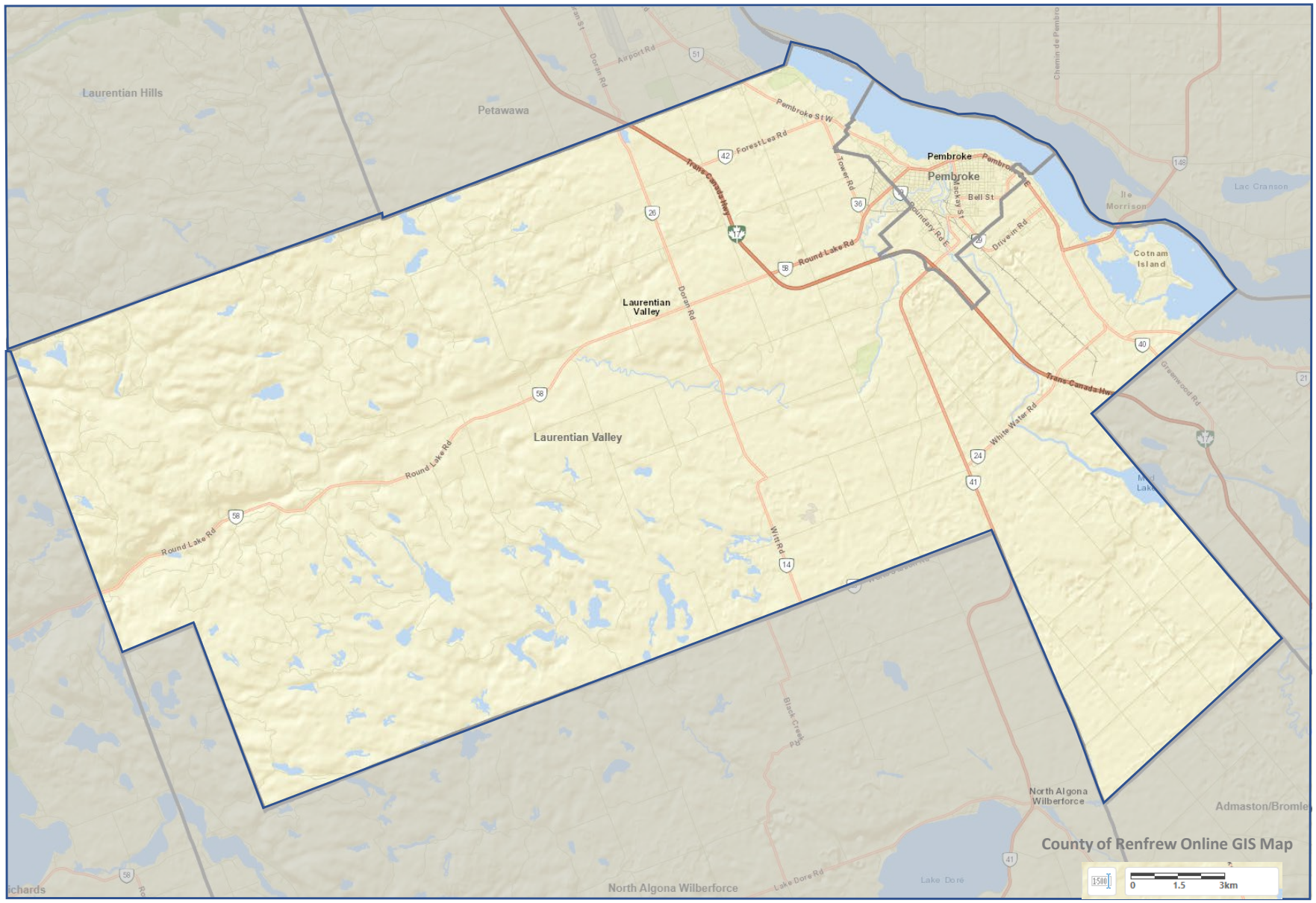
From a land use perspective, the eastern portion of the Township is predominantly agricultural in nature with several small settlement areas, while the western part comprises a diverse Canadian Shield landscape. Crown lands, active forestry, and some aggregate extraction industries are also prevalent in the west.

There are a number of settlement areas in the Township including the built up areas of Bromsgrove and Pleasant View (which are both on the border with the City of Pembroke), Riverview (on the boundary with Petawawa), Forest Lea and Shady Nook (settlement areas adjacent to Highway 17 and 41), and smaller hamlets in the rural areas of the Township including Alice, Davis Mills, and Cotnam Island. The built-up areas of Pleasant View and Brumsfield, surrounding the City of Pembroke, serve as the primary focus for new major development and the Township has agreements with the City to provide municipal services into these areas.

According to the 2021 Census of Canada, the Township has a population of approximately 9,450 residents distributed over an area of about 540 square kilometres, plus a large seasonal residential component. The City of Pembroke has a 2021 population of 14,360 residents distributed over 14.3 square kilometers.

Figure 2.1 illustrates the location and boundary of the primary municipalities within the study area.

Figure 2.1: Primary Study Area



Transportation infrastructure and services are delivered to study area residents through multiple jurisdictions including the Ontario Ministry of Transportation, the County of Renfrew, the Township of Laurentian Valley and the City of Pembroke.

Table 2.1 summarizes the responsibilities of the County, Township, City and MTO in delivering transportation services within the study area. The TMP focuses primarily on responsibilities under the Township and City jurisdiction, although the County may also have a role in implementing some of the study recommendations pertaining to County Road infrastructure.

TABLE 2.1: TRANSPORTATION NETWORK RESPONSIBILITIES

Element	Renfrew County	Township of Laurentian Valley	City of Pembroke	Ontario Ministry of Transportation
Provincial Highways				●
County Roads	●			
Local Roads		●	●	
Pedestrian Network		●	●	
Cycling Network	●	●	●	
Multi-Use Trails	●	●	●	
Transit			●	
Goods Movement	●	●	●	●
Parking and Curbside Management		●	●	

2.2 Province of Ontario Policies

2.2.1 Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development, including transportation facilities. The *Planning Act* requires all planning decisions to be consistent with the PPS.

Section 1.6 (Infrastructure and Public Service Facilities) of the PPS states municipalities shall:

- Provide infrastructure and public service facilities in an efficient manner that prepares for the impacts of a changing climate while accommodating projected growth; and
- Coordinate and integrate with land use planning and growth management to ensure facilities are financially viability over their life cycle and available to meet current and projected needs.

In planning and developing infrastructure and public service facilities, municipalities should:

- Promote green infrastructure to complement other infrastructure;
- Consider optimization and adaptive re-use of current infrastructure and public service facilities before developing new facilities;
- Strategically locate facilities to support effective and efficient delivery of emergency management systems, and ensure the protection of public health and safety; and
- Co-locate public service facilities in community hubs to promote cost-effectiveness, facility service integration and access to transit and active transportation.

Subsection 1.6.7 (Transportation Systems) sets out policies that focus on the movement of people and goods through a safe and energy efficient transportation system, and promotes a multimodal transportation system, which includes transit and active transportation. This direction is supported through the development of compact, mixed land uses, and transportation demand management initiatives that minimize the length and number of motor vehicle trips required.

Section 1.6.8 (Transportation and Infrastructure Corridors) directs municipalities to:

- Plan and protect corridors and rights-of-way for transportation, transit, and other infrastructure facilities to meet current and projected needs;
- Provide long-term protection for major goods movement facilities;
- Restrict development in planned corridors that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified;
- Encourage preservation and reuse of abandoned corridors for purposes that maintain its integrity and continuous linear characteristics;
- Promote the co-location of linear infrastructure where appropriate; and
- Consider the environmental impacts when planning for corridors and rights-of-way for significant transportation infrastructure facilities.

Beyond these elements, the PPS also provides important policy direction with a bearing on transportation pertaining to:

- Efficient use and management of land;
- Provision of sufficient housing to meet changing needs, including affordable housing;
- Protection of the environment and resources including farmland, natural resources (for example, wetlands and woodlands), and water;
- Opportunities for economic development and job creation; and
- Protection of people, property, and community resources by directing development away from natural or human-made hazards, such as flood prone areas.

Specifically, policy 2.1.7 references endangered and threatened species (species at risk). For any project-specific Municipal Class Environmental Assessments completed for future Schedule B/C projects, the Project File/Environmental Study Report must identify impacts to any such species and recommend mitigation measures.

2.2.2 Accessibility for Ontarians with Disabilities Act, 2005

The *Accessibility for Ontarians with Disabilities Act, 2005* (AODA) outlines mandatory requirements for the private, public, and non-profit sectors in Ontario to remove barriers and ensure equitable access for all individuals with disabilities by 2025. Ontario Regulation 191-11

under the AODA establishes accessibility standards to apply when planning, designing, and building transportation facilities, which were considered in completing the TMP and forming its recommendations.

2.2.3 Transit Supportive Guidelines, 2012

The *Transit Supportive Guidelines, 2012* developed by the Ministry of Transportation promote transit-oriented planning and design throughout the province. The aim is to assist practitioners in creating environments that facilitate transit use and developing services and programs to increase ridership in communities over time through supportive land use planning, urban design, and operational best practices. The document is structured into four key chapters with strategies applicable to all community scales including:

- *Community-wide Guidelines* to create transit-supportive communities through a range of higher-level planning strategies;
- *District-Level and Site-Specific Guidelines* detailing design guidelines relating to streets, buildings infrastructure, and unique uses;
- *Transit Improvement Guidelines* outlining transit improvement programs, innovations, and services that can help to increase transit ridership; and
- *Implementation Tools* that can be used to achieve the principles and guidelines within the document.

2.2.4 #CycleON Ontario's Cycling Strategy, 2013

Ontario's Cycling Strategy (#CycleON) is a 20-year plan to encourage the growth and improve the safety of cycling in the province. The Strategy envisions cycling in Ontario as a recognized, respected, and valued core mode of transportation that provides individuals and communities with health, economic, environmental, social, and other benefits by 2033. Achieving this vision requires commitment from all partners for integrated action to:

- Design healthy, active and prosperous communities;
- Improve cycling infrastructure;
- Make highways and streets safer;
- Promote cycling awareness and behavioural shifts; and
- Increase cycling tourism in Ontario.

The actions and recommended network outlined in the Strategy provide an important foundation for Active Transportation within the TMP.

Within Laurentian Valley and Pembroke, Highway 148 between Drive-In Road and the border crossing to Quebec is identified in the Province-wide network as a proposed on road cycling route, along with Greenwood Road to the south of Highway 148 as far as Beachburg Road. The route continues north through the Township and the City of Pembroke, via a connection from Drive-In Road to the Algonquin Trail, which provides a continuous route through the City and as far as TV Tower Road, before joining Pembroke Street West to link to Petawawa.

2.2.5 Ontario Trails Strategy, 2005

The Ontario Trails Strategy is a long-term plan that establishes strategic directions for planning, managing, promoting, and using trails in the Province. The Strategy recognizes trails as key economic and tourism assets for Ontario communities that bring important health benefits and contribute to a high quality of life. With a vision to develop a world-class system of diversified trails, planned and used in an environmentally responsible manner that enhances the health and prosperity of all Ontarians, the Strategy focuses on:

- Improving collaboration among stakeholders;
- Enhancing the sustainability of Ontario's trails;
- Enhancing the trail experience;
- Educating Ontarians about trails; and
- Fostering better health and a strong economy through trails.

Like #CycleON, the actions and recommended network outlined in the Strategy provide an important foundation for the Active Transportation within the TMP.

2.2.6 Connecting the East, A Draft Transportation Plan for eastern Ontario (2022)

In April 2022, the provincial government released a draft Transportation Plan for eastern Ontario for comment and consultation from municipalities, residents, and stakeholders. The draft plan contains 50 recommendations and actions to enhance transportation services and infrastructure in eastern Ontario and is intended to serve as a guide for provincial funding priorities. The plan is based on 5 key goals including:

- Connecting people and places,
- Supporting a competitive and open for business environment,
- Providing more choice and convenience,
- Improving safety and inclusion, and
- Preparing for the future.

The plan highlights the Ministry commitment to widening Highway 17 to four lanes, between Arnprior and Renfrew along with 4 new interchanges to provide local access to the highway. The Ministry will also continue the Connecting Links funding program to assist municipalities with funding to maintain and upgrade highways running through their urban areas.

With respect to transit, the plan recognizes the service gaps that existing for public transit in rural areas and smaller communities and the Ministry intends to create a task force of local mayors and Indigenous leaders to make recommendations to improve rail, bus and local transit services across eastern Ontario.

The plan also recognizes the role of local and regional cycling facilities and trails and commits to working with various partners and stakeholders to expand cycling routes identified in the province-wide cycling network.

2.3 County of Renfrew Policies

2.3.1 County of Renfrew Official Plan, 2023 Consolidation

The County of Renfrew Official Plan is the guiding document for directing growth and development in Renfrew County to the year 2036. The County Official Plan (COP) provides policies for growth and development that promote orderly and efficient development consistent with the desired lifestyle and needs for growth and prosperity. The County structure is further detailed through the official plans of each of the County's seventeen local area municipalities.

Section 13 of the COP outlines the following transportation goals:

- To maintain a safe and efficient road system;
- Ensure that all new development has access which is appropriate for its intended use;
- Support the development of pedestrian and cycling facilities as a means of travel and for recreation;
- Consider a "complete streets" approach where appropriate to road building and maintenance.

The plan includes details on how the goals will be achieved, with policies for road networks, development of recreational trails, road authority, and mitigating community impacts. The COP requires area municipalities, including the Township of Laurentian Valley, to implement the provisions outlined in Section 13.

The transportation policies in the COP informed the TMP, providing the basis for future growth forecasts, development patterns, and transportation system development.

2.3.2 County of Renfrew Strategic Plan

The 2023-2026 County of Renfrew Strategic Plan outlines the future direction and priorities for the municipalities in the coming years. The Plan is focused on six objectives:

- *Financial Sustainability* – Developing an advocacy strategy for long-term prosperity;
- *Workforce Development* – Encouraging support for business development and enabling qualified workers to work within the County;
- *Community Wellness and Healthcare* – Expanding seniors health services and ensuring access to primary care support;
- *Shared Services and Resources* – Evaluating services and plans to allow for the sharing of resources to increase efficiencies;
- *Attainable Housing and Infrastructure* – Developing a housing strategy to identify future attainable housing and creating a program to attract first time buyers; and
- *Environmental Resiliency* – Implementing a Climate Action Plan and establishing a baseline and model template for local municipalities.

The Strategic Plan priorities helped reinforce and guide the TMP recommendations.

2.3.3 County of Renfrew Transportation Master Plan

The County initiated work on their Transportation Master Plan in early 2023 with a five phase project incorporating Project Initiation, Data Collection, Public Engagement and Open Information Centres, Transportation Network Assessments and Preliminary Reporting, and Documenting Final Study Recommendations.

A public Information Centre was held in December of 2023 to introduce the public and solicit feedback from residents and stakeholders about transportation issues and opportunities in the County. Based on consultation material from December the objectives for the TMP include:

- Assessing the existing state of the County's transportation network (roads and intersections) including recommendations for network optimization and improvements to address growth and travel demand up to 2031 horizon year.
- Developing a sustainable transportation network implementation plan that reflects scenarios for the short term (1 to 5 year), medium term (5 to 10 year) and long term (10+ years) that will assist the County in prioritizing capital works and investing efficiently.
- Reviewing active transportation network gaps and opportunities to better integrate the County's communities through adequate and safe infrastructure.
- Developing and refining transportation related County policies such as road rationalization, classifications, traffic calming, etc.; and
- Improving mobility across all transportation modes that is safe, connected, sustainable, affordable, and accessible for residents of all ages and abilities.

The ongoing study is expected to be completed in 2025.

2.3.4 County of Renfrew Trails Strategy, 2016

The 2016 Trail Strategy provides action items for achieving co-ordinated rail systems within the region. The strategy includes two aspects, the ownership and maintenance of country trail networks, and identifying linkages to other systems of trails not owned by the County.

These aspects are accessed through the following four sections:

- Rail Corridor Acquisition and Management;
- Active Transportation (hardened shoulder linkages);
- County Forest Trails; and
- Identification of Other Trails and Linkages.

The Trails Strategy helped guide the TMP recommendations.

2.3.5 Ottawa Valley Recreational Trail Management Plan, 2018

The Ottawa Valley Recreational Trail Management Plan is a directional document to complete goals of maintaining the trail, encouraging safe use of the trail, and protecting it for future generations.

Subsection 5.2.2 allows and encourages cycling along all sections of the trail, and that sections of the trail surface be upgraded where appropriate to accommodate bikes.

Section 5.6 outlines Motorized Vehicle Access and recommends a ban on all non-recreational motorized vehicles on the trail apart from trail maintenance to reduce high impact trail activity.

2.4 Township of Laurentian Valley Policies

2.4.1 Township of Laurentian Valley Official Plan, 2002

The Township of Laurentian Valley Official Plan (TOP) defines the direction of growth and development in the Township. The TOP outlines objectives to encourage growth in urban areas and limit rural development to promote land use compatibility.

Section 16 of the TOP outlines the following transportation goals:

- Maintain safety and efficiency of the road system;
- Preventing expenditure increases on roads;
- Ensuring all new development has suitable and legal access; and
- Encouraging environmentally sensitive, energy efficient transportation systems.

The TOP provides a foundation for the TMP, providing development patterns and transportation system development.

2.4.2 Township of Laurentian Valley Strategic Plan

The 2019-2023 Strategic Plan is a guide for decision making within the Township. The Plan sets out to sustain and enhance the quality of life for residents of Laurentian Valley to uphold the Townships vision and guiding principles through 26 objectives.

These objectives include:

- Pursuing active transportation initiatives;
- Work towards re-signage by MTO on Highway 17;

- Continuing work with MTO for rehabilitation of Highway 148; and
- Conducting regular assessments for long-term needs in order to increase capital budgets for roads, equipment, and facilities.

The Strategic Plan priorities helped reinforce and guide the TMP recommendations.

2.4.3 Township of Laurentian Valley Development Charges Background Study, 2021

The Township's 2021 Development Charges (DC) Background Study identifies development-related infrastructure needs based on residential and non-residential growth forecast to the year 2030 and apportions the cost of these infrastructure works to planned growth. The study provides the basis for the Township's DC by-law.

The development forecasts and the Engineering Capital Works program prepared for the 2021 DC Background Study informed the TMP, providing the basis for current road improvement plans.

2.4.4 Township of Laurentian Valley Parks and Recreation Master Plan, 2022

The Parks and Recreation Master Plan, adopted in June 2022, aims to support the Township in achieving healthy environments, increasing physical activity, and improving the community and general quality of life.

The Master Plan will guide investments in parks and recreation facilities through to 2032, including short-, medium-, and long-term recommendations in a policy-driven manner. The main four categories for these recommendations are the following:

- Outdoor Recreation;
- Indoor Recreation;
- Parkland and Open Space; and
- Service Delivery.

2.5 City of Pembroke Policies

2.5.1 City of Pembroke Official Plan, 2016

The City of Pembroke completed a new Official Plan in 2016 to guide growth and development in the City to the year 2034. These guidelines are intended to give direction on decisions that further establish and maintain the City as an attractive and liveable community.

The Official Plan forecasts population growth of 16,006 residents by 2034, and so the outlined goals in the Plan align with this growth.

Section 5.3 is in regard to transportation systems in the City and provides guidelines regarding the use of street types as well as the road network and planned improvements. Other areas of Section 5 include pedestrian and special vehicle ways, public transit, and transportation corridors.

The City's OP serves as a foundation for the TMP, providing the basis for growth forecasts, transportation system development, and development patterns. The TMP builds on the policies set out in the OP.

2.5.2 City of Pembroke Strategic Plan

The 'Strategy "At a Glance" (2023-2027)' document for the City of Pembroke provides five priorities to aid the mission of "offering services and amenities that enhance sustainable and healthy lifestyles".

These priorities include:

- *Staff engagement, attraction and retention* – supporting employee engagement, succession planning and staff development to maintain a dedicated and professional public service;
- *Infrastructure and facility renewal* – managing community infrastructure wisely and investing in new facilities that will serve the community and the region as a whole;
- *Long-term financial planning* – adopting financing and revenue policies that align with long term investment needs to maintain assets and fund new infrastructure;
- *Development of outdoor spaces* – developing plans to support outdoor public spaces, activities and facilities that contribute to active lifestyles and support the health of residents; and

- *Economic development and growth* – maintain current programs and leverage new grant and incentive programs to support business retention and expansion and to support a thriving downtown.

2.5.3 City of Pembroke Transit Feasibility Study, 2022

The City's 2022 Transit Feasibility Study investigated how transit could be implemented to meet Pembroke's needs and goals as there is currently no local transit services for use by the general public.

The Study recommended point-to-point demand responsive service run by a private contractor using City-owned passenger vans as the transit solution. This is due to the offering of more flexibility in stop spaces and lower end-to-end journey times, the use of third-party grants for vehicle purchases, and the readily available nature of passenger vans with minimal lifecycle costs.

The City is currently preparing a request for proposals from private operators to deliver an on-demand transit service for a three year trial period, with a target start date of April 2025.

2.6 Planning Framework Summary

As noted in the previous sections, and summarized in **Table 2.2**, there are numerous transportation-related polices that apply to the study area and provide a policy context for the development of the Township-City Transportation Master Plan.

TABLE 2.2: SUMARY OF KEY TRANSPORTATION POLICIES

Province of Ontario	County of Renfrew	Township of Laurentian Valley	City of Pembroke
▶ Provincial Policy Statement ▶ Accessibility for Ontarians with Disabilities Act ▶ Ministry of Transportation Transit Supportive Guidelines ▶ #CycleON: Ontario's Cycling Strategy ▶ Ontario Trails Strategy	▶ Official Plan ▶ Strategic Plan ▶ Transportation Master Plan ▶ Trails Strategy ▶ Ottawa Valley Recreational Trail Management Plan	▶ Official Plan ▶ Strategic Plan ▶ Development Charges By-law ▶ Parks and Recreation Master Plan	▶ Official Plan ▶ Strategic Plan ▶ Transit Feasibility Study

The policy environment guiding the preparation of the plan promotes sustainable travel, particularly active transportation and strongly recommends that:

- Transportation and land use planning should be planned together to accommodate long term growth
- Planning should identify needs and protect future corridors
- Abandoned linear corridors should be protected
- Need for integrated facilities across boundaries
- The opportunity for transit in Pembroke/adjacent areas should be explored

3 Existing Conditions

3.1 Study Area Profile

The primary study area for the Transportation Master Plan is comprised of the geographic municipalities of the City of Pembroke and the Township of Laurentian Valley, as illustrated previously in **Figure 2.1**.

The municipalities within the study area are home to a combined 23,814 residents based on the 2021 Census, with 14,364 residents living within the City of Pembroke and 9,450 residents living in the Township.

For the purpose of assessing transportation patterns a broader study area including the Town of Petawawa was included to ensure that the close interactions between these adjacent communities was accounted for in the assessment of existing and future transportation improvement needs associated with planned growth.

In 2021, the Town of Petawawa had a population of 18,160 residents based on the Census, resulting in an overall population of 41,974 residents within the broader study area.

Table 3.1 summarizes the 2021 base year population and employment for each municipality in the study area.

TABLE 3.1: STUDY AREA POPULATION AND EMPLOYMENT

Jurisdiction	2021 Population	2021 Employment
City of Pembroke	14,364	6,085
Town of Petawawa	18,160	6,160
Township of Laurentian Valley	9,450	1,840
Totals	***41, 974***	***14,085***

Employment within the study area is relatively equally distributed between office, commercial, industrial and public administration categories. The presence of Garrison Petawawa accounts for a significant share of the public administration jobs in the region while the industrial parks in the Pembroke area provide the majority of the industrial employment for the region. Office and Commercial employment are also significant sources of employment in the City of Pembroke, with the downtown area serving as a hub for service-

related employment in the region. **Table 3.2** summarizes the employment by category for each of the three municipalities in the broader study area.

TABLE 3.2: STUDY AREA EMPLOYMENT BY CATEGORY

Jurisdiction	Employment by Category			
	Office	Commercial	Industrial	Public Administration
City of Pembroke	1,310	1,928	2,155	692
Town of Petawawa	949	1,369	1,043	2,799
Township of Laurentian Valley	381	528	706	226
Totals	***2,640***	***3,824***	***3,904***	***3,717***

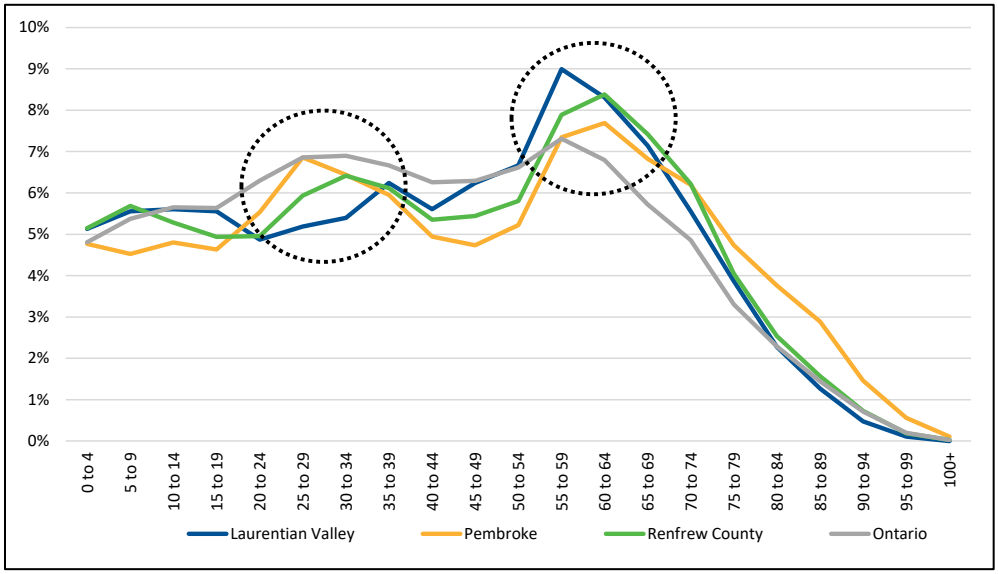
Demographic and Commuting Patterns

A review of the age distribution of study area residents, from the 2021 Census, is summarized in **Figure 3.1**, and is compared to profiles for all of Renfrew County and the province as a whole. The Township has a lower share of residents in the age 20 to age 39 demographic than the City of Pembroke, the County of Renfrew and the provincial average. The share of residents in the age 45 – 54 range is similar to the provincial average although the Township has a higher share of residents in the age 55 – 69 categories than the provincial average and the City of Pembroke.

In the City of Pembroke, there are fewer children and youth under the age of 24, but a higher share of those aged 24 to 34 than the Township and County average. The share of residents in the age categories between 39 and 60 are lower than the Township and County as a whole. As this is the key age range for families with children, it suggests that many of these types of family units are locating in the township. The share of residents in the age 60 to 70 range are also lower in the City of Pembroke than in the Township, although this trend is reversed for those over age 75 – where more seniors may be locating within the City to be closer to health care and support services, and where access to all services don't rely on automobile use.

The greater share of residents in the younger demographic that reside within Pembroke may be open to shifting to active transportation and transit for some of their trip making if the infrastructure and services are available.

Figure 3.1: Age Distribution Profile



A review of Census Place of Work and Commuting flows from the 2021 Census showed a significant change between the 2016 and 2021 census, with a sharp increase in work from home reported in Laurentian Valley and Pembroke, similar to the trends observed in Renfrew County and across the province.

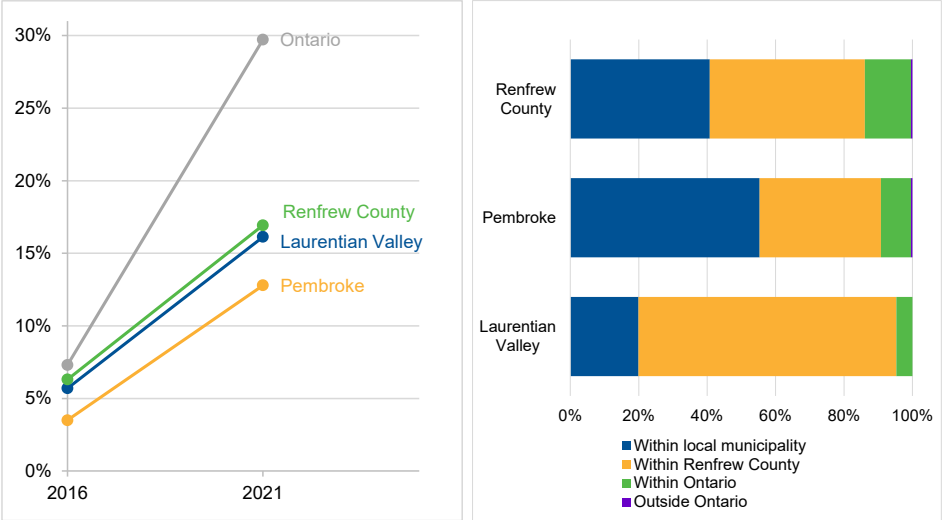
It should be noted that the 2021 Census was undertaken in the spring of 2021 when many communities were still under various forms of gathering restrictions due to COVID and many businesses were closed, workplaces had shifted to work from home where possible, and restaurants were restricted to take out or delivery services.[2]

While it is acknowledged that some of the changes to commuting patterns related to work from home have continued in the years following the COVID pandemic, the extent and magnitude of the work from home pattern seen in 2021 is expected to be significantly lower in the next Census in 2026.

Figure 3.2 also summarizes the location where residents work based on the 2021 Census. Laurentian Valley has a high proportion of workers that commute outside the municipality, with most working within Renfrew County. Only 20% of residents live and work within the Township. On the other hand, over 50% of Pembroke residents work within the City, with over 30% commuting outside the City to other communities within Renfrew County.

[2] Ontario announced stay at home orders on April 8, 2021 and those were eventually extended into June – covering the period the 2021 Census.

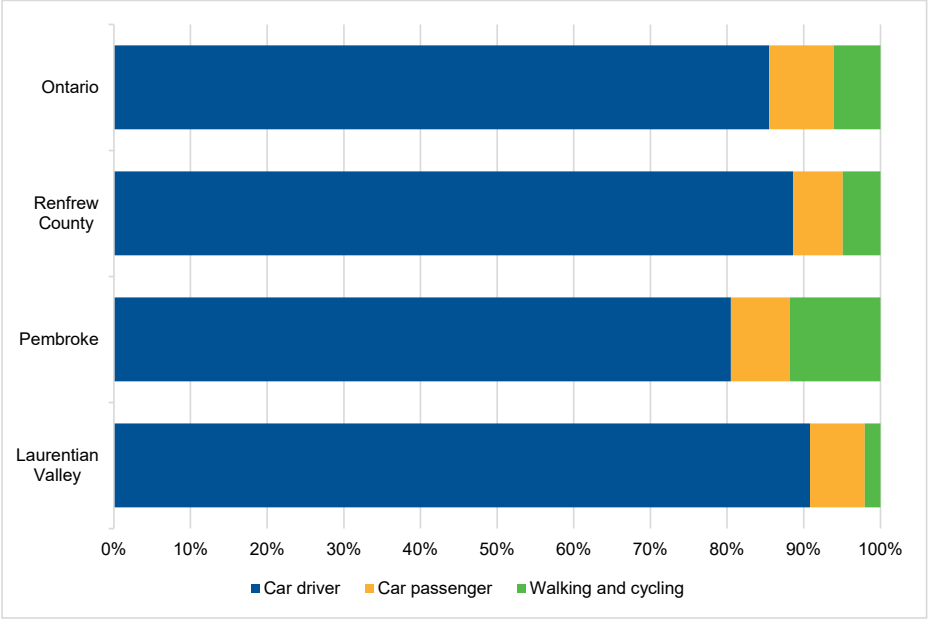
Figure 3.2: Place of Work Patterns



The automobile is the dominant mode of travel for commuting to work, particularly in the Township. As illustrated in **Figure 3.3**, approximately 96% of residents in the Township travel by automobile, with 89% driving and 7% traveling as a passenger. Of the remaining 4%, 2% walked to work and 2% travel by another mode (typically taxi).

In the City of Pembroke, 86% of residents travel by auto, with 78% as the driver and 8% traveling as a passenger. Walking and cycling was the primary mode of travel for 10% and 1% of residents of the City, respectively.

Figure 3.3: Commuting Mode Share

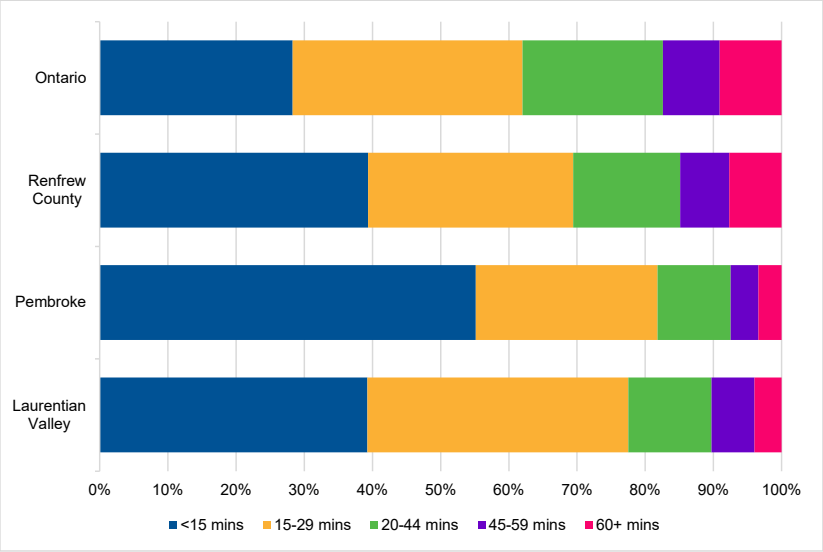


The Township patterns for mode choice are similar to the patterns for the entire Renfrew County population, which is reflective of the general lack of transit options and longer travel distances in rural areas which make walking and cycling less desirable. Patterns in the City are closer to the average for all Ontario except, on average, 9% of Ontario residents travel to work by transit.

With the lack of transit in Pembroke, those without a vehicle tend to live closer to where they work and walk to work instead. This trend is illustrated in **Figure 3.4** which illustrates the commuting times for residents of Laurentian Valley and Pembroke compared to Renfrew County and the provincial average.

In the City of Pembroke, approximately 55% of residents live within 15 minutes of their place of work which makes active travel modes more reasonable for those without a vehicle. In Laurentian Valley 40% of residents live within 15 minutes of their place or work, which is better than the provincial average and on par with the overall pattern for Renfrew County. This would tend to reflect those township residents living in built-up areas within close proximity to the Pembroke boundary. Both patterns suggest a need for active transportation infrastructure which would improve the safety and comfort of those residents and perhaps attract more users to chose active travel modes for some of their trip making.

Figure 3.4: Commuting Time (min)



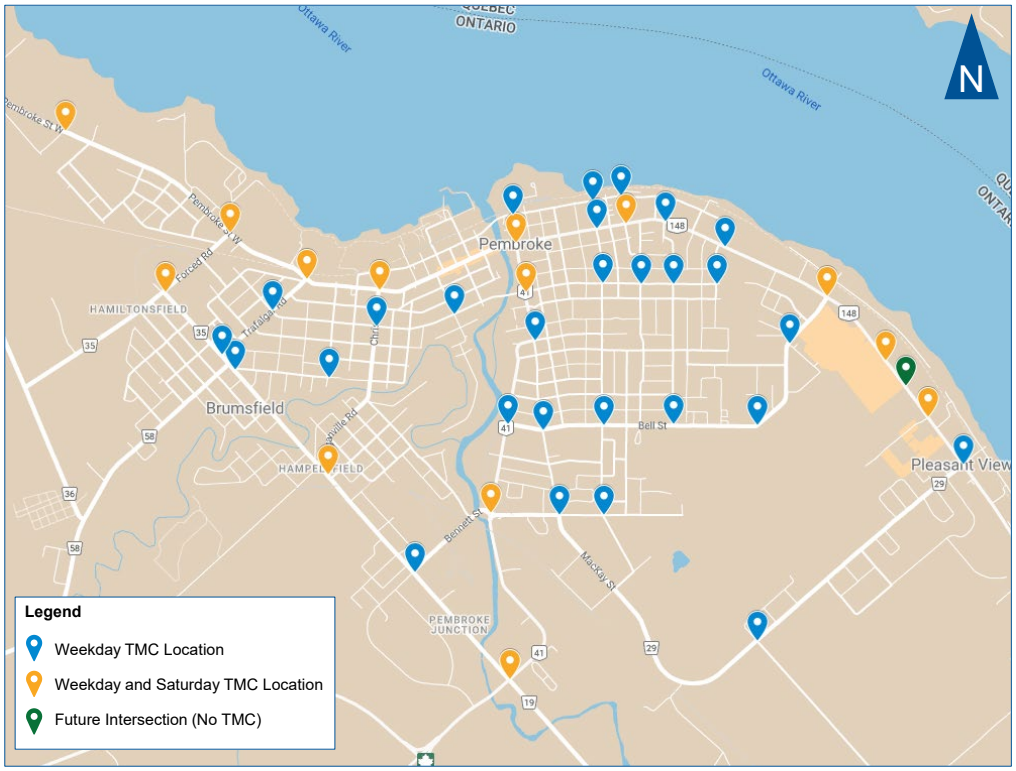
Residents of Pembroke and Laurentian Valley both tend to have shorter commutes in terms of travel time on average compared to residents of Renfrew County and the average for all of Ontario.

3.2 Traffic Count Program

To provide a baseline for the assessment of traffic conditions in the study area, a traffic count program was undertaken at 45 intersections, primarily oriented in and around the City of Pembroke and areas featuring new development growth in the Township. Of these, 14 intersections, primarily along Pembroke Street East, Pembroke Street West, Highway 148, Boundary Road and Paul Martin Drive were also counted on a Saturday to capture retail and tourist patterns. **Figure 3.5** illustrates the locations for the traffic count program. The traffic count data is included in **Appendix J**.

In addition to using the traffic count data to assess the performance of the intersections under current conditions, the traffic count data was used to calibrate the travel demand model developed for the study, by ensuring that the model was able to replicate and predict traffic volumes with a reasonable degree of accuracy when compared to observed data. A discussion about the development of the travel demand model for the study area is provided in **Section 3.6**.

Figure 3.5: Traffic Count Locations



3.3 Origin-Destination Patterns

3.3.1 Local Travel

The collection of origin-destination travel patterns for travellers within the study area is important to understanding how residents and visitors use the road network, where they travel to, and how the location of growth and road network improvements may influence the routes people take to get to their destinations.

Origin-Destination travel patterns are typically collected through household surveys or on road surveys, where people are asked questions about the start and end points of their trips, their trip purpose, their choice of route, and other characteristics of their trip or demographic characteristics. These types of surveys are very expensive and, in the case of on-road surveys, can introduce safety concerns for staff undertaking the surveys and result in delays for motorists.

Advances in “Big Data” have provided a replacement for traditional travel survey techniques and have proven to be highly accurate with larger sample sizes than can be obtained through a random survey taken over a short period of time (or a single day). Streetlight™ is an online source of travel information that provides highly accurate traffic count data and origin-destination travel patterns using a series of data sources including anonymous location-based data collected from cell phones and GPS devices, connected vehicle data, vehicle, bicycle and pedestrian sensors, combined with land use, demographic and road network data from online sources.

The Streetlight platform collects cell phone “pings” from cell towers and location based coordinates from users with location based services activated on their devices. Data is collected on a second-by-second basis, and this data is aggregated into trips made by various modes of travel and at various times of day. Combining the location-based data with land use, demographic and road network data allows the system to estimate the trip purpose (work, home, other) for each trip. As noted previously, no personal information is collected, and the data records obtained are anonymous. To further protect the privacy of users, records are aggregated into areas so that specific locations for any individual trips cannot be identified.

The continuous nature of the data collection methodology allows for enhanced analysis of travel patterns over different days of the week, months of the year and allows for the averaging of data to represent different seasons. For the purpose of the TMP origin-destination data

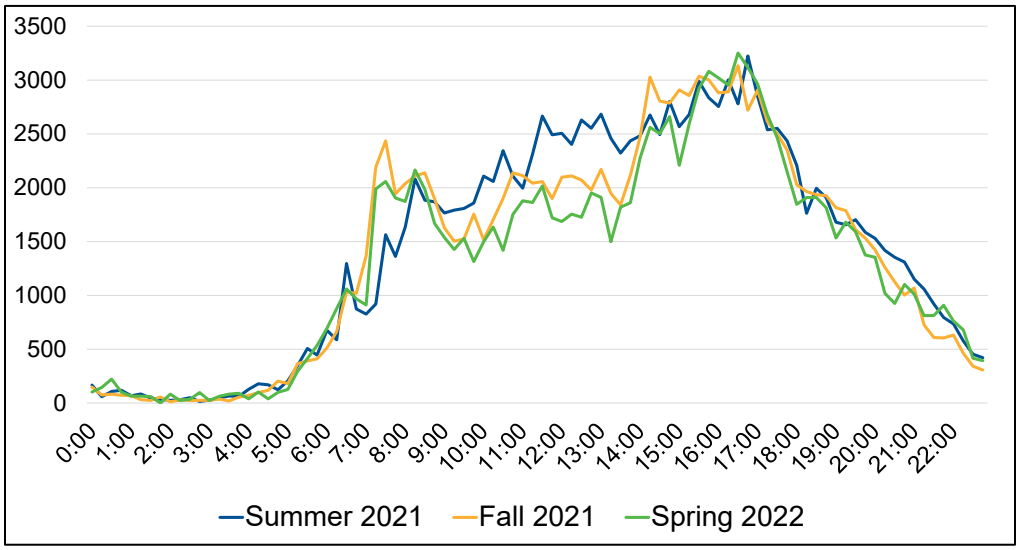
was collected and grouped to represent average daily conditions during the Summer of 2021, Fall of 2021, and Spring 2022.

Figure 3.6 illustrates the hourly travel demand over the course of a typical day by season for trips within the study area used for the model development, which includes Pembroke, Laurentian Valley and Petawawa.

The daily profile of trip making is relatively consistent for the fall and spring with peak demands in the morning, between 7:00 am and 9:00 am, and another peak in the afternoon, between 2:00 pm and 6:00 pm. These patterns are generally consistent with observed traffic counts and are reflective of travel to and from work and school. During the summer, the overall demand is approximately +11% higher than during the Spring period (March) when the base traffic counts were obtained.

During the summer months there is generally lower demand in the morning, with less pronounced peaking of traffic due to no school travel and fewer work trips being made due to holidays. Mid day volumes in the summer tend to be higher than the fall and spring periods as those not working are out doing activities in the middle of the day. Afternoon peak volume patterns in the summer are similar in magnitude to patterns in the fall and spring, albeit with a shorter peak period. Higher summer demands are important considerations on key tourist routes such as Highway 17, Highway 148 and Pembroke Street. The higher seasonal volumes create congestion downtown and on Pembroke Street East and Highway 148.

Figure 3.6: Hourly Travel Demand by Season

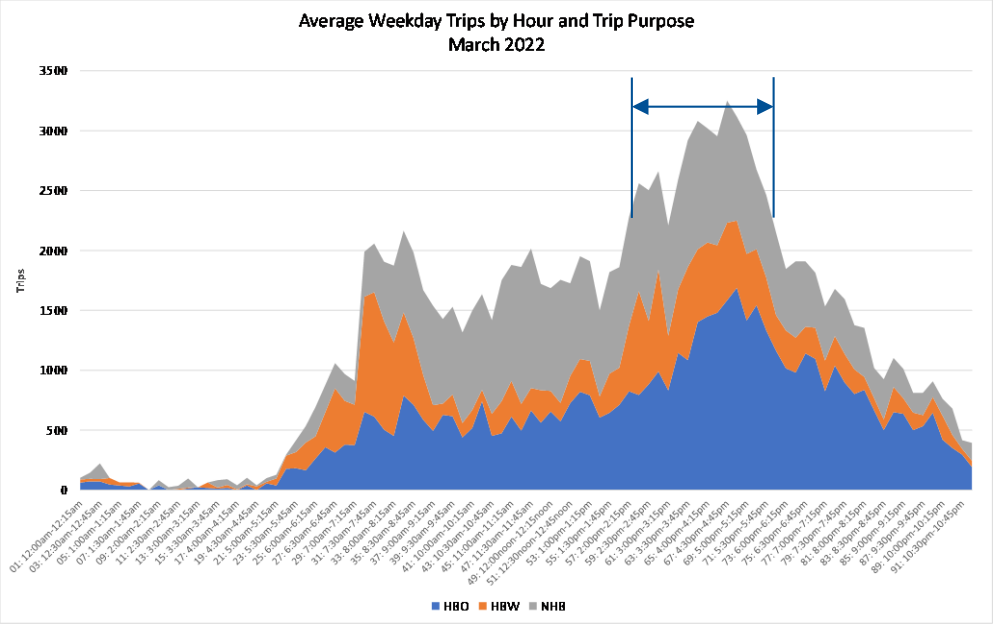


On a typical day there are approximately 8,650 trips made by car during the PM Peak Hour in the broader study area. Of these:

- 36% of trips stay within the study area (Pembroke / Laurentian Valley)
- 23% of trips stay within Petawawa
- 12% of trips travel between Petawawa and Pembroke / Laurentian Valley
- 27% travel to / from other areas, and
- 2% of trips pass through the study area

Trip purpose information for a typical day is summarized in **Figure 3.7.** During the PM peak period, between 2:30 and 5:30 pm, approximately 21% of trips are home to work or work to home trips (HBW), 46% are home based trips to or from other non-work locations (HBO), and 33% are trips that neither start nor end at home (NHB). These would represent trips from work to shopping or other types of activities.

Figure 3.7: Hourly Travel Demand by Trip Purpose



Trip purpose information about trip making patterns is important in order to predict how growth in new residents or growth in commercial or industrial land uses will impact overall trip making patterns in the community.

3.3.2 Influence of External Travel

External travel is another important consideration in assessing how growth will influence travel demands, what roadways in the City and Township are most used by external traffic, and what types of improvements may improve future travel conditions or avoid external traffic causing congestion within the local road network.

Over the course of a typical day there are approximately 95,000 auto trips that travel within or through the broader study area. Of these:

- 40% of trips travel within Pembroke / Laurentian Valley
- 21% of trips travel within Petawawa
- 13% of trips travel between Petawawa and Pembroke / Laurentian Valley
- 22% travel to / from external areas
- 3% pass through the study area

Travel to and from external areas is more pronounced during the PM peak period, as discussed in section 3.3.1, with 27% of trip making being oriented to external areas versus only 22% on a daily basis. This illustrates the influence of commuting flows from external areas into the study area, and in particular into the City of Pembroke.

External traffic passing through the study area is also a relativley small share of overall trip making representing 2% of total trips during peak periods and 3% over the course of the entire day. These trips tend to be concentrated on Highway 17, Highway 148, Highway 41 and other major County Roads that serve as routes for long-distance travel. On a corridor specific basis, the infleunce of external trip making is much more pronounced.

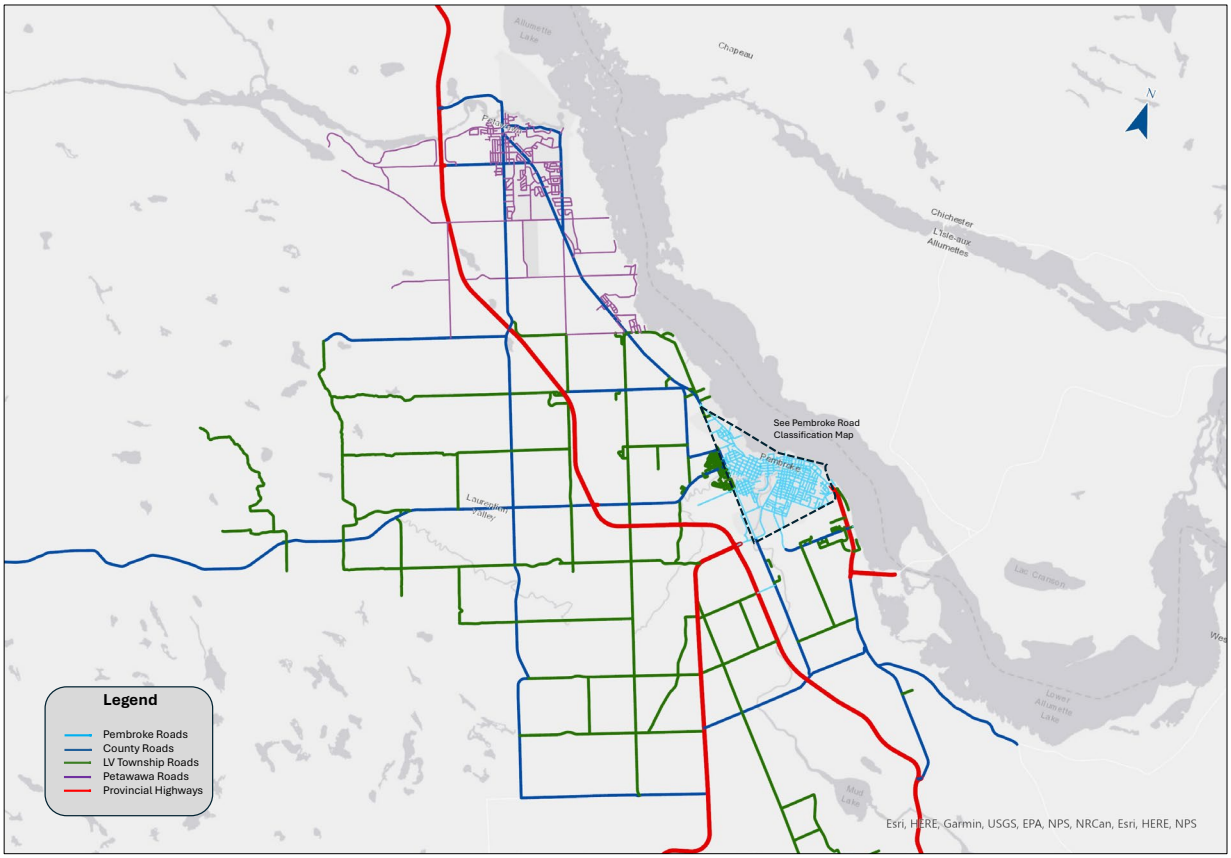
3.4 Road Network

The existing road network in the broader study area is comprised of a mix of Provincial Highways, County Roads, Township Roads, and urban roads within the City of Pembroke and the Town of Petawawa.

Figure 3.8 illustrates the extent of the road network and the classifications of the various roadways that serve travel demands across the region.

Highway 17, Highway 41, and Highway 148 represent the provincial highway network in the study area, and these facilities are designed to carry high speed traffic, comprised of a mix of cars and trucks, over medium to long distances within and beyond the immediate study area. Highway 148, at the east end of Pembroke serves as a link to the Ontario-Quebec border crossing across the Ottawa River, one of only three fixed crossings between Mattawa and Ottawa.

Figure 3.8: Study Area Road Network



There are a number of County Roads within the study area that provide connectivity throughout the County, link communities, and connect to the provincial highways. County Road 58 (Round Lake Road) provides the main east-west County Road through the Township, linking Bonnechere to Pembroke. Closer to the built-up area of Pembroke, other east-west County Roads include County Road 42 (Forest Lea Road),

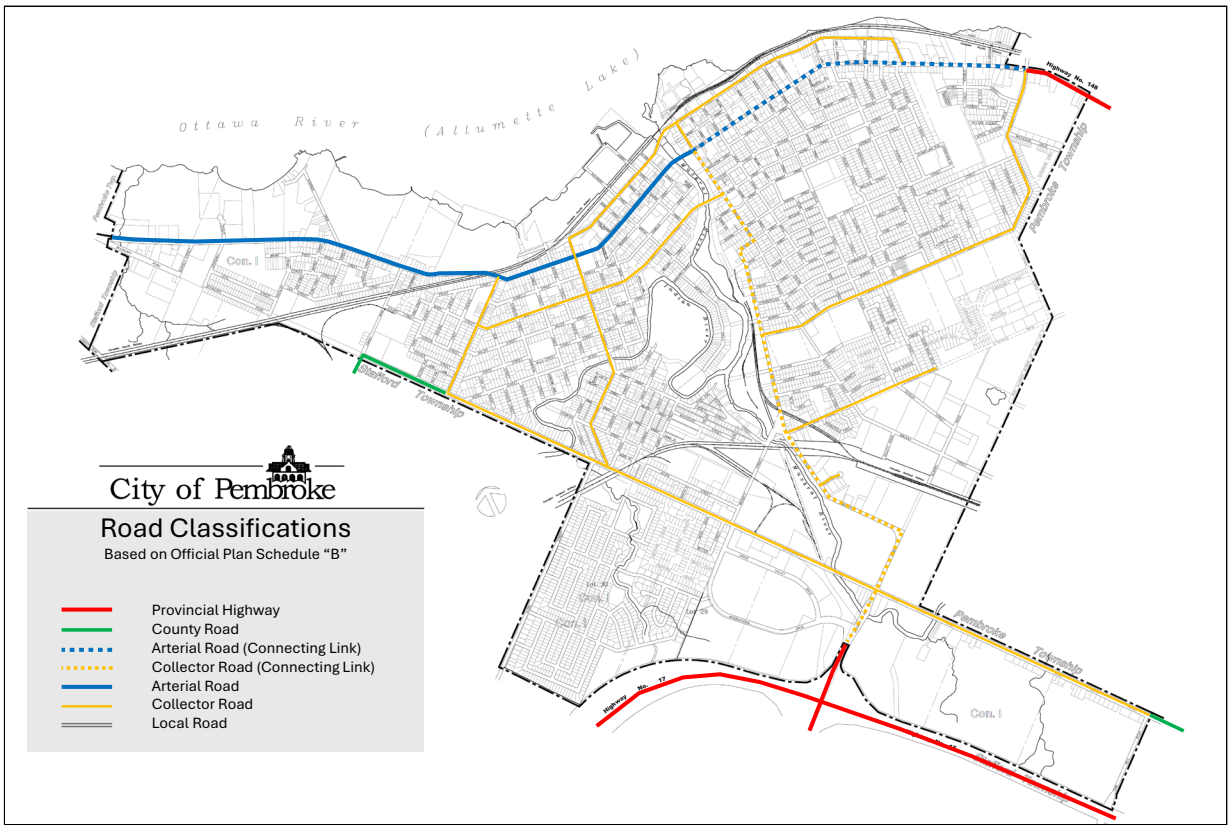
County Road 29 (Drive-In Road), County Road 24 (Whitewater Road), and County Roads 56 and 13, which provide connectivity between north-south routes and the provincial highways in the area.

County Road 26 (Doran Road), County Road 19 (Mud Lake Road), County Road 35 (Boundary Road), and County Road 51 (Pembroke Street West) provide the main north-south connectivity through the study area, with County Road 36 (TV Tower Road), County Road 35 (Jean Avenue), County Road 40 (Greenwood Road) and County Road 21 (Beachburg Road) providing links into Pembroke and to adjacent townships.

The Township road network within the study area provides both local access and connectivity between various communities within Laurentian Valley. B-Line Road, Stafford 3rd Line, Witt Road, and Wilson Road are amongst the key roads serving both local and longer distance travel needs within the Township. All Township roads are categorized the same, despite differences in traffic volumes and the role they play in the network.

Figure 3.9 illustrates the road network within the City of Pembroke by road classification as identified in the City Official Plan.

Figure 3.9: City of Pembroke Road Network



Roads under the jurisdiction of the City are classified as Arterial Roads, Collector Roads and Local Roads. The only Arterial Road in the City is Pembroke Street East and West, which carries north-south and east-west traffic through the City and through the downtown. Key collector roads include MacKay Street, Boundary Road, River Road, Paul Martin Drive, Mary Street, Howard Street / Nelson Street / Lake Street, Eganville Road / Christie Street, Trafalgar Road, Townline Road / D'Youville Drive, and Bell Street / Angus Campbell Drive.

A portion of Pembroke Street East (from the City limit to MacKay Street in the downtown), MacKay Street (from Pembroke Street to Metcalfe Street/ River Road), River Road, and Paul Martin Drive are also connecting link roadways, a special category of roadway which provides a local road connection between Highway 148 and Highway 17. The Ministry of Transportation provides funding to support the City in maintaining and upgrading these connecting link roadways due to the role they serve in accommodating provincial traffic.

Road Network Performance

Intersection performance analysis was undertaken for the main intersections in the study area where traffic count data was collected as part of the count program for the TMP. Intersection analysis was undertaken using the Synchro 11, traffic simulation software, for the AM and PM peak periods under existing conditions.

Outputs from the transportation model were used to assess the planning capacity compared to existing volumes to determine the operational performance of the road network links in the study area. **Figure 3.10** and **3.11** illustrate the results of the performance assessment for the PM Peak hour during the fall / spring and during the summer peak period.

Intersection level of service (LOS) is a recognized method of quantifying the efficiency of traffic flow 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 desiring to make a movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows. The highest possible rating is LOS A, under which the average total delay is equal or less than 10 seconds per vehicle. When the average delay exceeds 80 seconds at signalized intersections (50 seconds at unsignalized), the movement is considered to have a LOS F and remedial measures are usually implemented if they are feasible.

LOS D is typically a critical planning threshold used for intersection capacity analysis which represents the point at which the intersection is approaching capacity and delays are often experienced for some key movements during peak periods. LOS E is typically referred to as the “operational capacity” for an intersection and at LOS F the intersection is noted as operating over capacity for many key movements and congestion is often experienced during peak periods.

Figure 3.10: Road Network Performance – PM Peak

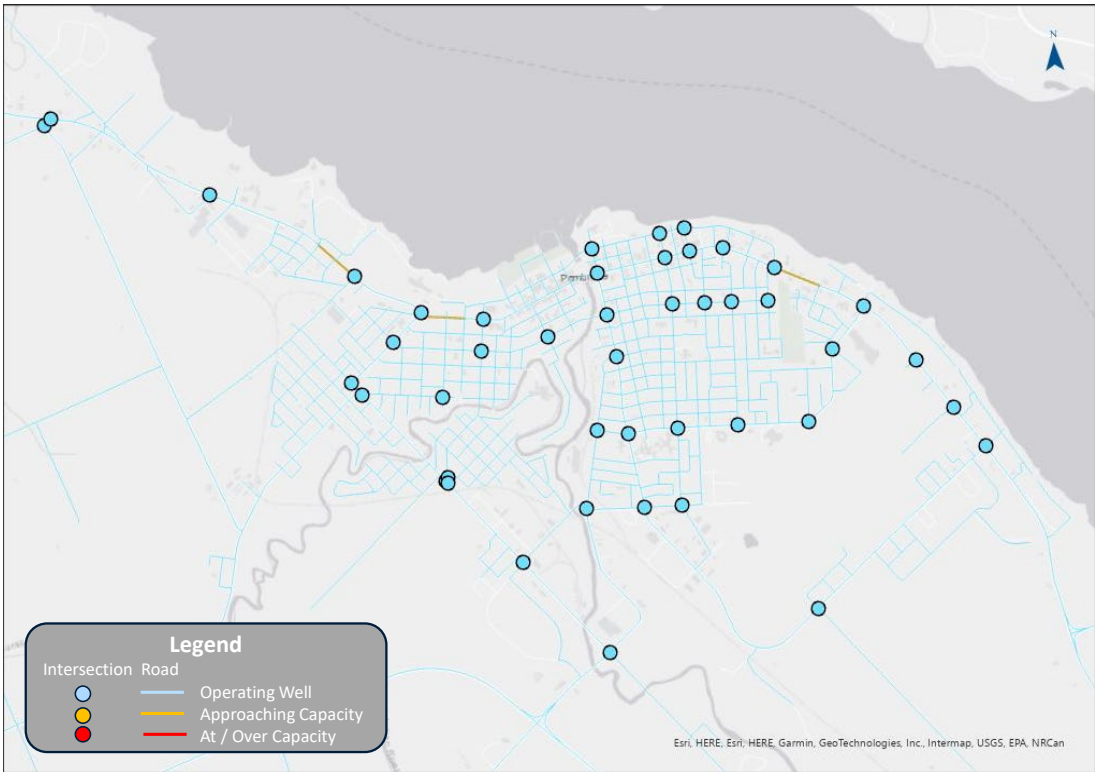
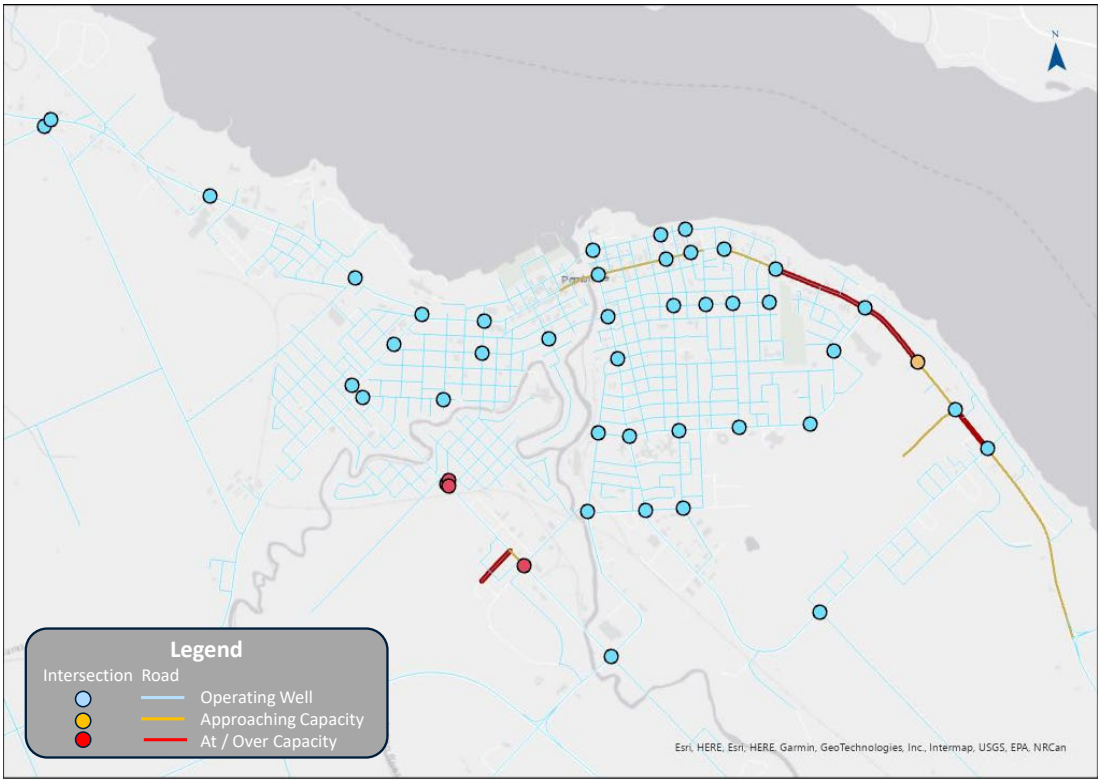


Figure 3.11: Road Network Performance – Summer Peak



As illustrated in **Figures 3.10 and 3.11** all of the key intersections and road network links operate well during peak periods in the fall / spring periods, with only select segments of Pembroke Street approaching capacity. Under summer peak conditions portions of Highway 148 and Pembroke Street West are operating at or over capacity with delays experienced, particularly on summer weekends. The majority of the intersections continue to operate at acceptable levels of performance during the typical summer peak periods, except for the Boundary Road intersections at Eganville Road and Bennett Street, which operate at or over capacity.

A detailed summary of the intersection performance under existing conditions is provided in **Appendix C**.

Operational analysis for a summer weekend period was not undertaken as part of the study, however it is recognized that conditions can be significantly more congested through the downtown area during peak summer weekends due to external through traffic from Highway 148 and general tourist traffic entering Pembroke. **Figure 3.12** illustrates this congestion experienced on the July 1st long weekend.

Figure 3.12: Pembroke Street Congestion – Summer Weekend

3.5 Active Transportation

Infrastructure Canada defines active transportation as "the movement of people or goods powered by human activity. It includes walking, cycling, and the use of human-powered or hybrid mobility aids such as wheelchairs, scooters, e-bikes, rollerblades, snowshoes, and cross-country skis."[3]

Active transportation can help reduce automobile dependence and carbon emissions, increase physical activity levels, improve public health, reduce infrastructure demands, and create more livable, vibrant, and equitable communities. Many Canadian jurisdictions have recognized the positive impact of providing attractive options for active travel and developed strategies to guide future infrastructure investments and program delivery supportive of these objectives.

3.5.1 Active Transportation Networks

The active transportation network in the study area is comprised of sidewalks in the City of Pembroke, paved shoulders on some roadways in the Township, and a combination of formal and informal trails outside the road right-of-way.

The backbone of the trail network in the study area is the Algonquin Trail, which is part of the Ottawa Valley Recreational Trail that runs along the former CP Rail corridor from Smiths Falls to Mattawa. The County of Renfrew partnered with the County of Lanark and Township of Papineau-Cameron to purchase the trail from CP.

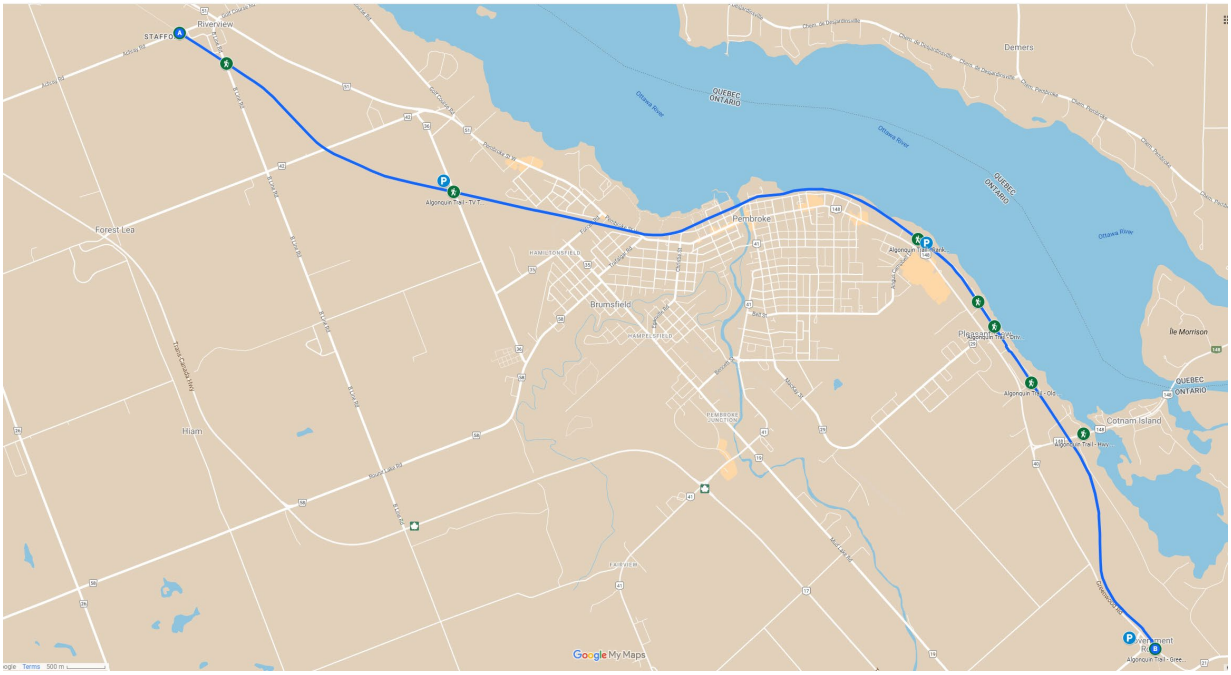
As illustrated in **Figure 3.13**, the Algonquin Trail runs in a north-south direction from the Laurentian Valley boundary with the Township of Whitewater Region, through the City of Pembroke, and north to the boundary with Petawawa. The Algonquin Trail is a four season trail with a stone dust surface treatment and is a shared use trail allowing motorized vehicles (such as All Terrain Vehicles and snowmobiles) along with pedestrians and cyclists.

The maximum speed limit permitted throughout the Algonquin Trail is 50km/hour on rural parts of the trail and 20km/hour on urban parts of the trail. There are a number of access points where users can enter the trail but there are limited places for users to park within the Township, leading to some issues with on road parking near trail access locations. Within Laurentian Valley users can access the trail where it crosses Township or County Roads, including B Line Road, TV Tower Road, Rankin Street / Mountain Road, Resmer Road, Drive-In Road, Old Mill Road, Highway 148, and Greenwood Road. In Pembroke, users can access the trail from many of the crossing roads within the City. Parking is available at some of the parks adjacent to the trail, including Waterfront Park.

[3] Infrastructure Canada, *National Active Transportation Strategy 2021-2026*, (Ottawa: Infrastructure Canada, 2021).

The City of Pembroke also operates Kiwanis Way, which is a non-motorized trail connecting Waterfront Park and Riverside Park and runs along the shoreline of the Ottawa River.

Figure 3.13: Algonquin Trail Route in Study Area



The Township of Laurentian Valley owns and operates a variety of other recreational trails associated with active recreational centres. While operated by the Township, these recreational trails are not connected to other trail facilities and generally serve as hiking or off road bike trails for local users and visitors to the area.

LV Four Seasons Trail

The LV Four Seasons Trail is a 1.5km facility located beside the Alice & Fraser Recreation Centre. In winter months (typically January to March), it provides a skating route using natural ice, with a snowshoe trail available alongside. In the off-season, the route is available for walking and biking. The facility shares parking with the recreation centre.

Forest Lea Trails

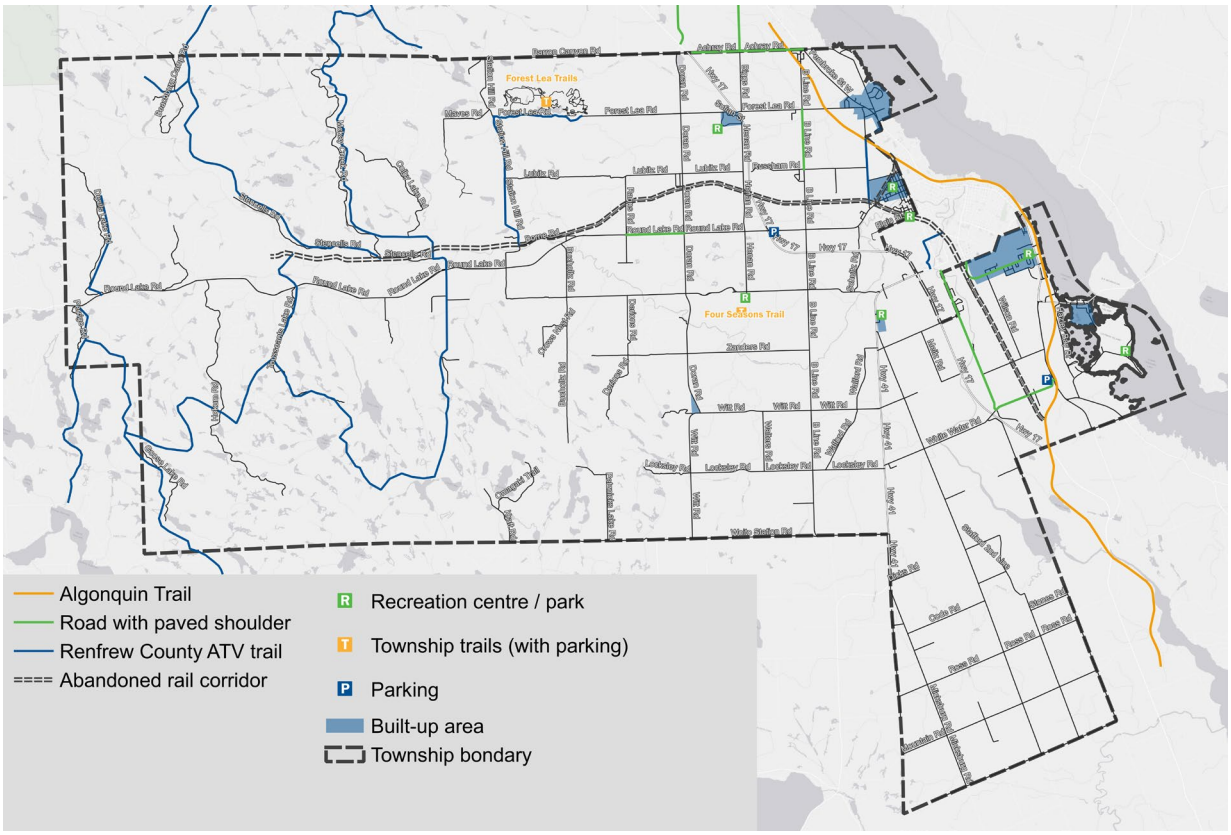
The Forest Lea Trails are a set of mountain biking/cross-country skiing trails located on Crown Land on/near Forest Lea Road. The routes are maintained by volunteers. They include several loops of varying lengths and difficulties.

Beyond the recreational trails noted above, there are limited facilities in the Township to support active transportation. As noted previously, paved shoulders are available on some Township and County Roads in the study area, such as portions of B Line

Road, Achary Road, Round Lake Road, Drive-In Road, Mud Lake Road and portions of White Water Road. **Figure 3.14** illustrates the active transportation network and facilities within the Laurentian Valley.

The Township recently purchased a portion of the Abandoned CN Rail corridor, from the south limit of the Township through to the City of Pembroke boundary to facilitate the establishment of a new trail system.

Figure 3.14: Active Transportation Network in Laurentian Valley



3.5.2 Active Transportation Travel Patterns

Data on use of active transportation facilities is hard to collect and not readily available in many municipalities. In order to assess usage of the various facilities in the study area, online data from Strava Metro was obtained and mapped to show popular walking and cycling routes in the study area.

Strava Metro is an online application where users can sign up to track and record their walking, running and cycling trip making, share popular routes with friends, and even compete with other online users. The data collected by Strava, and made available to municipalities, has all personal information removed and is aggregated to show daily trip making on different facilities.

Figure 3.15 illustrates the level of cycling activity in Laurentian Valley and Pembroke using data extracted from Strava Metro for a typical day. The highest activity levels were found on quiet rural roads and off-road facilities, with high usage on the Forest Lea Trails. With lower use on the nearby roads, this implies that people aren't cycling to/from the trails but are accessing the trail system by automobile.

A low level of cycling activity was observed on urban local streets within Pembroke despite short distances between homes and destinations.

Figure 3.15: Cycling Activity in Laurentian Valley and Pembroke

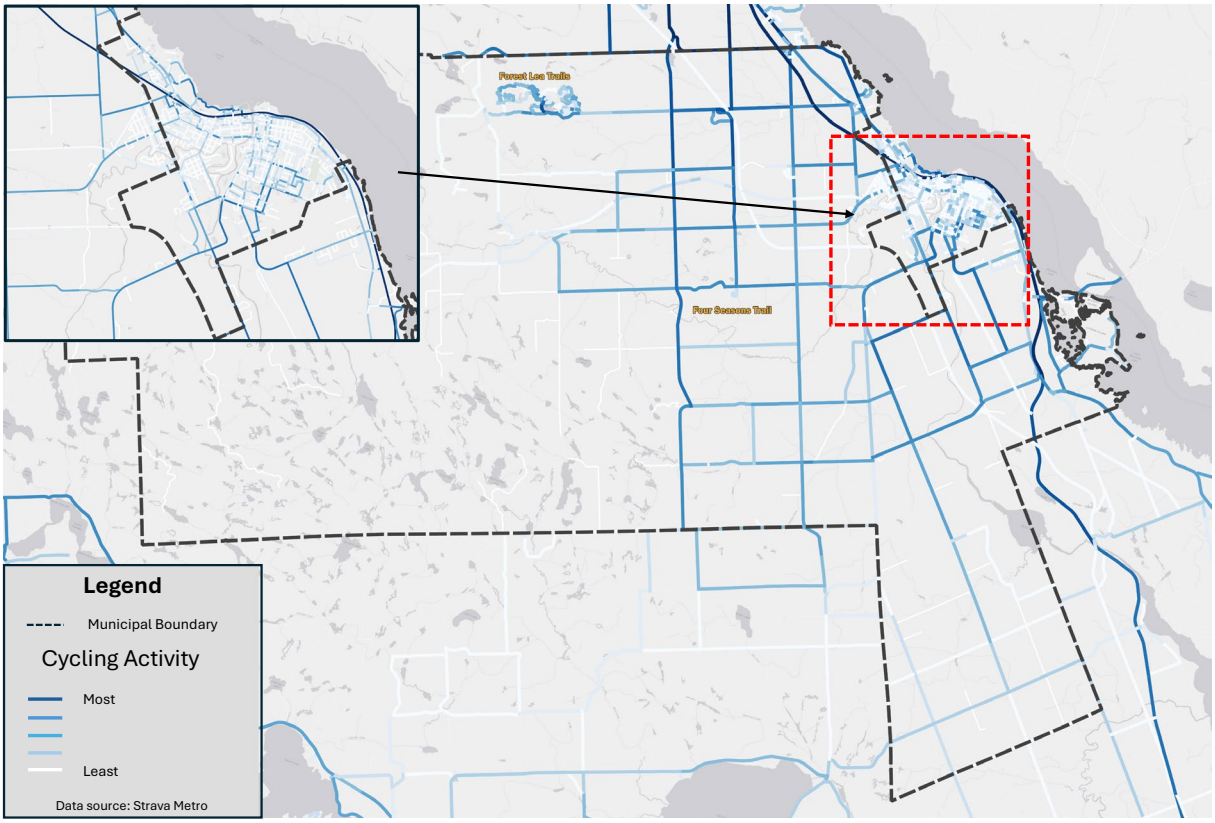
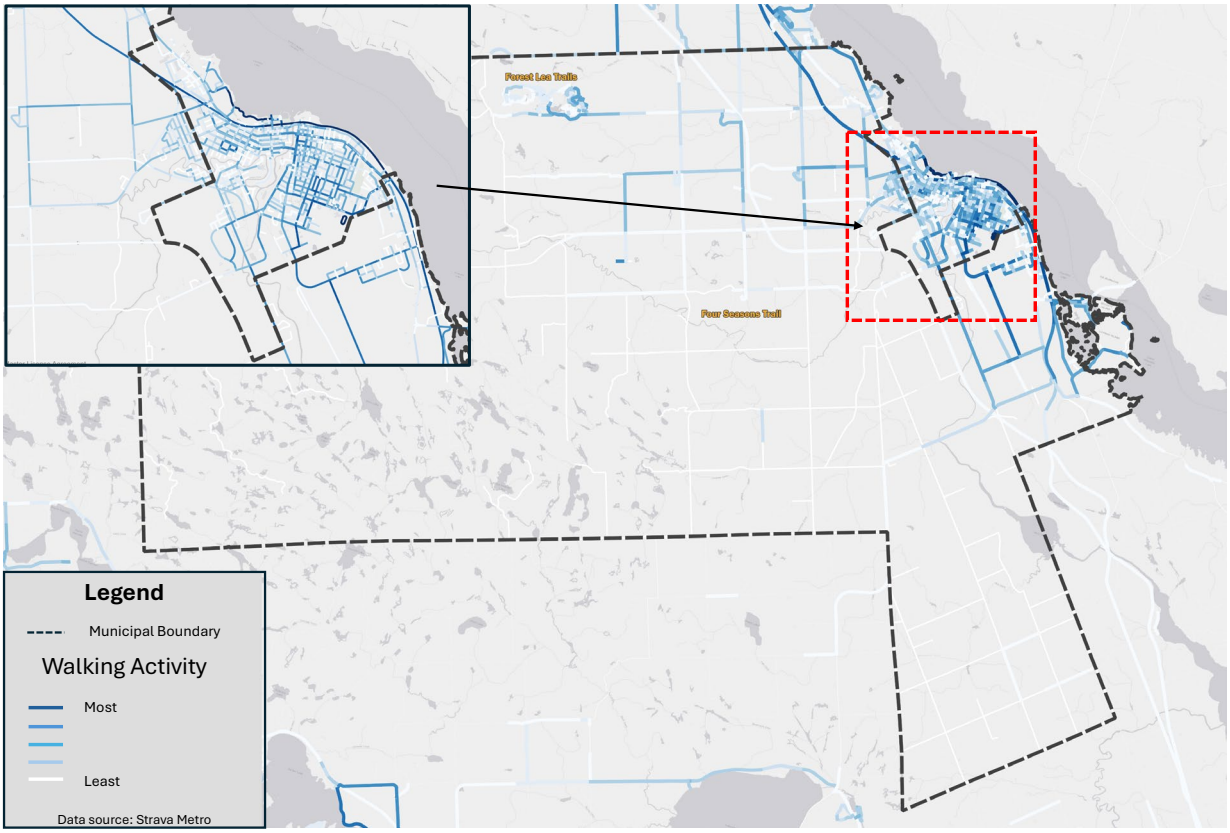


Figure 3.16 illustrates the level of walking, running and hiking activity in the Township and City, again using data extracted from the Strava Metro application. Walking activity is primarily focused on urban areas or on the off-road trail systems in the Township.

There is limited walking activity on existing roads in the Township as this requires use of gravel shoulders, which is not generally comfortable for pedestrians. Long distances between origins and destinations is also a major barrier to walking in rural areas, as noted previously by residents who responded to the public opinion survey (discussed previously in **Section 1.4**).

Promoting and supporting walking activity requires infrastructure (sidewalks, safe crossings) and destinations within walking distance to encourage use beyond those who walk for basic exercise or pleasure.

Figure 3.16: Walking Activity in Laurentian Valley and Pembroke



The Township of Laurentian Valley recently completed an Active Transportation and Trails Master Plan to identify new walking and cycling infrastructure opportunities, and to provide the Township with a prioritized list of recommendations for active transportation facilities and trails, with cost and timeframes for inclusion in their 10-year capital plan

The Active Transportation and Trails Plan will be used to:

- Connect community amenities for active forms of transportation such as walking, running, hiking, and cycling.
- Budget and program new trails, cycling facilities and sidewalks in the Township.
- Justify funding requests from other levels of government.
- Provide a plan for infrastructure that residents and visitors can use to actively travel around the Township.

3.6 Transportation Model Development

To assist in forecasting future travel demands a strategic travel demand model was developed for the study area using the VISUM transportation planning software. The model was designed as a simplified 4 step model, including trip generation, trip distribution, mode choice and auto assignment steps.

Origin-Destination data provides the base travel demand data for the model. Data was extracted from Streetlight representing average daily demands for the Summer 2021, Fall 2021 and Spring 2022 periods. The summer period averaged travel demands over the period between July 1, 2021 and July 31, 2021, while the fall period averaged demands between September 1, 2021 and October 31, 2021. The spring period averaged travel demands between March 1, 2022 and March 31, 2022. The data included both weekday and weekend trip making activity, however the model was designed to forecast average weekday conditions.

After reviewing the various data sets downloaded from Streetlight, data from the Spring 2022 period was used to represent the base line conditions for the model development. This time period coincides with the time period when the traffic count program was undertaken for the study, allowing the count data to be used for model calibration without the risk of errors due to seasonal variation.

Given that the study area experiences significant summer recreational travel demands the Summer 2021 data was used to develop a summer peak period demand adjustment factor, to represent these higher travel demands for use in testing road network deficiencies.

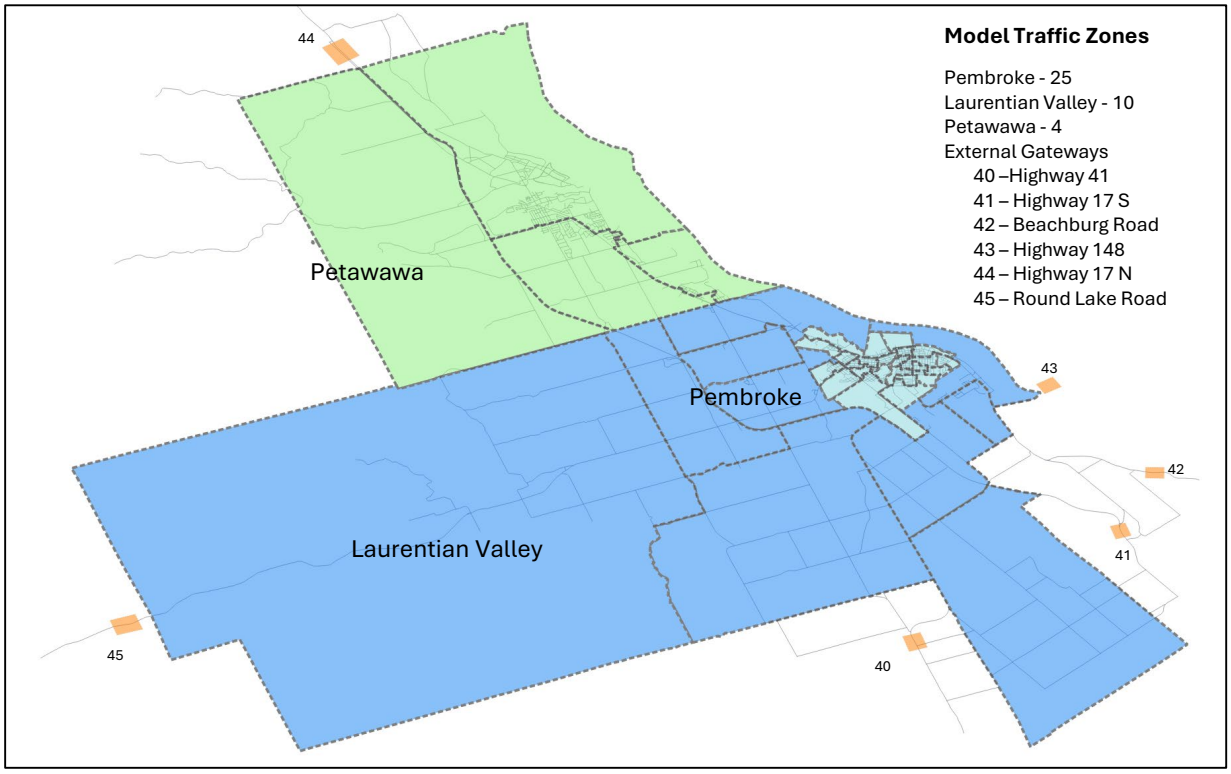
Zone System

To facilitate the extraction of origin-destination data the study area was broken down into 45 traffic zones, as illustrated in **Figure 3.17**. The zone system was developed based on the Census Dissemination Area boundaries for Laurentian Valley, Pembroke and Petawawa, with some zones in the rural areas with little travel activity aggregated to provide larger zones. Existing population and dwelling counts from the 2021 Census provided the allocation of existing population within each of the traffic zones.

The Township of Laurentian Valley was set up with 10 traffic zones while the City of Pembroke had 25 zones to represent the various neighbourhoods and commercial and industrial areas of the City. Petawawa was allocated 4 zones, and 6 external gateway zones were established to represent key Provincial Highway and County Roads leading into the study area.

The study area road network was obtained from Open Street Network data layers, supplemented with data and air photos from the County, City and Township to confirm intersection configurations, number of lanes, and speed limits. Zone connectors were added to the network to connect traffic zones to the local road network to facilitate the loading of vehicle trips during the assignment process.

Figure 3.17: Study Area Zone System



Trip Generation

The model was designed to forecast PM peak hour travel demands with the peak hour representing average conditions for the PM peak period between 2:30 pm and 5:30 pm. As noted in Section 3.3.1, the PM peak period represents the highest travel demand period throughout a typical weekday.

Trip generation was undertaken for three separate trip purposes, including:

- HBW = Home to Work / Work to Home (21% of PM peak demand)
- HBO = Home to Other / Other to Home (46% pf PM peak demand)
- NHB = Not home based = Other to Other (33% of PM peak demand)

Linear regression analysis was used to develop trip generation formulas based on a series of variables including zone population, plus estimates of the area of commercial, office, industrial, and military employment uses within each zone. Additional variables for other traffic generators such as the airport, tourist locations, schools, and the downtown were used to represent special areas that generate trips. The trip generation relationships were compared to existing observed trip generation demand for each zone from the Streetlight data to determine the goodness of fit for the formulas based on the R^2 statistic from the regression equations. **Table 3.3** illustrates the resulting R^2 statistics for each trip purpose, with a value of 1.0 representing a perfect match.

TABLE 3.3: TRIP GENERATION CALIBRATION

Trip Type	R^2
HBW-P	0.925
HBW-A	0.892
HBO-P	0.950
HBO-A	0.766
NHB-P	0.852
NHB-A	0.872

Trip Distribution

Trip distribution patterns for future horizon years were based on the observed trip distribution patterns from the base year data, factored to account for growth in trip making to or from each zone due to growth. A doubly constrained growth factor (or fratar) process was used to balance future trip productions and attractions and estimate the future travel demands between each pair of zones in the model. For new growth areas with no observed trip making activity, seed values were used, based on the trip making patterns in adjacent zones, to ensure local trip making patterns were maintained in the forecasting process.

Mode Share

The model was designed to use a policy based mode share, based on the mode shares observed in the existing census data for each municipality in the study area. No changes to the relative share of trips made by transit, walking or cycling was assumed to occur in the study area over the forecasting period.

Trip Assignment

As the observed travel data from the Streetlight platform provided auto vehicle trips, as opposed to person trips, the future forecasts also provided an estimate of future auto vehicle trips, assuming no change to average vehicle occupancies.

Existing auto travel demand was assigned to the road network and simulated volumes on various road links were compared to observed traffic count data to ensure that the model was able to predict existing observed travel patterns within an acceptable degree of variation.

The trip assignment procedure uses an iterative process to assign traffic to the best route (shortest travel time) between origin and destination. On the first iteration, all traffic takes the fastest route, and as traffic increases popular routes become slower due to congestion. For subsequent iterations the model assigns more trips to other routes to save travel time. The assignment process is finished when no driver can reduce travel time by changing their route. The end state of the process attempts to replicate driver behaviour, where on average drivers will take the fastest route to get

to their destination taking into account prevailing traffic on various roads in the network.

Before the model is used to forecast future conditions, the model needs to be tested to confirm that it is able to replicate existing conditions within acceptable ranges of tolerance. This is known as model calibration.

The Ontario Ministry of Transportation standards for model calibration were used to determine the level of confidence in the model, based on the GEH statistic, which evaluates both the absolute difference and the percentage difference between the modelled and the observed flows.

$$GEH = \sqrt{\frac{2(M-C)^2}{M+C}}$$

GEH Equation where:
M = model volume
C = count volume

Based on MTO standards:

- A GEH < 5 is high to very high confidence in accuracy;
- 5 < GEH < 10 is moderate to high confidence in accuracy; and
- GEH > 10 is low confidence in accuracy

For a model to be considered suitably calibrated, 75% of links should have a GEH statistic of 5 or less, with up to 20% of links with a GEH value of between 5 and 10. No more than 5% of links should have a GEH of 10 or higher.

Table 3.4 summarizes the model calibration results comparing simulated volumes from the model with observed traffic count data at over 45 intersections (representing approximately 160 road links) across the City and Township. Based on the model calibration results, the model can adequately represent traffic flows on the road network within acceptable standards.

TABLE 3.4: MODEL CALIBRATION RESULTS

GEH Values	MTO Standards	Paradigm Values
>= 5	75%	80%
5 < x <= 10	20%	16%
>10	5%	4%
Total	***100%***	***100%***

4 Future Conditions

In order to forecast future travel demands in the study area, forecasts of growth in population and employment were prepared based on land use and development data provided by the City and the Township.

4.1 Historical Growth

A review of historical growth in the study area was undertaken to provide a context and comparison for assessing the future forecasts developed using the summary of development approvals and current applications, provided by the City and Township.

Table 4.1 summarizes the population rates from the 2016 and 2021 Census data for the three municipalities in the broader study area.

TABLE 4.1: HISTORICAL POPULATION GROWTH RATES

Jurisdiction	2016 Pop	2021 Dwellings	2021 Pop	Pop/ Dwell	Growth Rate	2031 Pop Estimate
Statistics Canada Data						
City of Pembroke	13,882	6,542	14,364	2.20	0.69%	15,385
Town of Petawawa	17,187	6,762	18,160	2.69	1.11%	20,280
Township of Laurentian Valley	9,387	3,715	9,450	2.54	0.13%	9,575

Using the observed growth rates between the 2016 and 2021 Census years a 2031 population forecast was estimated for each municipality. As this forecast relies on historical growth rather than ongoing and proposed development activity, this would represent a lower boundary growth forecast for the area.

Table 4.2 summarizes the employment figures from the 2016 and 2012 Census data for the three municipalities in the broader study area. The employment forecasts were derived by adding the Place of Work (POW) data for all Census respondents that reported a usual place of work within each of the municipalities with the number of residents within each municipality who reported no fixed work place location. Work at home employees were excluded from our forecast summary for employment, as these employees do not typically generate home to work trips during the peak periods. Work at home employees may generate other non-work trip making during the day, and that activity is captured separately in the model through the Home to Other trip category.

TABLE 4.2: HISTORICAL EMPLOYMENT GROWTH RATES

Jurisdiction	2016 Emp	2016 Activity Rate[2]	2021 Emp	2021 Activity Rate	Growth Rate	2031 Emp Estimate
Statistics Canada Data						
City of Pembroke	7,960[1]	57.3%	6,785[1]	47.2%	-3.14%	4,932
Town of Petawawa	8,340[1]	48.5%	7,250[1]	39.9%	-2.76%	5,480
Township of Laurentian Valley	2,700[1]	28.8%	2,340[1]	24.8%	-2.82%	1,758

1) Usual Place of Work in Municipality + No Fixed Workplace, Excludes Work at Home
2) Activity Rate is the percentage of jobs in a community as a function of the community population

Employment between 2016 and 2021 saw a significant decline in all municipalities in the area, in the order of a -2.8% to -3.14% annual growth rate, despite the aforementioned growth in population. This is expected to be due to impacts of COVID 19, where residents in May of 2021 were still under a number of gathering restrictions and many workplaces were either shut down or under restricted operations as well.

Based on the 2021 Census data, the COVID 19 pandemic not only resulted in fewer people employed in the area municipalities, but for those who were still employed, many had switched to working at home where that was feasible for their specific jobs. In 2016 the work at home rate for Pembroke was 3.5% and for Laurentian Valley it was 5.7%. In 2021 this increased to 12.8% and 16.1% respectively.

In addition to the increase in work from home, the number of employees reporting no fixed place of work also increased between 2016 and 2021. While these residents are included in the total overall employment in each area, the work at home employees are excluded. As a result, the overall activity rate of employment in each community as a percentage of the population decreased as summarized in **Table 4.2**.

Given the impacts to employment caused by COVID 19, using the observed 2016 to 2021 Census growth rates for employment would result in significant employment declines in each municipality, which would not be reflective of a return to more normal working patterns and would not be reasonable in light of anticipated growth in each municipality.

4.2 Planned Development Growth

Future population forecasts for Pembroke and Laurentian Valley were also generated based on the planned / approved development anticipated in each municipality. The City and Township provided development activity maps to illustrate the potential number of residential units anticipated to be built in various areas of the City and Township for the 5, 10 and 20+ year horizons based on active or approved planning applications. Additional growth potential for lands in Laurentian Valley without a formal application on file were also considered as areas of potential longer term growth. For the purpose of this assessment, these forecasts have been categorized under the 2026, 2031, and 2041+ horizon years, using 2021 as a base.

The development areas identified in the maps provided by the City and Township were allocated to the appropriate traffic zones used in the model to estimate the growth in population within each zone. The number of anticipated development units were converted to population using the average persons per dwelling unit observed in the 2021 Census (see **Table 4.1**).

Since future growth in development units based on development applications was not available for Petawawa, and this area is at the outer edge of the model area and will have less influence on the infrastructure needs within Pembroke and Laurentian Valley, the historic Census growth rates for Petawawa were used to estimate the future population and employment.

Table 4.3 summarizes the total number of new units and the anticipated growth in population for each municipality based on planned development for each horizon. In the zero to five year horizon approximately 776 new units housing 1,789 new residents are anticipated to be built within the City of Pembroke and Township of Laurentian Valley.

Between years 6 and 10, an additional 1,493 units and 3,501 new residents are anticipated to added, and between years 11-and 20+, 1,808 new units with 4,080 new residents are forecasted to be built.

By 2041, the study area is expected to generate 4,077 new dwelling units accommodating 9,370 new residents.

TABLE 4.3: NEW DWELLINGS AND POPULATION BY HORIZON

Horizon	Jurisdiction		
5 Year (2026)	City of Pembroke	Township of Laurentian Valley	Total
New Dwellings	536	240	***776***
New Population	1,179	610	***1,789***
10 Year (2031)			
New Dwellings	719	774	***1,493***
New Population	1,582	1,919	***3,501***
20+ Year (2041+)			
New Dwellings	921	887	***1,808***
New Population	2,026	2,054	***4,080***
Total New Dwellings	***2,176***	***1,901***	***4,077***
Total New Population	***4,787***	***4,583***	***9,370***

Using the allocation of new units and new population summarized in **Table 4.3** future forecasts of population for each traffic zone were prepared for each horizon as inputs to the travel demand model.

TABLE 4.4: POPULATION FORECASTS BY MUNICIPALITY

Jurisdiction	2021 Population	2041+ Population	Population Growth Rate
City of Pembroke	14,364	19,151	1.45%
Town of Petawawa	18,160	22,272	1.03%
Township of Laurentian Valley	9,450	14,131	2.03%

As summarized in **Table 4.4**, the resulting growth forecasts for 2041 represent a 1.45% annual population growth rate for Pembroke, and 2.03% annual growth for Laurentian Valley, however it is recognized that the 20+ year growth forecasts may take longer to build out as these lands do not have formal planning applications in the review process.

Figure 4.1 illustrates the historical growth in population within Pembroke and Laurentian Valley between 2011 and 2021, and the forecast growth to 2031 assuming the historical trend compared to the more recent forecast based on development activity. **Figure 4.2** illustrates the allocation of future population growth to the traffic zones in Pembroke and the surrounding area in the Township.

Figure 4.1: Population Growth Forecast Comparison

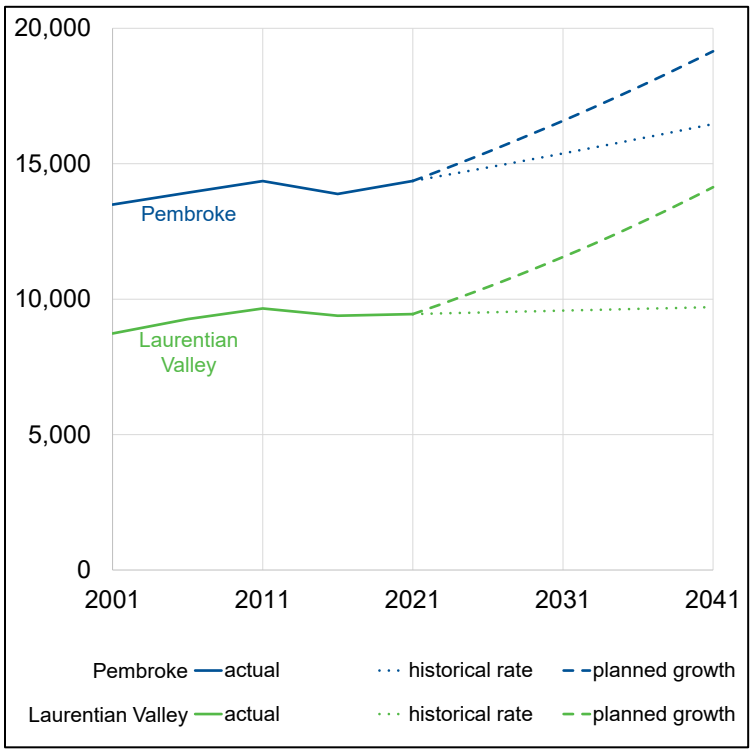
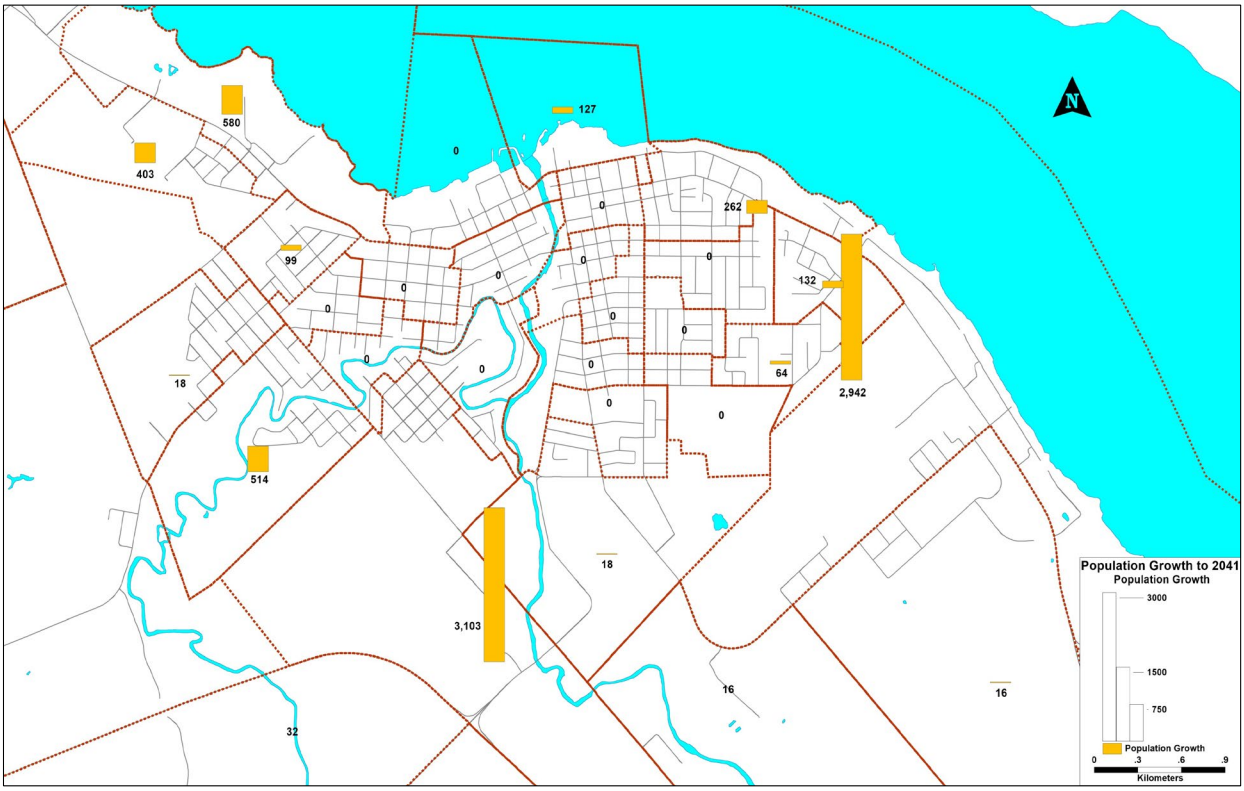


Figure 4.2: Population Growth Allocation



4.3 Development Based Employment Forecasts

As the City and Township did not provide specific employment oriented development forecasts based on planning applications to use as a basis for the employment forecasts, the growth in employment was assumed to match the rate of population growth in each municipality. This approach assumes that the activity rate (jobs per population) will remain unchanged in the future. This is the same approach used in the latest Development Charge Background Study for the City of Pembroke.

The employment growth forecasts applied at the traffic zone level are only the employment associated with people who have a usual place of work. As noted previously, those who worked at home or do not work at a fixed location are not included in the employment forecasts used in the model. The trip making associated with these employees are still represented in the model as their trip making activity is reflected in the observed trip generation rates the model uses to predict future travel demands. Accordingly, the growth in trip making for these employees will grow in line with the growth in overall work related trip making.

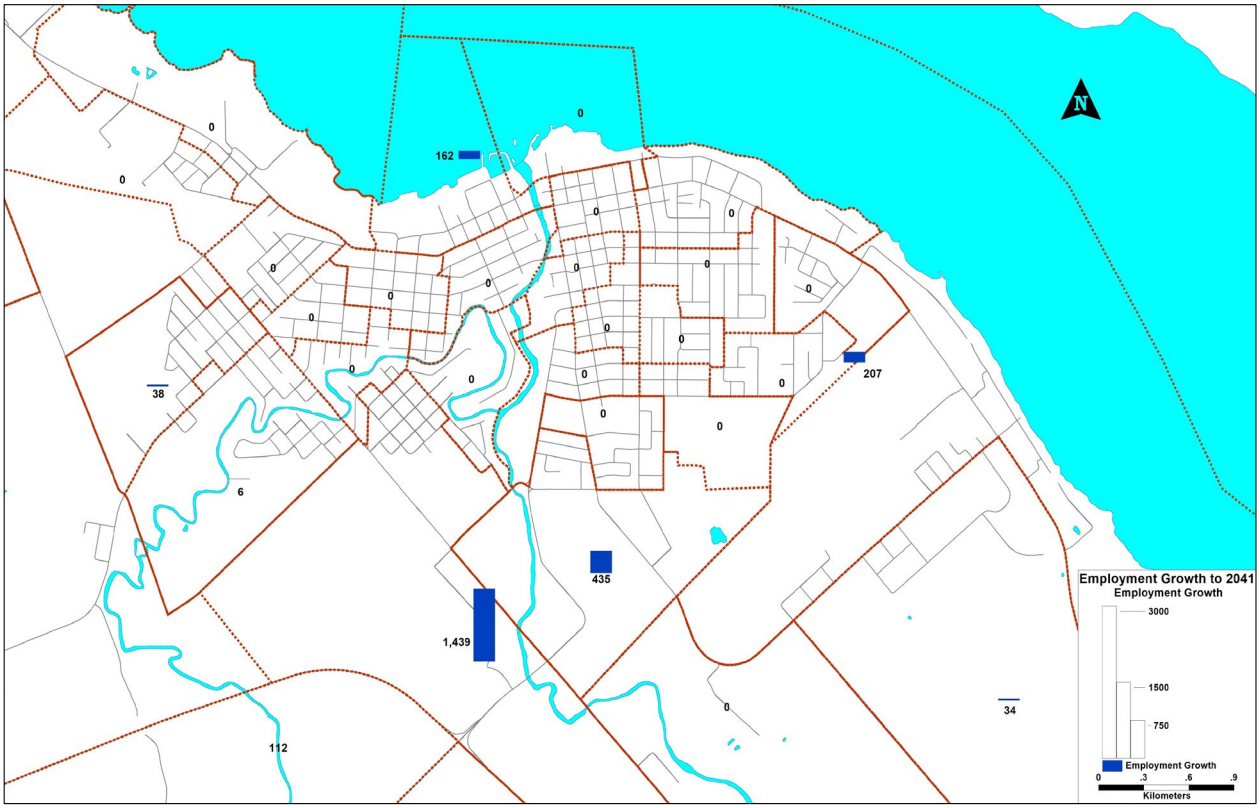
Table 4.4 summarizes the population growth rate derived for each municipality using the development based growth forecast approach, and uses this growth rate to estimate the employment in each municipality for the 2026, 2031 and 2041 horizon years.

TABLE 4.5: EMPLOYMENT FORECASTS BY MUNICIPALITY

Jurisdiction	2021	2026	2031	2041
City of Pembroke	6,085	6,539	7,026	8,113
Town of Petawawa	6,160	6,483	6,822	7,555
Township of Laurentian Valley	1,840	2,035	2,250	2,751

The allocation of future employment for the Township of Laurentian Valley was assumed to be in proportion to existing areas with observed employment, therefore the annual growth rate for employment was applied in each zone equally. For the City of Pembroke, the employment growth was allocated to the downtown (representing growth in the commercial and public administration sectors) and to the two zones covering the industrial areas around the Highway 17, Paul Martin Drive and Boundary Road areas, as designated in the Pembroke Official Plan. **Figure 4.3** illustrates the allocation of future employment growth to the traffic zones in Pembroke.

Figure 4.3: Employment Growth Allocation



A detailed overview of the methodology used to forecast future population and employment in the study area and allocate the growth to traffic zones is provided in **Appendix D**.

4.4 Planned Transportation Improvements

While the City and Township have planned to undertake various roadway improvements as part of their ongoing multi-year capital programs, these projects have focused on rehabilitation of existing roadways to address underground infrastructure (sewer or watermains) or to resurface the roadway to improve pavement surface conditions. None of the planned City or Township improvement projects are anticipated to increase roadway capacity or change the routes residents take to travel through the study area (except during construction).

As part of the Township of Laurentian Valley / City of Pembroke Transportation Master Plan, the municipalities have requested a review of the current project recommendations for the Highway 148 corridor including the proposed improvement plan, the recommended design, and the proposed traffic management plan to ensure that the interests

of the Township and City are considered. A summary of the findings of this review are provided in Section 6.2.

The planned improvements to Highway 148 vary by section and include operational and safety improvements that will improve the performance of Highway 148 in the short to medium term horizon, but do not significantly increase the capacity of the highway.

Between Angus Campbell Drive and Drive-in Road the proposed improvements include:

- Widening the road surface to provide a continuous two-way left turn lane;
- Urbanize the cross section including installation of sidewalks, a barrier curb with gutter and storm sewer upgrades; and
- Installation of traffic signals at the Highway 148/Drive-in Road intersection including installation of turning lanes.

Between Drive-in Road and Greenwood Road the proposed improvements include:

- Rehabilitation of the existing pavement and providing a 2.5 m wide paved shoulder;
- Modifying the westbound right turn channelization at the Greenwood Road intersection and extending the length of the merge lane; and
- Widening Highway 148 to provide a left-turn slip around lane at the Old Mill Road intersection.

4.5 Future Network Conditions

Based on planned growth in population and employment in the study area, PM peak hour travel demands are expected to grow as well, with an overall forecast growth of 17% by the 2041 horizon, as summarized in **Table 4.6**.

Local growth in the zones surrounding Pembroke, where the bulk of the new growth is anticipated is expected to result in a growth in travel demand of approximately 26% over the same period.

TABLE 4.6: GROWTH IN TRAVEL DEMAND BY TRIP PURPOSE

Trip Type	2022	2027	2031	2041
HBW	2,110	2,217	2,266	2,360
HBO	5,768	6,200	6,396	6,738
NHB	3,960	4,419	4,560	4,802
Total	**11,838**	**12,836**	**13,222**	**13,900**
Growth from 2022		8%	12%	17%

It should be noted that the growth forecasts prepared for this assessment are based on the observed travel patterns from the spring of 2022 and still incorporate some of the post COVID changes to commuting patterns and work from home that have continued to some degree after the lifting of gathering and travel restrictions. While work at home was not as prevalent in the study area as in other communities in Ontario, the trend analysis from the 2021 Census did show a marked increase in work from home within the study area as well. There is significant uncertainty with respect to the continuation of the work at home trends that have emerged post COVID.

While many public institutions have continued to allow work from home for jobs that are able to work remotely, some employers have begun to request that employees return to the office at least part time. The Federal government, for example, recently ordered office staff to return to the office at least 3 days per week, starting in September 2024[4]. Given the uncertainty with how this work pattern may evolve in the future, no adjustments to the travel demands have been made in the model.

As a result, the model forecasts represent conservative (low) estimates of future travel demands, and this has been considered during the assessment of the model results, the determination of needs, and the evaluation of required improvements.

Figures 4.4 and 4.5 illustrate the anticipated road network performance and capacity deficiencies for the 2041 PM peak and summer peak respectively. As illustrated in **Figure 4.4**, the majority of the road network and key intersections will operate at acceptable levels of service during typical PM peak conditions, with portions of Highway 148 and Pembroke Street approaching capacity.

[4] Government of Canada Website, https://www.canada.ca/en/government/publicservice/modernizing/hybrid-work/common-hybrid-work-model.html, accessed August 2024

Figure 4.4: Road Network Performance 2041 PM Peak

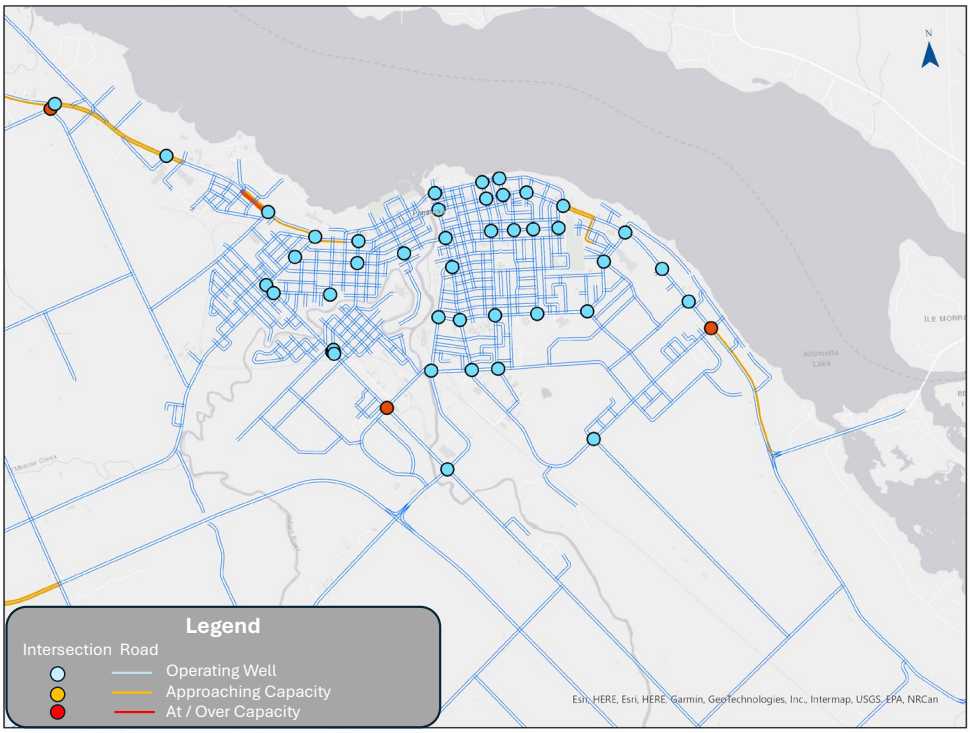
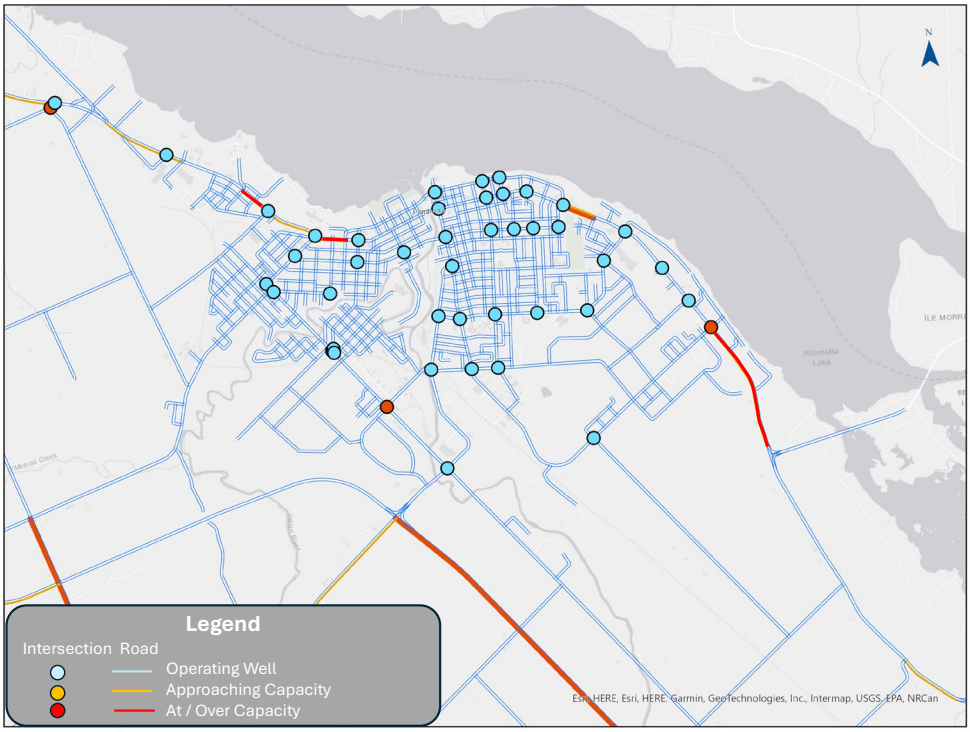


Figure 4.5: Road Network Performance 2041 Summer Peak



During the summer peak period, increased congestion is forecast for Pembroke Street East and West, and portions of Highway 148, south of Drive-In Road. The intersection of Highway 148 and Drive-In Road, Boundary Road and Benett Street, and TV Tower Road and Forest Lea Road / Pembroke Street West are all expected to be operating at or over capacity.

Due to the limited number of crossings of the Muskrat and Indian Rivers, additional traffic can be expected to divert to local roads serving the crossings, adding traffic to neighbourhood streets. While these streets do not reach their planning capacities, corridors like Mary Street / Alfred Street, and Bell Street / Angus Campbell Drive can be expected to see increased travel demand.

A detailed summary of the intersection performance under future conditions is provided in **Appendix E**.

4.6 Needs and Opportunities

The assessment summarized in the preceding sections highlights existing conditions and prevailing trends that will shape and influence the Township and City transportation system in the coming years. It is important to recognize and plan for these opportunities and challenges to develop a transportation network that serves all users. The following summarizes the key transportation opportunities and challenges in the study area:

Roads

Pembroke and Laurentian Valley are experiencing rapid growth with ongoing and expected development within and around City boundaries. This additional growth will increase travel demands on many Township and City roads, with east-west roads particularly affected due to the limited number of river crossings.

Higher summer volumes due to increases in external and recreational traffic currently creates congestion downtown and on Pembroke Street / Highway 148 during peak summer weekends. With planned growth to 2041, this congestion is expected to become more frequent, with congestion being experienced on typical summer weekdays, not just weekends.

Road network improvements that improve the operation of existing roads, and direct traffic away from the Pembroke Street corridor can assist in managing future congestion and reduce the growth in traffic on local roads.

Transit

The lack of public transit within Pembroke and Laurentian Valley restricts opportunities for residents to access jobs and services. Residents who responded to the opinion survey cited the need for regular transit service as critical to support mobility within the City, between new neighbourhoods surrounding the City boundary, and to settlement areas within Laurentian Valley. The provision of transit services is not expected to significantly change the demand for auto travel but will provide additional mobility options for residents and support efforts to maintain or improve the quality of life for residents in the study area.

Active Transportation

The short trip lengths in Pembroke offer an opportunity to enhance active transportation within the City for both recreation and some commuting purposes. Investments in new trails, sidewalks, and on road cycling facilities can build upon the excellent use of the Algonquin Trail and can enhance mobility options across the City for those without access to a car.

Opportunities to expand the trail system should be explored to enhance access and connect neighborhoods, including potential acquisition of the former CN Rail corridor to support new recreational trail opportunities. The lack of sidewalks in the Township forces residents to walk on roads / shoulders, limiting use and creating safety concerns as traffic volumes continue to grow.

Continued reliance on the automobile for virtually all trip making is expected to continue, despite the potential environmental, economic, societal, and health consequences. Reducing dependence on motorized vehicles can help mitigate roadway congestion (in locations forecast to experience high volumes), combat climate change, improve public health and user safety, and make the transportation system more equitable to all users. However, expanding the range of mobility options in rural environments can prove challenging given the longer trip lengths, lower population densities, and fiscal constraints.

5 Assessing Alternatives

5.1 Alternatives

To address the key road network needs identified in Section 4, a series of improvement alternatives were developed to take advantage of existing and future opportunities.

All of the future alternatives assumed a base level of new roadway infrastructure would be provided in new growth areas as part of the subdivision development process. A conceptual road network was developed for the two main growth areas to the east and west of the City boundary, as illustrated in **Figure 5.1**. This conceptual road network was informed by draft plans submitted as part of planning approvals, or conceptual draft neighbourhood plans prepared by landowners contemplating future development applications.

In addition to the new roadways in future development areas, six basic road improvement alternatives were initially developed to address the transportation needs identified. Four additional alternatives (or variants of existing alternatives) were tested and evaluated following public input received at the Public Open House meeting.

A description of each of the alternatives is provided below:

1. **Enhance Mary Street / Alfred Street** – this alternative included upgrades to Mary Street and Alfred Street through the downtown area within Pembroke to serve as an alternate route to Pembroke Street during peak periods. Traffic flow on Mary Street and Alfred Street would be enhanced through changes to the right-of-way control to emphasize east-west movements, and extensions of Mary Street (between 3rd Avenue and Forced Road) and Alfred Street (between Rosewood Avenue and Willoughby Crescent) would be constructed to provide a continuous collector road network by-passing the downtown.
2. **D'Youville Drive connection to Drive-In Road and Robinson Lane** – this alternative would provide a new road connection from the end of D'Youville Drive into the new development area in Laurentian Valley - bounded by Angus Campbell Drive, Highway 148 and Drive-In Road. The extension of D'Youville Drive would connect to the local street network and be upgraded to a collector road standard, along with the planned construction of Robinson Lane east to Highway 148, which would also be upgraded to a collector road. The existing portion of D'Youville Drive to Townline Road would also be upgraded to a collector road standard.

3. **Boundary Road Extension and Widening of Pembroke Street West** – this alternative would construct a new road connection to extend Boundary Road from the current termination at Forced Road, north to connect to Boundary Road West. Crandall Street would also be upgraded to accommodate higher traffic volumes and provide an alternative route to by-pass congested portions of Pembroke Street West leading into downtown Pembroke. Between Crandall Street and Forest Lea Road, Pembroke Street West would be widened to 4-5 lanes (with a centre turn lane where required) to accommodate future growth in travel demands.
4. **O'Brien Street Connection** – this localized improvement would upgrade the existing segments of O'Brien Street and construct a new segment, between Melton Street and Herbert Street East to complete a continuous roadway from Pembroke Street East to Angus Campbell Drive, with potential future extension into the development lands adjacent to the City boundary.
5. **Local By-Pass Route Via Drive-In Rd and new connection to Mud Lake Road or Paul Martin Drive** – this alternative would provide a south by-pass of the City using existing roads to take pressure off of the Pembroke Street corridor. Drive-in Road would be upgraded by adding turning lanes and other intersection improvements (traffic signals and or roundabouts) and a new connection would be provided to direct traffic to the Boundary Road corridor via a new river crossing to Mud Lake Road. An alternative alignment was also identified to avoid the river crossing by constructing a new road connection across the CN Rail corridor to connect to Paul Martin Drive, just east of Boundary Road.
6. **New MTO bypass** – this alternative would provide a new provincial highway corridor from Highway 148 at Greenwood Road west to Highway 17, in the vicinity of Sawmill Road to direct through traffic and trucks away from downtown Pembroke and relive congestion on the Highway 148 / Pembroke Street corridor.
7. **Quarry Road Extension** – this alternative was suggested by a number of members of the public and includes the construction of new roadway between Paul Martin Drive and MacKay Street using the existing Quarry Road alignment and a former road right-of-way that links the two roads. The existing Quarry Road would be upgraded and an additional extension would be constructed to the east to connect to D'Youville Drive.
8. **Boundary Road Extension – No widening of Pembroke St W** – this alternative was also suggested at the Public Open House as a variation to Alternative 3, with the difference being the elimination of the widening of Pembroke Street West.

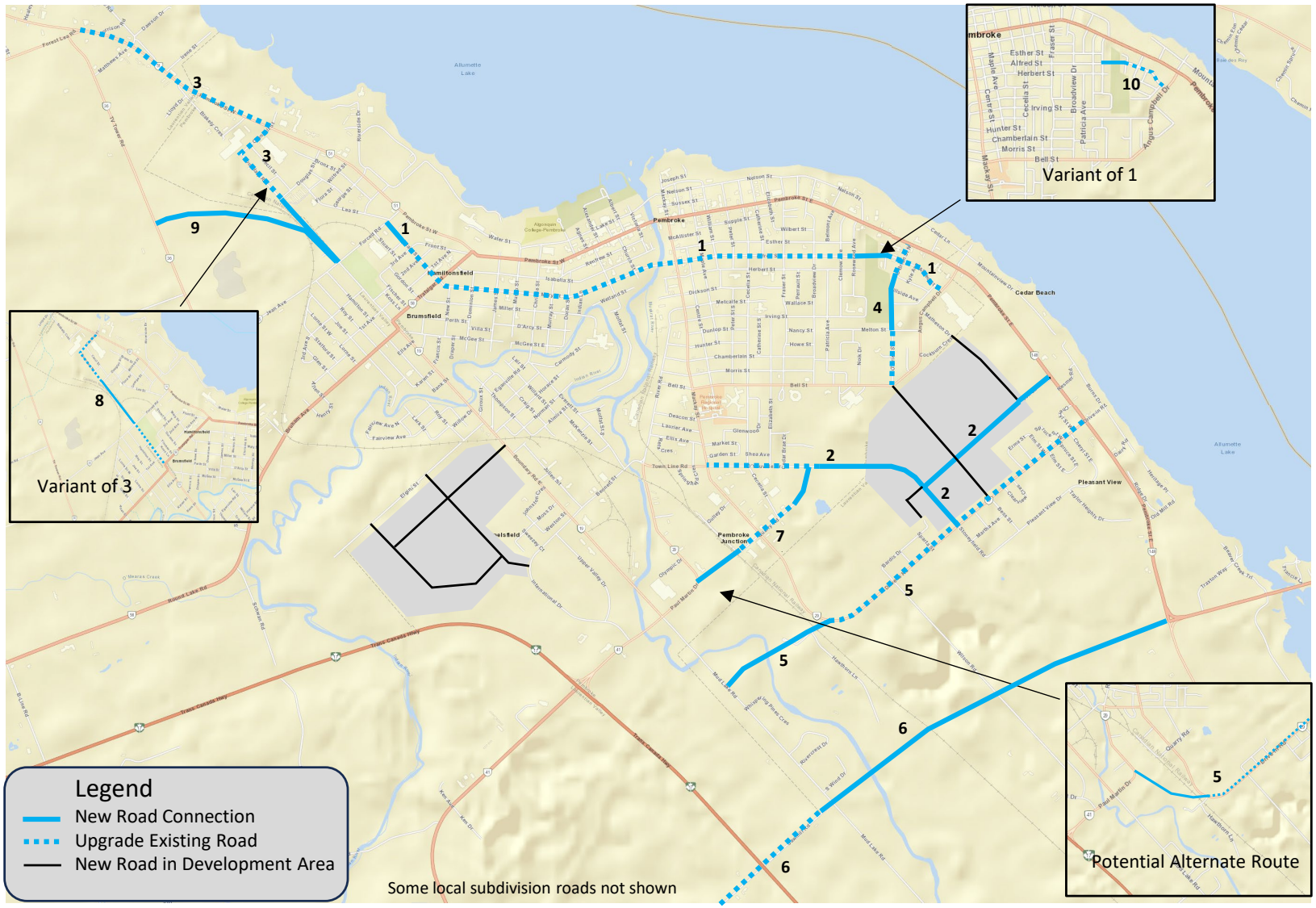
9. **Boundary Road Extension to TV Tower Rd** – in response to public feedback this alternative was also included as a variation of Alternative 3, where the extension of Boundary Road would be aligned to connect to TV Tower Road forming an alternative to the Pembroke Street West corridor and avoiding upgrades and added traffic on Boundary Road West and Crandall Street.
10. **Alfred Street Connection** – this alternative was a variation to Alternative 1 and was suggested following the Public Open House as a means to provide a secondary access to the east end of Pembroke Street for residents of the downtown without the creation of a continuous new collector road corridor as was envisioned in Alternative 1.

Table 5.1 lists the road network alternatives assessed, which are illustrated on the map in **Figure 5.1**.

TABLE 5.1: ROAD NETWORK ALTERNATIVES

1: Enhance Mary Street / Alfred Street
2: D'Youville Drive connection to Drive-In Road and Robinson Lane
3: Boundary Road Extension and Widening of Pembroke Street West
4: O'Brien Street Connection
5: Local By-Pass Route Via Drive-In Road and new connection to Mud Lake Road or Paul Martin Drive
6: New MTO bypass
7: Quarry Road Extension
8: Boundary Road Extension – No widening of Pembroke St W
9: Boundary Road Extension to TV Tower Rd
10: Alfred Street Connection

Figure 5.1: Road Network Alternatives



5.2 Evaluation of Alternatives

In accordance with the Municipal Class EA process, a systematic evaluation of each alternative was undertaken to determine the relative advantages and disadvantages of each alternative considering various aspects of the environment.

The evaluation criteria, summarized in **Table 5.2** captures technical factors plus the social/cultural environment, natural environment, and economic impacts and considerations, using a series of indicators that relate to the types of effects and benefits that are common as part of road projects of a similar nature.

TABLE 5.2: EVALUATION CRITERIA

Evaluation Criteria	Indicators
Transportation Performance	Network performance
	Potential to improve safety
	Reduction in travel delay
Social/Cultural Environment	Potential impacts/benefits to neighbourhoods
	Potential impacts to heritage areas
	Potential impacts to agricultural areas
	Potential impact/benefit to downtown areas
Environmental	Potential effects on environmentally sensitive areas
	Potential impacts to watercourses
	Potential impacts to habitat areas
	Potential impacts on air quality
Economic	Cost
	Community accessibility
	Support future growth areas and facilitate related investment
	Support goods movement
	Potential impacts/benefits or deterrents to businesses

The potential effects were assessed at a concept level of detail based on typical design treatments used in road construction projects, typical right-of-way widths, and a desktop review using secondary source information about natural environment features in the area along with social – cultural areas of interest in proximity to each alternative. For

alternatives selected for inclusion in the Transportation Master Plan, more detailed field investigations and design work would need to be undertaken to determine the extent and potential for impacts and the feasibility of implementing measures to avoid or mitigate potential effects.

Each alternative was evaluated using a net effects approach, where potential for positive or negative effects are considered recognizing the benefits that standard mitigation treatments would have on the potential for creating adverse impacts. For example, where an alternative may cross a watercourse and introduce the potential for impacts to the water quality in the watercourse, standard mitigation measures such as using a bridge to span the watercourse or avoiding the use of deck drains on a new bridge, can avoid some impacts and / or reduce the magnitude of impacts.

Each alternative was ranked using a reasoned argument approach from “Least Preferred” to “Moderately Preferred” to “Most Preferred” for each of the evaluation criteria.

A detailed summary of the evaluation is included in **Appendix F.**

Table 5.3 provides a summary of the evaluation findings under each of the criteria and an overall assessment of each alternative. Since no one alternative is able to address all of the road network deficiencies identified in the study area, the evaluation identified multiple recommended projects that should be included in the Transportation Master Plan.

As summary of the key evaluation findings is provided below.

Alternative 1 – Enhancing Mary Street and Alfred Street was not recommended to be included in the road network plan as it does not fully address the potential congestion on Pembroke Street and would result in a significant increase in through traffic on Mary Street and Alfred Street – which would change the character of these streets and introduce significant neighbourhood impacts including safety, noise, and emissions. The extension of Mary Street and Alfred Street through open space areas can be mitigated to some extent through careful design and addition of streetscaping elements, but the high cost and limited benefit in reducing congestion makes this alternative less desirable from an economic perspective.

TABLE 5.3: EVALUATION SUMMARY

Criteria / Alternative	1	2	3	4	5	6	7	8	9	10
Transportation	◐	◕	◔	◔	◕	◕	◕	◕	◔	◐
Social	◔	◐	◐	◐	◕	◕	◕	◐	◐	◐
Environmental	◐	◕	◐	◔	◔	◔	◐	◐	◔	◐
Economic	◔	◕	◔	◕	◐	○	◐	◕	◔	◕
Overall	✗	Include	✗	✗	Include	✗	Include	Include	✗	Include

Alternative 2 - D'Youville Drive connection to Drive-In Road and Robinson Lane – this alternative was found to be effective in attracting traffic away from congested portions of Pembroke Street and reducing traffic generated by new development areas that would otherwise be directed to Bell Street / Angus Campbell Drive to avoid travelling through the downtown to get the west side of Pembroke. Increased traffic on D'Youville Drive can be mitigated through upgrades to the roadway, intersection traffic controls and the provision of protected crossings for pedestrians. The extension of D'Youville Drive does have the potential to disturb natural areas although the degree of disturbance can be minimized by using the existing right-of-way which has been partially cleared already, and roads that have already been planned through new development areas. Much of the base road infrastructure in this alternative will be provided as part of planned development of these lands (by the developers) and the incremental cost to upgrade key roads to collector road standards is much more economical than building new roadways. This alternative is recommended for inclusion in the Transportation Master Plan.

Alternative 3 - Boundary Road Extension and Widening of Pembroke Street West – this alternative was found to draw traffic off of TV Tower Road to take advantage of increased capacity on Pembroke Street West, making the congestion on Pembroke Street West leading into downtown worse than the "do nothing" situation. Additional traffic is also directed to Boundary Road with this alternative triggering the additional need for widening of Boundary Road to make this alternative work. The extension of Boundary Road to connect to Boundary Road West would introduce neighbourhood safety, noise and emission impacts due to increased traffic which can be mitigated to some extent through design and the application of traffic calming measures. The extension would require a new protected crossing of the Algonquin Trail. The high cost of this alternative combined with the new congestion impacts to Pembroke Street West and Boundary Road make this alternative less effective from an economic perspective.

Alternative 4 - O'Brien Street Connection – this localized improvement was found to provide an alternate access to new development areas on the east side of Pembroke but did not provide significant relief to congestion on Pembroke Street West. O'Brien Street did divert some traffic away from the Bell Street / Angus Campbell Drive corridor. Neighbourhood impacts would be expected due to increase traffic through the residential areas along O'Brien Street resulting in safety, noise and emissions concerns. The modest cost of this alternative does not provide enough benefits to make this economically beneficial.

Alternative 5 - Local By-Pass Route Via Drive-In Rd and new connection to Mud Lake Road or Paul Martin Drive – this alternative would provide an effective south by-pass of the City using existing roads to take pressure off of the Pembroke Street corridor while also drawing traffic away from the Bell Street / Angus Campbell Drive corridor. This alternative was tested with a new connection to Mud Lake Road, which was found to increase traffic on Boundary Road, but not to the extent that Boundary Road would be over capacity or require widening. This alternative requires a crossing of the former CN Rail Corridor (now owned by the Township) which may become a future trail corridor and the new connection to Mud Lake Road requires impacts to existing open space / agricultural lands and a new crossing of the Muskrat River. The alternative configuration may avoid the river crossing but impact existing and future potential industrial lands, with the type and extent of impact depending on the route. The cost of this alternative would be significant, especially with a new river crossing, but the wide-spread benefits in terms of directing through traffic, trucks, and seasonal traffic away from downtown makes this economically beneficial. This alternative is recommended for inclusion in the Transportation Master Plan.

Alternative 6 - New MTO bypass – this alternative would provide an effective corridor to remove external traffic and trucks from downtown and Pembroke Street East / Highway 148 but is too far away from the development areas to redirect new development traffic away from Pembroke Street or local roads. Additional traffic directed to Mud Lake Road and Boundary Road may require improvements or widening of these roads as well. The new highway would cross the CN Rail Corridor (potential new trail) and would impact existing farmland and open space areas along the corridor, although the degree of impact may be reduced during detailed route planning.

This alternative also requires a new crossing of the Muskrat River and would likely require a new interchange when Highway 17 is widened to a full freeway corridor. This alternative would be very expensive, with a significant amount of new construction and property acquisition required. Given the investment MTO would need to make in this corridor, there is potential that the connecting link agreement for Pembroke Street could be terminated impacting funding available for the maintenance of the existing Pembroke Street corridor.

The diversion of through traffic away from downtown could have a detrimental impact on local businesses, particularly those that rely on pass-by traffic and tourist traffic. As a result, this alternative is not as economically desirable as other alternatives.

Alternative 7 - Quarry Road Extension – this alternative works best in combination with the extension of D'Youville Drive, directing traffic away from the Townline Road / Bennett Street / River Road / Paul Martin Drive intersection and providing a direct connection from the new development areas east of Pembroke to the Highway 17 corridor. This connection reduces the new traffic on Bell Street / Angus Campbell Drive and reduces the neighbourhood impacts due to the additional traffic attracted to existing portions of D'Youville Drive. The new extensions required to make this connection have the potential to impact open space areas and a wooded area adjacent to D'Youville Drive but these impacts can be mitigated through route planning and efforts to replace vegetation lost due to construction if necessary. The new connections are located within industrial areas, which may open up new industrial lands for redevelopment. The modest cost for construction and acquisition of property for this alternative is offset by the potential benefits due to the redistribution of traffic and potential new development opportunities. This alternative is recommended for inclusion in the Transportation Master Plan.

Alternative 8 - Boundary Road Extension – No widening of Pembroke St W – unlike Alternative 3, this alternative did not draw significant traffic off of TV Tower Road since Pembroke Street West was not widened. As a result, this alternative did draw some traffic off of Pembroke Street West, particularly on the section leading into downtown, reducing forecast congestion. Additional traffic is directed to Boundary Road with this alternative but not to the same extent as with Alternative 3, and localized improvements to Boundary Road would preserve the capacity of this corridor and avoid the need for widening. The extension of Boundary Road to connect to Boundary Road West would introduce some neighbourhood safety, noise and emission impacts due to increased traffic and the extension would require a new protected crossing of the Algonquin Trail. The lower relative cost of this alternative combined with the benefits to congestion on Pembroke Street West make this alternative more effective from an economic perspective than Alternative 3. This alternative is recommended for inclusion in the Transportation Master Plan.

Alternative 9 - Boundary Road Extension to TV Tower Rd – as opposed to Alternative 8, the extension of Boundary Road to connect to TV Tower Road was found to have little benefit to addressing deficiencies on Pembroke Street West. Instead, this alternative attracted traffic already using TV Tower Road and directed them to Boundary Road – putting it over capacity and requiring potential widening, while TV Tower Road had minimal traffic use. The new connection would be constructed within a new right-of-way through existing wooded areas between the Algonquin Trail and TV Tower Road. The relatively high cost of this alternative compared to the

limited benefits makes this a less desirable alternative from an economic perspective.

Alternative 10 - Alfred Street Connection – this alternative was a variation to Alternative 1 and was found to have some benefits in terms of reducing traffic on Pembroke Street East, through the downtown. Providing a limited connection from Alfred Street to Alfred Street East allows residents of downtown to use an alternative route to access the shopping areas along Pembroke Street East.

To avoid Alfred Street becoming a new by-pass of downtown like in Alternative 1, traffic calming measures can be incorporated into this alternative to make the route less desirable for through traffic. Measures such as radar feedback signs, lane narrowing to provide an urban shoulder for use by cyclists, curb extensions (where curb and gutter is to be provided in the future), and speed cushions at key locations could be used to manage traffic and reduce neighbourhood impacts due to increased traffic. Select use of All-Way Stop controlled intersections, between Rosewood Avenue and MacKay Street may also provide a deterrent to through traffic using this route. The extension of Alfred Street through open space areas can be mitigated to some extent through careful design and addition of streetscaping elements, and the modest cost makes this alternative more desirable from an economic perspective. This alternative is recommended for inclusion in the Transportation Master Plan.

6 A Plan for the Future

6.1 Road Network Improvements

The recommended road network improvement plan includes 28 projects that should be considered for implementation over the next 20 years. In addition to the improvement alternatives evaluated in Section 5, additional localized improvements designed to support the recommended alternatives were also identified for inclusion in the plan.

These primarily include localized intersection improvements that are intended to be incorporated into the recommended projects, stand alone intersection improvements anticipated to be required in the future, or planned work to be implemented through development or projects undertaken by others.

The recommended road network plan includes new road connections to provide new capacity to support growth, existing road upgrades, new roads in growth areas (to be implemented as part of the development process), and 13 intersection upgrades intended to optimize the performance of the system.

Figure 6.1 illustrates the recommended road network plan, and a detailed listing of projects is provided in **Table 6.1**.

To support the major road network improvement projects a series of intersection improvements are also recommended. Some of the intersection improvements have been assumed to be implemented as part of the larger road improvement projects, although they could be implemented as separate stand alone projects in most cases as well.

Howard Street Left Turn Lane - The Howard Street intersection is forecast to operate at or near capacity during peak periods in the future primarily due to the volume of sideroad traffic and the lack of a separate turning lane on Howard Street. Providing a separate left turn lane will allow for the implementation of advance green signal phasing for left turn movements to assist in clearing any queued traffic on Howard Street during peak periods.

D'Youville Drive Roundabout – As part of the extension of D'Youville Drive to Drive-In Road and Robinson Lane to serve the new development area there is an opportunity to develop a roundabout at the D'Youville Road / Robinson Lane intersection. A roundabout will provide an efficient operation for two collector road approaches and will encourage slower operating speeds through the residential area than a traditional signalized intersection.

Figure 6.1: Road Network Improvement Plan

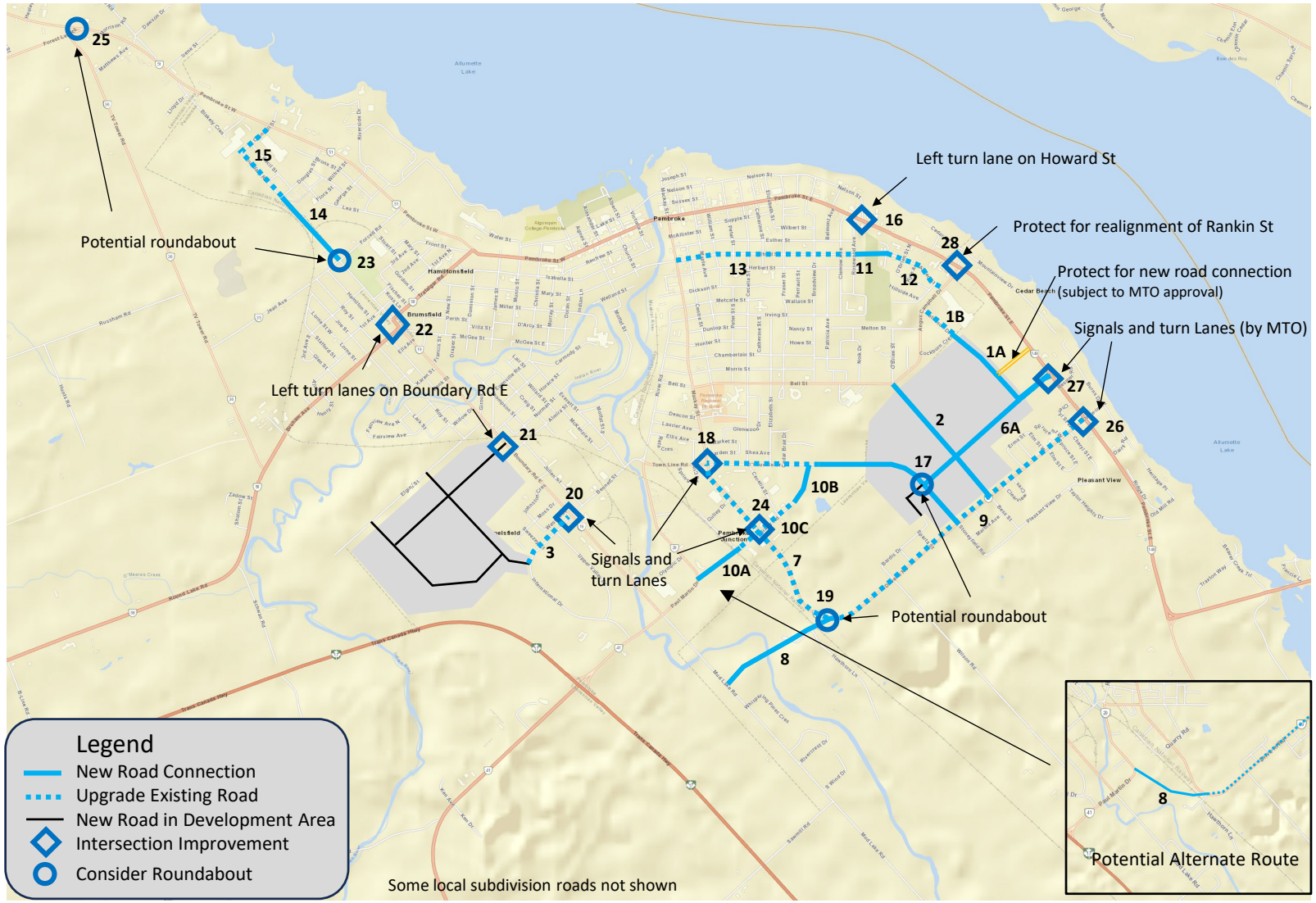


TABLE 6.1: RECOMMENDED ROAD NETWORK IMPROVEMENTS

Project #	Major Road Projects	Limits
1A	Matheson Drive - new road connection A	Cockburn Crescent to Robinson Lane
1B	Matheson Drive upgrade	Angus Campbell Drive to Cockburn Crescent
2	New Road connection B	Drive-In Road to Angus Campbell Drive / Bell Street
3	Upgrade / Urbanize International Drive	Boundary Road E to New Subdivision Road
6A	Robinson Lane Extension / Upgrade	Highway 148 to D'Youville Drive
9	Drive-In Road Upgrade	Highway 148 to MacKay Street
10A	Quarry Road Extension	Paul Martin Drive to CN Rail Corridor
10C	Quarry Road Upgrade	CN Rail Corrdior to Existing Limit
11	Alfred Street Extension (new road)	Rosewood Avenue to O'Brien Street N
12	Alfred Street Upgrade	O'Brien Street to Angus Campbell Drive
13	Alfred Street Traffic Calming	Rosewood Avenue to MacKay Street
4	D'Youville Drive Extension (new road)	Existing Limit to Drive-In Road
5A	D'Youville Drive Urbanization	MacKay Steet to Existing Limit
6B	Robinson Lane Extension / Upgrade	D'Youville Drive to Bardis Drive
7	MacKay Street Upgrade / Urbanization	Townline Road / D'Youville Drive to Drive-In Road
8	Drive-In Road Extension (new road)	MacKay Street to Mud Lake Road
10B	Quarry Road Extension	Existing Limit to D'Youville Drive
14	Boundary Road East Extension (new road)	Forced Road to Douglas Street
15	Boundary Road West / Crandal Street Upgrade	Douglas Street to Pembroke Street West
Project #	**Intersection Improvements**	**Intersecting Road**
16	Howard Street - Left Turn Lane	Pembroke Street East
17	D'Youville Drive - Roundabout	Robinson Lane
18	D'Youville Drive / Townline Road - turn lanes and signals	MacKay Street
19	Drive-In Road - roundabout	MackKay Street / Mud Lake Road Connection
20	Boundary Road - turn lanes and signals	International Drive
21	Boundary Road - turn lanes and signals	New Subdivision Entrance Road
22	Boundary Road E - Left Turn Lanes	Bruham Avenue and Trafalgar Road
23	Boundary Road E - roundabout	Forced Road
24	MacKay Street - turn lanes and signals	Quarry Road
25	TV Tower Road - roundabout	Foreast Lea Road / Pembroke Street West
26	Highway 148 - Turn Lanes and Signals (by MTO)	Drive-In Road
27	Highway 148 - Turn Lanes and Signals (by MTO)	Robinson Lane
28	Rankin Street Realignment	Highway 148 / Angus Campbell Drive

D'Youville Drive / Townline Road – to support the increase in traffic on D'Youville Drive and MacKay Street, it is anticipated that traffic signals will be required at this intersection in the future, once the connection to the new development area is established. The available property at this intersection is restricted, however the planned improvements should also incorporate left turn lanes on all intersection approaches to allow for the development of left turn signal phases as required.

Drive-In Road Roundabout – as part of the extension of Drive-In Road to Mud Lake Road, a new intersection will be created at MacKay Street. Given the anticipated volume of traffic at this location traffic signals or a roundabout will likely be required to accommodate future traffic demands. This location is ideally suited to a roundabout, given the higher order nature of Drive-In Road and the potential availability of adequate property to accommodate a roundabout design treatment.

This project would not be required until such time as the Drive-In Road extension is planned for implementation.

Boundary Road Intersection Upgrades – Boundary Road is anticipated to play an important role in the future network of the study area, serving as part of a local by-pass for east-west traffic to avoid downtown and avoid other local neighbourhood streets in Pembroke. The former CN rail crossing of Boundary Road represents a significant constraint that would make widening Boundary Road very costly. Removal of the rail overpass is a possible way to address this, but the grade separation would provide an excellent and safe crossing for future trail users that avoids the need for at grade trail crossing infrastructure (signals, PXO, etc.). The need for widening Boundary can be avoided (or at least deferred beyond the 2041 horizon) by a series of measures designed to optimize the capacity of the existing roadway. Typically, this is achieved through the provision of separate left turn lanes combined with roundabouts or traffic signals at busy intersections. Four key intersections have been identified for improvements designed to accommodate planned growth and optimize the capacity of Boundary Road, including:

- Left turn lanes and traffic signals at International Drive to support development;
- Left turn lanes and traffic signals at the new entrance road to the development adjacent to Elgin Street (depending on how traffic accesses this development signals and turn lanes may be better suited at the Elgin Street intersection);
- Left turn lanes on Boundary Road at the offset intersection of Bruham Avenue and Trafalgar Road; and
- A potential roundabout at the Forced Road / Jean Avenue intersection combined with the Boundary Road extension or as a separate project (subject to availability of property).

MacKay Street Signals at Quarry Road – as part of the Quarry Road extension, it is anticipated that traffic signals will be required to accommodate the increase of traffic at this intersection, particularly following the connection to D'Youville Drive. Separate left turn lanes on all approaches should be provided to ensure that advance green phasing can be implemented at this intersection in the future, as required.

TV Tower Road Roundabout at Pembroke Street West and Forest Lea Road – as growth continues, TV Tower Road is forecast to see an increase in traffic wanting to avoid the Pembroke Street West corridor. TV Tower Road is located so close to the existing signalized intersection of Forest Lea Road and Pembroke Street West that the

two intersections essentially operate as one intersection. Growth in demand on Forest Lea Road and TV Tower Road will result in future operational issues at this location due to the intersection spacing and the lack of space to accommodate queued vehicles. A roundabout at this location could be designed to accommodate the movements from all approaches within one single intersection, simplifying the operation and resulting in a safer overall design.

Highway 148 Intersection Improvements – As part of the planned improvements on Highway 148 the Ministry of Transportation is already planning to provide left turn lanes and new traffic signals at the Drive-In Road and Robinson Lane intersections. The recommended road network improvement program recommends corridor protection be put in place to allow for future realignment of the Rankin Street approach to the Highway 148 / Angus Campbell Drive intersection to improve the alignment and allow for safer turning movements without separate dedicated signal phasing.

6.2 Highway 148 Improvements

The Ontario Ministry of Transportation (MTO) is undertaking a Detail Design and Class Environmental Assessment (EA) Study for Highway 148 from approximately 200m west of Angus Campbell Drive, in the City of Pembroke, to approximately 300m east of the Greenwood Road Intersection, in the Township of Laurentian Valley.

As part of the Township of Laurentian Valley / City of Pembroke Transportation Master Plan, the municipalities requested a review of the current project recommendations including the proposed improvement plan, the recommended design, and the proposed traffic management plan to ensure that the interests of the Township and City are considered.

Between Angus Campbell Drive and Drive-in Road the proposed improvements include:

- Widening the road surface to provide a continuous two-way left turn lane;
- Urbanize the cross section including installation of a barrier curb with gutter and storm sewer upgrades; and
- Installation of traffic signals at the Highway 148/Drive-in Road intersection including installation of turning lanes.

Between Drive-in Road and Greenwood Road the proposed improvements include:

- Rehabilitation of the existing pavement and providing a 2.5 m wide paved shoulder;
- Modifying the westbound right turn channelization at the Greenwood Road intersection and extending the length of the merge lane; and
- Widening Highway 148 to provide a left-turn slip around lane at the Old Mill Road intersection.

The Ministry description of the proposed work also includes municipal works that will be completed on behalf of the Township, City and/or County, subject to finalizing funding agreements, securing required property and environmental approvals. These improvements include watermain and sanitary sewer servicing for portions of the study area, the construction of sidewalks on both sides of Highway 148, between Angus Campbell Drive and Drive-in Road, and rehabilitation of the pavement surface on Greenwood Road (County Road 40) for a length of approximately 1.0 km, south of the Highway 148 / Greenwood Road intersection.

Summary of Review Findings

As part of the Transportation Master Plan (TMP) scope of work, a review of the Highway 148 improvement project focussed on the assessment of the base traffic volumes and forecasts of future growth that underpinned the assessment, evaluation and recommendations for proposed improvements to Highway 148. The review also included aspects of the proposed design and some of the design decisions and design treatments reflected in the Transportation Environmental Study Report (TESR) and the TESR Addendum published by the Ministry.

In general, the review findings noted that the forecasts of future growth are in line with historical background growth on Highway 148, but they do not consider the additional traffic that is forecast to be generated as local development adjacent to the corridor is built out within the 2034 horizon year used for the Ministry study.

The findings from the Transportation Master Plan confirm that capacity deficiencies can be expected on Highway 148 during summer peak periods in the absence of other road network improvements.

The recommended design for Highway 148 should provide noticeable improvements to the operation and safety of this important corridor in the medium term, notwithstanding the review findings and the potential implications of summer peak conditions and new development growth over the longer-term.

Recommended improvement projects identified in the Transportation Master Plan will assist in managing the growth of traffic due to new developments adjacent to the Highway 148 corridor and will also reduce anticipated congestion, between Drive-In Road and Angus Campbell Drive. As a result, the planned improvements by MTO are expected to continue to provide adequate capacity beyond the 2041 horizon.

Between Drive-In Road and Greenwood Road, forecasts prepared as part of the TMP suggest that this portion of Highway 148 can be expected to experience increasing levels of congestion during summer peak periods, not just on summer weekends. None of the projects identified to support growth in the City and Township have any impact on traffic using this rural portion of Highway 148.

Sidewalk Design Treatment

The review noted potential user comfort and municipal maintenance concerns with the recommended curb faced sidewalk design approach incorporated into the preliminary design drawings. The Ministry has indicated that design options to address these concerns are being considered as part of the finalization of the detail design. The review noted that the lack of cycling facilities on the urban portion of Highway 148 may induce cyclists to ride on the new sidewalks, increasing the potential for conflicts with pedestrians.

Highway 148 – Greenwood Road Intersection

The review also recommended that the recommended design for the Highway 148 / Greenwood Road intersection be reassessed to consider the potential benefits of a roundabout design treatment for this location.

The original Class EA study completed by the Ministry identified 5 design and operational issues with the Greenwood Road intersection as noted in **Table 6.2**.

TABLE 6.2: GREENWOOD ROAD / HIGHWAY 148 DEFICIENCIES

Issue	Resolved by Proposed Design	Resolved by Traffic Signal	Resolved by Roundabout
1. Delays for traffic turning left from Highway 148 WB	No	Yes	Yes
2. Collision risk on merge lane due to traffic stopping to turn left at Esso gas station	Yes	If right turn channelization removed	Yes
3. SB left turn lane is too short	No	No	Yes
4. NB merge lane is a direct taper and is also too short	Yes	If right turn channelization removed	Yes
5. SB left turn collisions	No	Partially – with advance green	Yes

Note: Deficiencies noted were identified in the original Traffic Reports prepared in support of the MTO TESR.

The review noted that the proposed design for this intersection only addresses 2 of the identified issues, while signalization of the intersection may address up to 4 of the issues, while a roundabout would address all the issues. This is the primary reason the municipalities have been requesting a review of this decision.

The Ministry position with respect to the intersection design is that a roundabout design configuration would only be considered if the intersection met the warrants for traffic signals, where the roundabout could be an alternative to providing full traffic signals. At the time of the Ministry studies, and in subsequent counts taken during the design of the Highway 148 project, the minimum requirements for signalization have not been fully satisfied.

The Ministry process for assessing traffic volume warrants for signals uses volumes over the highest 8 hours of the day to determine if traffic signals are required. For traffic volumes there are three main criteria used. Traffic signals are considered warranted if:

1. The total intersection volumes exceed the threshold values in each hour (100% satisfied); or
2. The volume of traffic on the main road combined with the traffic crossing from the minor road exceeds threshold values in each hour (100% satisfied); or
3. If both criteria 1 and criteria 2 are satisfied to a level of 80%.

An updated signal warrant analysis was completed in August 2020 by the Ministry / County of Renfrew which indicated that the minimum warrant values still had not been met for all 8 hours, however for criteria 2 the minimum requirements were met in 7 of the 8 highest hours of the day – for an 8 hour average of 97% of the requirement.

Furthermore, warrant 2A and 2B were both satisfied to 100% during these 7 hours. Only one hour of the day did not meet the volume requirement.

A separate warrant analysis was completed using counts taken in September 2022, provided by MTO. The criteria 2 requirements for traffic signals were met in 3 of the 8 highest hours, (warrant 2A and 2B were both satisfied to 100% during these 3 hours). Volumes during the next 4 highest hours were between 92% and 96% of the required level to justify signals, and during the lowest hour, volumes were 80% of the required level - for an 8 hour average of 94% of the requirement.

Between 2012 and 2023 the volumes and resulting warrants for traffic signals have increased significantly and the intersection is now very close to meeting the signal warrants. The Ministry is planning this infrastructure to accommodate growth for the next 20 years.

The warrants for signals will likely be satisfied in the near future and there is a very real possibility that the Ministry may have to come back to address this issue sooner than expected. Installing signals now (or reconsidering the roundabout option) would provide a 20 year solution for the corridor.

It is recommended that the Ministry undertake a review of the Highway 148 / Greenwood Road intersection considering updated forecasts of future growth to determine the need for signalization of the intersection and the benefits of considering a roundabout design treatment.

Access Management

In the original MTO Transportation Environmental Study Report (TESR) a number of access management issues were identified on Highway 148, particularly through the built-up area between Angus Campbell Drive and Drive-in Road.

The key issues noted include intersection spacing that is less than the 800 m desired spacing on MTO highways; driveway density that is well over the ideal density of 6 entrances per km, per side; and numerous existing entrances located within the functional intersection area (defined as the limits of the turning lanes).

The TESR noted that existing entrances would be grandfathered, and would be consolidated where possible, while new entrances would generally not be permitted if there are other alternatives to provide access to properties.

Given the level of potential growth anticipated in this area of the City and Township, the access management policies of the Ministry are bound to conflict with the development objectives of the local municipalities.

The review noted that directing too much traffic to a limited number of sideroad intersections may not benefit the operation of Highway 148 either. Increased sideroad volumes will require a greater proportion of the available green time at the signalized intersections along Highway 148, reducing the available green time to serve the mainline traffic flows. The traffic study completed as part of the TESR already identified that the through movements on Highway 148 will experience queues during peak periods without considering this additional growth.

With additional area development growth, accessed primarily via the existing signalized intersections, the congestion issues on Highway 148 may be compounded in the future.

It is recommended that all parties work cooperatively to consider the benefits of permitting the development of additional strategic intersections on the Highway 148 corridor, combined with a parallel local road network to link future development areas and take pressure off of Highway 148.

The recommended road network plan presented in this study recommends the development of a parallel collector road through the new development lands adjacent to Highway 148 through an extension of Matheson Drive south to Robinson Lane. The parallel road network via Matheson Drive would be intended to serve locally generated traffic as opposed to highway traffic, and upgrades recommended in the plan may include measures such as traffic calming to discourage use of the corridor by through traffic. The plan also recommends that the Township protect a new road corridor between the Matheson Drive extension and Highway 148, just south of the Walmart plaza, to allow for an additional connection to Highway 148 in the future, subject to MTO approval.

Rankin Street / Angus Campbell Drive Intersection

The review also noted potential concerns related to future growth in the vicinity of the Angus Campbell Drive intersection, related to the offset alignment of the Rankin Street approach to this intersection. The City/ Township and Ministry may want to investigate opportunities to protect for the future realignment of this leg of the intersection to ensure this design limitation does not impact future opportunities to consider new development on the east side of Highway 148.

It is recommended that the Township protect for the future realignment of Rankin Street at Highway 148 through the establishment of corridor protection provisions in the Official Plan.

A full copy of the Highway 148 review and summary memo is included in **Appendix I**.

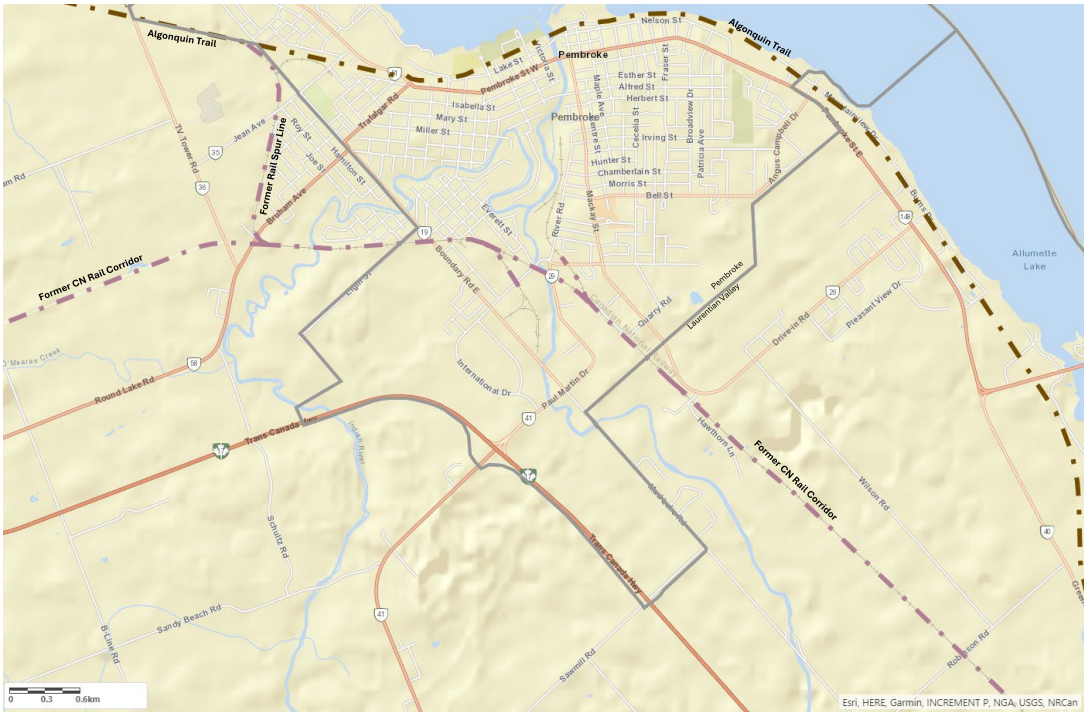
6.3 Active Transportation

The City of Pembroke and Township of Laurentian Valley have a limited network of active transportation facilities, primarily comprised of the Algonquin Trail, a network of urban sidewalks with the City of Pembroke, and a series of discrete recreational trails within the Township.

The compact nature of the City means that lots of trips are short enough for walking/cycling and there is real opportunity to develop an integrated network of walking and cycling facilities that will support active travel by residents. In the Township trip lengths are longer and opportunities to promote active transportation may be limited to on road cycling facilities and paved shoulder treatments on Township roads.

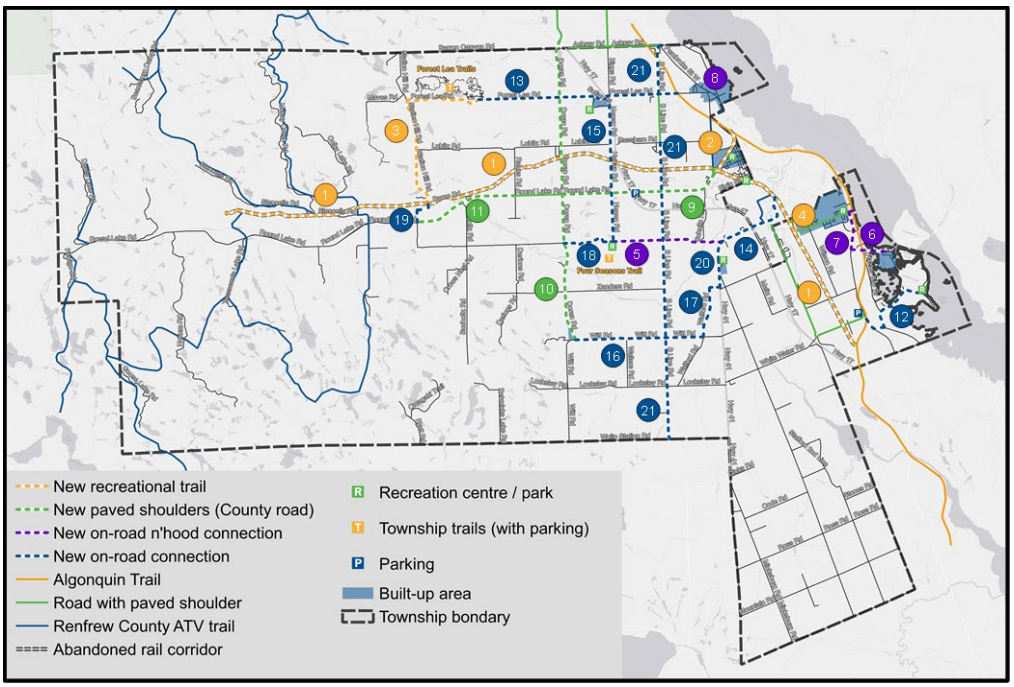
Building on the popularity of the Algonquin Trail and the Kiwanis Waterfront Trail, there is an opportunity for the City to work with the Township to develop a new trail facility on the abandoned portion of the CN Rail corridor running through the southwest portion of the City, as illustrated in **Figure 6.2**. The Township has already purchased a portion of this right-of-way, from the south boundary of the City to south boundary of the Township.

Figure 6.2: CN Rail Corridor Through Pembroke



The Township of Laurentian Valley has initiated the development of an Active Transportation and Trails Plan (ATTP), undertaken as a separate project, but running in parallel with the Transportation Master Plan process. The ATTP examined infrastructure and policy needs for walking, cycling, trails, and related activities. The plan, illustrated in **Figure 6.3** was developed in consultation with the public and various user groups and was approved by Township Council on November 19, 2024.

Figure 6.3: Township Active Transportation and Trails Plan



Within the City, opportunities for new trail corridors are limited (except for the CN Rail corridor noted previously). Opportunities to enhance active transportation could include:

- Developing an inventory of missing sidewalk links and a prioritization plan for construction
- Reviewing policies regarding the provision of sidewalks and updating the policy framework as required to improve access to safe walking infrastructure (the City currently requires sidewalks on one side of streets)
- Reviewing existing pedestrian crossing locations and update trail crossing designs, update pavement marking and signage to enhance visibility of crossings, and assess the need for protected crossings at key locations tied to pedestrian usage, safety risks, and pedestrian route connectivity

- Developing a network of on-road cycling routes to connect key activity areas and existing trails in the City
- Assess cycling facility types using guidelines developed in the Ontario Traffic Manual Book 18 and develop conceptual plans and priorities for implementation

To encourage increased use of active forms of transportation within the urban areas of Pembroke, the City should consider preparing an Active Transportation Plan to identify new trail opportunities, potential cycling infrastructure and priorities for completing missing sidewalk links.

6.4 Transit

Through the public feedback received during the TMP, residents of the City and Township both expressed a desire for a basic level of transit service to be provided in the City and Township that would provide travel options for those without access to a vehicle, or those wanting to choose more sustainable travel modes.

The City of Pembroke recently completed a transit feasibility study which assessed various forms of transit service delivery and recommended a demand-responsive service covering the whole city, with service crossing into the Township to access the Walmart Plaza on Pembroke Street West / Highway 148.

In the fall of 2024, the City is planning to begin the procurement process to retain a transportation service provider to implement and deliver an on-demand transit service for a three-year trial period, subject to available funding and approval by City Council. A Transit Steering Committee has been formed by the City to guide this project and ensure the service is designed to meet community needs.

The preliminary hours of service are anticipated to be Monday-Wednesday from 7:00 a.m. to 8:00 p.m; Thursday-Friday from 7:00 a.m. to 10:00 p.m; and Saturday-Sunday from 8:00 a.m. to 6:00 p.m.

It is recommended that the Township of Laurentian Valley consider entering a partnership with the City of Pembroke to provide transit beyond City boundary.

6.5 Policies to Support the Plan

6.5.1 Road Classification System

Road networks comprise various facility types, each of which performs a specific function from moving traffic through the network to providing access to abutting lands, or a combination of both. A functional roadway classification system establishes a “hierarchy” of roads grouped according to the type of service they provide, with gradation in function from access to mobility. The concept is based on the principle that roads do not operate independently but form part of an interconnected system. The design of the road must also fit its function and context, consistent with the Complete Streets principles articulated in Section 6.5.2.

A road network operates most efficiently and safely when each facility is designed and managed to serve its intended purpose. When a roadway attempts to prioritize both movement and access, neither function is well served. This compression of service functions typically results in higher collision rates, excessive vehicle emissions and fuel consumption, and community displeasure with neighbourhood traffic conditions.

Most Ontario municipalities prescribe a road classification system in their Official Plans and designate their roadways based on this structure to help minimize potential conflicts between service functions. Factors influencing classification include adjacent land use, desired service function (traffic movement versus land access), traffic volume, flow characteristics, operating speed, and vehicle types.

As noted, each type of roadway in a classification system is planned and designed to serve different needs within the network, as follows:

- **Provincial Highway** is a highway under the jurisdiction and control of the Ontario Ministry of Transportation (MTO). These roads are intended to serve provincial and inter-provincial travel demands, connect communities, and provide a network that facilitates goods movement across the province. Provincial highways are designed and operated to prioritize movement as opposed to access to adjacent properties and are typically higher speed roadways providing limited or controlled access.
- **Arterial Roads** (or **County Roads** in the County Official Plan) are intended and designed to carry large volumes of traffic from one area to another within and through a municipality and to link settlement areas within local municipalities.

- **Collector Roads** are designed to collect and distribute traffic from Local Roads to Arterial Roads, and to provide access to abutting properties. These roads tend to be shorter and carry lower volumes of traffic than Arterial Roads.
- **Local Roads** are intended and designed to provide access to abutting properties and to carry lesser volumes of traffic than Provincial Highways, Arterial Roads and Collector Roads. Most roads in the City are Local Roads.

As discussed in Section 3.4, roads under the jurisdiction of the City are classified as Arterial Roads, Collector Roads and Local Roads.

Based on the Official Plan, the only Arterial Road in the City is Pembroke Street East and West, which carries north-south and east-west traffic through the City and through the downtown.

Key collector roads include MacKay Street, Boundary Road, River Road, Paul Martin Drive, Mary Street, Howard Street / Nelson Street / Lake Street, Eganville Road / Christie Street, Trafalgar Road, Townline Road / D'Youville Drive, and Bell Street / Angus Campbell Drive. Some of these roads operate like Arterial Roads and should be considered for reclassification during the next City Official Plan update.

A portion of Pembroke Street East (from the City limit to MacKay Street in the downtown), MacKay Street (from Pembroke Street to Metcalfe Street/ River Road), River Road, and Paul Martin Drive are also connecting link roadways - a special category of roadway which provides a municipal road connection between Highway 148 and Highway 17. The Ministry of Transportation provides funding to support the City in maintaining and upgrading these connecting link roadways due to the role they serve in accommodating provincial traffic.

Within the Township Official Plan roads are categorized as Provincial Highways, County Roads, and Township roads, with no distinction between the various types of Township roads.

Table 6.3 recommends typical characteristics for rural and urban roads based on guidance provided in the Transportation Association of Canada *Geometric Design Guide for Canadian Roads*[5].

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

TABLE 6.3: CHARACTERISTICS OF ROADS

Characteristic	Local		Collector		Arterial	
	Rural	Urban[1]	Rural	Urban[1]	Rural	Urban[2]
Service Function	Traffic movement secondary consideration		Traffic movement and land access of equal importance		Traffic movement primary consideration	Traffic movement major consideration
Land Service	Land access primary consideration		Traffic movement and land access of equal importance		Land access secondary consideration	Some access control
Traffic Volumes (Daily Typical)	< 1,000 AADT		< 5,000 AADT	< 8,000 AADT	< 12,000 AADT	5,000 – 20,000 AADT
Flow Characteristics	Interrupted flow		Interrupted flow		Uninterrupted flow except at signals and crosswalks	
Design Speed (km/h)	50 – 110	30 – 50	60 – 110	50 – 80	80 – 130	50 – 70
Average Running Speed (km/h)	50 – 90	20 – 40	50 – 90	30 – 70	60 – 100	40 – 60
Vehicle Type	Predominantly passenger cars and occasional trucks	Passenger and service vehicles	All types, up to 30% trucks	Passenger and service vehicles	All types, up to 20% trucks	All types
Normal Connections	Locals, Collectors		Locals, Collectors, Arterials		Arterials, Highways	
Accommodation of Cyclists	No restrictions or special facilities	No restrictions or special facilities	Paved shoulders often used to provide operating space	Special facilities considered	Paved shoulders often used to provide operating space	No restrictions; special facilities considered, separation for traffic lanes preferred
Accommodation of Pedestrians	No restrictions or special facilities	Sidewalks normally on one or both sides	No restrictions or special facilities	Sidewalks often provided on both sides	No restrictions or special facilities	Sidewalks typically on both sides
Parking (typically)	n/a	No restrictions or restrictions one side only	n/a	Few restrictions other than peak hour	n/a	Peak hour restrictions
Minimum Intersection Spacing (m)	n/a	60	n/a	60	n/a	250-350
Right-of-Way Width (m) (typically)	20	15 – 22	20	20 – 24	30	20[3] – 45[4]

Notes:
1. Based on Residential Local category.
2. Based on Minor Arterial category.
3. Rights-of-way 20 m in width applicable to retrofit conditions only.
4. Wider rights-of-way are often required to accommodate other facilities such as auxiliary turn lanes, utilities, noise mitigation implications, bikeways, and landscaping. For new streets, the immediate provision of wider rights-of-way may be considered to accommodate such facilities.

Source: Transportation Association of Canada, "Design Controls, Classification and Consistency," Chapter 2 in *Geometric Design Guide for Canadian Roads*, (Ottawa, TAC, 2017), 51 – with some modifications.

The adoption of a roadway classification system for the Township Road network would allow for the application of policies related to access management, design treatments and standards, maintenance, and traffic management measures that vary by roadway classification. Higher order roadways in the Township could have stricter policy measures to reflect the higher priority given to vehicle movement on these facilities versus the emphasis on property access for local roads.

A recommended road classification system for the Township is illustrated in **Figure 6.4** based on an assessment of the role of each roadway and connectivity each roadway provides within the Township and how they connect to County Roads and Provincial Highways. Additional refinement to this preliminary classification system could benefit from a program of annual traffic counts to verify the operating characteristics of each road.

Laurentian Valley should adopt a refined roadway classification system (such as Township Arterial, Township Collector, Township Local, Seasonal Road) and incorporate this into the next Official Plan update.

6.5.2 Design Guidelines

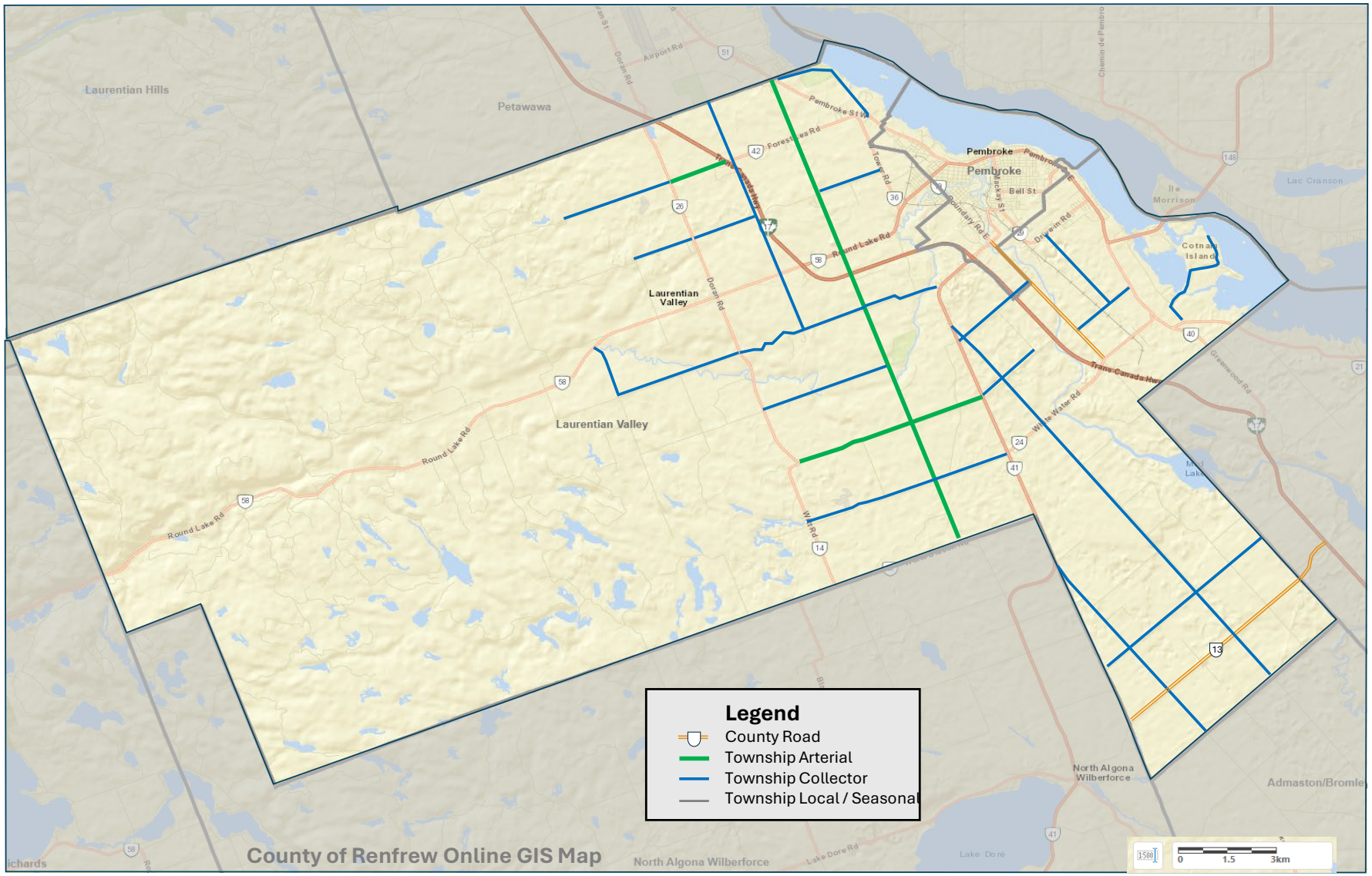
Design standards and guidelines for roads are put in place to promote uniformity in the way roads are designed to support driver expectancy, recognize vehicle and driver performance limits, acknowledge and make provisions for all road users, and in doing so - promote a safe operating environment.

The Transportation Association of Canada (TAC) provides a design guide[6] for urban and rural roadways that is used by most municipal jurisdictions across Canada to guide design decisions on their roadways.

Increasingly, municipalities have been updating their design guideline documents to better reflect the needs of all road users and all modes of travel using a Complete Streets approach to guide design decisions and trade-offs. A Complete Streets approach focuses on creating safe and convenient streets for pedestrians and cyclists of all ages and abilities, transit vehicles and users, automobiles and trucks while recognizing how users of the street are influenced by surrounding land use and urban form. In a rural context, street users could also include farming equipment, equestrian riders, and equestrian vehicles.

[6] Transportation Association of Canada, “Geometric Design Guide for Canadian Roads”, 2017

Figure 6.4: Recommended Township Road Classifications



The concept of Complete Streets revolves around the notion that a transportation network is a system, and every street does not necessarily need to be designed for every mode. For example, a local road typically does not have a dedicated cycling facility and is not used as a truck route. The network must be complete in providing alternatives or parallel facilities that can accommodate all users to be consider “complete”.

By integrating land use into the assessment process, the Complete Streets approach recognizes that land use can change along a stretch of road and in response the design approach should change as well. In a rural context this is particularly important as a single arterial or collector road could pass through open countryside, natural areas, industrial land, resource extraction areas, and small towns or hamlets.

In rural areas, context can dramatically affect roadway design. A two-lane road connecting two small hamlets is likely to have some, but not many bike or pedestrian trips, so a paved shoulder between the travel-way and a drainage ditch can make the roadway safer and more accessible for all users –especially the economically disadvantaged. Whereas, that same road may go through the commercial area (like Highway 148 through Pleasant View), where a person might bike to the mall and then walk between the businesses. To safely accommodate travel within that business district, sidewalks and crosswalks may need to be included as part of the roadway design for that roadway to be considered a Complete Street.

In the Township, development pressure is most pressing on the urban fringe areas of Pembroke, where the design needs and land use context is more urban in nature and inconsistent with the largely rural nature of the outlying areas. The creation of design guidelines for the Township, to be applied in newly urbanizing areas, would assist in providing guidance for land developers and for designing roadways that will support the various users in these rural urbanized areas.

The Township should consider the development of design guidelines for township roads in urban areas to better characterize their use and design parameters

The City of Pembroke, on the other hand, is already largely urbanized, with new development taking place in sub-urban areas on the fringe of the City or as part of intensification or redevelopment of existing lands within the built up area. Many of the City roadways have been built over time with a mix of urban design treatments including curbs, sidewalks, and boulevards; and rural designs featuring ditches and gravel shoulders. The creation of design guidelines for the City would

also provide benefits in terms of providing consistent policy direction on designing using a Complete Streets approach to guide City initiated reconstruction projects and developer driven projects that build new city streets or upgrade existing roads.

The City of Pembroke should consider the creation of design guidelines for City roads tied to the existing land use and road classification system

6.5.3 Corridor Protection

Corridor protection is a planning process intended to protect lands that may be required for future public uses and encompasses measures intended to:

- Prevent or minimize development within the proposed right-of-way of a planned transportation facility or improvement;
- Acquire right-of-way in advance of construction need; and
- Preserve the safety and efficiency of the future facility or improvement through access management policies.

Corridor protection provides greater clarity of public intentions regarding the location and timing of future roadway improvements and promotes orderly development of the community considering the future transportation network needed to serve planned growth. Coordinating transportation corridor planning with land use planning within and adjacent to proposed facilities also helps to avoid incompatible land development or development within or so close to a future right-of-way, which, could require the Township and City to:

- Identify an alternative location for the facility, which could place the corridor in a less desirable and/or more environmentally impactful area;
- Revise plans and postpone project delivery, thereby delaying and/or increasing the cost of implementation; and/or
- Pay higher costs to acquire property if the corridor is not relocated.

While the Township and City Official Plans include general policy direction regarding the protection of transportation corridors, the documents do not fully articulate the methods and guidance for protecting and/or acquiring rights-of-way. The Official Plans would also benefit from a table or map specifying required road allowance (right-of-way) widths and/or a generic policy indicating typical widths by roadway category (e.g., 30 m for Arterial roads).

Corridors Recommended for Protection

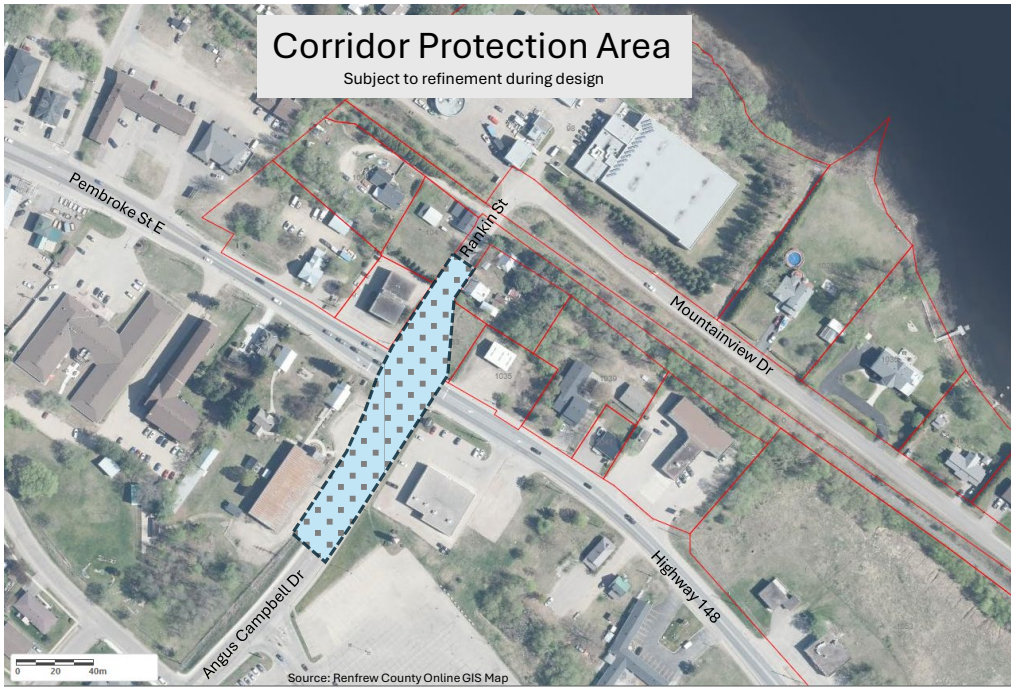
The recommended road network plan presented in **Section 6.1** includes a number of projects identified as long-term initiatives or for corridor protection, in anticipation of a future need. The alignments of the corridors shown, are approximate and subject to more detailed planning and engineering studies to determine their ultimate size and location. These studies will identify community, private property, and environmental impacts and measures to mitigate any such concerns.

The following corridor protection areas are recommended:

Angus Campbell Drive / Rankin Street

The Highway 148 design review completed as part of the TMP identified the need to protect for opportunities to correct the existing offset intersection design treatment at Angus Campbell Drive / Rankin Street intersection. To correct this, a realignment of Angus Campbell Drive and/or Rankin Street will be required, as illustrated in **Figure 6.5**.

Figure 6.5: Corridor Protection Area - Angus Campbell Drive and Rankin Street



The offset design requires special traffic signal phasing which gives dedicated green time on separate signal phases for the side road approaches, to reduce conflicts between vehicles entering Highway 148 from Rankin Street and Angus Campbell Drive at the same time.

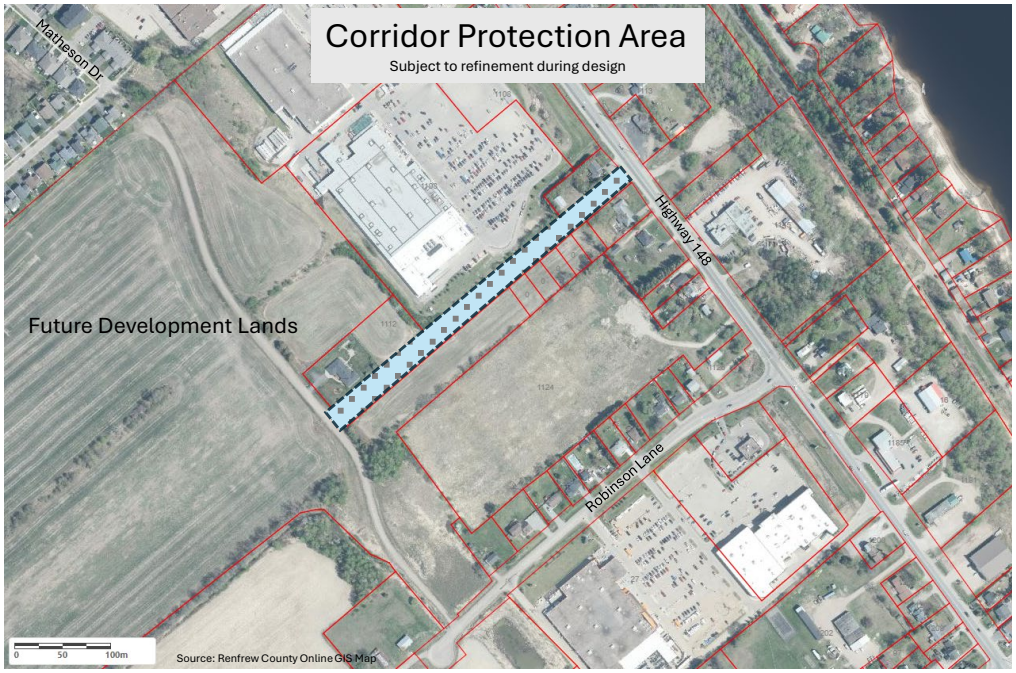
While this signal phasing approach can work under the low volumes currently using Rankin Street, in the event of redevelopment of lands in this area, higher side road traffic volumes on Rankin Street would have a significant impact on the operation of Highway 148.

New Roadway Connection to Highway 148

The Highway 148 design review completed as part of the TMP also identified the need to protect for strategic opportunities to provide additional roadway connections to Highway 148 to serve new development (subject to MTO approval). Current MTO corridor management guidelines would typically prohibit new mid block road connections where the intersection spacing is less than 800 m between intersections. In most urban areas, intersection spacing of 200-250 m is common in dense commercial areas along arterial roads.

The protection of new mid block access points to Highway 148 provides opportunities to distribute development generated traffic across multiple side road intersections so that no one side road approach is overloaded. Focusing all access on one or two signalized intersections can reallocate green time away from the signal phases serving highway traffic, resulting in delays and congestion. The proposed corridor location, illustrated in **Figure 6.6**, is approximately 260 m from the planned traffic signal at Drive-In Road and 210 m south of the existing traffic signal at the Walmart driveway entrance.

Figure 6.6: Corridor Protection Area – New Road Connection to Highway 148



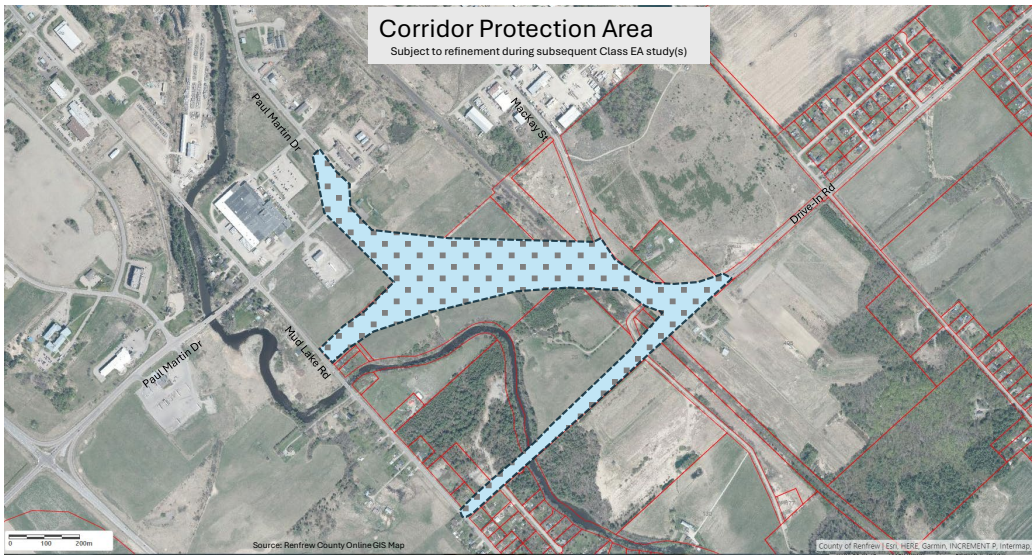
Drive-In Road Extension

The future extension of Drive-In Road to connect to Mud Lake Road or Paul Martin Drive is a long-term project identified in the road network plan to promote connectivity and form a key part of a local “by-pass’ of downtown Pembroke. Two connection options were identified in the TMP, and the modelling results indicated a similar level of performance with the connection to Mud Lake Road versus the connection to Paul Martin Drive. A high level review of connection options also identified two different opportunities to connect to Mud Lake Road, with one requiring a new crossing of the Muskrat River and the other avoiding a river crossing by shifting the route closer to Paul Martin Drive, as illustrated in **Figure 6.7**.

More detailed route planning and the assessment of localized impacts is required to fully assess each route and determine a preferred alternative to be used as the basis for design work. This additional study would typically be undertaken as part of phases 3 and 4 of the Municipal Class EA process, where detailed field investigations are undertaken to identify site characteristics and preliminary design of the route alternatives are completed to assess the potential for impacts.

As this project is expected to be needed in the 10-20 year horizon, protecting these corridors from future development will allow for a range of design alternatives to be considered in the subsequent Municipal Class EA study.

Figure 6.7: Corridor Protection Area – Drive-In Road Extension

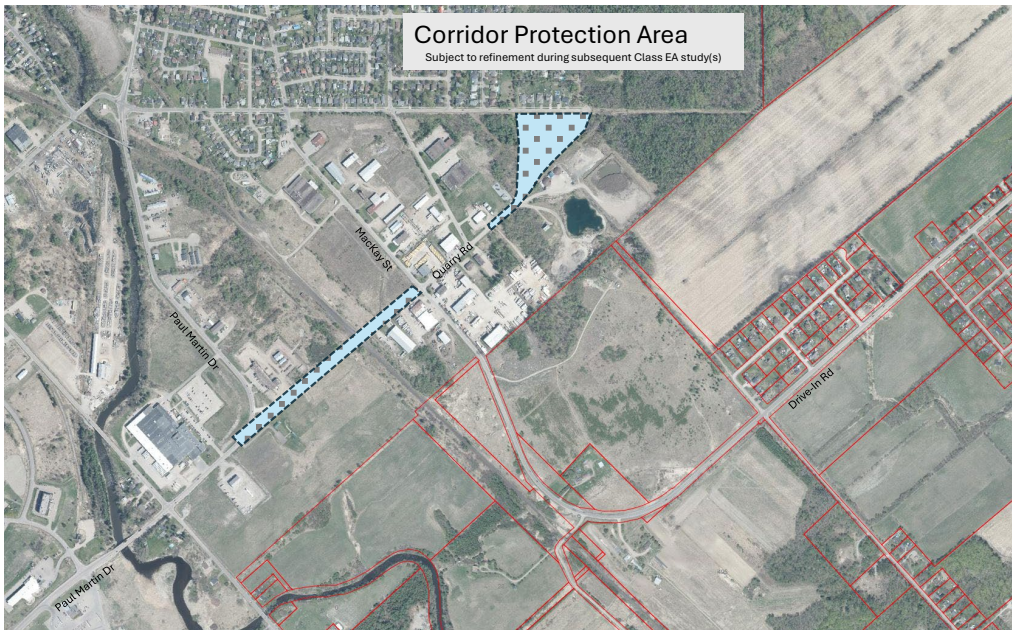


Quarry Road Extension

The future extension of Quarry Road, from Paul Martin Drive to MacKay Street, and from the termination of Quarry Road to D'Youville Drive was identified in the recommended road network plan to enhance access to the new development areas on the east boundary of Pembroke. This new road would direct traffic out to Paul Martin Drive and Highway 17, and reduce traffic that would otherwise use the Angus Campbell Drive / Bell Street corridor.

This project was identified for the 10-20 year horizon and is tied to progress of development in the area, and the recommended extension of D'Youville Drive to Drive-In Road, as part of servicing the future development lands. **Figure 6.8** illustrates a corridor protection area that will allow for the future extension of Quarry Road and permit the assessment of various connection options and alignments where Quarry Road intersects with D'Youville Drive.

Figure 6.8: Corridor Protection Area – Quarry Road Extension



Boundary Road Extension

The future extension of Boundary Road, from Forced Road / Jean Avenue to Boundary Road West and Crandall Street was identified in the recommended road network plan to provide an alternate route to attract traffic away from the Pembroke Street West corridor.

This project was identified for the 10-20 year horizon and is tied to the upgrade of Crandall Street and new development build out on lands

adjacent to the Boundary Road corridor. **Figure 6.9** illustrates a corridor protection area that will allow for the future extension of Boundary Road and permit the assessment of various connection options and alignments where Boundary Road intersects with Forced Road, including the potential for a roundabout.

Figure 6.9: Corridor Protection Area – Boundary Road Extension

6.5.4 Speed Management and Traffic Calming

Many municipalities are facing growing requests from residents to address speeding on local roads to provide a safe environment for pedestrians and cyclists. In some urban areas, requests for traffic calming measures are also growing to address aggressive driver behaviour and protect neighbourhoods from infiltration of cut through traffic.

Safety was cited by residents who completed the online survey as a key barrier that makes them avoid walking and cycling in their neighborhoods, and the implementation of traffic calming measures was also suggested as an initiative that could improve safety.

Speed regulations help motorists select operating speeds that are safe for the prevailing conditions. The maximum safe speed at any location will vary as road geometry, traffic demands, and the road environment change.

Selecting a posted speed limit for a specific location must take into consideration legislative regulations, public recognition and

understanding, ease of implementation, capital and maintenance costs, and adherence to recognized engineering standards and practices. In Ontario, speed regulations are primarily defined in the Highway Traffic Act (HTA), which states “no person shall drive a motor vehicle at a rate of speed greater than 50 kilometres per hour on a highway within a local municipality or within a built-up area.” This provision is commonly known as the Statutory Speed Limit. Outside of built-up areas the Statutory Speed Limit is 80 km/h.

Lowering the posted speed limit alone is typically not enough to achieve a sustained reduction in vehicle operating speeds. Police enforcement can be an effective measure to achieve compliance, but without constant and rigorous attention drivers tend to return to operating their vehicles at the speed they feel most comfortable regardless of the posted limit. Implementing traffic calming measures to force motorists to slow down is one option to reduce the reliance on police enforcement to manage speeding on Township and City roads.

Different speed management approaches are typically used in urban municipalities versus rural municipalities. In Pembroke the City has already implemented reduced speed limits on a number of streets featuring schools, hospitals, and other facilities attracting vulnerable road users and children. All school areas have a designated posted speed limit of 40 km/h except for the school zone on Carmody Street which is posted at 30 km/h. Roadways through City parks have posted speed limits of 25 km/h and Community Safety Zones have been established on Angus Campbell Drive and Bell Street with a posted speed limit of 40 km/h. In Community Safety Zones fines for traffic infractions are double the fines specified in the HTA. The City also has a designated Hospital Zone on Deacon Street and MacKay Street, which is posted at 40 km/h.

The City uses various speed management techniques to try to encourage residents to follow posted speed limits, including portable radar feedback message boards which display a drivers actual speed to them as they pass by the sign.

The Township also has a range of posted speed limits designated for roads under their jurisdiction. Statutory Speed limits of 50km/h, in built-up areas, or 80 km/h outside built-up areas apply unless otherwise designated in the Speed Limit / Community Safety Zone By-Law (2022-01-001). Roads with designated speed limits range from 20 km/h on some seasonal roads, 40 km/h on some local roads, and 60 / 70 km/h on major township roads, such as B Line Road. The Township also has six areas designated as Community Safety Zones in the vicinity of parks, recreation centres and in some neighbourhoods.

In many communities, Speed Management or Traffic Management protocols have been developed to guide the Municipality's process and procedures for responding to traffic and safety queries and concerns received from residents. Common approaches include:

- A consistent, objective, and transparent process for reviewing and assessing requests for traffic management measures, with flowcharts illustrating the steps to be followed in responding to reported concerns;
- A range of potential traffic management measures for use in their community, including both traffic control devices (i.e., traffic control signals, all-way Stop signs, speed control signs, pedestrian crossovers, Community Safety Zones) and traffic calming treatments;
- A methodology and criteria/warrants for determining the most appropriate traffic management measure(s) to use on roads under the Municipality's jurisdiction; and
- A procedure for monitoring and evaluating the effectiveness of traffic management measures after installation.

A sample Speed Management / Traffic Calming policy is included in **Appendix G**, based on an extensive best practices review completed in 2024 for Lanark County. This framework could form the basis for local policies designed to address the specific context and preferred traffic calming techniques within the City of Pembroke and the Township of Laurentian Valley.

Pembroke and Laurentian Valley should consider adopting policies and processes for reviewing requests for speed management / traffic calming on City and Township roads

6.5.5 Truck Route Management

A "truck route" is defined as a road that a municipality has formally designated for certain trucks to use when traveling through or within that jurisdiction. "The purpose of a truck route network is to provide rules that balance the needs of commerce and the trucking industry with the desire to minimize the impacts of trucks on sensitive land uses." [7]

Typically, truck routes use the most suitable roads to the greatest extent possible, while limiting intrusion into sensitive areas to the

[7] Ontario Trucking Association. December 2011. *Local Truck Routes: A Guide for Municipal Officials*. p. 6.

minimum possible. To focus of truck route planning is to define a network that is:

- Safest for the movement of large vehicles;
- Supports local and regional commerce; and
- Provides enough capacity and adequate design features to accommodate the anticipated volume, size, and weight of vehicles.

The City currently has five roadways where heavy trucks are prohibited under Schedule K of By-law 2020-64. These include:

- Almira Street – between Boundary Road and Julien Street
- Angus Campbell Drive – between Pembroke Street East and Bell Street
- Bell Street – between Angus Campbell Drive and River Road
- Griffith Street – between Boundary Road and Julien Street; and
- Julien Street – between a point 116 m west of Griffith Street to Almira Street

The Township has no truck restrictions in place. Site and/or season specific restrictions are typically used to limit loads during the spring and enforce weight restrictions on older structures. But outside these limited locations, the Township's practice has traditionally been to permit truck traffic on all Township Roads.

Heavy Truck restrictions do not typically apply to truck traffic that is accessing a property along a restricted street for delivery purposes, to access services along a street (such as repair or fueling facilities) or to access a property that is appropriately zoned for commercial or industrial uses and is used as a base of operations for trucks.

Some municipalities have adopted formal truck routes to try to intercept trucks coming into the built-up area and direct them to roads that are better suited for truck traffic. The use of permissive routes are often combined with heavy truck restrictions on roads where truck traffic is restricted as a means to provide positive guidance to trucks entering the community.

Figure 6.10 illustrates two example of permissive truck route signage used in the Guelph and Bradford-West Gwillimbury areas. This approach can be particularly beneficial where there are a number of trucks that are passing through a community or where there are key routes that a municipality would prefer to direct trucks trying to access industrial parks.

Figure 6.10: Designated Truck Route Signage

Truck Route Signing - Guelph

Truck Route Signing – Bradford-West Gwillimbury

A key area of concern with respect to truck traffic has been trucks using Highway 148 and those trying to access the commercial development areas along the Highway 148 / Pembroke Street West corridor. Concerns have been expressed in the past about truck traffic using Angus Campbell Drive and Bell Street as an alternative route, which resulted in the local truck prohibitions on these streets.

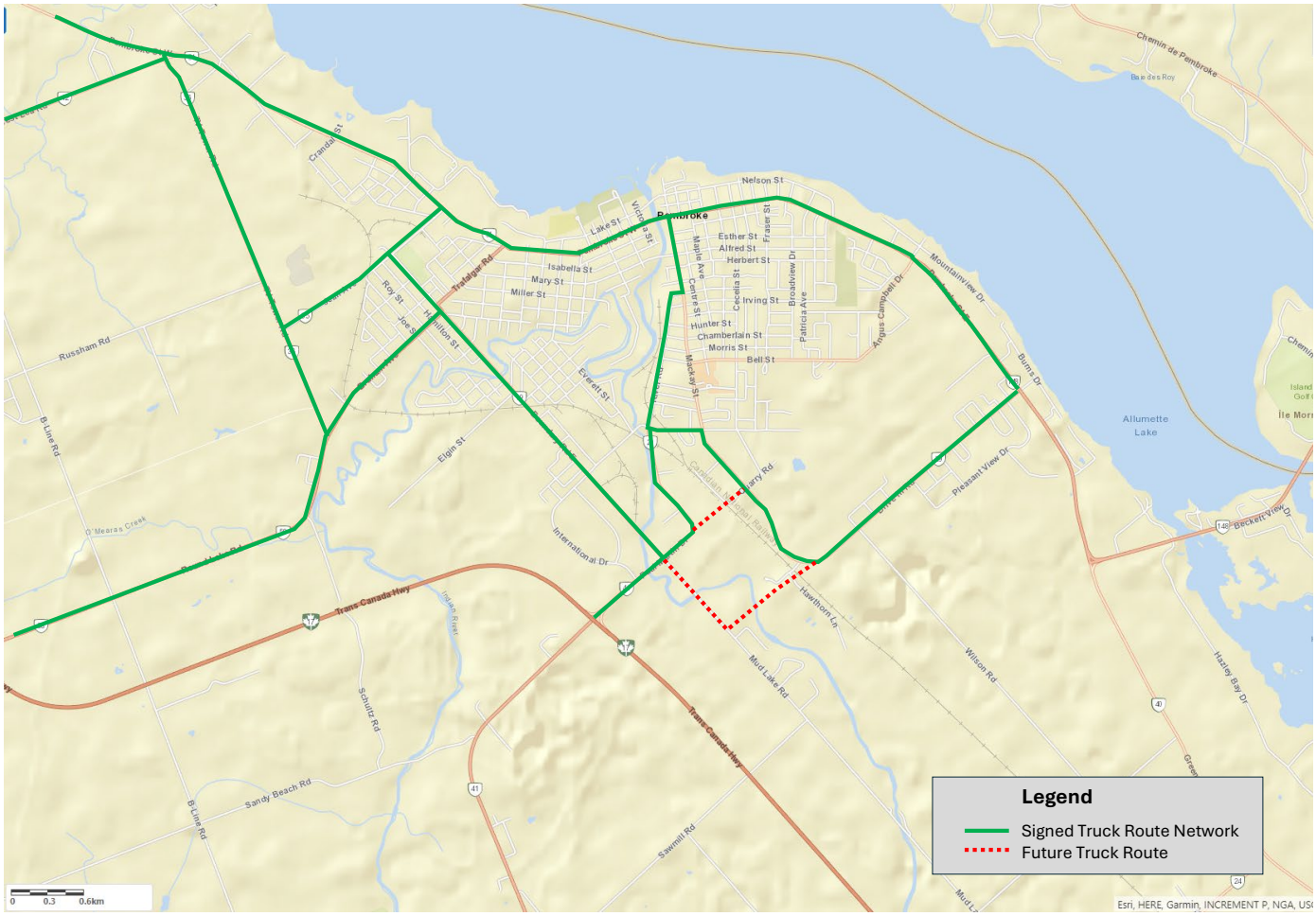
A conceptual truck route network for the periphery of Pembroke has been developed to illustrate the key routes that could form part of a signed truck route network and is illustrated in **Figure 6.11**. Many of these road segments are County Roads and or Provincial Highways which allow trucks. Future road connections identified in the recommended road network plan should also be incorporated into this truck route network once they are constructed.

Installing permissive truck route signing does not require any enabling legislation to implement, but agreement of the Ministry of Transportation and the County of Renfrew would be required to permit the installation of signs on their respective roads.

Additional truck restrictions could be implemented in conjunction with the truck route network, through amendments to the City By-Law, if necessary.

Pembroke and Laurentian Valley should work with the County and MTO to implement a Truck Route Network using signage that directs heavy vehicles to preferred routes.

Figure 6.11: Recommended Truck Route Network



7 Implementation and Monitoring

7.1 Implementation Tools

7.1.1 Official Plan Amendments

The TMP introduces key themes and principles that should be incorporated into the Township and City Official Plans, which represent the guiding land use and policy document for both municipalities.

Below summarizes the proposed policy and schedule changes that will inform the future Official Plan Amendment pursuant to the *Planning Act.*

- Policies:
  - Road Classification System
  - Road widening, right-of-way, and entrance spacing policies
  - Mechanisms to acquire and protect designated corridors
  - Active transportation
- Schedules:
  - Road Network schedule, including protected corridors
  - Schedule/table setting out right-of-way requirements by road section
  - Active Transportation schedule (possibly)

The City of Pembroke and the Township of Laurentian Valley should incorporate the recommended policy measures in Chapter 6 into their next update to their respective Official plans.

7.1.2 Future Environmental Assessment Requirements

The TMP will be relied upon in completing the Municipal Class EA studies for future projects identified herein. In most cases, the TMP will satisfy Phases 1 (identify the problem) and 2 (identify and evaluate alternative solutions to the problem) of the five-phase Municipal Class EA planning and design process.

For smaller projects identified as being exempt, no further Environmental Assessment work is required, although it is good practice to undertake consultation with the public during the detailed design of these improvements and additional consultation is often

required with review agencies to obtain necessary permits to facilitate construction.

Functional plans will be completed for each project to assess costs and impacts in greater detail. It is assumed that these more detailed studies will not result in a complete rethink of the underlying basis for the project, but rather the best methods to design and implement the project.

It may be desirable to alleviate adverse environmental consequences of a proposed project by relocating the facility, altering the design, or choosing not to proceed with its implementation. However, in many instances the infrastructure already exists or the options for new or improved alignments are limited. In these situations, mitigation measures may be needed to minimize the negative impact of the transportation facility or service and these measures would typically be developed in greater detail during the subsequent phases of the Municipal Class EA process.

Given the time required to complete the necessary Class EA studies, secure property if required, prepare design drawings and tender packages, and allocate funding for construction it is recommended that projects required in the 0-5 year and 5-10 year planning horizons, where additional planning and approvals are needed, be initiated in the short term.

The City of Pembroke and the Township of Laurentian Valley should work with the County to initiate Municipal Class EA studies for the projects identified in the TMP for the 0-5 and 5-10 year planning horizons to secure project approvals and refine the cost estimates to allow for appropriate budget forecasting.

7.1.3 Development Approval Process

The *Planning Act* establishes the framework for land use planning in Ontario, providing the basis for a variety of mechanisms municipalities use to facilitate development in their communities. As part of the approval process, municipalities are responsible for ensuring alignment with Provincial interests and mandates. The most common tools used by the Township and City to guide and control development includes Official Plan Amendments, Plans of Subdivision, Plans of Condominium, and severances/consents for lands. The type of application(s) will depend on the development contemplated and the permission required from the Township or City to enable the plan.

The development approval process can also be used to implement the transportation infrastructure and policies identified in the TMP directly related to specific lands. The *Planning Act* authorizes municipalities to impose conditions on development approvals to secure compliance. From a transportation perspective, typical conditions imposed may include:

- Dedication of property for abutting road, pathway, and other transportation rights-of-way described in the Official Plan at no cost to the municipality;
- Design conditions for access to/from the subject development, such as intersection controls, lane arrangements, ramps, curbing, and traffic signs;
- Requirements and design conditions for off-street loading and parking facilities; and
- Design conditions for walkways, walkway ramps, and other means of pedestrian access.

Transportation infrastructure improvements identified in the TMP may be implemented through the development approval process if the improvements are directly related to the subject development. Where a roadway through a proposed development area has been identified for a higher classification (collector or arterial road), the municipality would typically be responsible for paying for the additional costs to oversize the roadway (beyond what is needed for a local road).

The City of Pembroke and the Township of Laurentian Valley should finalize design guidelines that can be shared with developers implementing projects in areas that overlap with the projects identified in the TMP.

Where projects identified in the TMP will require right-of-way widths beyond the existing right-of-way or the typical right-of-way for a new local street, the City and Township should incorporate the right-of-way requirements into their respective Official Plans to ensure lands can be secured at the time of development approval.

7.2 Implementation Phasing and Costing

Costs for implementing the road network projects identified in **Chapter 6** were estimated based on benchmark cost data provided by the Township and City. Costs from previous years were increased to reflect construction price escalation and inflation and are based on 2024$. The cost estimates developed for the TMP are anticipated to be incorporated into the Township and City Development Charges Background Study's. No cost escalation beyond 2024 has been applied to the cost estimates, given the uncertainty regarding future inflation rates and construction specific cost escalation factors.

Note that the project identification and costing was carried out at a high-level based on the assumptions stated above. The analysis did not include detailed design work, constructability reviews, and/or environmental impact, relying on the simplifying assumption that the potential road improvements could be implemented with typical design treatments and standard measures to mitigate adverse impacts. Further detailed studies, including Municipal Class EAs, are required prior to implementation of the identified projects to refine the design treatments, incorporate appropriate measures to mitigate effects, and consult with First Nations, the public, stakeholders and landowners to ensure that localized concerns can be addressed.

The phasing of the proposed road network projects considers the forecast growth in population and employment within the Township and City and associated travel demands. Relative priority compared to other initiatives and objectives of the Township and City were not considered in this study but will be a factor that the respective municipal Council's will need to consider as part of the annual budget process. For some projects, a portion of the planned work may already be contemplated in current Asset Management Plans, and the County, City and Township should review these plans to determine how best to integrate the proposed works with planned maintenance or rehabilitation work for the roadways and any underground services within the rights-of-way.

Implementation timing and final extent and configuration of the proposed works will be confirmed through future study and capital budgets, prior to construction.

Table 7.1 and **7.2** provide a detailed listing of projects included in the Recommended Road Network Plan including estimated capital costs, recommended timing for implementation, the applicable Municipal Class EA Schedule for each project, and recommendations for who should led the projects as proponent. Detailed costing information is provided in **Appendix H**.

TABLE 7.1: ROAD NETWORK IMPROVEMENT PROJECTS

Project #	Major Road Projects	Limits	MCEA Schedule	Length (km)	Cost Estimate	Time Period	Notes	Proponent
1A	Matheson Drive - new road connection A	Cockburn Crescent to Robinson Lane	by developer	0.7	$ 4,500,000	0-5	1	Developer / Township
1B	Matheson Drive upgrade	Angus Campbell Drive to Cockburn Crescent	Exempt (21)	0.28	$ 1,400,000	0-5		City
2	New Road connection B	Drive-In Road to Angus Campbell Drive / Bell Street	by developer	1.1	$ 6,200,000	0-5	1	Developer / Township
3	Upgrade / Urbanize International Drive	Boundary Road E to New Subdivision Road	Exempt (21)	0.47	$ 2,600,000	0-5		City
6A	Robinson Lane Extension / Upgrade	Highway 148 to D'Youville Drive	by developer	1.1	$ 6,800,000	0-5	1 / 3	Developer / Township
9	Drive-In Road Upgrade	Highway 148 to MacKay Street	Exempt (19a)	2.2	$ 6,900,000	5-10	3	County
10A	Quarry Road Extension	Paul Martin Drive to CN Rail Corridor	Schedule C	0.7	$ 4,900,000	5-10	4	City
10C	Quarry Road Upgrade	CN Rail Corrdior to Existing Limit	Exempt (21)	0.5	$ 2,700,000	5-10	5	City
11	Alfred Street Extension (new road)	Rosewood Avenue to O'Brien Street N	Schedule C	0.22	$ 2,100,000	5-10		City
12	Alfred Street Upgrade	O'Brien Street to Angus Campbell Drive	Exempt (21)	0.48	$ 2,900,000	5-10		City
13	Alfred Street Traffic Calming	Rosewood Avenue to MacKay Street	Exempt (28a)	1.3	$ 600,000	5-10	6	City
4	D'Youville Drive Extension (new road)	Existing Limit to Drive-In Road	by developer	1.2	$ 9,300,000	10-20	1	Developer / Township
5A	D'Youville Drive Urbanization	MacKay Steet to Existing Limit	Exempt (21)	0.8	$ 3,800,000	10-20		City
6B	Robinson Lane Extension / Upgrade	D'Youville Drive to Bardis Drive	by developer	0.5	$ 3,100,000	10-20	1	Developer / Township
7	MacKay Street Upgrade / Urbanization	Townline Road / D'Youville Drive to Drive-In Road	Exempt (21)	1.5	$ 7,600,000	10-20		City / Township
8	Drive-In Road Extension (new road)	MacKay Street to Mud Lake Road	Schedule C	1.1	$ 10,000,000	10-20	2	County / Township
10B	Quarry Road Extension	Existing Limit to D'Youville Drive	Schedule C	0.4	$ 2,800,000	10-20	5	City
14	Boundary Road East Extension (new road)	Forced Road to Douglas Street	Schedule C	0.67	$ 6,300,000	10-20	7	City / Township
15	Boundary Road West / Crandal Street Upgrade	Douglas Street to Pembroke Street West	Exempt (21)	0.75	$ 4,000,000	10-20	7	City / Township
	Total Major Road Projects				**$ 88,500,000**			

Notes:

1 Assumes developer will pay for the typical cost for a local road standard, Township to pay for oversizing to Collector Road - Cost shown reflects total cost before cost sharing

2 Assumes new structure across Muskrat River - 75 m span x 11.75 m width - to be confirmed during Class EA study

3 Excludes intersection work at Highway 148 to be completed by MTO

4 Assumes at grade trail crossing on former CN Rail Line

5 Project should be completed with Project 10A as combined Schedule C Class EA for entire connection

6 Preliminary Traffic Calming Cost Estimate

7 Assumed to be a joint City - Township project - within City boundary

TABLE 7.2: INTERSECTION IMPROVEMENT PROJECTS

Project #	Intersection Improvements	Intersecting Road	MCEA Schedule		Total Cost Estimate	Time Period
16	Howard Street - Left Turn Lane	Pembroke Street East	Exempt (19a)		$ 400,000	5-10
17	D'Youville Drive - Roundabout	Robinson Lane			included in Proj 4	
18	D'Youville Drive / Townline Road - turn lanes and signals	MacKay Street			included in Proj 5A	
19	Drive-In Road - roundabout	MackKay Street / Mud Lake Road Connection			included in Proj 8	
20	Boundary Road - turn lanes and signals	International Drive			included in Proj 3	
21	Boundary Road - turn lanes and signals	New Subdivision Entrance Road	Exempt (19a)		$ -	5-10
22	Boundary Road E - Left Turn Lanes	Bruham Avenue and Trafalgar Road	Exempt (19a)		$ 900,000	5-10
23	Boundary Road E - roundabout	Forced Road			included in Proj 14	
24	MacKay Street - turn lanes and signals	Quarry Road			included in Proj 7	
25	TV Tower Road - roundabout	Foreast Lea Road / Pembroke Street West	Schedule B		$ 5,200,000	10-20
26	Highway 148 - Turn Lanes and Signals (by MTO)	Drive-In Road	By Others			
27	Highway 148 - Turn Lanes and Signals (by MTO)	Robinson Lane	By Others			
28	Rankin Street Realignment	Highway 148 / Angus Campbell Drive	Corridor Protection Only			
	Total Intersection Improvements				**$ 6,500,000**	

The recommended road network improvement plan is anticipated to cost $95,000,000 in 2024 dollars, excluding property costs. A portion these costs will be borne by developers as part of building new roads within growth areas. For projects requiring reconstruction and improvements to an existing road, a portion of these costs to rehabilitate or resurface the existing road would already be accounted for in the City and Township Asset Management Plans. **Table 7.3** summarizes the capital investments required by horizon.

Over the 20 year horizon of the plan an average level of investment required to fund the plan is between $4.3 and $5.2 million per year (in 2024$).

TABLE 7.3: CAPITAL INVESTMENT BY HORIZON

Horizon	Estimated Cost	Annual Cost
0-5	$ 21,500,000	$ 4,300,000.00
5-10	$ 21,400,000	$ 4,280,000.00
10-20	$ 52,100,000	$ 5,210,000.00
Total	**$ 95,000,000**	

Implementation of the recommended road network improvement plan will require co-ordinated efforts for the planning and implementation phases of the work, along with joint funding arrangements for some projects. A summary of the recommended projects and anticipated costs by jurisdiction is provided in **Table 7.4**.

Within the 0-5 year near term horizon, the City share of project costs are estimated at $4.0 million and Township's share is estimated at $17.5 million. A portion of the Township costs in the 0-5 year horizon will be shared with developers who will be expected to fund the base costs for construction of new roads within their development areas. Costs to the Township for these projects will depend on cost sharing agreements to be negotiated with the development community.

In the 5-10 year horizon, the City is anticipated to need an additional $13.6 million to fund road improvements while approximately $7.8 million in capital costs would be required for County Road improvements. A portion of the County cost may already be included in current Asset Management Plans.

In the 10-20 year horizon, City costs are estimated at $6.6 million plus a share of the $17.9 million in capital costs for joint projects, such as the Boundary Road Extension and the upgrades to MacKay Street between Townline Road / D'Youville Drive and Drive-In Road. Township costs in the 10-20 year horizon are estimated at $12.4 million plus a share of the $17.9 million in joint City/ Township projects

and a share of the $10.0 million in joint County / Township projects. County costs are estimated at $5.2 million plus a share of the joint County / Township projects identified.

TABLE 7.4: CAPITAL INVESTMENT BY PROPONENT

Proponent	Estimated Cost	0-5 Year	5-10 year	10-20 year
City	$ 24,200,000	$ 4,000,000	$ 13,600,000	$ 6,600,000
Township	$ 29,900,000	$ 17,500,000	$ -	$ 12,400,000
County	$ 13,000,000	$ -	$ 7,800,000	$ 5,200,000
City / Township	$ 17,900,000	$ -	$ -	$ 17,900,000
County / Township	$ 10,000,000	$ -	$ -	$ 10,000,000
Total	**$ 95,000,000**	**$ 21,500,000**	**$ 21,400,000**	**$ 52,100,000**

7.3 Funding Strategies

Potential funding sources to implement the recommended road projects and programs identified in **Section 6.1** include:

- **Property Taxes** – Taxes levied on land and structures are the primary source of revenue for the City and Township;
- **Development Charges** – Fees charged by municipalities on land development and redevelopment projects help fund the capital costs of infrastructure needed to serve planned growth. The City and Township both have existing development charge By-laws in place and the Background Studies identify the items and costs eligible for collection through the Development Charges By-law;
- **Canada Community-Building Fund** – This permanent source of funding, formerly known as the Gas-Tax Fund, is provided by the Federal government to municipalities (via the Association of Municipalities of Ontario (AMO)) and supports local infrastructure priorities including roads and active transportation facilities. Municipal allocation is on a per capita basis and split on a 50:50 basis between upper- and lower-tier jurisdictions;
- **Other Provincial and Federal Programs** – When available, conditional and unconditional grants to municipalities by senior levels of government can fund transportation initiatives meeting the program eligibility criteria. Recent examples include:
  - *Ontario Builds* – This provincial program has financed a range of transportation infrastructure projects in communities across Ontario;
  - *Green Municipal Funds* – This $1 billion program delivered by the Federation of Canadian Municipalities (FCM) and funded by the Government of Canada finances a share of eligible costs for

studies, capital projects, and pilot projects that "reduce the number of vehicles on the road, the number of kilometres they travel, or the amount of time they spend transporting people or goods" or "get people to use their vehicles more efficiently or switch to less polluting forms of transportation (i.e., a modal shift to public transit, walking, or cycling)";

- *Investing in Canada Infrastructure Program* - This multi-year program provides funding for projects in five specific streams including Public Transportation, Green Infrastructure, Community, Culture and Recreation Infrastructure; Rural and Northern Infrastructure; and COVID-19 Resilience. The program is administered through a bi-lateral agreement with the Province with project approved at the Provincial level requiring final approval from Infrastructure Canada. The program can be used in the:
  - Public transit infrastructure stream to help fund projects improving transit access, such as pedestrian facilities;
  - Green infrastructure stream to help fund projects that increase structural or natural capacity to adapt to climate change impacts;
  - Community, culture and recreation infrastructure stream to support upgrades to outdoor recreational spaces, and;
  - COVID-19 resilience stream, which funding related to active transportation infrastructure, including parks, trails, footbridges, bike lanes and multi-use paths.

- **Developer, Private Sector, and Other Alternative Funding** – In-kind or cash contributions from non-government sources can play an important role in financing the cost of public amenities like sidewalks, parking, and trails, and community programs through sponsorships and focused advertising.

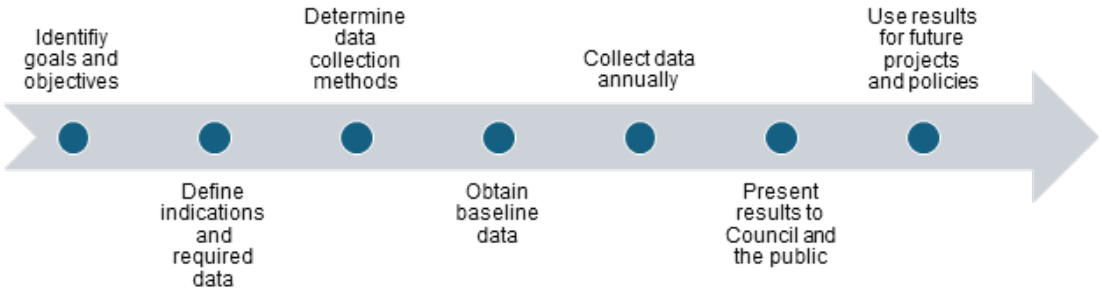
Property taxes, development charges, and Federal Gas Tax funds represent the most reliable and consistent sources of financing for a municipality. Although availability is less certain, other funding sources will likely be needed to implement some TMP recommendations, particularly higher cost items.

The City of Pembroke and the Township of Laurentian Valley should update their respective Development Charge By-Laws to incorporate the capital costs for eligible portions of the recommend projects.

7.4 Monitoring Progress

Ongoing monitoring of the transportation system will enable the Township and City to evaluate the effectiveness and overall contribution of the recommended road network improvements and transportation policies. **Figure 7.1** details the recommended process to monitor the effectiveness of the TMP.

Figure 7.1: Monitoring Process



Measures, such as intersection volume/capacity ratios and level of service, can be used to monitor the road network performance, gauging the effectiveness of the policies and recommendations of the TMP in achieving the vision and goals of the plan. If performance measures indicate progress in the wrong direction, adjustments, or updates to the TMP can be made.

The following recommendations should be considered in the ongoing monitoring of transportation conditions:

- **Corridor Traffic Count Program (ATR)** – Daily traffic counts collected for the road network provide the basis for many programs and are used in calculating AADT volumes on each road segment. A program should be initiated to undertake annual counts on the Township and City road network to monitor growth in traffic and help to refine the timing for key improvements. As an alternative to physical counts, the Streetlight data analytics platform used to provide the base origin-destination data for this project can also provide daily traffic volume data on all road links in a municipality, averaged over an entire year or by season. Data can also be provided on average speeds on various roads which can be helpful in determining corridors suitable for speed management or traffic calming measures. The City and Township should explore the costs to subscribe to a platform such as Streetlight to obtain traffic data to support their management of the road network.

- **Study Area Traffic Model** – TMP updates rely on access to the traffic forecasts produced by the Travel Forecasting Model developed for this study. Prior to initiating updates to this plan new origin-destination data should be obtained to update the base patterns used in developing the model.
- **Collision Data** – Maintaining access to collision data for the road network will enable the Township and City to track trends in road safety and undertake site-specific safety investigations.

The monitoring program should examine user preference for facilities, levels of use and other key factors over an extended timeframe to avoid immediate response bias (which occurs right after a new improvement is implemented). Data should be collected every two to three years (maximum every five years) and at the same time/season.

Results of the monitoring program could be reported to Council and the community through information reports and other publications. The report could highlight progress made in implementing the TMP, summarize the performance measures and targets for the previous period, and outline upcoming initiatives.

7.5 Reviews and Updates of the Plan

Regular reviews and updates of the TMP allow for the ongoing assessment of the performance and effectiveness of the plan. Establishing this stable transportation planning cycle ensures the strategies can respond to unforeseen conditions and imprecise assumptions, remain relevant, and fulfil the Township and City's transportation objectives.

Generally, master plans should be reviewed every five years to determine the need for a detailed formal update. The need to renew the TMP should be examined in conjunction with a similar assessment of the Official Plan and Development Charges Background Study, which are also required to be regularly updated per the *Planning Act* and *Development Charges Act*, respectively.

The development growth patterns assumed in the TMP are based on best estimates of where growth will occur and the magnitude of potential growth that could occur in each area. However, these forecasts are often a best estimate based on preliminary information and plans, which often change as market conditions and the planning framework in a community changes. Changes to planned growth and the type and magnitude of growth may occur during the plan horizon, and if the changes are significant a review of the plan recommendations may be warranted.

The City and Township should review the Transportation Master Plan every five years, ideally in conjunction with updates to the Official Plan and Development Charges Background Study.

Township of Laurentian Valley
City of Pembroke

Transportation Master Plan for East-West Traffic

Appendices – Volume 1

December 2024

Laurentian Valley

Pembroke
the heart of the ottawa valley

paradigm TRANSPORTATION SOLUTIONS LIMITED

Appendix A

Public Engagement Materials

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

Transportation Master Plan
for East-West Traffic

Draft Engagement Plan
Last Update – April 25, 2023

Contents

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Engagement Objectives 1
Target Audiences 2
Engagement and Communication Tools 3
Ongoing Engagement 3
Specific Events and Activities 6
Performance Measures 9
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Introduction

The Township of Laurentian Valley and City of Pembroke have partnered together to develop a long-term strategy to strengthen and support the transportation network within the municipalities, with a focus on east-west traffic. The **Transportation Master Plan** (TMP) for East-West Traffic will recommend infrastructure improvements and supporting policies and programs to meet future transportation needs.

This **Engagement Plan** outlines the process the Township and City will follow to involve the public and stakeholders in developing the TMP. The plan specifies the:

- Engagement objectives;
- Target audiences;
- Engagement mechanism(s);
- Performance measures; and
- Roles and responsibilities.

Engagement Objectives

The engagement program will offer the public and other stakeholders different opportunities to learn about the TMP and provide their input into development of the long-term transportation strategy for Laurentian Valley and Pembroke. The study will also enable the Township and City to educate interested parties about local transportation issues and opportunities.

The overarching goal of the Engagement Plan is to ensure that the final TMP meets the needs of residents, businesses, agencies and other stakeholders within the Township of Laurentian Valley and City of Pembroke. Specific engagement objectives include:

- **Informing** residents about the TMP, focusing on the following key messages:
  - The Township and City are planning for growth in population and employment within the community;
  - The Township and City want to provide users with a range of safe, efficient and accessible mobility choices; and
  - Involving residents, businesses, agencies and other stakeholders throughout the study will ensure the final plan is pragmatic and meets community needs now and into the future.
- **Understanding** existing and anticipated transportation challenges and opportunities within and external to Laurentian Valley and Pembroke;

- **Educating** the community on:
  - The purpose of the TMP (what the plan is and is not);
  - How transportation for all modes (pedestrians, cycling, transit, and roads) will be enhanced; and
  - Specific infrastructure, policies and programs that will facilitate the enhancements;
- **Building** support and consensus within the community for the TMP and its vision, goals and objectives; and
- **Satisfying** the requirements of Municipal Class Environmental Assessment (EA) process pertaining to future infrastructure projects.

Target Audiences

The following individuals and organizations will be the primary target of the Engagement Plan. **Appendix A** provides the latest version of the study contact list:

- General Public:
  - Township and City residents and businesses
- Local Stakeholders:
  - Township and City Councils
  - Municipal Departments
  - Accessibility Advisory Committee(s)
  - Downtown Pembroke Business Improvement Association
  - Upper Ottawa Valley Chamber of Commerce
  - Algonquins of Pikwakanagan First Nation
  - Cycling and walking groups
  - Other community groups/stakeholders
- External Agencies:
  - County of Renfrew
  - Ontario Provincial Police
  - Ontario Ministry of Transportation
  - Renfrew County District School Board / Catholic District School Board
  - Other external agencies

Engagement and Communication Tools

A wide range of engagement and communication tools will be used to involve as broad a spectrum of participants in the study as possible.

Ongoing Engagement

Project Web Page

Approach	A main project web page will be created on the Township website. A link will be provided from the City website to the Township website to direct users to the main page. The page will serve as the primary communication portal for the project and will: • Explain the TMP and its context; • Provide links to pertinent study reports and references; • Identify and provide responses to Frequently Asked Questions (FAQs); • Include a link to the online survey; and • Include information on upcoming meetings and other outreach events (e.g. location, date and time). The recommended address for the project web page is www.lvtownship.ca/east-west-tmp As the project team begins to add content as the TMP progresses, additional links can be created on this "landing" page to provide information on specific topics or issues.
Target Audience	General public
Tasks	Paradigm to prepare content. Township to create main web page (City to create link to Township page). Township to establish formatting and review and upload content (ongoing).
Timeline	Initial project web page content in early May 2023, with launch before Engagement Round #1. Ongoing maintenance thereafter.

Contact List and Notices

Approach	A contact list will be developed and maintained to track residents, businesses, agencies and other stakeholders with an interest in the study, in part to satisfy Municipal Class EA requirements. The project web page will include an option to join the contact list. E-mails and/or mailouts will be sent to individuals and organizations on the contact list notifying of (see specifics below): • Study commencement and completion; • Upcoming meetings and other outreach events (location, date and time); and • The online survey, including a link.
Target Audience	Residents, businesses, agencies and other stakeholders (including community groups)
Tasks	Paradigm to populate and maintain contact list, provide content for notices and send e-mails. Township and City to forward available contacts lists and mailouts with notices.
Timeline	Initial contact list in May 2023. Ongoing notices and contact list maintenance thereafter.

Social Media Posts

Approach	The Township's Facebook and the City's Twitter, Facebook and Instagram accounts will be used to publicize upcoming engagement events and provide other information about the study. The social media posts will be issued based on the following schedule:
	• One post for the Notice of Study Commencement with a link to the project web page and online survey;
	• Two posts per scheduled engagement event (i.e. public information centres/open houses), with:
	  • One post to announce the date, time and location;
	  • A second post to remind interested parties of the upcoming event a few days in advance; and
	• Continued, ad-hoc posts reminding individuals and organizations about the study.

Target Audience	General public
Tasks	Paradigm to prepare content, as/if required. Township and City to issue posts, as/if required.
Timeline	Ongoing throughout the study.

Specific Events and Activities

Notice of Study Commencement

Approach	A Notice of Study Commencement will be published in the local newspapers (paper and online versions), posted on the Township's and City's website and sent to individuals and organizations on the contact list.
Target Audience	General public plus residents, businesses, agencies and other stakeholders (including community groups) on the contact list
Tasks	Paradigm to prepare notice. Township and City to provide comments on draft notice and publish, post and send final notice.
Timeline	**Engagement Round #1.** Notice in early May 2023, once the project web page is launched.

Online Survey

Approach	An online survey will be launched to: • Identify current transportation conditions, concerns, needs and expectations within the Township and City; and • Identify specific motivators and barriers to existing transportation choices. Feedback from the survey and map will help to establish the vision for transportation in the community and will identify preliminary issues or opportunities for improvements to the road network, cycle and pedestrian networks, or transit. It will also aid in identifying gaps and deficiencies in the active transportation and road networks.
Target Audience	General public
Tasks	Paradigm to prepare survey questionnaire and mapping template, upload to the online platforms (Survey Monkey) and summarize and analyze results. Township and City to include link to the survey on the project web page.
Timeline	**Engagement Round #1.** Survey questionnaire in early May 2023 Survey will remain active for one month.

Stakeholder and First Nations Meetings

Approach	Ad-hoc meetings will be held with identified stakeholder and First Nation groups to provide an opportunity to offer more in-depth feedback on the TMP. The specific format and the agenda for the meeting will be confirmed prior to the event.
Target Audience	Identified stakeholders and First Nations
Tasks	Paradigm to prepare meeting invitations, prepare materials, deliver presentation, facilitate sessions and document the proceedings. Township and City to send invites to individuals on the contact list, attend session and assist in responding to attendee questions.
Timeline	**Engagement Rounds #1 and 2.** May/June 2023.

Public Information Centre/Open House

Approach	A Public Information Centre/Open House will be held to present the draft TMP. The event will begin with a brief presentation summarizing the proposed plan. Attendees will be invited to provide feedback. The specific format and the agenda for the meeting will be confirmed prior to the event.
Target Audience	General public
Tasks	Paradigm to prepare meeting notice, invitation and materials, set-up displays, deliver presentation, respond to attendee questions and document proceedings. Township and City to provide meeting location, arrange for publication of the notice in local newspapers, post notice on the Township's and City's social media platforms and website, send invites to individuals on the contact list, attend meeting and assist in responding to attendee questions.
Timeline	**Engagement Round #2.** Mid June 2023.

Township and City Council Presentation

Approach	A presentation will be delivered to Township and City Council.
Target Audience	Township and City Council
Tasks	Paradigm to prepare and deliver presentation and respond to questions. Township and City to arrange attendance, attend meeting, assist in responding to questions and document the proceedings.
Timeline	**Engagement Round #2.** Late summer 2023.

Notice of Completion

Approach	A Notice of Completion will be published in the local newspapers (paper and online versions), posted on the Township's and City's website and sent to individuals and organizations on the contact list.
Target Audience	General public plus residents, businesses, agencies and other stakeholders (including community groups) on the contact list
Tasks	Paradigm to prepare notice. Township and City to provide comments on draft notice and publish, post and send final notice.
Timeline	**Engagement Round #2.** Following Council endorsement of the TMP. Late Fall 2023.

Performance Measures

The following performance measures will be used to assess the reach and impact of the engagement program:

- Number of individuals completing the online survey;
- Number of attendees at the Public Open House;
- Number of stakeholders at the Stakeholder Meeting;
- Number of comments received through the engagement period; and
- Number of hits on the project web page.

Appendix A Study Contact List

The latest version of the study contact list is attached.

Version	Date
1	

Notice of Public Open House

Township of Laurentian Valley/City of Pembroke Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke has retained Paradigm Transportation Solutions Limited to complete the Township of Laurentian Valley/City of Pembroke Transportation Master Plan for East-West Traffic.

A Transportation Master Plan (TMP) is one of several strategic policy documents that direct how a municipality will grow and develop over the long term. It works together with a municipality's Official Plan, which directs land use and development patterns, as well as other master plans such as those concerning municipal servicing, parks and recreation, and economic development. Generally, Transportation Master Plans examine current transportation issues within a community, assess existing and future growth patterns, determine the need for transportation improvements, and establish policies to support the plan and maintain the transportation network.

The Transportation Master Plan for East-West Traffic will provide important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure. As a collaborative project between the Township of Laurentian Valley and City of Pembroke, the TMP provides the opportunity to ensure a coordinated approach to future decisions on transportation. The study will follow the requirements of the Municipal Class Environmental Assessment (EA) (an approved process under the Ontario *Environmental Assessment Act*).

Your input is important to us!

Engaging the community is a vital component of this study. Visit the project web site at www.lvtownship.ca/LVPembrokeTMP/ to learn more about the study, complete our online survey and offer comments. Hard copies of the survey are available for pickup at the Pembroke Public Library (237 Victoria Street), City of Pembroke Operations Centre (460 River Road) and Township of Laurentian Valley Municipal Office (460 Witt Road).

If you (or your agency or group) are interested in participating in the study or would like to be added to the contact list to receive future updates, please contact lvpembrokeTMP@ptsl.com or one of the Project Managers:

Lauree Armstrong
Township Planner/CEMC
Township of Laurentian Valley
(613) 735-6291 x203
lvpembrokeTMP@ptsl.com

Brian Lewis
Director of Operations
City of Pembroke
(613) 735-6821 x1410
lvpembrokeTMP@ptsl.com

Kevin Jones
Consultant Team Project Manager
Paradigm Transportation Solutions Limited
(416) 479-9684 x513
lvpembrokeTMP@ptsl.com

This notice was first issued on May 29, 2023.

With the exception of personal information, all comments received will become part of the public record, in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*.

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Legal & Tender Notices

Notice of Public Open

HouseTownship of Laurentian Valley/City of Pembroke

Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke is completing a Transportation Master Plan for East-West Traffic.

A Transportation Master Plan (TMP) is one of several strategic policy documents that direct how a municipality will grow and develop over the long term. It works together with a municipality's Official Plan, which directs land use and development patterns, as well as other master plans such as those concerning municipal servicing, parks and recreation, and economic development. Generally, Transportation Master Plans examine current transportation issues within a community, determine the need for transportation improvements to support future growth, and establish policies to support the plan and maintain the transportation network. The Transportation Master Plan for East-West Traffic is being undertaken in accordance with the requirements of the Municipal Class Environmental Assessment (EA) (an approved process under the Ontario Environmental Assessment Act).

Your input is important to us!

Engaging the community is a vital component of this study. A Public Open House to present preliminary study recommendations and allow members of the public to discuss their ideas with members of the project team has been scheduled for:

December 13, 2023
4:00 p.m. – 7:30 p.m.
Shady Nook Recreation Centre
80 Richardson Crescent, Laurentian Valley
Ontario, Canada K8A 6W5

Visit the project web site at www.lvtownship.ca/LVPembrokeTMP/ to learn more about the study. Online copies of the display material will be posted on the project website following the meeting for those who may not be able to attend.

If you (or your agency or group) are interested in participating in the study or would like to be added to the contact list to receive future updates, please contact lvpembrokeTMP@ptsl.com or one of the Project Managers:

Lauree Armstrong
Township Planner/CEMC
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(613) 735-6291 x203
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Kevin Jones
Consultant Team Project Manager
Paradigm Transportation Solutions Limited
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lvpembrokeTMP@ptsl.com

This notice was first issued on November 29, 2023.

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>Graduations

Via email & letter

June 9, 2023

Algonquins of Greater Golden Lake First Nation
2 International Drive
Pembroke, ON
K8A 6W5

Attention: Connie Mielke, ANR/Chief

Copy: Maurane Poirier, Community and Economic Development

Re: Notice of Request to Consult
Township of Laurentian Valley / City of Pembroke
Transportation Master Plan for East-West Traffic

Transportation Master Plans (TMPs) are long-range plans that guide transportation planning and infrastructure needs to accommodate growth and development within a broad area. The Township of Laurentian Valley and the City of Pembroke are developing a TMP to guide the Township and City in decision making related to transportation infrastructure improvements to 2041. As part of the TMP Update, the short- and long-term transportation infrastructure needs and deficiencies will be identified to help confirm the need for improvements to the transportation network required to efficiently address existing and future travel demands.

Nature and Scope of the Proposed Activity
As indicated in the attached Notice of Study Commencement, the TMP Update will examine current transportation issues within the community, assess existing and future growth patterns, determine the need for transportation improvements, and establish policies to support the plan and maintain the transportation network. The TMP will be an important resource for the Township and City as they continue to adapt to changing needs, emerging issues and new opportunities.

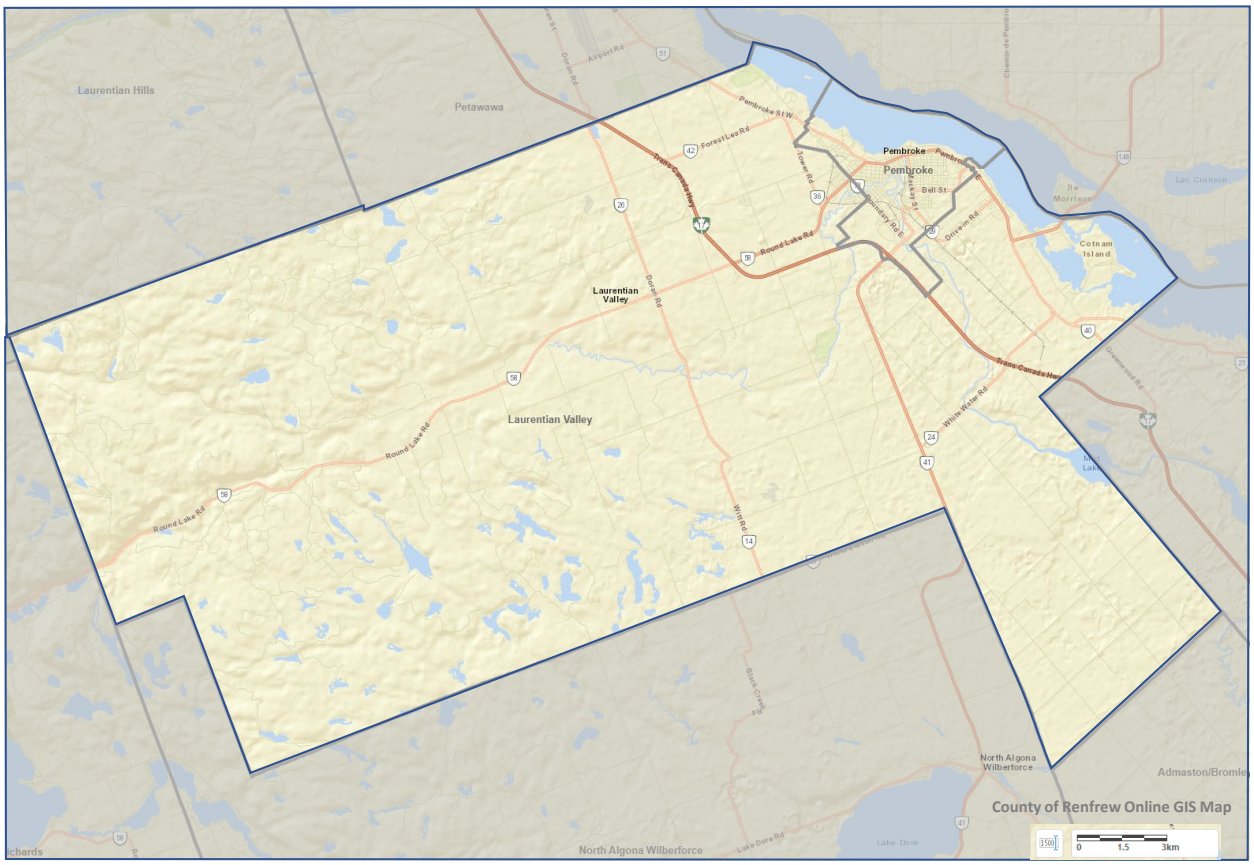
The TMP Update will be developed in consideration of applicable legislation and regulations, and the transportation plans of the County of Renfrew, adjacent communities, the Ontario Ministry of Transportation and First Nations. An

implementation plan will be developed and documented within the TMP report to outline a framework for transportation improvement priorities and funding strategies.

Timing of the Proposed Activity
The study is anticipated to be completed within 6 months.

Location of the Proposed Activity
The geographic area of interest includes the Township of Laurentian Valley and the City of Pembroke, as outlined in the map below.

Study Area Map



How the Proposed Activity May Affect the Williams Treaty First Nations Traditional Territory
The TMP is intended to confirm a framework for infrastructure improvement planning over the next 20 years. While no detailed environmental investigations are being undertaken as part of the TMP Update, more detailed studies, such as Municipal Class Environmental Assessments (EA), may be undertaken in the future to complete the planning for some of the recommended infrastructure improvements identified as part of the TMP Update.

Profile of the Proponents
The Township and City own and operates the local transportation system within their respective municipal boundaries. The Township network includes more than 260 kilometers of paved and gravel roadways, and is lead proponent for this study. The City network includes more than 99 kilometers of roadways, 66 km of sidewalk and 8 bridges, and is a co-proponent for this study.

Description of the Proposed Consultation Process
This study is being undertaken in accordance with Approach #1 of the Master Planning Process, as outlined in Appendix 4 of the Municipal Class EA document (October 2000, as amended in 2007, 2011, 2015 and 2023). As such, the TMP will generally address Phases 1 and 2 of the Municipal Class EA process and will form the basis for the recommended Schedule B and C transportation infrastructure projects identified within the TMP report.

The Township and City are initiating a comprehensive public consultation process to provide input to project planning by identifying potential transportation infrastructure needs and opportunities. Two study webpages have been established on the Township and City websites in relation to the TMP (www.lvtownship.ca/transportation-master-plan-east-west-traffic and www.pembroke.ca/ transportation-master-plan-east-west-traffic , respectively). Members of the public are invited to visit these webpages to subscribe to receive updates on the study and/or participate in online consultation activities. Public Information Centres (PICs) are also planned at key points in the study process as the study progresses. Dates, times and locations for these future public consultation events will be communicated in future notices.

The purpose of this letter is to communicate our request to consult with you concerning this study, provide you with initial study information, and to request your feedback concerning how you wish to be consulted during this study.

Available Documents Which Are Pertinent to the Proposed Activity
Study information will be available for review, as the study progresses.

Related Processes or Approvals that are Currently Underway That Effect the Proposed Activity

There are no related processes and/or approvals that are currently underway that would affect this study. However, as noted the TMP will generally address Phases 1 and 2 of the Municipal Class EA process, and will form the basis for the recommended Schedule B and C transportation infrastructure projects identified within the TMP report.

Relevant Decision Makers and Those Assisting with the Project

Lauree Armstrong. Township Planner/CEMC 460 Witt Road Pembroke, ON K8A 6W5 (613) 735-6291 ext. 203 lvpembrokeTMP@ptsl.com	Kevin Jones Project Manager Paradigm Transportation Solutions Limited (416) 479-9684 ext. 513 lvpembrokeTMP@ptsl.com	Brian Lewis Director of Operations City of Pembroke 460 River Road Pembroke, ON K8A 1A1 (613) 735-6821 ext. 1400 lvpembrokeTMP@ptsl.com

Please advise if you have any concerns/comments with the proposed activity and if you require any further information.

Sincerely,

Dave Unrau, P.Eng. PMP
Chief Administrative Officer
City of Pembroke
613-735-6821, ext. 1300

Attach.: Notice of Study Commencement, Transportation Master Plan for East-West Traffic

Cc Mark Behm, C.Tech. Public Works Manager, Township of Laurentian Valley
Marielle McLaughlin, C.Tech, Manager of Operations, City of Pembroke
Kevin Jones, Project Manager, Paradigm Solutions Limited
Heather Hector, M.Eng., P.Eng., PTP, Paradigm Solutions Limited

Notice of Study Commencement

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Engaging the community is a vital component of this study. Visit the project web site at https://www.surveymonkey.com/r/lvpembrokeTMP to learn more about the study, complete our online survey and offer comments. Hard copies of the survey are available for pickup at the Pembroke Public Library (237 Victoria Street), City of Pembroke Operations Centre (460 River Road) and Township of Laurentian Valley Municipal Office (460 Witt Road).

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This notice was first issued on May 29, 2023.

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Via email & letter

June 9, 2023

Algonquins of Ontario
31 Riverside Drive
Suite 101
Pembroke, ON
K8A 8R6

Attention: Jim Meness, Executive Director

Copy: Haleigh Cox, Project Consultation Advisor

Re: Notice of Request to Consult
Township of Laurentian Valley / City of Pembroke
Transportation Master Plan for East-West Traffic

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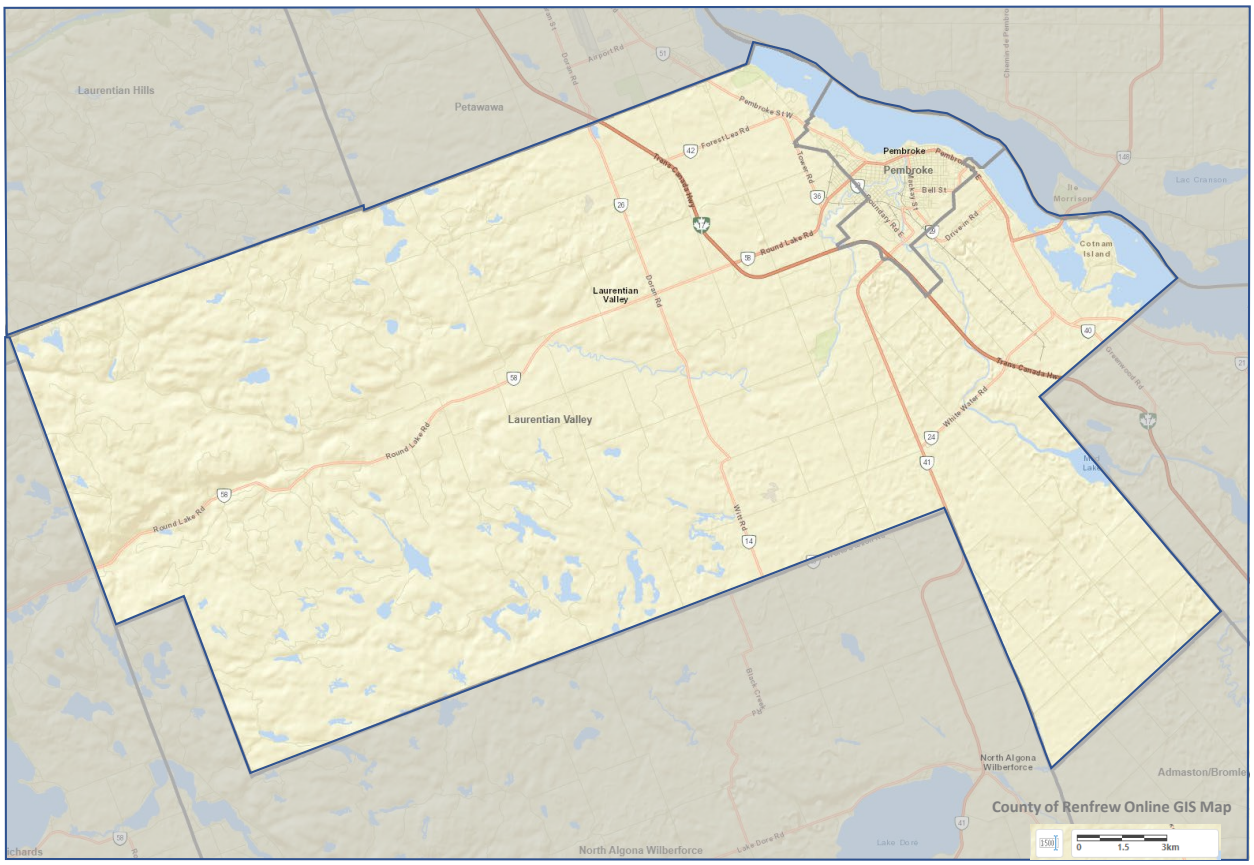

How the Proposed Activity May Affect the Williams Treaty First Nations Traditional Territory
The TMP is intended to confirm a framework for infrastructure improvement planning over the next 20 years. While no detailed environmental investigations are being undertaken as part of the TMP Update, more detailed studies, such as Municipal Class Environmental Assessments (EA), may be undertaken in the future to complete the planning for some of the recommended infrastructure improvements identified as part of the TMP Update.

Profile of the Proponents
The Township and City own and operates the local transportation system within their respective municipal boundaries. The Township network includes more than 260 kilometers of paved and gravel roadways, and is lead proponent for this study. The City network includes more than 99 kilometers of roadways, 66 km of sidewalk and 8 bridges, and is a co-proponent for this study.

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The Township and City are initiating a comprehensive public consultation process to provide input to project planning by identifying potential transportation infrastructure needs and opportunities. Two study webpages have been established on the Township and City websites in relation to the TMP (www.lvtownship.ca/transportation-master-plan-east-west-traffic and www.pembroke.ca/ transportation-master-plan-east-west-traffic , respectively). Members of the public are invited to visit these webpages to subscribe to receive updates on the study and/or participate in online consultation activities. Public Information Centres (PICs) are also planned at key points in the study process as the study progresses. Dates, times and locations for these future public consultation events will be communicated in future notices.

The purpose of this letter is to communicate our request to consult with you concerning this study, provide you with initial study information, and to request your feedback concerning how you wish to be consulted during this study.

Available Documents Which Are Pertinent to the Proposed Activity
Study information will be available for review, as the study progresses.

Related Processes or Approvals that are Currently Underway That Effect the Proposed Activity

There are no related processes and/or approvals that are currently underway that would affect this study. However, as noted the TMP will generally address Phases 1 and 2 of the Municipal Class EA process, and will form the basis for the recommended Schedule B and C transportation infrastructure projects identified within the TMP report.

Relevant Decision Makers and Those Assisting with the Project

Lauree Armstrong. Township Planner/CEMC 460 Witt Road Pembroke, ON K8A 6W5 (613) 735-6291 ext. 203 lvpembrokeTMP@ptsl.com	Kevin Jones Project Manager Paradigm Transportation Solutions Limited (416) 479-9684 ext. 513 lvpembrokeTMP@ptsl.com	Brian Lewis Director of Operations City of Pembroke 460 River Road Pembroke, ON K8A 1A1 (613) 735-6821 ext. 1400 lvpembrokeTMP@ptsl.com

Please advise if you have any concerns/comments with the proposed activity and if you require any further information.

Sincerely,

Dave Unrau, P.Eng. PMP
Chief Administrative Officer
City of Pembroke
613-735-6821, ext. 1300

Attach.: Notice of Study Commencement, Transportation Master Plan for East-West Traffic

Cc Mark Behm, C.Tech. Public Works Manager, Township of Laurentian Valley
Marielle McLaughlin, C.Tech, Manager of Operations, City of Pembroke
Kevin Jones, Project Manager, Paradigm Solutions Limited
Heather Hector, M.Eng., P.Eng., PTP, Paradigm Solutions Limited

Notice of Study Commencement

Township of Laurentian Valley/City of Pembroke Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke has retained Paradigm Transportation Solutions Limited to complete the Township of Laurentian Valley/City of Pembroke Transportation Master Plan for East-West Traffic.

A Transportation Master Plan (TMP) is one of several strategic policy documents that direct how a municipality will grow and develop over the long term. It works together with a municipality's Official Plan, which directs land use and development patterns, as well as other master plans such as those concerning municipal servicing, parks and recreation, and economic development. Generally, Transportation Master Plans examine current transportation issues within a community, assess existing and future growth patterns, determine the need for transportation improvements, and establish policies to support the plan and maintain the transportation network.

The Transportation Master Plan for East-West Traffic will provide important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure. As a collaborative project between the Township of Laurentian Valley and City of Pembroke, the TMP provides the opportunity to ensure a coordinated approach to future decisions on transportation. The study will follow the requirements of the Municipal Class Environmental Assessment (EA) (an approved process under the Ontario *Environmental Assessment Act*).

Your input is important to us!

Engaging the community is a vital component of this study. Visit the project web site at https://www.surveymonkey.com/r/lvpembrokeTMP to learn more about the study, complete our online survey and offer comments. Hard copies of the survey are available for pickup at the Pembroke Public Library (237 Victoria Street), City of Pembroke Operations Centre (460 River Road) and Township of Laurentian Valley Municipal Office (460 Witt Road).

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Kevin Jones
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This notice was first issued on May 29, 2023.

With the exception of personal information, all comments received will become part of the public record, in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*.

Via email & letter

June 9, 2023

Algonquins of Pikwakanagan First Nation
1657A Mishomis Inamo
Pikwakanagan, ON
K0J 1X0

Attention: Greg Sarazin, Chief

Copy: Alanna Hien, Manager of Political Operations

Re: Notice of Request to Consult
Township of Laurentian Valley / City of Pembroke
Transportation Master Plan for East-West Traffic

Transportation Master Plans (TMPs) are long-range plans that guide transportation planning and infrastructure needs to accommodate growth and development within a broad area. The Township of Laurentian Valley and the City of Pembroke are developing a TMP to guide the Township and City in decision making related to transportation infrastructure improvements to 2041. As part of the TMP Update, the short- and long-term transportation infrastructure needs and deficiencies will be identified to help confirm the need for improvements to the transportation network required to efficiently address existing and future travel demands.

Nature and Scope of the Proposed Activity
As indicated in the attached Notice of Study Commencement, the TMP Update will examine current transportation issues within the community, assess existing and future growth patterns, determine the need for transportation improvements, and establish policies to support the plan and maintain the transportation network. The TMP will be an important resource for the Township and City as they continue to adapt to changing needs, emerging issues and new opportunities.

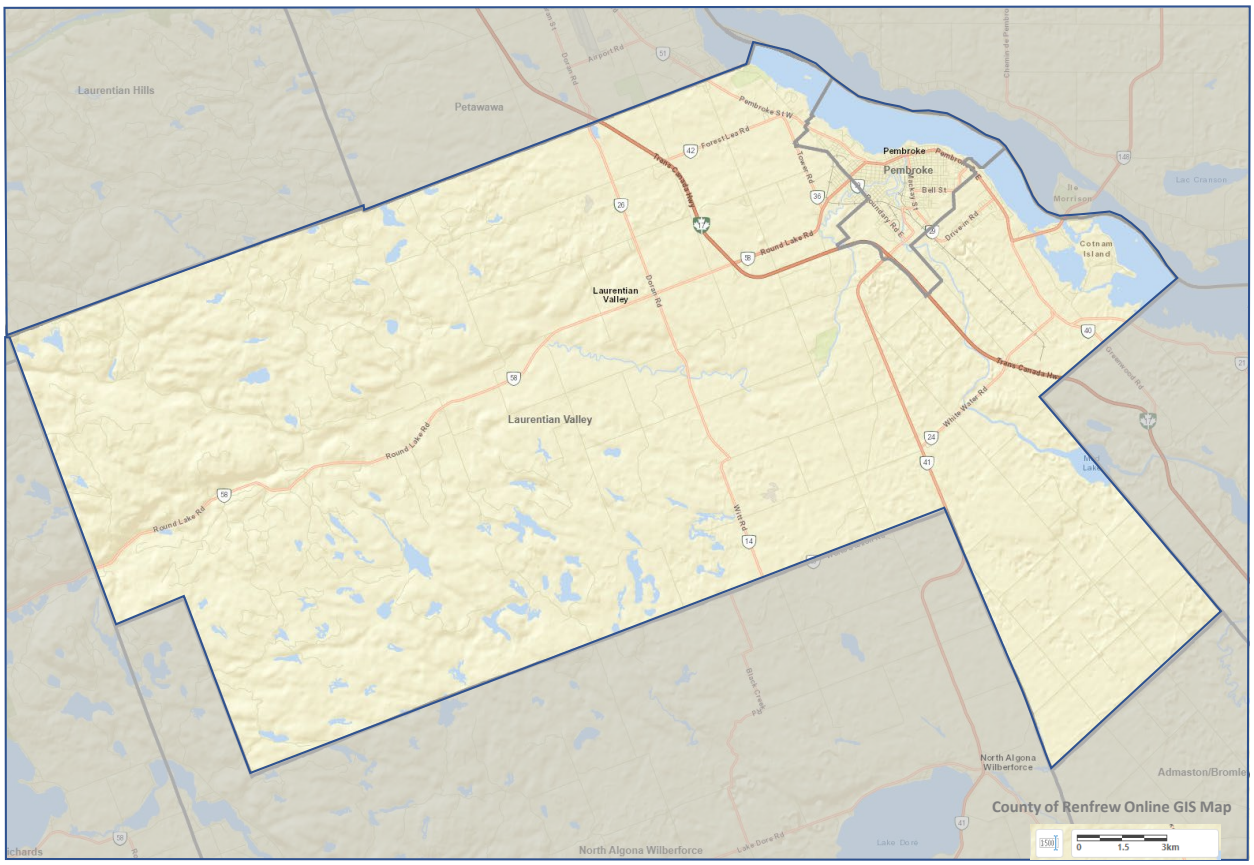
The TMP Update will be developed in consideration of applicable legislation and regulations, and the transportation plans of the County of Renfrew, adjacent communities, the Ontario Ministry of Transportation and First Nations. An

implementation plan will be developed and documented within the TMP report to outline a framework for transportation improvement priorities and funding strategies.

Timing of the Proposed Activity
The study is anticipated to be completed within 6 months.

Location of the Proposed Activity
The geographic area of interest includes the Township of Laurentian Valley and the City of Pembroke, as outlined in the map below.

Study Area Map



How the Proposed Activity May Affect the Williams Treaty First Nations Traditional Territory
The TMP is intended to confirm a framework for infrastructure improvement planning over the next 20 years. While no detailed environmental investigations are being undertaken as part of the TMP Update, more detailed studies, such as Municipal Class Environmental Assessments (EA), may be undertaken in the future to complete the planning for some of the recommended infrastructure improvements identified as part of the TMP Update.

Profile of the Proponents
The Township and City own and operates the local transportation system within their respective municipal boundaries. The Township network includes more than 260 kilometers of paved and gravel roadways, and is lead proponent for this study. The City network includes more than 99 kilometers of roadways, 66 km of sidewalk and 8 bridges, and is a co-proponent for this study.

Description of the Proposed Consultation Process
This study is being undertaken in accordance with Approach #1 of the Master Planning Process, as outlined in Appendix 4 of the Municipal Class EA document (October 2000, as amended in 2007, 2011, 2015 and 2023). As such, the TMP will generally address Phases 1 and 2 of the Municipal Class EA process and will form the basis for the recommended Schedule B and C transportation infrastructure projects identified within the TMP report.

The Township and City are initiating a comprehensive public consultation process to provide input to project planning by identifying potential transportation infrastructure needs and opportunities. Two study webpages have been established on the Township and City websites in relation to the TMP (www.lvtownship.ca/transportation-master-plan-east-west-traffic and www.pembroke.ca/ transportation-master-plan-east-west-traffic , respectively). Members of the public are invited to visit these webpages to subscribe to receive updates on the study and/or participate in online consultation activities. Public Information Centres (PICs) are also planned at key points in the study process as the study progresses. Dates, times and locations for these future public consultation events will be communicated in future notices.

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Relevant Decision Makers and Those Assisting with the Project

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Please advise if you have any concerns/comments with the proposed activity and if you require any further information.

Sincerely,

Dave Unrau, P.Eng. PMP
Chief Administrative Officer
City of Pembroke
613-735-6821, ext. 1300

Attach.: Notice of Study Commencement, Transportation Master Plan for East-West Traffic

Cc Mark Behm, C.Tech. Public Works Manager, Township of Laurentian Valley
Marielle McLaughlin, C.Tech, Manager of Operations, City of Pembroke
Kevin Jones, Project Manager, Paradigm Solutions Limited
Heather Hector, M.Eng., P.Eng., PTP, Paradigm Solutions Limited

Notice of Study Commencement

Township of Laurentian Valley/City of Pembroke Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke has retained Paradigm Transportation Solutions Limited to complete the Township of Laurentian Valley/City of Pembroke Transportation Master Plan for East-West Traffic.

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The Transportation Master Plan for East-West Traffic will provide important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure. As a collaborative project between the Township of Laurentian Valley and City of Pembroke, the TMP provides the opportunity to ensure a coordinated approach to future decisions on transportation. The study will follow the requirements of the Municipal Class Environmental Assessment (EA) (an approved process under the Ontario *Environmental Assessment Act*).

Your input is important to us!

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If you (or your agency or group) are interested in participating in the study or would like to be added to the contact list to receive future updates, please contact lvpembrokeTMP@ptsl.com or one of the Project Managers:

Lauree Armstrong
Township Planner/CEMC
Township of Laurentian Valley
(613) 735-6291 x203
lvpembrokeTMP@ptsl.com

Brian Lewis
Director of Operations
City of Pembroke
(613) 735-6821 x1410
lvpembrokeTMP@ptsl.com

Kevin Jones
Consultant Team Project Manager
Paradigm Transportation Solutions Limited
(416) 479-9684 x513
lvpembrokeTMP@ptsl.com

This notice was first issued on May 29, 2023.

With the exception of personal information, all comments received will become part of the public record, in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*.

From:	Amanda O'Brien
To:	David Unrau
Cc:	Brian Lewis; Lauree Armstrong; Kevin Jones
Subject:	FW: Notice of Request to Consult - Transportation Master Plan
Date:	June 19, 2023 10:14:10 AM

Good morning,

I received this response to the letter sent June 9th 2023.

Amanda O'Brien
Civil Technician

City of Pembroke
Tel. (613) 735-6821 ext. 1410

From: Algonquins of Ontario Consultation Office <algonquins@tanakiwin.com>
Sent: Monday, June 19, 2023 9:51 AM
To: Amanda O'Brien <aobrien@pembroke.ca>
Cc: Meness, Jim (Algonquins Of Ontario) <jmeness@tanakiwin.com>
Subject: RE: Notice of Request to Consult - Transportation Master Plan

> **Caution** - This is a external email. Please take care when opening links and attachments

Good morning Amanda,

Thank you for contacting the Algonquins of Ontario on June 9th regarding the Transportation Master Plan for East-West Traffic. We have reviewed the Notice of Request to Consult and wish to communicate the following:

1. As stated in the attachment, the Township of Laurentian Valley and the City of Pembroke are developing the TMP to guide decision making related to transportation infrastructure movements to 2041. As part of this TMP Update you are looking to identify deficiencies to help confirm both short- and long-term infrastructure needs.
    - The AOO should be appraised of how these needs and deficiencies are being identified and should have the opportunity to comment.

2. According to the Letter, the TMP is to be developed in consideration of adjacent communities and First Nations, but you only mention William Treaty First Nation in the attachment.
    - The Algonquins of Ontario Consultation Office can only assume that this is a clerical error made on your part by addressing your correspondence to the

AOO yet referencing impacts on Williams Treaty First Nation. I will assert that this project is within the Settlement Area of the Algonquins of Ontario and not WTFN. For more information on the Settlement Area, the communities and land selections, please see our website: https://www.tanakiwin.com/
    - For our interactive map of the Settlement Area, please see here: https://www.tanakiwin.com/imap.html

3. As stated in the attachment, "While no detailed environmental investigations are being undertaken as part of the TMP Update, more detailed studies, such as Municipal Class Environmental Assessments (EA), may be undertaken in the future to complete the planning for some of the recommended infrastructure improvements identified as part of the TMP Update."
    - I will assert that the AOO Consultation Office needs to be appraised of all EA environmental undertakings and be notified in due time when we can provide comments and gather input from communities. All reports and notices can be sent to algonquins@tanakiwin.com.

To reiterate, the AOO needs to be included on all project correspondence to remain appropriately informed on the project's impacts. Should we need clarification and/or additional information, a virtual meeting may be requested.

Thank you,

****Important Notice****

In light of the ongoing developments resulting from the novel Coronavirus (COVID-19), the Algonquins of Ontario are taking proactive steps to keep our employees and workplace safe and secure. **Effective Monday, March 16, 2020 the AOO Consultation Office will be closed until further notice.**

During this time, to maintain our business continuity, we will be monitoring emails and will respond when possible. If you require immediate assistance or have any pressing inquiries, please contact our general inbox at algonquins@tanakiwin.com or visit our website at www.tanakiwin.com.

Thank you for your patience, understanding and support.

Haleigh Cox (she/her)
Project Consultation Advisor

Algonquins of Ontario Consultation Office
31 Riverside Drive, Suite 101
Pembroke, ON K8A 8R6
Phone: 613-735-3759
Fax: 613-735-6307
Email: algonquins@tanakiwin.com
Website: www.tanakiwin.com

CONFIDENTIAL AND PRIVILEGED INFORMATION NOTICE

This e-mail, and any attachments, may contain information that is confidential, subject to copyright, or exempt from disclosure. Any unauthorized review, disclosure, retransmission, dissemination or other use of or reliance on this information may be unlawful and is strictly prohibited.

From: Amanda O'Brien <aobrien@pembroke.ca>
Sent: Friday, June 9, 2023 11:49 AM
To: Algonquins of Ontario Consultation Office <algonquins@tanakiwin.com>
Cc: David Unrau <dunrau@pembroke.ca>
Subject: Notice of Request to Consult - Transportation Master Plan

Good morning,

Please find attached a letter regarding the Notice of Request to Consult Township of Laurentian Valley / City of Pembroke Transportation Master Plan for East-West Traffic.

Regards,

Amanda O'Brien
Civil Technician

City of Pembroke
Tel. (613) 735-6821 ext. 1410

From:	Lauree Armstrong
To:	Philip McKnight
Cc:	projectco3@pikwakanagan.ca; Kevin Jones
Subject:	LVPem Transportation Master Plan - East West Traffic
Date:	January 9, 2024 5:19:15 PM
Attachments:	LVPem TMP PIC Dec 13 2023 boards.pdf

Hello Philip further to our conversation today, I am sending you this separate email related to the joint LVPem Transportation Master Plan – East West Traffic that is being undertaken by Paradigm on behalf of both the Township of Laurentian Valley and the City of Pembroke.

There has been consultation with the Public but the recommendations and findings have not yet been brought to the municipal councils for comment and review. No construction will occur as part of this project, it is to set out a plan to help guide our decisions particularly related to increasing development pressures in the east and west ends of Pembroke and areas in the Township that border these areas. As mentioned we can have a virtual or in-person meeting including Kevin Jones who is the lead from Paradigm our consultants on the project. I have copied Kevin on this email so that he can be part of any possible date and time discussion.

I will reply separately on the email related to the dates and times for our discussions on other township planning act files. If you felt some of those options would work for this discussion as well though I could also share those with Kevin.

For the Transportation Master Plan I have attached the Public Information session boards to provide some background and context so you could determine if there are other parties from the Algonquins that should be part of a briefing. I look forward to hearing from you.

Lauree

Lauree J. Armstrong, MCIP, RPP
Township Planner/
Community Emergency Management Coordinator
Township of Laurentian Valley
460 Witt Road
Pembroke, ON K8A 6W5
(613) 735-6291 Ext. 203
www.lvtownship.ca

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retransmission, dissemination or other use of or reliance on this information may be unlawful and is strictly prohibited. If it is not addressed to you or intended for you, and you receive it, kindly delete the email and all copies, and advise the sender immediately. Thank you.

Township of Laurentian Valley/City of Pembroke Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke has retained Paradigm Transportation Solutions Limited to complete the Township of Laurentian Valley/City of Pembroke Transportation Master Plan for East-West Traffic.

The Transportation Master Plan for East-West Traffic will provide important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure. As a collaborative project with the City of Pembroke, the Master Plan provides the opportunity to ensure a holistic approach to future decisions on transportation.

Notice of Study Commencement - Issued May 29, 2023

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Your input is important to us!

Engaging the community is a vital component of this study. Visit the project website below to learn more about the study, complete our online survey and offer comments. Hard copies of the survey are available for pickup at the Pembroke Public Library (237 Victoria Street), City of Pembroke Operations Centre (460 River Road) and Township of Laurentian Valley Municipal Office(460 Witt Road).

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Kevin Jones
Consultant Team Project Manager, Paradigm Transportation Solutions Limited
(416) 479-9684 x513
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What is a Transportation Master Plan?

A Transportation Master Plan (TMP) is a strategic policy document that guides how a municipality's transportation system will grow and develop over the long term. The plan works together with a municipality's Official Plan, which directs land use and development patterns, as well as other master plans such as those concerning municipal servicing, parks and recreation, and economic development. Generally, Transportation Master Plans examine current transportation issues within a community, assess existing and future growth patterns, determine the need for transportation improvements, and establish policies to support the plan and maintain the transportation network.

Why do municipalities need a TMP?

The Township of Laurentian Valley and City of Pembroke are growing, with new commercial uses emerging along the Highway 148/Pembroke Street East corridor and plans for residential development to the south and west edges of Pembroke on lands within the City and along its boundary with the Township. The Town of Petawawa, while outside the immediate study area, is also experiencing growth, putting pressure on the Pembroke Street West (Renfrew County Road 51) corridor leading into the City. Over the longer term, this pattern of growth may put additional strain on the existing east-west road network within the Township and City – a network bisected by the Muskrat River and featuring few arterial road crossings.

With the Township and City poised for continued prosperity and growth, it requires a strategy to address existing traffic concerns and plan to meet future transportation needs. The Township of Laurentian Valley and City of Pembroke Official Plans set out broad transportation system objectives, but do not identify the specific transportation improvement projects needed to serve planned growth. The Transportation Master Plan will address these needs.

What will the study involve?

The Transportation Master Plan will assess the existing transportation network to identify potential improvements to meet current and future needs. Ultimately, the integrated plan will also provide a policy framework to support sustainable transportation practices and livable communities as Laurentian Valley and Pembroke grow over time. In delivering this policy framework, the plan is expected to:

- Review Highway 148 as it relates to traffic management and future development;
- Review the performance of the existing road network based on existing traffic and new data collected;
- Develop projections of future traffic from Provincial highways, County roads, and local growth;
- Evaluate the ability of existing infrastructure to meet future needs;
- Identify and propose ways to address current and future road needs;
- Create a balanced transportation system that supports active and alternative transportation options, including sustainable choices like walking and cycling;
- Provide supporting policies on matters related to the design and operation of the transportation network, including matters such as safety, traffic management and pedestrian crossings;
- Itemize infrastructure requirements for building and maintaining the transportation network in the short, medium and long-term, including anticipated costs; and
- Identify potential funding sources for future works.

How can I provide input?

Public and stakeholder participation is an essential component of the Transportation Master Plan Study. The public engagement program for the study has been designed to encourage meaningful, two-way communication so that the final plan aligns with the Township's and City's vision and unique community features. This will include opportunities to converse with the consultant team, Township and City staff and provide input on ideas and recommendations through an online survey and open house as work progresses.

Step 1: Complete the Survey (now closed)

Step 2: Attend the Public Open House on December 13, 2023 at the Shady Nook Recreation Centre

Engaging the community is a vital component of this study. The next step is a Public Open House to present preliminary study recommendations and allow members of the public to discuss their ideas with members of the project team. More information is contained in the Notice below

Notice of Public Open House on December 13, 2023

Notice of Public Open House

Township of Laurentian Valley/City of Pembroke
Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke is completing a Transportation Master Plan for East-West Traffic.

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Your input is important to us!

Engaging the community is a vital component of this study. A Public Open House to present preliminary study recommendations and allow members of the public to discuss their ideas with members of the project team has been scheduled for:

December 13, 2023

4:00 pm – 7:30 pm

Shady Nook Recreation Centre

80 Richardson Crescent, Laurentian Valley

Ontario, Canada K8A 6W5

Visit the project web site at www.lvtownship.ca/LVPembrokeTMP/ to learn more about the study. Online copies of the display material will be posted on the project website following the meeting for those who may not be able to attend.

If you (or your agency or group) are interested in participating in the study or would like to be added to the contact list to receive future updates, please contact lvpembrokeTMP@ptsl.com or one of the Project Managers:

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Township Planner/CEMC, Township of Laurentian Valley
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lvpembrokeTMP@ptsl.com

This notice was first issued on November 29, 2023.

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Step 3: If you could not attend the Public Open House your comments are still welcome!

For those who could not attend the Public Open House on December 13, 2023 the information from the Open House session is below. If you have any comments please fill out the comment form provided and email your comments to lvpembrokeTMP@ptsl.com.

Information from Public Open House, December 13, 2023

Transportation Master Plan Comments Form

Where urban amenities meet outdoor rural fun.

LV is home to easy comfortable living.

© Copyright 2021 Township of Laurentian Valley

Welcome

Township of Laurentian Valley /
City of Pembroke

Transportation Master Plan for East-West Traffic

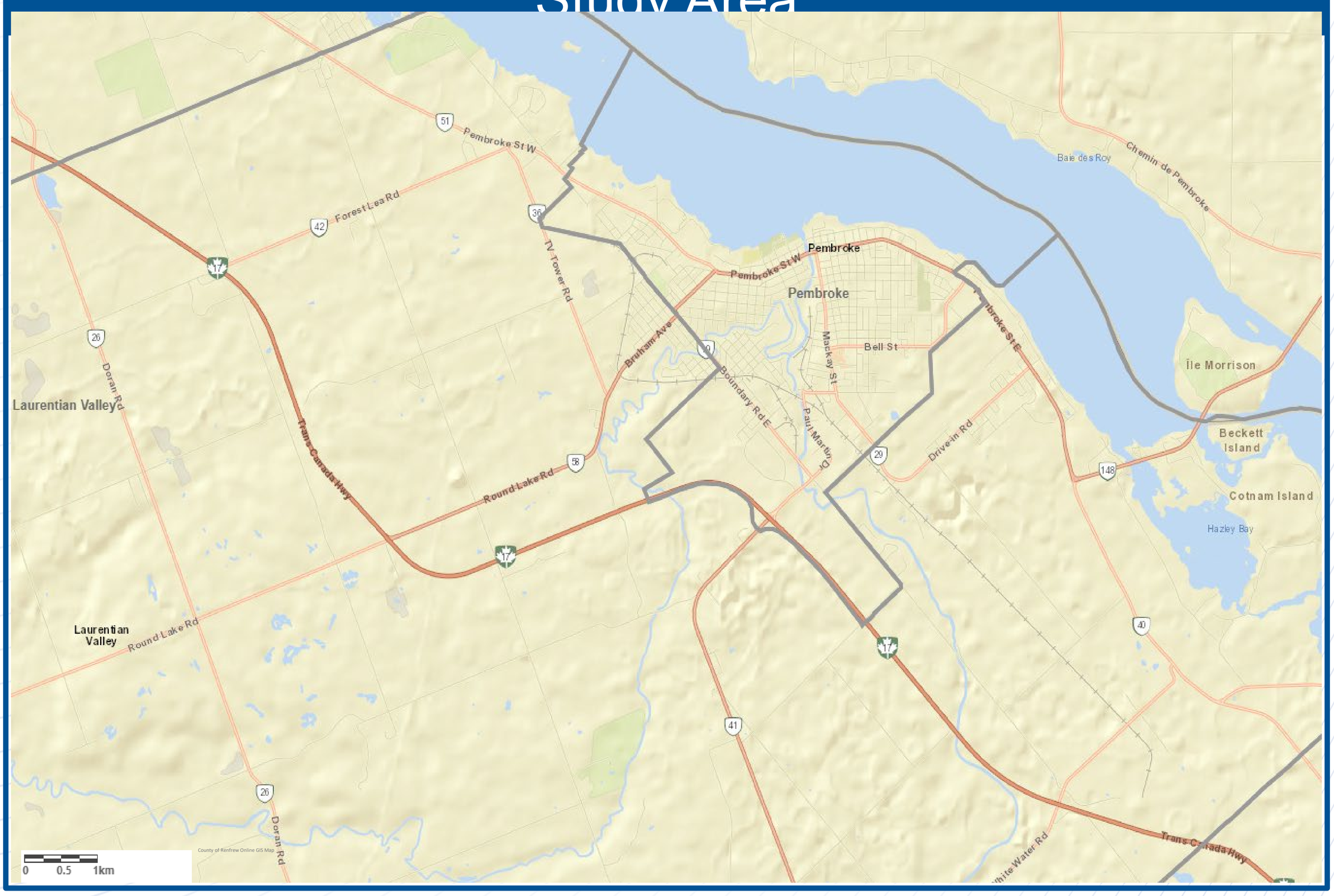
The *Transportation Master Plan for East-West Traffic* is being undertaken in accordance with the requirements of the Municipal Class Environmental Assessment (EA) (an approved process under Ontario's *Environmental Assessment Act*).

With the exception of personal information, all comments received will become part of the public record, in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*.

Key Problems / Objectives

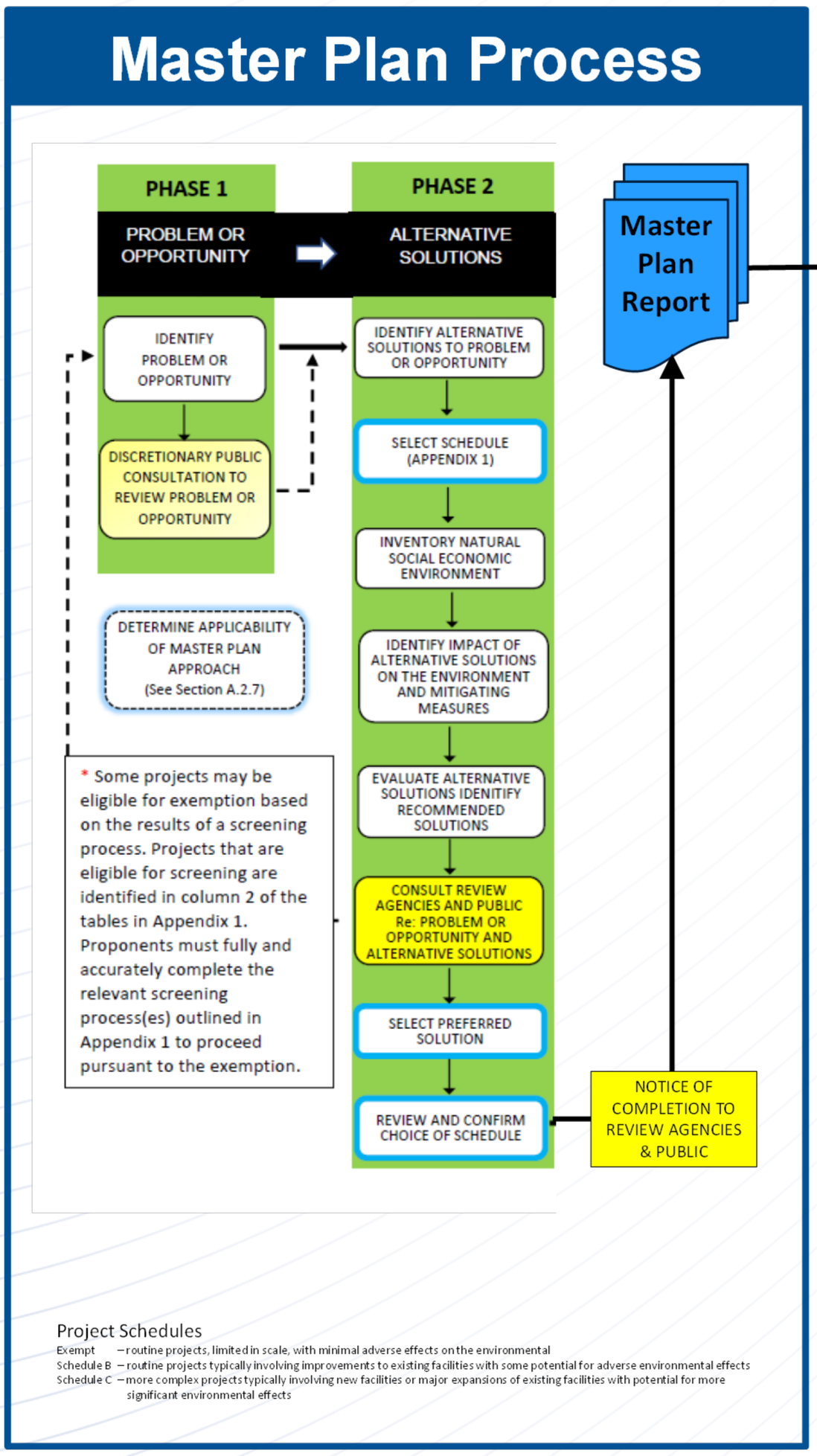
- **Pembroke and Laurentian Valley are experiencing rapid growth**
  - Ongoing and expected development within and around City boundaries
- **East-west roads are particularly affected**
  - by local growth *and* by traffic passing through
- **The East-West Transportation Master Plan will:**
  - Examine the existing and future needs for roads, sidewalks and active transportation infrastructure in the study area
  - Address those needs by developing plans and policies that support future growth

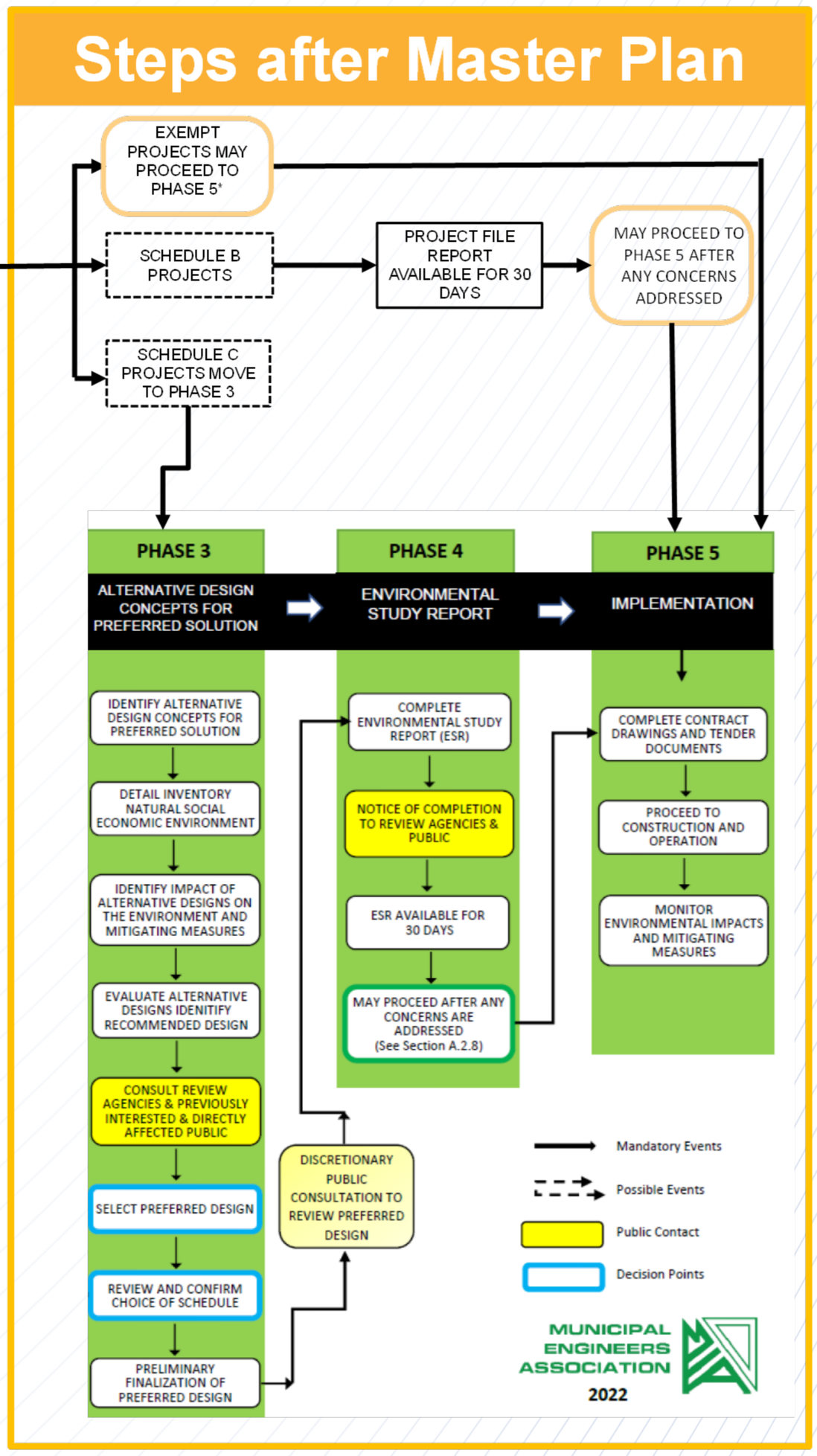
Study Area



Masterplan process

- Ontario requires municipalities to assess the environmental effects of major projects, including transportation using a common five phase process
- Master Plan process identifies problem, evaluates/recommends solutions – first two phases
- Major projects recommended by this study will get more detailed review





Existing Conditions: Policies

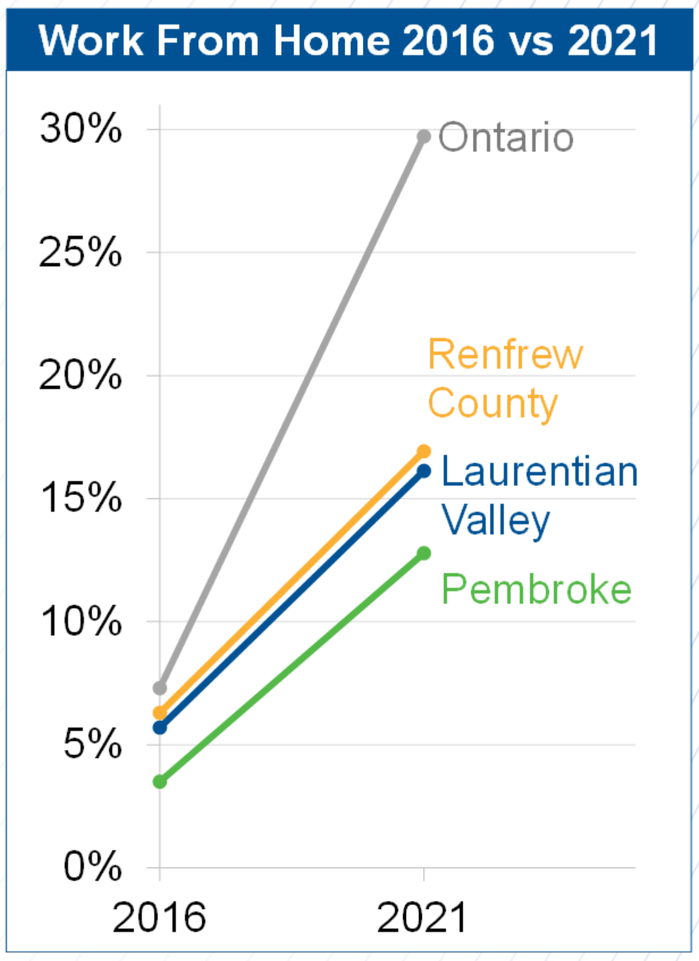
- **Numerous transportation-related polices apply to the study area:**

Province of Ontario	County of Renfrew	Township of Laurentian Valley	City of Pembroke
▶ Provincial Policy Statement ▶ Accessibility for Ontarians with Disabilities Act ▶ Ministry of Transportation Transit Supportive Guidelines ▶ #CycleON: Ontario's Cycling Strategy ▶ Ontario Trails Strategy	▶ Official Plan ▶ Strategic Plan ▶ Transportation Master Plan ▶ Trails Strategy ▶ Ottawa Valley Recreational Trail Management Plan	▶ Official Plan ▶ Strategic Plan ▶ Development Charges By-law ▶ Parks and Recreation Master Plan	▶ Official Plan ▶ Strategic Plan ▶ Transit Feasibility Study

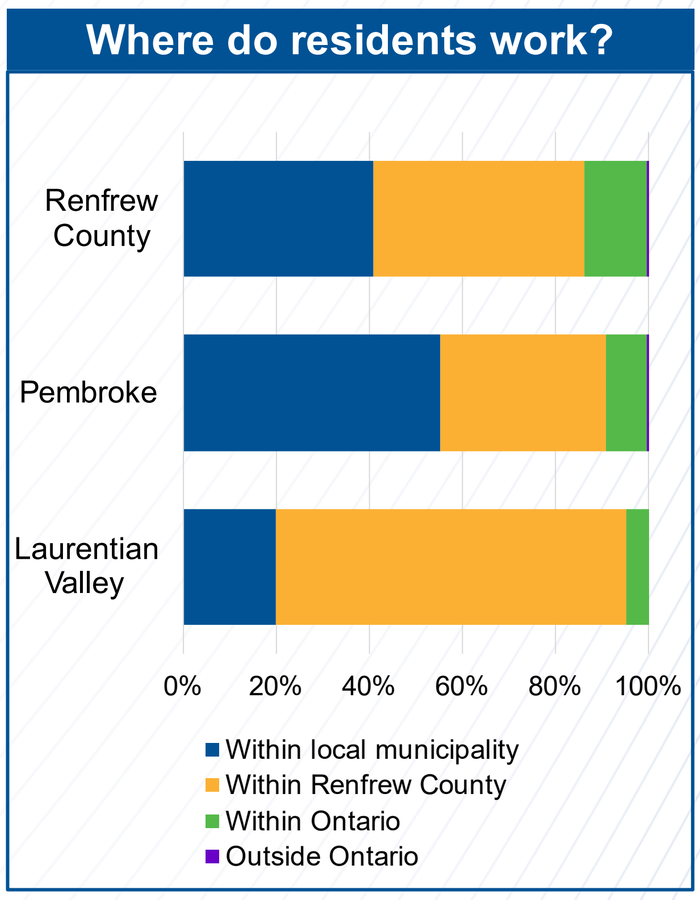
- **Transportation and land use planning should be planned together to accommodate long term growth**
  - Identify needs and protect future corridors
- **Policy environment promotes integrated planning, sustainable travel, and active transportation**
  - Abandoned linear corridors should be protected for transportation uses
  - Need for integrated facilities across boundaries
  - Laurentian Valley has initiated Active Transportation and Trails Plan (ongoing project)
- **Opportunity to introduce transit in Pembroke/adjacent areas**
  - Supported by Provincial policy direction, local policy objectives
  - Longer-term expansion to rural areas / connecting communities

Existing Conditions: Working and Commuting

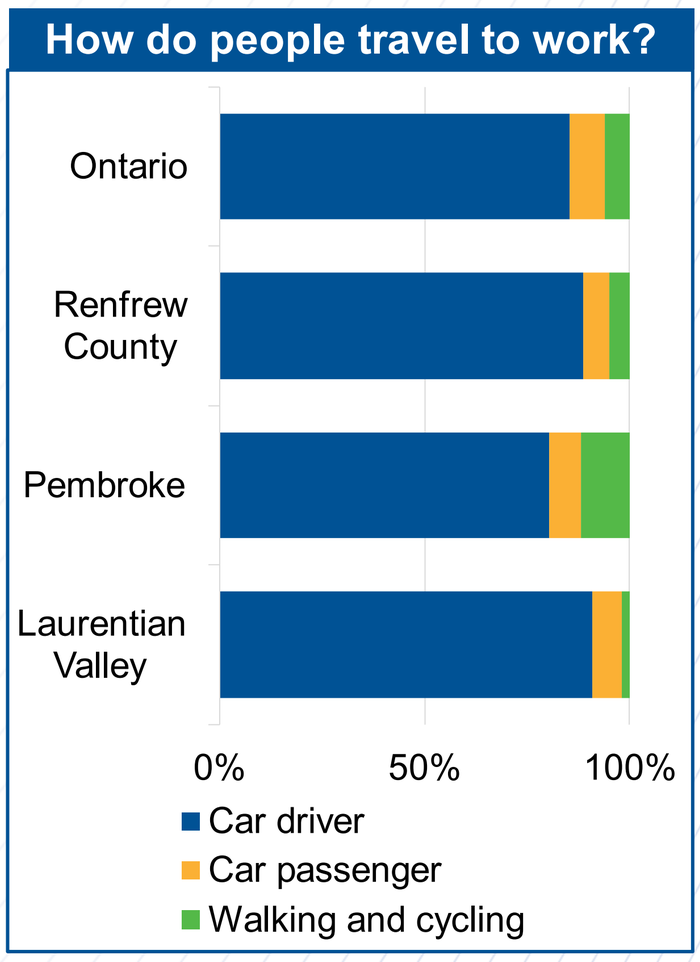
- **Working from home has increased, but less than elsewhere in Ontario**
  - Manufacturing, education, healthcare jobs are in-person
  - Figures include people who attend workplace some days



- **High proportion of people work outside the local municipality they live in**
  - But most work within County
  - Also: 5% of Pembroke's and 8% of Laurentian Valley's workers live outside Ontario



- **Car is dominant mode for commuting to work**
  - Same for other trips
  - Not likely to change significantly in the future
  - However, a household owning a car does not mean it's available to all household members for all their all trips

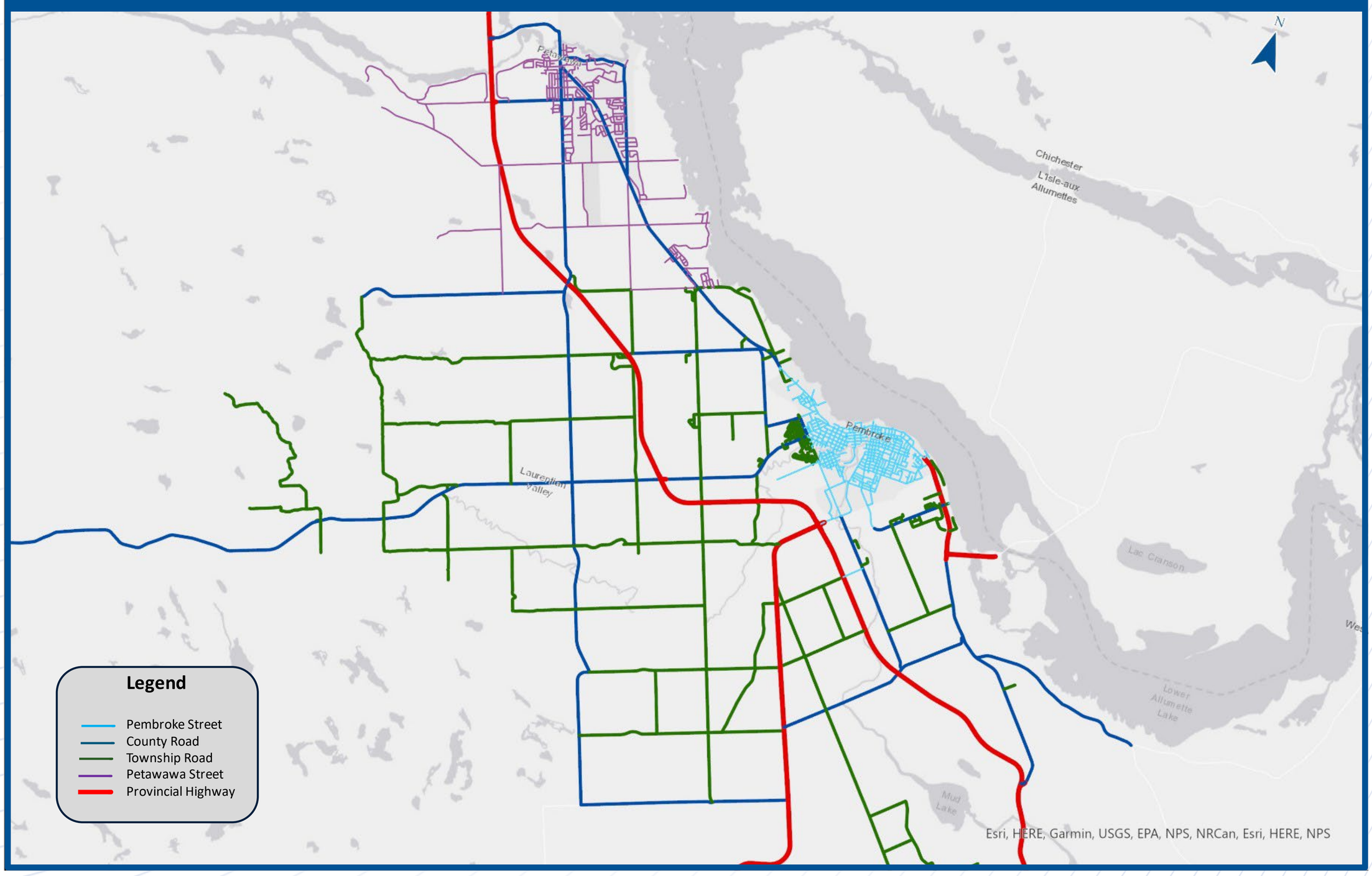


Data source for charts: 2021 Census.

EXISTING CONDITIONS: Road network

- **Roads in study area are the responsibility of multiple governments**
- **Pembroke**
  - Province (Hwys 41 and 148)
  - Pembroke Street East – MacKay Street to Hwy 148 is a connecting highway link - partly funded by province
  - A grid network of local, collector and arterial roads (such as part of Boundary Road East, Angus Campbell Drive)
- **Laurentian Valley**
  - Province (Hwy 17, Hwy 41, Hwy 148/Pembroke St E)
  - County of Renfrew (e.g. Drive In Rd, part of Boundary Rd East, TV Tower Rd, Pembroke St West, Bruham Ave)
  - Township (e.g. B Line Road, Wilson Road, Robinson Ln, network of local, collector and arterials)

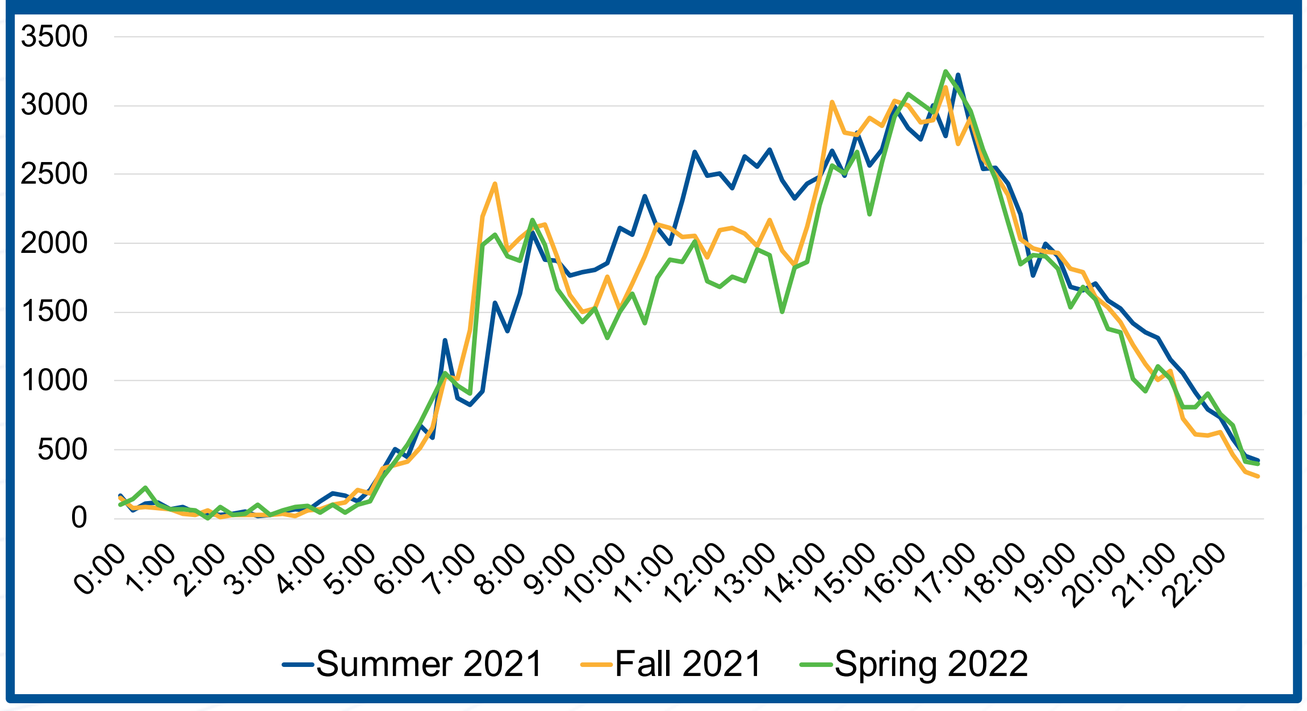
Road Classifications



EXISTING CONDITIONS: Traffic Volumes

- **Typical traffic conditions**
  - No significant congestion or problems at intersections
- **Summer traffic**
  - Higher seasonal volumes creates congestion downtown and on Pembroke Street East / Highway 148
  - Lower demand in morning – higher mid-day

Trips by time of day



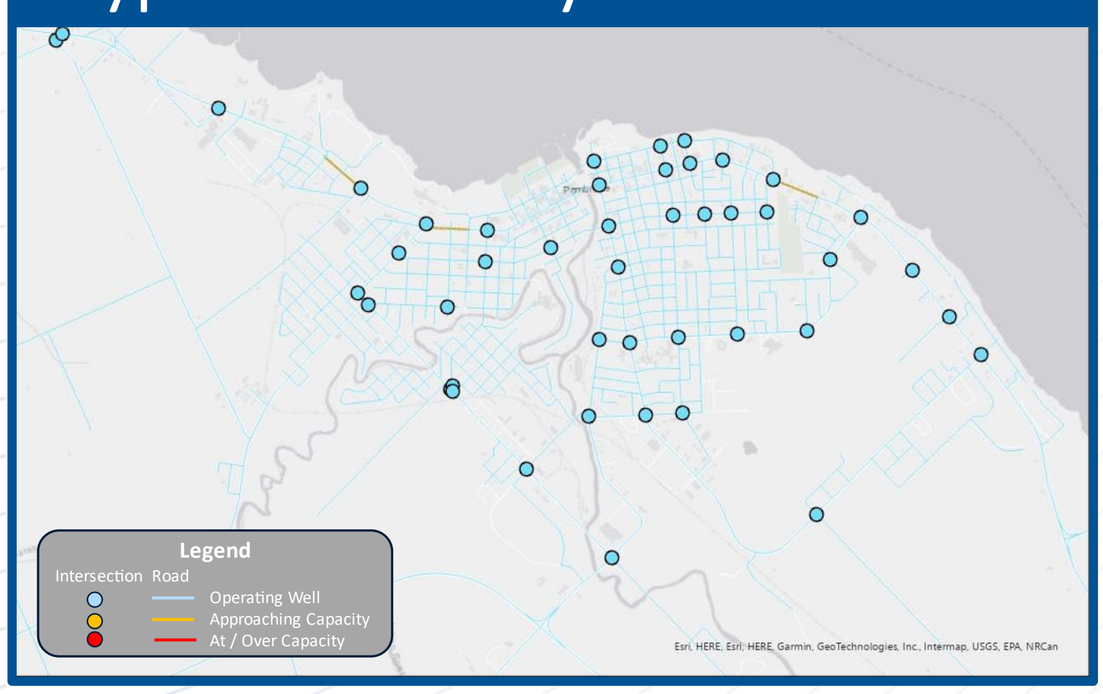
Travel During a Typical Day

Approximately 8,650 trips are made by car during the PM Peak Hour in the area covered by the traffic model. Of these:

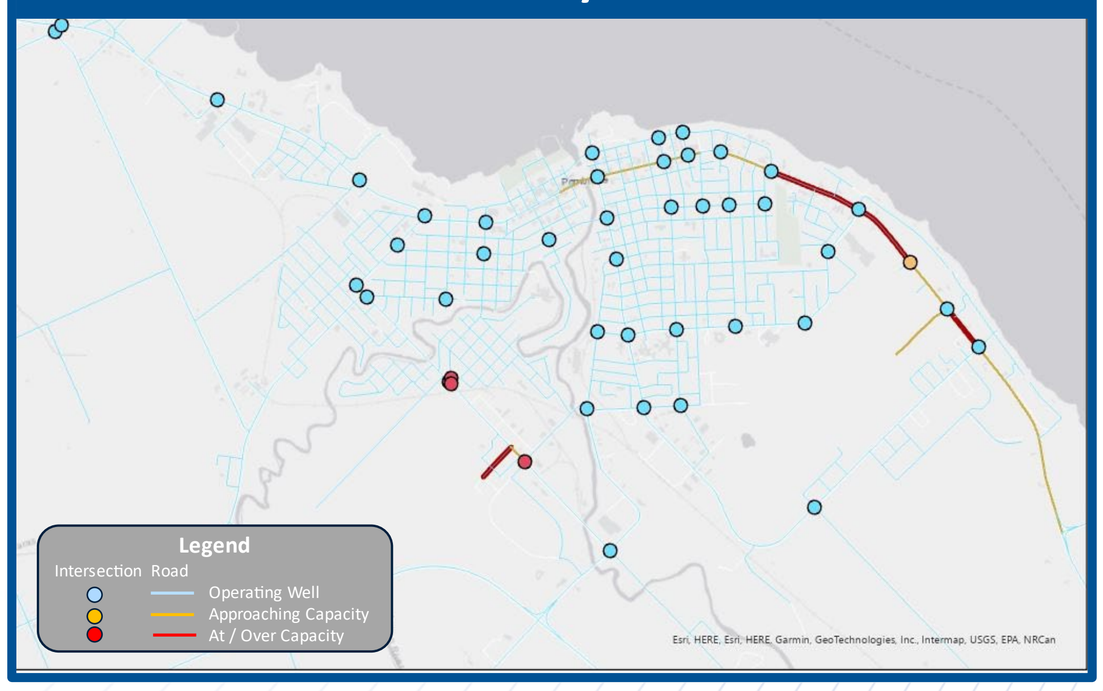
- 36% of trips are within the study area (Pembroke / Laurentian Valley)
- 23% of trips are within Petawawa
- 12% of trips travel between Petawawa and the study area
- 27% travel to / from other areas
- 2% pass through the modelled area

- **Should the road network be designed to accommodate need of summer traffic or typical levels at other times of year?**

Typical Weekday PM Peak hour



Summer Weekday PM Peak Hour

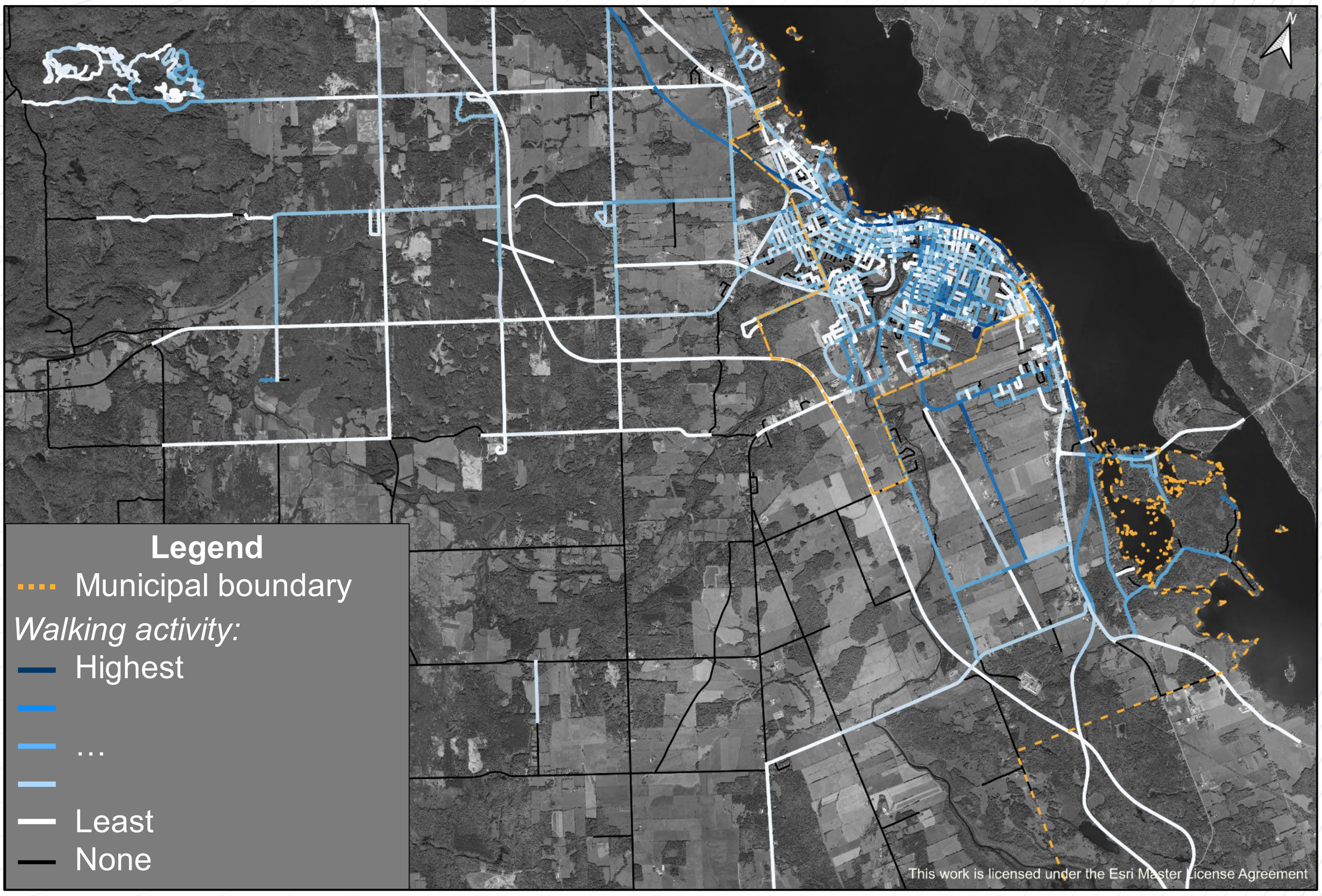


Existing Conditions: Cycling Activity

Data source for map: Strava Metro

- **Highest activity on quiet rural roads and off-road facilities**
  - Higher usage on Forest Lea Trails than nearby roads implies people aren't cycling to/from there.
- **Low activity on streets in Pembroke**
  - Despite short distances between homes and destinations

Existing Conditions: Walking Activity

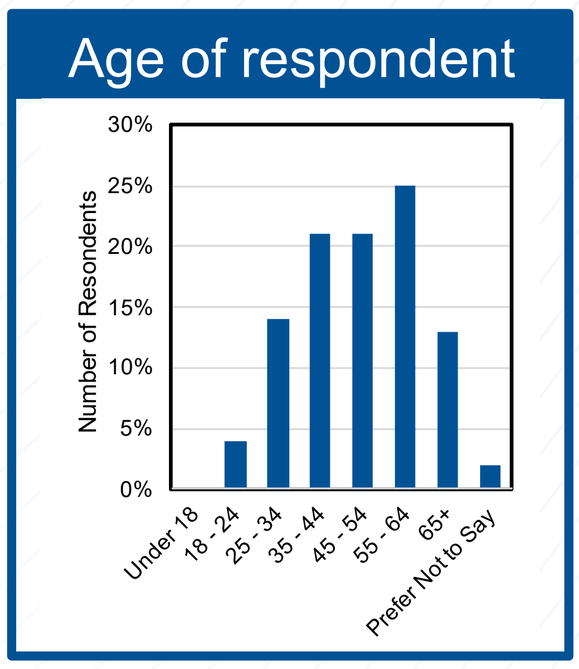


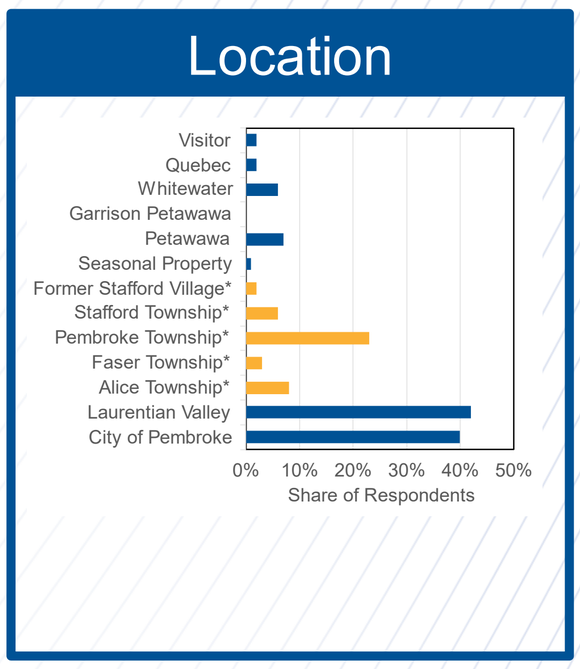
Data source for map: Strava Metro

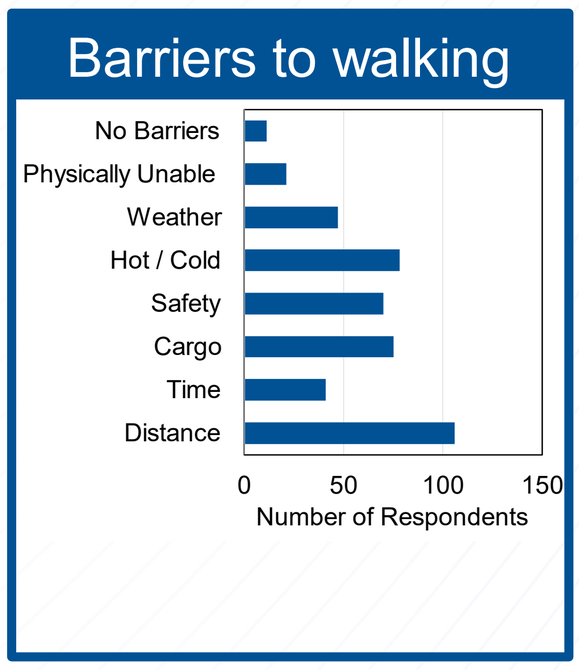
- **Walking activity focused on urban areas**
  - Requires both infrastructure (sidewalks, crossings) *and* destinations within walking distance
- **Walking outside of urban areas associated with off-road recreation activity**
  - Example: Forest Lea Trails

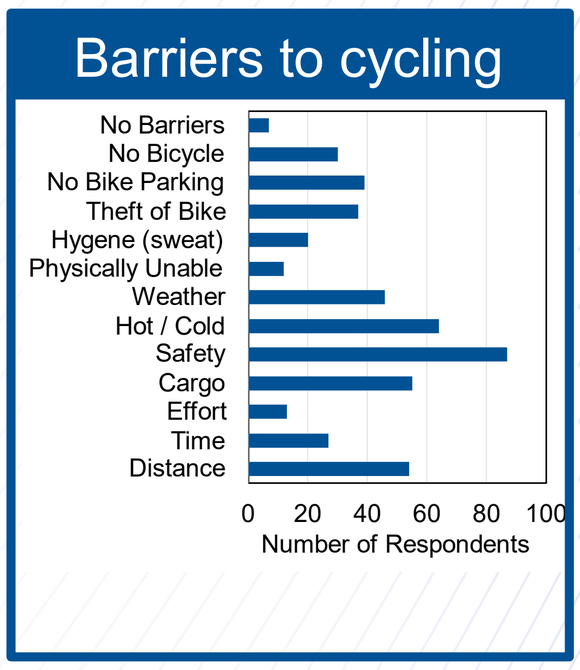
Existing Conditions: Online Survey Results

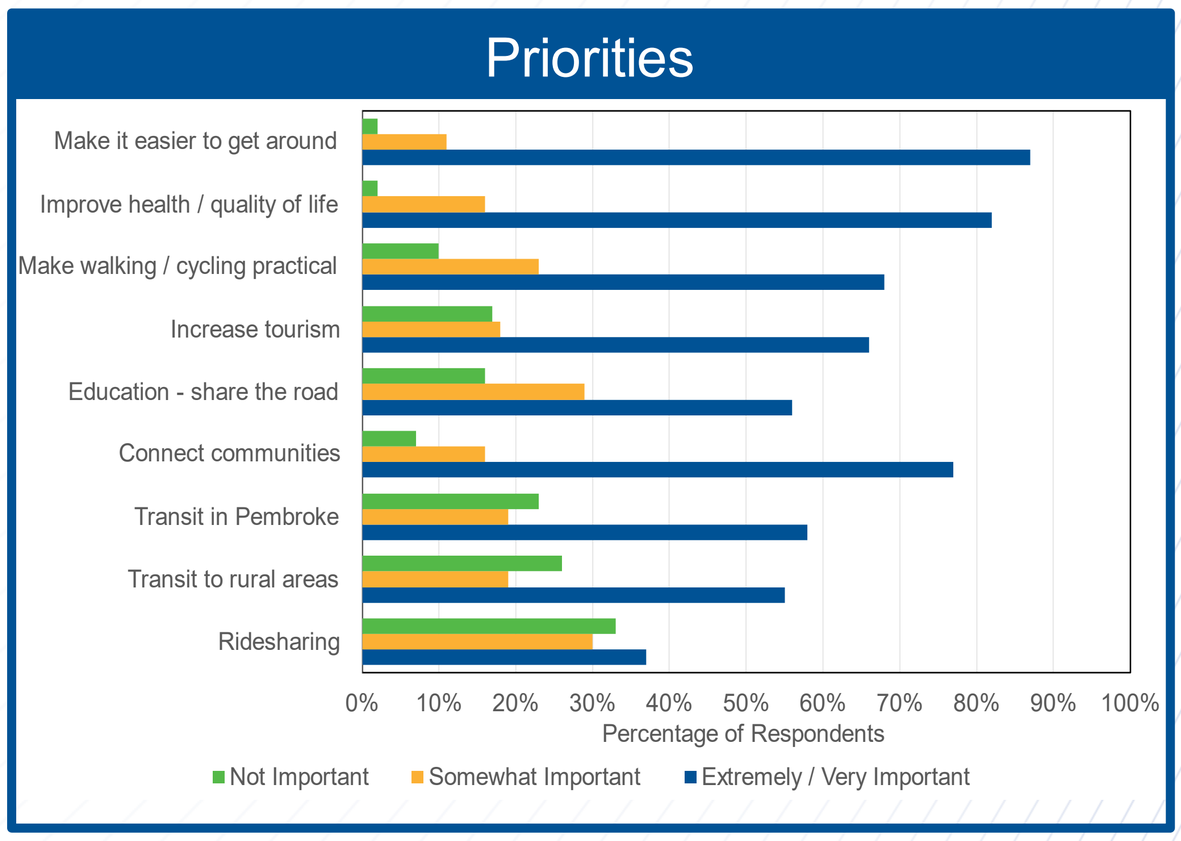
- **164 participants**
- **84% travel by auto**
  - 8% walk
  - 3% cycle
  - 3% are passengers
  - 2% other (school bus)
- **Distance traveled to work / school:**
  - 9% travel under 2 km
  - 19% travel 2–5 km
- **Barriers**
  - Safety a key barrier to cycling
  - Distance a key barrier to walking









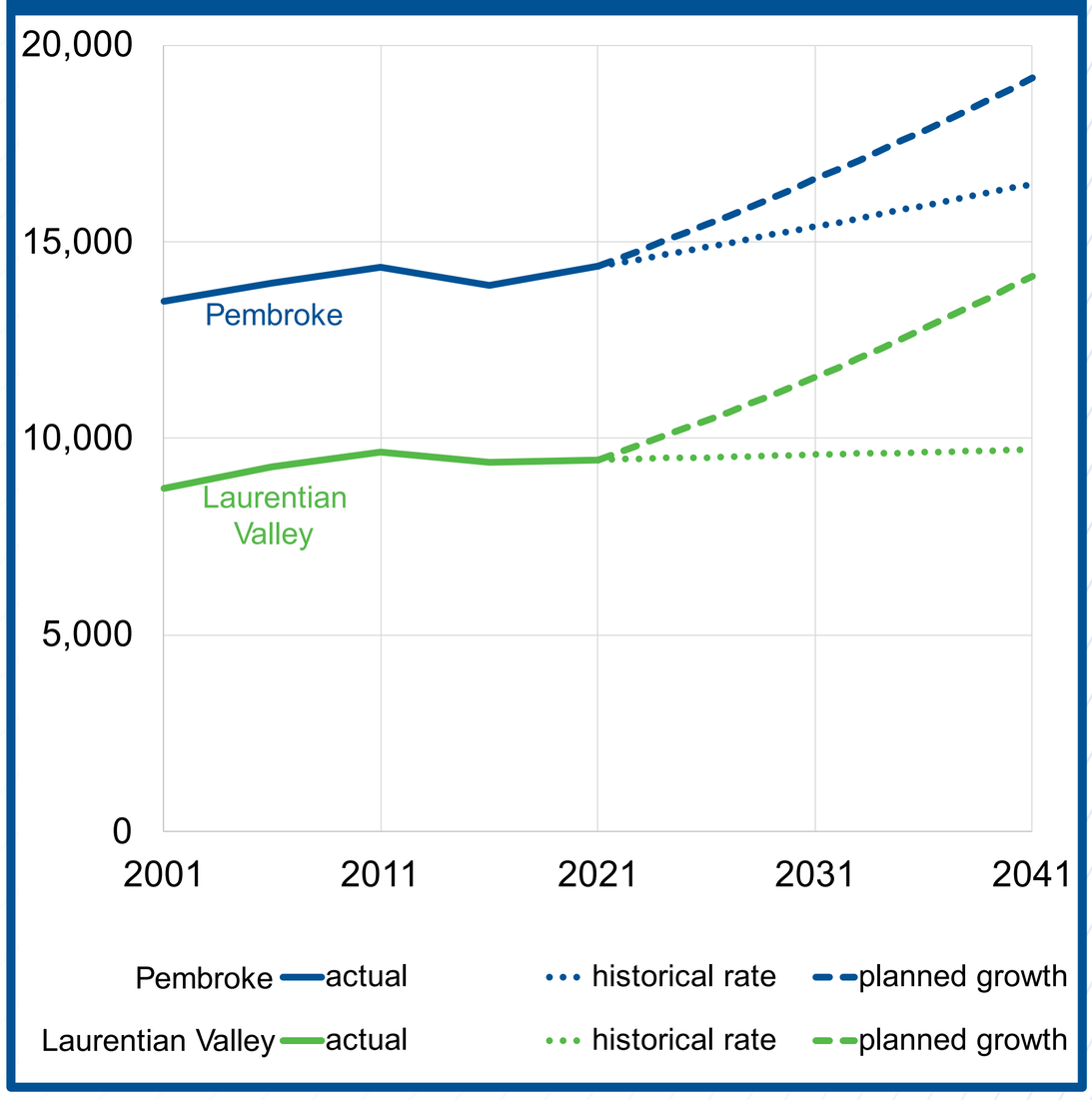


- **Strong support for improving condition of roads**
- **Co-ordinating signals, adding turn lanes, and widening or building new roads supported to improve convenience**
- **Separating cyclists, adding pedestrian crossings, and traffic calming viewed as positive safety measures**

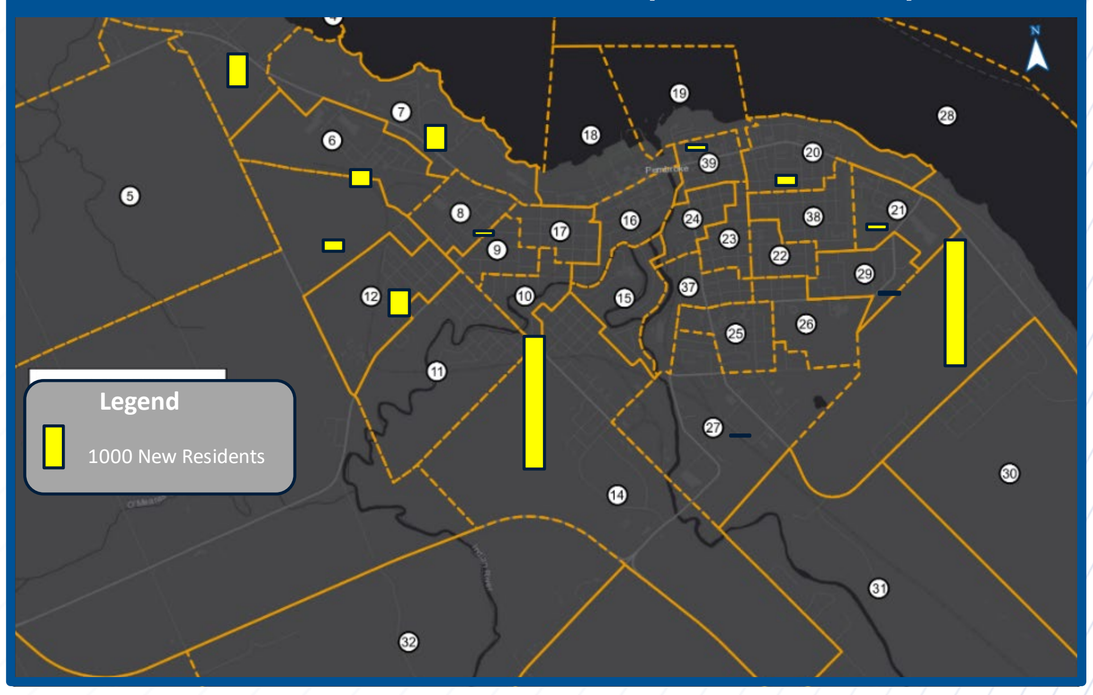
FUTURE CONDITIONS: Population Growth

- **Planned growth to 2041 higher than historical growth rate**
  - Pembroke: 33% increase in population
  - Laurentian Valley: 50% increase in population
- **Growth will generate extra traffic**
  - Some growth will be accommodated by new road network in areas with new development
- **Key issues:**
  - Pembroke St E / Hwy 148 will operate at/over capacity during summer peaks
  - Limited crossings of Muskrat and Indian Rivers
  - Added traffic on neighbourhood streets
  - Better connections to river crossings can distribute traffic

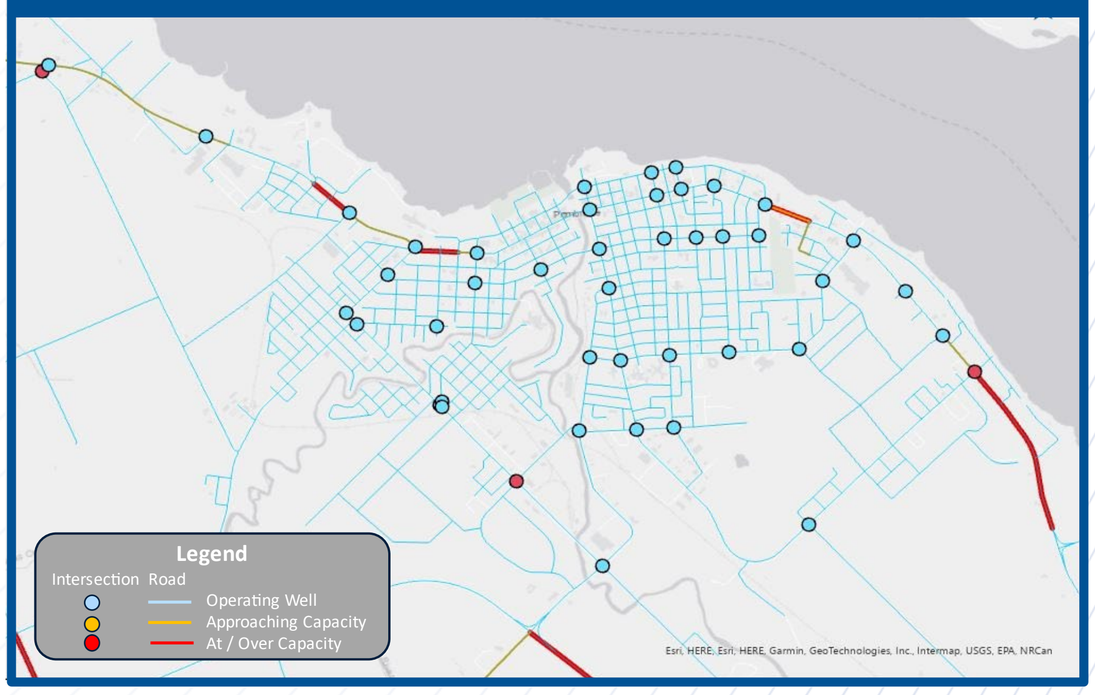
Population Trend



Growth Areas (to 2041)



2041 Summer Peak Traffic



Future Road Options

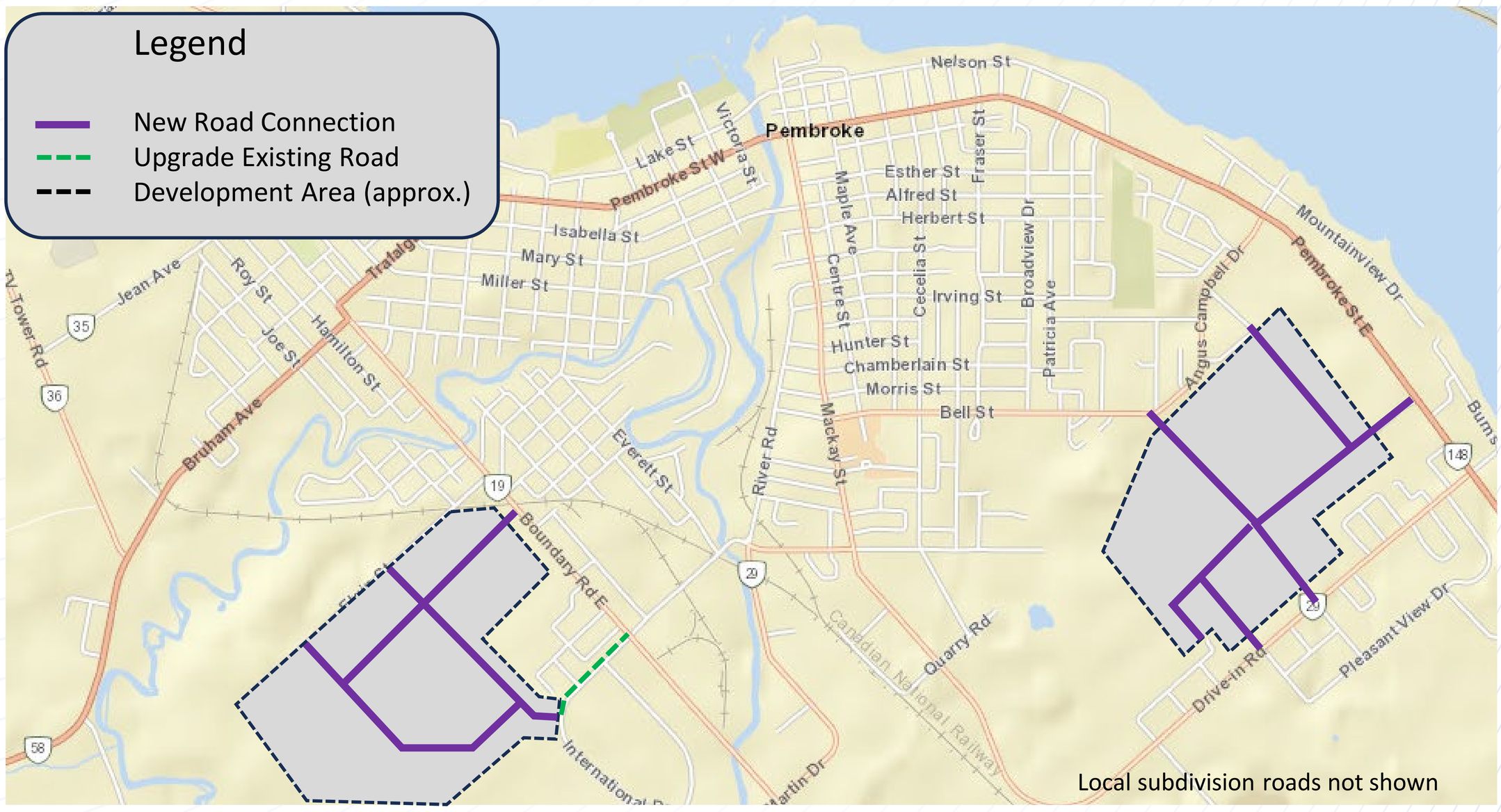
Potential Road Network Improvements:

- **Base: New Roads in Growth Areas**
  - Local roads in growth areas to serve development
  - Assumed to be included in all options
- **Option 1: Enhance Mary Street / Alfred Street**
  - Alternative to Pembroke St through downtown
- **Option 2: D'Youville Drive connection to Drive In Road and Robinson Road**
  - Connect new development areas to MacKay Street / Townline Road and Highway 148
- **Option 3: Boundary Road Extension and Widening of Pembroke Street West**
  - Direct traffic away from downtown
- **Option 4: O'Brien Street Connection**
  - Complete O'Brien Street to connect to growth areas
- **Option 5: Local By-Pass Route**
  - Improve Drive In Rd and connect to Mud Lake Road or Paul Martin Drive to by-pass downtown
- **Option 6: New MTO bypass**
  - New road between Hwy 148 / County Road 40 and Hwy 17, to by-pass downtown area

FUTURE ROAD OPTIONS:
Base: New Roads in Growth Areas

▶ Potential Improvements

- Connect Matheson Drive to Robinson Lane through new development (traffic signals at Drive In Road / Hwy 148)
- Connect internal road network to Drive In Road and Angus Campbell Drive / Bell Street
- Connect internal road network to International Drive and Boundary Road East
- Upgrade International Drive



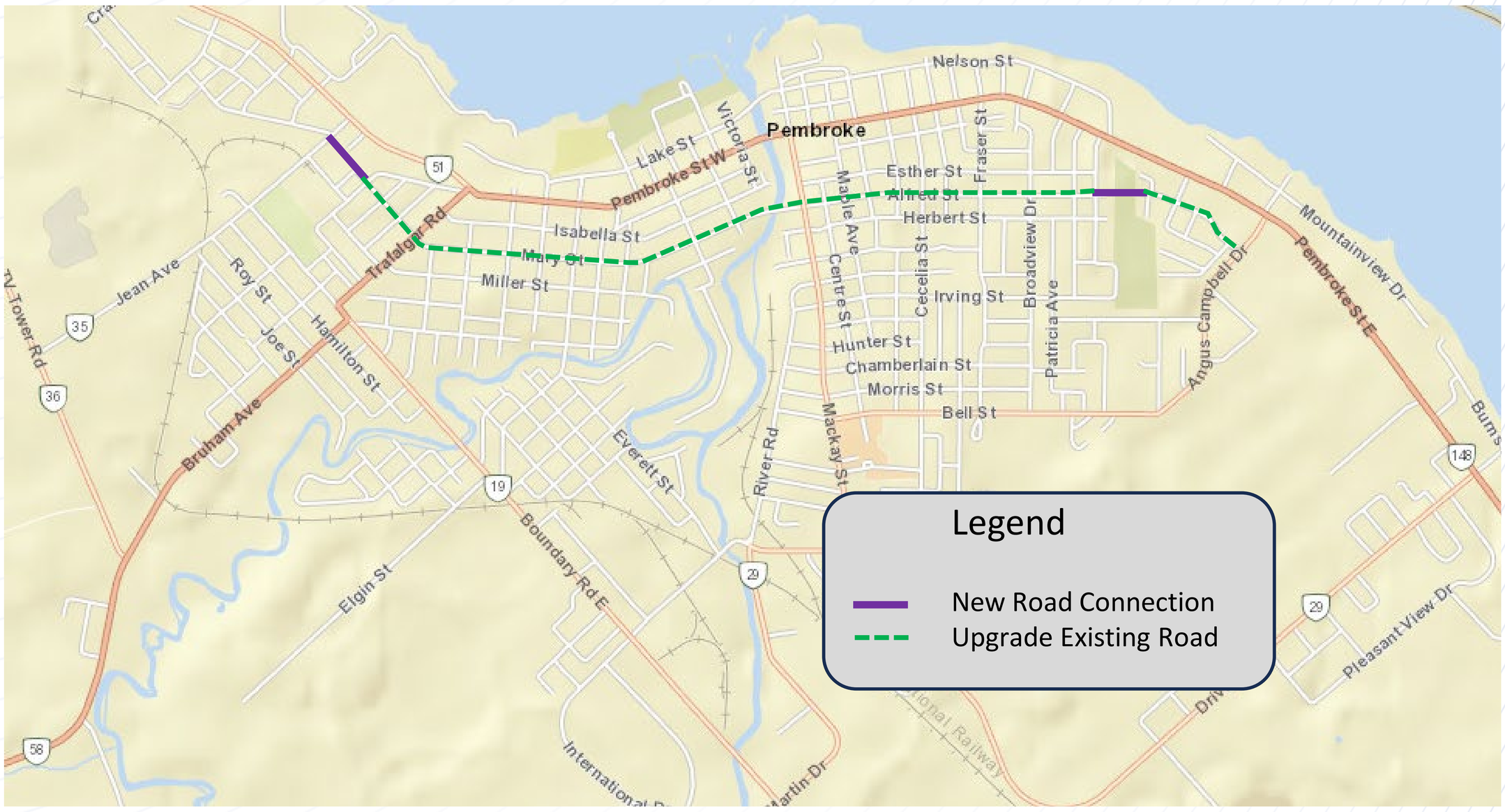
▶ Evaluation

Criteria	Evaluation
Transportation	Congestion remains on Pembroke Street East and Hwy 48 Moderate Increase in traffic on Bell St / Angus Campbell Dr
Social	Neighbourhood impacts due to increased traffic (noise / safety)
Environmental	No additional disruption to natural areas
Economic	$
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
1) Enhance Mary St / Alfred St

▶ Potential Improvements

- Connect Mary Street to Forced Road
- Connect Alfred Street across park to Angus Campbell Drive
- Upgrade Mary Street / Alfred Street



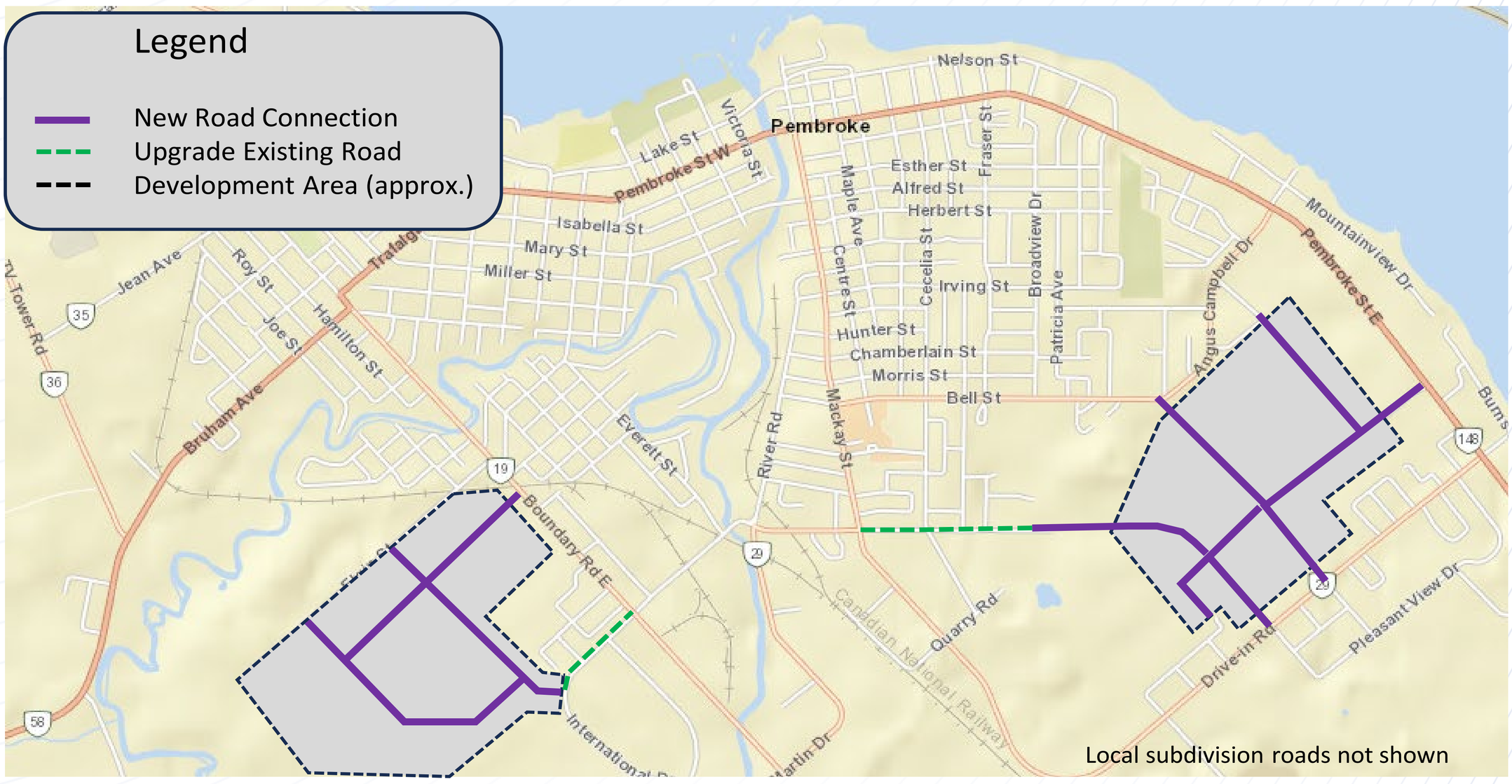
▶ Evaluation

Criteria	Evaluation
Transportation	Does not fully address congestion on Pembroke Street Significant increase in traffic on Mary Street / Alfred Street
Social	Neighbourhood impacts due to increased traffic (noise / safety). Alfred St connection bi-sects open space area / park
Environmental	Mary Street connection disturbs natural area Increased emissions through residential area
Economic	$$$
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
2) D'Youville Dr connection to Drive In Rd / Robinson Ln

▶ Potential Improvements

- Connect D'Youville Drive to new subdivision roads
- Upgrade existing D'Youville Drive
- Upgrade International Drive
- New roads within new development areas



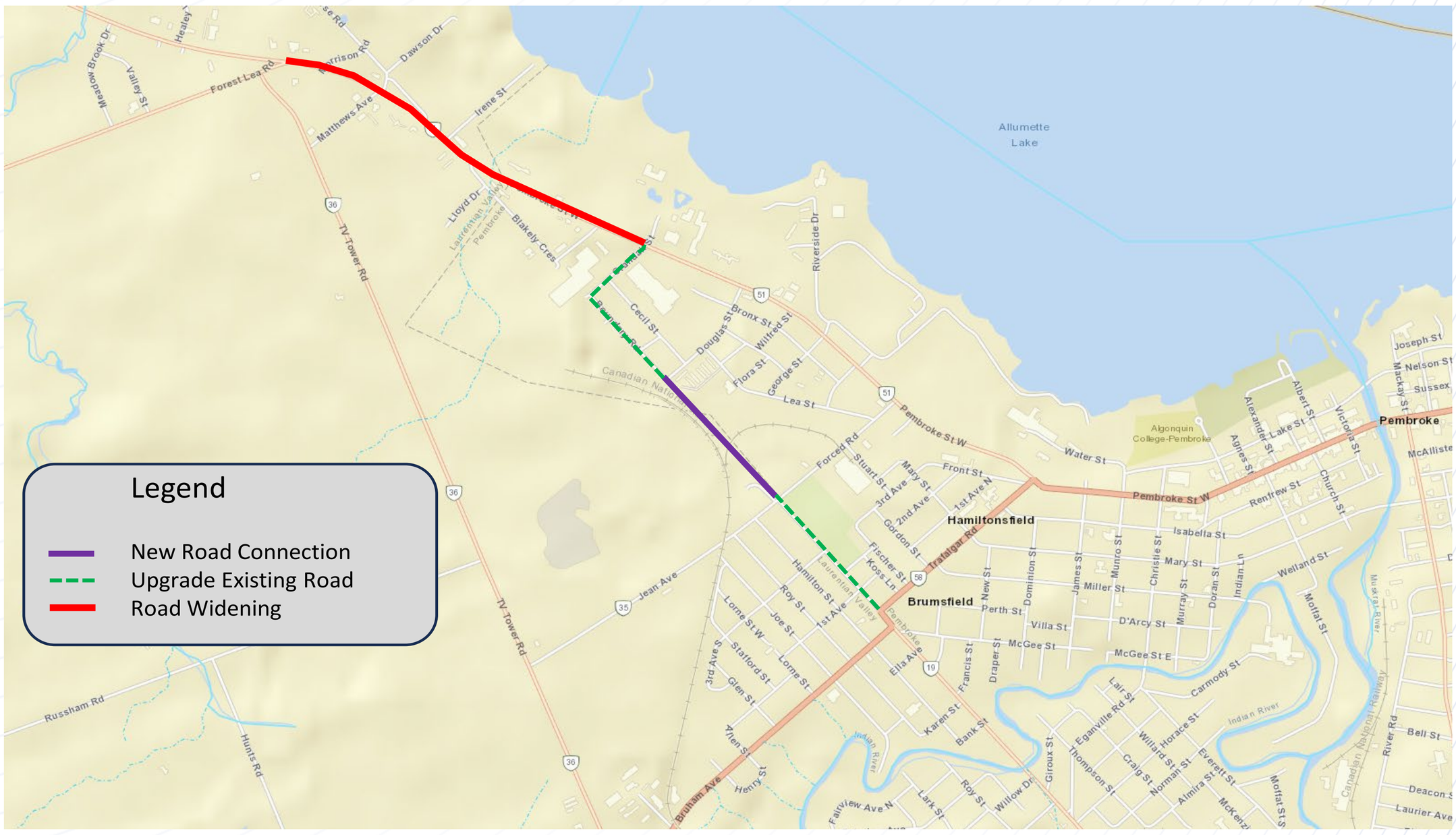
▶ Evaluation

Criteria	Evaluation
Transportation	Improves congestion on Pembroke Street Significant increase in traffic on D'Youville Drive
Social	Neighbourhood impacts due to increased traffic (noise / safety)
Environmental	D'Youville Drive connection disturbs natural area Increased emissions through residential area
Economic	$$
Overall	**RECOMMENDED - COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
3) Boundary Rd Extension and Widening Pembroke St W

▶ Potential Improvements

- Extend Boundary Road East to connect to Boundary Road West
- Upgrade Boundary Rd West and Crandall Street to accommodate traffic
- Widen Pembroke St West to 4-5 lanes



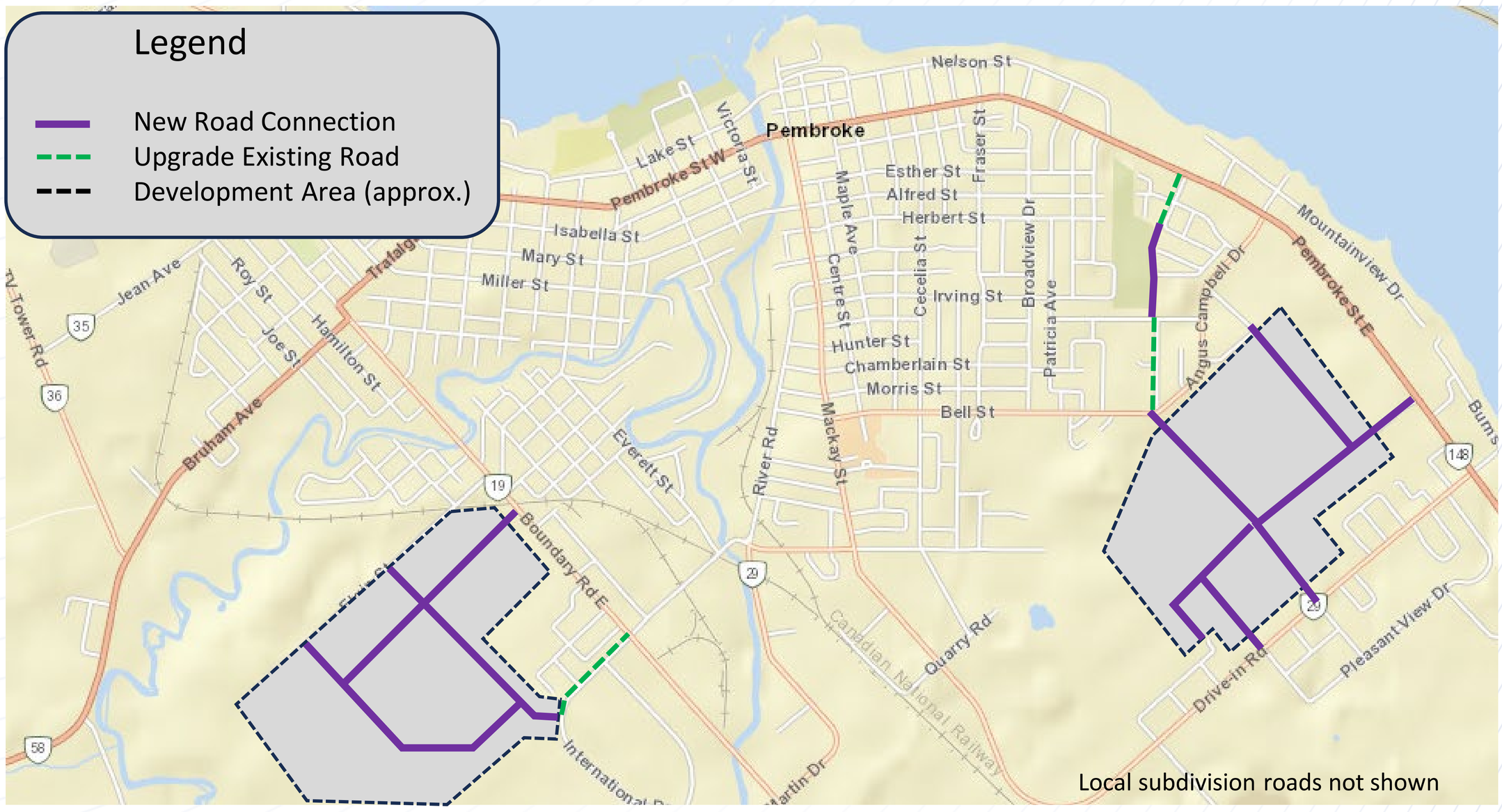
▶ Evaluation

Criteria	Evaluation
Transportation	Draws traffic from TV Tower Road Congestion worse on Pembroke St W - east of Forced Road Increase in traffic on Boundary Road – may need widening
Social	Neighbourhood impacts due to increased traffic (noise / safety); Boundary Road extension impacts Algonquin Trail
Environmental	Boundary Road connection disturbs natural area Increased emissions through residential area
Economic	$$$
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
4) O'Brien St Connection

▶ Potential Improvements

- Connect O'Brien Street between Herbert Street and Melton Street
- Upgrade O'Brien Street
- Install new signals at Pembroke Street East
- New / upgraded roads in new development areas



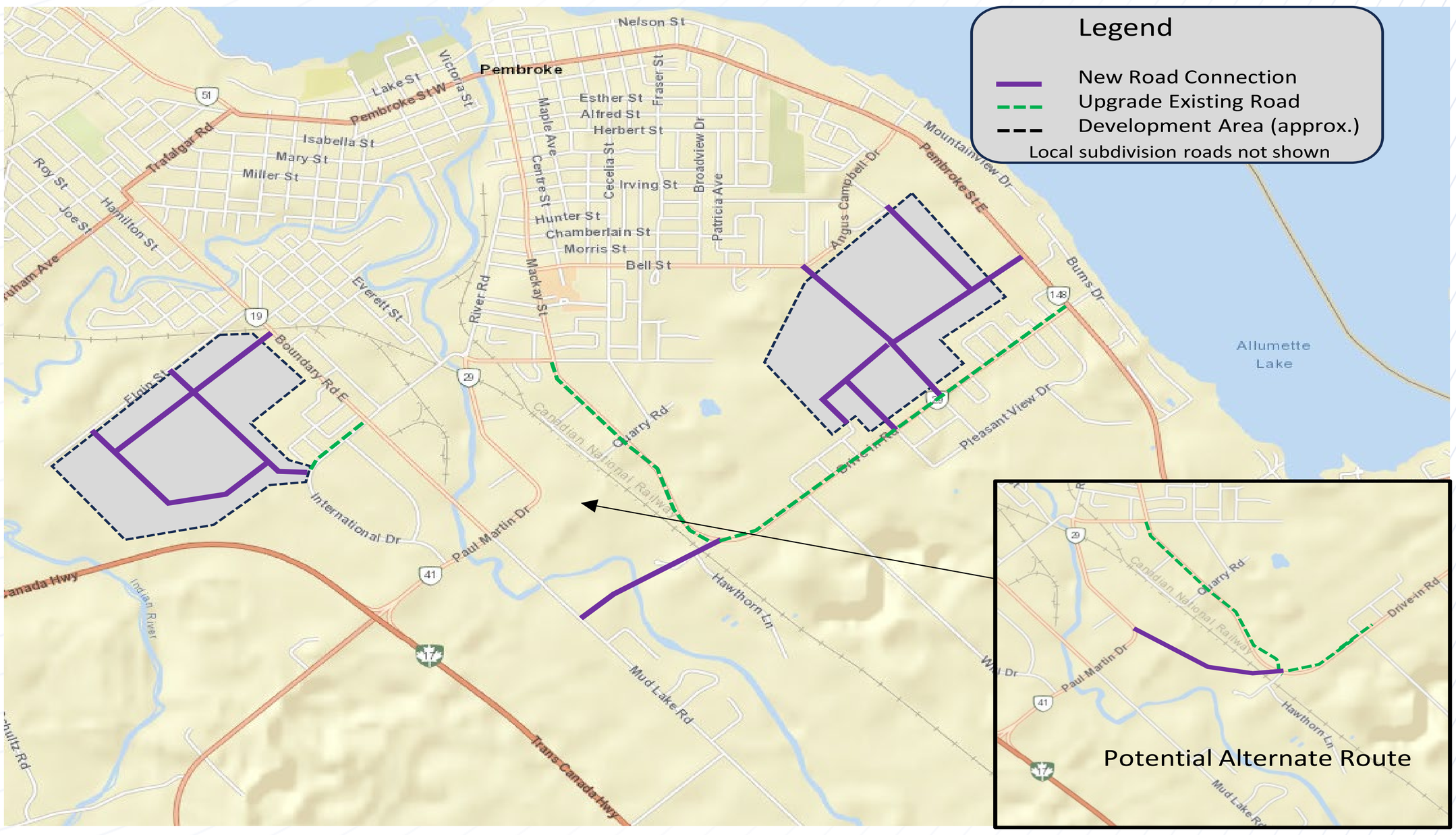
▶ Evaluation

Criteria	Evaluation
Transportation	Provides alternate access to new development areas Limited benefit to Pembroke Street East
Social	Neighbourhood impacts due to increased traffic on O'Brien (noise / safety); Some reduction in traffic on Angus Campbell Drive / Bell Street
Environmental	O'Brien Street connection borders open space area Increased emissions through residential area
Economic	$$
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
5) Local By-Pass Route

▶ Potential Improvements

- New County Road connection between Drive In Road and Mud Lake Road or Paul Martin Drive
- Upgrade MacKay Street and Drive In Road
- Install new signals at Hwy 148 (as planned by MTO)
- New / upgraded roads in new development areas
- Potential to act as local downtown by-pass



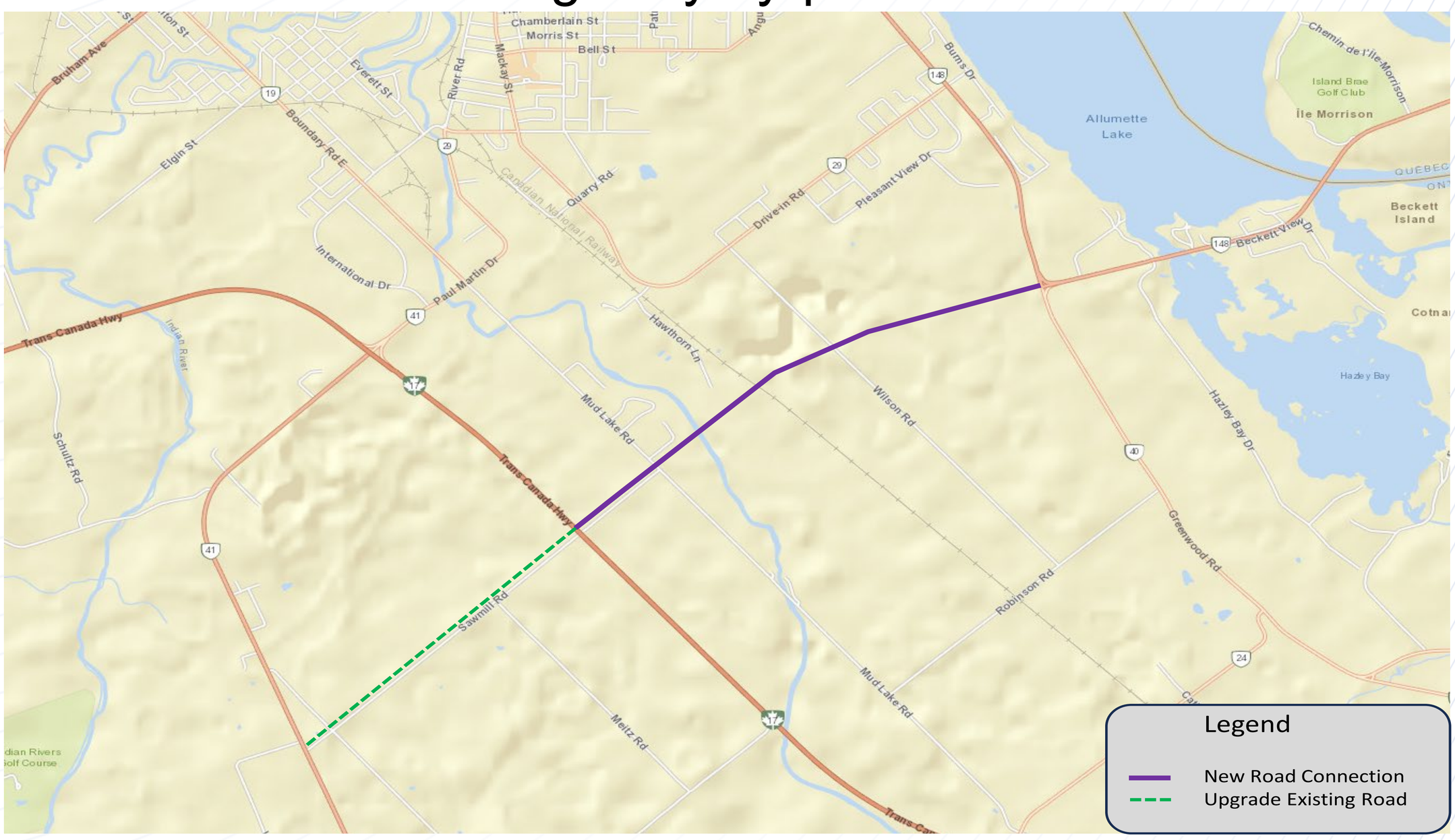
▶ Evaluation

Criteria	Evaluation
Transportation	Provides alternate access to new development areas. Some minor benefit to Pembroke St East. Draws traffic away from Bell St / Angus Campbell Dr. Adds traffic to Boundary Rd E
Social	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on Angus Campbell Drive / Bell Street
Environmental	New connection crosses open space area Potential new river crossing (depending on route)
Economic	$$ - $$$ Potential impact to existing industrial lands (depending on route)
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
6) MTO By-Pass Route

▶ Potential Improvements

- Upgrade Sawmill Road between Hwy 41 and Hwy 17
- New highway connection between Hwy 148 and Hwy 17 via Sawmill Rd
- New signals or roundabout at Hwy 17 and at Hwy 148
- Potential to act as highway by-pass



▶ Evaluation

Criteria	Evaluation
Transportation	Removes external through traffic / trucks from downtown; Modest benefit to Pembroke St E / Highway 148; Adds traffic to Mud Lake Rd and Boundary Rd – may need widening
Social	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on local streets
Environmental	New connection crosses open space area Requires new river crossing (potential future interchange)
Economic	$$$$$ By-pass of downtown may impact local businesses
Overall	**NOT RECOMMENDED**

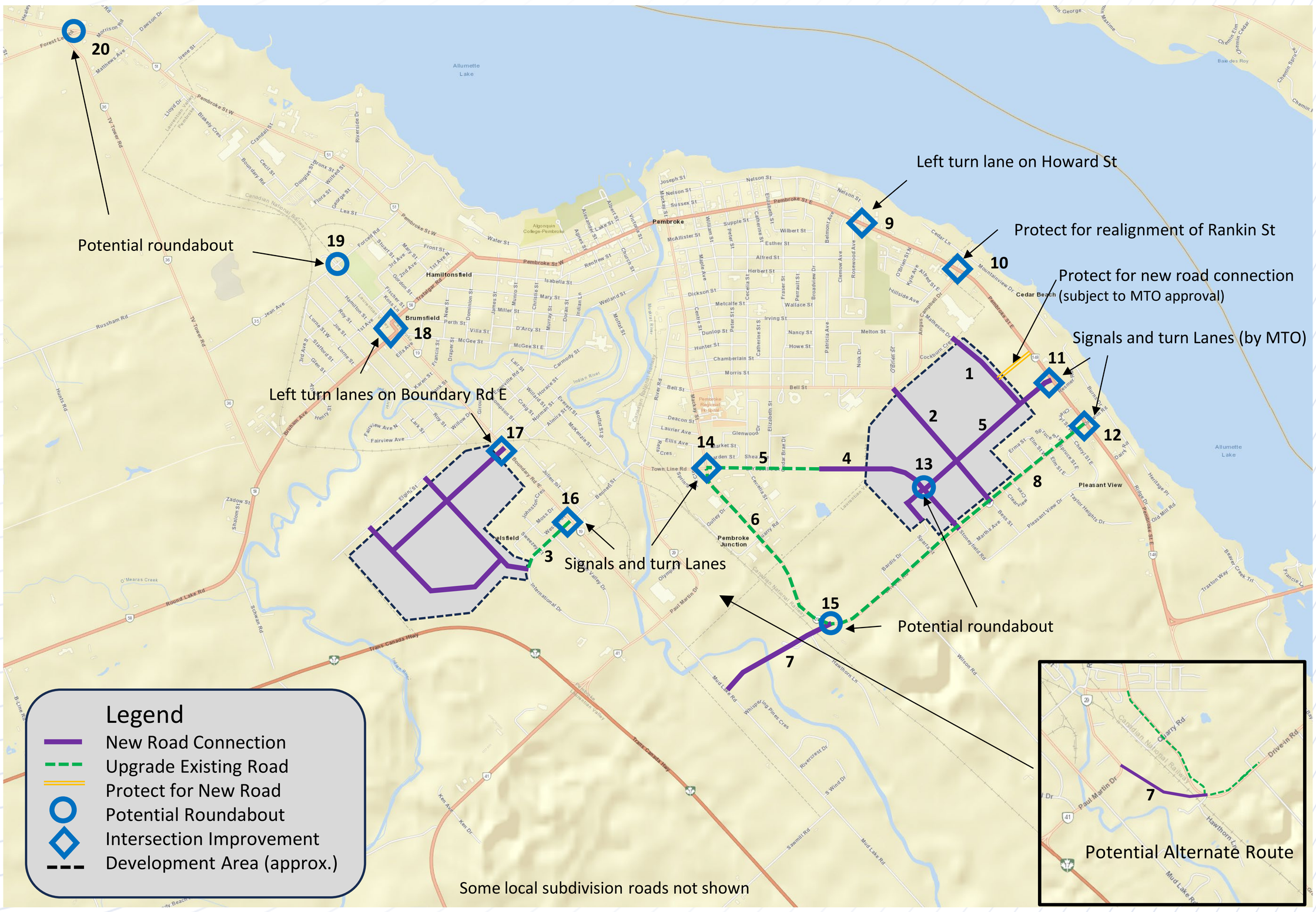
Future Road Network: Recommended Improvements

▶ Recommended Improvements

1. Connect Matheson Dr to Robinson Ln through development
2. Connect Drive In Rd and Angus Campbell Dr / Bell St to Drive In Road through development
3. Upgrade International Dr
4. Connect D'Youville Dr to Robinson Ln and Drive In Road through new subdivision road network
5. Upgrade D'Youville Dr and Robinson Ln to Collector Roads
6. Upgrade MacKay St (future traffic signals and turn lanes at D'Youville Dr)
7. New County Road connection from Drive In Rd to Mud Lake Rd / or Paul Martin Dr
8. Upgrade Drive In Rd – turn lanes at main intersections

▶ Intersection Improvements

9. Pembroke St E / Howard St – left turn lane on Howard St
10. Angus Campbell Dr / Rankin St – protect for future realignment of Rankin St
11. Highway 148 / Robinson Ln – Left turn lanes and upgrade signal (planned by MTO)
12. Highway 148 / Drive In Rd – Left turn lanes and new signal (planned by MTO)
13. D'Youville Dr / Robinson Ln – consider for future roundabout as part of development
14. D'Youville Dr / MacKay St – future signals and turn lanes
15. Drive In Road / MacKay St / New Road Connection – consider for roundabout
16. Boundary Rd E / International Dr – future turn lanes and new signals
17. Boundary Rd E at new subdivision access – left turn lane – potential future signals
18. Boundary Rd E at Bruham Ave / Trafalgar Rd – left turn lanes
19. Boundary Rd E / Forced Rd – consider potential roundabout
20. TV Tower Rd / Forest Lea Rd / Pembroke St W – consider potential roundabout



Transit and Active Transportation

Pembroke

- **City recently completed transit feasibility study**
  - Previous study recommended demand-responsive service covering whole city plus Walmart plaza
  - Council is considering financial implications
- **Walking and cycling :**
  - Compact nature of city means lots of trips are short enough for walking/cycling
  - City should prepare an Active Transportation Plan to identify new trail opportunities, potential cycling infrastructure and priorities for completing missing sidewalk links
  - The City should review and update existing trail crossing designs, pavement marking and signage

Laurentian Valley

- **Township is already developing an *Active Transportation and Trails Plan***
  - Examining infrastructure and policy needs for walking, cycling, trails, and related activities
  - Anticipated completion in early 2024
- **Consider partnership with Pembroke to provide transit beyond City boundary**

Policy Recommendations

▶ Roadway Classifications

- Laurentian Valley should adopt a refined roadway classification system and create design guidelines for township roads to better characterize their use and design parameters (such as Township Arterial, Township Collector, Township Local)
- Pembroke should consider the creation of design guidelines for City roads tied to the existing classification system

▶ Traffic Management

- New development will increase traffic on some existing roads
- Pembroke and Laurentian Valley should consider adopting policies and processes for reviewing requests for speed management / traffic calming on City and Township roads
- Pembroke and Laurentian Valley should develop a permissive truck route system to direct truck traffic to / from the provincial highway network and away from the downtown and local roads

▶ Highway 148 Corridor

- To facilitate future development approvals, the Township should investigate the feasibility of assuming Highway 148 from MTO under the connecting link program (Angus Campbell Drive to Drive In Road), after MTO has finished improvements

Next Steps

- **Consideration of feedback from public and stakeholders**
- **Prepare Study Report documenting:**
  - Study process
  - Analysis and findings
  - Option development and evaluation
  - Input received from consultation
  - Final recommendations
- **Draft recommendations presented to City and Township Councils for approval**

- **Interested in updates?** If you (or your agency or group) are interested in participating in the study or would like to be added to the contact list to receive future updates, please contact lvpembrokeTMP@ptsl.com or one of the Project Managers:

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lvpembrokeTMP@ptsl.com

Brian Lewis
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City of Pembroke
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Kevin Jones
Consultant Team Project Manager
Paradigm Transportation Solutions Limited
(416) 479-9684 x513
lvpembrokeTMP@ptsl.com

- **Visit the project web site**

  www.lvtownship.ca/LVPembrokeTMP/

  for additional information on the study and its progress

Project 220694 Township of Laurentian Valley-Pembroke TMP

#	Name	Address	Email	Date	Resident	Support Recommendations	Support Policy	Comments
1	[redacted]	Town Line Rd, Pembroke On	[redacted]	2023-12-13	Pembroke			Good morning Lauree, Brian and Kevin and other support staff working on the Laurentian Valley / Pembroke East West Transportation Master Plan. I am a resident of Pembroke living on Town Line road near the intersection of Town Line / Bennett Street and Paul Martin / River Road. I have observed some issues with the road through my neighborhood with regards to the he I believe there are several significant dangers to the residents safety in this stretch of road and inefficiencies for local businesses that can be resolved through a short road connection between Hwy 41 (Paul Martin Dr) and Quarr everyone. Safety Issues - Heavy trucks turning right from Hwy 41 on an inadequate turn lane are forced to turn onto the sidewalk to make the corner, coming very close to a fire hydrant and electrical infrastructure. See photo attached. - Heavy trucks routed along a developing residential street. - Town Line has houses all along it and new builds in progress. Further development is in the works further up D'Youville. This route puts large 18 wheel trucks in direct contact with residents. - School bussing route - Bus stops along this route. Local school bus depot also uses this route for many buses every school day, most of them turning left onto Hwy 41 in the morning. The proposed road would allow a more direc - Sidewalk compromised, Pedestrians waiting to cross Town Line are put dangerously close to heavy trucks with limited visibility - Sidewalk being degraded by truck traffic overrunning the curb - ATV trail route - The acquisition of the rail bridge over Hwy 41 by a private entity forced the local ATV trails to be diverted to Town Line this year. This puts these vulnerable vehicles in direct competition with a busy commercia See amendment 2023-43 attached with relevant section highlighted. - Residential proximity Many of the houses on Town Line have small children, elderly residents and dogs who go outside in their front yards to play, visit friends, work in gardens etc. The frequency of these large vehicles is unacceptable for the regular Mail delivery persons often walk in front yards to avoid heavy traffic on the road. (this is fine by me but they shouldn't have to)
2	[redacted]	Round Lake Rd, K8A 0K4	[redacted]	2023-12-13	Laurentian Valley	Yes	Yes	Efficiencies - Many businesses in the area use this route to deliver goods and service vehicles to their clients. The extension of Quarry Rd would shorten their trips saving money for fuel and maintenance of breaks and tires. Businesses inclu - Cassidy Moving and Storage, Township of Pembroke - Public works road maintenance, Saffco aka Efficiency First Insulation & Contracting - KI, Sunbelt Rentals, Intelcom Express, Purolator, BDI Canada Inc., Valley Transportation (school busses), Pemco Steel, Ranger Septic Pumping - EIP Manufacturing, Westburne Electrical Supply, Fastenal Canada - Heavy traffic on the corner of Town Line and Hwy 41 and also on the corner of Town Line and MacKay is causing damage to the street and to the intersections with trucks much heavier than they are designed for. This costs mo - Attract business to fill vacancies in the warehouses and buildings on MacKay street and on Hwy 41 (Paul Martin Dr). - Reduce traffic at the already busy intersection of Town line and Hwy 41. Impediments/Mitigations - A private entity owns part or the land that is required to make the connection to Hwy 41 from Quarry Rd - This parcel of land has been decommissioned by CN rail for years. It is currently unused, not even as a passable walking or ATV path. - Neighbors on proposed route - Currently the immediate neighbors to this proposed road extension are Pemco Steel, a new roofing concern on Hwy 41 (sorry I don't know the name of the business), Valley Apex Training Grounds, Cassidy's Moving and Storag - There appears to be an easement of unused land along the path of the proposed route. - Cost of road and ongoing maintenance - This shorter route will mean fewer turns and heavy breaking on current infrastructure which will be easier to maintain in the long run. - Prematurely repairing and replacing the roads on the current route would be much less frequent given the new route. I hope that I have presented a sufficient argument to persuade you to undertake this project as a significant improvement to the businesses and residents of this part of Pembroke. I really look forward to reading the final Transp If this proposal does not fit into the scope of the current plan please consider it as a project for the Township of Pembroke in the near future. I have forwarded this email to the supervisor of roads and fleets in Pembroke as well,
3	[redacted]	Round Lake Rd, K8A 6W8	[redacted]	2023-12-13	Laurentian Valley	Yes	Yes	Agree as long as there is no amalgamation with Pembroke
4	[redacted]		[redacted]	2023-12-13	Pembroke		Yes	none
5	[redacted]	Zion Line, Beachburg, K0J 1C0	[redacted]	2023-12-13	Other	Yes	Yes	looks like most solutions to connect subdivisions at edge of town. I think new connection "7" is most important link. Seems we need to address getting people from one side of town to the other easier and avoid using downtown we can to encourage development there and walking and cycling to it. I also think a Boundary Rd extnesion should be on the table for future, without the expansion of Pembroke St w. Why wasn't Quarry Rd extension considere As a resident of Pembroke I think it is really important we look at how to help people walk/cycle to their destinations and try to reduce local car trips in the City. We should do what we can to encourage slightly higher densities i natural 15 min City - we should embrace that - even if we don't market ourselves with exactly those words. Also support idea of truck route away from downtown. Bike paths would be helpful. Roundabouts - I agree they are a great idea to have and are working well in other cities. Integrating the bus system slowly would be a good idea. Bus route to the possibly new P3 complex in the indu

	[redacted]		[redacted]				Would like to see more as things develop.
6	[redacted]		[redacted]	2023-12-15	Other	Yes	No	Getting thru Pembroke has always been a struggle, and I understand as bridges are necessary so they limit potential arteries. Traffic flow might be better if Pembroke street was one way and Lake steer was the other way only. I more quickly. Not to forget about pedestrians who should be prioritized as in other cities: give pedestrians the walk light before traffic, and don't allow right turns on reds downtown. This will require retraining but Pembroke dri and Greenwood road and at Drive-In road would benefit greatly from traffic circles. Major cities and even smaller places all over have implemented them successfully and they keep traffic flowing smoothly with opportunities to people can learn how to navigate them
	[redacted]		[redacted]				I didn't clearly see policy recommendations in the document-aside form the need for a study. Pedestrians first, cyclists second, drivers last priority. Let's be a first rate city for people on all lies of transportation. And be mindful c
7	[redacted]		[redacted]	2023-12-15	Pembroke	No	No	There's no money for improvements.
	[redacted]		[redacted]				There should be toll booths set up at the Quebec border so the Quebecois have to pay to use our infrastructure .
8	[redacted]		[redacted]	2023-12-15	Pembroke	Yes	Yes	I think that cycling is not a priority given it is not a major mode of transportation for work. Leisure is a seperate issue. 8% is a high number for people and cycling is not 5 months of the year… perhaps e-bikes will increase given th Love the idea of connecting roads… many end at strange places.. connecting Alfred st would help bypass Pembroke st. Crandal is way too populated to connect and divert traffic and Mary to forced would land near the Lea st intersection so that feels illogical and potentially a jam
	[redacted]		[redacted]				Some yes some no (policies). Have you received data from the cab companies? How many folks are taking them and the heavy routes?
9	[redacted]		[redacted]	2023-12-15	Pembroke	Yes	Yes	
10	[redacted]		[redacted]	2023-12-15	Other	Yes	Yes	none
11	[redacted]		[redacted]	2023-12-15	Other	Yes	Yes	I think that they are all good ideas. Especially the one connecting Drive-In Road to Paul Martin Drive. I would still like to see a better connection in the west end of town. With all the new housing going in behind the No Frills area Road has not been put through. I see your reasons for not doing it, but then a new road needs to be put in somewhere.
12	[redacted]	Sandy Beach Road, Pembroke ON k8A 6W8	[redacted]	2023-12-15	Laurentian Valley	Yes	Yes	The biggest issue is the lack of arteries that go straight east to west. With such a large population in Petawawa needing to travel to the east end for shops etc the only main option is Pembroke street. I've often thought to make l street as the opposite route and using the old rail line to empty out at Miriamichi where the bike path is now. This would alleviate congestion downtown and perhaps offer more parking options. Further there needs to be an artery that follows the same as east to west. Be it Boundary Road to Paul Martin from where it begins in the west end. Creating a more direct north south to the area of Robinson Road would greatly make countless turns to get where your going when trying to find alternate routes to get from east to west or vice versa
	[redacted]		[redacted]				We need to make more of a gird pattern. So many streets in Pembroke are so badly broken up and don't continue through. Congestion will only get worse as the population grows.I think each have great benefits to better transportation however each seems to offer some help with the same issue at the end of the day. It gets you so far before you ha And I dont think people will use the highway as a bypass as much as they would use Boundary road if it were opened up to perhaps Forest Lea in some way.
13	[redacted]		[redacted]	2023-12-15	Pembroke	Yes	Yes	1) Given that a college in Pembroke potentially attracts people from different regions, improving public transportation should be a priority. Of course, one must consider peak hours and demand. 2) Sidewalks are required in many neighbourhoods in the city.
14	[redacted]		[redacted]	2023-12-15	Laurentian Valley	Yes	Yes	Pembroke deffinatley needs an alternative route through town to get to the east end. I worry some of the recommended options wont actually help the traffic. Option 1. Improving mary st, its such a narrow street that theres no route depending on where the roads is located.
15	[redacted]		[redacted]	2023-12-15	Laurentian Valley	Yes	Yes	none
16	[redacted]	Reynold Ave	[redacted]	2023-12-16	Pembroke	Yes	Yes	There are several options that I would support like Option A to extend Mary Street/Alfred Street - From Forced Road to Angus Campbell .... it would help the traffic in the East end from Metro to Pembroke Mall. Option 3 is anoth Pembroke Street West as is. Something that is not on your plan .... I would extend Quarry Road to go straight through to Paul Martin instead of traveling to Townline to go around
	[redacted]		[redacted]				It would be nice to see a four line highway from Pembroke to Petawawa on Pembroke Street West/ Petawawa Blvd ... instead of a turning line. There are many that travel this road everyday to get to work, beaches in the summ
17	[redacted]	Irving street Pembroke ontario K8A2T1	[redacted]	2023-12-16	Pembroke	Yes	Yes	none
18	[redacted]	WILSON RD	[redacted]	2023-12-16	Laurentian Valley	Yes	Yes	Less lights, more roundabouts. The traffic that is accumulating is made worse by adding traffic lights. Single lane roundabouts keep traffic moving, reduce accidents and wont bunch up vehicles
19	[redacted]		[redacted]	2023-12-16	Laurentian Valley	Yes	Yes	Please look at the forest lea & Bline intersection. Its is dangerous and so many accidents monthly/yearly, well above the norm
20	[redacted]	Alfred St E, Pembroke K8A 7Z6	[redacted]	2023-12-16	Pembroke	Yes	Yes	Make main St and Lake St each one way streets between Walmart and Miramichi Lodge. If is is possible purchase the lot at Alfred St E thus opening Alfred St as an alternative street to cross from the East End Mall to the West End
21	[redacted]		[redacted]	2023-12-17	Pembroke	No	Yes	The problem isn't the roads. For the 84% of 164 people you surveyed maybe. Due to the fact they drive. This is inaccurate as to Pembroke's needs as there are 13,000 + people here alone. Your survey was conducted in 0.012 % This is a road construction master plan, not transportation. It is not feasible for a person to walk from West End to East End Pembroke alone, as it can take anywhere from an hour to 2.5 depending where you are going, with no need for winter clothes this year, it doubles down on the fact that this is an unsafe ask for our residents
	[redacted]		[redacted]				Re survey. Re evaluate. Use your brain
22	[redacted]	sandstone crescent	[redacted]	2023-12-17	Other	Yes	Yes	Thanks for this initiative along with Road plan its also worth to consider public transport option. This option makes the areas more connected

23	[redacted]		[redacted]	2023-12-17	Pembroke	Yes	No	none
								Plans for public transport..
24	[redacted]		[redacted]	2023-12-18	Other	Yes	Yes	The intersection at the Esso gas station and the Quebec turnoff to #148 is one of the most dangerous intersections that I have seen in over 50 years of driving in Ontario. It needs a traffic light.
25	[redacted]		[redacted]	2023-12-18	Other	Yes	Yes	I agree with the recommending projects and would like to see some of the 'not recommended' projects done as well. Most of the recommendations do not tackle the congestion through the downtown area. I would like to see t Boundary Road east to west
26	[redacted]		[redacted]	2023-12-18	Laurentian Valley	Yes	Yes	none
27	[redacted]		[redacted]	2023-12-19	Pembroke	Yes	Yes	Roads to be repaired properly , not cheaply, same roads are constantly have to be redone.
	[redacted]		[redacted]					There is dire need for transportation in Pembroke. For people that dont drive there is no reliable transportation. There is only one taxi company that seems to be the only one that stays in business. You wait an hour to bring gr groceries to put in car, or help at destination . Just overall rude because they can be . I refuse to give them money anymore. I will do 10 trips walking before i call them ever again. We need buses , uber anything .
28	[redacted]		[redacted]	2023-12-20	Pembroke	No	No	We cannot afford it
29	[redacted]		[redacted]	2023-12-20	Pembroke	Yes	Yes	We need a better/auxiliary way to get from the east end to the west end past the other side of the forest lea. The past infrastructure updates in the City of Pembroke have put incredible stress of road users because of POOR pla area would be an asset.
	[redacted]		[redacted]					Make driving those Pembroke easy
30	[redacted]		[redacted]	2023-12-20	Pembroke	Yes	Yes	none
31	[redacted]		[redacted]	2023-12-20	Pembroke	Yes	Yes	I really like the idea of the Drive-In Road connect to Mud Lake or Paul Martin and the extension of D-Youville to Drive In Road. I believe that these connections alone will allow to filter a lot of traffic away from areas that are not without having to congest Mary Street or Pembroke Street
	[redacted]		[redacted]					It was well thought out, they did a good job of looking at all areas of the City and breaking down the implications of their recommendations
32	[redacted]	Esther St, Pembroke	[redacted]	2023-12-20	Pembroke	Yes	Yes	Although the main thoroughfare needs major attention, i would like attention paid to areas around schools. There are no sidewalks. Children of very young ages have to walk home. If buses cannot be afforded to shuttle children from school
	[redacted]		[redacted]					Thought. What about using Nelson street and Pembroke street as one ways during the busy season. Use Nelson/Lake streets for west bound traffic only and Pembroke street for east bound traffic only. Once they hit Munro an
33	[redacted]	B Line road	[redacted]	2023-12-20	Laurentian Valley	Yes	Yes	none
34	[redacted]		[redacted]	2023-12-20	Pembroke	Yes	Yes	I am very happy with the Mary Street extension to Forest Road as well as the Alfred extension across the park. I believe changes are needed at Trafalgar round Lake Road and McKee Street. I would suggest McGee Street be turned into a dead end so that it does not connect and cause the three-way wacky intersection.
	[redacted]		[redacted]					With regards to pedestrians boundary Road, seriously requires a pedestrian crossing for safety of all.
35	[redacted]	Roy St Pembroke ON K8A 6R6	[redacted]	2023-12-20	Laurentian Valley	Yes	Yes	Two concerns. 1) One concern is that Mary St is the obvious candidate for a cycling lane across the city. It's closer to the schools and daycares, it's flat and it's much easier to widen as it's not the downtown core. While improvem percentage of riders and walkers will not increase if the infrastructure isn't there. Dont get locked into the chicken/egg problem of under investing in active transportation because no one uses it. You must start somewhere and how a non-driver is supposed to get into the downtown. All of the current options are terrible, either choked with auto traffic on narrow and winding streets, or on quiter roads where maintenance is so bad that riders are likely especially around peak times. It would be nice if the city could provide some real recommendations rather than give vague promises to create a separate plan. Active transportation IS transportation, it will always fail to develop
36	[redacted]		[redacted]	2023-12-20	Laurentian Valley	Yes	Yes	Having the connection between drive in road and Paul Martin drive would be great. Not having to drive completely into town to drive back out to places like Home Depot, etc would save a lot of time, and traffic. I believe turning
37	[redacted]		[redacted]	2023-12-20	Laurentian Valley	Yes	Yes	none
38	[redacted]		[redacted]	2023-12-21	Laurentian Valley	Yes	Yes	none
39	[redacted]	tv tower rd	[redacted]	2023-12-21	Laurentian Valley	Yes	Yes	Always bike lanes all the time. Keep the cyclists safe
	[redacted]		[redacted]					I think that cycling safety and bicycle infrastructure is majorly lacking let’s get some bikes racks in town
40	[redacted]		[redacted]	2023-12-21	Pembroke	Yes	Yes	Get a public transit system. It’s vital for the community. Stop making excuses and find a way to make it work. LV can pay for the extra traffic load on Angus Campbell drive and Matheson due to that proposed subdivision.
41	[redacted]		[redacted]	2023-12-22	Pembroke	Yes	Yes	none

Appendix B

Public Opinion Survey Results

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

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1 Introduction

As part of the public engagement program for the Transportation Master Plan, a public opinion survey was developed to seek feedback from residents and visitors to the area about their travel patterns, issues and concerns, and ideas for improvements.

This report summarizes the survey, the response rate, and the observations and findings.

- Section 2 provides a brief description of the survey and public notification processes used; and
- Sections 3 summarize the key findings from the survey including responses to free from questions where respondents could add their own comments or ideas. Responses have been included for these questions as they were provided by the respondent without any editing.

2 Online Survey

The public survey was designed to invite feedback from residents and stakeholder groups on their issues, concerns, and opinions regarding a host of transportation topics.

The survey was hosted in SurveyMonkey, and a link to access the survey was provided on the Township and City websites. Printed copied of the survey were made available at the Township and City municipal offices for those without computer access. Social media notifications were also sent via the Township and City's accounts.

The survey included 15 questions in total, with 12 structured questions asking users to select from various responses and 3 open-ended questions, where participants could identify the issues of most interest to them.

The online survey was available between May 29 and October 30, 2023 through Paradigm's Survey Monkey account. **Attachment B** provides a copy of the questionnaire posted on SurveyMonkey.

3 Survey Findings

The Township received 164 responses to the survey online (164). No paper copies were received. While the results are not statistically representative of the whole Township and City, they provide valuable insight on local transportation opportunities and challenges.

The following summarizes the results of survey organized by question:

Question 1 – Daily Activities in Laurentian Valley

Figure 3.1 shows that most respondents travelling to destinations within Township of Laurentian Valley make the trips to access shopping and leisure/recreation activities, with relatively few making trips to work or school. This suggests travel to location within the municipality is more discretionary in purpose and less utilitarian.

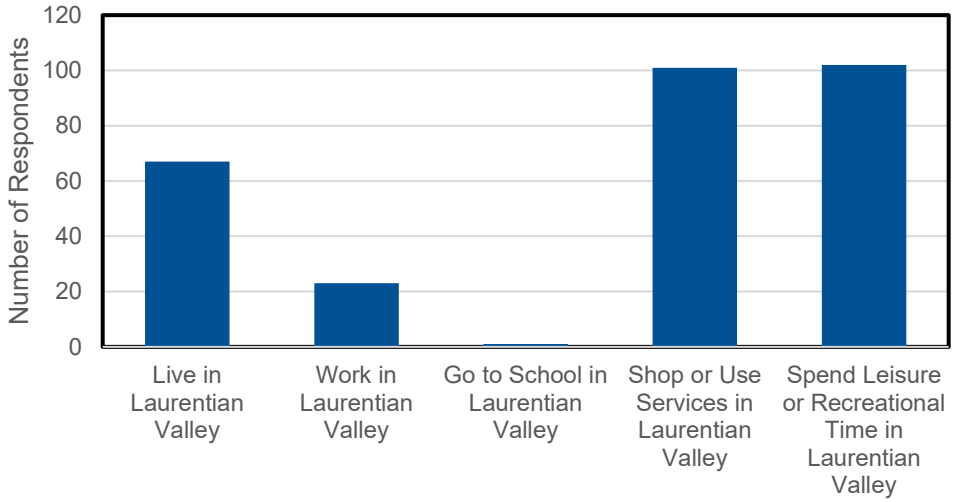


FIGURE 3.1: DAILY ACTIVITIES WITHIN LAURENTIAN VALLEY

Figure 3.2 shows a similar pattern to travel within Laurentian Valley for travel within Pembroke, as most respondents make trips to access shopping and leisure/recreation activities, with relatively few trips being made to school.

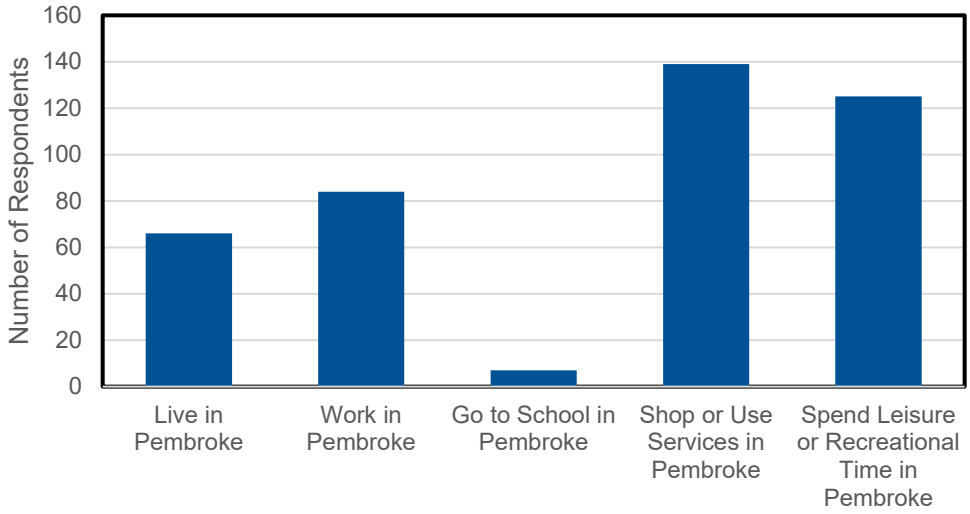


FIGURE 3.2: DAILY ACTIVITIES WITHIN PEMBROKE

TABLE 3.1 – SURVEY RESPONSES QUESTION 1

Answer	**Responses**	
Live in the Township of Laurentian Valley	41.1%	67
Work in the Township of Laurentian Valley	14.11%	23
Go to school in the Township of Laurentian Valley	0.61%	1
Shop or use services in the Township of Laurentian Valley (doctors office, dry cleaning, food services, etc.)	61.96%	101
Spend leisure or recreation time in the Township of Laurentian Valley (includes visiting family or friends or recreational activities)	62.58%	102
Live in the City of Pembroke	40.49%	66
Work in the City of Pembroke	51.53%	84
Go to school in the City of Pembroke	4.29%	7
Shop or use services in the City Pembroke (doctors office, dry cleaning, food services etc.)	85.28%	139
Spend leisure or recreation time in the City of Pembroke (includes visiting family or friends or recreational activities)	76.69%	125
Total Responses = 163		

Question 2 – Distance Travelled from Home to Typical Destination

Figure 3.3 shows that 30% of respondents indicated that they typically travel a distance greater than 10 kilometres from where they live to work or school. The longer distances these individuals travel make it more difficult to transition from single occupancy vehicles (SOVs) to active transportation modes for trip making. Approximately 28% of respondents indicated they travel less than 5 kilometres to their typical destination, which is more attractive for cycling.

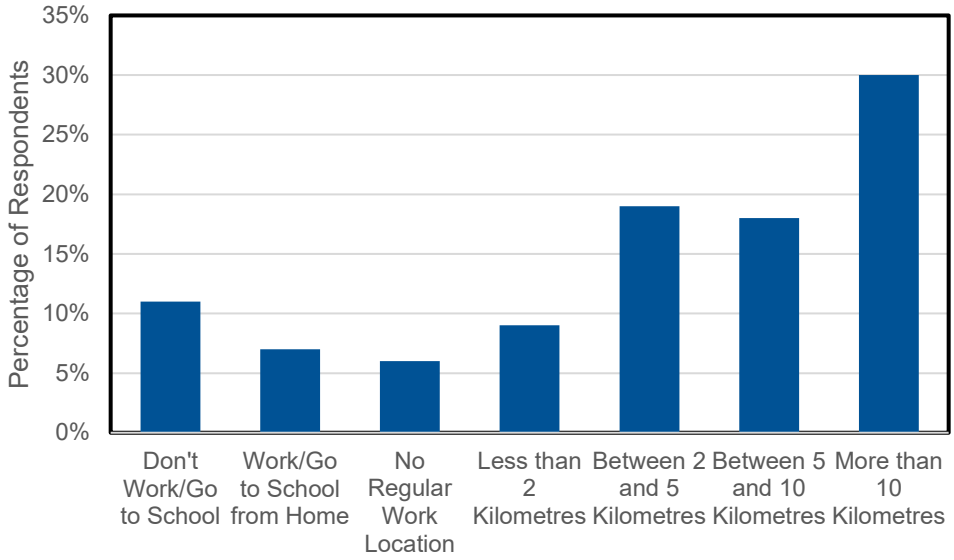


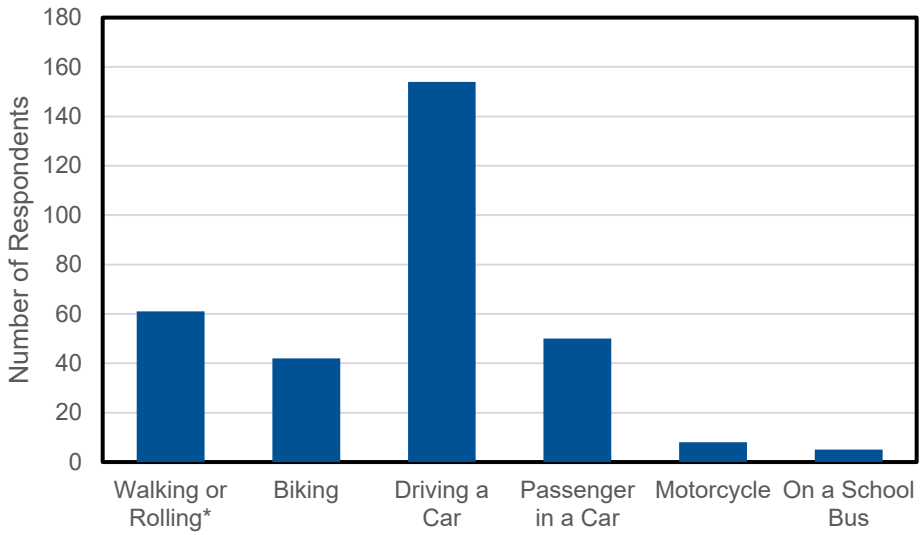
FIGURE 3.3: DISTANCE TRAVELLED FROM HOME TO TYPICAL DESTINATION

TABLE 3.2 – SURVEY RESPONSES QUESTION 2

Answer	Responses	
Don't work/go to school	11.25%	18
Work/go to school from home	6.88%	11
No regular work location	6.25%	10
Less than 2 kilometres	9.38%	15
Between 2 and 5 kilometres	18.75%	30
Between 5 and 10 kilometres	17.50%	28
Greater than 10 kilometres	30.00%	48
Total Responses = 160		

Question 3 – Mode of Travel within Laurentian Valley and Pembroke

Figure 3.4 shows that most respondents drive a car for trips within Laurentian Valley and Pembroke. A significant portion also walk/roll or are passengers in a car. Participants were able to select more than one travel mode.



*refers to the use of an assistive device on wheels such as a wheelchair

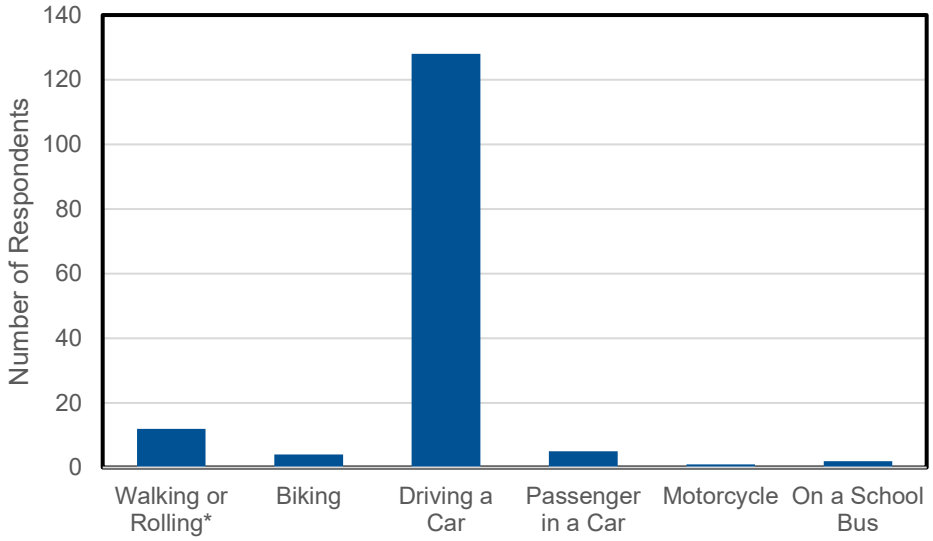
FIGURE 3.4: MODE OF TRAVEL WITHIN LAURENTIAN VALLEY AND PEMBROKE

TABLE 3.3 – SURVEY RESPONSES QUESTION 3

Answer	Responses	
Walking or rolling* (*Refers to the use of a wheelchair or other mobility device)	37.20%	61
Biking	25.61%	42
Driving a car	93.90%	154
Passenger in a car	30.49%	50
Motorcycle	4.88%	8
On a school bus	3.05%	5
Total Responses = 164		

Question 4 – Mode of Travel for Work or School

Figure 3.5 shows that over 84% of respondents indicated that driving is their most common mode of travel. Walking/rolling was the second most common (8%), with passenger in a car, cycling, on a school bus and motorcycle completing the list.



*refers to the use of an assistive device on wheels such as a wheelchair

FIGURE 3.5: MODE OF TRAVEL FOR WORK OR SCHOOL

TABLE 3.4 – SURVEY RESPONSES QUESTION 4

Answer	Responses	
Walking or rolling* (*Refers to the use of a wheelchair or other mobility device)	7.89%	12
Biking	2.63%	4
Driving a car	84.21%	128
Passenger in a car	3.29%	5
Motorcycle	0.66%	1
On a school bus	1.32%	2
Total Responses = 152		

Question 5 – Barriers to Walking or Rolling

Participants were asked what prevented them from walking or rolling around Laurentian Valley and Pembroke more frequently. As **Figure 3.6** shows, the most common reasons stated for not walking and rolling around Laurentian Valley and Pembroke were “Destinations are too far”, “Seasonal Conditions”, and “Too much to carry to/from destinations”. Respondents were permitted to select more than one response.

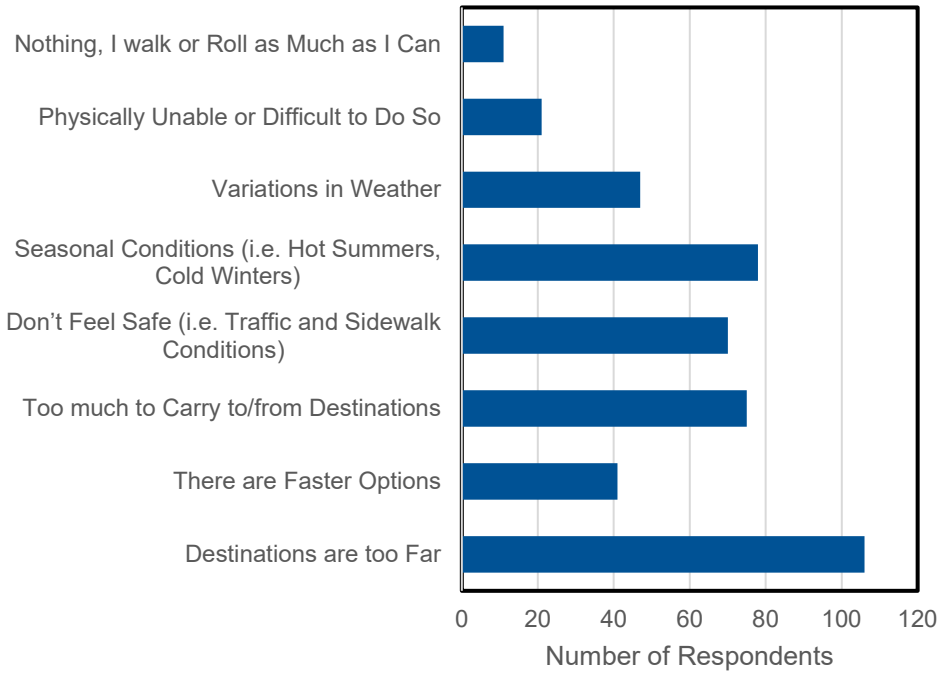


FIGURE 3.6: BARRIERS TO WALKING OR ROLLING

TABLE 3.5 – SURVEY RESPONSES QUESTION 5

Answer	Responses	
Destinations are too far	66.25%	106
There are faster options	25.62%	41
Too much to carry to/from destinations	46.88%	75
Don't feel safe (i.e. traffic and sidewalk conditions)	43.75%	70
Seasonal conditions (i.e. hot summers, cold winters)	48.75%	78
Variations in weather (i.e. rain)	29.38%	47
Physically unable, or difficult to do so (due to sidewalk/trail conditions and/or personal ability)	13.13%	21
Nothing, I walk or roll as much as I can	6.88%	11
Total Responses = 160		

Question 6 – Barriers to Cycling

Participants were asked what prevented them from cycling around Laurentian Valley and Pembroke more frequently. As **Figure 3.7** shows, the most common reasons stated for not cycling around Laurentian Valley and Pembroke were “Don’t Feel Safe”, “Seasonal Conditions”, and “Too much to carry to/from destinations”. Respondents were permitted to select more than one response.

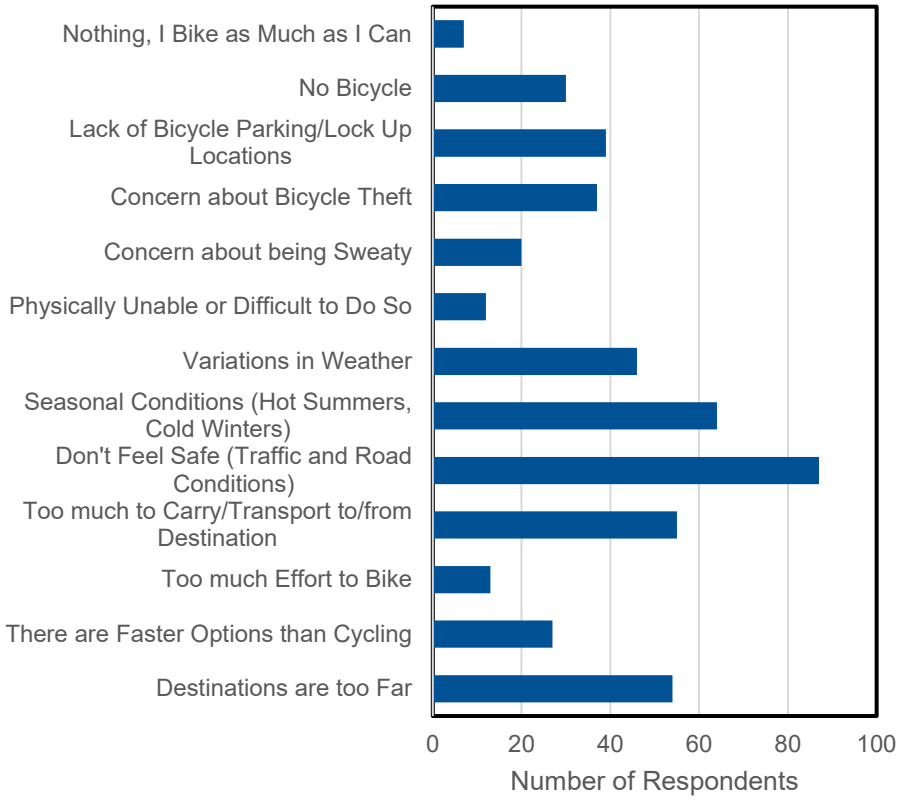


FIGURE 3.7: BARRIERS TO CYCLING

TABLE 3.6 – SURVEY RESPONSES QUESTION 6

Answer	Responses	
Destinations are too far to cycle	33.33%	54
There are faster options than cycling	16.67%	27
Too much effort to bike	8.02%	13
Too much to carry/transport to/from destination	33.95%	55
Don't feel safe (e.g. traffic and road conditions)	53.70%	87
Seasonal conditions (e.g. hot summers, cold winters)	39.51%	64
Variations in weather conditions (e.g. rain)	28.40%	46
Physically unable or difficult to do so	7.41%	12
Concern about being sweaty	12.35%	20
Concern about bicycle theft	22.84%	37
Lack of bicycle parking/lock up locations	24.07%	39
No bicycle	18.52%	30
Nothing, I bike as much as I can	4.32%	7
Total Responses = 162		

Question 7 – Measures to Improve Traffic Safety

Participants were asked to rank a list of measures, in order of importance, for improving the safety of vehicular traffic movement in Laurentian Valley and Pembroke. As **Figure 3.8** shows, respondents indicated that "Improving the road conditions" is the most important measure. Respondents were asked to select one level of importance for each measure.

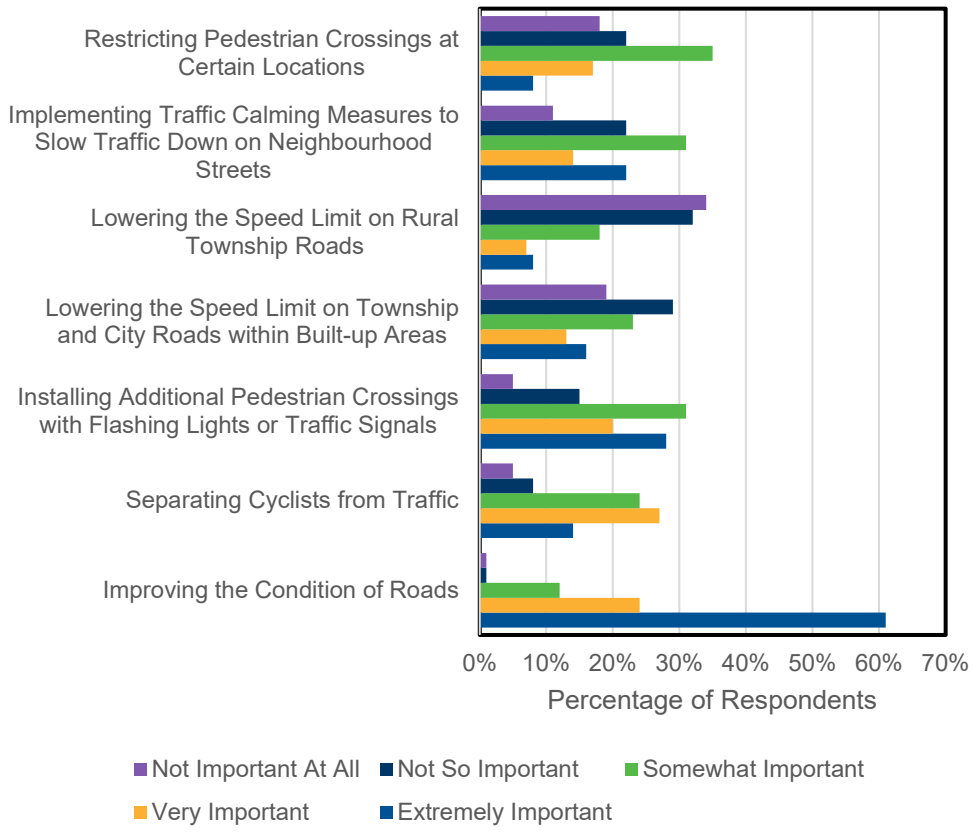


FIGURE 3.8: MEASURES TO IMPROVE TRAFFIC SAFETY

TABLE 3.7 – SURVEY RESPONSES QUESTION 7

Answer	Extremely Important	Very Important	Somewhat Important	Not So Important	Not At All Important	Total
Improving the condition of roads	61.11% 99	24.07% 39	12.35% 20	1.23% 2	1.23% 2	162
Separating cyclists from traffic	35.40% 57	27.33% 44	24.22% 39	8.07% 13	4.97% 8	161
Installing additional pedestrian crossings with flashing lights or traffic signals	28.40% 46	20.37% 33	30.86% 50	15.43% 25	4.94% 8	162
Lowering the speed limit on Township and City roads within built-up areas	16.25% 26	13.13% 21	23.13% 37	28.75% 46	18.75% 30	160
Lowering the speed limit on rural Township roads	8.23% 13	6.96% 11	18.35% 29	32.28% 51	34.18% 54	158
Implementing traffic calming measures to slow traffic down on neighbourhood streets	21.74% 35	13.66% 22	31.06% 50	22.36% 36	11.18% 18	161
Restricting pedestrian crossings at certain locations	7.59% 12	17.09% 27	35.44% 56	21.52% 34	18.35% 29	158

Question 8 – Priorities for Making Travel more Convenient

Participants were asked to rank a list of priorities, in order of importance, for improving the convenience of vehicular traffic movement in Laurentian Valley and Pembroke. As **Figure 3.9** shows, respondents indicated that "Improving the condition of roads" is the most important measure, followed by "Adding turn lanes and/or phasing at more intersections" and "Better coordinating traffic signals". Respondents were asked to select one level of importance for each priority.

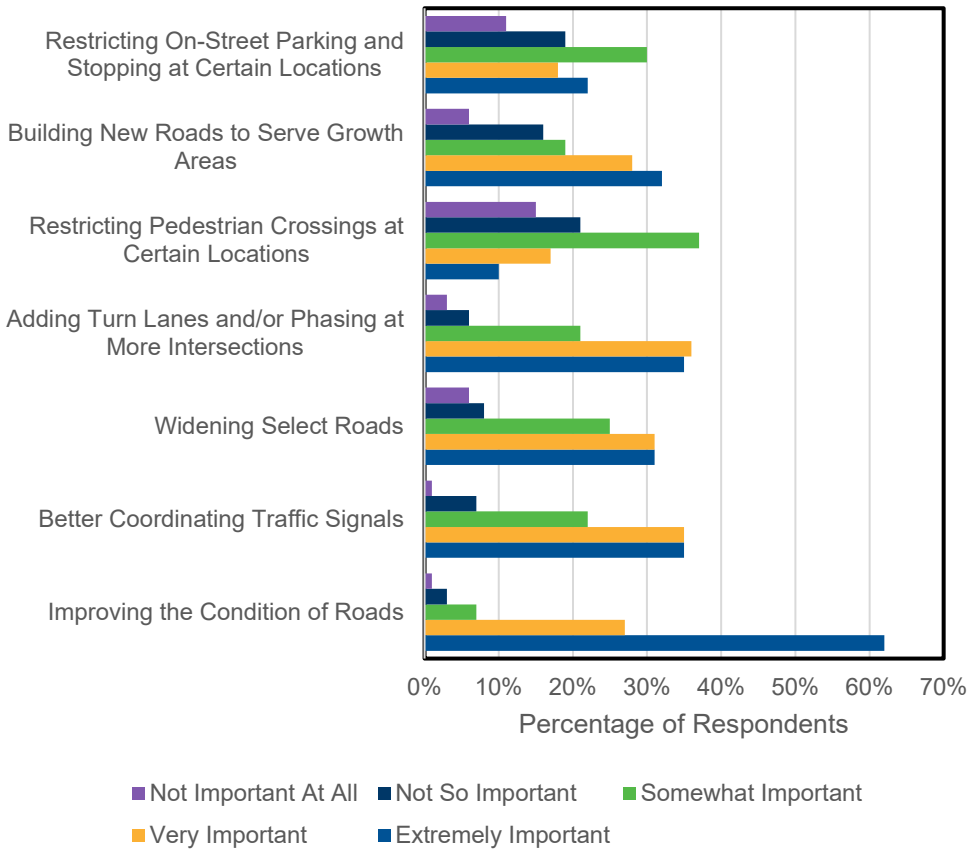


FIGURE 3.9: PRIORITIES FOR MAKING TRAVEL MORE CONVENIENT

TABLE 3.8 – SURVEY RESPONSES QUESTION 8

Answer	Extremely Important	Very Important	Somewhat Important	Not So Important	Not At All Important	Total
Improving the condition of roads	62.35% 101	26.54% 43	7.41% 12	3.09% 5	0.62% 1	162
Better coordinating traffic signals	35.40% 57	34.78% 56	21.74% 35	7.45% 12	0.62% 1	161
Widening select roads	30.82% 49	31.45% 50	24.53% 39	7.55% 12	5.66% 9	159
Adding turn lanes and/or advance phasing (i.e. green arrow) at more intersections	34.59% 55	35.58% 57	20.75% 33	5.66% 9	3.14% 5	159
Restricting pedestrian crossings at certain locations	10.19% 16	16.56% 26	36.94% 58	21.02% 33	15.29% 24	157
Building new roads to serve growth areas	31.87% 51	27.50% 44	18.75% 30	15.63% 25	6.25% 10	160
Restricting on-street parking and stopping at certain locations	21.74% 35	18.01% 29	30.43% 49	18.63% 30	11.18% 18	161

Question 9 – Positives of Moving Around Laurentian Valley and Pembroke

Participants were asked to share what they like best about moving around Laurentian Valley and Pembroke. Key themes identified included:

- Walkability in the Pembroke Downtown Core;
- Trails and sidewalks are wide and provide good connectivity between communities;
- Amenities are accessible and in good proximity to one another;
- Flashing pedestrian crossings;
- Multiple alternate routes available for drivers; and
- Residential roads with traffic calming measures.

Answers Provided

Answered: 91 Skipped: 73

- The development of the Pembroke downtown and the Algonquin Trail has been great. The walkability and parking in the downtown core of Pembroke.
- Hmm.. traffic is generally moderate except at the end of work days.
- A vast array of different types of scenery, shops and neighborhoods.
- Congestion starting to build
- Not too much traffic
- Nothing is too far
- The biking trail is nice. When the roads get paved they are very nice for a long time.
- The rail trail and the sidewalks that are wide enough for running and walkkng
- audible traffic lights since I am a blind person
- the scenery is fantastic and the country roads are lovely to bike on
- Accessible to amenities
- Roads are well maintained in winter
- Nice that you can walk/cycle between the two municipalities in the more urban areas.
- It is very helpful to have access roads such as Mary St. and Lake St. so that we can avoid the traffic on Pembroke Street.
- I like smaller community driving and overall commutes within Laurential Valley and Pembroke are OK.
- -the closeness of everything, being a rural area as compared to a large city - recent improvements to traffic lights and crosswalks
- It does not work very well at all.
- Routes are direct to major centers, but there are alternate routes as well.
- Best moving around LV and Pembroke is start bus service. Thats improved more development in people. For instance, more kids, people, can go job, gyms, playground and more pleasure around community.
- Algonquin Trail and paved shoulders. I would love to see more roads with paved shoulders.
- It is a smaller community and usually traffic isn't too bad unless there is detours from construction.
- Very Accessible

- Major routes in and out of town are in poor condition, Boundary Rd. River Rd, Hwy 148 all need to be addressed asap
- Roads are generally in good condition
- The advanced green is making turning left much easier. The flashing pedestrian crossings are good.
- Open Hazleys Bay road to through traffic.
- There are some shortcuts to get from one end of Laurentian Valley, through Pembroke, to the other end. This makes it more time efficient.
- I love the Algonquin Trail
- Everything we require is within a few minutes of where we live.
- The advanced turn signal on the stop lights are good but they are not consistent
- It's a pretty drive
- Using Drive in road to by pass traffic.
- Nothing works well. The road conditions have been neglected, traffic has increased immensely and the current traffic flow is backed up constantly
- The algonquin trail makes it extremely convenient for the travel I do in the area.
- Nothing is working well. There is no easy way of moving around LV/Pembroke.
- No traffic Jams traffic moving no stop and go
- Traffic flow seems ok most of the time. Lights work.
- Avoid using residential street (eg. Elizabeth Street) to get to commercial areas and schools, as a shortcut.
- Green space
- Easy to hop onto county roads to get to hwy 17
- I can’t come up with an answer. I avoid driving in Pembroke from 9 am until 6 pm because traffic can just be terrible.
- Everything is close and easy to get to. There are no complicated intersections or round abouts.
- We like the left turn signals that have been installed on some traffic lights . We like the widening of Drive In Road. We like the reduced speeds on the roads .
- When there are issues of traffic volume (construction, time of day, street closures) there are several alternate routes that may be used if a person is familiar with getting around.
- The Algonquin trail is wonderful, Pembroke is flat and compact so moving around by walking or bike could one day be easy if the roads were safer, slower and quieter.
- There are several concerns like better weather maintenance in the winter for sidewalks. There should be a bike lane that goes from west side of Pembroke to east side of Pembroke that has no and small hills.
- relatively easy to get around
- Sidewalks are kept in a good state.
- hard question to answer
- Most places are very accessible.
- It is still a smallish city. Off peak traffic is still mostly low.
- Short drive times to travel between destinations.
- Very little! The two communities don't seem to work together. There is no easy way to get around Pembroke (i.e. express route). The roads you have in Pembroke are horrible and deteriorating faster than you fix them.
- Apart from the main roads there is minimal traffic.
- Roads are easy to navigate and most have good signage.
- traffic is always moving
- small town vibes
- The downtown core is pleasant to walk around, however, would benefit from removing parking on Pembroke Avenue to allow better flow of traffic and turning lanes. Grocery stores are too far apart to walk to.
- I enjoy walking around the downtown and frequenting the variety of shops and restaurants.
- The new traffic lights with delayed turning signals is a great new change.

- Advanced turning signals
- There is nothing I like.Traffic is crazy and lights on mudlake rd. and Paul Martin drive not green long enough.Ii live near Sunset nursery and traffic is driving me crazy.I may move because of it.
- Love the Algonquin trail
- Close proximity to everything. Pembroke is only 14 square km so it's easy to get around—lots of space and not many traffic build-ups.
- The flowers
- N/A
- the Algonquin Trail is an amazing asset that is, generally, well maintained and services both communities well. Being removed from the surface road system (generally), it is safe for all pedistrian traffic
- I like the Algonquin Trail multi-use path as an option for getting around the city without the threat of vehicles. However, I wish it connected more directly to useful destinations such as shopping and work.
- There's more then one road to get where you want to go
- I like that it is not too restrictive. Most roads are two-way, I can turn right on red, I have options about which routes to take, speed limits are reasonable.
- Algonquin Trail efficiently provides connection thru the City of Pembroke for destinations in east or west Laurentian Valley.
- When roads are finally repaved and widened but bad when man hole covers are built in tires groove areas.
- Laurentian Valley movement is great, Pembroke is too busy and traffic moves slowly at peak times.
- Roads aren't complicated by roundabouts or too many markings.
- Pembroke is relatively small in size, and I like that I can walk from my home to downtown. I also like the ability to connect to the Algonquin Trail.
- The shops downtown now are amazing! The restaurants and marina, a lot to love.
- I don't the traffic is getting heavier each yr
- The advanced left turn lights are definitely a step in the right direction.
- Downtown core is fantastic, can walk everywhere, lots of parking.
- I think that there is plenty of room for improvement in Pembroke and Laurentian Valley's transportation network. Not sure I have many positives to share when comparing to our neighbours.
- Parking options are good, advance green lights are helpful, good crosswalk placements
- Residential roads have good calming measures through frequent stop signs. Sidewalks exist in most areas. Crosswalks are typically well placed (Boundary is the exception). Driving has good options that flow well (Boundary, Christie, MacKay/Drive In).
- Using the streets that can be traveled parallel to the busy ones.
- Not much. Traffic is crazy. Where are all these cars coming and going to. Need other routes to walmart than the main road .
- Passing througg
- There isn't too much, I cringe when I have to drive from one end of town to another.
- Roads in LV Twp not so busy like Pembroke City. Shoulders too narrow if two cars from opposite direction pass each other as well as me on bicycle.
- the low number of traffic lights, used to be none!
- Newly paved roads incorporate sidewalks and bicycle lanes.
- advanced green at some intersections.
- It is easy and safe to move around the Township and the city.

Question 10 – How to Improve Moving Around Laurentian Valley and Pembroke

Participants were asked to share what they think could make moving around Laurentian Valley and Pembroke better. Key themes identified included:

- Wider network of bike infrastructure (protected bike lanes, bike lockers and parking);
- Improved public transportation options (bus routes, more cost-effective methods);
- Improve paving on roads;
- Introduce more roundabouts at intersections to improve traffic flow;
- Bypass for Pembroke Downtown Core; and
- More traffic calming measures and improved pedestrian crossings.

Answers Provided

Answered: 119 Skipped: 45

- more options such as cost effective transportation
- Bike lanes connecting the Algonquin trail to business sectors throughout Pembroke to encourage active transportation. Also, the bike rentals that are available at trail heads, downtown, mall, and schools (especially those at the edge of the city). Public transportation should be considered from all schools to main business areas to encourage employment, cooperative education, etc...
- No on street parking in downtown Pembroke. Free up parking on side lots. More sidewalks throughout the city for pedestrians.
- Traffic lights on drive in road
- Open Quarry Road with a roundabout off Paul Martin Drive, now it takes my staff and delivery trucks 15 to 20 minutes from 8 am to 9 am and again from # pm to 6 pm to access our buildings on Mackay St. Townline Road has a steep pitch from Paul Martin to Mackay st, and 100 to 200 vehicles in busy time have to use a 4 way stop. We stop 15 to 20 times to clear this 4 way stop. When its snows double that with cars slipping in front of us.
- A revamp of traffic patterns to cross downtown Pembroke…..plus a better direct access road from highway 17 to the downtown area of Pembroke.
- Fix the roads! This area as the worst conditions in Ontario.
- Public transit/expanded daily routes to Ottawa
- better road work coordination
- Public transportation options.
- Consider traffic circles to improve flow a certain intersections
- Wider roads or more paved sidewalks or biking routes. A bypass for downtown would be nice. There should be bridges at the interchanges at HWY 17 too many accidents at the lights. Why are there stop lights on a highway that is absurd. too many heavy trucks running the red lights because the yellow is not long enough.

- Fewer cars on the road. We could very adorably implement public buses and vans to reduce single traveler private vehicles. We have to reduce emissions in ways that address transport affordability.
- good public bus service
- Slow down rural traffic, and build an actual bike lane.
- I am responding as an Employer. Our staff have difficulties due to the lack of public transportation. I was hoping this study would facilitate its implementation.
- More traffic signals where traffic flow is higher.
- Re-educating the drivers
- Public transit. More bike paths, better/additional side walks
- Parking, safer for bikers and pedestrians
- fixing roads with special attention to main arteries such as B-Line Adding sidewalks to main arteries in Pembroke--Nelson Street especially Remove street parking on Pembroke Street or make it one way with Lake Street being the other way more left turn lights not just lanes
- Improving ease of getting East/West at busy traffic times, either with more lanes, better coordination of signals, or another option to bypass driving through bottlenecks.
- Road conditions and overall safety - many roads don't have paved or hardened shoulders. If this isn't available, people are less likely to walk and/or cycle. I understand that sidewalks aren't available everywhere, but having a shoulder so people feel safe is integral.
- I am not a fan of the zigzag patterns within the city. If Lake Street and other access roads help to connect the east and west sides of town. On either end there is essentially one main access to the malls which bogs traffic.
- I would like to see better kept roads, the pot holes and rough roads make for a lot of wear and tear on vehicles. When possible, I try and avoid noticeable pot holes, depending on traffic flow, it is not always easy to do.
- -better, safer biking options on roads -more access from Algonquin Trail to Pembroke St. & highway -less traffic jam on Pembroke St. -traffic lights at key intersections -better entry / exit to businesses
- 1 Way Streets. Make Downtown a 1 way and Lake a 1 way. Boundary Road should be opened up to Matthews Avenue area.
- Removing parking spots on main route through Pembroke downtown.
- For job, entertainment, shopping, meeting up friend for coffee, gym, sports.
- More bike trails and paved shoulders
- There is no public transportation and would like more bike lock ups
- Improving road conditions and adding lanes for bicycles or at least installing “share the road” signs to bring attention to inconsiderate drivers
- I think it is fine the way it is.
- Many of the main arteries are in terrible condition.
- Extending Paul Martin Drive through to Quarry Rd would help vehicles and Heavy truck traffic from tearing up the streets and congesting traffic and by pass Pembroke altogether.
- Better traffic flow at the Hwy 148 intersection
- Remove the gate between Forest Park Road and Hazley Bay Road
- Hire companies that can replace a culvert without leaving it a bumpy mess my child could have paved smoother.
- Not sure what really can be done. Our roads are narrow and many drivers are impatient.
- Alternate routes from west to east in Pembroke
- A more direct route with roundabouts instead of traffic signals from one end to the other. Opening up boundary road as a possible bypass. Putting a traffic roundabout at Drive-In and Pembroke street. Public transportation options between all towns.
- Bike lock areas in downtown Pembroke and the malls
- There are no sidewalks in Laurentian Valley so you have to walk on the road/street.
- Extend Paul Martin Drive from the long corner at Storwal through to the long corner where Mackey Street turns into Drive In Road. A stop light at Drive In Road intersection with Pembroke Street West.

- Having some form of public transportation.
- There need to be a stop light at the intersection of Drive -in Road and Pembroke Street!!! Build a road from Irving big Stop through to Mackay street to divert traffic from town-line!
- Make new roads so you aren't forced to go thru Pembroke. Traffic lights at Drive in Road, 148-Greenwood Road intersections, and put a new road from Drive in Rd to the Truck stop so you don't have to go through town
- More sidewalk access on Pembroke St E
- Connect trails to parks and rec facilities
- The City of Pembroke needs more thruways in order to have better traffic flow from east to west and west to east. Pembroke Street is much too congested; in avoiding traffic it causes drivers/patrons to bypass downtown retailers.
- Traffic circle at 148 turn to Quebec
- Road from D'Youville to Robinson. Open up Quarry Road at Paul Martin
- Rond point at strategic locations (eg. Pembroke/Drive-in)
- More safe crossings. Boundary road and trafalger is terrible.
- More designated walking bike paths
- left turn lane at riverside drive and Pembroke street; repair boundary road as it feeds to hwy 41 and then 17. Nelson st repairs - people use that road a lot to avoid downtown
- When main streets are closed (Bennet, Boundary, Pembroke, MacKay, etc) it's long detours to go around / they don't make sense. When pembroke street was closed, the Lee st work around was awful! This traffic study is a good start.
- Bike lanes
- Ring roads designed to move traffic quickly between the east and west. A connection of Paul Martin Drive to Mackay Street near Pemco Steel. Stone dust and grading of the rail line between b-line road and tv tower road for biking.
- Fixing the conditions of the roads. Way too many pot holes and uneven surfaces. As a cyclist, I find myself loading my bike and riding in other communities as it is so rough and uncomfortable to ride in Pembroke. My car has gone through 2 wheel bearings since moving into Pembroke.
- More ways to go across from East to West
- Traffic lights at the intersection of Drive In Road and Pembroke Street East. Widening some roads for bicycles. Creating bicycle/walking paths from east to downtown and to west. More sidewalks
- In the City of Pembroke, making both Pembroke St and Nelson/Lake St one way streets would certainly help the flow of traffic going both east and west. The new traffic lights at Mackay and Pembroke St need to be adjusted as there is often a backup of traffic travelling east.
- Slower streets with traffic calming, and more pedestrian crossings. End all mandatory minimum parking requirements on new developments to encourage active and micro transportation. Pembroke street between Mcdonalds and The PMC should feel like a slow living street instead of a highway. Lake street/Nelson is much more effective at moving vehicular traffic. Restrict traffic and parking downtown in favour of walking and cycling. Especially large vehicles! Downtown should be a play to live and linger not a highway!!! I bike everyday to work on Greenwood road and it can be terrifying when the cars pass fast and close. Perhaps a new bylaw that requires a certain amount of distance beside cars and bikes. Cars often don't stop at the two crosswalks on William street. This is a common complaint in my neighborhood. It seems like a waste that the B line trail is not easily bikeable like the Algonquin. Seems like adding a bit of crushed limestone is a no-brainer.
- Smoother roads, street light on high traffic corners and eliminate street lights that are not needed anymore.
- additional lanes
- Adding sidewalks, better signage for pedestrians crossing at traffic lights.
- More police action for the redlight runners, the never stop at stop signs, or turning right on red lights without stopping.
- Additional bike racks downtown with camera monitoring

- Some form of accessible public transportation and making sure sidewalks are maintained in the winter.
- fewer stop lights/signs on direct routes - or direct routing from east to west/west to east - or a ring road routing - stop using stop signs as silent speed enforcement
- There are a few intersections that I avoid due to traffic. The one difficult spot is Drive Inn Rd/Pembroke ST intersection.
- I've seen the benefits of roundabouts and wish we implemented instead of traffic lights. Lights just bunch up traffic and are not useful during the majority of the time. Lights are what cause the long traffic lineups from East to west on Main St.
- Public transportation! Improved road surface, dedicated bike lanes
- Fewer lights in Pembroke (or better coordinated lights - sometimes you have to stop at literally every light but one downtown - why???). Have more through streets. Make Boundary Road a 60km/h. Open Boundary Road straight through - the West End get way, way, way too congested!!! Make utilizing TV Tower Road more known/ideal to get past the West End.
- More affordable public transportation options for those who do not have access to a vehicle.
- Access, affordable public transportation Roads that hold up better to our type of climate.
- Bus system - Handi bus is not able to handle all the volume for our disabled residents More complete East/West options (connect Boundary E & W) connect Town Line/D'Youville and Angus Campell
- transportation - bus system
- A bus system would be extremely beneficial to alleviate traffic in and around town. Paved shoulders or bicycle lanes on main roads in and around Pembroke and the Laurentian Valley for cyclists. More places to lock up bikes in the downtown area and outside of the malls. Enforce speed limits of roadways so cyclists feel secure and safe.
- Fixing the road conditions for vehicles, having other modes of transportation for people with a physical disability that can't walk or drive. (bus, affordable taxis, etc)
- More and better bike and foot paths! Pembroke is lacking in this area especially for cycling, skateboards, roller blading, etc. There are no safe spaces to do these activities to get around the area.
- Lowering speed limits on high traffic streets and high traffic residential streets. No parking on these busy streets it McGee, Trafalgar, Cecelia, Mary. These are all high traffic.
- Preventative road maintenance and repair shoulders more frequently and enforce safety on our roads poor or no response from police with speeding and no preventive measures to slow traffic down ie speed bumps should be installed on certain streets.
- Less traffic.
- Our intersection at old mill rd and Greenwood rd is very unssfe
- Better access to biking. No bike lanes are present anywhere, and the Algonquin Trail is multi-use, creating hazards and a crazy amount of dust with motorized traffic.
- A bus system. Cops watching the main lights between mackay and pembroke st. I almost get hit daily.
- Continue streets. Ex: when you are on Alfred St. you run into a field and have to go around Pembroke St. onto Angus Campbell to get back onto Alfred St. Too many streets in Pembroke are like that. Need more streets going to Walmart. Widen streets at stop signs.
- creating safe spurs from the trail deeper in to the city/twp. i.e. east end: to the pool (Catherine St). library/Seniors Ctr (Victoria St). East End Mall(Angus Campbell/Rankin St). Home Depot/Laurentian Square (Drive In Rd-Spruce W-through Pleasant View Park
- The city needs more options to get around without vehicles. More pedestrian and cycling infrastructure such as separated bike lanes, walking paths, etc. We also need to implement traffic calming measures and narrow our roads to reduce the speed of vehicle traffic. Also public transit, even in the form of a single bus line on Pembroke Street, would be massively helpful. One area I would love to see become more pedestrian friendly especially is the downtown core. Right now Pembroke st is the primary road for traffic

across the city, and this makes being downtown outside of a vehicle a dreadful experience.

- A bus system, fix our roads
- Need a traffic signal at Drive In Road/Pembroke St. East intersection. Need a direct roadway between Hwy 17/Paul Martin Drive and Quarry Rd./MacKay St., so trucks don't have to waste 2km zig-zagging to Townline Rd. Need to repair streets, since they cause damage to my car. Need easier/more direct access between Forced Road and Mary Street-- this would alleviate congestion on Pembroke St.
- Safe active transportation links
- Not placing sewer man hole covers on road where car tire's normally travel causing bumps worse than potholes. Traffic lights that don't cause backed up traffic because the light change times are so short only a few cars get through at a time or traffic lights too close to the next set of traffic lights not working in conjunction causing traffic delays unnecessarily. Timed traffic lights that only waste time and fuel, if no cross traffic are waiting leave the traffic lights green geez.
- Have two one way streets through main Pembroke to keep traffic moving. Improved road conditions (pot holes in Pembroke).
- Less potholes or better signage for poor road conditions.
- Prioritized pedestrian and cycling infrastructure, and better networks between them. Also would love to ensure that sidewalks are plowed consistently in the winter! Having an option that allows drivers to get from one end of city to other without using Main Street would also be great. Main Street would do so much better with more pedestrians and less cars!
- I wish there was some kind of busing available, even from laurentian valley to Pembroke, I think it would bring in a lot more business to downtown, The side walks/side walk maintenance especially come winter is hard on those without mobility issues let alone the disabled.
- Stop the construction on major routes all at once finish one rd then start another
- Bicycle lanes/infrastructure
- The corner of Drive Inn Rd and Pembroke street NEEDS to have lights and turning lane. It is VERY DANGEROUS at the corner. Too many near misses !!
- Diverting more traffic to Lake St would be helpful to get traffic off of Pembroke St Downtown. Another crosswalk downtown at Zaytouna restaurant/CIBC + Scotiabank.
- More modes of transportation.. a bus route. Uber
- Equal consideration of active transportation (infrastructure and snow clearing) there is an obvious preference for motorized transportation, yet if we consider our demographics that is not capturing all our residents (elderly, non drivers, youth, etc) Transit options for those without access to vehicles. Winter maintenance of walking infrastructure (active communities are healthy communities) Strategic planning of construction projects to facilitate traffic flow (don't do projects at the same time on every route across the city/township)
- More sidewalks for pedestrians Having ATV able to be on roads to access trails
- Evening traffic moving east to west is slow requiring additional options, bike lanes would be beneficial for safety on the roads, allowing ATV use through city limits, lights at Eganville road and boundary road, advance green light would be beneficial heading west on Pembroke st at intersection Christie Street, more sidewalks for safety, continue D'youville to Home Depot
- More sidewalks and street lighting
- Dedicated bikes lanes to the downtown would dramatically improve cycling safety. Evanville/Christie St or Pembroke St are not safe at busy times, as motorists cannot pass cyclists effectively. Winter biking is practically impossible in the area as the snow banks take what little space a cyclist has away. Dedicated lanes solve both those problems. There are no crosswalks on Boundary Road... Its a few kilometres between controlled crossings. My kids have to learn to dodge the traffic rather than learning how to use a crosswalk to get to Pembroke. That shouldn't be necessary. Its an easy fix.

- Add 2-3 pedestrian crossings on Boundary Rd to make crossing from LV (Stafford) to Pembroke safer. Currently crossing very dangerous (especially with children) during peak travel times.
- Fixing pot holes and narrow crappy roads
- Better pedestrian consideration. Fix the roads!
- Timing the traffic lights on Pembroke Street. So you don't hit every red light. It's a small city, but takes forever to get from one end of town to the other.
- Another east west artery, and something coming off of Paul martin down to the Walmart/Home Depot area.
- Wider placement and wider solid shoulders.
- Repair Pembroke Street East from Mall to Quebec turn off, install a back route into Walmart and CTC
- One way Pembroke Street and Lake Street. Better secure bike parking options at key locations.
- eliminate parking on Pembroke St. downtown area
- Another East to West route, to take the pressure off of Pembroke St.

Question 11 – Concerns for Moving Around Laurentian Valley and Pembroke

Participants were asked to indicate what concerns them about moving around Laurentian Valley and Pembroke. As **Figure 3.10** shows, the most common concern among respondents was the "Current state of roads" followed by the "Current state of sidewalks" and the "Current traffic volumes". "Other" responses included lack of public transportation options, lack of signage for first time visitors, and the need for an expanded sidewalk network. Respondents were permitted to select more than one response.

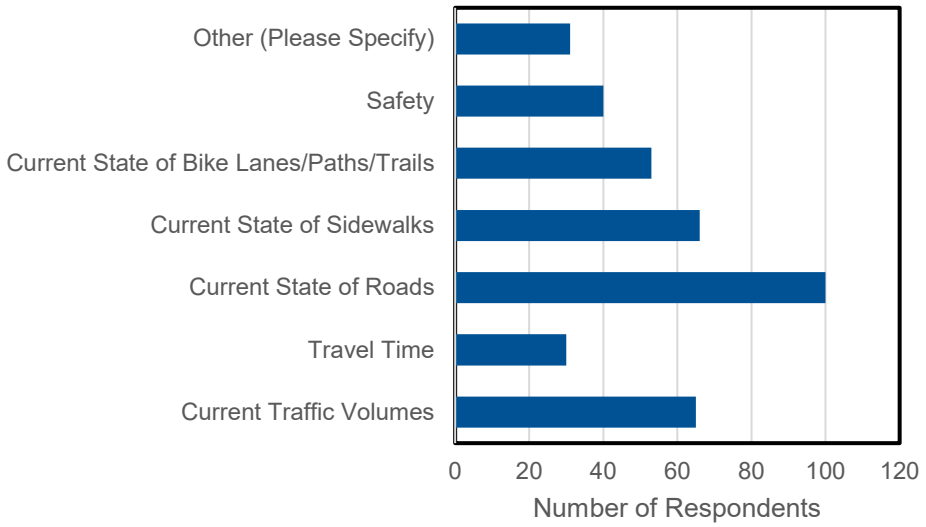


FIGURE 3.10: CONCERNS FOR MOVING AROUND LAURENTIAN VALLEY AND PEMBROKE

TABLE 3.9 – SURVEY RESPONSES QUESTION 11

Answer	Responses	
Current traffic volumes	46.43%	65
Travel time	21.43%	30
Current state of roads	71.43%	100
Current state of sidewalks	47.14%	66
Current state of bike lanes/paths/trails	37.86%	53
Safety	28.57%	40
Other	22.14%	31
Total Responses = 140		

Question 12 – Importance of Improving Transportation

Participants were asked to rank a list of priorities, in order of importance, for improving transportation in Laurentian Valley and Pembroke. As **Figure 3.11** shows, respondents indicated that "Making it easier to get around" is the most important improvement, followed by "Improving health/quality of life for residents". Respondents were asked to select one level of importance for each priority.

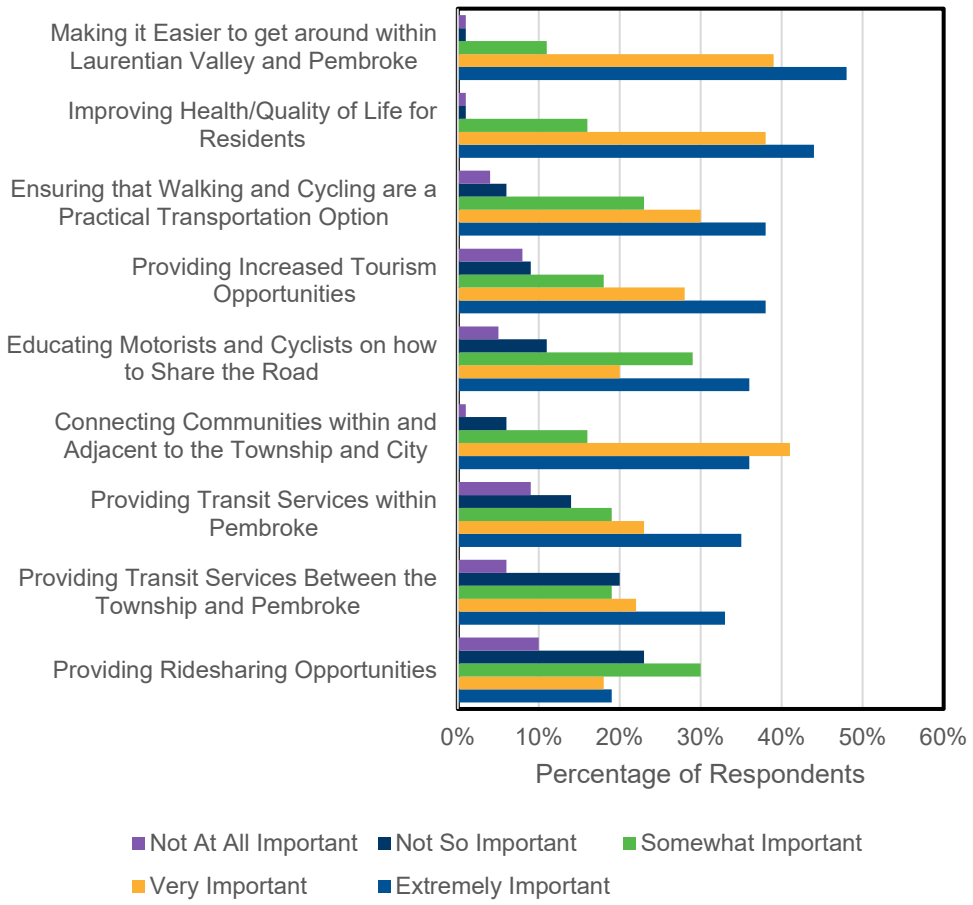


FIGURE 3.11: IMPORTANCE OF IMPROVING TRANSPORTATION

TABLE 3.10 – SURVEY RESPONSES QUESTION 12

Answer	Extremely Important	Very Important	Somewhat Important	Not So Important	Not At All Important	Total
Providing ridesharing opportunities	19.01% 27	18.31% 26	29.58% 42	23.24% 33	9.86% 14	142
Providing transit services between the Township and Pembroke	33.09% 46	22.30% 31	18.71% 26	20.14% 28	5.76% 8	139
Providing transit services within Pembroke	34.53% 48	23.02% 32	19.42% 27	14.39% 20	8.63% 12	139
Connecting communities within and adjacent to the Township and City	36.43% 51	40.71% 57	16.43% 23	5.71% 8	0.71% 1	140
Educating motorists and cyclists on how to share the road	35.92% 51	19.72% 28	28.87% 41	10.56% 15	4.93% 7	142
Providing increased tourism opportunities	37.59% 53	27.66% 39	18.44% 26	8.51% 12	7.80% 11	141
Ensuring that walking and cycling are practical transportation options	38.03% 54	30.28% 43	22.54% 32	5.63% 8	3.52% 5	142
Improving health/quality of life for residents	43.97% 62	38.30% 54	16.31% 23	0.71% 1	0.71% 1	141
Making it easier to get around within Laurentian Valley and Pembroke	47.89% 68	39.44% 56	10.56% 15	1.41% 2	0.70% 1	142

Question 13 – Comments or Questions

Participants were asked to share any other comments or questions regarding the existing transportation conditions or future transportation needs. Key themes identified included:

- Transportation restrictions for students to navigate the Township safely;
- Concern for pedestrian and cyclist safety;
- Need for more Electric Vehicle infrastructure to support the growth in EV sales;
- Change timed traffic lights;
- Need for affordable public transportation; and
- E-bikes should be encouraged for those who need the physical assistance and do not drive.

Answers Provided

Answered: 60 Skipped: 104

- Students from high schools are at a disadvantage from those in cities due to transportation. Due to restricitve transportation options some students are unable to access all job opportunities in the township and city due to ability to safely (no bike/walking paths) get to job sites.
- With so much road construction that effects certain intersections with traffic lights, could the lights not be temporarily programmed to accommodate the change in traffic flow?
- Please have your area consultant call me 613-633-1500 I own 65 acres in the city of Pembroke and 42 acres in the commercial industrial park off Mackay st. He needs to see what I have been seeing for 22 years. Brian Decaire
- Yes……where can I submit a simple but detailed suggestion to improve traffic flow through the downtown area of Pembroke?
- I would like to see a transit corridor from Ottawa to North Bay. Rail maybe?
- Our communities need to be safe for Pedestrians and cyclists. My kids live around 1 km from their school but can't safely walk or cycle to their school
- More bike access to grocery stores and shopping centers
- we need good public transport within the city
- As an avid cyclist (100 kms+ / per week) I restrict my cycling to rural roads and don't even consider it as an option to bike to work because of road conditions and lack of driver awareness.
- If public transportation was implemented stops at the Hospital, Marianhill and Miramichi Lodge would help attract staff.
- none that I can think of at the present time.
- Many years back when I lives in the City of Pembroke and the City had public transportation, I often used it. When I moved to Laurentian Valley, the transportation was not as available to where I lived, but I was still able to access it if necessary. Currently, with Algonquin College students needing to get around, and my working different shifts, it would be nice to have some form of transportation available, especially for students who may not have a vehicle, to get too and from jobs, placements, co-op, school (like the College) etc.

- Electric vehicles will be normal in the very near future so there must be the ability to charge them. This is critical for visitors. If there are a few Level 3 chargers in the City downtown and areas in LV with nearby services, motorists will come in off the highway. The transportation plan needs to recognize that cycling should be a vital component. Making the City / area bike friendly will also draw people. Connecting the Algonquin Trail to other bike routes would encourage more active transportation beyond the Trail. Provide services for bikes. Provide options for renting/borrowing bikes or other "no emission" vehicles that are pay per use from a few locations.
- Timeline for completing study important. Hopefully end of 2024.
- Budget and cost to residents should be considered.
- The trestle on Boundary Rd needs to be removed. It now serves no purpose because the trail system has been bought. It narrows the road and sidewalk and causes ponding in the Spring. Take it out
- Pay attention to the roads around the office. Two huge bumps right around the corner….
- The traffic on Pembroke street between McKay and Angus Campbell dr. is very heavy a lot of time. Drivers dont stop before entrances to let cars out or to let them turn.
- We live in a very spread out community. With no public transportation options, many people have very few opportunities to go much further than they can walk. This creates many issues.
- There needs to be areas in downtown pembroke for locking bikes. Currently there are no specific and safe areas to do so which reducing my willingness to bike to town and go shopping out to lunch etc. with bike locking areas I would be able to do this more frequently
- Within Laurentian Valley there are very few sidewalks. Even if there could be some coordination for say getting to CFB Pet and CNL with public transportation would be great
- There need to be a stop light at the intersection of Drive -in Road and Pembroke Street!!! Build a road from Irving big Stop through to Mackay street to divert traffic from town-line! Put a 3 way stop sign at Stoneyfield and Drive-in to slow traffic in the residential area.
- Make sure any improvements are 4 lane, both ends of Pembroke, with turning lanes with advance green lights . Don’t force traffic thru the City that doesn’t need to be. If someone wants to shop downtown, they will go there. This is why you have traffic flow problems, there are no alternate routes!!!!
- Traffic circle 148 at Quebec turnoff
- We desperately need a public transit system. I hope the City decides to do the talked about pilot project. Ride share company will also help. Taxis are too expensieve.
- As stated pedestrian crossings are needed on boundary road and trafalgar, and burham. That intersection is dangerous and needs to be addressed.
- Pembroke St from east to west can be very congested, forcing drivers to take residential roads; evaluating traffic flow/light cycles is important, especially as Pembroke and LV grow. I don’t see parking as an issue, might have too much parking on Main Street Pembroke that could be used to improve flow (and safety). Consider sharing/focusing OCIF and gas tax funds between the lower tier municipalities where strategic priorities/specific infrastructure needs align
- Please post the results of this survey on the Pembroke website. There’s no reason it can’t be made into an accessible format, and posted online. We submit surveys and then get questionable summaries from the Operations department only during council meetings, without source documents. This should be more transparent for engaged citizens.
- Nothing at this time.
- Keep in mind if you wouldn't feel comfortable with a 7-year-old or 90-year-old cycling alone on a particular road then your infrastructure is not safe enough!
- I walk on the road by the Laurentian Square. In the winter there is no cleared sidewalk to walk on. Speed is a factor on this stretch of road as well. When I go to cross the street at the traffic lights at Walmart I often almost get hit because of traffic coming from the West not stopping before turning right into Walmart. Something needs to be done here as well to slow traffic down when they are entering or exiting the intersection. I have a physical disability which affects my mobility. It takes me a few minutes to cross the intersection and often cars will come within a foot of me as they are in such a rush!

- Pembroke Street East between Angus Campbell Dr. and Drive-In Road needs sidewalks on both sides of the street. There is nowhere safe to walk and to say that it can not be maintained by LV is crap. Step up and provide the services that we are paying for. To suggest that with the rebuilding of the street, LV does not have the ability to maintain sidewalks is total BS. Buy the equipment and protect your taxpayers before someone is killed.
- traffic from Quebec to plant and base should have access directly from Quebec bridge to hwy 17..... 2- Quarry Road should be opened from Cassidy's to Paul Martin Drive across former CNR rail bed or under or over it. 3 - 11 sets of traffic lights on 17 between Renfrew and Petawawa should be eliminated - 7 sets in LV alone - and none/not one set between Halifax and Renfrew (a 20 hour drive). 4 - modernize the township by eliminating the name Drive In Road and make it Laurentian Valley Drive - the drive in disappeared in the late 1960's or early 1970's.....very confusing name for visitors to our community
- Traffic lights just cause lineups of traffic. Boundary Rd. on one side has no lights and there is rarely any congested traffic. Nelson St. on the other side bottlenecks at both ends due to lights. Install roundabouts!
- Take a real look at this - be creative! No one cares how things have always been done, they aren't working well anymore and its time to think outside the box!
- I hope to see affordable public transportation become a priority in planning given this is a significant barrier for many of our community members. Walking/ rolling is difficult for many individuals and a lack of affordable public transportation makes daily activities like getting groceries challenging for some of our most vulnerable community members.
- Better options for public transportation. i support individuals who for the large majority don't drive and transportation is an issue. Taxi service is often unreliable. I work occasionally in Pembroke. Traveling from east to west through the city is often very frustrating.
- We need to promote a welcoming and access community which includes accessible transportation for seniors and those with disabilities or low income who cannot afford a vehicle.
- Individuals on ODSP are having to spend $40 to get to work at a part time job or to go shopping. They don't get to claim this expense, but still have to claim all their income, potentially reducing their benefit. Handibus is not always able to take individuals due to availability. The need for safe and affordable transportation that is readily available when needed without the need to plan a week in advance.
- bus system
- It is possible for smaller communities to support a transportation system for its residents and the Pembroke/Laurentian Valley would greatly benefit from having one. Once one is introduced it is surprising how quickly it grows, having experienced living a community that didn't have one and then introduced one and it grew very quickly in use, popularity and route size. Plus, it was free to use in town!
- Designated bicycle lanes throughout Pembroke and Laurentian Valley would definitely be an asset to the community. I have experienced a few times almost being hit by a cyclist and skater boarders while walking on sidewalks in the City of Pembroke.
- We need more roads to open the flow of traffic from east to west and alleviate congestion on certain streets. More speed control permanent solutions such as speed bumps that will provide a safer means to travel on certain streets. Policing doesn’t work
- I think I have made my feeling very clear.
- People always say "fix the roads" and complain about the potholes. I look at the problem as too much traffic (not stop and go but general usage) on the roads we do have. If you create good, safe, cheap alternatives to driving (active transportation) people will use it. Therefore, fewer people are on the roads creating fewer maintenance issues (potholes to get open, curbs being chipped, general wear and tear). As well, you will create a community more healthy and active as we are not depending on vehicles to travel distances humans are very capable of walking, biking, or rolling. We need cars, but we also need to be able to use ourselves to get around.

- Need to widen roads near malls and stop signs. Add signal lights at Drive In Road/Pembroke St. E.. Continue Matheson Dr. to Robinson Lane
- Bus system!!
- Pembroke seems to focus on things like building housing on Nelson St./River Road (blocking the view of the river), or inviting industry to the Mackay St. industrial park, but don't give a thought to the transportation headaches (among other issues) this will cause. Also, if I want to get from one end of Pembroke to the other, there should be options that don't involve endless detours, zig-zagging, turns, stops, and rough surfaces. Why does an eastbound driver or cyclist, starting at LVT near Pembroke St. W/Forest Lea Road, have to take such a circuitous route if they want to avoid Downtown?
- No timed traffic lights, move sewer man hole covers so not where car tires normally travel. No electric scooters or inclosed electric mini car/scooter on roads that have no license plates or insurance
- Our marginalized and low income folks can't get basic supports they need due to lack of transportation. This is a fact.
- Please focus on reducing VMT as a key metric for success. don't build anymore wide-lane dangerous "stroads" . In addition to transportation, need to ensure services are located in different parts of the area so that we all don't need to drive as much. This includes opening up zoning for more retail/cafes/small grocery stores within existing neighbourhoods, and building much more housing downtown!
- Why not make downtown Pembroke a one way street or t least take away street parking so stores and restaurants can have a patio
- Elimination of left turns onto Munro Street from Pembroke Street West. Providing safe bicycle infrastructure to access the Algonquin Trail.
- Need improvements NOW before someone gets hurt.
- Immigration to the area is essential to protect economic prosperity, when folks are choosing where to live they look at how walkable communities are and if there are transit options.
- People won't bike or walk until the infrastructure exists. It's dishonest to cite low numbers of pedestrians or cyclists in the area as an excuse to not build it out, as it takes conscious effort to walk or bike despite the poor infrastructure and maintenance of existing options. People drive because it's the best option with our current infrastructure. Do not block the use of ebikes. Ebikes are allowing those with limited physical ability to finally start cycling. They make a heavy grocery trip feasible. They make keeping up with traffic easier. They make long distances feel short. Blocking the use of bike doesn't take advantage of their popularity.
- Increase pedestrian and cycling infrastructure
- Too much reliance on Pembroke Street.
- Only one direct way through City heading to Food basics or home depot
- Consider constructing more trails and sidewalks increasing safety and sidewalk connectivity. As an example - sidewalk required on Cecelia between Bell and Irving Streets.

Question 14 – Location of Residence

Participants were asked to share where the live in Laurentian Valley and Pembroke. As **Figure 3.12** shows, just over half (40%) of respondents live in City of Pembroke, with Pembroke Township the next most popular location.

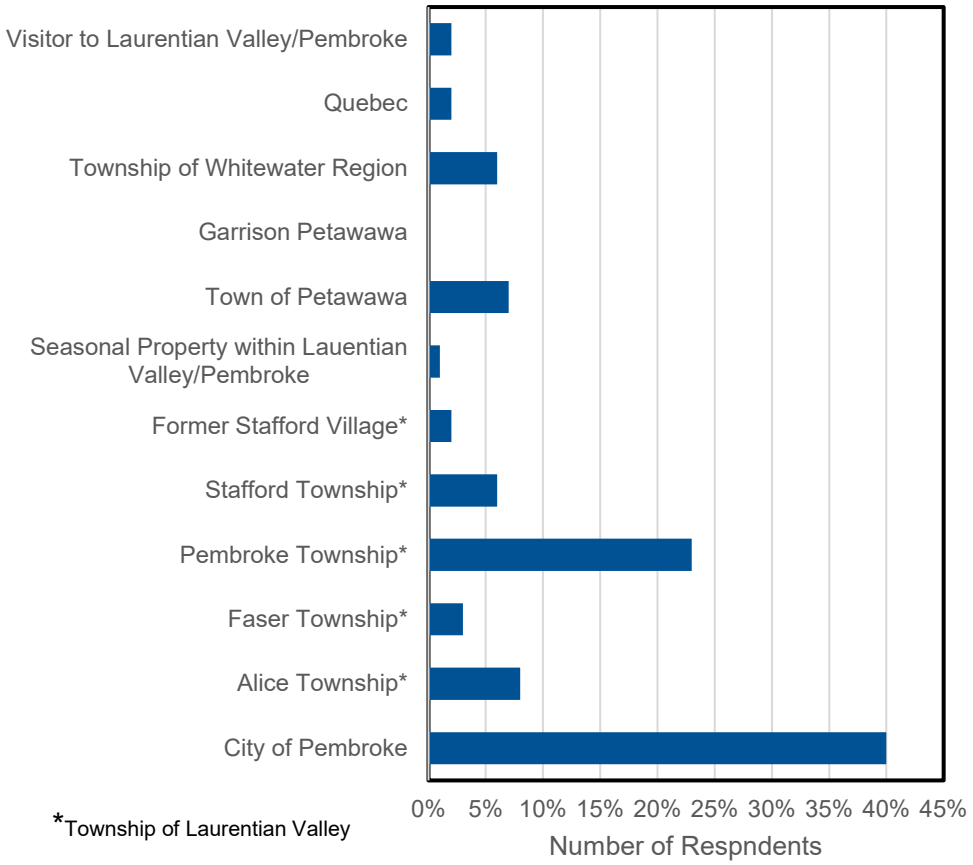


FIGURE 3.12: LOCATION OF RESIDENCE

TABLE 3.11 – SURVEY RESPONSES QUESTION 14

Answer	Responses	
City of Pembroke	40.00%	58
Geographic Alice Township (Township of Laurentian Valley)	8.28%	12
Geographic Fraser Township (Township of Laurentian Valley)	2.76%	4
Geographic Pembroke Township (Township of Laurentian Valley)	23.45%	34
Geographic Stafford Township (Township of Laurentian Valley)	6.21%	9
Geographic Stafford Village (Township of Laurentian Valley)	2.07%	3
Town of Petawawa	6.90%	10
Garrison Petawawa	0.00%	0
Township of Whitewater Region	5.52%	8
Quebec	2.07%	3
Own seasonal property in Laurentian Valley/Pembroke and live outside Laurentian Valley/Pembroke	0.69%	1
Visitor to Laurentian Valley/Pembroke	2.07%	3
Total Responses = 145		

Question 15 – Age of Respondents

Participants were asked to share their age. As **Figure 3.13** shows, most respondents were 55-64 years. A significant number also fell into the 35-44 and 45-54 age groups.

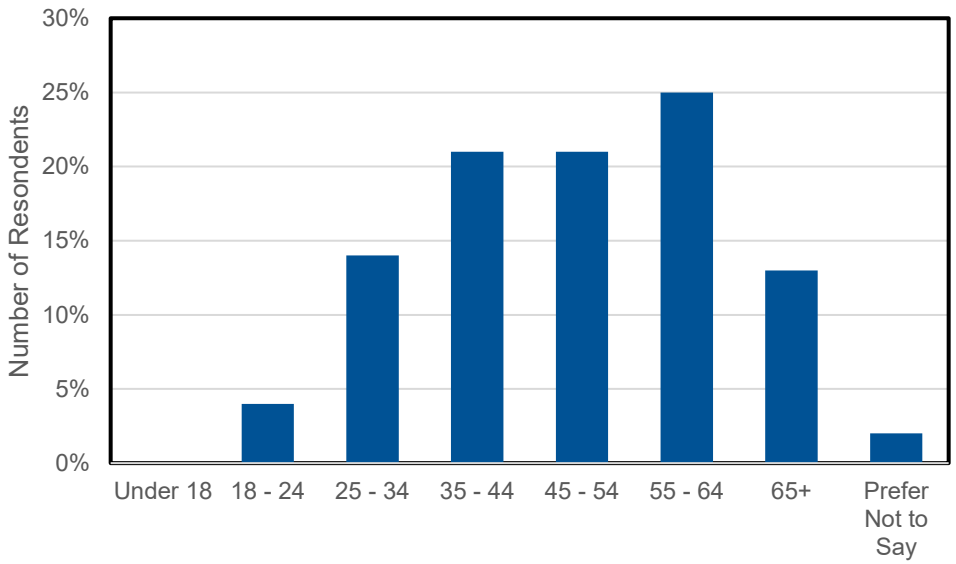


FIGURE 3.13: AGE OF RESPONDENTS

TABLE 3.12 – SURVEY RESPONSES QUESTION 15

Answer	Responses	
Under 18	0.00%	0
18 – 24	4.14%	6
25 – 34	13.79%	20
35 – 44	20.69%	30
45 – 54	20.69%	30
55 – 64	25.52%	37
65+	13.10%	19
Prefer not to say	2.07%	3
Total Responses = 145		

4 Key Messages

The online survey identified the following key messages, which were considered in developing the TMP:

- More residents and visitors would walk/roll to their destinations if sidewalk connectivity were improved;
- Certain conditions (e.g., proximity to high volume, high speed roadways, surface cracking, narrow width, etc.) prevent or make individuals uncomfortable using the sidewalks;
- Increasing the amount and quality of cycling infrastructure will encourage residents and visitors to cycle more often;
- Road surface conditions need improvement; and
- Increased frequency and coverage of transit services are needed.

Attachment A

Survey Questions

Public Survey

Township of Laurentian Valley/City of Pembroke Transportation Master Plan East-West Traffic

The Township of Laurentian Valley in partnership with the City of Pembroke has retained Paradigm Transportation Solutions Limited to complete the Township of Laurentian Valley/City of Pembroke Transportation Master Plan for East-West Traffic.

The Transportation Master Plan for East-West Traffic will provide important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure. As a collaborative project with the City of Pembroke, the Master Plan provides the opportunity to ensure a holistic approach to future decisions on transportation.

In developing the plan, the Township and City are conducting this survey to better understand the opinions and priorities of local residents about transportation in your community. The survey should take about 5 to 10 minutes for you to complete.

Please tell us about you and your current travel trends and opinions on transportation:

1. Do you… (Select all that apply)

- ☐ Live in the Township of Laurentian Valley
- ☐ Work in the Township of Laurentian Valley
- ☐ Go to school in the Township of Laurentian Valley
- ☐ Shop or use services in the Township of Laurentian Valley (doctors office, dry cleaning, food services, etc.)
- ☐ Spend leisure or recreation time in the Township of Laurentian Valley (includes visiting family or friends or recreational activities)
- ☐ Live in the City of Pembroke
- ☐ Work in the City of Pembroke
- ☐ Go to school in the City of Pembroke
- ☐ Shop or use services in the City Pembroke (doctors office, dry cleaning, food services etc.)
- ☐ Spend leisure or recreation time in the City of Pembroke (includes visiting family or friends or recreational activities)

2. **The approximate distance between where you live and where you regularly work/go to school is: (Select one)**
   - ☐ Don't work/go to school
   - ☐ Work/go to school from home
   - ☐ No regular work location
   - ☐ Less than 2 kilometres
   - ☐ Between 2 and 5 kilometres
   - ☐ Between 5 and 10 kilometres
   - ☐ Greater than 10 kilometres
3. **How do you get around within Laurentian Valley and Pembroke? (Select all that apply)**
   - ☐ Walking or rolling* (*Refers to the use of a wheelchair or other mobility device)
   - ☐ Biking
   - ☐ Driving a car
   - ☐ Passenger in a car
   - ☐ Motorcycle
   - ☐ On a school bus
4. **What is your most common mode of travel for work or school trips? (Select one)**
   - ☐ Walking or rolling*
   - ☐ Biking
   - ☐ Driving a car
   - ☐ Passenger in a car
   - ☐ Motorcycle
   - ☐ On a school bus
5. **What prevents you from walking or rolling* more frequently? (Select all that apply)**
   - ☐ Destinations are too far
   - ☐ There are faster options
   - ☐ Too much to carry to/from destinations
   - ☐ Don't feel safe (i.e. traffic and sidewalk conditions)
   - ☐ Seasonal conditions (i.e. hot summers, cold winters)
   - ☐ Variations in weather (i.e. rain)

- ☐ Physically unable, or difficult to do so (due to sidewalk/trail conditions and/or personal ability)
- ☐ Nothing, I walk or roll as much as I can

6. **What prevents you from cycling more? (Select all that apply)**
   - ☐ Destinations are too far to cycle
   - ☐ There are faster options than cycling
   - ☐ Too much effort to bike
   - ☐ Too much to carry/transport to/from destination
   - ☐ Don't feel safe (e.g. traffic and road conditions)
   - ☐ Seasonal conditions (e.g. hot summers, cold winters)
   - ☐ Variations in weather conditions (e.g. rain)
   - ☐ Physically unable or difficult to do so
   - ☐ Concern about being sweaty
   - ☐ Concern about bicycle theft
   - ☐ Lack of bicycle parking/lock up locations
   - ☐ No bicycle
   - ☐ Nothing, I bike as much as I can

7. **Please indicate how important each of the following measures are for making travel safer in the Township and City from your perspective: Circle an option – Extremely Important (EI), Very Important (VI), Somewhat Important (SI), Not So Important (NSI), Not at all Important (NI)**
   a. Improving the condition of roads
   (EI) (VI) (SI) (NSI) (NI)
   b. Separating cyclists from traffic
   (EI) (VI) (SI) (NSI) (NI)
   c. Installing additional pedestrian crossings with flashing lights or traffic signals
   (EI) (VI) (SI) (NSI) (NI)
   d. Lowering the speed limit on Township and City roads within built-up areas
   (EI) (VI) (SI) (NSI) (NI)
   e. Lowering the speed limit on rural Township roads
   (EI) (VI) (SI) (NSI) (NI)
   f. Implementing traffic calming measures to slow traffic down on neighbourhood streets
   (EI) (VI) (SI) (NSI) (NI)
   g. Restricting pedestrian crossings at certain locations
   (EI) (VI) (SI) (NSI) (NI)

8. Please indicate how important each of the following measures are for making vehicular traffic movement more convenient in the Township and City from your perspective: Circle an option – Extremely Important (EI), Very Important (VI), Somewhat Important (SI), Not So Important (NSI), Not at all Important (NI)

a. Improving the condition of roads
(EI) (VI) (SI) (NSI) (NI)

b. Better coordinating traffic signals
(EI) (VI) (SI) (NSI) (NI)

c. Widening select roads
(EI) (VI) (SI) (NSI) (NI)

d. Adding turn lanes and/or advance phasing (i.e. green arrow) at more intersections
(EI) (VI) (SI) (NSI) (NI)

e. Restricting pedestrian crossings at certain locations
(EI) (VI) (SI) (NSI) (NI)

f. Building new roads to serve growth areas
(EI) (VI) (SI) (NSI) (NI)

g. Restricting on-street parking and stopping at certain locations
(EI) (VI) (SI) (NSI) (NI)

The following questions will help the Township and City develop a transportation vision for the community as well as an understanding of how the existing transportation network is used.

9. What do you like best about moving around Laurentian Valley and Pembroke Please tell us what is working well. Please keep your answer to under 200 words.

_____

_____

_____

10. What would make moving around within Laurentian Valley and Pembroke better? Please keep your answer to under 200 words.

_____

_____

_____

_____

11. What, if anything, concerns you about moving around within Laurentian Valley and Pembroke? Please check all that apply.

- ☐ Current traffic volumes
- ☐ Travel time
- ☐ Current state of roads
- ☐ Current state of sidewalks
- ☐ Current state of bike lanes/paths/trails
- ☐ Safety
- ☐ Other_____

12. **Please indicate how important each of the following objectives are for improving transportation from your perspective: Circle an option – Extremely Important (EI), Very Important (VI), Somewhat Important (SI), Not So Important (NSI), Not at all Important (NI)**

a. Improving health/quality of life for residents
(EI) (VI) (SI) (NSI) (NI)

b. Connecting communities within and adjacent to the Township and City
(EI) (VI) (SI) (NSI) (NI)

c. Making it easier to get around within Laurentian Valley and Pembroke
(EI) (VI) (SI) (NSI) (NI)

d. Ensuring that walking and cycling are practical transportation options
(EI) (VI) (SI) (NSI) (NI)

e. Ensuring that there are recreational areas for walking and cycling
(EI) (VI) (SI) (NSI) (NI)

f. Educating motorists and cyclists on how to share the road
(EI) (VI) (SI) (NSI) (NI)

g. Providing transit services within Pembroke
(EI) (VI) (SI) (NSI) (NI)

h. Providing transit services between the Township and Pembroke
(EI) (VI) (SI) (NSI) (NI)

i. Providing ridesharing opportunities
(EI) (VI) (SI) (NSI) (NI)

j. Providing increased tourism opportunities
(EI) (VI) (SI) (NSI) (NI)

13. Are there any other comments or questions that you want to provide regarding existing transportation conditions or future transportation needs?

_____

_____

_____

_____

_____

_____

_____

_____

The following questions will give us some general information about yourself to help better understand your responses to other questions:

14. Where do you live? You can find this information on your tax bill. (Select one)

- ☐ City of Pembroke
- ☐ Geographic Alice Township (Township of Laurentian Valley)
- ☐ Geographic Fraser Township (Township of Laurentian Valley)
- ☐ Geographic Pembroke Township (Township of Laurentian Valley)
- ☐ Geographic Stafford Township (Township of Laurentian Valley)
- ☐ Geographic Stafford Village (Township of Laurentian Valley)
- ☐ Town of Petawawa
- ☐ Garrison Petawawa
- ☐ Township of Whitewater Region
- ☐ Quebec
- ☐ Own seasonal property in Laurentian Valley/Pembroke and live outside Laurentian Valley/Pembroke
- ☐ Visitor to Laurentian Valley/Pembroke
- ☐ Street Name (responses will be confidential) _____

15. Which age group applies to you? (Select one)

- ☐ Under 18
- ☐ 18 – 24
- ☐ 25 – 34
- ☐ 35 – 44
- ☐ 45 – 54
- ☐ 55 – 64
- ☐ 65+
- ☐ Prefer not to say

16. Would you like to receive email correspondence to hear about updates on the Transportation Master Plan, and future surveys?

a. No

b. Yes. Please provide your e-mail address:

_____

Thank you for taking the time to respond to this survey. The Township of Laurentian Valley and City of Pembroke greatly value your input! If you have any questions, please send an email to lvpembrokeTMP@ptsl.com and continue to visit the project webpages for updates!

Appendix C

Existing Conditions Intersection Analysis

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

Existing Intersection Performance - Fall Peak

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	
	Mud Lake Road/Boundary Road East & Paul Martin Drive	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	C	C	B
			Delay	6	0	7	7	6	0	9	9	27	0	0	27	28	0	29	28	13
			V/C	0.18	0.00	0.29		0.05	0.00	0.34		0.22	0.00	0.00		0.35	0.00	0.44		
			Q	0	0	2		0	0	2		3	0	0		6	0	5		
	River Road & Bennett Street/Town Line Road	TCS	LOS	C	A	C	C	C	A	C	C	A	A	A	A	A	A	A	A	B
			Delay	25	0	31	28	25	0	30	28	8	0	0	8	7	8	0	8	18
			V/C	0.33	0.00	0.57		0.33	0.00	0.53		0.20	0.00			0.01	0.22			
			Q	4	0	9		4	0	8		1	0	0.0		0	1	0.0		
	MacKay Street & River Road/Metcalfe Street	TCS	LOS	C	A	A	C	C	A	A	C	A	A	A	A	A	A	A	A	B
			Delay	25	0	0	25	22	0	0	22	4	0	0	4	5	0	0	5	10
			V/C	0.50	0.00	0.00		0.06	0.00	0.00		0.14	0.00	0.00		0.29	0.00	0.00		
			Q	6	0	0		1	0	0		1	0	0		2	0	0		
	MacKay Street & Pembroke Street West/Pembroke Street East	TCS	LOS	B	A	C	C	B	A	C	B	C	A	C	C	C	A	C	C	C
			Delay	18	0	30	30	19	0	20	20	24	0	31	29	27	0	30	30	26
			V/C	0.02	0.00	0.66		0.44	0.00	0.44		0.23	0.00	0.44		0.04	0.00	0.24		
			Q	1	0	38		6	0	20		7	0	20		2	0	10		
	MacKay Street & Lake Street/Nelson Street	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	2	0	3	3	3	0	2	2	22	0	0	22	21	0	0	21	5
			V/C	0.00	0.00	0.25		0.07	0.00	0.17		0.28	0.00	0.00		0.06	0.00	0.00		
			Q	0	0	2		0	0	1		2	0	0		0	0	0		
	MacKay Street & Town Line Road/D' Youville Drive	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	10	>	10	<	8	>	8	<	9	>	9	<	8	>	8	9
			V/C	<	0.34	>		<	0.09	>		<	0.21	>		<	0.09	>		
			Q	<	11	>		<	2	>		<	6	>		<	2	>		
	Cecelia Street & D' Youville Drive	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	7	>	7	8
			V/C	<	0.18	>		<	0.02	>		<	0.06	>		<	0.07	>		
			Q	<	4	>		<	1	>		<	2	>		<	2	>		
	Wilson Road & Drive-in Road	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	A	>	A	A
			Delay	7	0	0	0	8	0	0	1	<	11	>	11	<	9	>	9	2
			V/C	0.00	0.00	0.00		0.01	0.00	0.00		<	0.04	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		
	Highway 148 & Drive-in Road	TWSC	LOS	<	D	>	D	<	C	>	C	A	A	A	A	A	A	A	A	A
			Delay	<	32	>	32	<	21	>	21	10	0	0	1	8	0	0	0	4
			V/C	<	0.52	>		<	0.04	>		0.07	0.00	0.00		0.00	0.00	0.00		
			Q	<	21	>		<	1	>		2	0	0		0	0	0		
	Highway 148 & Robinson Lane	TCS	LOS	C		C	C					A	A		A		A	A	A	B
			Delay	34		34	34					5	4		4		10	6	9	11
			V/C	0.41		0.39						0.08	0.23				0.49	0.15		
			Q	7		6						0	1				4	1		
	Highway 148 & Walmart Entrance	TCS	LOS	C	A	D	D	A	A	A	A	A	A	A	A	A	B	A	B	B
			Delay	33	0	39	37	0	0	0	0	6	5	0	6	0	12	8	11	15
			V/C	0.36	0.00	0.76		0.00	0.00	0.00		0.17	0.24	0.00		0.00	0.49	0.13		
			Q	9	0	17		0	0	0		0	2	0		0	4	1		
	Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS	E	A	D	E	D	A	A	D	B	A	A	A	B	A	B	B	C
			Delay	72	0	42	61	43	0	0	43	11	0	10	10	17	0	12	16	22
			V/C	0.80	0.00	0.24		0.15	0.00	0.00		0.14	0.00	0.31		0.54	0.00	0.13		
			Q	36	0	13		2	0	0		1	0	7		32	0	4		
	Driveway/Howard Street & Highway 148	TCS	LOS	B	A	B	B	B	B	A	B	B	A	A	B	C	A	A	C	B
			Delay	13	0	11	11	13	11	8	10	19	0	0	19	26	0	0	26	14
			V/C	0.01	0.00	0.51		0.00	0.48	0.14		0.04	0.00	0.00		0.68	0.00	0.00		
			Q	0	0	4		0	4	1		1	0	0		14	0	0		
	River Road & Driveway/Bell Street	TWSC	LOS	<	A	>	A	<	B	>	B	A	A	A	A	A	A	A	A	A
			Delay	<	0	>	0	<	14	>	14	0	0	0	0	8	0	0	0	3
			V/C	<	0.00	>		<	0.23	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	0	>		<	7	>		0	0	0		0	0	0		
	Mackay Street & Bell Street	TCS	LOS	A	A	A	A	A	A	A	A	A	A	B	B	B	A	A	B	B
			Delay	5	0	0	5	5	0	0	5	0	0	15	15	15	0	0	15	10
			V/C	0.09	0.00	0.00		0.18	0.00	0.00		0.00	0.00	0.39		0.38	0.00	0.00		
			Q	0	0	0		1	0	0		0	0	1		1	0	0		
	Cecelia Street & Bell Street	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	9	>	9	<	10	>	10	<	9	>	9	<	9	>	9	10
			V/C	<	0.26	>		<	0.29	>		<	0.22	>		<	0.11	>		
			Q	<	8	>		<	9	>		<	6	>		<	3	>		
	Bell Street & O' Brien Street	AWSC	LOS	<	B		B		A	>	A					A		>	A	A
			Delay	<	10		10		9	>	9					7		>	7	10
			V/C	<	0.34				0.28	>						0.00		>		
			Q	<	11				8	>						0		>		

Existing Intersection Performance - Fall Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Overall
PM Peak Hour	Cecelia Street & Alfred Street	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	8	>	8	8
			V/C	<	0.15	>		<	0.06	>		<	0.12	>		<	0.14	>		
			Q	<	4	>		<	2	>		<	3	>		<	4	>		
	Matheson Drive & Angus Campbell Drive	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		0	10		>	10					0
			V/C		0.00	0.00		0.01	0.00			0.01		>						
			Q		0	0		0	0			0		>						
	Mackay Street & Mary Street/Alfred Street	TCS	LOS	C	A	C	C	C	A	A	C	A	A	A	A	A	A	B	B	B
			Delay	25	0	27	27	24	0	0	24	8	0	8	8	8	0	12	12	16
			V/C	0.30	0.00	0.65		0.33	0.00	0.00		0.13	0.00	0.23		0.02	0.00	0.39		
			Q	4	0	10		5	0	0		0	0	2		0	0	2		
	Broadview Drive & Alfred Street	TWSC	LOS	<	A	>	A	<	A	>	A	A	A	A	A	A	A	A	A	A
			Delay	<	9	>	9	<	10	>	10	7	0	0	4	7	0	0	0	7
			V/C	<	0.08	>		<	0.02	>		0.01	0.00	0.00		0.00	0.00	0.00		
			Q	<	2	>		<	1	>		0	0	0		0	0	0		
	Rosewood Avenue & Alfred Street	TWSC	LOS	<	A	>	A	<	A	>	A	A	A	A	A	A	A	A	A	A
			Delay	<	9	>	9	<	0	>	0	8	0	0	0	0	0	0	0	3
			V/C	<	0.03	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	1	>		<	0	>		0	0	0		0	0	0		
	Bell Street & Broadview Drive	TWSC	LOS	A	A		A		A	A	A					B		>	B	A
			Delay	8	0		0		0	0	0					12		>	12	0
			V/C	0.01	0.00				0.00	0.00						0.03		>		
			Q	0	0				0	0						1		>		
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	B	B	C	A	C	C	C	A	C	C	B
			Delay	7	10	6	10	6	0	11	11	30	0	27	28	29	0	28	29	13
			V/C	0.06	0.52	0.00		0.04	0.00	0.59		0.07	0.00	0.13		0.27	0.00	0.39		
			Q	0	4	0		0	0	5		1	0	2		4	0	4		
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	B	>	B	A
			Delay	8	0	0	2	0	0	0	0	<	16	>	16	<	14	>	14	3
			V/C	0.05	0.00	0.00		0.00	0.00	0.00		<	0.02	>		<	0.23	>		
			Q	2	0	0		0	0	0		<	1	>		<	7	>		
	Driveway/McGee Street & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	B	>	B	A
			Delay	8	0	0	1	8	0	0	0	<	18	>	18	<	11	>	11	2
			V/C	0.05	0.00	0.00		0.01	0.00	0.00		<	0.06	>		<	0.09	>		
			Q	2	0	0		0	0	0		<	2	>		<	2	>		
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	C	>	C	A
			Delay	8	0	0	1	0	0	0	0	<	0	>	0	<	18	>	18	4
			V/C	0.05	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.36	>		
			Q	2	0	0		0	0	0		<	0	>		<	12	>		
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS	<	B	>	B	<	A	>	A	<	A	>	A	<	A	B	A	B
			Delay	<	13	>	13	<	10	>	10	<	9	>	9	<	10	10	10	11
			V/C	<	0.51	>		<	0.23	>		<	0.08	>		<	0.06	0.28		
			Q	<	21	>		<	7	>		<	2	>		<	2	8		
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS	<		>		<		>		<		>		<		>		
			Delay	<		>		<		>		<		>		<		>		
			V/C	<		>		<		>		<		>		<		>		
			Q	<		>		<		>		<		>		<		>		
	Broadview Drive & Pembroke Street East	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		0	13		>	13					0
			V/C		0.00	0.00		0.01	0.00			0.04		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Nelson Street	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		1	12		>	12					1
			V/C		0.00	0.00		0.01	0.00			0.04		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Pembroke Street East	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	B
			Delay	6	0	10	10	6	0	7	7	30	0	0	30	28	0	0	28	11
			V/C	0.01	0.00	0.48		0.10	0.00	0.40		0.33	0.00	0.00		0.13	0.00	0.00		
			Q	0	0	4		0	0	2		6	0	0		2	0	0		
	Christie Street & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	A	A	B	A	B	B	A	A	B	B	A
			Delay	7	0	7	7	8	0	6	7	19	0	15	18	0	0	17	17	9
			V/C	0.03	0.00	0.42		0.04	0.00	0.40		0.38	0.00	0.11		0.00	0.00	0.43		
			Q	0	0	3		0	0	2		1	0	0		0	0	1		
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B	A
			Delay	8	0	0	0	8	0	0	0	<	11	>	11	<	10	>	10	1
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.03	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		

Existing Intersection Performance - Fall Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Elizabeth Street & Pembroke Street East	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	C	>	**C**	<	B	>	**B**	**A**
			Delay	8	0	0	**0**	9	0	0	**0**	<	21	>	**21**	<	15	>	**15**	**1**
			V/C	0.01	0.00	0.00		0.01	0.00	0.00		<	0.08	>		<	0.07	>		
			Q	0	0	0		0	0	0		<	2	>		<	2	>		
	Forced Road & Pembroke Street West	TCS	LOS		A	A	**A**	A	A		**A**	C		C	**C**					**A**
			Delay		0	9	**9**	5	4		**4**	34		32	**34**					**9**
			V/C		0.00	0.53		0.05	0.36			0.44		0.12						
			Q		0	4		0	2			7		2						
	Fraser Street & Alfred Street	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	7	0	0	**0**	7	0	0	**0**	<	9	>	**9**	<	10	>	**10**	**2**
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.02	>		<	0.03	>		
			Q	0	0	0		0	0	0		<	1	>		<	1	>		
	Christie Street & Mary Street	AWSC	LOS	<	B	>	**B**	<	B	A	**B**	<	B	>	**B**	<	B	>	**B**	**B**
			Delay	<	10	>	**10**	<	12	8	**11**	<	10	>	**10**	<	10	>	**10**	**11**
			V/C	<	0.28	>		<	0.35	0.06		<	0.27	>		<	0.25	>		
			Q	<	9	>		<	12	2		<	8	>		<	8	>		
	Trafalgar Road & Mary Street	AWSC	LOS	<	A	>	**A**	<	A	A	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	8	>	**8**	<	9	7	**9**	<	8	>	**8**	<	9	>	**9**	**8**
			V/C	<	0.08	>		<	0.18	0.03		<	0.13	>		<	0.19	>		
			Q	<	2	>		<	4	1		<	3	>		<	5	>		
	Moffat Street & Mary Street	AWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	10	>	**10**	<	9	>	**9**	<	8	>	**8**	<	9	>	**9**	**9**
			V/C	<	0.35	>		<	0.31	>		<	0.03	>		<	0.08	>		
			Q	<	12	>		<	10	>		<	1	>		<	2	>		
	James Street & McGee Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	A	A	A	**A**	A	A	A	**A**	**A**
			Delay	<	9	>	**9**	<	9	>	**9**	0	0	0	**0**	0	0	0	**0**	**4**
			V/C	<	0.06	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	2	>		<	0	>		0	0	0		0	0	0		
	Trafalgar Road/Driveway & Pembroke Street West	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	C	>	**C**	<	A	>	**A**	**A**
			Delay	0	0	0	**0**	9	0	0	**1**	<	20	>	**20**	<	0	>	**0**	**2**
			V/C	0.00	0.00	0.00		0.09	0.00	0.00		<	0.19	>		<	0.00	>		
			Q	0	0	0		2	0	0		<	5	>		<	0	>		
	Forest Lea Road/Driveway & Pembroke Street West	TCS	LOS	A	A	A	**A**	A	A	A	**A**	D	A	A	**D**	A	A	C	**C**	**A**
			Delay	6	10	7	**9**	6	5	0	**5**	36	0	0	**36**	0	0	31	**31**	**10**
			V/C	0.00	0.45	0.18		0.21	0.39	0.00		0.50	0.00			0.00	0.00	0.05		
			Q	0	3	1		0	2	0		10	0	0.0		0	0	1		
	TV Tower Road & Forest Lea Road	TWSC	LOS		A	A	**A**	A	A		**A**	B		>	**B**					**A**
			Delay		0	0	**0**	8	0		**5**	12		>	**12**					**5**
			V/C		0.00	0.00		0.12	0.00			0.23		>						
			Q		0	0		3	0			7		>						

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)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
AWSC - All-Way Stop Control
< / > - Shared with through movement

Existing Intersection Performance - Summer Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Mud Lake Road/Boundary Road East & Paul Martin Drive	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	C	C	B
			Delay	6	0	8	8	6	0	10	9	25	0	0	25	29	0	31	30	16
			V/C	0.12	0.00	0.23		0.08	0.00	0.38		0.06	0.00	0.00		0.58	0.00	0.69		
			Q	0	0	2		0	0	2		1	0	0		12	0	10		
	River Road & Bennett Street/Town Line Road	TCS	LOS	F	A	D	F	C	A	C	C	B	A	A	B	B	B	A	B	E
			Delay	190	0	48	122	26	0	30	29	15	0	0	15	13	17	0	17	79
			V/C	1.32	0.00	0.92		0.37	0.00	0.55		0.19	0.00			0.01	0.38			
			Q	163	0	56		4	0	18		4	0	0.0		0	10	0.0		
	MacKay Street & River Road/Metcalfe Street	TCS	LOS	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	B
			Delay	26	0	0	26	0	0	21	21	5	0	0	5	6	0	0	6	11
			V/C	0.53	0.00	0.00		0.00	0.00	0.07		0.21	0.00	0.00		0.31	0.00	0.00		
			Q	8	0	0		0	0	1		1	0	0		2	0	0		
	MacKay Street & Pembroke Street West/Pembroke Street East	TCS	LOS	B	A	D	D	C	A	C	C	C	A	C	C	C	A	C	C	C
			Delay	19	0	44	44	25	0	23	23	24	0	27	26	27	0	32	32	32
			V/C	0.02	0.00	0.88		0.55	0.00	0.50		0.35	0.00	0.30		0.04	0.00	0.32		
			Q	1	0	73		6	0	26		10	0	14		2	0	15		
	MacKay Street & Lake Street/Nelson Street	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	2	0	3	3	4	0	2	3	22	0	0	22	21	0	0	21	5
			V/C	0.00	0.00	0.40		0.09	0.00	0.12		0.26	0.00	0.00		0.06	0.00	0.00		
			Q	0	0	2		1	0	1		1	0	0		0	0	0		
	MacKay Street & Town Line Road/D' Youville Drive	AWSC	LOS	<	D	>	D	<	A	>	A	<	B	>	B	<	A	>	A	C
			Delay	<	27	>	27	<	10	>	10	<	11	>	11	<	10	>	10	21
			V/C	<	0.85	>		<	0.16	>		<	0.26	>		<	0.15	>		
			Q	<	76	>		<	4	>		<	8	>		<	4	>		
	Cecelia Street & D' Youville Drive	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	8	>	8	8
			V/C	<	0.06	>		<	0.03	>		<	0.06	>		<	0.20	>		
			Q	<	2	>		<	1	>		<	2	>		<	5	>		
	Wilson Road & Drive-in Road	TWSC	LOS	A	A	A	A	B	A	A	A	<	C	>	C	<	B	>	B	A
			Delay	7	0	0	0	10	0	0	2	<	25	>	25	<	10	>	10	1
			V/C	0.00	0.00	0.00		0.01	0.00	0.00		<	0.13	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	3	>		<	0	>		
	Highway 148 & Drive-in Road	TWSC	LOS	<	F	>	F	<	D	>	D	A	A	A	A	A	A	A	A	F
			Delay	<	1075	>	1075	<	33	>	33	0	0	0	0	8	0	0	0	247
			V/C	<	3.25	>		<	0.07	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	339	>		<	2	>		0	0	0		0	0	0		
	Highway 148 & Robinson Lane	TCS	LOS	C		D	D					B	A		A		B	A	B	B
			Delay	34		38	36					12	6		8		14	8	13	13
			V/C	0.40		0.64						0.59	0.45				0.67	0.16		
			Q	7		11						2	3				8	1		
	Highway 148 & Walmart Entrance	TCS	LOS	C	A	D	D	A	A	A	A	F	A	A	F	A	C	C	C	E
			Delay	32	0	44	39	0	0	0	0	194	9	0	114	0	23	22	23	58
			V/C	0.41	0.00	0.85		0.00	0.00	0.00		1.35	0.34	0.00		0.00	0.70	0.64		
			Q	14	0	35		0	0	0		138	2	0		0	28	21		
	Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS	E	A	F	F	D	A	A	D	C	A	B	B	C	A	B	C	D
			Delay	72	0	108	97	43	0	0	43	26	0	11	13	31	0	12	28	41
			V/C	0.80	0.00	1.04		0.15	0.00	0.00		0.40	0.00	0.41		0.86	0.00	0.13		
			Q	36	0	106		2	0	0		5	0	10		84	0	4		
	Driveway/Howard Street & Highway 148	TCS	LOS	C	A	C	C	C	B	B	B	B	A	A	B	D	A	A	D	C
			Delay	22	0	24	24	29	18	12	17	17	0	0	17	36	0	0	36	25
			V/C	0.02	0.00	0.80		0.00	0.60	0.18		0.03	0.00	0.00		0.84	0.00	0.00		
			Q	0	0	23		0	12	2		1	0	0		36	0	0		
	River Road & Driveway/Bell Street	TWSC	LOS	<	A	>	A	<	C	>	C	A	A	A	A	A	A	A	A	A
			Delay	<	0	>	0	<	20	>	20	0	0	0	0	8	0	0	0	5
			V/C	<	0.00	>		<	0.46	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	0	>		<	18	>		0	0	0		0	0	0		
	Mackay Street & Bell Street	TCS	LOS	A	A	A	A	A	A	A	A	A	A	B	B	B	A	A	B	B
			Delay	7	0	0	7	9	0	0	9	0	0	16	16	14	0	0	14	12
			V/C	0.15	0.00	0.00		0.46	0.00	0.00		0.00	0.00	0.67		0.37	0.00	0.00		
			Q	1	0	0		3	0	0		0	0	2		1	0	0		
	Cecelia Street & Bell Street	AWSC	LOS	<	D	>	D	<	B	>	B	<	B	>	B	<	B	>	B	C
			Delay	<	30	>	30	<	12	>	12	<	13	>	13	<	10	>	10	22
			V/C	<	0.84	>		<	0.38	>		<	0.39	>		<	0.07	>		
			Q	<	71	>		<	14	>		<	14	>		<	2	>		
	Bell Street & O' Brien Street	AWSC	LOS	<	D		D		B	>	B					A		>	A	C
			Delay	<	29		29		11	>	11					8		>	8	23
			V/C	<	0.84				0.39	>						0.01		>		
			Q	<	76				14	>						0		>		

Existing Intersection Performance - Summer Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Cecelia Street & Alfred Street	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	8	>	8	8
			V/C	<	0.12	>		<	0.06	>		<	0.06	>		<	0.10	>		
			Q	<	3	>		<	2	>		<	2	>		<	2	>		
	Matheson Drive & Angus Campbell Drive	TWSC	LOS		A	A	A	A	A		A	C		>	C					A
			Delay		0	0	0	9	0		0	15		>	15					0
			V/C		0.00	0.00		0.01	0.00			0.03		>						
			Q		0	0		0	0			1		>						
	Mackay Street & Mary Street/Alfred Street	TCS	LOS	C	A	C	C	C	A	A	C	A	A	A	A	A	A	B	B	B
			Delay	26	0	25	25	25	0	0	25	7	0	6	6	0	0	12	12	14
			V/C	0.40	0.00	0.36		0.37	0.00	0.00		0.16	0.00	0.27		0.00	0.00	0.44		
			Q	6	0	4		6	0	0		0	0	2		0	0	3		
	Broadview Drive & Alfred Street	TWSC	LOS	<	A	>	A	<	A	>	A	A	A	A	A	A	A	A	A	A
			Delay	<	9	>	9	<	9	>	9	7	0	0	1	7	0	0	1	7
			V/C	<	0.04	>		<	0.02	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	1	>		<	1	>		0	0	0		0	0	0		
	Rosewood Avenue & Alfred Street	TWSC	LOS	<	A	>	A	<	A	>	A	A	A	A	A	A	A	A	A	A
			Delay	<	9	>	9	<	0	>	0	8	0	0	1	0	0	0	0	4
			V/C	<	0.03	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	1	>		<	0	>		0	0	0		0	0	0		
	Bell Street & Broadview Drive	TWSC	LOS	A	A		A		A	A	A					C		>	C	A
			Delay	8	0		0		0	0	0					19		>	19	0
			V/C	0.01	0.00				0.00	0.00						0.05		>		
			Q	0	0				0	0						2		>		
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	B	B	C	A	C	C	C	A	C	C	B
			Delay	6	9	6	9	6	0	10	10	30	0	27	28	29	0	28	29	12
			V/C	0.05	0.43	0.00		0.04	0.00	0.54		0.07	0.00	0.13		0.27	0.00	0.39		
			Q	0	3	0		0	0	4		1	0	2		4	0	4		
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	E	>	E	<	F	>	F	A
			Delay	9	0	0	5	0	0	0	0	<	42	>	42	<	108	>	108	8
			V/C	0.31	0.00	0.00		0.00	0.00	0.00		<	0.07	>		<	0.60	>		
			Q	10	0	0		0	0	0		<	2	>		<	20	>		
	Driveway/McGee Street & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	B	>	B	A
			Delay	8	0	0	1	8	0	0	0	<	17	>	17	<	12	>	12	2
			V/C	0.05	0.00	0.00		0.01	0.00	0.00		<	0.06	>		<	0.09	>		
			Q	2	0	0		0	0	0		<	2	>		<	2	>		
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	C	>	C	A
			Delay	8	0	0	2	0	0	0	0	<	0	>	0	<	16	>	16	4
			V/C	0.08	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.34	>		
			Q	2	0	0		0	0	0		<	0	>		<	11	>		
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS	<	F	>	F	<	B	>	B	<	B	>	B	<	B	C	C	F
			Delay	<	396	>	396	<	12	>	12	<	13	>	13	<	13	19	18	283
			V/C	<	1.78	>		<	0.19	>		<	0.12	>		<	0.12	0.68		
			Q	<	551	>		<	4	>		<	2	>		<	2	23		
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS	<		>		<		>		<		>		<		>		
			Delay	<		>		<		>		<		>		<		>		
			V/C	<		>		<		>		<		>		<		>		
			Q	<		>		<		>		<		>		<		>		
	Broadview Drive & Pembroke Street East	TWSC	LOS		A	A	A	A	A		A	C		>	C					A
			Delay		0	0	0	9	0		0	16		>	16					0
			V/C		0.00	0.00		0.01	0.00			0.05		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Nelson Street	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		1	12		>	12					1
			V/C		0.00	0.00		0.01	0.00			0.04		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Pembroke Street East	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	5	9	0	9	6	0	6	6	29	0	0	29	29	0	0	29	9
			V/C	0.01	0.54	0.00		0.06	0.00	0.37		0.13	0.00	0.00		0.14	0.00	0.00		
			Q	0	4	0		0	0	2		2	0	0		2	0	0		
	Christie Street & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	A	A	B	A	B	B	A	A	B	B	B
			Delay	8	0	5	5	6	0	7	7	18	0	17	17	0	0	17	17	11
			V/C	0.03	0.00	0.21		0.06	0.00	0.44		0.49	0.00	0.43		0.00	0.00	0.42		
			Q	0	0	1		0	0	3		1	0	1		0	0	1		
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B	A
			Delay	8	0	0	0	8	0	0	0	<	12	>	12	<	10	>	10	1
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.03	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		

Existing Intersection Performance - Summer Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Elizabeth Street & Pembroke Street East	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	C	>	**C**	<	C	>	**C**	**A**
			Delay	8	0	0	**0**	9	0	0	**0**	<	24	>	**24**	<	15	>	**15**	**1**
			V/C	0.01	0.00	0.00		0.01	0.00	0.00		<	0.09	>		<	0.07	>		
			Q	0	0	0		0	0	0		<	2	>		<	2	>		
	Forced Road & Pembroke Street West	TCS	LOS		A	A	**A**	A	A		**A**	C		C	**C**					**A**
			Delay		0	6	**6**	4	3		**3**	34		32	**34**					**6**
			V/C		0.00	0.36		0.03	0.33			0.31		0.06						
			Q		0	2		0	2			4		1						
	Fraser Street & Alfred Street	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	7	0	0	**0**	7	0	0	**0**	<	9	>	**9**	<	10	>	**10**	**4**
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.03	>		<	0.04	>		
			Q	0	0	0		0	0	0		<	1	>		<	1	>		
	Christie Street & Mary Street	AWSC	LOS	<	B	>	**B**	<	B	A	**B**	<	B	>	**B**	<	B	>	**B**	**B**
			Delay	<	10	>	**10**	<	12	9	**11**	<	14	>	**14**	<	11	>	**11**	**12**
			V/C	<	0.19	>		<	0.29	0.07		<	0.50	>		<	0.32	>		
			Q	<	5	>		<	9	2		<	21	>		<	10	>		
	Trafalgar Road & Mary Street	AWSC	LOS	<	A	>	**A**	<	B	A	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	8	>	**8**	<	11	7	**11**	<	8	>	**8**	<	9	>	**9**	**10**
			V/C	<	0.07	>		<	0.34	0.02		<	0.13	>		<	0.16	>		
			Q	<	2	>		<	11	1		<	3	>		<	4	>		
	Moffat Street & Mary Street	AWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	8	>	**8**	<	9	>	**9**	<	8	>	**8**	<	8	>	**8**	**9**
			V/C	<	0.21	>		<	0.33	>		<	0.03	>		<	0.05	>		
			Q	<	6	>		<	10	>		<	1	>		<	2	>		
	James Street & McGee Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	A	A	A	**A**	A	A	A	**A**	**A**
			Delay	<	9	>	**9**	<	10	>	**10**	0	0	0	**0**	0	0	0	**0**	**4**
			V/C	<	0.06	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	2	>		<	0	>		0	0	0		0	0	0		
	Trafalgar Road/Driveway & Pembroke Street West	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	B	>	**B**	<	A	>	**A**	**A**
			Delay	0	0	0	**0**	8	0	0	**1**	<	12	>	**12**	<	0	>	**0**	**1**
			V/C	0.00	0.00	0.00		0.04	0.00	0.00		<	0.10	>		<	0.00	>		
			Q	0	0	0		1	0	0		<	2	>		<	0	>		
	Forest Lea Road/Driveway & Pembroke Street West	TCS	LOS	A	B	A	**A**	A	A	A	**A**	D	A	A	**D**	A	A	C	**C**	**B**
			Delay	8	10	9	**10**	6	6	0	**6**	36	0	0	**36**	0	0	29	**29**	**12**
			V/C	0.00	0.34	0.13		0.20	0.37	0.00		0.60	0.00			0.00	0.00	0.03		
			Q	0	2	1		0	2	0		16	0	0.0		0	0	1		
	TV Tower Road & Forest Lea Road	TWSC	LOS		A	A	**A**	A	A		**A**	B		>	**B**					**A**
			Delay		0	0	**0**	8	0		**4**	13		>	**13**					**5**
			V/C		0.00	0.00		0.10	0.00			0.34		>						
			Q		0	0		2	0			11		>						

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)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
AWSC - All-Way Stop Control

< / > - Shared with through movement

Appendix D

Population and Employment Growth Forecasts

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

5A-150 Pinebush Road
Cambridge ON N1R 8J8
p: 519.896.3163
905.381.2229
416.479.9684

www.ptsl.com

2023-11-24
Project: (220694)

Ms. Lauree Armstrong, MCIP, RPP
Township Planner
Township of Laurentian Valley
460 Witt Road
Pembroke ON, K8A 6W5

Dear Ms. Armstrong:

RE: TOWNSHIP OF LAURENTIAN VALLEY – TRANSPORTATION MASTER PLAN POPULATION & EMPLOYMENT GROWTH FORECASTING ASSUMPTIONS

One of the fundamental inputs to the travel demand forecasting process for the Laurentian Valley / Pembroke Transportation Master Plan (TMP) is the development of future population and employment forecasts to represent planned growth in the community. Increases in population and employment in a community is one of the key drivers of increased trip making. This memo summarizes that approach used to develop future forecasts of population and employment within the model area developed for this study, and describes the assumptions used to allocate the new growth to different areas of the City and Township.

Background

The population and employment growth forecasts used in the TMP are based on 2021 Census data comprised of population and dwelling counts and Place of Residence / Place of Work data. The approach to the development of forecasts of future growth differs by area within the model:

Petawawa – Petawawa is included as an external set of zones in the transportation model given the magnitude of the existing travel patterns between Petawawa and the Township of Laurentian Valley and the City of Pembroke. As detailed forecasts of future growth in population and employment, and the allocation of future growth to areas within Petawawa were not available for use in the study, future growth was estimated based on the historical growth rate for population over the past 5 years as reported in the Census.

Township of Laurentian Valley and City of Pembroke – Assumptions regarding the magnitude and location of future growth in population within Laurentian Valley and Pembroke was provided by the Township and City based on approved development approvals and development applications in the review and approval process.

As detailed forecasts of employment growth were not provided at the same level of detail, Paradigm developed these forecasts using historical Census Place of Work data and activity rates, combined with the most recent employment forecasts prepared by Hemson Consulting in the March 2021 Development Charges Background Study for the City of Pembroke. Employment was allocated based on the employment areas and commercial areas designated in the respective Official Plans.

Details summarizing the key assumptions and results of the growth forecasting and growth allocation process are summarized in the following sections.

Existing Characteristics

Data Sources

Data was collected from two sources to determine the existing population and employment figures for the existing base year:

- **Open Street Maps[1] (OSM)** – Data provided exclusively in a geographic information system (GIS) format, providing information on land use, and building locations, size and use;
- **Statistics Canada** – Data provided in a table and GIS format, with employment and population values for 2016 and 2021;
- **Hemson Consulting Development Charge Background Study (Pembroke)** – growth forecasts and assumptions for population per household, employees per square metre, and employment activity rates were reviewed;
- **Development Forecasts** – maps provided by the City of Pembroke and Township of Laurentian Valley summarized development applications currently under review or recently approved and allocated them for the 5, 10, and 20 year horizons as illustrated in **Figures 3-5** at the end of the document.

Zone system

A zone system was developed for the study area to break down the urban and rural areas into smaller contiguous areas that have similar land use characteristics, similar trip making activity, and are not bisected or separated by physical boundaries (such as rivers, major creeks, rail corridors and other major features) that act as a barrier to travel.

The model zone system is comprised of:

- 23 zones within Pembroke,
- 13 Zones within Laurentian Valley (with smaller zones adjacent to the Pembroke boundary and larger zones in the rural area),
- 4 Zones within Petawawa, and
- 6 external gateway zones that represent the major highways and County Roads entering the model area including:

[1] https://www.openstreetmap.org/#map=14/45.8211/-77.1210&layers=CD

- Beachburg Road (County Road 21) – east-west travel to/from northern Renfrew;
- Highway 17 (south of Pembroke) – travel to/from Renfrew and Ottawa;
- Highway 148 – boarder crossing to/from Quebec;
- Highway 17 (north of Petawawa) – travel to/from northwestern Ontario;
- Highway 41 –travel to/from Renfrew County to the south; and
- Round Lake Road (Conty Road 58) – travel to/from Bonnechere and the Algonquin Park area.

Figure 1, at the end of this document, illustrates the Census Dissemination Area boundaries that were used in the model and **Figure 2** illustrates the Traffic Zone boundaries in the Pembroke and Laurentian Valley areas.

The zone system within each municipality generally follows the boundaries established for the Census Dissemination Areas. In a number of areas the dissemination areas were combined together (or aggregated) to create a larger zone more suited for the use in the model. Existing population and dwelling counts from the 2021 Census were used as the basis for the existing population within each zone.

Table 1 summarizes the 2021 base year population and employment for each traffic zone in the study area.

The Census does not provide a geographical allocation of employment within a municipality, but the total number of jobs in a municipality can be estimated from the number of people who indicated they worked at a usual place of work in that municipality. This does not include residents who work from home, work out of province, or do not have fixed workplace, so these are treated separately when total municipal employment is estimated. The distribution of existing employment to each zone was estimated based on the relative distribution of different categories of non-residential buildings (obtained from the Open Street Map Data) and the relative share of employment in each category based on the Occupation Classifications reported in the Census.

Table 2 summarizes the existing employment in each municipality by major employment category for all employees reporting a usual place of work in the 2021 Census.

TABLE 1: EXISTING POPULATION AND EMPLOYMENT BY TRAFFIC ZONE

Jurisdiction	Traffic Zone	2021 Population	Number Dwellings	2021 Employment[1]
City of Pembroke	6	961	403	412
City of Pembroke	7	965	447	217
City of Pembroke	8	589	273	197
City of Pembroke	9	556	255	8
City of Pembroke	10	505	236	0
City of Pembroke	14	1,312	632	481
City of Pembroke	15	523	245	0
City of Pembroke	16	605	341	520
City of Pembroke	17	459	249	63
City of Pembroke	18	479	289	1,765
City of Pembroke	19	202	93	6
City of Pembroke	20	1,089	606	95
City of Pembroke	21	683	336	11
City of Pembroke	22	462	171	0
City of Pembroke	23	487	210	0
City of Pembroke	24	472	242	31
City of Pembroke	25	620	187	11
City of Pembroke	26	416	171	0
City of Pembroke	27	537	242	1,862
City of Pembroke	29	773	371	0
City of Pembroke	37	495	277	237
City of Pembroke	38	524	250	0
City of Pembroke	39	650	362	169
City of Pembroke Total		***14,364***	***6,888***	***6,085***
Laurentian Valley	4	727	299	228
Laurentian Valley	5	438	167	12
Laurentian Valley	11	777	323	12
Laurentian Valley	12	687	325	78
Laurentian Valley	13	622	258	22
Laurentian Valley	28	681	315	419
Laurentian Valley	30	584	219	71
Laurentian Valley	31	609	238	0
Laurentian Valley	32	1,191	479	226
Laurentian Valley	33	697	262	0
Laurentian Valley	34	1,118	419	0
Laurentian Valley	35	640	260	0
Laurentian Valley	40	679	313	772
Laurentian Valley Total		***9,450***	***3,877***	***1,840***
Town of Petawawa	1	1,173	592	20
Town of Petawawa	2	3,951	1,501	931
Town of Petawawa	3	1,726	731	0
Town of Petawawa	36	11,310	4,350	5,209
Town of Petawawa Total		***18,160***	***7,174***	***6,160***
Total		***41,974***	***17,939***	***14,085***

1) Excludes Employees with No Fixed Workplace (Pembroke = 700, Laurentian Valley=500, and Petawawa=1,090)

TABLE 2: EXISTING EMPLOYMENT BY TYPE AND MUNICIPALITY

Jurisdiction	2021	Employment by Category			
	Employment	Office	Commercial	Industrial	Public Administration
City of Pembroke	6,085	1,310	1,928	2,155	692
Town of Petawawa	6,160	949	1,369	1,043	2,799
Laurentian Valley	1,840	381	528	706	226
Totals	***14,085***	***2,640***	***3,824***	***3,904***	***3,717***

Historical Growth in Population and Employment

A review of historical growth in the study area was undertaken to provide a context and comparison for assessing the future forecasts developed using the summary of development approvals and current applications, provided by the City and Township.

Table 3 summarizes the population rates from the 2016 and 2012 Census data for the three municipalities in the model area. For comparison, we have also summarized the population figures used in the 2021 Hemson Development Charge Study for the City of Pembroke.

TABLE 3: HISTORICAL POPULATION GROWTH RATES

Jurisdiction	2016 Population	2021 Number Dwellings	2021 Population	Pop/ Dwell	Growth Rate	2031 Population Forecast
Statistics Canada Data						
City of Pembroke	13,882	6,542	14,364	2.20	0.69%	15,385
Town of Petawawa	17,187	6,762	18,160	2.69	1.11%	20,280
Laurentian Valley	9,387	3,715	9,450	2.54	0.13%	9,575
Hemson DC Study						
City of Pembroke	13,882	6,348	14,220[1]	2.24	0.47%	14,891[2]
Difference in Data (Stat Can - Hemson)						
City of Pembroke	-	194	144	-0.04	0.22%	537

1) Hemson Report provided a forecast population for 2021 of 14,220 for the City based on growth from a base year of 2016.
2) Hemson Report provided a forecast population for 2030 of 14,824. Extended this to 2031 results in an estimated 2031 population of 14,891 for Pembroke.

Using the observed growth rates between the 2016 and 2021 Census years a 2031 population forecast was estimated for each municipality. As this forecast relies on historical growth rather than ongoing and proposed development activity, this would represent a lower boundary growth forecast for the area.

Table 4 summarizes the employment figures from the 2016 and 2012 Census data for the three municipalities in the model area. For comparison, we have also summarized the employment figures used in the 2021 Hemson Development Charge Study for the City of Pembroke. The employment forecasts were derived by adding the Place of Work (POW) data for all Census respondents that reported a usual place of work within each of the municipalities with the number of residents within each municipality who reported no fixed work place location. The same approach was used in the Hemson Report to estimate the employment for Pembroke. Work at home employees were excluded from the Hemson forecast as they do not contribute to employment space needs. Work at home employees were also excluded from our forecast summary for employment as well, as these employees do not typically generate home to work trips during the peak periods. Work at home employees may generate other non-work trip making during the day, and that is captured separately in the model through the Home to Other trip category.

TABLE 4: HISTORICAL EMPLOYMENT GROWTH RATES

Jurisdiction	2016	2016 Activity Rate[4]	2021	2021 Activity Rate	Growth Rate	2031 Estimate
Stat Can Data						
City of Pembroke	7,960[3]	57.3%	6,785[3]	47.2%	-3.14%	4,932
Town of Petawawa	8,340[3]	48.5%	7,250[3]	39.9%	-2.76%	5,480
Laurentian Valley	2,700[3]	28.8%	2,340[3]	24.8%	-2.82%	1,758
Hemson DC Study						
City of Pembroke	7,930	57.1%	8,123[1]	57.1%	0.48%	8,521[2]
Difference in Data (Stat Can - Hemson)						
City of Pembroke	-		-1,338	-9.9%		

1) Hemson Report provided a forecast employment for 2021 of 8,123 for the City based on growth from a base year of 2016.
2) Projecting this growth forward to 2031 would yield an employment forecast of 8,521 for Pembroke
3) Usual Place of Work in Municipality + No Fixed Workplace, Excludes Work at Home
4) Activity Rate is the percentage of jobs in a community as a function of the community population

Employment between 2016 and 2021 saw a significant decline in all municipalities in the area, in the order of a -2.8% to -3.14% annual growth rate, despite the aforementioned growth in population. This is expected to be due to impacts of COVID 19, where residents in May of 2021 were still under a number of gathering restrictions and many workplaces were either shut down or under restricted operations as well. The Hemson report forecasts for 2021 employment were based on the 2016 Census and used historical growth rates between 2011 and 2016 as the basis for the forecasts. At the time of preparing the report there was no data available on the impacts due to the ongoing COVID pandemic.

Based on the 2021 Census data, the COVID 19 pandemic not only resulted in fewer people employed in the area municipalities, but for those who were still employed, many had switched to working at home where that was feasible for their specific jobs. In 2016 the work at home rate for Pembroke was 3.5% and for Laurentian Valley it was 5.7%. In 2021 this increased to 12.8% and 16.1% respectively. In addition to the increase in work from home, the number of employees reporting no fixed place of work also increased between 2016 and 2021. While these residents are included in the total overall employment in each area, the work at home employees are excluded. As a result, the overall activity rate of employment in each community as a percentage of the population decreased as summarized in **Table 4**.

Given the impacts to employment caused by COVID 19, using the observed 2016 to 2021 Census growth rates for employment would result in significant employment declines in each municipality, which would not be reflective of a return to more normal working patterns and would not be reasonable in light of anticipated growth in each municipality.

Development Generated Population Growth Forecasts

A second set of future population forecasts for Pembroke and Laurentian Valley were also generated based on the planned / approved development anticipated in each municipality. **Figures 3 – 5** illustrate the potential number of residential units anticipated to be built in various areas of the City and Township for the 5, 10 and 20 year horizons. For the purpose of this assessment, we have categorized these as 2026, 2031, and 2041 horizon years, using 2021 as a base year.

The development areas identified in the maps provide by the City and Township were allocated to the appropriate traffic zones used in the model to estimate the growth in population within each zone. The number of anticipated development units were converted to population using the average persons per dwelling unit observed in the 2021 Census (see **Table 3**).

Since future growth in development units based on ongoing and approved applications was not available for Petawawa, and this area is at the outer edge of the model area and will have less influence on the infrastructure needs within Pembroke and Laurentian Valley, the historic Census growth rates for Petawawa were used to determine the population and employment growth.

Table 5 summarizes the total number of new units and the anticipated growth in population for each municipality based on planned development for each horizon. In the zero to five year horizon approximately 776 new units, housing 1,789 new residents are anticipated to be built within the City of Pembroke and Township Laurentian Valley. Between years 6 and 10, an additional 1,145 units and 2,664 new residents are anticipated to added, and between years 11 and 20, 1,496 new units with 3,487 new residents are forecast to be built. By 2041, the study area is expected to generate 3,417 new dwelling units accommodating 7,939 new residents. **Table 6** itemizes each development area included in the forecast by horizon year and traffic zone allocation.

TABLE 5: NEW DWELLINGS AND POPULATION BY HORIZON

Horizon	Jurisdiction		
5 Year (2026)	**City of Pembroke**	**Laurentian Valley**	**Total**
New Dwellings	536	240	***776***
New Population	1,179	610	***1,789***
10 Year (2031)			
New Dwellings	719	426	***1,145***
New Population	1,582	1,082	***2,664***
20 Year (2041)			
New Dwellings	921	575	***1,496***
New Population	2,026	1,461	***3,487***
Total New Dwellings	***2,176***	***1,241***	***3,417***
Total New Population	***4,787***	***3,152***	***7,939***

TABLE 6: NEW DEVELOPMENT UNITS AND POPULATION BY HORIZON

Development	Horizon	Zone	# Units	New Population
Brundage Farm	5	6	130	286
Eddy Street Subdivision	5	6	45	99
Renfrew County Housing	5	6	8	18
Joseph 3rd Apartment	5	19	12	26
Mora Developments	5	29	29	64
TLV Development	5	28	120	305
TLV Development	5	28	75	191
River Road Townhouses	5	27	8	18
TLV Development	5	11	45	114
Golfview Land Development Inc.	5	14	196	431
Johnston Meadows (Parts of Golfview)	5	14	103	227
Griffith Apartment	5	14	5	11
Total 0-5 Years			***776***	***1789***
Sisters of St. Joseph	10	7	172	378
TLV Development	10	4	105	267
Condos behind Beer Store	10	19	39	86
TLV Development	10	28	100	254
TLV Development	10	11	45	114
Golfview Land Development Inc.	10	14	408	898
Griffith Apartment	10	14	100	220
TLV Development	10	11	57	145
TLV Development	10	11	12	30
TLV Development	10	13	107	272
Total 6-10 Years			***1145***	***2664***
TLV Development	20	4	200	508
West Wood Park Estates	20	8	45	99
Canada Splint Lands	20	7	92	202
Pontiac Street Waterfront	20	19	7	15
Land Behind Shoppers Drug Mart	20	20	119	262
Cooper Noik Lands	20	21	60	132
TLV Development	20	28	100	254
TLV Development	20	28	200	508
TLV Development	20	11	75	191
Golfview Land Development Inc.	20	14	598	1316
Total 11-20 Years			***1496***	***3487***

Using the allocation of new units and new population summarized in **Table 6** future forecasts of population for each traffic zone were prepared for each horizon as inputs to the travel demand model, as summarized in **Table 7**. The resulting growth forecasts for 2041 represent a 1.45% annual population growth rate for Pembroke, and a 1.52% annual growth for Laurentian Valley.

TABLE 7: POPULATION FORECASTS BY TRAFFIC ZONE AND HORIZON

Jurisdiction	Traffic Zone	2021 Population	2026 Population	2031 Population	2041 Population
City of Pembroke	6	961	1,364	1,364	1,364
City of Pembroke	7	965	965	1,343	1,546
City of Pembroke	8	589	589	589	688
City of Pembroke	9	556	556	556	556
City of Pembroke	10	505	505	505	505
City of Pembroke	14	1,312	1,981	3,098	4,414
City of Pembroke	15	523	523	523	523
City of Pembroke	16	605	605	605	605
City of Pembroke	17	459	459	459	459
City of Pembroke	18	479	479	479	479
City of Pembroke	19	202	228	314	330
City of Pembroke	20	1,089	1,089	1,089	1,351
City of Pembroke	21	683	683	683	815
City of Pembroke	22	462	462	462	462
City of Pembroke	23	487	487	487	487
City of Pembroke	24	472	472	472	472
City of Pembroke	25	620	620	620	620
City of Pembroke	26	416	416	416	416
City of Pembroke	27	537	555	555	555
City of Pembroke	29	773	837	837	837
City of Pembroke	37	495	495	495	495
City of Pembroke	38	524	524	524	524
City of Pembroke	39	650	650	650	650
City of Pembroke Total		***14,364***	***15,543***	***17,125***	***19,151***
Laurentian Valley	4	727	727	994	1,502
Laurentian Valley	5	438	441	444	450
Laurentian Valley	11	777	891	1,181	1,371
Laurentian Valley	12	687	692	696	705
Laurentian Valley	13	622	622	894	894
Laurentian Valley	28	681	1,176	1,430	2,192
Laurentian Valley	30	584	588	592	600
Laurentian Valley	31	609	613	617	625
Laurentian Valley	32	1,191	1,199	1,207	1,223
Laurentian Valley	33	697	702	706	716
Laurentian Valley	34	1,118	1,126	1,133	1,148
Laurentian Valley	35	640	644	649	657
Laurentian Valley	40	679	684	688	697
Laurentian Valley Total		***9,450***	***10,104***	***11,231***	***12,780***
Town of Petawawa	1	1,173	1,239	1,306	1,439
Town of Petawawa	2	3,951	4,175	4,398	4,846
Town of Petawawa	3	1,726	1,824	1,921	2,117
Town of Petawawa	36	11,310	11,950	12,591	13,871
Town of Petawawa Total		***18,160***	***19,188***	***20,216***	***22,272***
Total		***41,974***	***44,835***	***48,572***	***54,204***

Development Based Employment Forecasts

As the City and Township did not provide specific employment oriented development forecasts based on planning applications to use as a basis for the employment forecasts, the growth in employment was assumed to match the rate of population growth in each municipality. This approach assumes that the activity rate (jobs per population) will remain unchanged in the future. This is the same approach used in the Hemson Development Charge Background Study for the City of Pembroke.

The employment growth forecasts applied at the traffic zone level are only the employment associated with people who have a usual place of work. As noted previously, those who worked at home or do not work at a fixed location are not included in the employment forecasts used in the model since there is no fixed destination for the trip. The trip making associated with these employees are still represented in the model as their trip making activity is reflected in the observed trip generation rates the model uses to predict future travel demands. Accordingly, the growth in trip making for these employees will grow in line with the growth in overall work related trip making.

Table 8 summarizes the population growth rate derived for each municipality using the development based growth forecast approach, and uses this growth rate to estimate the employment in each municipality for the 2026, 2031 and 2041 horizon years.

TABLE 8: EMPLOYMENT FORECASTS BY MUNICIPALITY

Jurisdiction	2021 Population	2041 Population	Population Growth Rate
City of Pembroke	14,364	19,151	1.45%
Town of Petawawa	18,160	22,272	1.03%
Laurentian Valley	9,450	12,780	1.52%

Jurisdiction	2021 Employment	2026 Employment	2031 Employment	2041 Employment
City of Pembroke	6,085	6539	7026	8113
Town of Petawawa	6,160	6483	6822	7555
Laurentian Valley	1,840	1984	2140	2488

The allocation of future employment for the Township of Laurentian Valley was assumed to be in proportion to existing areas with observed employment, therefore the annual growth rate for employment was applied in each zone equally. For the City of Pembroke, the employment growth was allocated to the downtown (representing growth in the commercial and public administration sectors) and to the two zones covering the industrial areas around the Highway 17, Paul Matrin Drive and Boundary Road areas, as designated in the Pembroke Official Plan.

Table 9 summarizes the existing employment distribution by traffic zone along with the forecasts for employment in the 2026, 2031, and 2041 horizon years.

TABLE 9: EXISTING AND FORECAST EMPLOYMENT BY TRAFFIC ZONE

Jurisdiction	Traffic Zone	2021 Employment	2026 Employment	2031 Employment	2041 Employment
City of Pembroke	6	412	412	412	412
City of Pembroke	7	217	217	217	217
City of Pembroke	8	197	197	197	197
City of Pembroke	9	8	8	8	8
City of Pembroke	10	0	0	0	0
City of Pembroke	14	481	764	1,140	1,913
City of Pembroke	15	0	0	0	0
City of Pembroke	16	520	520	520	520
City of Pembroke	17	63	63	63	63
City of Pembroke	18	1765	1,886	1,927	1,927
City of Pembroke	19	6	6	6	6
City of Pembroke	20	95	95	95	95
City of Pembroke	21	11	11	11	11
City of Pembroke	22	0	0	0	0
City of Pembroke	23	0	0	0	0
City of Pembroke	24	31	31	31	31
City of Pembroke	25	11	11	11	11
City of Pembroke	26	0	0	0	0
City of Pembroke	27	1862	1,957	2,211	2,296
City of Pembroke	29	0	0	0	0
City of Pembroke	37	237	237	237	237
City of Pembroke	38	0	0	0	0
City of Pembroke	39	169	169	169	169
City of Pembroke Total		***6085***	***6,585***	***7,255***	***8,113***
Laurentian Valley	4	228	246	266	309
Laurentian Valley	5	12	13	14	16
Laurentian Valley	11	12	13	14	16
Laurentian Valley	12	78	84	90	105
Laurentian Valley	13	22	24	26	30
Laurentian Valley	28	419	452	487	566
Laurentian Valley	30	71	76	82	95
Laurentian Valley	31	0	0	0	0
Laurentian Valley	32	226	243	262	305
Laurentian Valley	33	0	0	0	0
Laurentian Valley	34	0	0	0	0
Laurentian Valley	35	0	0	0	0
Laurentian Valley	40	772	833	898	1,044
Laurentian Valley Total		***1840***	***1,984***	***2,139***	***2,486***
Town of Petawawa	1	20	22	23	25
Town of Petawawa	2	931	984	1,036	1,142
Town of Petawawa	3	0	0	0	0
Town of Petawawa	36	5209	5,503	5,798	6,388
Town of Petawawa Total		***6,160***	***6,509***	***6,857***	***7,555***
Total		***14,085***	***15,077***	***16,251***	***18,154***

It should be noted that there is potential that the existing employment activity rate could increase slightly compared to the rate observed in 2021, as the work patterns related to COVID subside. It is assumed that some employees who lost their jobs due to COVID closures may find new employment and more employees are expected to return to working in a regular workplace instead of working from home. Accordingly, the employment forecasts presented herein should be considered as conservative estimates.

Conclusions

Population and employment forecasts for the City of Pembroke and Township of Laurentian Valley have been reviewed and assessed from two perspectives. Historical growth between 2016 and 2021, based on the Census, was used to estimate the lower end of the population growth forecast for each community. This historical growth rate approach does not consider current development activity in the two municipalities, and the historical rate of employment growth over the same period results in negative growth, which is largely because of COVID restrictions that were still in place during the Census period. This had a higher impact on the reporting of work related activities than population.

An alternate growth forecast based on planned, approved, and anticipated development activity in Pembroke and Laurentian Valley yields an average annual population growth rate of 1.45% and 1.52% respectively for each municipality. At these levels of development activity, it is forecast that Pembroke will reach a population of 19,151 by 2041, and Laurentian Valley will grow to a population of 12,780 over the same time period. Growth in employment is assumed to match the growth in population, with Pembroke hosting 8,113 jobs and Laurentian Valley supporting 2,486 jobs by 2041.

These growth forecasts are recommended for use in assessing the future transportation needs for the communities as part of the Transportation Master Plan.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Kevin Jones **Project Manager** *Senior Consultant, Public Sector Practice Lead*	

Figure 1 – Census Zones

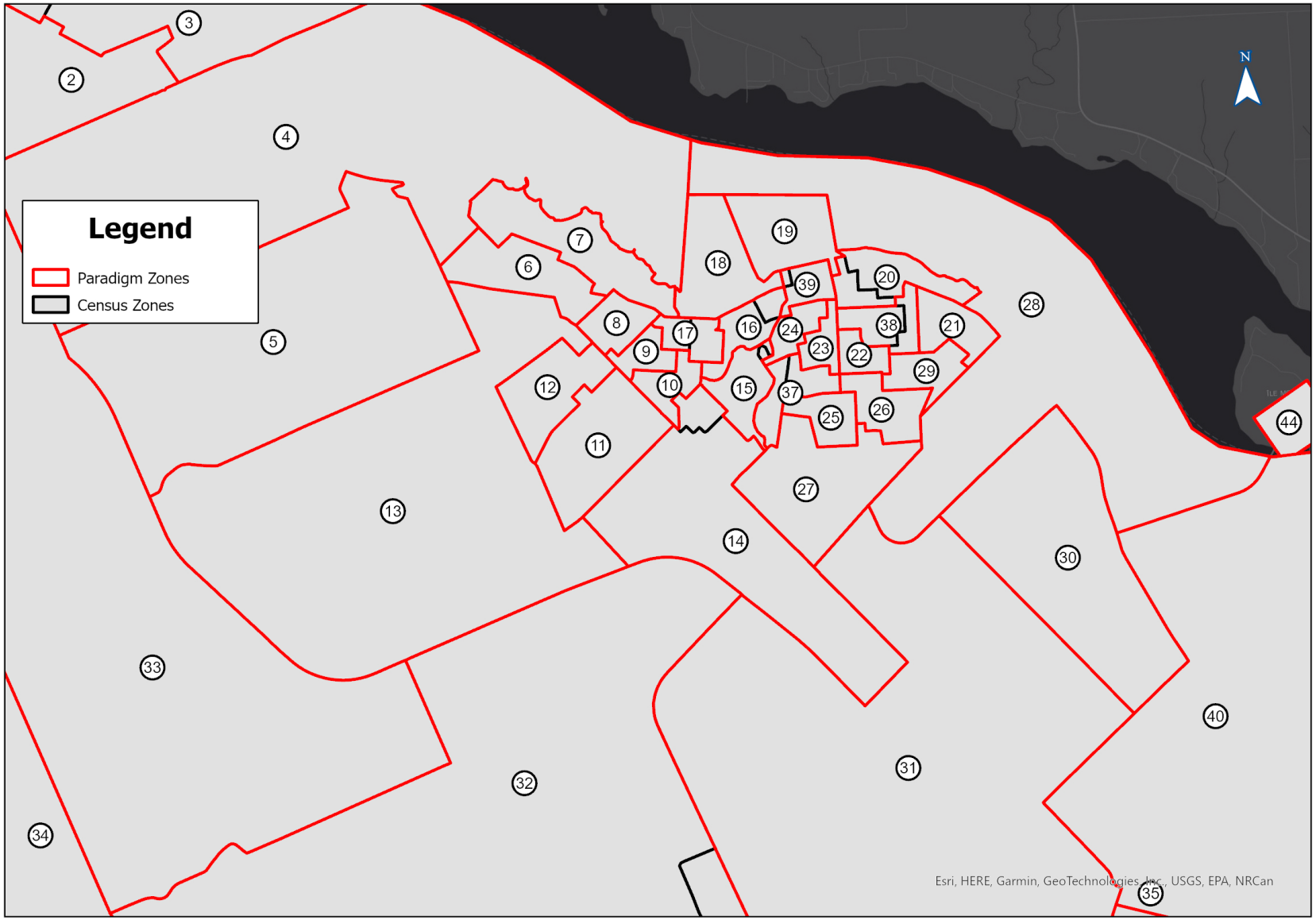


Figure 2 – Traffic Zone Boundaries

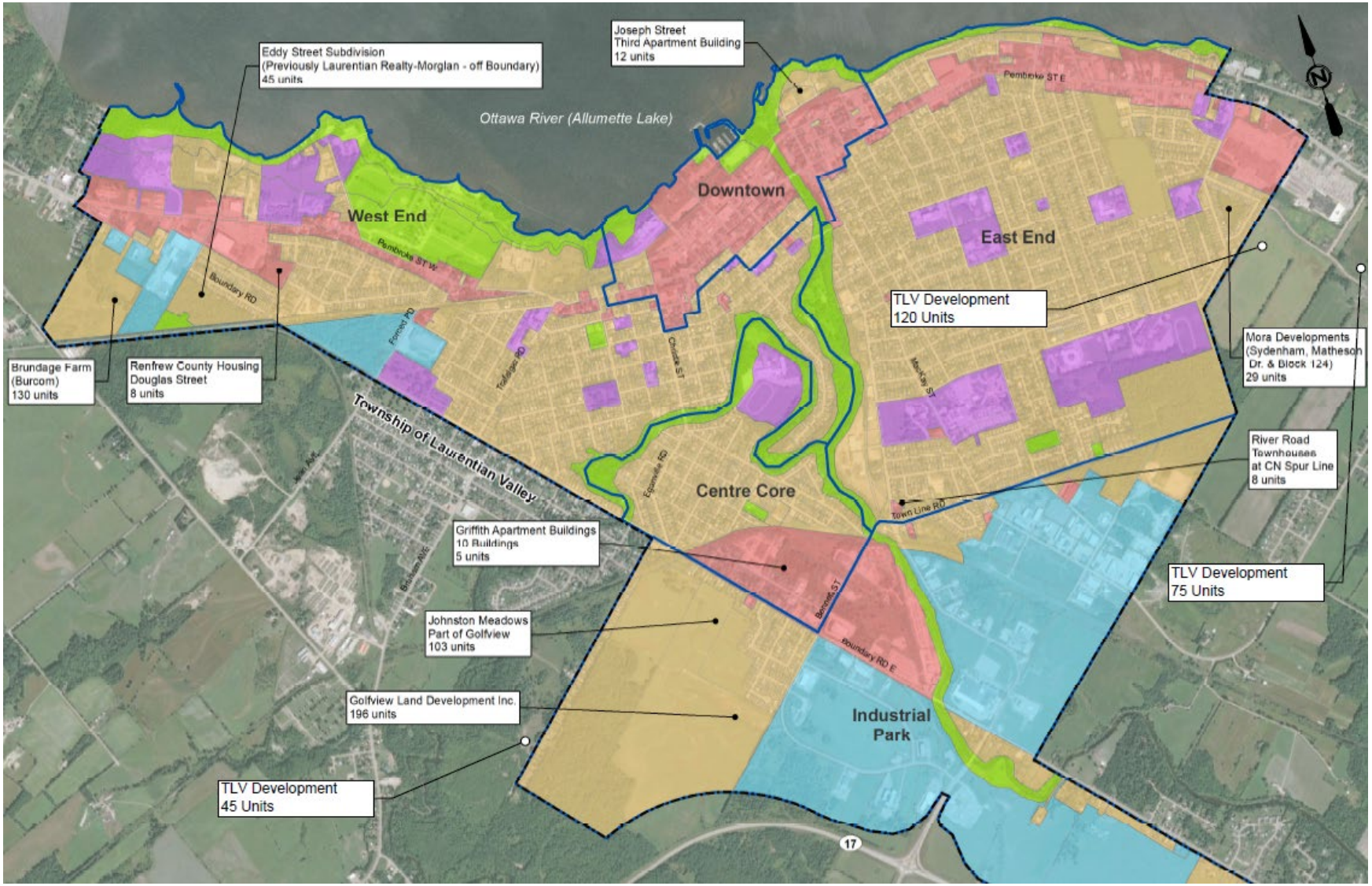


Figure 3 – Planned Residential Development 5 Year Horizon

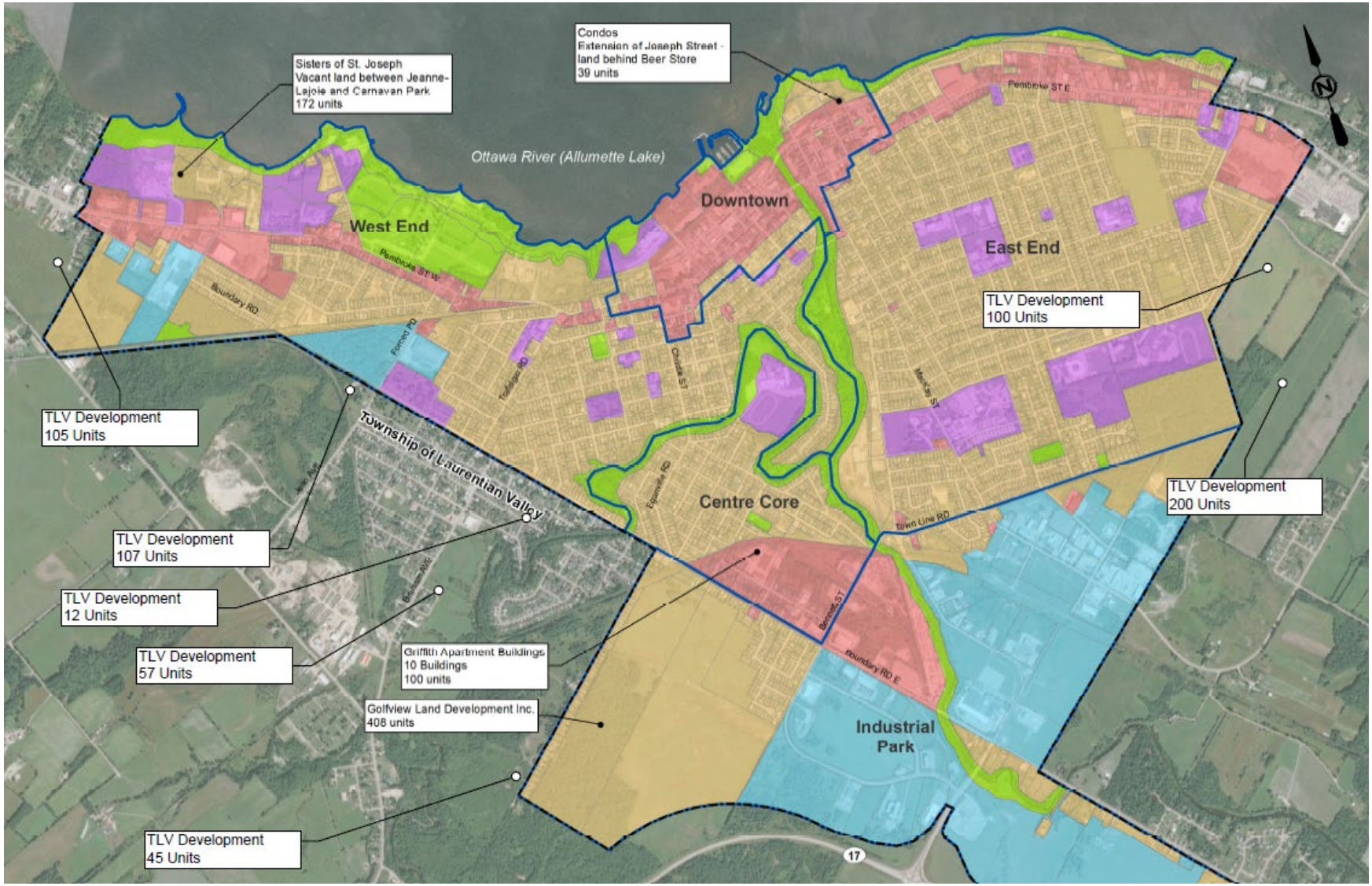


Figure 4 – Planned Residential Development 10 Year Horizon

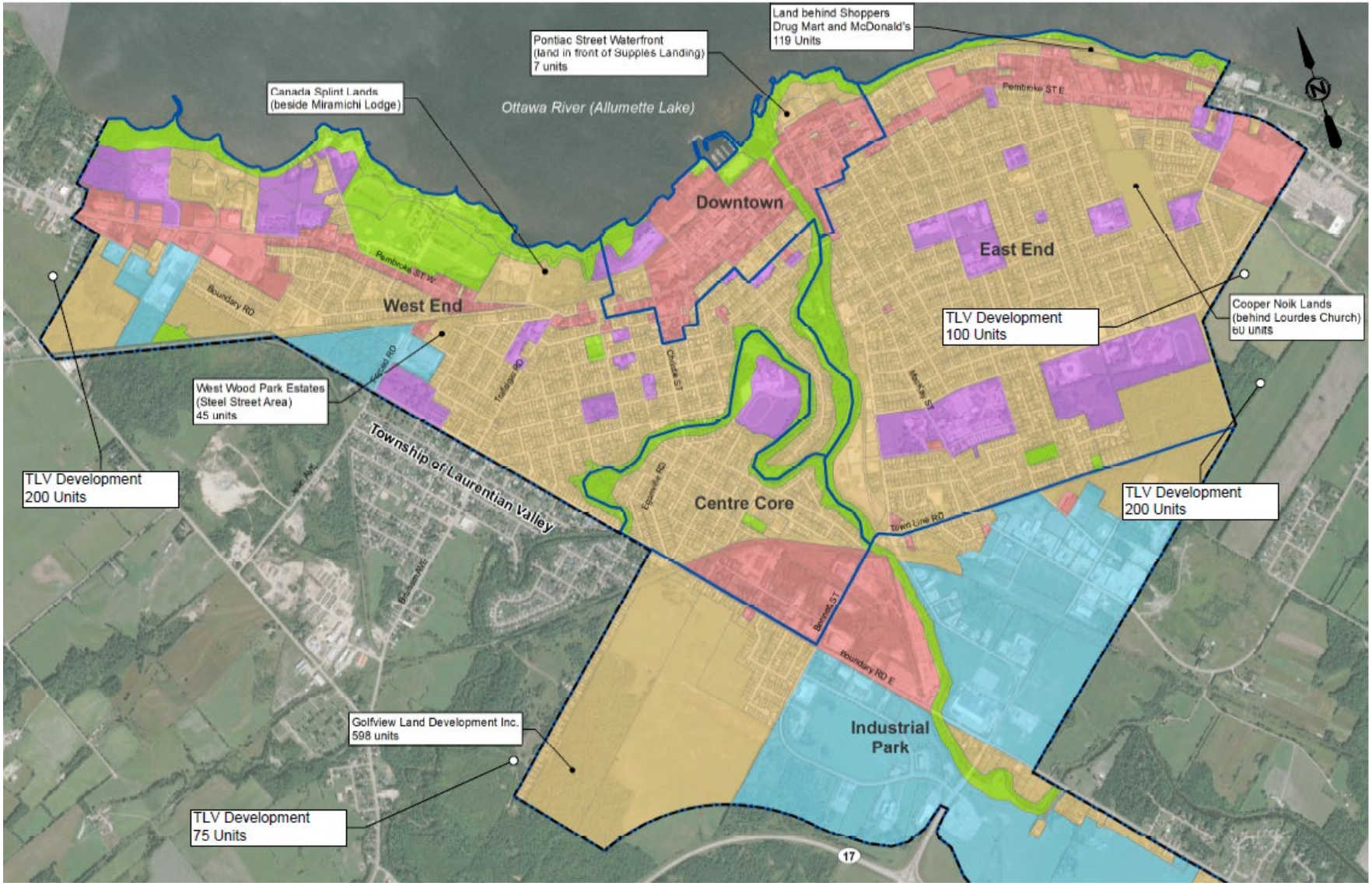


Figure 5 – Planned Residential Development 20 Year Horizon

Appendix E

Future Base Conditions Intersection Analysis

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

2041 Base Forecast Fall - PM Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Mud Lake Road/Boundary Road East & Paul Martin Drive	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	A	A	C	C	B
			Delay	5	0	6	6	6	0	8	8	26	0	0	26	0	0	27	27	11
			V/C	0.11	0.00	0.24		0.02	0.00	0.29		0.14	0.00	0.00		0.00	0.00	0.33		
			Q	0	0	2		0	0	2		2	0	0		0	0	4		
	River Road & Bennett Street/Town Line Road	TCS	LOS	A	A	C	C	C	A	C	C	A	A	A	A	A	A	A	A	C
			Delay	0	0	32	32	23	0	23	23	8	0	0	8	7	0	0	7	22
			V/C	0.00	0.00	0.73		0.26	0.00	0.54		0.14	0.00			0.01	0.00			
			Q	0	0	12		2	0	10		1	0	0.0		0	0	0.0		
	MacKay Street & River Road/Metcalfe Street	TCS	LOS	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	B
			Delay	26	0	0	26	0	0	21	21	5	0	0	5	7	0	0	7	10
			V/C	0.51	0.00	0.00		0.00	0.00	0.07		0.18	0.00	0.00		0.44	0.00	0.00		
			Q	7	0	0		0	0	1		1	0	0		3	0	0		
	MacKay Street & Pembroke Street West/Pembroke Street East	TCS	LOS	B	A	F	F	C	A	C	C	C	A	D	D	C	A	F	F	F
			Delay	18	0	172	170	27	0	22	23	30	0	39	38	26	0	632	624	297
			V/C	0.03	0.00	1.29		0.66	0.00	0.56		0.48	0.00	0.73		0.07	0.00	2.31		
			Q	0	0	260		4	0	25		5	0	41		1	0	693		
	MacKay Street & Lake Street/Nelson Street	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	2	0	2	2	3	0	2	2	22	0	0	22	21	0	0	21	5
			V/C	0.00	0.00	0.21		0.06	0.00	0.18		0.28	0.00	0.00		0.06	0.00	0.00		
			Q	0	0	1		0	0	1		2	0	0		0	0	0		
	MacKay Street & Town Line Road/D' Youville Drive	AWSC	LOS	<	B	>	B	<	A	>	A	<	A	>	A	<	A	>	A	B
			Delay	<	12	>	12	<	9	>	9	<	9	>	9	<	9	>	9	11
			V/C	<	0.52	>		<	0.20	>		<	0.11	>		<	0.09	>		
			Q	<	23	>		<	5	>		<	3	>		<	2	>		
	Cecelia Street & D' Youville Drive	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	7	>	7	8
			V/C	<	0.08	>		<	0.18	>		<	0.06	>		<	0.03	>		
			Q	<	2	>		<	5	>		<	2	>		<	1	>		
	Wilson Road & Drive-in Road	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	A	>	A	A
			Delay	7	0	0	0	8	0	0	1	<	11	>	11	<	9	>	9	2
			V/C	0.00	0.00	0.00		0.01	0.00	0.00		<	0.04	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		
	Highway 148 & Drive-in Road	TWSC	LOS	<	F	>	F	<	A	>		A	A	A	A	A	A	A	A	F
			Delay	<	696	>	696	<	0	>		10	0	0	2	8	0	0	0	306
			V/C	<	2.49	>		<	0.00	>		0.15	0.00	0.00		0.00	0.00	0.00		
			Q	<	625	>		<	0	>		4	0	0		0	0	0		
	Highway 148 & Robinson Lane	TCS	LOS	C		C	C					A	A		A		A	A	A	B
			Delay	34		35	34					5	5		5		9	7	9	11
			V/C	0.41		0.42						0.09	0.29				0.45	0.15		
			Q	8		7						0	2				3	1		
	Highway 148 & Walmart Entrance	TCS	LOS	C	A	D	D	A	A	A	A	A	A	A	A	A	B	A	A	B
			Delay	33	0	39	37	0	0	0	0	5	5	0	5	0	10	7	10	12
			V/C	0.26	0.00	0.73		0.00	0.00	0.00		0.18	0.30	0.00		0.00	0.44	0.11		
			Q	5	0	14		0	0	0		0	2	0		0	3	1		
	Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS	E	A	D	E	D	A	A	D	B	A	A	A	B	A	B	B	C
			Delay	72	0	39	69	43	0	0	43	11	0	10	10	17	0	11	16	21
			V/C	0.80	0.00	0.04		0.15	0.00	0.00		0.08	0.00	0.34		0.55	0.00	0.13		
			Q	36	0	2		2	0	0		1	0	8		31	0	4		
	Driveway/Howard Street & Highway 148	TCS	LOS	B	A	B	B	B	B	A	B	B	A	A	B	C	A	A	C	B
			Delay	16	0	13	13	16	13	8	12	19	0	0	19	26	0	0	26	15
			V/C	0.02	0.00	0.61		0.00	0.57	0.17		0.04	0.00	0.00		0.69	0.00	0.00		
			Q	0	0	6		0	5	1		1	0	0		15	0	0		
	River Road & Driveway/Bell Street	TWSC	LOS	<	A	>	A	<	B	>	B	A	A	A	A	A	A	A	A	A
			Delay	<	0	>	0	<	13	>	13	0	0	0	0	8	0	0	0	3
			V/C	<	0.00	>		<	0.18	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	0	>		<	5	>		0	0	0		0	0	0		
	Mackay Street & Bell Street	TCS	LOS	B	A	A	B	B	A	A	B	A	A	A	A	B	A	A	B	B
			Delay	11	0	0	11	15	0	0	15	0	0	10	10	18	0	0	18	16
			V/C	0.05	0.00	0.00		0.42	0.00	0.00		0.00	0.00	0.11		0.71	0.00	0.00		
			Q	0	0	0		3	0	0		0	0	0		3	0	0		
	Cecelia Street & Bell Street	AWSC	LOS	<	B	>	B	<	A	>	A	<	A	>	A	<	A	>	A	B
			Delay	<	11	>	11	<	9	>	9	<	9	>	9	<	9	>	9	10
			V/C	<	0.45	>		<	0.26	>		<	0.12	>		<	0.06	>		
			Q	<	17	>		<	8	>		<	3	>		<	2	>		
	Bell Street & O' Brien Street	AWSC	LOS	<	A		A		A	>	A					A		>	A	A
			Delay	<	8		8		8	>	8					7		>	7	8
			V/C	<	0.11				0.18	>						0.00		>		
			Q	<	3				4	>						0		>		
	Cecelia Street & Alfred Street	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	8	>	8	8
			V/C	<	0.13	>		<	0.11	>		<	0.04	>		<	0.07	>		

2041 Base Forecast Fall - PM Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour			Q	<	3	>		<	3	>		<	1	>		<	2	>		
	Matheson Drive & Angus Campbell Drive	TWSC	LOS		A	A	A	A	A		A	A		>	A					A
			Delay		0	0	0	7	0		0	9		>	9					1
			V/C		0.00	0.00		0.01	0.00			0.01		>						
			Q		0	0		0	0			0		>						
	Mackay Street & Mary Street/Alfred Street	TCS	LOS	F	A	C	F	C	A	A	C	B	A	B	B	B	A	F	F	F
			Delay	184	0	22	147	21	0	0	21	20	0	14	15	13	0	158	157	124
			V/C	1.31	0.00	0.38		0.22	0.00	0.00		0.37	0.00	0.35		0.01	0.00	1.28		
			Q	188	0	8		5	0	0		1	0	4		0	0	249		
	Broadview Drive & Alfred Street	TWSC	LOS	<	B	>	B	<	B	>	B	A	A	A	A	A	A	A	A	A
			Delay	<	11	>	11	<	12	>	12	8	0	0	7	7	0	0	0	7
			V/C	<	0.08	>		<	0.05	>		0.08	0.00	0.00		0.00	0.00	0.00		
			Q	<	2	>		<	1	>		2	0	0		0	0	0		
	Rosewood Avenue & Alfred Street	TWSC	LOS	<	A	>	A	<	A	>	A	A	A	A	A	A	A	A	A	A
			Delay	<	9	>	9	<	0	>	0	8	0	0	8	0	0	0	0	3
			V/C	<	0.04	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	1	>		<	0	>		0	0	0		0	0	0		
	Bell Street & Broadview Drive	TWSC	LOS	A	A		A		A	A	A					B		>	B	A
			Delay	8	0		0		0	0	0					14		>	14	0
			V/C	0.01	0.00				0.00	0.00						0.03		>		
			Q	0	0				0	0						1		>		
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS	A	B	A	B	A	A	B	B	C	A	C	C	C	A	C	C	B
			Delay	7	12	6	12	7	0	12	12	30	0	27	28	29	0	28	29	14
			V/C	0.06	0.64	0.00		0.05	0.00	0.65		0.07	0.00	0.13		0.27	0.00	0.39		
			Q	0	7	0		0	0	7		1	0	2		4	0	4		
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	C	>	C	A
			Delay	0	0	0	0	0	0	0	0	<	14	>	14	<	17	>	17	1
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.02	>		<	0.13	>		
			Q	0	0	0		0	0	0		<	1	>		<	4	>		
	Driveway/McGee Street & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	D	>	D	A
			Delay	8	0	0	1	9	0	0	0	<	22	>	22	<	27	>	27	1
			V/C	0.05	0.00	0.00		0.01	0.00	0.00		<	0.08	>		<	0.03	>		
			Q	2	0	0		0	0	0		<	2	>		<	1	>		
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	B	>	B	A
			Delay	8	0	0	2	0	0	0	0	<	0	>	0	<	12	>	12	3
			V/C	0.09	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.25	>		
			Q	2	0	0		0	0	0		<	0	>		<	8	>		
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS	<	C	>	C	<	B	>	B	<	B	>	B	<	A	C	C	C
			Delay	<	20	>	20	<	10	>	10	<	10	>	10	<	10	17	16	17
			V/C	<	0.68	>		<	0.19	>		<	0.09	>		<	0.04	0.61		
			Q	<	40	>		<	5	>		<	2	>		<	1	32		
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS	<		>		<		>		<		>		<		>		
			Delay	<		>		<		>		<		>		<		>		
			V/C	<		>		<		>		<		>		<		>		
			Q	<		>		<		>		<		>		<		>		
	Broadview Drive & Pembroke Street East	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	9	0		0	14		>	14					0
			V/C		0.00	0.00		0.01	0.00			0.04		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Nelson Street	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		1	11		>	11					1
			V/C		0.00	0.00		0.01	0.00			0.04		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Pembroke Street East	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	5	0	8	8	5	0	7	7	29	0	0	29	29	0	0	29	9
			V/C	0.01	0.00	0.46		0.01	0.00	0.38		0.13	0.00	0.00		0.14	0.00	0.00		
			Q	0	0	3		0	0	2		2	0	0		2	0	0		
	Christie Street & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	A	A	B	A	B	B	A	A	B	B	A
			Delay	8	0	6	6	7	0	7	7	17	0	15	17	0	0	19	19	9
			V/C	0.02	0.00	0.43		0.03	0.00	0.48		0.37	0.00	0.03		0.00	0.00	0.61		
			Q	0	0	3		0	0	4		1	0	0		0	0	2		
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B	A
			Delay	8	0	0	0	8	0	0	0	<	12	>	12	<	11	>	11	1
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.03	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		
	Elizabeth Street & Pembroke Street East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	C	>	C	A
			Delay	8	0	0	0	9	0	0	0	<	24	>	24	<	15	>	15	1
			V/C	0.01	0.00	0.00		0.01	0.00	0.00		<	0.09	>		<	0.07	>		
			Q	0	0	0		0	0	0		<	2	>		<	2	>		
	Forced Road &	TCS	LOS		A	A	A	A	A		A	C		C	C					A
			Delay		0	8	8	5	4		4	34		32	34					8

2041 Base Forecast Fall - PM Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Pembroke Street West	TCS	V/C		0.00	0.55		0.01	0.42			0.37		0.07						
			Q		0	4		0	3			5		1						
	Fraser Street & Alfred Street	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	B	>	**B**	<	B	>	**B**	**A**
			Delay	7	0	0	**0**	7	0	0	**0**	<	10	>	**10**	<	10	>	**10**	**4**
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.07	>		<	0.05	>		
			Q	0	0	0		0	0	0		<	2	>		<	1	>		
	Christie Street & Mary Street	AWSC	LOS	<	C	>	**C**	<	B	A	**B**	<	B	>	**B**	<	B	>	**B**	**B**
			Delay	<	16	>	**16**	<	12	8	**11**	<	11	>	**11**	<	11	>	**11**	**13**
			V/C	<	0.62	>		<	0.33	0.07		<	0.27	>		<	0.22	>		
			Q	<	32	>		<	10	2		<	8	>		<	6	>		
	Trafalgar Road & Mary Street	AWSC	LOS	<	B	>	**B**	<	B	A	**B**	<	A	>	**A**	<	A	>	**A**	**B**
			Delay	<	11	>	**11**	<	13	8	**13**	<	10	>	**10**	<	10	>	**10**	**11**
			V/C	<	0.32	>		<	0.45	0.00		<	0.21	>		<	0.16	>		
			Q	<	10	>		<	17	0		<	6	>		<	4	>		
	Moffat Street & Mary Street	AWSC	LOS	<	B	>	**B**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	**B**
			Delay	<	11	>	**11**	<	10	>	**10**	<	9	>	**9**	<	10	>	**10**	**10**
			V/C	<	0.41	>		<	0.30	>		<	0.03	>		<	0.22	>		
			Q	<	15	>		<	10	>		<	1	>		<	6	>		
	James Street & McGee Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	A	A	A	**A**	A	A	A	**A**	**A**
			Delay	<	9	>	**9**	<	9	>	**9**	0	0	0	**0**	0	0	0	**0**	**4**
			V/C	<	0.06	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	2	>		<	0	>		0	0	0		0	0	0		
	Trafalgar Road/Driveway & Pembroke Street West	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	B	>	**B**	<	A	>	**A**	**A**
			Delay	0	0	0	**0**	9	0	0	**0**	<	13	>	**13**	<	0	>	**0**	**1**
			V/C	0.00	0.00	0.00		0.03	0.00	0.00		<	0.09	>		<	0.00	>		
			Q	0	0	0		1	0	0		<	2	>		<	0	>		
	Forest Lea Road/Driveway & Pembroke Street West	TCS	LOS	B	C	B	**C**	B	B	A	**B**	D	A	A	**D**	A	A	C	**C**	**C**
			Delay	16	23	15	**21**	16	13	0	**13**	41	0	0	**41**	0	0	26	**26**	**22**
			V/C	0.00	0.71	0.28		0.43	0.52	0.00		0.77	0.00			0.00	0.00	0.02		
			Q	0	32	8		2	5	0		38	0	0.0		0	0	1		
	TV Tower Road & Forest Lea Road	TWSC	LOS		A	A	**A**	A	A		**A**	C		>	**C**					**A**
			Delay		0	0	**0**	9	0		**6**	20		>	**20**					**8**
			V/C		0.00	0.00		0.20	0.00			0.63		>						
			Q		0	0		6	0			33		>						

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)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
AWSC - All-Way Stop Control
< / > - Shared with through movement

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Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Mud Lake Road/Boundary Road East & Paul Martin Drive	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	A	A	C	C	B
			Delay	6	0	7	7	6	0	9	9	26	0	0	26	0	0	30	30	16
			V/C	0.11	0.00	0.22		0.02	0.00	0.31		0.14	0.00	0.00		0.00	0.00	0.70		
			Q	0	0	1		0	0	2		2	0	0		0	0	10		
	River Road & Bennett Street/Town Line Road	TCS	LOS	A	A	C	C	C	A	D	C	B	A	A	B	A	A	A	A	C
			Delay	0	0	26	26	21	0	36	34	10	0	0	10	9	0	0	9	29
			V/C	0.00	0.00	0.28		0.20	0.00	0.89		0.16	0.00			0.01	0.00			
			Q	0	0	6		3	0	38		1	0	0.0		0	0	0.0		
	MacKay Street & River Road/Metcalfe Street	TCS	LOS	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A
			Delay	26	0	0	26	0	0	21	21	6	0	0	6	7	0	0	7	10
			V/C	0.51	0.00	0.00		0.00	0.00	0.06		0.26	0.00	0.00		0.41	0.00	0.00		
			Q	7	0	0		0	0	1		2	0	0		2	0	0		
	MacKay Street & Pembroke Street West/Pembroke Street East	TCS	LOS	B	A	F	F	C	A	C	C	C	A	D	D	C	A	F	F	F
			Delay	19	0	310	308	27	0	26	26	30	0	44	42	27	0	321	316	205
			V/C	0.03	0.00	1.61		0.65	0.00	0.67		0.54	0.00	0.81		0.08	0.00	1.61		
			Q	0	0	448		5	0	34		7	0	51		1	0	355		
	MacKay Street & Lake Street/Nelson Street	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	2	0	2	2	3	0	2	2	22	0	0	22	21	0	0	21	5
			V/C	0.00	0.00	0.20		0.07	0.00	0.15		0.28	0.00	0.00		0.06	0.00	0.00		
			Q	0	0	1		0	0	1		2	0	0		0	0	0		
	MacKay Street & Town Line Road/D' Youville Drive	AWSC	LOS	<	B	>	B	<	B	>	B	<	C	>	C	<	A	>	A	B
			Delay	<	13	>	13	<	11	>	11	<	16	>	16	<	10	>	10	13
			V/C	<	0.45	>		<	0.29	>		<	0.55	>		<	0.14	>		
			Q	<	17	>		<	9	>		<	26	>		<	4	>		
	Cecelia Street & D' Youville Drive	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	7	>	7	8
			V/C	<	0.08	>		<	0.13	>		<	0.06	>		<	0.07	>		
			Q	<	2	>		<	4	>		<	2	>		<	2	>		
	Wilson Road & Drive-in Road	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	A	>	A	A
			Delay	7	0	0	4	7	0	0	1	<	9	>	9	<	9	>	9	5
			V/C	0.00	0.00	0.00		0.01	0.00	0.00		<	0.03	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		
	Highway 148 & Drive-in Road	TWSC	LOS	<	F	>	F	<	F	>	F	A	A	A	A	A	A	A	A	E
			Delay	<	160	>	160	<	3051	>	3051	10	0	0	2	9	0	0	0	48
			V/C	<	1.24	>		<	3.09	>		0.16	0.00	0.00		0.01	0.00	0.00		
			Q	<	145	>		<	17	>		4	0	0		0	0	0		
	Highway 148 & Robinson Lane	TCS	LOS	C		D	D					A	A		A		B	A	A	B
			Delay	34		36	35					5	6		6		10	7	10	11
			V/C	0.40		0.51						0.14	0.43				0.47	0.15		
			Q	7		8						0	3				3	1		
	Highway 148 & Walmart Entrance	TCS	LOS	C	A	D	D	A	A	A	A	A	A	A	A	A	B	A	B	B
			Delay	31	0	40	37	0	0	0	0	8	8	0	8	0	13	10	12	16
			V/C	0.25	0.00	0.82		0.00	0.00	0.00		0.28	0.47	0.00		0.00	0.44	0.11		
			Q	7	0	23		0	0	0		0	3	0		0	4	1		
	Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS	E	A	D	E	D	A	A	D	B	A	B	B	B	A	B	B	C
			Delay	72	0	40	66	43	0	0	43	10	0	12	12	16	0	11	16	20
			V/C	0.80	0.00	0.08		0.15	0.00	0.00		0.12	0.00	0.49		0.50	0.00	0.13		
			Q	36	0	4		2	0	0		1	0	13		28	0	4		
	Driveway/Howard Street & Highway 148	TCS	LOS	B	A	B	B	B	B	A	B	B	A	A	B	C	A	A	C	B
			Delay	17	0	11	11	13	13	8	12	19	0	0	19	26	0	0	26	14
			V/C	0.02	0.00	0.51		0.00	0.64	0.19		0.04	0.00	0.00		0.67	0.00	0.00		
			Q	0	0	4		0	7	1		1	0	0		14	0	0		
	River Road & Driveway/Bell Street	TWSC	LOS	<	A	>	A	<	B	>	B	A	A	A	A	A	A	A	A	A
			Delay	<	0	>	0	<	13	>	13	0	0	0	0	8	0	0	0	3
			V/C	<	0.00	>		<	0.20	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	0	>		<	5	>		0	0	0		0	0	0		
	Mackay Street & Bell Street	TCS	LOS	A	A	A	A	B	A	A	B	A	A	B	B	B	A	A	B	B
			Delay	8	0	0	8	14	0	0	14	0	0	12	12	16	0	0	16	14
			V/C	0.06	0.00	0.00		0.64	0.00	0.00		0.00	0.00	0.23		0.56	0.00	0.00		
			Q	0	0	0		7	0	0		0	0	0		1	0	0		
	Cecelia Street & Bell Street	AWSC	LOS	<	A	>	A	<	B	>	B	<	A	>	A	<	A	>	A	A
			Delay	<	10	>	10	<	10	>	10	<	9	>	9	<	9	>	9	10
			V/C	<	0.33	>		<	0.36	>		<	0.18	>		<	0.06	>		
			Q	<	10	>		<	12	>		<	5	>		<	2	>		
	Bell Street & O' Brien Street	AWSC	LOS	<	A		A		A	>	A					A		>	A	A
			Delay	<	8		8		8	>	8					7		>	7	8
			V/C	<	0.11				0.16	>						0.00		>		
			Q	<	3				4	>						0		>		
	Cecelia Street & Alfred Street	AWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	A
			Delay	<	8	>	8	<	8	>	8	<	8	>	8	<	8	>	8	8
			V/C	<	0.10	>		<	0.09	>		<	0.04	>		<	0.08	>		
			Q	<	2	>		<	2	>		<	1	>		<	2	>		
			LOS		A	A	A	A	A		A	A		>	A					A

2041 Base Forecast Summer - PM Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Matheson Drive & Angus Campbell Drive	TWSC	Delay		0	0	0	7	0		0	9		>	9					0
			V/C		0.00	0.00		0.01	0.00			0.01		>						
			Q		0	0		0	0			0		>						
	Mackay Street & Mary Street/Alfred Street	TCS	LOS	C	A	C	C	C	A	A	C	B	A	A	B	A	A	E	E	D
			Delay	24	0	25	24	24	0	0	24	17	0	9	10	8	0	67	67	44
			V/C	0.27	0.00	0.35		0.25	0.00	0.00		0.41	0.00	0.39		0.00	0.00	1.07		
			Q	4	0	4		4	0	0		1	0	2		0	0	102		
	Broadview Drive & Alfred Street	TWSC	LOS	<	B	>	B	<	B	>	B	A	A	A	A	A	A	A	A	A
			Delay	<	11	>	11	<	11	>	11	7	0	0	7	7	0	0	0	7
			V/C	<	0.04	>		<	0.04	>		0.07	0.00	0.00		0.00	0.00	0.00		
			Q	<	1	>		<	1	>		2	0	0		0	0	0		
	Rosewood Avenue & Alfred Street	TWSC	LOS	<	A	>	A	<	A	>	A	A	A	A	A	A	A	A	A	A
			Delay	<	9	>	9	<	0	>	0	8	0	0	8	0	0	0	0	2
			V/C	<	0.02	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	1	>		<	0	>		0	0	0		0	0	0		
	Bell Street & Broadview Drive	TWSC	LOS	A	A		A		A	A	A					B		>	B	A
			Delay	8	0		0		0	0	0					14		>	14	0
			V/C	0.01	0.00				0.00	0.00						0.03		>		
			Q	0	0				0	0						1		>		
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	B	B	C	A	C	C	C	A	C	C	B
			Delay	7	8	6	8	6	0	12	12	30	0	27	28	29	0	28	29	13
			V/C	0.06	0.42	0.00		0.04	0.00	0.63		0.07	0.00	0.13		0.27	0.00	0.39		
			Q	0	3	0		0	0	6		1	0	2		4	0	4		
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	C	>	C	A
			Delay	0	0	0	0	0	0	0	0	<	15	>	15	<	18	>	18	1
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.02	>		<	0.14	>		
			Q	0	0	0		0	0	0		<	1	>		<	4	>		
	Driveway/McGee Street & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	D	>	D	A
			Delay	9	0	0	1	8	0	0	0	<	24	>	24	<	31	>	31	1
			V/C	0.07	0.00	0.00		0.01	0.00	0.00		<	0.09	>		<	0.03	>		
			Q	2	0	0		0	0	0		<	2	>		<	1	>		
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	C	>	C	A
			Delay	8	0	0	0	0	0	0	0	<	0	>	0	<	17	>	17	2
			V/C	0.01	0.00	0.00		0.00	0.00	0.00		<	0.00	>		<	0.26	>		
			Q	0	0	0		0	0	0		<	0	>		<	8	>		
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS	<	E	>	E	<	B	>	B	<	B	>	B	<	A	F	F	F
			Delay	<	47	>	47	<	13	>	13	<	12	>	12	<	10	164	160	103
			V/C	<	1.00	>		<	0.24	>		<	0.11	>		<	0.04	1.27		
			Q	<	81	>		<	6	>		<	2	>		<	1	232		
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS	<		>		<		>		<		>		<		>		
			Delay	<		>		<		>		<		>		<		>		
			V/C	<		>		<		>		<		>		<		>		
			Q	<		>		<		>		<		>		<		>		
	Broadview Drive & Pembroke Street East	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		0	13		>	13					0
			V/C		0.00	0.00		0.01	0.00			0.04		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Nelson Street	TWSC	LOS		A	A	A	A	A		A	B		>	B					A
			Delay		0	0	0	8	0		1	11		>	11					1
			V/C		0.00	0.00		0.01	0.00			0.03		>						
			Q		0	0		0	0			1		>						
	Cecelia Street & Pembroke Street East	TCS	LOS	A	A	A	A	A	A	A	A	C	A	A	C	C	A	A	C	A
			Delay	5	7	0	7	5	0	7	7	29	0	0	29	29	0	0	29	8
			V/C	0.01	0.37	0.00		0.02	0.00	0.45		0.13	0.00	0.00		0.14	0.00	0.00		
			Q	0	2	0		0	0	3		2	0	0		2	0	0		
	Christie Street & Pembroke Street West	TCS	LOS	A	A	A	A	A	A	A	A	B	A	B	B	A	A	B	B	A
			Delay	6	0	4	4	4	0	6	6	17	0	16	17	0	0	19	19	7
			V/C	0.00	0.00	0.26		0.04	0.00	0.49		0.15	0.00	0.04		0.00	0.00	0.55		
			Q	0	0	2		0	0	4		0	0	0		0	0	1		
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS	A	A	A	A	A	A	A	A	<	B	>	B	<	B	>	B	A
			Delay	8	0	0	0	8	0	0	0	<	12	>	12	<	10	>	10	1
			V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.03	>		<	0.01	>		
			Q	0	0	0		0	0	0		<	1	>		<	0	>		
	Elizabeth Street & Pembroke Street East	TWSC	LOS	A	A	A	A	A	A	A	A	<	C	>	C	<	C	>	C	A
			Delay	9	0	0	0	9	0	0	0	<	23	>	23	<	16	>	16	1
			V/C	0.01	0.00	0.00		0.01	0.00	0.00		<	0.09	>		<	0.08	>		
			Q	0	0	0		0	0	0		<	2	>		<	2	>		
	Forced Road & Pembroke Street West	TCS	LOS		A	A	A	A	A		A	C		C	C					A
			Delay		0	5	5	3	4		4	34		33	34					6
			V/C		0.00	0.32		0.01	0.42			0.28		0.06						
			Q		0	2		0	3			3		1						
	Fraser Street & Alfred	TWSC	LOS	A	A	A	A	A	A	A	A	<	A	>	A	<	A	>	A	A
			Delay	7	0	0	1	7	0	0	0	<	10	>	10	<	10	>	10	3

2041 Base Forecast Summer - PM Peak

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
	Street	TWSC	V/C	0.00	0.00	0.00		0.00	0.00	0.00		<	0.02	>		<	0.05	>		
			Q	0	0	0		0	0	0		<	1	>		<	2	>		
	Christie Street & Mary Street	AWSC	LOS	<	A	>	**A**	<	A	A	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	9	>	**9**	<	9	8	**8**	<	8	>	**8**	<	9	>	**9**	**9**
			V/C	<	0.25	>		<	0.12	0.06		<	0.10	>		<	0.16	>		
			Q	<	8	>		<	3	2		<	2	>		<	4	>		
	Trafalgar Road & Mary Street	AWSC	LOS	<	A	>	**A**	<	B	A	**B**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	8	>	**8**	<	10	7	**10**	<	8	>	**8**	<	8	>	**8**	**10**
			V/C	<	0.17	>		<	0.33	0.00		<	0.03	>		<	0.08	>		
			Q	<	4	>		<	11	0		<	1	>		<	2	>		
	Moffat Street & Mary Street	AWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	**A**
			Delay	<	8	>	**8**	<	8	>	**8**	<	8	>	**8**	<	8	>	**8**	**8**
			V/C	<	0.18	>		<	0.19	>		<	0.03	>		<	0.13	>		
			Q	<	4	>		<	5	>		<	1	>		<	3	>		
	James Street & McGee Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	A	A	A	**A**	A	A	A	**A**	**A**
			Delay	<	9	>	**9**	<	9	>	**9**	0	0	0	**0**	0	0	0	**0**	**4**
			V/C	<	0.06	>		<	0.00	>		0.00	0.00	0.00		0.00	0.00	0.00		
			Q	<	2	>		<	0	>		0	0	0		0	0	0		
	Trafalgar Road/Driveway & Pembroke Street West	TWSC	LOS	A	A	A	**A**	A	A	A	**A**	<	B	>	**B**	<	A	>	**A**	**A**
			Delay	0	0	0	**0**	8	0	0	**0**	<	10	>	**10**	<	0	>	**0**	**1**
			V/C	0.00	0.00	0.00		0.03	0.00	0.00		<	0.06	>		<	0.00	>		
			Q	0	0	0		1	0	0		<	2	>		<	0	>		
	Forest Lea Road/Driveway & Pembroke Street West	TCS	LOS	B	B	B	**B**	B	B	A	**B**	D	A	A	**D**	A	A	C	**C**	**C**
			Delay	17	18	15	**18**	12	14	0	**14**	46	0	0	**46**	0	0	25	**25**	**23**
			V/C	0.00	0.43	0.17		0.26	0.50	0.00		0.83	0.00			0.00	0.00	0.02		
			Q	0	17	4		2	10	0		50	0	0.0		0	0	1		
	TV Tower Road & Forest Lea Road	TWSC	LOS		A	A	**A**	A	A		**A**	B		>	**B**					**A**
			Delay		0	0	**0**	8	0		**4**	14		>	**14**					**8**
			V/C		0.00	0.00		0.09	0.00			0.54		>						
			Q		0	0		2	0			25		>						

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)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
AWSC - All-Way Stop Control

< / > - Shared with through movement

Appendix F

Evaluation of Alternatives

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

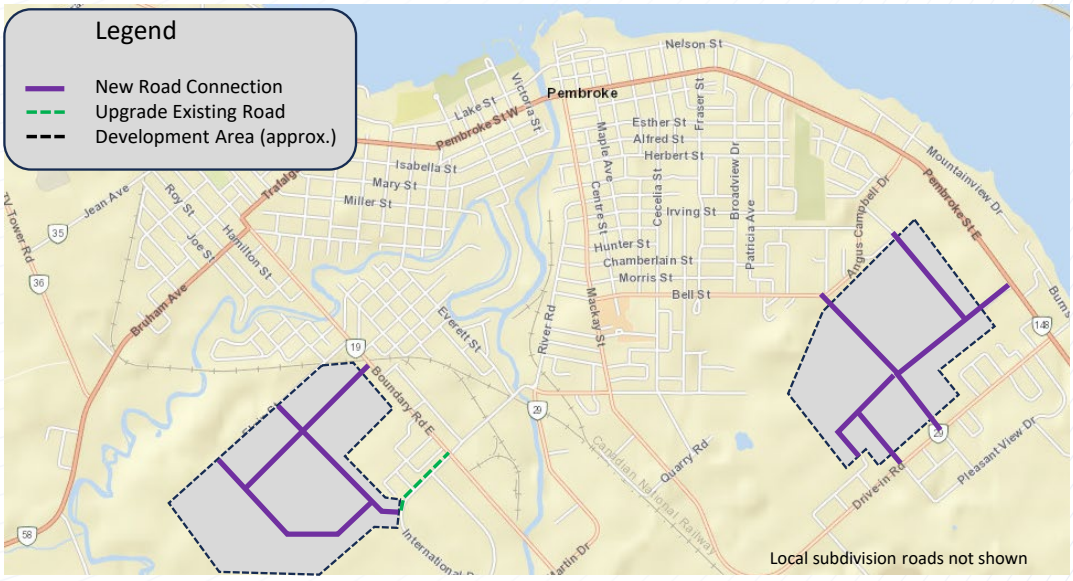
Road Network Alternatives

- **Base: New Roads in Growth Areas**
  - Local roads in growth areas to serve development
  - Assumed to be included in all options
- **Option 1: Enhance Mary Street / Alfred Street**
  - Alternative to Pembroke St through downtown
- **Option 2: D'Youville Drive connection to Drive In Road and Robinson Road**
  - Connect new development areas to MacKay Street / Townline Road and Highway 148
- **Option 3: Boundary Road Extension and Widening of Pembroke Street West**
  - Direct traffic away from downtown
- **Option 4: O'Brien Street Connection**
  - Complete O'Brien Street to connect to growth areas
- **Option 5: Local By-Pass Route**
  - Improve Drive In Rd and connect to Mud Lake Road or Paul Martin Drive to by-pass downtown
- **Option 6: New MTO bypass**
  - New road between Hwy 148 / County Road 40 and Hwy 17, to by-pass downtown area
- **Option 7: Quarry Road Extension**
  - New road between Paul Martin Rd and D'Youville Road
- **Option 8: Boundary Road Extension No Widening of Pembroke Street West**
  - New Road connecting Boundary Rd E to Boundary Rd W with no widening of Pembroke St W
- **Option 9: Boundary Road Extension to TV Tower Rd**
  - New Road connecting Boundary Rd E to TV Tower Rd
- **Option 10: Alfred St Connection**
  - New Road connecting Alfred St to Alfred St E

FUTURE ROAD OPTIONS:
Base: New Roads in Growth Areas

▶ Potential Improvements

- Connect Matheson Drive to Robinson Lane through new development (traffic signals at Drive In Road / Hwy 148)
- Connect internal road network to Drive In Road and Angus Campbell Drive / Bell Street
- Connect internal road network to International Drive and Boundary Road East



▶ Evaluation

Criteria	Evaluation
Transportation	Congestion remains on Pembroke Street East and Hwy 48 Moderate Increase in traffic on Bell St / Angus Campbell Dr
Social	Neighbourhood impacts due to increased traffic (noise / safety)
Environmental	No additional disruption to natural areas
Economic	$
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
1) Enhance Mary St / Alfred St

▶ Potential Improvements

- Connect Mary Street to Forced Road
- Connect Alfred Street across park to Angus Campbell Drive
- Upgrade Mary Street / Alfred Street

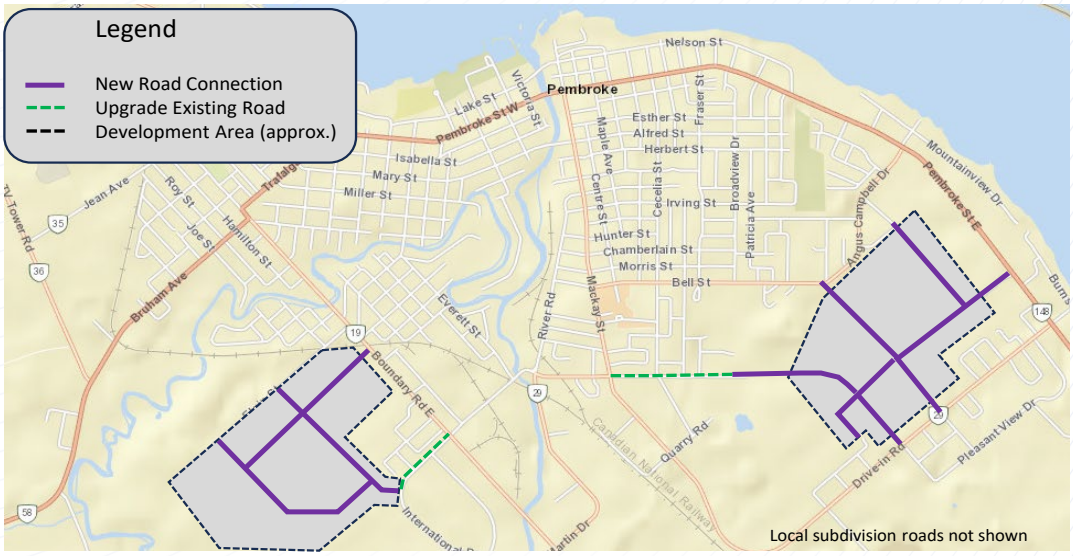
▶ Evaluation

Criteria	Evaluation
Transportation	Does not fully address congestion on Pembroke Street Significant increase in traffic on Mary Street / Alfred Street
Social	Neighbourhood impacts due to increased traffic (noise / safety). Alfred St connection bi-sects open space area / park
Environmental	Mary Street connection disturbs natural area Increased emissions through residential area
Economic	$$$
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
2) D'Youville Dr connection to Drive In Rd / Robinson Ln

▶ Potential Improvements

- Connect D'Youville Drive to new subdivision roads
- Upgrade existing D'Youville Drive
- Upgrade International Drive
- New roads within new development areas



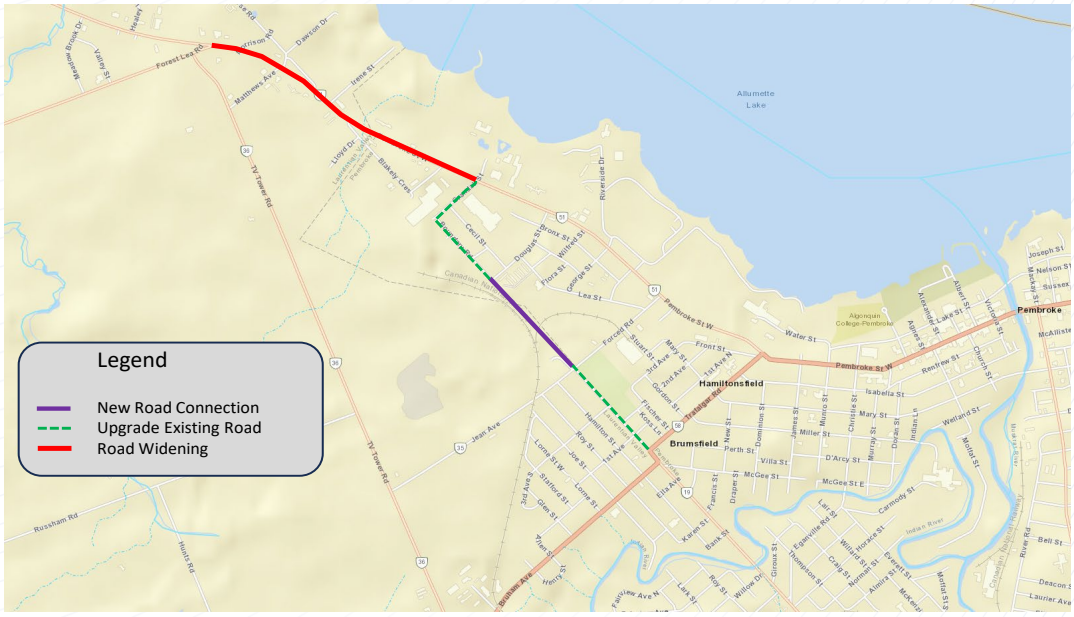
▶ Evaluation

Criteria	Evaluation
Transportation	Improves congestion on Pembroke Street Significant increase in traffic on D'Youville Drive
Social	Neighbourhood impacts due to increased traffic (noise / safety)
Environmental	D'Youville Drive connection disturbs natural area Increased emissions through residential area
Economic	$$
Overall	**RECOMMENDED - COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
3) Boundary Rd Extension and Widening Pembroke St W

▶ Potential Improvements

- Extend Boundary Road East to connect to Boundary Road West
- Upgrade Boundary Rd West and Crandall Street to accommodate traffic
- Widen Pembroke St West to 4-5 lanes



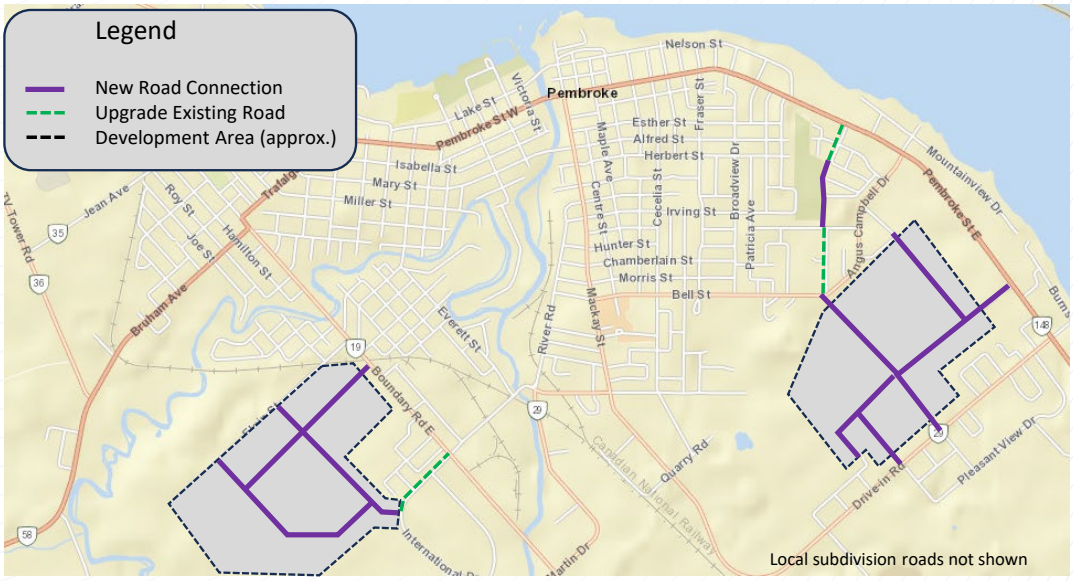
▶ Evaluation

Criteria	Evaluation
Transportation	Draws traffic from TV Tower Road Congestion worse on Pembroke St W - east of Forced Road Increase in traffic on Boundary Road – may need widening
Social	Neighbourhood impacts due to increased traffic (noise / safety); Boundary Road extension impacts Algonquin Trail
Environmental	Boundary Road connection disturbs natural area Increased emissions through residential area
Economic	$$$
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
4) O'Brien St Connection

▶ Potential Improvements

- Connect O'Brien Street between Herbert Street and Melton Street
- Upgrade O'Brien Street
- Install new signals at Pembroke Street East
- New / upgraded roads in new development areas



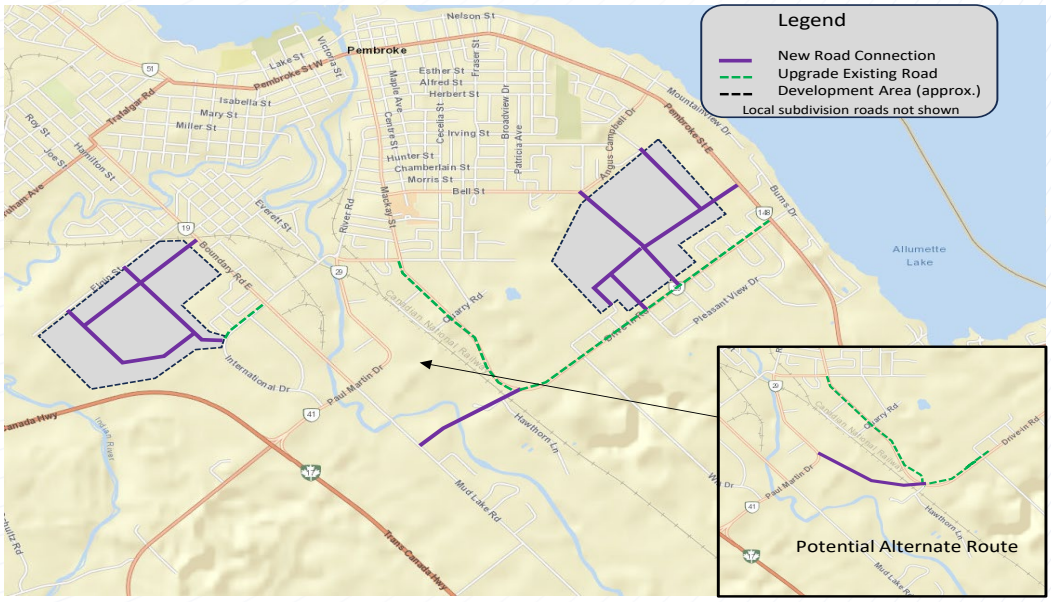
▶ Evaluation

Criteria	Evaluation
Transportation	Provides alternate access to new development areas Limited benefit to Pembroke Street East
Social	Neighbourhood impacts due to increased traffic on O'Brien (noise / safety); Some reduction in traffic on Angus Campbell Drive / Bell Street
Environmental	O'Brien Street connection borders open space area Increased emissions through residential area
Economic	$$
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
5) Local By-Pass Route

▶ Potential Improvements

- New County Road connection between Drive In Road and Mud Lake Road or Paul Martin Drive
- Upgrade MacKay Street and Drive In Road
- Install new signals at Hwy 148 (as planned by MTO)
- New / upgraded roads in new development areas
- Potential to act as local downtown by-pass



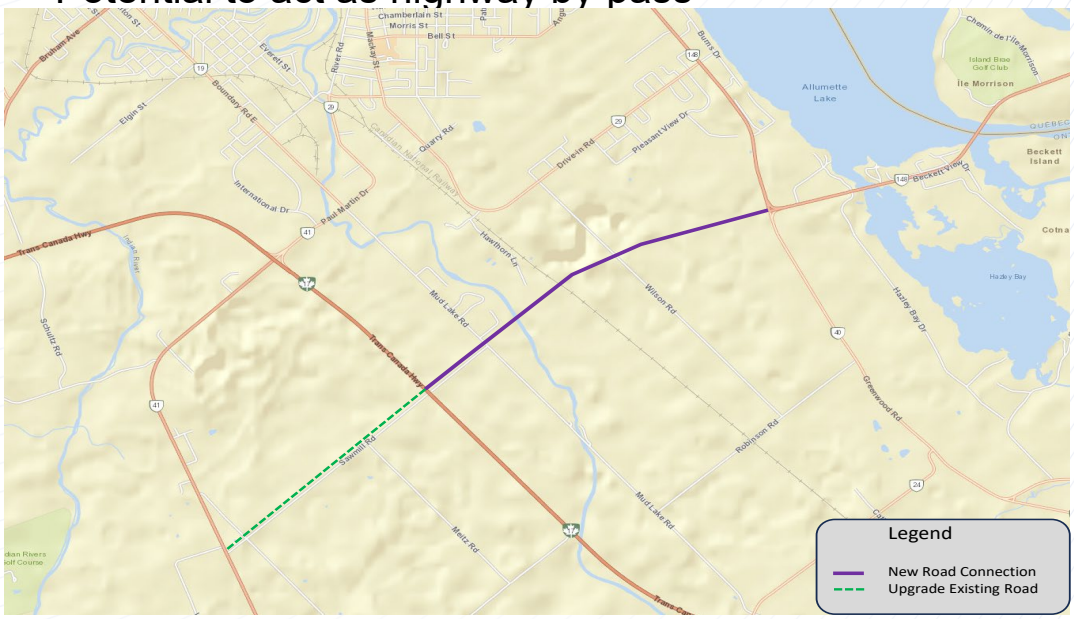
▶ Evaluation

Criteria	Evaluation
Transportation	Provides alternate access to new development areas. Some minor benefit to Pembroke St East. Draws traffic away from Bell St / Angus Campbell Dr. Adds traffic to Boundary Rd E
Social	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on Angus Campbell Drive / Bell Street
Environmental	New connection crosses open space area Potential new river crossing (depending on route)
Economic	$$ - $$$ Potential impact to existing industrial lands (depending on route)
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
6) MTO By-Pass Route

▶ Potential Improvements

- Upgrade Sawmill Road between Hwy 41 and Hwy 17
- New highway connection between Hwy 148 and Hwy 17 via Sawmill Rd
- New signals or roundabout at Hwy 17 and at Hwy 148
- Potential to act as highway by-pass



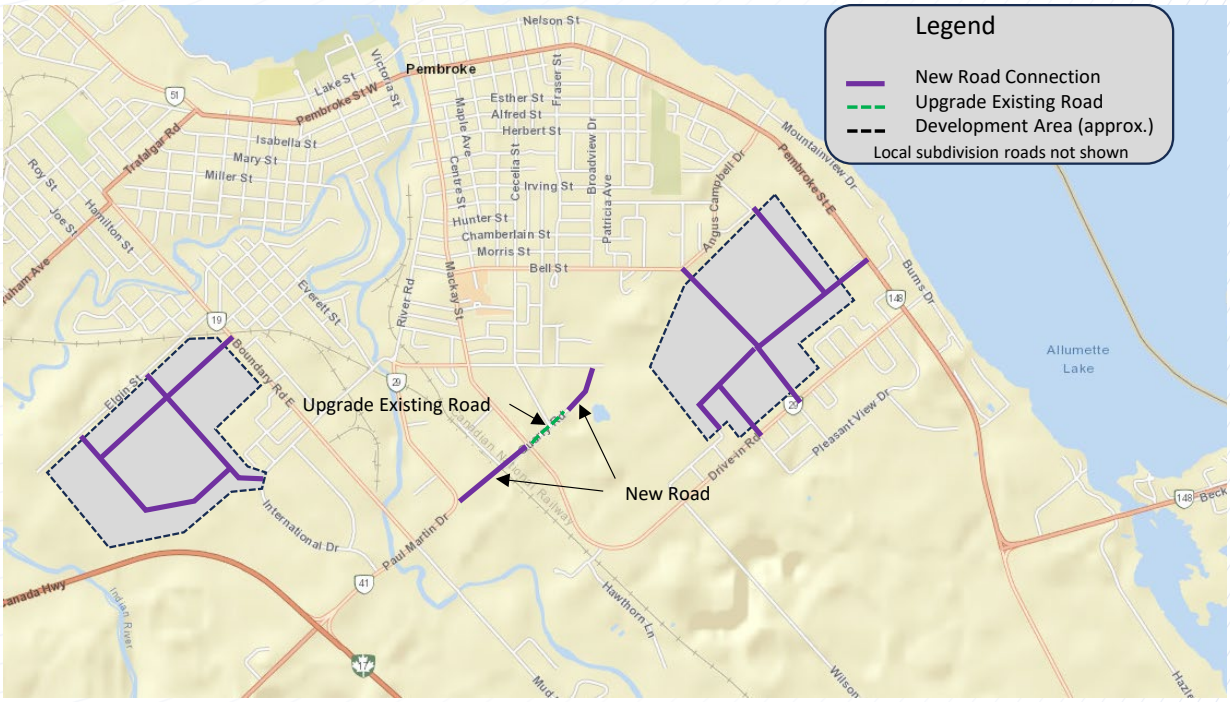
▶ Evaluation

Criteria	Evaluation
Transportation	Removes external through traffic / trucks from downtown; Modest benefit to Pembroke St E / Highway 148; Adds traffic to Mud Lake Rd and Boundary Rd – may need widening
Social	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on local streets
Environmental	New connection crosses open space area Requires new river crossing (potential future interchange)
Economic	$$$$$ By-pass of downtown may impact local businesses
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
7) Quarry Road Extension

▶ Potential Improvements

- New Road between Paul Martin Dr and MacKay St via Quarry Rd
- Upgrade existing Quarry Rd
- Extend Quarry Rd to D'Youville Dr



▶ Evaluation

Criteria	Evaluation
Transportation	Directs traffic away from Townline Rd / Bennett St Provides direct connection between new development areas and Paul Martin Dr
Social	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on Bell St / Angus Campbell Dr
Environmental	New connection crosses open space area (industrial) Potential impacts to wooded area
Economic	$$ May open up lands for new industrial development
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
8) Boundary Rd Extension NO Widening of Pembroke St W

▶ Potential Improvements

- Extend Boundary Road East to connect to Boundary Road West
- Upgrade Boundary Rd West and Crandall Street to accommodate traffic

▶ Evaluation

Criteria	Evaluation
Transportation	Draws traffic from Pembroke St W Improves congestion Pembroke St W - east of Forced Road
Social	Neighbourhood impacts due to increased traffic (noise / safety); Boundary Road extension impacts Algonquin Trail
Environmental	Boundary Road connection disturbs natural area Increased emissions through residential area
Economic	$$
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

FUTURE ROAD OPTIONS:
9) Boundary Rd Extension to TV Tower Rd

▶ Potential Improvements

- Extend Boundary Road East to connect to TV Tower Road

▶ Evaluation

Criteria	Evaluation
Transportation	Draws traffic from TV Tower Rd No benefit to congestion on Pembroke St W Attracts traffic to Boundary Road – may require widening
Social	Avoids impacts to built up areas Boundary Road extension impacts Algonquin Trail
Environmental	Boundary Road connection disturbs heavily wooded area Potential to impact habitat areas
Economic	$$$ - $$$$ May open new lands for development
Overall	**NOT RECOMMENDED**

FUTURE ROAD OPTIONS:
10) Alfred St Extension

▶ Potential Improvements

- Connect Alfred Street across park to Angus Campbell Drive
- Upgrade Alfred Street

▶ Evaluation

Criteria	Evaluation
Transportation	Provides some congestion relief on Pembroke Street Modest increase in traffic on Mary Street / Alfred Street – can be mitigated through traffic calming
Social	Modest neighbourhood impacts due to increased traffic (noise / safety). Alfred St connection bi-sects open space area / park
Environmental	Alfred St Extension disturbs open space area Increased emissions through residential area
Economic	$$ May reduce traffic in front of downtown businesses
Overall	**RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS**

Appendix G

Sample Speed Management / Traffic Calming Policy

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

paradigm
TRANSPORTATION SOLUTIONS LIMITED

Sample

Speed Management And Traffic Calming Policy

ptsl.com

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1 Introduction

This sample Speed Management and Traffic Calming Policy is provided as an example document for a community to use as a guide or starting point to assist in developing a local speed management and traffic calming policy based on specific local conditions, the jurisdictional setting and relationships or various levels of government, and the preferences of the Municipality. The document provides a sample of a policy that was developed for an Ontario upper tier jurisdiction and as such some modifications may be required to adapt the policy to the local area.

1.1 Overview

A **Speed Management Policy** is intended to support the municipality in identifying locations experiencing excessive speeding by motor vehicle drivers and provide guidance on the application of speed management measures, including speed limit changes and traffic calming initiatives. The policy is intended to improve safety for all road users, reduce incidents of aggressive driving, and improve livability for community residents.

1.2 Policy Scope

A typical Speed Management Policy:

- Describes the basis for setting speed limits on Municipal Roads;
- Defines the minimum criteria needed to explore speed management measures on Municipal Roads;
- Provides a flowchart to illustrate policy application, identifying the steps to be followed in responding to concerns about speeding motorists on Municipal Roads; and
- Outlines a list of speed management measures (the "Toolkit"), including traffic calming, for urban hamlets and rural areas of the Municipality; and

A policy typically features:

- A consistent, objective process for reviewing, evaluating, and responding to requests for speed management measures on Municipal Roads;
- A methodology and criteria for determining if speed management is appropriate for a given road and prioritizing locations being considered for measures; and
- A procedure for monitoring and assessing the effectiveness of speed management measures after installation.

Typical policies incorporate best practices in speed management (including traffic calming) with local context to provide an appropriate, efficient, and flexible framework for addressing speed- and traffic-related inquiries received by the Municipality. It supplements and customizes guidance contained in the Transportation Association of Canada (TAC) publications *Speed*

Management Guide[1], *Canadian Guidelines for Establishing Posted Speed Limits*[2], *Canadian Guide to Traffic Calming*[3], and *Geometric Design Guide for Canadian Roads*[4] and Ontario Traffic Manual (OTM) *Book 5 – Regulatory Signs*[5] and *Book 6 – Warning Signs*[6], with considerations specific to Lanark County.

Polices also reflect applicable provincial legislation including the *Highway Traffic Act* (HTA) and *Accessibility for Ontarians with Disabilities Act* (AODA). The planning, design, and implementation of speed management measures must comply with relevant provisions of these and other pertinent statutes.

1.3 Definitions

A municipal Speed Management Policy often uses the following terms as defined in or adapted from the *Speed Management Guide*, *Canadian Guide to Traffic Calming*, OTM *Book 5 – Regulatory Signs*, HTA, and a communities Official Plan:

- **Built-up Area** – An area along a highway not situated in a designated Settlement Area but with frontage consisting of dwellings, businesses, schools, or churches that occupies:
  - 50% or more of the road property frontage for at least 200 m on one side, or for at least 100 m if on both sides; or
  - Where no more than 200 m of the highway separates the areas described above.
- **Design Speed** – The speed selected for the purposes of determining the various geometric design features of a roadway.
- **85th Percentile Speed** – The speed at which 85% of vehicles are travelling at or below.
- **95th Percentile Speed** – The speed at which 95% of vehicles are travelling at or below.
- **Operating Speed** – The speed at which a driver can travel on a highway under prevailing weather and traffic conditions.
- **Posted (Speed) Limit** – The maximum lawful vehicular speed for a particular location as displayed on a regulatory sign, in multiples of 10 km/h.
- **Settlement Area** – Towns, villages, and hamlets shown in the Official Plan.
- **Speed Zone** – A section of road with a specified speed limit.
- **Statutory Speed Limit** – Also known as the "default speed limit", the maximum lawful speed established by the HTA that applies to a class or category of roads in the absence of a posted speed limit.

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1 Transportation Association of Canada (TAC), *Speed Management Guide*, (Ottawa, ON; 2016).
2 TAC, *Canadian Guidelines for Establishing Posted Speed Limits*, (Ottawa, ON; 2009).
3 TAC, *Canadian Guide to Traffic Calming*, 2nd ed., (Ottawa, ON; 2018).
4 TAC, *Geometric Design Guide for Canadian Roads*, (Ottawa, ON; 2017).
5 Ontario Ministry of Transportation, *Ontario Traffic Manual Book 5 – Regulatory Signs*, (Toronto, ON; 2021).
6 Ontario Ministry of Transportation, *Ontario Traffic Manual Book 6 – Warning Signs*, (Toronto, ON; 2001).

- **Traffic Calming** – The process and measures applied by road authorities to address concerns about the behaviour of motor vehicle drivers travelling on streets within their jurisdictions.
- **Transitional Speed Zone** – A section of road used to introduce a speed limit reduction, typically 20 km/h or more.
- **Urban Entrance** – An entrance located along any portion of a Municipal Road that is constructed with any of the following features: curb, gutter, sidewalk, and/or storm sewer.
- **Urban Road Allowance** – A Municipal road allowance located within the boundaries of a Settlement Area. typically characterized by the presence of street lighting and in most but not all cases curb and gutter.

1.4 Traffic Advisory Working Group

Many municipalities will create a **Traffic Advisory Working Group**. The committee, comprised of staff from the Municipality, other adjacent municipalities or a County level of government, and the Ontario Provincial Police (or local police force), can provide an on-going forum to discuss speed enforcement needs, recommended Community Safety Zone and speed limit changes, potential traffic calming measures, and other traffic-related matters on Municipal Roads. Representatives from the local Health Unit, the Ministry of Transportation, and other emergency service providers (i.e., fire and ambulance) may also be invited to participate.

2 Basis for Speed Limits and Speed Management

2.1 Policy Rationale

Road authorities enact laws establishing speed limits to protect the public and set norms for acceptable driving behaviour. Their primary purpose is to inform drivers of the maximum operating speed permitted on that segment of the roadway. The posted speed limit also dictates behaviour that is subject to sanctions and ought to be fair in the context of traffic law.

Studies show that speeding is a significant contributing factor to severe injury and fatal collisions.[7] In general, as the speed at impact increases, so does the severity of injury.[8] Higher speeds not only escalate the risk of more catastrophic collisions, but also increase the probability of a collision happening in the first place. Vehicles travelling at higher speeds require a greater distance to stop and have less manoeuvring space to avoid a collision.[9]

Speed regulations help motorists select safe operating speeds for the prevailing conditions. Regulations also aid in reducing speed differential, which can increase collision risk. Studies have found that roads with large variations in vehicle speeds tend to experience higher collision rates than ones with small differences.[10]

The maximum safe speed at any location generally reflects road geometry, traffic demands, and the surrounding environment. The selection of a posted speed limit must also consider legislative provisions, enforcement considerations, public understanding, ease of implementation, capital and maintenance costs, and adherence to recognized engineering guidelines and practices.

Drivers tend to understand and respect the classification, function, and physical characteristics of a roadway when the posted speed limit and operating speeds are aligned.

2.2 Regulatory Framework in Ontario

Section 128 of the HTA establishes the regulatory framework for setting speed limits in Ontario. Subsection 1 states, in part, that no person shall drive a motor vehicle at a rate of speed greater than:

- 50 km/h on a roadway within a Built-up Area; or
- 80 km/h on a highway not within a Built-up Area.

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7 US Department of Transportation, National Highway Traffic Safety Administration, *An Analysis of Speeding-Related Crashes: Definitions and the Effects of Road Environments*, (2009).
8 World Health Organization, *Managing Speed*, (2017), 5.
9 TAC, "Driver Behaviour and Capabilities" in *Speed Management Guide*, (Ottawa: TAC, 2016).
10 TAC, "Speed Differential/Variance" in *Speed Management Guide*, (Ottawa: TAC, 2016).

These provisions, known as the statutory speed limits, apply for all Municipal Roads without MAXIMUM SPEED signs (Rb-1 or Rb- 1A) posted.

Subsection 2 permits municipal councils to pass by-laws prescribing rates of speed that differ from the statutory speed limit on roads under their jurisdiction. The speed limit set must be less than 100 km/h and denoted with MAXIMUM SPEED signs.

In 2017, the provincial government added subsection 2.1 through an amendment to the HTA introduced under the *Safer School Zones Act, 2017*. This change allowed municipalities to prescribe rates of speed lower than 50 km/h for all roads within a designated area without posting signs along each roadway with the reduced limit. A municipality can now post gateway speed limit signs at entry and exit points to a designated area and all streets within that area assume the same speed limit.

Subsection 5 permits municipal councils to pass by-laws prescribing lower rates of speed on roads adjoining schools. The speed limit reduction can be in effect for only specified times and dates if denoted by the municipality.

Per subsection 6, a municipality can set lower speed limits for vehicles passing over identified bridges. Further, subsection 6.1 allows for reduced speed limits on roads with grades of six percent (6%) or higher. The municipality can also prescribe specific classes of vehicles for the grade restriction in its enabling by-law.

2.3 Speed Limits on Municipal Roads

The statutory speed limit provisions of the HTA apply to all roads under the Municipality's jurisdiction except for any sections designated in a specific Municipal By-law.

3 Speed Limit Policy

3.1 Guidelines for Determining Posted Speed Limits

The Municipality will apply the methodology set out in the *Canadian Guidelines for Establishing Posted Speed Limits* in determining posted speed limits on Municipal Roads. The recommended practices contained in the guidebook should be applied with sound engineering judgment.

When determining the ideal speed using the methodology, the Municipality will apply the appropriate road classification.

3.2 Posted Speed Limits in Rural Areas

The Municipality will maintain the statutory 80 km/h speed limit on all roads outside the Official Plan Settlement Areas.

The Municipality may reduce speed limits on "rural" road sections satisfying the **Speed Limit Change Warrant** in **Section 4.4** of this policy. On road sections with unfavourable geometric characteristics and design speeds of 80 km/h or less, the Municipality will set the speed limit at or below the speed dictated by the geometric condition, but no less than 50 km/h. Depending on length of the design feature, the Municipality may install warning signs before changing the speed limit per OTM *Book 6 – Warning Signs*.

3.3 Posted Speed Limits in Urban Areas

The Municipality will maintain the statutory 50 km/h speed limit on all roads within the Official Plan Settlement Areas and any Built-up Areas outside these designations, except where a By-law (specify appropriate By-law No.) specifies a different speed limit for the subject road section.

The Municipality may reduce speed limits on "urban" road sections satisfying the **Speed Limit Change Warrant** in **Section 4.4** of this policy. On road sections with unfavourable geometric characteristics and design speeds of 50 km/h or less, the Municipality will set the speed limit at or below the speed dictated by the geometric condition. Depending on length of the design feature, the Municipality may install warning signs before changing the speed limit per OTM *Book 6 – Warning Signs*.

3.4 Transitional Speed Zones

The Municipality will implement transitional speed zones on roads where the speed limit changes by more than 20 km/h. The zones should measure at least 1.0 km in length for speed limits of 70 km/h or higher. The Municipality may specify shorter transitional speed zones for lower posted speed limits, but typically not less than 500 m in length.

When introducing speed limit reductions of 20 km/h or more (e.g., from 80 km/h to 50 km/h), the Municipality will specify transitional speed limits in intervals of 20 km/h maximum (e.g., from 80 km/h to 70 km/h or 60 km/h to 50 km/h).

The physical characteristics of the transitional speed zone should guide drivers to lower their speeds; the road cues and posted speed limit should provide a uniform message. Land use changes, physical measures, and/or signing/pavement markings should accompany transitional speed zones to emphasize and reinforce the speed limit reduction. Example treatments include:

- Regulatory and warning signs and messages (e.g., MAXIMUM SPEED AHEAD, TRAFFIC SIGNALS AHEAD);
- Gateway treatments such as place defining town name displays, flags and banners, suitable landscaping, and displays of public art; and/or
- Community and trailblazer signs guiding road users to local attractions that naturally warn drivers of an urban environment ahead.

Refer to OTM *Book 5 – Regulatory Signs* for guidance on placing speed limit signs in transitional speed zones.

4 Speed Management Program

4.1 Approach

The Speed Management Policy is intended to promote consistency in the application of speed limits, reduce the variation between operating speeds and posted limits, and provide a structured process for considering changes to the roadway environment to promote speed limit compliance. The aim is to influence drivers to adopt operating speeds that offer mobility without unduly compromising safety, in alignment with the speed limit in effect.

If a significant discrepancy exists between the posted speed limit and current operating speeds, the Municipality will explore speed management measures to address incongruities. Strategies used by the Municipality as part of its **Speed Management Program** to encourage compliance include education, enforcement, designation of special areas of concern (e.g., Community Safety Zones), speed limit changes, and/or traffic calming.

4.2 Screening Criteria for Speed Management Measures

The Municipality may consider speed management measures at locations on the Municipal Road network satisfying the **Speed Management Program Screening** in **Appendix B**. These locations include road sections:

- Within 500 m of a designated School Zone or Community Safety Zone, or other location of special consideration (e.g., school, seniors' centre or residence, playground, hospital, other areas of high pedestrian activity);
- Where the 85th percentile speed exceeds the current speed limit:
  - On Municipal Roads within the Official Plan Settlement Areas or any Built-up Areas outside these designations; or
  - By 10 km/h or more on all other Municipal Roads.

  Motorists travelling above this speed are typically considered to be exceeding the safe and reasonable speed for road and traffic conditions and the surrounding environment; and/or
- Where the 95th percentile speed exceeds the current speed limit by 20 km/h or more. A significant difference between the 85th and 95th percentile speeds can indicate a high prevalence of high-end speeders or opportunities to speed.

As described in **Chapter 5**, locations satisfying the screening will undergo a more detailed technical assessment before the Municipality will consider implementing speed management measures on the subject road section. The Municipality may also deny requests not meeting the requirements.

4.3 Community Safety Zones

Section 214.1 of the HTA gives municipalities the authority to designate a Community Safety Zone if Council believes public safety is of special concern on that part of the roadway. Fines for traffic-related offences in a Community Safety Zone are doubled on conviction.

Achieving the level of deterrent inferred by a Community Safety Zone designation requires a commitment to increased enforcement, which limits the number of zones that can be in effect at any given time. For this reason, the Municipality will consider designating a Community Safety Zone only if the subject road section satisfies the **Community Safety Zone Warrant** in **Appendix C**, which comprises the following four justifications:

Justification 1: Areas of Special Consideration

The Municipality will only implement Community Safety Zones in areas of special consideration obvious to the road user. Such locations include elementary and secondary schools, seniors' centres and residences, playgrounds, and hospitals.

Justification 2: Identified Safety Concern

The Municipality will only implement Community Safety Zones in locations of identified safety concern, based on either:

- **Collision History** – Collision ratio less than 1:900 (collisions per year to average annual daily traffic (AADT)) averaged over 36 consecutive months; or
- **Risk Assessment** – Identified safety concerns exist.

Justification 3: Other Applicable Measures/Devices Tried

The Municipality will only implement Community Safety Zones where other warranted countermeasures have been tried and found to be unsuccessful (i.e., failed to reduce the collision ratio to less than 1:900). Other potential countermeasures, not previously applied, should also be considered before designating a Community Safety Zone. The measures should address identified collision types and contributing circumstances. Enforcement without the implementation of a Community Safety Zone is another potential countermeasure and should be considered prior to designation.

Justification 4: Ability to Enforce

The Municipality will only implement Community Safety Zones if sufficient resources exist to provide enforcement at initial designation and periodically thereafter (i.e., does not assume daily enforcement for the entire six months). For this reason, the maximum number of Community Safety Zones implemented in the Municipality will be determined in consultation with the Ontario Provincial Police and/or through a Traffic Advisory Working Group, if established.

In addition to the four justifications, the Municipality will also consider the following guidelines in designating a Community Safety Zone:

- **Size:** The legislation does not specify limits on the size of a Community Safety Zone. The size will depend on the nature of the safety issue(s). For example, a zone could encompass all streets surrounding a particular site or alternatively, only a section of a street fronting an area of special consideration.
- **Duration:** The legislation also does not specify duration for a Community Safety Zone. If possible, the zone should be removed once the specific problem is addressed.
- **Time Period:** The by-law designating the Community Safety Zone must specify the hours, days, and months the designation is in effect. This will vary by location, depending on the site and nature of the safety issue(s) to address.

All four justifications must be met to warrant a Community Safety Zone. If the warrant is met, Municipal staff will recommend that a Community Safety Zone be established. If approved by Council, the Municipality will:

- Amend the pertinent by-law(s) and install the required signage to enact the Community Safety Zone;
- Distribute notices/information brochures, at least one week in advance of implementation, to places of public gathering within or immediately adjacent to the newly designated Community Safety Zone; and
- Prepare a media release and post information on the Municipality's website explaining the location and limits of the Community Safety Zone and the consequences associated with committing a violation in the zone.

4.4 Speed Limit Changes

The Municipality will consider modifying the posted speed limit only if the subject road section satisfies the **Speed Limit Change Warrant** in **Appendix D**. The warrant requires two of the following four criteria to be met:

- The current speed limit differs from the suggested speed limit determined using the *Canadian Guidelines for Establishing Posted Speed Limits* (per **Section 3.1**) by 10 km/h or more.
- Site-specific geometric constraints defined in the *Geometric Design Guide for Canadian Roads* (such as reduced sight distance or curve radii) do not match the current speed limit.
- The 85th percentile speed differs from the current speed limit:
  - On Municipal Roads within the Official Plan Settlement Areas or any Built-up Areas outside these designations; or
  - By 10 km/h or more on all other Municipal Roads.

- The Environmental Factor Score is 30 points or more (out of a maximum of 50 points).

The length of the potential speed zone should also exceed 500 m for posted speed limits of 70 km/h or less and 1,000 m for posted speed limits of more than 70 km/h.

Where the warrant is met, Municipal staff will recommend a change in posted speed limit to Council based on the suggested speed limit determined using the *Canadian Guidelines for Establishing Posted Speed Limits* method. If the Environmental Factor Score is:

- Less than 30 points, the recommended speed limit will equal the suggested speed limit; or
- 30 points or more, the recommended speed limit will be 10 km/h less than the suggested speed limit.

If approved by Council, the Municipality will amend the pertinent by-law and install the required signage to enact the revised speed limit.

4.5 Education and Enforcement

The Municipality may undertake education and/or enforcement programs, either as a stand-alone initiative or the first step in an overall strategy, to address motor vehicle speeding concerns on Municipal Roads. These programs require no physical changes to the roadway, can be less expensive to undertake, and are usually faster to implement than other measures. As noted in **Subsection 4.6.2**, the Municipality will typically carry out education and/or enforcement before installing physical traffic calming if such a trial has not been conducted.

Most speed management programs have an effective, highly visible educational component comprising communications and outreach. These initiatives typically support other speed management measures and may form part of a broader strategy, at both the Municipality-wide and specific road section levels.

While police enforcement is not a viable long-term solution in most cases, some limited initial staffed enforcement with occasional follow-up visits may be adequate to manage the speeding concern. Automated speed enforcement may provide a potential future opportunity to manage speeding issues in school zones or designated Community Safety Zones.

The **Traffic Calming Toolbox** in **Appendix F** lists the typical education and enforcement measures used (also see **Subsection 4.6.3**).

4.6 Traffic Calming

Definition and Description

The *Canadian Guide to Traffic Calming* describes traffic calming as "the process and measures applied by road authorities to address concerns about the behaviour of motor vehicle drivers travelling on streets within their jurisdictions."[11]

Traffic calming measures may be applied in locations experiencing excessive motor vehicle speeds with the goal of enhancing road safety and community livability, particularly for vulnerable users like pedestrians and cyclists. Traffic calming may also be used to address disproportionate volumes of shortcutting traffic, although application for this purpose is not the focus of this Policy.

When used properly, traffic calming can help reduce motor vehicle speeds. Other benefits include reducing:

- The risk and severity of motor vehicle collisions;
- Conflicts between roadway users;
- Pedestrian crossing distances and times; and
- Traffic volumes and shortcutting.

Traffic calming measures for speed management can be broadly categorized into two groups:

- **Physical Measures** – Primarily vertical and horizontal deflections in the roadway that influence or force motorists to travel at lower speeds. Also includes treatments that narrow the road, alter its surface, or restrict access.
- **Non-Physical Measures** – Tools and strategies aimed at modifying driver behaviour without changing the roadway features. Often described as education and enforcement (see **Section 4.5**).

Most physical traffic calming measures are "self-enforcing" in nature, which reduces the need for police enforcement to ensure compliance.

While traffic calming offers several potential benefits, physical measures can cause unintended consequences, like:

- Increased emergency vehicle response times;
- Reduced or impeded access and egress from neighbourhoods by motor vehicle;
- Shifting or diverting of traffic volumes and/or speeding concerns onto other roadways;
- Increased maintenance costs, including snow clearing and curbside waste collection; and

[11] TAC, *Canadian Guide to Traffic Calming*, 2nd ed., (Ottawa: TAC, 2018),1.

- Increased vehicle emissions and/or noise pollution.

Careful consideration and proper planning, design, and implementation are key to a successful traffic calming plan.

Application

The Municipality may consider applying physical traffic calming measures at locations on Municipal Roads satisfying the **Traffic Calming Screening** in **Appendix E**. These locations include road sections:

- Where an adequate trial of education and/or enforcement (i.e., non-physical traffic calming per **Section 4.5**) has been undertaken to reduce speeds;
- With two-lane cross-sections;
- Not serving as a designated truck route and/or emergency vehicle route (ambulance, fire, police services) unless exempted by the Municipality;
- Without unique or local considerations affecting the installation of traffic calming measures; and
- With a Locational Factor Score of 50 points or more (out of a maximum of 80 points).

In most cases, the Municipality will undertake education and/or enforcement before installing physical measures if a trial has not been conducted.

If a trial of education and/or enforcement undertaken in the past three years has failed to produce the desired results or non-physical measures are inappropriate under the circumstances, the Municipality may proceed to install physical traffic calming measures on Municipal Roads satisfying the screening criteria. The Municipality may also initiate physical traffic calming on road (re)construction projects where safety and/or speeding concerns are anticipated to (re)occur upon (re)opening the road to traffic.

Where the installation of physical measures is deemed the preferred course of action, the Municipality will:

- Avoid impeding non-motorized travel (pedestrian and cyclist movement) when designing the traffic calming plan;
- Assess the impacts to all emergency services (i.e., Fire Service, Paramedic Services, and Ontario Provincial Police) and consult with these agencies in preparing the traffic calming plan. This will typically occur through direct consultation with EMS providers or through a Traffic Advisory Working Group; and
- Monitor outcomes and conduct follow-up studies to assess plan effectiveness after implementing the traffic calming plan and share the results with Council and the community as appropriate.

Traffic calming measures may not be appropriate in every situation and, if considered, should ensure the equitable and consistent treatment of all Municipal Road users following the guidance in this document.

Council has final approval on all traffic calming measures and may deny any plan at its discretion.

Recommended Measures

The **Traffic Calming Toolbox** in **Appendix F** provides information on the traffic calming measures applicable for use on Municipal Roads. The Toolbox:

- Includes a description and photo of each treatment;
- Notes the applicability (e.g., rural or urban road) and effectiveness of different measures;
- Describes the recommended process for selecting traffic calming treatments from the list of potential measures; and
- Provides indicative costs and general design guidance for each measure.

Not all traffic calming measures are appropriate under all circumstances. Applying the Toolbox consistently will help the Municipality select the most suitable measure(s) to address the identified issue(s) and avoid undesirable consequences.

Trial Installations

A Municipality will typically trial new traffic calming plans for a period of up to 24 months using temporary/seasonal measures before installing the features permanently. Undertaking a trial enables the Municipality to:

- Better understand the plan implications before investing in a permanent installation, thereby allowing for refinement of the design prior to final implementation;
- Avoid or defer the initial capital cost of more expensive traffic calming plans;
- Gauge community reaction to the plan concept in operation prior to final installation; and
- Retain flexibility to remove traffic calming measures seasonally.

After evaluating the trial installation, the Municipality will decide whether to implement the approved traffic calming plan with permanent materials.

In certain circumstances, the Municipality may move forward with permanent installation without a trial after considering the possible negative aspects of using temporary/seasonal measures, which can include:

- Lower relative aesthetic value;
- On-going operational costs and/or additional operational resource requirements;
- Requirements for seasonal installation and removal;
- Potential to have similar or higher overall costs than permanent installations;
- Potentially lower effectiveness than permanent materials; and
- Quicker degradation of roadway surfaces (specifically where measures are anchored into existing road surfaces).

Removal

The Municipality may remove traffic calming measures deemed ineffective, posing a safety risk, or creating unintended consequences that cannot be rectified easily at its discretion. The Municipality will notify affected parties if considering changes to the approved traffic calming plan.

The Municipality may also remove traffic calming measures at the request of neighbouring property owners. A petition signed by at least 51% (other ratios of support have been used in other municipalities) of owners directly fronting the subject road section is required to initiate the process. Owners can request removal only after the approved traffic calming plan has been in place for at least one year.

If the petition requests elimination of only part of an approved traffic calming plan, the Municipality may remove all measures if the remaining features will not achieve the intended effect.

Once removed, neighbouring residents must wait at least more three years before submitting a new request for speed management measures on the subject road section. This provision does not apply to non-physical traffic calming measures.

Regulatory Signs Not Used for Traffic Calming

The Municipality will not consider the installation of new regulatory signs for the sole purpose of traffic calming. Traffic control devices in this category include arbitrary posted speed limits and unwarranted all-way stop controls. These devices are not intended for this purpose, as noted in the *Canadian Guide to Traffic Calming* and OTM *Book 5 – Regulatory Signs*.

<u>Posted Speed Limits</u>

Posted speed limits should match the expectation of drivers for a given roadway and its surrounding area. Following the guidelines set out in this Speed Management Policy, instead of setting maximum rates of speed subjectively, will provide more consistent and credible posted limits on Municipal Roads.

All-Way Stop Controls

OTM *Book 5 – Regulatory Signs* states that the purpose of a stop sign is to assign right-of-way between vehicles approaching an intersection from different directions when traffic signals are not warranted or not yet installed. The guidebook explicitly recommends that all-way stop control not be used to protect pedestrians (particularly school children), control speeds, and/or deter through traffic movement in a residential area.

Like posted speed limits, indiscriminate use of all-way stops can lead to increased driver delay and frustration, greater speeding between intersections, increased noise from vehicle acceleration, increased emissions from vehicles forced to stop and idle, and/or reduced compliance with all-way stop control at the subject location and in general. Even when justified, all-way stops can increase the risk of certain collision types, most notably rear-end crashes.

4.7 Mitigation Measures for Pedestrian-Vehicle Conflicts on Rural Roads

In locations where Community Safety Zones, speed limit changes, and traffic calming are not currently warranted or may be inappropriate, the Municipality may consider the following measures to help mitigate pedestrian-vehicle conflicts on rural roads:

- Mowing and grading unpaved shoulders;
- Installing "Share the Road" signs in conjunction with warning signs to alert motorists of the presence of pedestrians. Consider sign placement as follows:
  - Near major routes where there are higher volumes of entering traffic;
  - At locations where sight distance and expectancy of encountering a pedestrian may be limited (e.g., in advance of curves, both horizontal and vertical);
- Educating drivers and pedestrians on safe walking practices (consistent with **Section 4.5** and the **Traffic Calming Toolbox** in **Appendix F**);
- Requesting targeted police enforcement (consistent with **Section 4.5** and the **Traffic Calming Toolbox** in **Appendix F**); and/or
- Hard surfacing (paving) shoulders when reconstructing/rehabilitating roads, where appropriate and feasible.

5 Speed Management Review Process

A Speed Management Policy can be described as a "set of instructions" or process for responding to requests for speed management measures on Municipal Roads. **Figure 5.1** depicts the seven-step review process, which is described in further detail as follows.

5.1 Step 1 – Review Initiation

The review process begins with a written request for speed management measures to the Municipality using the **Request for Speed Management Measures Form** in **Appendix A**. The submission must identify the requester and specify the subject road section and nature of the speeding concern. Council members can also submit requests on behalf of constituents.

5.2 Step 2 – Initial Screening

The Municipality will conduct an initial screening of the request to determine if the subject road section meets the criteria for speed management measures per **Section 4.2** of this policy. Requests for measures received for roads not under the Municipality's jurisdiction will be referred to the responsible road authority.

The Municipality will only consider measures at locations where:

- A prior request has not been denied within the preceding two years, unless new information is brought forward; and
- Speed management measures (including traffic calming) have not been removed within the preceding three years.

As part of the initial screening, the Municipality will conduct a speed survey for the subject road section over a period of at least seven consecutive days to determine the 85th and 95th percentile speeds. The timing for data collection will depend on available resources. The Municipality will collect the data during relevant time periods (e.g., during the school year in front of schools). The Municipality will typically collect the data required to complete the initial screening in the spring, summer, and/or fall season.

If the initial screening does not satisfy the minimum requirements for speed management measures, the Municipality will notify the requester and explain why the request was denied and the investigation stopped. After this, the Municipality will not entertain new requests for speed management measures on the subject road section for at least two years. Data collected will be retained by the Municipality regardless of the outcome of the initial screening. The Municipality, at its sole discretion, may complete a follow-up speed survey within 12 months to confirm the findings of the initial screening.

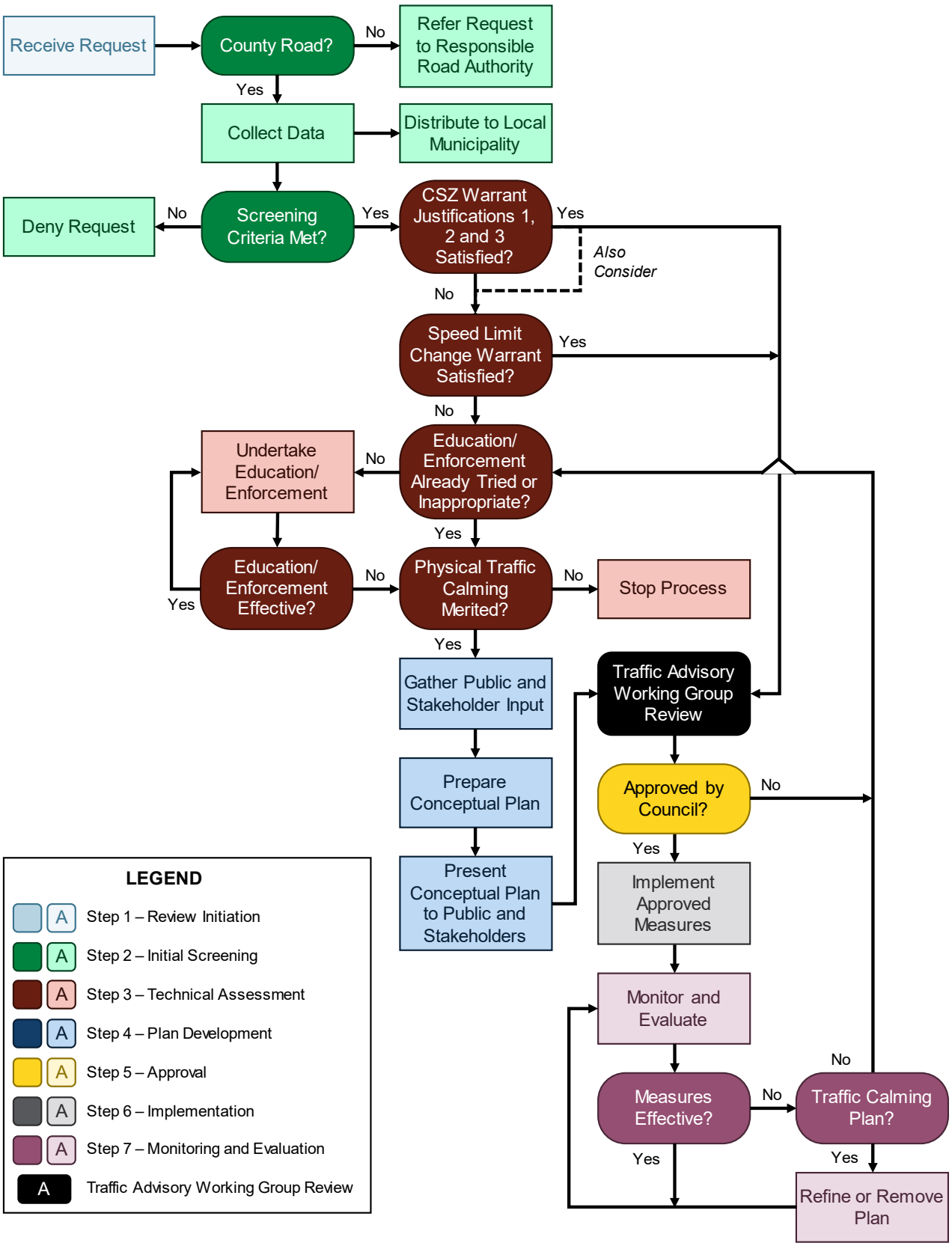


FIGURE 5.1: SPEED MANAGEMENT REVIEW PROCESS

5.3 Step 3 – Technical Assessment

For requests meeting the initial screening requirements in Step 2, the Municipality will complete a technical assessment to determine the preferred speed management measures. The assessment comprises up to four stages, beginning with Stage 1 to determine if a Community Safety Zone is warranted. If a Community Safety Zone already exists, the assessment proceeds to Stage 2.

After completing the technical assessment, the Municipality will notify the requester of the investigation findings and whether (additional) speed management measures are recommended.

The following summarizes the four-staged assessment:

Stage 1 – Community Safety Zone Designation

If the initial screening identifies the subject road section as a candidate for a Community Safety Zone, the Municipality will assess the merit of designation based on the warrant set out in **Section 4.3** of this policy.

If Justifications 1, 2, and 3 of the Community Safety Zone Warrant are satisfied, the Traffic Advisory Working Group (or Municipal staff) will consider the location and offer feedback on potential effectiveness and implementation considerations for Justification 4. If supported, the assessment moves to Stage 2, as prevailing conditions may still justify further speed management measures to complement the Community Safety Zone. If a speed limit change is not merited after further assessment in Stage 2, the review process skips to Step 5 for Council to consider approval of the recommended Community Safety Zone designation.

If the warrant is not satisfied, the assessment still moves to Stage 2 for consideration of a speed limit change.

Stage 2 – Speed Limit Change

The Municipality will assess the merit of changing the speed limit for the subject road section, and determine the recommended posted limit if justified, based on the warrant described in **Section 4.4** of this policy.

If the Speed Limit Change Warrant is satisfied, the Traffic Advisory Working Group (or Municipal staff) will consider the recommendation and offer feedback on potential effectiveness and implementation considerations. The review process then skips to Step 5 for Council to consider approval of the recommended speed limit change.

If the warrant is not satisfied, the assessment moves to Stage 3 for consideration of education and/or enforcement measures.

Stage 3 – Education and Enforcement

The Municipality will undertake education and/or enforcement per **Section 4.5** of this policy if such measures were not previously tried or are inappropriate under the circumstances. Implemented measures will continue until found ineffective in consultation with Local or Provincial Police and/or a Traffic Advisory Working Group.

If education and/or enforcement measures were previously tried, inappropriate, and/or found ineffective in the past three years, the process moves to Stage 4 for consideration of physical traffic calming.

Stage 4 – Physical Traffic Calming Measures

The Municipality will assess the merit of installing physical traffic calming measures on the subject road section based on the screening described in **Subsection 4.6.2** of this policy. Implementation priority, if justified, will also be determined.

If the Traffic Calming Screening is not satisfied, the process stops. After this, the Municipality will not entertain new requests for speed management measures on the subject road section for at least three years.

5.4 Step 4 – Plan Development

Development Process

For requests meeting the technical assessment requirements in Stage 4 of Step 3, the Municipality will develop a traffic calming plan consistent with the guidance contained in **Subsection 4.6.3**.

To begin, the Municipality will consult with the public and stakeholders to confirm traffic issues, identify candidate speed management measures, and note potential implementation challenges/opportunities. The Municipality will then prepare a conceptual traffic calming plan (or options, if appropriate) based on the input received and engage the public and stakeholders again to obtain feedback on the concept(s). Further refinement and engagement continue as needed, until Municipal staff presents the recommended plan to Council for approval in Step 5.

Community Engagement

As noted above, community engagement is often an integral part of developing a traffic calming plan – from problem identification, to plan preparation, to monitoring the installation. The consultation process helps foster support (and reduce opposition) for potential traffic calming measures and ultimately aids in ensuring a positive outcome.

The Municipality may maintain a dedicated webpage on its website explaining the Speed Management Policy, including information about the review process and potential measures, how to initiate an investigation, and studies currently underway.

No single method of community engagement is suitable for all situations. For individual studies, the Municipality may employ a variety of techniques to engage the public, such as workshops, online presentations, community meetings, and mailouts, as deemed appropriate.

More complex and contentious issues typically require greater levels of public education and outreach. Throughout the process, the following principles should be applied in engaging the community in developing a traffic calming plan:

- Involve the public and stakeholders early and frequently in the process, within available staff resources.
- Identify areas of agreement as early as possible in the process and concentrate resources on areas of contention, aiming to build consensus as the study progresses.
- Clearly define what is (and is not) within the project scope.
- Present relevant technical information and data to allow informed input.
- Provide convenient and accessible methods for interested parties to participate and offer feedback.
- Explain how public feedback influences the decision-making process, including why specific suggestions are (or are not) included.

Adherence to these basic principles will ensure that traffic calming plan development is undertaken in a manner that is consistent with the needs and aspirations of all parties.

There may be instances when traffic calming measures are warranted but interested parties have conflicting opinions on the preferred approach to addressing the identified speeding concerns. In these circumstances, the Municipality may need to conduct additional community engagement and/or outreach with potentially impacted parties to resolve the situation.

The Municipality will communicate with the public throughout the traffic calming plan development, primarily through the Speed Management Policy webpage described above. The webpage will present all study-related information and facilitate online engagement efforts. The Municipality may also include these communications on its social media feeds and in local newspapers, as appropriate. Distribution methods will depend on the study area size and nature.

5.5 Step 5 – Approval

Municipal staff will present the recommended speed management measures (with priority ranking for traffic calming plans) and potential funding sources, if needed, to Council for approval. Prioritization of traffic calming plans will be based on the point score calculated through the technical assessment (Stage 4 of Step 3) and estimated implementation costs.

Council may suggest changes to the recommended measures for a traffic calming plan (e.g., cost, design, funding source), which would be incorporated prior to implementation.

If Council does not approve the recommended measures for implementation, the review process **may** return to Stage 3 of Step 3 for consideration of education and/or enforcement as a strategy to address identified speeding concerns **or** be stopped. If stopped, the Municipality will not entertain new requests for speed management measures on the subject road section for at least three years.

5.6 Step 6 – Implementation

If approved in Step 5, the Municipality will install the approved speed management measures (with any alterations specified by Council) subject to available resources and other priorities.

Further budget approval may be required to finance the installation of a traffic calming plan. The Municipality may also need to prepare detailed design and tender documents to facilitate construction and inform the public and stakeholders prior to permanent installation. In most cases, the Municipality will install traffic calming plans with trial measures for a period of up to 24 months to assess effectiveness before committing to permanent installation per **Subsection 4.6.4**.

5.7 Step 7 – Monitoring and Evaluation

Following implementation, the Municipality will monitor the subject road section and evaluate the effectiveness of the speed management measures. The scope of the monitoring and evaluation program should be consistent with the investigations conducted prior to installation to allow “before/after” or “cause/effect” comparisons. At a minimum, the program should include a speed survey for the subject road section over a period of at least three consecutive days to determine the 85th and 95th percentile speeds post implementation.

The *Canadian Guidelines for Establishing Posted Speed Limits* recommends that road authorities conduct a review of motor vehicle operating speeds, traffic operations, and safety performance approximately six to 12 months after a posted speed limit is modified. This helps determine whether the posted limit accurately reflects driver expectations and desired operating speeds.

For Community Safety Zones and/or speed limit changes, the review process may return to Stage 3 of Step 3 for consideration of education and/or enforcement and/or Stage 4 of Step 3 for consideration of physical traffic calming to complement the traffic control device installation(s) if these measures alone do not address identified speeding concerns.

The Municipality may remove a Community Safety Zone or relocate it to another warranted location if driver behaviour has not changed after six months. Six months under increased fines is considered adequate time to create a lasting effect. Other countermeasures will likely be required as may be identified through the review process.

For traffic calming plans, impact on the surrounding road network may also need to be assessed. Potential studies may include traffic counts (to determine changes in volumes) and/or origin-destination surveys (to estimate the volume of traffic diverting to adjacent streets). The evaluation should also consider winter operating conditions.

The Municipality may refine or remove traffic calming measures deemed ineffective, posing a safety risk, causing unintended consequences, or no longer considered appropriate (e.g., removal of a Community Safety Zone if a school is closed). Council must approve the removal of any approved speed management measures.

Appendix A

Request for Speed Management Measures

Where are you requesting speed management measures for (be as specific as possible with road name and limits)?

_____

Which of the following applies to you?

- ☐ I live on this street.
- ☐ I work on this street.
- ☐ My kids go to school on this street.
- ☐ I live nearby and use this street frequently for commuting, cycling, or walking.
- ☐ Other (please specify): _____

Is there a specific time of day when speeding is an issue?

- ☐ Morning
- ☐ Noon
- ☐ Afternoon
- ☐ Evening
- ☐ Overnight
- ☐ All day

Are there any other traffic issues concerning you about the street in question?

- ☐ Vehicle volumes
- ☐ Cut-through traffic
- ☐ Pedestrian and cyclist safety
- ☐ Collisions
- ☐ Other (please specify): _____

Name: _____ Date: _____

Email: _____ Phone: _____

Preferred method of contact (check one): ☐ Email ☐ Phone

Would you like to share any other comments? _____

_____

_____

Appendix B

Speed Management Program Screening

Use this checklist with **Section 4.2** of the **Speed Management Policy** when considering a request for speed management measures on a **Municipal Road**. If the subject road is not under Municipal jurisdiction, the request will be referred to the responsible road authority.

Road Name & Section Limits: _____

Date Inquiry Received: _____

Date Review Completed: _____

Name of Reviewer: _____

Road Environment: ☐ Urban ☐ Rural Current Speed Limit: _____ km/h

85th Percentile Speed: _____ km/h 95th Percentile Speed: _____ km/h

Criteria	Speed management measures may be considered if:	Satisfied?
All Criteria Must be Met:		
1. Not Previously Requested	A prior request for speed management measures has not been denied in the preceding two years, unless new information is brough forward.	☐
2. Measures Removed	Speed management measures (including traffic calming) have not been removed in the preceding three years.	☐
At Least One Criteria Must be Met:		
3. Location of Special Consideration	The subject road section is within 500 m of: a) A designated School Zone or Community Safety Zone OR b) Other location of special consideration (e.g., school, seniors' centre or residence, playground, hospital)	☐ ☐
4. 85th Percentile Speed	The 85th percentile speed exceeds the current speed limit: a) On Municipal Roads within the Official Plan Settlement Areas or any Built-up Areas outside these designations OR b) By 10 km/h or more on all other Municipal Roads.	☐
5. 95th Percentile Speed	The 95th percentile speed exceeds the current speed limit by 20 km/h or more.	☐

Screening Recommendation:

If Screening Satisfied (check all that apply):	
Proceed with Technical Assessment	☐
Investigate Community Safety Zone if Criteria 3.b) met	☐
If Screening Not Satisfied:	
Deny request	☐

Appendix C

Community Safety Zone Warrant

Use this checklist with **Section 4.3** of the **Speed Management Policy** when considering designating a Community Safety Zone on a Municipal Road.

Road Name & Section Limits: _____

Date Inquiry Received: _____

Date Review Completed: _____

Name of Reviewer: _____

Road Environment: ☐ Urban ☐ Rural Current Speed Limit: _____ km/h

Adjacent Land Uses: ☐ Elementary or Secondary School ☐ Community Playground

☐ Seniors' Centre or Residence ☐ Hospital ☐ Other

Pedestrian Activity: ☐ High (≥ 50 peds per hour) ☐ Low (< 50 peds per hour)

Shoulder Width _____ m (n/a for no shoulder)

Qualifying Collisions (see Note 1 below): _____ AADT (defined below): _____

Violation Rates: ☐ High ☐ Low

Other Countermeasures: ☐ Tried and Successful ☐ Tried and Unsuccessful ☐ Not Tried

Justification 1 – Area of Special Consideration:

Criteria	A Community Safety Zone may be considered if:	Satisfied?
At Least One Criteria Must be Met:		
1. Adjacent Land Use	The subject road section is adjacent to an elementary or secondary school, seniors' centre or residence, community playground, or hospital.	☐
2. Pedestrian Activity	The subject road section has high pedestrian activity and/or pedestrians must walk on a shoulder or sidewalk less than 1.5 m wide.	☐
Justification 1 Criteria Satisfied?		☐

Justification 2 – Identified Safety Concern:

Criteria	A Community Safety Zone may be considered if:	Satisfied?
At Least One Criteria Must be Met:		
1. Collision Ratio	The ratio of collisions per year to AADT (collision ratio) is less than 1:900 averaged over 36 consecutive months.[1]	☐
2. Risk Factor	a) The subject road section experiences unusually high violation rates based on field observations and/or local law enforcement AND b) The **Risk Factor Score** from the table below is 15 points or more.	☐ ☐
Justification 2 Criteria Satisfied?		☐

Note: 1. Only collisions with a causal factor related to one of the *Highway Traffic Act* violations identified in the Community Safety Zone legislation (Section 214.1) should be included.

Risk Factor Score:

Factor	Value	Factor Scoring			Score
		High (3 Points)	Moderate (2 Points)	Low (1 Point)	
Current Speed Limited (km/h)	See above	≥ 70	60	≤ 50	
Difference Between 85th Percentile Speed and Current Speed Limit (km/h)		> 15	5-15	< 5	
Average Annual Daily Traffic Volume (AADT)	See above	> 8,000	2,000-8,000	< 2,000	
Number of Vehicle Travel Lanes		6	4	2	
Highest Hourly Truck Volume		> 100	50-100	< 50	
Highest Hourly Pedestrian Volume		> 50	20-50	< 20	
Number of Intersections and Commercial Driveways (per km)		> 10	4 to 10	< 4	
Geometric Constraints	☐ Alignment ☐ Visibility ☐ No Sidewalk/ Cycling Facility ☐ Other	1 to 4 points assigned based on staff review			
				Total Score	

Justification 3 – Other Applicable Measures/Devices Tried

Criteria	A Community Safety Zone may be considered if:	Satisfied?
One Criteria Must be Met:		
1. Other Countermeasures	Other warranted countermeasures tried and found to be unsuccessful (i.e., failed to reduce the collision ratio to less than 1:900).	☐
Justification 3 Criteria Satisfied?		☐

Justification 4 – Ability to Enforce

Criteria	A Community Safety Zone may be considered if:	Satisfied?
One Criteria Must be Met:		
1. Enforcement Resources	The local police service has sufficient resources to provide the necessary enforcement based on input from the Police or a Traffic Advisory Working Group.	☐
Justification 4 Criteria Satisfied?		☐

Warrant Recommendation:

If Warrant Satisfied (All Four Justifications Met):	
Designate Community Safety Zone	☐
If Warrant Not Satisfied:	
Consider speed limit change	☐

Appendix D

Speed Limit Change Warrant

Use this checklist with **Section 4.4** of the **Speed Management Policy** when considering a request to change the speed limit.

Road Name and Limits: _____

Date Inquiry Received: _____

Date Review Completed: _____

Name of Reviewer: _____

Road Environment: ☐ Urban ☐ Rural Current Speed Limit: _____ km/h

Geometric Constraints: ☐ Yes ☐ No

85th Percentile Speed: _____ km/h Road Segment Length: _____ km

Residential Entrances: _____ Qualifying Collisions (see Note 1 below): _____

Education/Enforcement: ☐ Tried and Effective ☐ Tried and Ineffective ☐ Not Tried

Criteria	A speed limit change may be considered if:	Satisfied?
At Least Two Criteria Must be Met		
1. Suggested Speed Limit	The suggested speed limit determined using the Transportation Association of Canada *Canadian Guidelines for Establishing Posted Speed Limits* (TAC Method) differs from the current speed limit by 10 km/h or more. TAC Method Suggested Speed Limit: _____ km/h assuming the _____ Road classification when determining the ideal speed using the methodology.	☐
2. Geometric Constraints	Site-specific geometric constraints (such as reduced sight distance or curve radii) do not match the current speed limit.	☐
3. Operating Speed	The 85th percentile speed differs from the current speed limit: a) On Municipal Roads within the Official Plan Settlement Areas or any Built-up Areas outside these designations <u>OR</u> b) By 10 km/h or more on all other Municipal Roads.	☐

Criteria	A speed limit change may be considered if:	Satisfied?
4. Environment Characteristics	The **Environmental Factor Score** from the table below is 30 points or more.	☐
All Criteria Must be Met		
5. Potential Speed Zone Length	The length of the potential speed zone would exceed 500 m for TAC Method Suggested Speed Limit of 70 km/h or less and 1,000 m for TAC Method Suggested Speed Limit of more than 70 km/h.	☐

Environmental Factor Score:

Factor	Value	Factor Scoring	Maximum Points	Score
Pedestrian/ Cycling Activity		5 points for each adjacent pedestrian and/or cycling generator (e.g., school, seniors' centre or residence, playground, hospital, park, recreation centre/arena, library, shopping centre, place of worship)	25	
Pedestrian Facilities	☐ Yes ☐ No	5 points if no sidewalks or multi-use paths	5	
Cycling Facilities	☐ Yes ☐ No	5 points for designated cycling facilities	5	
Collision History	See above	1 point for each qualifying collision[1] over the last 36 months	5	
Residential Frontage		5 points for primarily residential frontage (> 10 entrances per km)	5	
Settlement Area	☐ Yes ☐ No	5 points if within a Settlement Area designation (Towns, Villages, and Hamlets) in the Official Plan	5	
		Total Score	**50**	

Note: 1. Includes all collisions along the subject road section except for collisions involving animals.

Warrant Recommendation:

If Warrant Satisfied:	
Change speed limit to TAC Method Suggested Speed Limit if the **Environmental Factor Score** is less than 30 points	☐
Change speed limit to TAC Method Suggested Speed Limit less 10 km/h if the **Environmental Factor Score** is 30 points or more (but not less than 40 km/h)	☐
Recommended Speed Limit: ☐ 40 km/h ☐ 50 km/h ☐ 60 km/h ☐ 70 km/h ☐ 80 km/h	
If Warrant Not Satisfied (check one):	
Consider physical traffic calming if education and/or enforcement already tried and found ineffective or inappropriate under the circumstances	☐
Undertake education and/or enforcement if not already tried	☐

Appendix E

Traffic Calming Screening

Use this checklist with **Section 4.6** of the **Speed Management Policy** when considering physical traffic calming measures on a Municipal Road for speed management purposes.

Road Name and Limits: _____

Date Inquiry Received: _____

Date Review Completed: _____

Name of Reviewer: _____

Road Environment: ☐ Urban ☐ Rural Current Speed Limit: _____ km/h

Education/Enforcement: ☐ Tried and Effective ☐ Tried and Ineffective ☐ Not Tried

Number of Lanes: _____ Route: ☐ Truck ☐ Emergency Vehicle

85th Percentile Speed: _____ Qualifying Collisions (see Note 1 below): _____

Criteria	Physical traffic calming may be considered if:	Satisfied?
All Criteria Must be Met		
1. Adequate Trial of Other Solutions	An adequate trial of education and/or enforcement has been undertaken to reduce speeds.	☐
2. Number of Lanes	The subject road section is two-lanes.	☐
3. Designated Route	The subject road section does not serve as a designated truck route and/or emergency vehicle route (ambulance, fire, police services) unless exempted by the Municipality.	☐
4. Unique or Local Considerations	The subject road section does not have any unique or local considerations affecting the installation of physical traffic calming measures.	☐
5. Locational Characteristics	The **Locational Factor Score** from the table below is 50 points or more.	☐

Locational Factor Score:

Factor	Value	Factor Scoring	Maximum Points	Score
Speed Differential		1 point for every 1 km/h the 85th percentile speed exceeds the posted speed limit	25	
Excessive Speed		5 points if the 95th percentile speed exceeds the posted speed limit by 20 km/h	5	
Environmental Factor from Speed Limit Change Warrant:				
Pedestrian/ Cycling Activity		5 points for each adjacent pedestrian and/or cycling generator (e.g., school, seniors' centre or residence, playground, hospital, park, recreation centre/arena, library, shopping centre, place of worship)	25	
Pedestrian Facilities	☐ Yes ☐ No	5 points if no sidewalks or multi-use paths	5	
Cycling Facilities	☐ Yes ☐ No	5 points for designated cycling facilities	5	
Collision History	See above	1 point for each qualifying collision[1] over the last 36 months	5	
Residential Frontage		5 points for primarily residential frontage (> 10 entrances per km)	5	
Settlement Area	☐ Yes ☐ No	5 points if within a Settlement Area designation (Towns, Villages, and Hamlets) in the Official Plan	5	
		Total Score	**80**	

Note: 1. Includes all collisions along the subject road section except for collisions involving animals.

Screening Recommendations:

If Screening Satisfied:	
Proceed with traffic calming plan development	☐
If Warrant Not Satisfied:	
Deny request	☐

Appendix F

Traffic Calming Toolbox

F.1 Overview of the Toolbox

This **Traffic Calming Toolbox** provides a comprehensive "toolkit" of traffic calming strategies, measures, and designs. The Toolbox reflects the latest practices in traffic calming in other municipalities, and considers the local context and resources.

The Toolbox is based principally on information contained in the 2018 edition of the Transportation Association of Canada's (TAC) *Canadian Guide to Traffic Calming* (the Guide). [12] This foundational publication serves as the source of most traffic calming guidance in the Speed Management Policy, including the list of potential traffic calming techniques set out below and the detailed profiles of the applicable measures contained in **Attachment 1**.

F.2 List of Potential Traffic Calming Measures

The Guide identifies a broad range of potential traffic calming techniques for use in Canada, organizing the measures into the following 11 general categories (in alphabetical order):

- Access Restrictions
- Education
- Emerging Technologies
- Enforcement
- Gateways
- Horizontal Deflection
- Pavement Markings
- Roadway Narrowing
- Shared Space
- Surface Treatments
- Vertical Deflection

These measures can be broadly categorized into two groups:

- **Physical Measures** – Primarily vertical and horizontal deflections in the roadway that influence or force motorists to travel at lower speeds (and/or select an alternate route if shortcutting traffic is the primary concern). Also includes treatments that narrow the road, alter its surface, or restrict access.
- **Non-Physical Measures** – Tools and strategies aimed at modifying driver behaviour without changing the roadway features. Often described as education and enforcement.

From the overall catalogue of options presented in the Guide, a shortlist of applicable traffic calming measures for potential use on Municipal Roads, is described in the following section.

[12] Transportation Association of Canada, *Canadian Guide to Traffic Calming*, 2nd ed., (Ottawa; TAC, 2018).

F.3 Applicable Traffic Calming Measures

Overview

Attachment 1 details the list of applicable traffic calming measures. The Toolbox includes a description and photo of each treatment and an overview of typical applicability, potential benefits, and other implementation considerations.

The list of applicable measures captures a range of approaches to traffic calming. **Table F.1** provides a simplified, visual comparison of the different measures, highlighting their potential applicability, indicative costs, and design guidance.

The Toolbox combines the latest and best practices in traffic calming with consideration of local context. Building on guidance contained in the Guide, it outlines a range of techniques that can be used to address different types of problems (i.e., speed, collisions, pedestrian conflicts, shortcutting traffic, etc.) in various contexts (i.e., on different road classifications, and in urban versus rural roadside environments, etc.). Information provided includes the advantages and disadvantages of each measure and its effectiveness based on available research. This helps to avoid the undesirable outcomes of selecting an inappropriate measure(s) for a particular application.

Indicative Costs

Table F.1 provides indicative costs, where available, for trial (temporary) and permanent installations of the traffic calming measures identified. The range of costs for permanent placement cited in Column 5 (Indicative Cost, Low) and Column 6 (Indicative Cost, High) were sourced primarily from the Institute of Transportation Engineers (ITE) *Traffic Calming Fact Sheets*[13], with adjustments to reflect Canadian dollars and inflation (from 2017 to 2022 dollars). Other municipal traffic calming guidelines[14] were also referenced in deriving the permanent installation indicative costs. Costs are not provided for site-specific (e.g., road diet) and primarily operational measures (e.g., targeted education campaign and fixed speed enforcement), as denoted by “n/a”.

For trial installations, the indicative costs noted in **Table F.1** (Indicative Cost, Trial) were estimated based on quotes from vendors/manufacturers. The prices were factored up to account for installation and removal following the trial, if applicable. Costs are not provided in cases where trial installations are unlikely (e.g., raised intersection, any measure primarily signing or pavement marking), as denoted by “n/a”.

[13] Institute of Transportation Engineers, *Traffic Calming Fact Sheets*, Accessed September 27, 2022 from https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures

[14] City of Toronto, *Traffic Calming Guide for Toronto*, 2016. Accessed September 27, 2022 from https://www.toronto.ca/wp-content/uploads/2017/11/97d0-2016-Traffic-Calming-Guide_March2017.pdf

TABLE F.1: POTENTIAL TRAFFIC CALMING MEASURES

	Measure	Applicability			Indicative Cost[1]			Design Details[2]
		Local or Collector	Urban Arterial	Rural Arterial	Low	High	Trial	
1. Education								
1.1	Active and Safe Routes to School Program	●	●	●	n/a	n/a	n/a	n/a
1.2	Speed Display Devices	●	●	●	$4,000	$7,500	n/a	n/a
1.3	Targeted Education Campaign	●	●	●	n/a	n/a	n/a	n/a
1.4	Vehicle Activated Signs	●	●	●	$2,000	$12,000	n/a	n/a
1.5	Oversized Speed Limit Signs	●	●	●	$1,000	$2,000	n/a	OTM 5
2. Enforcement								
2.1	Fixed Speed Enforcement	●	●	●	n/a	n/a	n/a	n/a
2.2	"Speed Watch" Program	●	●	●	n/a	n/a	n/a	n/a
3. Pavement Markings								
3.1	Converging Chevrons	●	▲	●	$10,000	$20,000	n/a	n/a
3.2	Dragon's Teeth	●	▲	●	n/a	$4,000	n/a	n/a
3.3	Full-lane Transverse Bars	●	▲	●	n/a	$4,000	n/a	n/a
3.4	On-Road 'Sign' Pavement Markings	●	●	●	$150 (per symbol)	$200 (per symbol)	n/a	OTM 11
3.5	Peripheral Transverse Bars	●	▲	●	n/a	$4,000	n/a	4.6.1
4. Surface Treatment								
4.1	Sidewalk Extension/ Textured Crosswalk	●	▲	✕	$12,000	$30,000	n/a	4.5.1
4.2	Transverse Rumble Strips	▲	✕	●	$3,000	$4,000	n/a	n/a
5. Roadway Narrowing								
5.1	Curb Extension	●	●	✕	$3,000	$50,000	$10,000	4.4.1
5.2	Lane Narrowing	●	▲	✕	$12,000	$20,000	n/a	OTM 11
5.3	On-Street Parking	●	▲	✕	$12,000	$20,000	n/a	4.4.2
5.4	Raised Median Island	●	▲	✕	$3,000	$125,000	$8,000	4.4.3
5.5	Road Diet[3]	●	●	✕	n/a	n/a	n/a	4.4.4
5.6	Vertical Centreline Treatment	●	✕	●	$2,500 (per km)	$4,000 (per km)	n/a	OTM 6

TABLE F.1: POTENTIAL TRAFFIC CALMING MEASURES

	Measure	Applicability			Indicative Cost[1]			Design Details[2]
		Local or Collector	Urban Arterial	Rural Arterial	Low	High	Trial	
6. Gateways								
6.1	Gateways[4]	●	●	●	$10,000	$50,000	$5,000	n/a
7. Horizontal Deflection								
7.1	Lateral Shift	●	▲	✕	$16,000	$62,500	$25,000	n/a
7.2	Traffic Button/	●	✕	✕	$3,000	$50,000	$10,000	4.3.4
	Traffic Circle/ Mini-Roundabout	●	✕	▲	$20,000	$125,000	$15,000	
8. Vertical Deflection								
8.1	Raised Crosswalk	●	✕	✕	$5,000	$20,000	$10,000	4.2.1
9. Access Restriction								
9.1	Right-in/Right-out Island	●	▲	✕	$3,000	$50,000	$5,000	4.7.6
10. Emerging Technologies and Measures								
10.1	Optical Illusion Pavement Markings	●	▲	✕	$150 (per symbol)	$200 (per symbol)	n/a	n/a

Legend:

● Applicable ▲ Use with Care ✕ Not Appropriate

Notes:

1. See **Section F.3** for explanation of indicative costs and sources.
2. See **Section F.3** for explanation of design details and sources.
3. Measure is site-specific. Implemented as part of road reconstruction or new development.
4. To be used in conjunction with other traffic calming measures. Typically considered for new development.

The indicative costs cited in **Table F.1** provide order of magnitude estimates for planning purposes, but should be applied with caution given the many factors affecting actual implementation costs, such as:

- Width of roadway(s);
- Corner radii;
- Existing infrastructure and utilities (e.g., catch basins, maintenance holes, utility poles, streetlights);
- Dimensions of proposed feature(s) (e.g., island size, length of extensions, width/height of raised feature);
- Quantity (e.g., number of signs, length of pavement markings, numbers of signals);
- Property acquisition (if required);
- Landscaping;
- Labour and materials;
- Design and contingency.

Closer to implementation, the Municipality will typically estimate permanent and trial installation costs based on more detailed design plans and current unit/benchmark prices derived from recent construction contracts.

Design Guidelines

The Municipality will generally follow the design guidance provided in Chapter 4 of the Guide when implementing the traffic calming measures identified in **Table F.1**. Column 8 (Design Details) denotes the relevant section to consult in the guidebook. The TAC *Geometric Design Guide for Canadian Roads*[15] may also be referenced in the design process.

In a few instances, the table refers to the Ontario Traffic Manual (OTM) for guidance pertaining to signing or pavement marking treatments. References are not provided for measures without available guidance (e.g., lateral shift) or for non-physical measures (e.g., fixed speed enforcement), as denoted by “n/a”.

F.4 Selecting Measures

The following outlines the typical decision process for selecting measures from the Toolbox. As noted above, other factors can also influence the measure(s) selected.

Step 1

Determine if the subject road section is a candidate for traffic calming measures per **Section 4.6** of the Speed Management Policy.

[15] Transportation Association of Canada, *Canadian Guide to Traffic Calming*, 2nd ed., (Ottawa, ON; 2018).

Step 2

Identify the list of potentially applicable traffic calming measures based on roadway classification and environment.

Step 3

Confirm and rank (based on severity) the primary issue(s) to be addressed through the traffic calming plan. Potential issues include:

- Speeding (typically primary)
- Shortcutting traffic
- Pedestrian crossings
- Vehicle and pedestrian/cyclist conflicts
- Heavy vehicles

Step 4

Shortlist the measures that address the issue(s) from the initial list assembled in Step 2.

Step 5

Focus on/eliminate measures that would/would not be appropriate under the following conditions:

- School Zones and Community Safety Zones
- Active transportation routes
- Adjacent to park
- High pedestrian generators, particularly more vulnerable users
- Adjacent land uses (residential versus non-residential)
- Planned reconstruction
- Noise to surrounding neighbourhood
- Applicability for temporary installation

Step 6

Confirm measures can be implemented under current roadway conditions. Factors to consider include:

- Existing intersections and control
- Midblock pedestrian/cyclist crossings and control
- Cross-section width
- Need for on-street parking
- Roadway alignment (i.e., horizontal and vertical curvature)
- Grade
- Block Length
- Driveway density

- Pavement condition and materials
- Drainage
- Utilities and street furniture (e.g., benches, poles, boxes)
- Streetlighting

Attachment 1

Traffic Calming Measures for Use

1. EDUCATION

1.1 Active and Safe Routes to School Program

Description and Purpose

A community-based program that promotes the use of active transportation for daily trips to school while addressing traffic safety issues.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – n/a
Engineering Study Required – No

Potential Traffic Calming Benefits

Speed Reduction	☐
Volume Reduction	☐
Conflict Reduction	☐
Natural Environment	☐

Other Implementation Considerations

Local Vehicle Access	☐
Emergency Vehicle Response	☐
Cycling Use	☐
Traffic Enforcement	☐
Vehicle Parking	☐
Street Maintenance	☐

☐/☐	No Benefit/Impact
☐/☐	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

1. EDUCATION

1.2 Speed Display Devices

Description and Purpose

A speed display device is an interactive sign that displays vehicle speeds as oncoming motorists approach. Vehicle speed is captured using radar and can trigger the display board to show when vehicles approach at predetermined undesirable speeds. Can be used upstream of fixed speed enforcement.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	◘
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	◘
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
◘/◘	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

1. EDUCATION

1.3 Targeted Education Campaign

Description and Purpose

Targeted education campaigns are initiatives to raise awareness of road safety issues. Education campaigns can address multiple types of driver awareness. In some cases, these will be an integral component of an overall strategic road safety program.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $-$$$
Timeline – n/a
Engineering Study Required – No

Potential Traffic Calming Benefits

Speed Reduction	☐
Volume Reduction	☐
Conflict Reduction	☐
Natural Environment	☐

Other Implementation Considerations

Local Vehicle Access	☐
Emergency Vehicle Response	☐
Cycling Use	☐
Traffic Enforcement	☐
Vehicle Parking	☐
Street Maintenance	☐

☐/☐	No Benefit/Impact
◘/◘	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

1. EDUCATION
1.4 Vehicle Actuated Signs (VAS)

Description and Purpose

Vehicle actuated signs are electronic roadside warning signs equipped with radar speed detectors and illuminated display.

Vehicle activated signs are like speed feedback signs but instead of showing the speed of the vehicle, the speed is used to activate a symbol displaying the actual hazard ahead when a predetermined speed threshold is exceeded. Otherwise, the sign shows no message.

The purpose is to alert drivers with the aim that they reduce their travel speed as they approach specific conditions or hazards ahead.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	▣
Natural Environment	□

Other Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

1. EDUCATION
1.5 Oversized Speed Limit Signs

Description and Purpose

Oversized speed limit signs may be used where extra emphasis is required, such as an unusual speed limit, a change in speed limit in rural areas, high traffic volume, high violation rates, or lower sign conspicuity.

Per Ontario Traffic Manual *Book 5 – Regulatory Signs*, oversized signs will be:

- 90 cm x 120 cm for Rb-1A (MAXIMUM SPEED with KM/H)
- 30 cm x 90 cm for Rb-7t (KM/H tab) and Rb-84t (BEGINS tab)
- 90 cm x 165 cm for Rb-3 (MAXIMUM SPEED with KM/H and BEGINS)
- 90 cm x 150 cm for Rb-5A (MAXIMUM SPEED AHEAD with KM/H)

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – Primarily rural
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – No

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Other Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	□

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

2. ENFORCEMENT

2.1 Fixed Speed Enforcement

Description and Purpose

Fixed (or targeted) speed enforcement involves employing additional police enforcement in locations when speed, collision, citation, resident comments, or other sources of information suggest that the site is unusually hazardous due to illegal driving practices.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $$$
Timeline – Temporary
Engineering Study Required – No

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	▣
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

2. ENFORCEMENT

2.2 Speed Watch Program

Description and Purpose

The placement of speed display devices (see Measure 9.2) that measure the speed of passing vehicles as they pass. Run by local police services, volunteers and residents are involved to help monitor traffic and record license plates of vehicles travelling at excessive speeds. Letters may be sent to registered owners of these vehicles altering them of their excessive speeding.

The speeds of vehicles can also be stored and analyzed. If there is excessive speeding in the area, municipalities can create a plan for further speed limit enforcement or traffic calming.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – No

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	■
Vehicle Parking	□
Street Maintenance	□

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

3. PAVEMENT MARKINGS

3.1 Converging Chevrons

Description and Purpose

Converging chevrons are pavement markings painted in the shape of a forward-facing V pointing in the roadway travel direction. They can be spaced close together or painted thinner to create the illusion that a vehicle's speed is increasing. This is done to alert the driver of the need to reduce speed.

Applicability

- **Road Class** – Local Streets, Collector Roads, Urban and Rural Arterials
- **Roadway Cross-Section** – Urban and rural
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

3. PAVEMENT MARKINGS

3.2 Dragon's Teeth

Description and Purpose

Dragon's teeth are a series of triangular pavement markings along the edge of the travelled lanes. They may be painted with increasing size to give the impression of roadway narrowing. They provide a visual change of the roadway and alert drivers that they are entering a rural community.

Applicability

- **Road Class** – All classes
- **Roadway Cross-Section** – all cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	☐
Volume Reduction	☐
Conflict Reduction	☐
Natural Environment	☐

Implementation Considerations

Local Vehicle Access	☐
Emergency Vehicle Response	☐
Cycling Use	☐
Traffic Enforcement	☐
Vehicle Parking	☐
Street Maintenance	☐

☐/☐	No Benefit/Impact
☐/☐	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

3. PAVEMENT MARKINGS

3.3 Full-lane Transverse Bars

Description and Purpose

Full-lane transverse bars are a series of parallel pavement markings which extend across the majority of the travelled lane width. The series of markings may be placed closer together with distance to create the illusion that a vehicle's speed is increasing to alert the driver of the need to reduce speed.

Applicability

- **Road Class** – All classes
- **Roadway Cross**-Section – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	▣

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

3. PAVEMENT MARKINGS

3.4 On-Road Sign Pavement Markings

Description and Purpose

On-road 'sign' pavement markings provide information that would typically be shown to drivers through signage but are painted on the roadway to provide a larger image, and one that is directly in the driver's line of sight. Some examples could be speed limit, 'SLOW', 'Stop ahead, etc.

Applicability

- **Road Class** – All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	▣

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

3. PAVEMENT MARKINGS

3.5 Peripheral Transverse Bars

Description and Purpose

Peripheral transverse bars are a series of parallel pavement markings along the edge of the travelled lane widths. The series of markings may be placed closer together with distance to create the illusion that a vehicle's speed is increasing. This is done to alert the driver's awareness of the need to reduce speed. Peripheral transverse bars are similar to full-lane transverse bars but require less maintenance of pavement markings.

Applicability

- **Road Class** – All classes
- **Roadway Cross**-Section – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	▣

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

4. SURFACE TREATMENT

4.1 Sidewalk Extension/ Textured Crosswalk

Description and Purpose

A sidewalk extension is a sidewalk continued across a local street intersection at the level of the roadway. Textured/patterned elements that contrast the roadway can be incorporated into the sidewalk extension.

The purpose of a sidewalk extension is to visually enhance a pedestrian crossing location so drivers become more aware of its presence. It is not intended to indicate whether drivers or pedestrians are required to yield (traffic must comply with local or provincial regulations governing the type of pedestrian crossing system being enhanced by the sidewalk extension / textured crosswalk).

With a sidewalk extension/textured crosswalk the continuation of the surface and enhanced visual/tactile identification of the crosswalk area emphasizes pedestrian priority.

Applicability

- **Road Class –** Local Streets, Collector Roads, Urban Arterials
- **Roadway Cross-Section** – Urban, sidewalks on both sides
- **Speed Limit** – 50 km/h or less
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	◻
Volume Reduction	☐
Conflict Reduction	◻
Natural Environment	◻

Implementation Considerations

Local Vehicle Access	☐
Emergency Vehicle Response	☐
Cycling Use	◻
Traffic Enforcement	☐
Vehicle Parking	☐
Street Maintenance	■

☐/☐	No Benefit/Impact
◻/◻	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

4. SURFACE TREATMENT
4.2 Transverse Rumble Strips

Description and Purpose

Transverse rumble strips are raised buttons, bars or grooves closely spaced at regular intervals on the roadway that create both noise and vibration in a moving vehicle.

The purpose of a rumble strip is to alert motorists to a traffic control device which is associated with unusual or changing conditions ahead. Rumble strips are sometimes incorrectly used in a standalone mode as a speed control device.

With rumble strips, motorists are alerted by minor vertical deflection of vehicle wheels and audible warning created as vehicles wheels pass over.

Applicability

- **Road Class –** Local Streets, Collector Roads, Rural Arterials
- **Roadway Cross-**Section – Urban and rural (usually one lane per direction)
- **Speed Limit –** All speed limits
- **Average Daily Traffic –** All volumes

Cost – $
Timeline – Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	■
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

5. ROADWAY NARROWING

5.1 Curb Extension

Description and Purpose

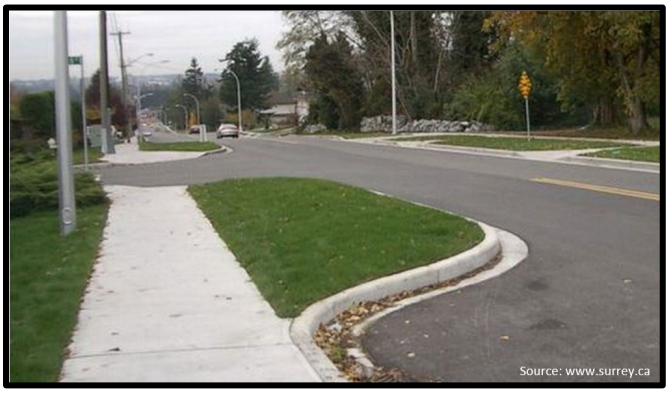
A curb extension (also known as neckdown, choker, curb bulb, or bulb-out) is a horizontal intrusion of the curb into the roadway resulting in a narrow section of roadway. The curb is extended on one or both sides of the roadway to reduce its width to as a little as 6.0 m for two-lane, two-way traffic. In urban environments, it is possible to implement curb extensions by removing existing parking spaces.

The purpose of a curb extension is to reduce vehicle speeds, reduce crossing distance for pedestrians, increase visibility of pedestrians, and prevent parking close to an intersection.

Applicability

- **Road Class** – Local Streets, Collector Roads and Urban Arterials
- **Roadway Cross-Section** – Urban
- **Speed Limit** – 60 km/h or less
- **Average Daily Traffic** – All volumes

Cost – $$-$$$
Timeline – Permanent
Engineering Study Required – Yes



Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	■

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	■
Traffic Enforcement	□
Vehicle Parking	■
Street Maintenance	■

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

5. ROADWAY NARROWING

5.2 Lane Narrowing

Description and Purpose

Lane narrowing is the process of reducing lane widths using pavement markings or other features (for example, bicycle lanes, street beautification programs, pavement texture).

The intention is for drivers to perceive the roadway to be less comfortable at higher speeds due to the narrowing of the lanes and ultimately reduce operating speeds.

Applicability

- **Road Class** – Local Streets, Collector Roads and Urban Arterials
- **Roadway Cross-Section** – Urban
- **Speed Limit** – 60 km/h or less
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	■
Traffic Enforcement	□
Vehicle Parking	■
Street Maintenance	□

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

5. ROADWAY NARROWING

5.3 On-Street Parking

Description and Purpose

On-street parking is the reduction of the roadway width available for vehicle movement by allowing motor vehicles to park adjacent and parallel to the curb. Angled parking is not appropriate as a traffic calming measure, due to the increased potential for conflicts.

The effect of using on-street parking to narrow the effective roadway space is to reduce vehicle speeds and to reduce possible short-cutting or through traffic.

Applicability

- **Road Class** – Local Streets, Collector Roads and Urban Arterials
- **Roadway Cross-Section** – Urban
- **Speed Limit** – 50 km/h or less
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	■

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	■
Cycling Use	■
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

5. ROADWAY NARROWING

5.4 Raised Median Island

Description and Purpose

A raised median island is an elevated median constructed on the centerline of a two-way roadway to reduce the overall width of the adjacent travel lanes.

The purpose of a raised median island is to reduce vehicle speeds and to reduce pedestrian–vehicle conflicts.

Applicability

- **Road Class** – Local Streets, Collector Roads, Urban and Rural Arterials
- **Roadway Cross-Section –** Urban and rural, two-lane
- **Speed Limit –** 60 km/h or less
- **Average Daily Traffic –** All volumes

Cost – $$-$$$
Timeline – Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	◘
Volume Reduction	□
Conflict Reduction	◘
Natural Environment	□

Implementation Considerations

Local Vehicle Access	◘
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	◘
Street Maintenance	◘

□/□	No Benefit/Impact
◘/◘	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

5. ROADWAY NARROWING
5.5 Road Diet

Description and Purpose

A road diet is a reconfiguration of a roadway where the number of travelled lanes and/or effective width of the road is reduced to allocate the reclaimed space for other uses, such as widen sidewalks, turning lanes, bus lanes, pedestrian refuge islands, bike lanes, parking, etc.

Typically, a Road Diet involves converting an existing four-lane, undivided roadway segment to a three-lane segment consisting of two through lanes, a centre two-way left-turn lane, and two bicycle lanes. However, other conversions are possible, such as 4-lane to 5-lane, 2-lane to 3-lane, 3-lane to 3-lane, and 5-lane to 3-lane.

Applicability

- **Road Class** – Local Streets, Collector Roads and Urban Arterials
- **Roadway Cross-Section** – Urban
- **Speed Limit** – 60 km/h or less
- **Average Daily Traffic** – All volumes

Cost – $ - $$
Timeline – Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	■
Natural Environment	■

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	▣
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	□

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

5. ROADWAY NARROWING

5.6 Vertical Centreline Treatment

Description and Purpose

The use of vertical treatments such as flexible post-mounted delineators or raised pavement markers to create a centre median. This could be used to give drivers a perception of lane narrowing and create a sense of constriction.

Flexible post-mounted delineators are similar in appearance to bollards. They are commonly used in work zones, high-occupancy vehicle (HOV) lanes, and on-ramp exits to direct vehicles or prevent certain movements.

Applicability

- **Road Class** – All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit –** 80 km/h or less
- **Average Daily Traffic –** All volumes

Cost – $
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

6. GATEWAYS

Description and Purpose

Gateways are the combination of traffic calming devices, that help to provide an entry or "gateway" which identifies transitional zones such as between commercial/rural areas and urban/rural residential zones, villages, or hamlets.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	▣

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

7. HORIZONTAL DEFLECTION

7.1 Lateral Shift

Description and Purpose

A lateral shift in a roadway occurs where an otherwise straight section is redesigned using pavement markings or curb extensions to create a curvilinear alignment (a 'jog') in the roadway like a chicane. This effect can also be achieved with the use of a central island.

A lateral shift causes drivers to have to negotiate the alignment and increases awareness aimed at reducing vehicle speeds.

Applicability

- **Road Class** – Local Streets, Collector Roads and Urban Arterials
- **Roadway Cross-Section** – Urban
- **Speed Limit** – 50 km/h or less
- **Average Daily Traffic** – All Volumes
- **Grade** - < 8%

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	☐
Volume Reduction	☐
Conflict Reduction	☐
Natural Environment	☐

Implementation Considerations

Local Vehicle Access	☐
Emergency Vehicle Response	☐
Cycling Use	☐
Traffic Enforcement	☐
Vehicle Parking	■
Street Maintenance	☐

☐/☐	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

7. HORIZONTAL DEFLECTION

7.2 Traffic Button/Traffic Circle/Mini-Roundabout

Description and Purpose

A traffic button/traffic circle/mini-roundabout is an island located at the centre of an intersection, which requires vehicles to travel in a counter-clockwise direction around the island.

Mini-roundabouts are designed in accordance with full-size roundabout design principles incorporating splitter islands and deflection of vehicles on all approaches, except that they have a smaller diameter and traversable islands. A traffic circle is typically smaller than a mini-roundabout and does not have splitter islands on the approaches. A traffic button is like a traffic circle. However, the former is typically made of coloured asphalt while the latter is landscaped.

The turning radius for left-turning trucks, buses, or emergency vehicles may require a diameter which would be larger than the intersection space available. Consequently, vehicles may turn left in front of the traffic circle or mount the centre raised island rather than travelling around the measure.

Yield traffic control is recommended.

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – Yes

Applicability

- **Road Class** – Local Streets and Collector Roads
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit –** 50 km/h or less
- **Average Daily Traffic** – < 1500 vpd

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	■
Natural Environment	■

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	▣
Cycling Use	▣
Traffic Enforcement	□
Vehicle Parking	▣
Street Maintenance	▣

□/□	No Benefit/Impact
□/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

8. VERTICAL DEFLECTION

8.1 Raised Crosswalk

Description and Purpose

A raised crosswalk is a marked pedestrian crosswalk at an intersection or midblock location constructed at a higher elevation than the adjacent roadway.

The purpose of a raised crosswalk is to reduce vehicle speeds, improve pedestrian visibility, and reduce pedestrian–vehicle conflicts.

Applicability

- **Road Class** – Local Streets and Collector Roads
- **Roadway Cross-Section** – Urban, sidewalk on at least one side of road
- **Speed Limit** – 50 km/h or less
- **Average Daily Traffic** – All volumes
- **Grade** – ≥ 1%, but ≤ 8%

Cost – $ to $$
Timeline – Permanent
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	▣
Natural Environment	▣

Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	▣
Cycling Use	▣
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	▣

□/□	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

9. ACCESS RESTRICTIONS

9.1 Right-In/Right-Out Island

Description and Purpose

A right-in / right-out island is a raised triangular island at an intersection approach which obstructs left turns and through movements to and from the intersecting street or driveway.

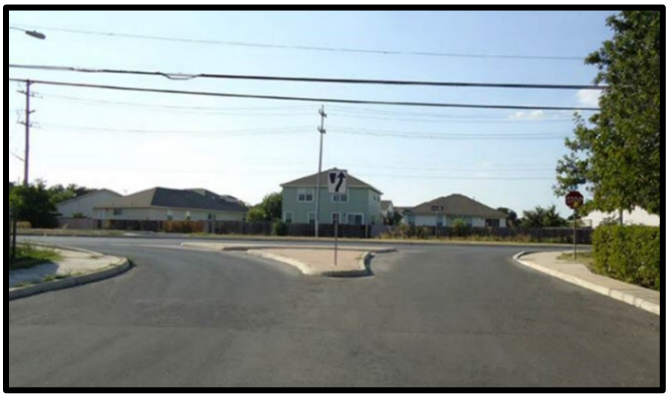
Bicycles are typically permitted to make left turns and through movements from the side street, either through gaps or depressions in the island, or by travelling around the island.

The purpose of a right-in / right-out island is to obstruct short-cutting or through traffic.

Applicability

- **Road Class –** Local Streets, Collector Roads and Urban Arterials
- **Roadway Cross-Section** – Urban
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $-$$
Timeline – Temporary or Permanent
Engineering Study Required – Yes



Potential Traffic Calming Benefits

Speed Reduction	☐
Volume Reduction	■
Conflict Reduction	▣
Natural Environment	▣

Implementation Considerations

Local Access	▣
Emergency Vehicle Response	▣
Cycling Use	▣
Traffic Enforcement	▣
Vehicle Parking	☐
Street Maintenance	▣

☐/☐	No Benefit/Impact
▣/▣	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

10. EMERGING TECHNOLOGIES AND MEASURES

10.1 Optical Illusion Pavement Markings

Description and Purpose

Optical illusion pavement markings use colours and shading to create an optical illusion in an attempt to influence drivers to reduce their speed.

Applicability

- **Road Class –** All classes
- **Roadway Cross-Section** – All cross-sections
- **Speed Limit** – All speed limits
- **Average Daily Traffic** – All volumes

Cost – $
Timeline – Temporary or Required
Engineering Study Required – Yes

Potential Traffic Calming Benefits

Speed Reduction	■
Volume Reduction	□
Conflict Reduction	□
Natural Environment	□

Other Implementation Considerations

Local Vehicle Access	□
Emergency Vehicle Response	□
Cycling Use	□
Traffic Enforcement	□
Vehicle Parking	□
Street Maintenance	■

□/□	No Benefit/Impact
■/■	Minor Benefit/Impact
■/■	Substantial Benefit/Impact

Appendix H

Project Cost Estimates

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

(220694) Township of Laurentian Valley - City of Pembroke TMP 04-Mar-24

For Report

Project Cost Estimates and Phasing

Project #	Major Road Projects	Limits	MCEA Schedule	ength (kn	Cost Estimate	Time Period	Notes	Proponent
1A	Matheson Drive - new road connection A	Cockburn Crescent to Robinson Lane	by developer	0.7	$ 4,500,000	0-5	1	Developer / Township
1B	Matheson Drive upgrade	Angus Campbell Drive to Cockburn Crescent	Exempt (21)	0.28	$ 1,400,000	0-5		City
2	New Road connection B	Drive-In Road to Angus Campbell Drive / Bell Street	by developer	1.1	$ 6,200,000	0-5	1	Developer / Township
3	Upgrade / Urbanize International Drive	Boundary Road E to New Subdivision Road	Exempt (21)	0.47	$ 2,600,000	0-5		City
6A	Robinson Lane Extension / Upgrade	Highway 148 to D'Youville Drive	by developer	1.1	$ 6,800,000	0-5	1 / 3	Developer / Township
9	Drive-In Road Upgrade	Highway 148 to MacKay Street	Exempt (19a)	2.2	$ 6,900,000	5-10	3	County
10A	Quarry Road Extension	Paul Martin Drive to CN Rail Corridor	Schedule C	0.7	$ 4,900,000	5-10	4	City
10C	Quarry Road Upgrade	CN Rail Corrdior to Existing Limit	Exempt (21)	0.5	$ 2,700,000	5-10	5	City
11	Alfred Street Extension (new road)	Rosewood Avenue to O'Brien Street N	Schedule C	0.22	$ 2,100,000	5-10		City
12	Alfred Street Upgrade	O'Brien Street to Angus Campbell Drive	Exempt (21)	0.48	$ 2,900,000	5-10		City
13	Alfred Street Traffic Calming	Rosewood Avenue to MacKay Street	Exempt (28a)	1.3	$ 600,000	5-10	6	City
4	D'Youville Drive Extension (new road)	Existing Limit to Drive-In Road	by developer	1.2	$ 9,300,000	10-20	1	Developer / Township
5A	D'Youville Drive Urbanization	MacKay Steet to Existing Limit	Exempt (21)	0.8	$ 3,800,000	10-20		City
6B	Robinson Lane Extension / Upgrade	D'Youville Drive to Bardis Drive	by developer	0.5	$ 3,100,000	10-20	1	Developer / Township
7	MacKay Street Upgrade / Urbanization	Townline Road / D'Youville Drive to Drive-In Road	Exempt (21)	1.5	$ 7,600,000	10-20		City / Township
8	Drive-In Road Extension (new road)	MacKay Street to Mud Lake Road	Schedule C	1.1	$ 10,000,000	10-20	2	County / Township
10B	Quarry Road Extension	Existing Limit to D'Youville Drive	Schedule C	0.4	$ 2,800,000	10-20	5	City
14	Boundary Road East Extension (new road)	Forced Road to Douglas Street	Schedule C	0.67	$ 6,300,000	10-20	7	City / Township
15	Boundary Road West / Crandal Street Upgrade	Douglas Street to Pembroke Street West	Exempt (21)	0.75	$ 4,000,000	10-20	7	City / Township
	Total Major Road Projects				**$ 88,500,000**			

Project #	Intersection Improvements	Intersecting Road	MCEA Schedule		Total Cost Estimate	Time Period
16	Howard Street - Left Turn Lane	Pembroke Street East	Exempt (19a)		$ 400,000	5-10
17	D'Youville Drive - Roundabout	Robinson Lane			included in Proj 4	
18	D'Youville Drive / Townline Road - turn lanes and signals	MacKay Street			included in Proj 5A	
19	Drive-In Road - roundabout	MackKay Street / Mud Lake Road Connection			included in Proj 8	
20	Boundary Road - turn lanes and signals	International Drive			included in Proj 3	
21	Boundary Road - turn lanes and signals	New Subdivision Entrance Road	Exempt (19a)		$ -	5-10
22	Boundary Road E - Left Turn Lanes	Bruham Avenue and Trafalgar Road	Exempt (19a)		$ 900,000	5-10
23	Boundary Road E - roundabout	Forced Road			included in Proj 14	
24	MacKay Street - turn lanes and signals	Quarry Road			included in Proj 7	
25	TV Tower Road - roundabout	Foreast Lea Road / Pembroke Street West	Schedule B		$ 5,200,000	10-20
26	Highway 148 - Turn Lanes and Signals (by MTO)	Drive-In Road	By Others			
27	Highway 148 - Turn Lanes and Signals (by MTO)	Robinson Lane	By Others			
28	Rankin Street Realignment	Highway 148 / Angus Campbell Drive	Corridor Protection Only			
	Total Intersection Improvements				**$ 6,500,000**	

Grand Total **$ 95,000,000**

Notes:

1 Assume developer will pay for the typical cost for a local road standard, Township to pay for oversizing to Collector Road - Cost shown reflects total cost before cost sharing
2 Assume new structure across Muskrat River - 75 m span x 11.75 m width - to be confirmed during Class EA study
3 Excludes intersection work at Highway 148 to be completed by MTO
4 Assumes at grade trail crossing on former CN Rail Line
5 Project should be completed with Project 10A as combined Schedule C Class EA for entire connection
6 Preliminary Traffic Calming Cost Estimate
7 Assumed to be a joint City - Township project - within City boundary

(220694) Township of Laurentian Valley - City of Pembroke TMP 04-Mar-24

Project Cost Estimates - Breakdown

Project #	Major Road Projects	Roadworks Length	Unit	Unit Cost	Roadwork Cost	Bridges deck area	Unit Cost	Bridge Cost	Intersections Intersections	Signals	Turn Lanes	Roundabout	Intersection Cost	Subtotal	Utilities 10%	Contingency 20%	Engineering 10%	Total Project Cost	Unit Cost $ / km
1A	Matheson Drive - new road connection A	0.70	km	$ 4,200,000	$ 2,940,000	0	$ 5,000	$ -	3	0	1	0	$ 500,000	$ 3,440,000	$ -	$ 688,000	$ 344,000	$ 4,500,000	$ 6,428,571
1B	Matheson Drive upgrade	0.28	km	$ 2,600,000	$ 728,000	0	$ 5,000	$ -	1	0	1	0	$ 300,000	$ 1,028,000	$ 102,800	$ 205,600	$ 102,800	$ 1,400,000	$ 5,000,000
2	New Road connection B	1.00	km	$ 4,200,000	$ 4,200,000	0	$ 5,000	$ -	2	0	2	0	$ 600,000	$ 4,800,000	$ -	$ 960,000	$ 480,000	$ 6,200,000	$ 5,636,364
3	Upgrade / Urbanize International Drive	0.47	km	$ 2,600,000	$ 1,222,000	0	$ 5,000	$ -	2	1	1	0	$ 650,000	$ 1,872,000	$ 187,200	$ 374,400	$ 187,200	$ 2,600,000	$ 5,531,915
6A	Robinson Lane Extension / Upgrade	1.10	km	$ 4,200,000	$ 4,620,000	0	$ 5,000	$ -	2	0	2	0	$ 600,000	$ 5,220,000	$ -	$ 1,044,000	$ 522,000	$ 6,800,000	$ 6,181,818
9	Drive-In Road Upgrade	2.20	km	$ 1,000,000	$ 2,200,000	0	$ 5,000	$ -	4	0	4	1	$ 2,700,000	$ 4,900,000	$ 490,000	$ 980,000	$ 490,000	$ 6,900,000	$ 3,136,364
10A	Quarry Road Extension	0.70	km	$ 4,200,000	$ 2,940,000	0	$ 5,000	$ -	1	1	1	0	$ 550,000	$ 3,490,000	$ 349,000	$ 698,000	$ 349,000	$ 4,900,000	$ 7,000,000
10C	Quarry Road Upgrade	0.50	km	$ 2,600,000	$ 1,300,000	0	$ 5,000	$ -	2	0	2	0	$ 600,000	$ 1,900,000	$ 190,000	$ 380,000	$ 190,000	$ 2,700,000	$ 5,400,000
11	Alfred Street Extension (new road)	0.22	km	$ 4,200,000	$ 924,000	0	$ 5,000	$ -	2	0	2	0	$ 600,000	$ 1,524,000	$ 152,400	$ 304,800	$ 152,400	$ 2,100,000	$ 9,545,455
12	Alfred Street Upgrade	0.48	km	$ 2,600,000	$ 1,248,000	0	$ 5,000	$ -	4	1	1	0	$ 850,000	$ 2,098,000	$ 209,800	$ 419,600	$ 209,800	$ 2,900,000	$ 6,041,667
13	Alfred Street Traffic Calming	1.30	km	$ 150,000	$ 195,000	0	$ 5,000	$ -	2	0	0	0	$ 200,000	$ 395,000	$ 39,500	$ 79,000	$ 39,500	$ 600,000	$ 461,538
4	D'Youville Drive Extension (new road)	1.20	km	$ 4,200,000	$ 5,040,000	0	$ 5,000	$ -	2	0	2	1	$ 2,100,000	$ 7,140,000	$ -	$ 1,428,000	$ 714,000	$ 9,300,000	$ 7,750,000
5A	D'Youville Drive Urbanization	0.80	km	$ 2,600,000	$ 2,080,000	0	$ 5,000	$ -	2	1	1	0	$ 650,000	$ 2,730,000	$ 273,000	$ 546,000	$ 273,000	$ 3,800,000	$ 4,750,000
6B	Robinson Lane Extension / Upgrade	0.50	km	$ 4,200,000	$ 2,100,000	0	$ 5,000	$ -	1	0	1	0	$ 300,000	$ 2,400,000	$ -	$ 480,000	$ 240,000	$ 3,100,000	$ 6,200,000
7	MacKay Street Upgrade / Urbanization	1.50	km	$ 2,600,000	$ 3,900,000	0	$ 5,000	$ -	2	2	4	0	$ 1,500,000	$ 5,400,000	$ 540,000	$ 1,080,000	$ 540,000	$ 7,600,000	$ 5,066,667
8	Drive-In Road Extension (new road)	1.10	km	$ 2,200,000	$ 2,420,000	878	$ 5,000	$ 4,387,500	1	0	1	0	$ 300,000	$ 7,107,500	$ 710,750	$ 1,421,500	$ 710,750	$ 10,000,000	$ 9,090,909
10B	Quarry Road Extension	0.40	km	$ 4,200,000	$ 1,680,000	0	$ 5,000	$ -	1	0	1	0	$ 300,000	$ 1,980,000	$ 198,000	$ 396,000	$ 198,000	$ 2,800,000	$ 7,000,000
14	Boundary Road East Extension (new road)	0.67	km	$ 4,200,000	$ 2,814,000	0	$ 5,000	$ -	2	0	0	1	$ 1,700,000	$ 4,514,000	$ 451,400	$ 902,800	$ 451,400	$ 6,300,000	$ 9,402,985
15	Boundary Road West / Crandal Street Upgrade	0.75	km	$ 2,600,000	$ 1,950,000	0	$ 5,000	$ -	3	0	3	0	$ 900,000	$ 2,850,000	$ 285,000	$ 570,000	$ 285,000	$ 4,000,000	$ 5,333,333
																		$ 88,500,000	**$ 6,050,399**
																			Average

Project #	Intersection Improvements	Roadworks Length	Unit	Unit Cost	Roadwork Cost	Bridges deck area	Unit Cost	Bridge Cost	Intersections Intersections	Signals	Turn Lanes	Roundabout	Intersection Cost	Subtotal	Utilities 10%	Contingency 20%	Engineering 10%	Total Project Cost
16	Howard Street - Left Turn Lane	0		$ -	$ -	0	$ -	$ -	1	0	1	0	$ 300,000	$ 300,000	$ 45,000	$ 60,000	$ 30,000	$ 400,000
17	D'Youville Drive - Roundabout	0		$ -	$ -	0	$ -	$ -		0		0	$ -	$ -	$ -	$ -	$ -	$ -
18	D'Youville Drive / Townline Road - turn lanes and signals	0		$ -	$ -	0	$ -	$ -		0		0	$ -	$ -	$ -	$ -	$ -	$ -
19	Drive-In Road - roundabout	0		$ -	$ -	0	$ -	$ -		0		0	$ -	$ -	$ -	$ -	$ -	$ -
20	Boundary Road - turn lanes and signals	0		$ -	$ -	0	$ -	$ -		0		0	$ -	$ -	$ -	$ -	$ -	$ -
21	Boundary Road - turn lanes and signals	0		$ -	$ -	0	$ -	$ -		0		0	$ -	$ -	$ -	$ -	$ -	$ -
22	Boundary Road E - Left Turn Lanes	0		$ -	$ -	0	$ -	$ -	2	0	2	0	$ 600,000	$ 600,000	$ 90,000	$ 120,000	$ 60,000	$ 900,000
23	Boundary Road E - roundabout	0		$ -	$ -	0	$ -	$ -		0		0	$ -	$ -	$ -	$ -	$ -	$ -
24	MacKay Street - turn lanes and signals																	
25	TV Tower Road - roundabout	0.5		$ 4,200,000	$ 2,100,000	0	$ -	$ -	0	0	0	1	$ 1,500,000	$ 3,600,000	$ 540,000	$ 720,000	$ 360,000	$ 5,200,000
26	Highway 148 - Turn Lanes and Signals (by MTO)																	
27	Highway 148 - Turn Lanes and Signals (by MTO)																	
																		$ 6,500,000
																Total		$ 95,000,000

Unit Cost Estimates

Items		Unit Cost	
Intersections		$ 100,000.00	each
Traffic Signals		$ 250,000.00	each
Roundabout		$ 1,500,000.00	each
Turn Lane		$ 200,000.00	each set (assume on both approaches)
Bridge Deck		$ 5,000.00	m2
Major Culvert		$ 3,000.00	m2
Road			
2 Lane Rural	resurface	$ 1,000,000.00	/km
2 Lane Rural	new	$ 2,200,000.00	/km
2 Lane Urban	reconstruct road	$ 2,600,000.00	/km
2 Lane Urban	widen	$ 3,200,000.00	/km
2 Lane Urban	widen&resurface	$ 5,800,000.00	/km
2 Lane Urban	new	$ 4,200,000.00	/km

Check of Unit Costs Rates based on Conceptual Quantities for 1 km length of road

2 Lane Urban New - 1 km length

	unit	unit cost	quantity	cost
Grading	m3	$ 12.00	10000	$ 120,000
Gran B	t	$ 15.00	6750	$ 101,250
Gran A	t	$ 20.00	2550	$ 51,000
HL8	t	$ 150.00	2400	$ 360,000
HL3	t	$ 175.00	1200	$ 210,000
Conc C&G	m	$ 75.00	2000	$ 150,000
Conc Sidewalk	m	$ 150.00	1000	$ 150,000
Storm	m	$ 500.00	1200	$ 600,000
CB	ea	$ 2,500.00	22	$ 55,000
Sanitary	m	$ 300.00	1000	$ 300,000
San Mholes	ea	$ 4,000.00	10	$ 40,000
Services	ea	$ 5,000.00	50	$ 250,000
watermain	m	$ 400.00	1000	$ 400,000
services	ea	$ 4,000.00	50	$ 200,000
Streetlights	ea	$ 10,000.00	10	$ 100,000
subtotal				**$ 3,087,250**
Minor Items			20%	$ 617,450
Contingency			15%	$ 463,088
				$ 4,167,788
			rounded	**$ 4,200,000**

2 Lane Urban Reconstruct Road - 1 km length

	unit	unit cost	quantity	cost
Grading	m3	$ 12.00	5000	$ 60,000
Gran B	t	$ 15.00	6750	$ 101,250
Gran A	t	$ 20.00	2550	$ 51,000
HL8	t	$ 150.00	2400	$ 360,000
HL3	t	$ 175.00	1200	$ 210,000
Conc C&G	m	$ 75.00	2000	$ 150,000
Conc Sidewalk	m	$ 150.00	1000	$ 150,000
Storm	m	$ 500.00	1200	$ 600,000
CB	ea	$ 2,500.00	22	$ 55,000
Sanitary	m	$ 300.00	0	$ -
San Mholes	ea	$ 4,000.00	0	$ -
Services	ea	$ 5,000.00	0	$ -
watermain	m	$ 400.00	0	$ -
services	ea	$ 4,000.00	0	$ -
Streetlights	ea	$ 10,000.00	10	$ 100,000
Removal Asphalt & Gran	m3	$ 10.00	6000	$ 60,000
Remove Curb	m	$ 15.00	2000	$ 30,000
subtotal				**$ 1,927,250**
Minor Items			20%	$ 385,450
Contingency			15%	$ 289,088
				$ 2,601,788
			rounded	**$ 2,600,000**

Pembroke Capital Forecast
2021 DC Background Study (Hemson)

Appendix C.2 - Table 2

Proj #	Street	From	To	Timing	Length (m)	Gross Cost	Cost / km	Notes
2.1.1	Victoria St	Renfrew St	Lake St	2021	210	$ 400,000	$ 1,904,762	assume reconstruction
2.2.2	Bennett Street	International Dr	Everett St	2021	525	$ 1,174,920	$ 2,237,943	assume reconstruction
2.1.2	Boundary Rd	Bennett St	Trafalgar Rd	2021	1910	$ 50,000	$ 26,178	assume study / design cost
2.2.3	Pembroke St W	City Limit	Christie St	2021	2825	$ 3,937,481	$ 1,393,799	assume resurface
2.1.3	Nelson St	MacKay St	Howard St	2021	297	$ 1,896,372	$ 6,385,091	Assume reconstruction + underground work - completed in phases
2.2.4	Nelson St	MacKay St	Howard St	2022	195	$ 1,242,583	$ 6,372,221	Assume reconstruction + underground work - completed in phases
2.1.4	Nelson St	MacKay St	Howard St	2023	261	$ 1,664,132	$ 6,375,985	Assume reconstruction + underground work - completed in phases
2.2.5	Nelson St	MacKay St	Howard St	2024	269	$ 1,718,291	$ 6,387,699	Assume reconstruction + underground work - completed in phases
2.1.5	Nelson St	MacKay St	Howard St	2025	269	$ 1,718,291	$ 6,387,699	Assume reconstruction + underground work - completed in phases
2.2.6	Bell St	River Rd	MacKay St	2022	240	$ 400,000	$ 1,666,667	assume resurface
2.1.6	Blakely Crescent Sidewalk			2022	700	$ 140,000	$ 200,000	sidewalk only
2.2.7	MacKay St	Deacon St	City Limits	2022	1200	$ 1,200,000	$ 1,000,000	resurface only - rural cross section
2.1.7	Albert St	Pembroke St	Fred Blacksteir	2022	295	$ 230,000	$ 779,661	assume study / design cost
2.2.8	Albert St	Pembroke St	Fred Blacksteir	2023	295	$ 2,782,200	$ 9,431,186	Assume major underground work
2.1.8	Frank Nighbor St	Pembroke St	Lake St	2023	120	$ 230,000	$ 1,916,667	assume study / design cost
2.2.9	Frank Nighbor St	Pembroke St	Lake St	2024	120	$ 2,782,200	$ 23,185,000	High Price - assume major underground work - exclude
2.1.9	Fraser St	Pembroke St	Bell St	2025	1360	$ 280,000	$ 205,882	assume study / design cost
2.2.10	Fraser St	Pembroke St	Bell St	2027	340	$ 2,747,500	$ 8,080,882	Assume reconstruction + underground work - completed in phases
2.1.10	Fraser St	Pembroke St	Bell St	2028	340	$ 2,747,500	$ 8,080,882	Assume reconstruction + underground work - completed in phases
2.2.11	Fraser St	Pembroke St	Bell St	2029	340	$ 2,747,500	$ 8,080,882	Assume reconstruction + underground work - completed in phases
2.1.11	Fraser St	Pembroke St	Bell St	2030	340	$ 2,747,500	$ 8,080,882	Assume reconstruction + underground work - completed in phases
2.2.12	Prince St	Pembroke St	Lake St	2022	120	$ 80,000	$ 666,667	assume study / design cost
2.1.12	Prince St	Pembroke St	Lake St	2024	120	$ 1,120,000	$ 9,333,333	Assume major underground work
2.2.13	MacKay St	Deacon St	Townline Rd	2031	340	$ 8,455,000	$ 24,867,647	High Price - assume major underground work - exclude
2.1.13	Forced Rd	Pembroke St	Boundary	2024	575	$ 575,000	$ 1,000,000	resurface only - rural cross section
						Avg	$ 5,761,905	

Typical Projects	Average Cost / km
Resurfacing Urban	$ 1,530,233
Resurface Rural	$ 1,000,000
Reconstruct Urban with underground	$ 7,545,158

Laurentian Valley Capital Forecast
2020 DC Background Study (JP2G) Table 2A

Road	From	To	Timing	Length (m)	Gross Cost	Cost / km	Notes / Assumptions:
Forest Park Road			2020	650	$ 385,000	$ 592,308	partial reconstruct
B-Line Road	Highway 17	Westerly	2020	2000	$ 170,000	$ 85,000	paved shoulders?
Golf Course Road			2020	1000	$ 900,000	$ 900,000	partial reconstruct
Micksburg Rd - Phase 1			2020	1840	$ 168,000	$ 91,304	paved shoulders?
Rivercrest Dr			2021	660	$ 492,000	$ 745,455	partial reconstruct
Southwind Dr			2021	360	$ 694,000	$ 1,927,778	assume full reconstruct
Schultz Rd			2021	1410	$ 160,000	$ 113,475	resurface top course
Stafford 3rd Line	Saars	Highway 41	2021	2450	$ 265,000	$ 108,163	resurface top course
Witt Rd	Highway 41	B-Line Rd	2022	2370	$ 300,000	$ 126,582	assume resurface - top course with shoulders?
B-Line Road	Russham	Forest Lea	2022	2000	$ 315,000	$ 157,500	assume resurface - top course with shoulders?
Micksburg Rd - Phase 2			2023	1850	$ 324,000	$ 175,135	assume resurface - top course with shoulders?
Stafford 3rd Line - Phase 2			2023	1840	$ 163,000	$ 88,587	paved shoulders?
Micksburg Rd - Phase 3			2024	1840	$ 163,000	$ 88,587	paved shoulders?
B-Line Road	Witt	Zanders	2024	2000	$ 150,000	$ 75,000	paved shoulders?
Stafford 3rd Line			2024	1840	$ 177,000	$ 96,196	paved shoulders?
3rd Ave S			2024	300	$ 750,000	$ 2,500,000	assume full reconstruct
					Avg	$ 491,942	

Typical Projects	Average Cost / km
Paved Shoulders	$ 87,446
Resurface Rural	$ 110,819
Resurface rural + paved shoulders	$ 153,072
Rural Partial Reconstruct	$ 745,921
Rural Full Reconstruct	$ 2,213,889

Appendix I

Highway 148 Project Review Memo

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024

5A-150 Pinebush Road
Cambridge ON N1R 8J8
p: 519.896.3163
905.381.2229
416.479.9684

www.ptsl.com

2023-06-14
Project: (220694)

Lauree Armstrong, MCIP, RPP
Township Planner
Township of Laurentian Valley
460 Witt Road
Pembroke ON K8A 6W5

Dear Ms. Armstrong:

RE: LAURENTIAN VALLEY / PEMBROKE TRANSPORTATION MASTER PLAN HIGHWAY 148 PROJECT REVIEW

The Ontario Ministry of Transportation (MTO) is undertaking a Detail Design and Class Environmental Assessment (EA) Study for Highway 148 from approximately 200m west of Angus Campbell Drive, in the City of Pembroke, to approximately 300m east of the Greenwood Road Intersection, in the Township of Laurentian Valley. This project is a follow up to the previous Transportation Environmental Study Report (TESR) which was finalized in June of 2018, covering the same study area.

An addendum to the TESR has been prepared as part of the current detailed design assignment to document changes to the original Preliminary Design and traffic management plans for the construction phase of the project. Detail design work is still underway and the MTO has not publicly indicated when the project will proceed to tender.

As part of the Township of Laurentian Valley / City of Pembroke Transportation Master Plan, the municipalities have requested a review of the current project recommendations including the proposed improvement plan, the recommended design, and the proposed traffic management plan to ensure that the interests of the Township and City are considered.

The following memo outlines the scope and limitations of our review, our observations and findings, and suggested recommendations for consideration.

Scope of Review

In undertaking this review, we have relied upon the reports and documents published by the MTO on their project website, www.hwy148.ca to represent the “proposed design” for the purpose of this initial review. We have not consulted with the Ministry project team, nor their engineering consultants to confirm the details or current status of the design for the project,

under the assumption that any significant changes would need to be published through a further amendment to their TESR.

We have requested, and received updated traffic count data from the Ministry at four intersections within the study area for this project. These include weekday turning movement counts at:

- Highway 148 at Angus Campbell Drive (Thursday May 3, 2018)
- Highway 148 at Robinson Lane (Thursday May 3, 2018)
- Highway 148 at County Rd 29/Drive In Road (Tuesday July 16, 2019)
- Highway 148 at County Rd 40/Greenwood Road (Thursday September 1, 2022)

As part of our work on the Township / City Transportation Master Plan we have also collected traffic data at a number of intersections in the study area, including the following locations along the Highway 148 corridor:

- Highway 148 at Angus Campbell Drive (Saturday March 4 & Tuesday March 7, 2023)
- Highway 148 at Walmart Plaza Entrance (Saturday March 4 & Tuesday March 7, 2023)
- Highway 148 at Robinson Lane (Saturday March 4 & Tuesday March 7, 2023)
- Highway 148 at County Rd 29/Drive In Road (Wednesday March 1, 2023)

We have reviewed the updated traffic count data provided by the Ministry and collected as part of our study, summarized the key findings, and used this updated data to inform our review of the Highway 148 project.

Project Definition

Based on the review of available documents the Highway 148 project has been consistently defined as a rehabilitation project to upgrade the pavement surface and implement operational improvements that include intersection improvements and signalization and localized widening of Highway 148 to add turning lanes or to add other municipal infrastructure.

Highway 148 Transportation Environmental Study Report (TESR) – June 2018

In 2015 the MTO initiated a Preliminary Design and Class EA for Highway 148, from Pembroke to the Quebec border. The project was eventually split into two separate projects in order to expedite the replacement of the former CPR railway bridge on the section of Highway 148 between Greenwood Road (County Road 40) and the Quebec border.

The Preliminary Design and Class EA project was identified as a Group 'B' project under the MTO Class EA for Provincial Transportation Facilities (2000), which represents the approved process under the Environmental Assessment Act for projects that involve major improvements to existing provincial transportation facilities, including improvements that increase traffic capacity or cause a significant widening of the footprint beyond the existing highway, and new or modified water crossings.

The TESR provides a summary description of the proposed improvements to Highway 148. The description of the proposed work has been separated into two sections, with the section between Angus Campbell Rive and Drive-in Road being reconstructed to an urban cross section, while the section between Drive-in Road and Greenwood Road would remain as a rural cross section.

Between Angus Campbell Drive and Drive-in Road the proposed improvements include:

- Widening the road surface to provide a continuous two-way left turn lane;
- Urbanize the cross section including installation of a barrier curb with gutter and storm sewer upgrades; and
- Installation of traffic signals at the Highway 148/Drive-in Road intersection including installation of turning lanes and changes to the road profile on the north approach.

Between Drive-in Road and Greenwood Road the proposed improvements include:

- Rehabilitation of the existing pavement and providing a 2.5 m wide paved shoulder;
- Modifying the westbound right turn channelization at the Greenwood Road intersection (reduce radius from 70 m to 45 m) and extending the length of the merge lane;
- Widening Highway 148 to provide a left-turn slip around lane at the Old Mill Road intersection; and
- Various entrance closures.

Highway 148 Transportation Environmental Study Report Addendum – October 2022

As part of the detail design for the project, the MTO initiated a Group 'B' project under the MTO Class EA for Provincial Transportation Facilities (2000), which represents the approved process under the Environmental Assessment Act for projects that involve major improvements to existing provincial transportation facilities.

The Group 'B' process noted in the Highway 148 Transportation Environmental Study Report Addendum (TESR Addendum) includes a number of steps, including:

- Notice of Study Commencement;

- Conduct Field Investigations, consult with stakeholders, and develop detailed design plan;
- Issue TESR Addendum Report for 30-day comment period;
- Host Public Information Centre;
- Finalize Detail Design Plan (based on public feedback) and Obtain Permits and Approvals;
- Issue Design and Construction Report (DCR) for 30-day comment period;
- Finalize construction drawings and specifications; and
- Tender project for construction.

The TESR Addendum was issued October 7, 2022 and the comment period closed on November 7, 2022. A Public Information Centre (PIC) was held on November 3, 2022, between 4:00 pm and 9:00pm, at the Best Western Pembroke Inn and Conference Centre, and the comment period for this step closed on November 23, 2022. There is no information online to indicate if any changes to the project have been recommended as a result of the feedback received during the PIC.

The TESR Addendum provides a summary description of the proposed improvements to Highway 148 and the changes to the 2018 TESR that have been recommended as part of the Addendum. The description of the proposed work has been separated into two sections, with the section between Angus Campbell Rive and Drive-in Road being reconstructed to an urban cross section, while the section between Drive-in Road and Greenwood Road would remain as a rural cross section.

Between Angus Campbell Drive and Drive-in Road the proposed improvements include:

- Widening the road surface to provide a continuous two-way left turn lane;
- Urbanize the cross section including installation of a barrier curb with gutter and storm sewer upgrades; and
- Installation of traffic signals at the Highway 148/Drive-in Road intersection including installation of turning lanes.

Between Drive-in Road and Greenwood Road the proposed improvements include:

- Rehabilitation of the existing pavement and providing a 2.5 m wide paved shoulder;
- Modifying the westbound right turn channelization at the Greenwood Road intersection and extending the length of the merge lane; and
- Widening Highway 148 to provide a left-turn slip around lane at the Old Mill Road intersection.

The Ministry description of the proposed work also includes municipal works that will be completed on behalf of the Township, City and/or County, subject to finalizing funding agreements, securing required property and environmental approvals. These improvements include watermain and sanitary sewer servicing for portions of the study area, the construction of sidewalks on both sides of Highway 148, between Angus Campbell Drive and Drive-in Road, and rehabilitation of the pavement surface on Greenwood Road (County Road 40) for a length of approximately 1.0 km, south of the Highway 148 / Greenwood Road intersection.

The TESR Addendum identified changes to the right-of-way requirements for the project, including the need to acquire an additional 0.08 ha of private property. The report indicates that alternatives were considered to reduce these requirements, however the need for additional property was largely due to adding municipal sidewalks while maintaining ditch grading and existing lane width standards. There is no detail to indicate what alternatives were considered or how they were evaluated.

The TESR Addendum also clarifies the traffic management commitments in the original TESR. In general, two lanes will be maintained in operation on Highway 148, except for some activities that will require a single lane operation (with traffic control persons) during the daytime work hours, with traffic restored to two lanes in the evening. This is expected to be required for a two-three month duration, subject to the contractor's proposed schedule of work.

Night work may be required to facilitate and expedite intersection works, and the report indicates that alternatives to night work were considered, but these alternatives were ruled out in order to maintain safety for the workers and travelling public and reduce the overall duration of the project.

Observations

As the definition of the project has not substantially changed between the completion of the original Preliminary Design and TESR and the Detailed Design TESR Addendum, our review has focussed on the base information, analysis and alternatives assessment process in the original TESR that MTO used to determine the required improvements; and the final design drawings and modifications to the design outlined in the TESR Addendum.

Initial Observations

1. The Problem and Opportunity statement focussed on pavement rehabilitation; inadequate access management treatments (per MTO standards) for intersection spacing and access density; and limited to no facilities for pedestrians and cyclists on Highway 148. The objectives of the study were to identify corridor deficiencies, provide recommendations of improvements to enhance safety and traffic operations, and investigate the need and feasibility of including active transportation improvements.

2. Alternatives To the Undertaking – After an assessment of Alternatives the project team carried forward the Do Nothing alternative plus TDM (promote other modes through improvements to pedestrian and cyclist safety), Local Intersection Improvements, and Widening to 3-4 lanes for further evaluation. MTO dismissed one alternative that would

have explored Diversion of Travel Demands to other corridors (with no apparent rationale provided).

3. The TESR utilized the 2034 horizon year for performance assessment of the corridor, representing a 16 year horizon from the date of publishing and 19 years from the start of study. The 2034 horizon year represents a planning horizon of 11 years from today, which does not provide a long term view of corridor needs, recognizing the time required to undertake new planning studies and design and program projects that are recommended.

4. The reported traffic volume demand on Highway 148 in 2012 showed an Annual Average Daily Traffic (AADT) volume 11,000 vehicles per day for the section of Highway 148 between Greenwood Road (County Road 40) and Cedar Lane. The most recent published data from MTO shows a 2019 AADT of 11,400 for this same section of Highway 148, representing a growth of 3.6% over the 7 year period or 0.51% annually.

5. Base volumes used in the original Traffic Analysis for the project were derived from counts taken in August 2012. These counts were factored to a 2015 base year using a 1% annual growth rate, and seasonal adjustment factors were used to adjust summer count data down to represent average conditions for the year (representative of AADT). A seasonal adjustment factor of 1.1 was used, which reduces observed volumes by 10%. An additional 2015 traffic count taken at Robinson Lane was added to the base volumes to capture traffic generated by the Laurentian Square development (which was not open during the 2012 base count program). The traffic counts were not balanced between intersections.

6. The corridor speed limit is posted as 50km/h, from the Pembroke City Limit to 220m west of Robinson Lane, 60km/h from 220 m west of Robinson Lane to 475 m east of Drive-in Road, and 80km/h from 475 m east of Drive-In Road to Greenwood Road.

Assessment of Daily Volumes and Forecasts

The first step in the review of traffic volumes assessed the historical pattern of traffic growth in the Highway 148 corridor and the relationship between Average Annual Daily Traffic (AADT) and Summer Average Daily Traffic (SADT). SADT values represent the average daily traffic volumes between July 1 and August 31, including weekends.

Figure 1 illustrates the historical growth in AADT and SADT on Highway 148 between the Quebec Boundary and Greenwood Road, for the 1988 to 2019 period, representing the last published data by MTO. In addition to the historical volumes for this period, a trendline was generated to extend this historical observed growth to the 2034 horizon year, and this was compared to the 1% annual growth rate used by IBI Group in the original traffic study report.

Figure 2 illustrates the historical growth in AADT and SADT on the section of Highway 148 between Greenwood Road and the Pembroke Limit, for the same 1988 and 2019 period.

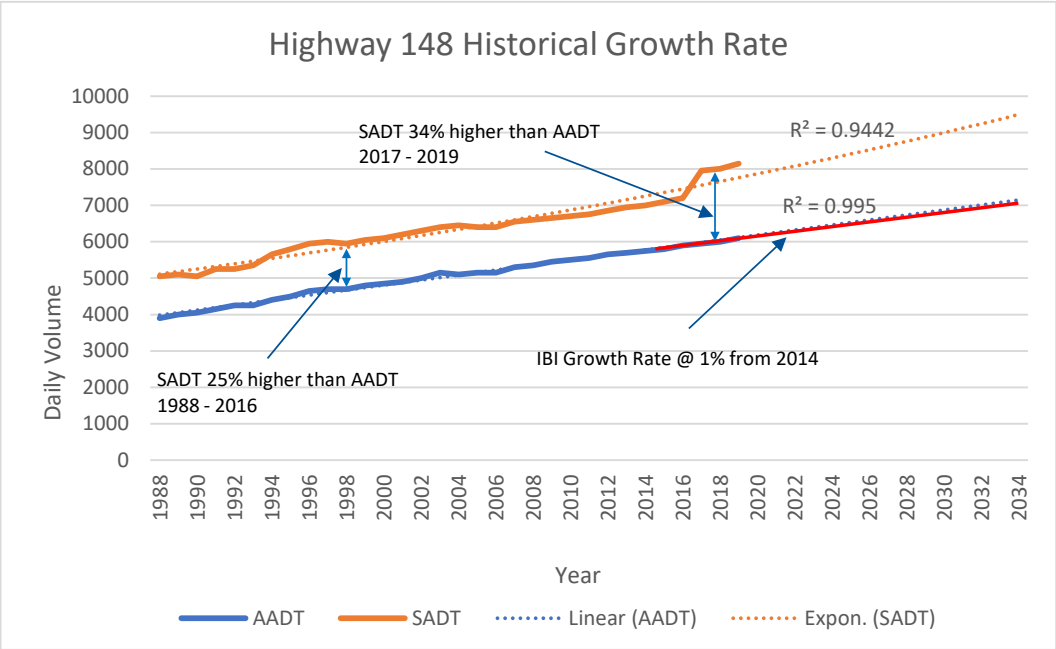


FIGURE 1 – HIGHWAY 148 VOLUMES, QUEBEC BOUNDARY TO GREENWOOD ROAD

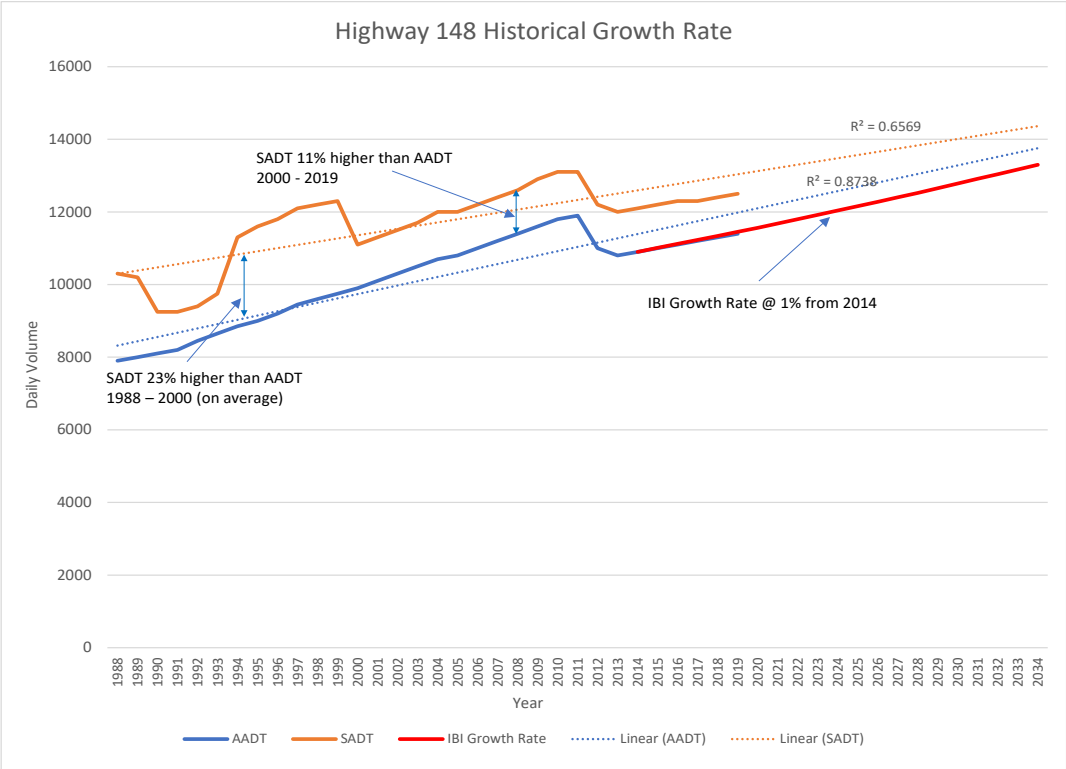


FIGURE 2 – HIGHWAY 148 VOLUMES, GREENWOOD ROAD TO PEMBROKE LIMIT

On the section of Highway 148, between the Quebec Boundary and Greenwood Road, there has been a stable and consistent growth in traffic volumes between 1988 and 2019 at a rate of approximately 1% per year. The 1% annual growth rate used by IBI in the traffic analysis is consistent with the historical trend for this segment. There is also a relatively consistent pattern of higher traffic volumes during the summer months, with SADT volumes between 25% and 34% higher than AADT volumes, with the higher seasonal increase observed in the most recent period between 2017 and 2019.

On the section of Highway 148, between Greenwood Road and the City of Pembroke Limit, the growth of traffic has been much more variable. Between 1988 and 2011 historical volumes were growing at a consistent rate of approximately 1.8% per year. For most of that period volumes were approximately 10-12% higher in the summer months, except for a brief period between 1993 and 1999 where the increase was closer to 23% on average. Between 2011 and 2013 there was a 10% drop in daily volumes, at which point a pattern of consistent growth at a rate of approximately 1% per year has prevailed until 2019. By 2034, a continuation of the 1% annual growth in traffic used in the IBI analysis, and matched by the recent historical trend, would result in a future AADT of approximately 13,500 vehicles per day and future SADT of approximately 14,300 to 14,900 vehicles per day.

Since the Ministry typically counts major highway segments once every three years, the drop in volumes reported in 2011 may have been a correction to previous years where the AADT was estimated. However, this period also coincides with a reported drop in population in the Pembroke / Laurentian Valley area. Statistics Canada data for 2011 shows a combined City / Township population of 26,126 in 2011 and a combined population of 25,590 by 2016. By 2021, the combined population had recovered almost back to 2011 levels, with a reported population of 26,021. This population reduction and recovery coincides with the drop in volumes after 2011 and the resumption of growth in traffic after 2013.

Assessment of Peak Hour Volumes and Forecasts

An assessment of traffic volumes used in the original traffic analysis for the TESR was also undertaken using the updated turning movement count data collected as part of the Transportation Master Plan (TMP) project and as provided by MTO. As this data considers peak hour traffic volumes, not just daily volumes, this type of comparison provides a more direct assessment of the assumptions used in undertaking the traffic analysis for the TESR versus more recent observations.

Figure 3 and **Figure 4** illustrate a comparison of the mid-block traffic volumes (between intersections) for the AM and PM peak hours for three scenarios:

- 2015 IBI Base - Base peak hour volumes used in the original traffic study for the TESR
- 2022 MTO - Updated MTO Summer peak hour traffic volumes, normalized to a 2022 base year but not adjusted for seasonal variation
- 2023 March – Peak hour traffic volumes collected by Paradigm

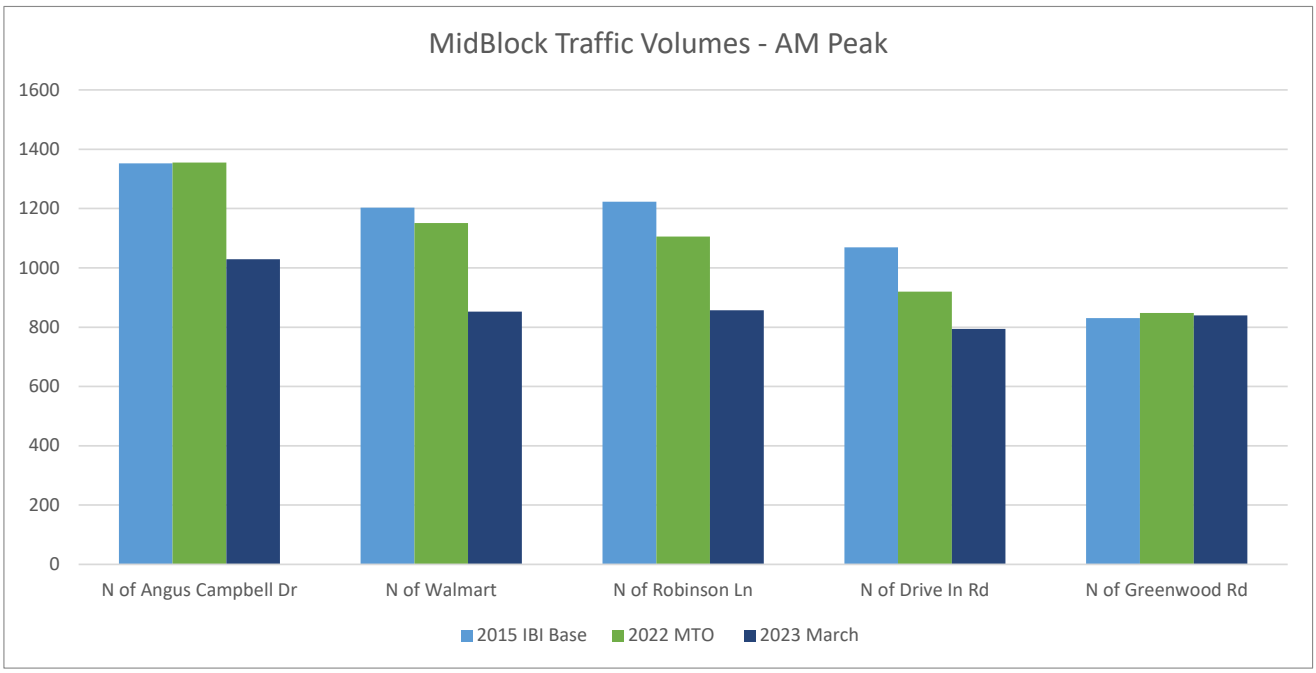


FIGURE 3 – AM PEAK HOUR VOLUME COMPARISON

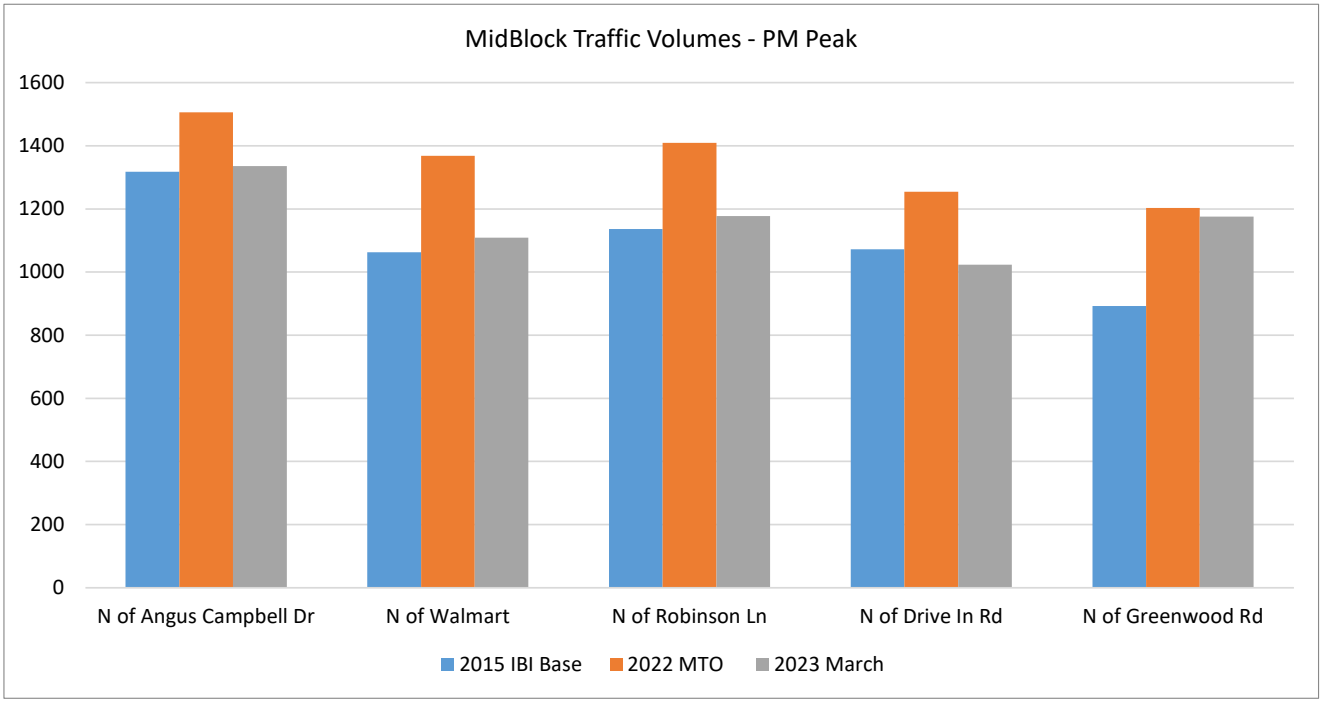


FIGURE 4 – PM PEAK HOUR VOLUME COMPARISON

A comparison of the mib-block traffic volumes shows that in most locations the 2015 IBI Base traffic volumes for the AM peak hour are higher than the new 2022 MTO traffic counts and the March 2023 traffic counts taken by Paradigm. The new MTO count data, adjusted to a 2022 Summer base, is approximately 5% lower (on average) than the AM peak hour counts used in the IBI original analysis work. The March 2023 volumes are approximately 17% lower than the 2022 MTO Summer base volumes, showing the influence of the seasonal variation in traffic on Highway 148. The only segment that did not show this trend is the southern most section between Greenwood Road and Drive-In Road, which showed a consistent level of traffic between each set of counts.

For the PM peak hour, the 2022 MTO Summer volumes are approximately 24% higher than the original 2015 IBI Base volumes used in the original traffic study report. While the March 2023 counts are approximately 14% lower than the 2022 MTO Summer volumes (which is consistent with a typical summer traffic pattern), they are still approximately 1.2% higher (on average) than the base volumes used in the original analysis for the MTO project, with the section between Greenwood Road and Drive-In Road showing the highest difference in traffic volumes. From this analysis it is clear that the PM peak hour represents the worst case time period for performance analysis of Highway 148. The AM peak period has seen a declining share of traffic compared to the 2015 base year.

Taking the updated 2022 traffic counts provided by MTO as a base, we have also provided a comparison of the future PM peak hour volumes on Highway 148 that were used to assess the need for improvements and the resulting corridor performance. For this comparison we have summarized the PM peak hour mid-block volumes counted in 2022 (summer conditions), the original 2034 PM peak hour volumes forecast by IBI, and a 2034 Trend Scenario derived by growing the 2022 summer base volumes by an annual growth rate of 1% per year to 2034. **Figure 5** illustrates the comparison of mid-block volumes for each scenario.

As illustrated in **Figure 5**, the 2034 forecasts prepared as part of the MTO TESR are on average approximately 2.2% higher than the MTO 2022 base summer count volumes. For the segment between the Walmart Entrance and Angus Campbell Drive, the MTO 2022 Summer volumes exceed the 2034 PM peak hour forecasts used in the TESR. The Trend Scenario volumes, derived by growing the 2022 Summer Peak volumes by an annual 1% growth rate, are on average 11% higher than the 2034 forecasts used in the TESR analysis, which is consistent with the reported difference between AADT and SADT volumes noted previously.

In **Figure 6** we have taken the 2034 Trend Scenario (representing summer PM peak conditions) and compared these volume forecasts on a directional basis to the estimated mid-block capacity of Highway 148. Highway 148, to the north of Angus Campbell Drive is expected to operate at 88% of the midblock capacity during the summer peak hours, and between Robinson Lane and the Walmart Entrance volumes are expected to reach 91% of the midblock planning capacity.[1] This assessment does not include additional traffic that would expect to be generated by additional growth on lands adjacent to the Highway 148 corridor.

[1] Based on a planning capacity of 1100 veh/hr/lane as noted in HCM Exhibit 10-7, Class I Urban Street

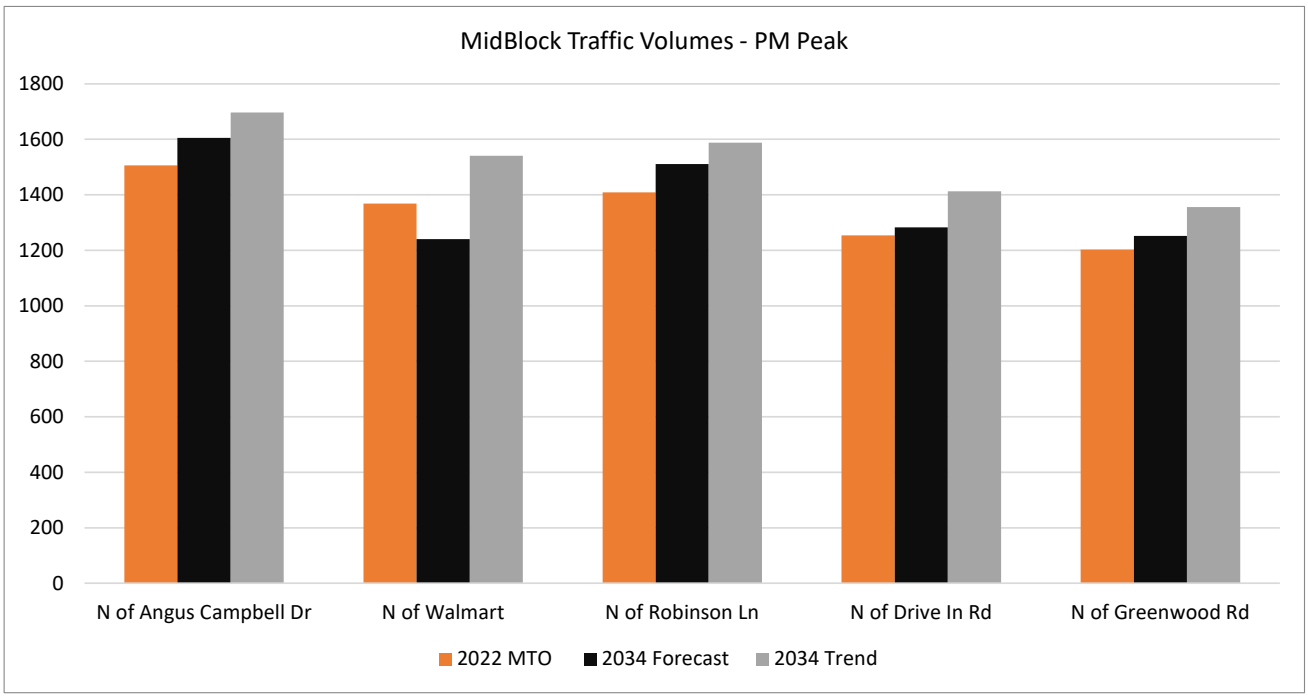


FIGURE 5 – PM PEAK HOUR VOLUME FORECAST COMPARISON

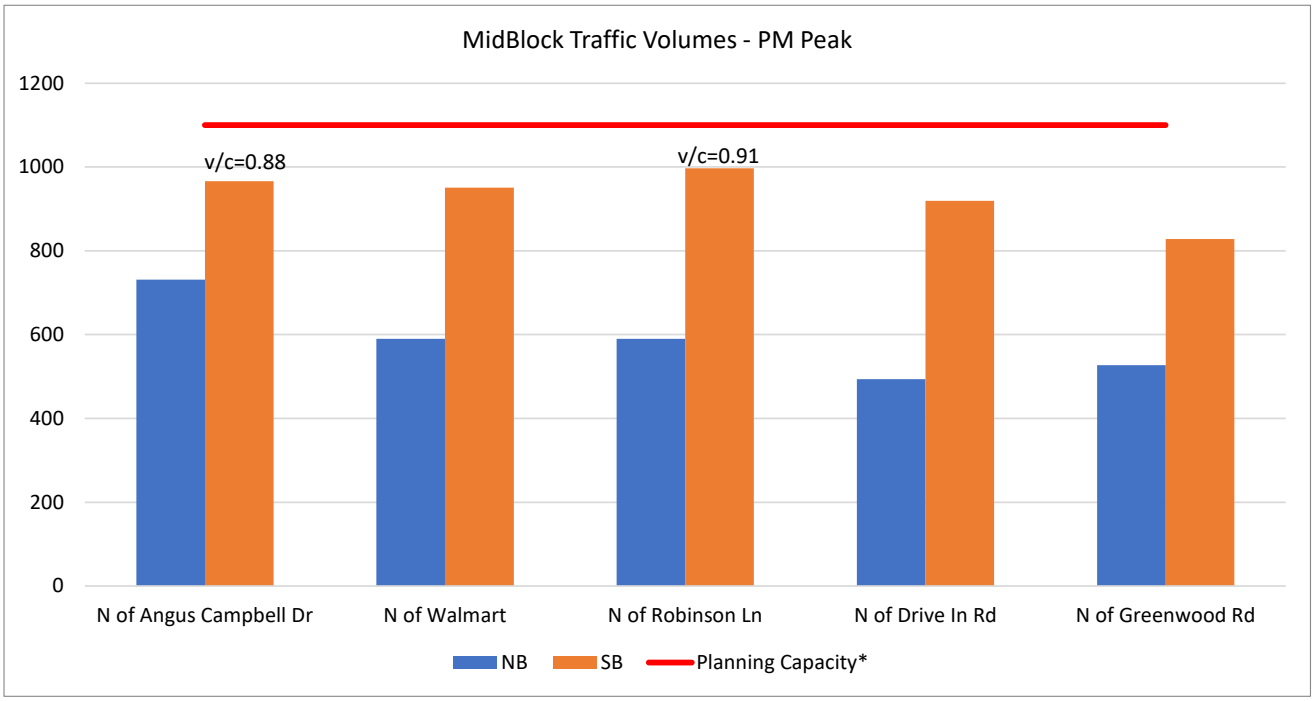


FIGURE 6 – 2034 PM PEAK HOUR TREND FORECAST VS MID-BLOCK CAPACITY

Based on the preceding assessment we note the following observations and conclusions.

1. Based on the long-term historical growth trend, the 1% growth rate used in the original traffic analysis for the TESR appears to be **appropriate for the purpose of forecasting growth in background traffic volumes**.

2. The historical data shows a consistent pattern of increased traffic during summer months, which appears to increase daily traffic on Highway 148, between the City Limit and Greenwood Road, by 10-12% over the AADT volumes. This regular increase in traffic was not considered in the traffic analysis supporting the TESR. Given the popularity of this area as a recreational destination **Highway 148 can be expected to operate at higher levels of congestion than reported in the original traffic study during the peak summer periods of the year**.

3. The original traffic report noted that "vehicle queues in the through lanes along Highway 148 periodically block access to adjacent turning lanes at the Angus Campbell Drive and Robinson Lane intersections during the peak hours."[2] The Future Conditions Analysis memo, also noted that queue lengths of 146 – 162 m could be expected in the PM peak periods in the Eastbound through lanes by 2034.[3] Queues for through traffic will not be solved by the construction of the proposed Centre Turing Lane on Highway 148 as there are already localized left turn lanes at the major intersections. The centre turn lane will only remove mid-block left turning vehicles from the through traffic mix. Queues for through traffic are typically a sign of green time being allocated to serve sideroad demands at the expense of through traffic volumes. **The increase in traffic during summer months can be expected to result in longer queues than estimated in the report for these peak periods of the year**.

4. An extrapolation of the MTO 2022 Summer peak traffic counts to a 2034 horizon year using a similar 1% annual growth rate can be expected to **result in peak volumes approaching the mid-block capacity of Highway 148 during summer peak periods**.

5. The historical traffic volumes on the portion of Highway 148 entering the Township and City appear to correlate with changes in the overall City / Township population. Growth forecasts prepared by the City and Township over the next 20 years anticipate the potential for at least 800 new residential units on the lands just east of the portion of Highway 148 corridor being studied. If this level of growth is realized, in such close proximity to Highway 148, the 1% annual growth rate used in the TESR will likely understate future traffic volumes on Highway 148 and the operation of Highway 148 will be worse than estimated in the TESR. Of particular concern is **the potential that additional growth due to local development may result in peak midblock volumes that exceed the capacity of Highway 148 during peak periods**.

[2] Highway 148 Traffic Operations and Safety Review – Existing Conditions, IBI Group, Oct 2017 (pg 19)
[3] Highway 148 Traffic Operations and Safety Review – Future Conditions Analysis, IBI Group, Oct 31, 2017 (pg 5)

Assessment of Proposed Design

A review of the proposed design has been conducted based on the Highway 148 Transportation Environmental Study Report (TESR) – June 2018 and the design plates included in the Highway 148 Transportation Environmental Study Report Addendum – October 2022. The following overarching design comments are summarized in the sections below, with some additional location specific design comments noted as appropriate.

1) Use of Curb Faced Sidewalks – In the original TESR, an evaluation of cross section alternatives was completed which concluded that the preferred cross section for the urban portion of Highway 148, between Angus Campbell Drive and Drive-In Road would be comprised of two 3.75 m lanes, a 4.0 m centre turning lane, a 0.4 m mountable curb, 1.5 m boulevard, and 2.0 m sidewalk on each side of the road, as illustrated in **Figure 7**.

Exhibit 5-4: Section 1 Preferred Cross Section – Angus Campbell Drive to Drive In Road

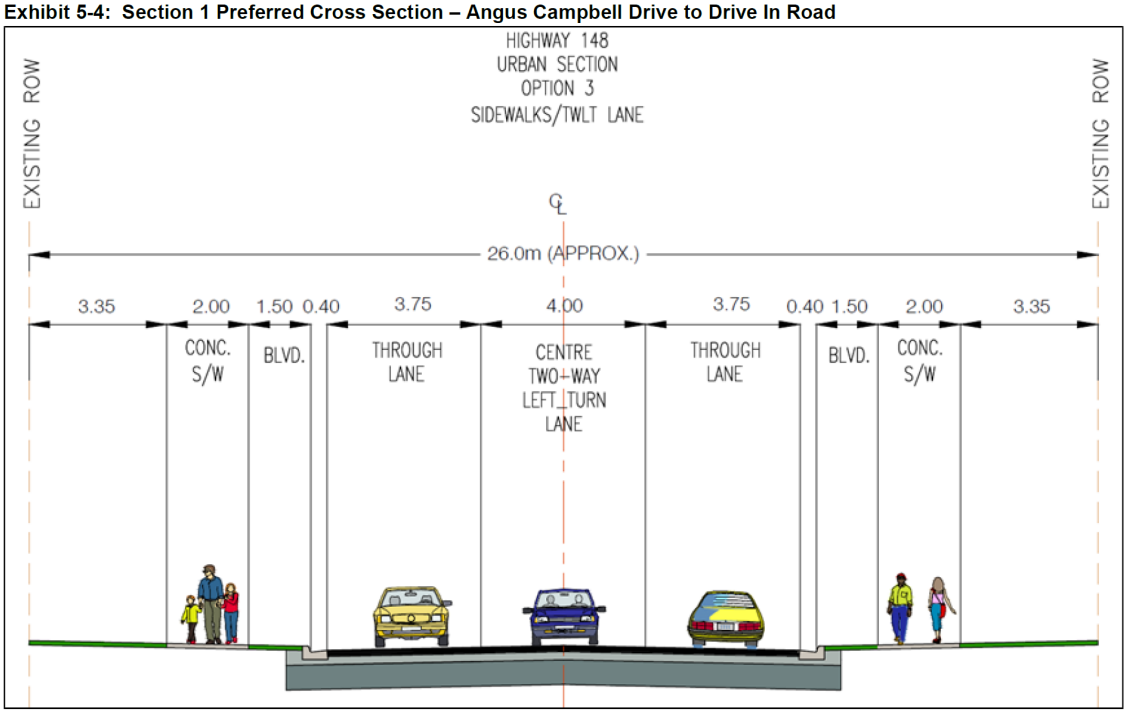


FIGURE 7 – RECOMMENDED CROSS SECTION – INITIAL EVALUATION (TESR)

Subsequent to the initial evaluation, and after completion of the preliminary design the final recommended cross section for Highway 148 incorporated boulevard ditches into the cross section, between the sidewalk and the property line. This change had the effect of reducing the available space within the boulevard and resulted in the elimination of the proposed boulevard space between the curb and gutter and the proposed sidewalk. The final recommended cross section presented in the TESR incorporated a curb faced sidewalk design, featuring a 2.0m sidewalk offset from the through lanes by a 0.6m wide barrier curb treatment, as illustrated in **Figure 8**.

Exhibit 7-2: Typical Cross-Section – Highway 148, Angus Campbell Drive to Drive In Road

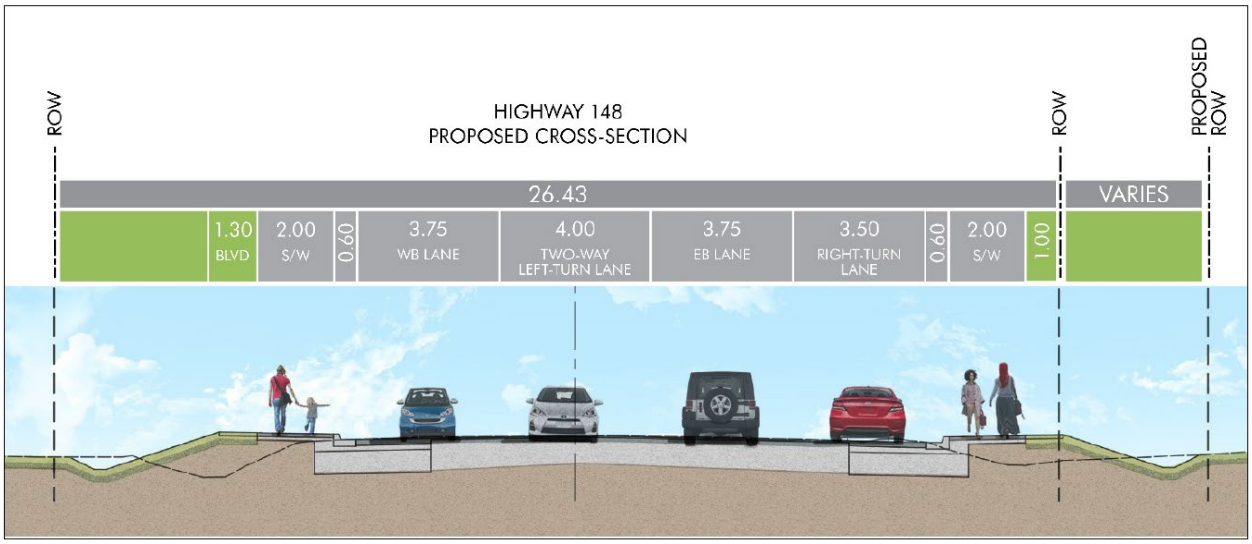


FIGURE 8 – FINAL RECOMMENDED CROSS SECTION (TESR)

Curb faced sidewalks introduce a number of concerns, particularly on major arterial roads or highways. Not only are curb faced sidewalks unappealing for pedestrians, particularly where there are heavy vehicles using the roadway, but they reduce the available space for snow storage during the winter months. Municipalities will typically increase their sidewalk width to 2.0 m where they use curb faced sidewalks, and the proposed design is consistent with this.

Roadside plows will tend to push the snow onto the sidewalk, which can lead to requests for priority clearing of the sidewalks to make them passable for pedestrians. This can result in increased maintenance costs for the City / Township, who would be responsible for sidewalk snow clearing. Crews clearing the curb faced sidewalk will inevitably push some of the snow back onto the roadway, resulting in the need for an additional snow clearing pass by the road maintenance crews. Where sidewalk snow clearing cannot be completed in a reasonable time, the snow stored on the sidewalk area will reduce the effective width of the sidewalk and result in ice build up on the sidewalk, making subsequent clearing operations more difficult and potentially requiring heavier applications of de-icing materials.

We would recommend that the City / Township encourage MTO to review the final design with a view to trying to eliminate the curb faced sidewalks and restore a 1.0 m minimum boulevard width between the curb and gutter and the sidewalk. We would also suggest that this review include an assessment of the need for the roadside ditches though the built-up area of Highway 148, as we understand that storm sewers are being installed to collect roadway drainage. In most urban environments the roadside storm sewers also accommodate the boulevard drainage needs without the need for roadside ditches.

2) Cycling Facilities in the Built-Up Area – In the original TESR, the lack of pedestrian and cycling infrastructure on Highway 148 was noted and was part of the Problem and Opportunity statement that formed the basis for the evaluation of alternatives. The subsequent evaluation considered three active transportation alternatives including, installation of a Multi-Use Path on one side of the road with a sidewalk on the other side, installation of on-road bicycle lanes and sidewalks on both sides of the road; and installation of sidewalks on both sides of the road with no cycling facilities. The Multi-Use Path was discounted due to concerns about the number of driveways along Highway 148. While we agree that busy driveways can present operational and safety risks for Multi-Use Path facilities, the driveways on the east side of Highway 148 would not be considered as busy driveways, and the commercial driveways on the west side, while much busier, are configured as intersections where there are crossing treatments that can mitigate much of this risk. **Our view is the MUP alternative was discounted too quickly without the benefit of a more in-depth evaluation, and if incorporated, could provide a safe facility that encourages higher levels of use by both pedestrians and cyclists**.

The Bicycle Lane alternative was discounted due to the lack of any on-road facilities on Pembroke Street East, within the City, and the fact that a parallel trail facility was planned for the former CN Rail Corridor (now in operation as the Algonquin Trail). We would note that the lack of a cycling facility on Pembroke Street East should not be a reason to preclude installation of a facility on Highway 148 as part of a reconstruction project. The existing shoulder treatment on Pembroke Street East (at least as far as Belmont Avenue) appears to have sufficient width to allow it to be converted to a MUP design or an on-road bicycle lane should the City wish to pursue cycling infrastructure on this key road link.

Trails on rail corridors tend to attract recreational cyclist trips and are well suited to cyclists who do not feel comfortable riding on the roadway, in a marked lane or in mixed traffic. Cyclists who ride for utilitarian purposes will continue to want to use Highway 148 to access the shops and services along this developed corridor. We expect that the current design will simply encourage some cyclists who are not willing to ride in mixed traffic to use the new sidewalks.

We would also suggest that the City and Township monitor the need for cycling infrastructure on the side roads between the Algonquin Trail and the developments along Highway 148, as these may become popular routes to access the services along Highway 148.

3) Cycling Facilities in Rural Area – In the original TESR, a separate evaluation process was used to assess cycling facility alternatives for the rural area, between Drive-in Road and Greenwood Road. Paved shoulders with a buffer separation treatment and a Multi-Use Pathway alternative were considered to be appropriate facilities for this section of Highway 148. Again, the need for a formal cycling facility was discounted due to the future implementation of the Algonquin Trail on the former CN rail corridor. Instead, the final recommendation included a 2.5 m paved shoulder treatment, which would provide space for pedestrians and cyclists that want to use Highway 148, without designating this as a formal cycling facility.

We reviewed the OTM Book 18 cycling lane selection criteria for the roadway conditions in this portion of Highway 148, illustrated in **Figure 9**. Given that the daily traffic volumes exceed 11,000 vehicles per day, and the posted speed limit ranges between 60 and 80 km/h, OTM Book 18 standards would suggest that a Buffered Paved Shoulder or Multi-Use Path would be the most suitable facility for this segment of road. This is consistent with the assessment completed in the TESR.

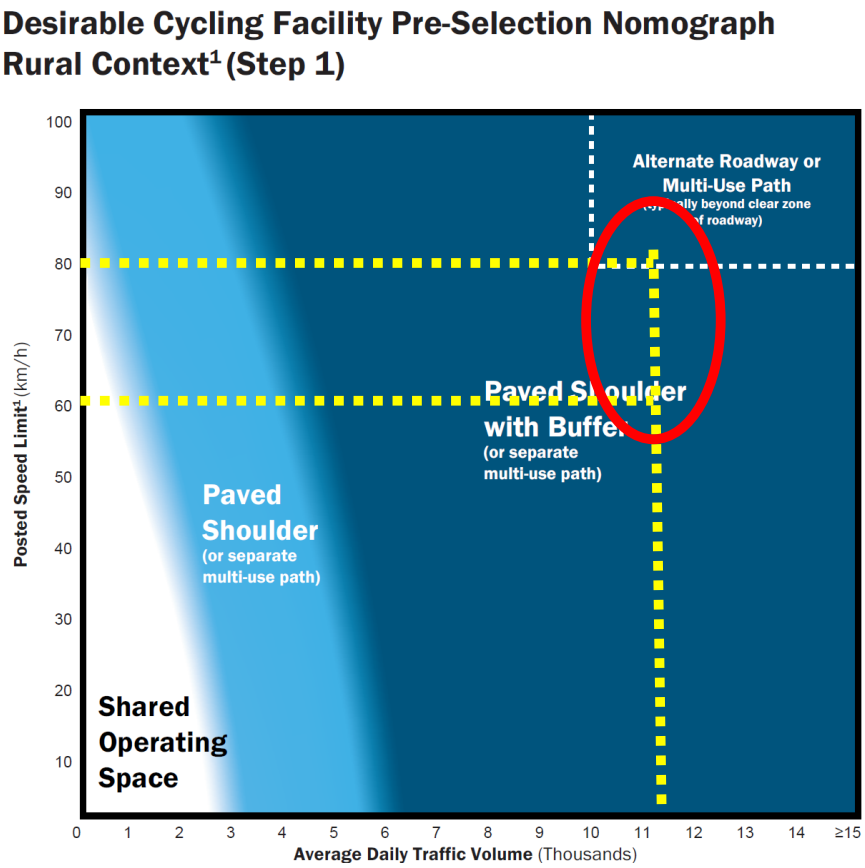


FIGURE 9 – RURAL CYCLING LANE SELECTION ASSESSMENT

We would note however, that the 2.50 m paved shoulder width meets the OTM Book 18 standards for a paved shoulder treatment, allowing for a 2.0 m operating space with a 0.5 m painted buffer treatment. **We would suggest that MTO consider marking the paved shoulder in accordance with OTM Book 18, Figure 4.74, as illustrated in Figure 10, to enhance the level of separation provided for cyclists using this paved shoulder area.**

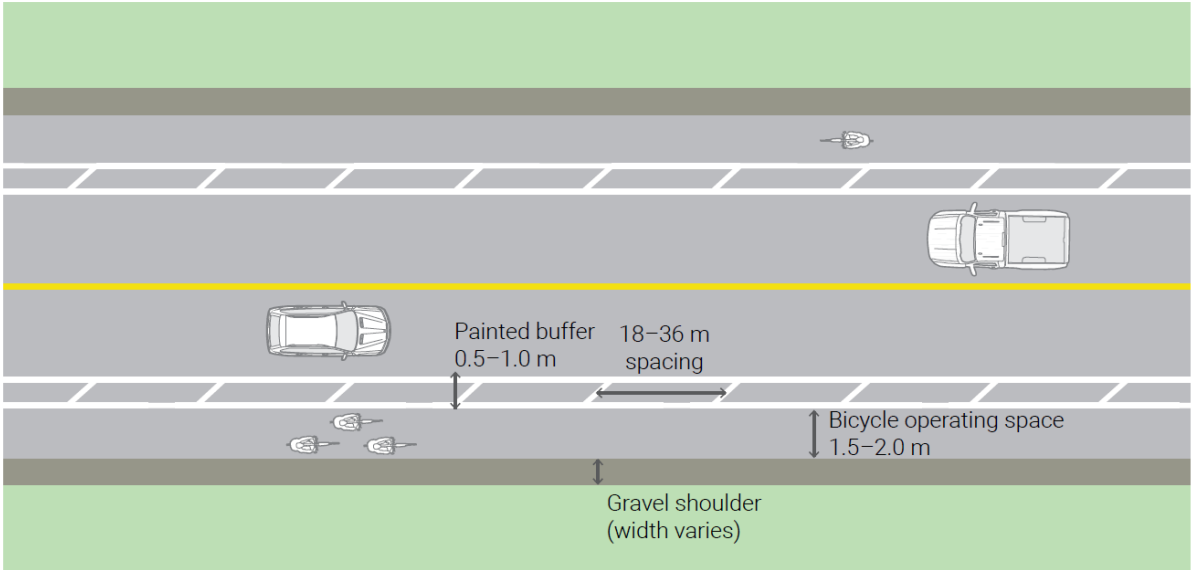


Figure 4.74 – Roadway with Buffered Paved Shoulders

FIGURE 10 – RURAL BUFFERED PAVED SHOULDER TREATMENT

4) Greenwood Road Intersection – In the original TESR it was noted that public comments received during the study indicated a desire for consideration of safety improvements at the Highway 148 / Greenwood Road intersection. A review of the intersection undertaken during that traffic study for the TESR identified a number of areas where the current design does not comply with MTO design standards; including the direct taper design for the acceleration lane from the westbound right turn channelization to enter Highway 148, the lack of pavement markings for the acceleration lane, and the short length of the southbound left turn lane. Concerns were expressed about the merge lane, and its proximity to the entrance to the gas station on the west side of Highway 148 causing the potential for collisions, and the collision pattern and delays for southbound traffic turning left to continue on Highway 148 to Quebec.

Seven alternatives were developed (including signalization and a roundabout option) but only two alternatives were carried forward for detailed evaluation. The traffic volumes at the intersection were not high enough to warrant traffic signals and therefore this alternative was not carried forward, however it is noted that this is primarily due to the effect of the channelization, where traffic using a channelized right turn movement is not included in the warrant analysis. If this intersection was configured as a Tee intersection without the right turn channelization, signals would be warranted under a combination warrant based on the MTO count taken in 2022.

Ultimately, the traffic study recommended reducing the radius of the westbound right turn channelization in order to create an acceleration lane to improve the merge and partially address some of the concerns related to the spacing between the start of the merge lane and the gas station entrance.

The roundabout concept was evaluated at a preliminary level of detail in the traffic study, and it was noted that the roundabout would address all of the identified deficiencies at the intersection, but this alternative was ultimately discounted due to MTO policy that indicated a roundabout would only be considered where signals are warranted. It is assumed that this policy direction is based on the premise that the Ministry would only consider spending money on a roundabout if they were already considering an expenditure for the installation of traffic signals, which would warrant investigating if a roundabout would provide a better “value for money” proposition. It is not stated how much the reconfiguration of the westbound right turn channelization is expected to cost, only that the cost is “moderate”.

The safety analysis completed as part of the original traffic study noted that the Greenwood Road intersection showed a pattern of excess collisions, or more collisions than would typically be expected for this type of intersection. The collision review noted a pattern of approximately 1 left turn collision per year between southbound motorists turning left to continue on Highway 148 and northbound vehicles entering Highway 148 from Greenwood Road. Despite this pattern the estimated collision reduction benefits were deemed to be insufficient to justify the capital expense for construction of a roundabout. No estimate for the construction cost of a roundabout was provided.

There are a number of benefits noted in the TESR that would support a more detailed review and assessment of the roundabout concept prior to finalizing the detailed design for this project. These include:

1) The analysis prepared in the traffic study for the TESR concluded that a roundabout could be constructed within the existing MTO property limits, requiring no additional property costs;

2) The roundabout would solve all of the geometric deficiencies noted at the intersection related to the deficient speed change lane for the westbound channelization and the deficient length of the southbound left turn lane;

3) The roundabout would eliminate the safety concerns with westbound right tuning vehicles quickly merging and stopping to access the gas station by moving the merge area well away from the entrance location;

4) The roundabout would eliminate the pattern of southbound left turn collisions at the intersection by eliminating this conflict area;

5) The roundabout analysis prepared in the traffic study for the TESR concluded that it would provide positive safety benefits in economic terms on an annual basis; and

6) The cost of the modifications to the westbound right turn channelization when combined with the annual safety benefits associated with the roundabout should warrant a further review to determine if a roundabout would provide a sufficient cost-benefit ratio for inclusion in the project.

For these reasons we would suggest that MTO reassess the recommended improvement plan for the Highway 148 / Greenwood Road intersection and complete a more thorough cost-benefit analysis to determine if the roundabout alternative should be included in the project.

5) Access Management – In the original TESR a number of access management issues were identified on Highway 148, particularly through the built-up area between Angus Campbell Drive and Drive-in Road. The key issues noted include intersection spacing that is less than the 800 m desired spacing on MTO highways; driveway density that is well over the ideal density of 6 entrances per km, per side; and numerous existing entrances located within the functional intersection area (defined as the limits of the turning lanes). The TESR noted that existing entrances would be grandfathered, and would be consolidated where possible, while new entrances would generally not be permitted if there are other alternatives to provide access to properties.

Given the level of potential growth anticipated in this area of the City and Township, the access management policies of the Ministry are bound to conflict with the development objectives of the local municipalities.

We would note that directing too much traffic to a limited number of sideroad intersections may not benefit the operation of Highway 148 either. Increased sideroad volumes will require a greater proportion of the available green time at the signalized intersections along Highway 148, reducing the available green time to serve the mainline traffic flows. As noted previously, the traffic study completed as part of the TESR already identified that the through movements on Highway 148 will experience queues during peak periods without considering this additional growth. With additional area development growth, accessed primarily via the existing signalized intersections, the congestion issues on Highway 148 may be compounded in the future.

The City, Township and MTO are encouraged to work cooperatively to consider the benefits of permitting the development of additional strategic intersections on the Highway 148 corridor, combined with a parallel local road network to link future development areas and take pressure off of Highway 148.

6) Angus Campbell Drive Intersection - The design for the Angus Campbell Drive intersection includes a fourth leg on the east side of Highway 148 noted as Rankin Street. Rankin Street is offset from Angus Campbell Drive by approximately 13 m, as illustrated in

Figure 11. It is interesting that this substandard design treatment was not discussed in the traffic study nor the TESR, and there were no alternatives considered to address this offset intersection.

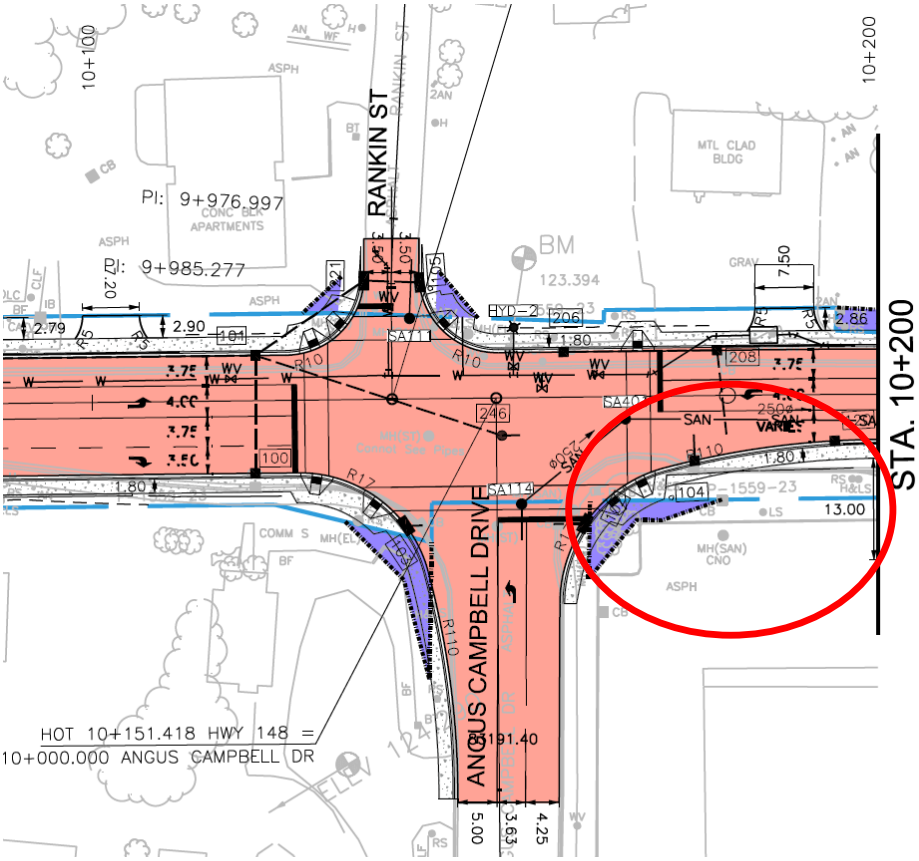


FIGURE 11 – ANGUS CAMPBELL DRIVE INTERSECTION

The intersection analysis completed as part of the traffic study assumed that movements from Rankin Street and Angus Campbell Drive would move together on the same signal phase, which would introduce some significant safety concerns if the traffic volumes on Rankin Street ever developed beyond the 15-20 vehicles per hour using this approach now.

In the event that development is considered on the east side of Highway 148 at this intersection, a realignment of the Rankin Street approach may be required to avoid having to operate this intersection under separate side road phases, which could significantly impact the operation of Highway 148.

We also noted that the current design includes a sweeping compound radius curve in the south-west quadrant of the intersection. These types of curve design treatments are typically used in higher speed highway applications but in urban areas they are increasingly being eliminated in favour of tighter curb radius designs that shorten pedestrian crossing distances

and promote slower speeds on turns. This comment is noted at a number of other intersections along the Highway 148 corridor as well.

7) General Design Comments - The design for the urban portion of Highway 148 features a number of sections of curb faced sidewalk that should be reviewed to determine if these areas can be redesigned to eliminate the boulevard ditches or provide a 1.0 m boulevard width between the curb and the sidewalk, as noted earlier. We have noted a few locations on the design drawings illustrated in **Figures 13, 14 and 15** for this type of review.

We have also noted that the new proposed sidewalk will need to cross the splitter island on the right-in/right-out entrance driveways to the two commercial properties along Highway 148. To ensure accessibility, the sidewalk should continue through the splitter island at grade, or a drop curb treatment with tactile indicator plates should be provided where the sidewalk meets the island and the pedestrian transfers from the sidewalk to an asphalt surface. These locations are also noted on the design drawings illustrated in **Figures 13, 14 and 15.**

At the Walmart driveway intersection, the proposed sidewalk should be extended to connect with the existing walkway serving the development to ensure an accessible connection is provided. There are also a number of other locations where the sidewalk should be extended to match existing walkways or to the MTO property limit to allow for future connections by the Township or City.

We have also noted a few locations where the sidewalk appears to be deflected to avoid utility poles or other obstructions. This is not ideal from an accessibility perspective as a pedestrian with low sight may not be able to detect the deflection of the sidewalk. At some locations the deflection appears to occur right at the same location as the drop curb treatment for cross walks at the signalized intersections. The design should ensure that a minimum of 1.2 m of pedestrian clearway is provided outside of the curb ramp slope treatment area, as illustrated in **Figure 12**.

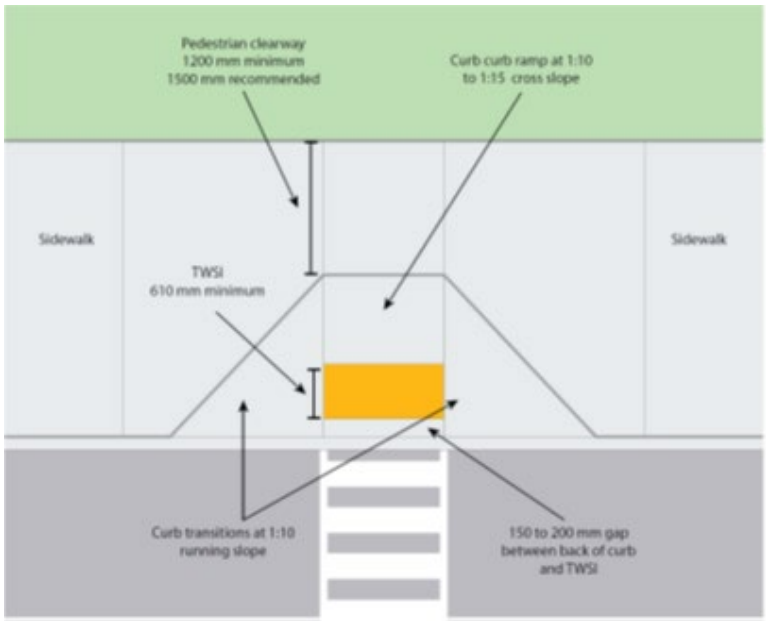


FIGURE 12 – SIDEWALK TREATMENT AT CURB RAMPS FOR CROSSWALKS

Figures 13 to 15 illustrate the locations noted above that are suggested for review.

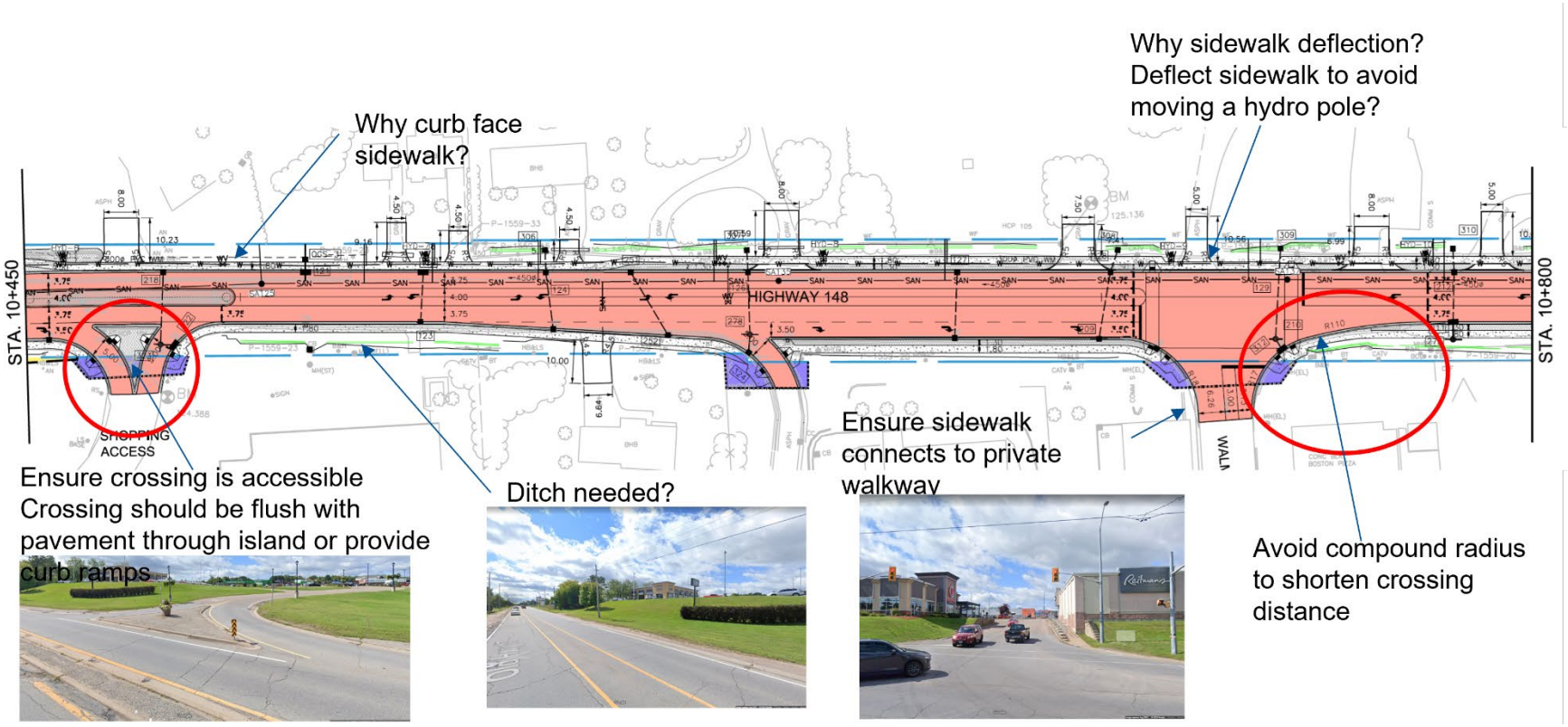


FIGURE 13 – MALL ENTRANCE TO WALMART INTERSECTION REVIEW AREAS

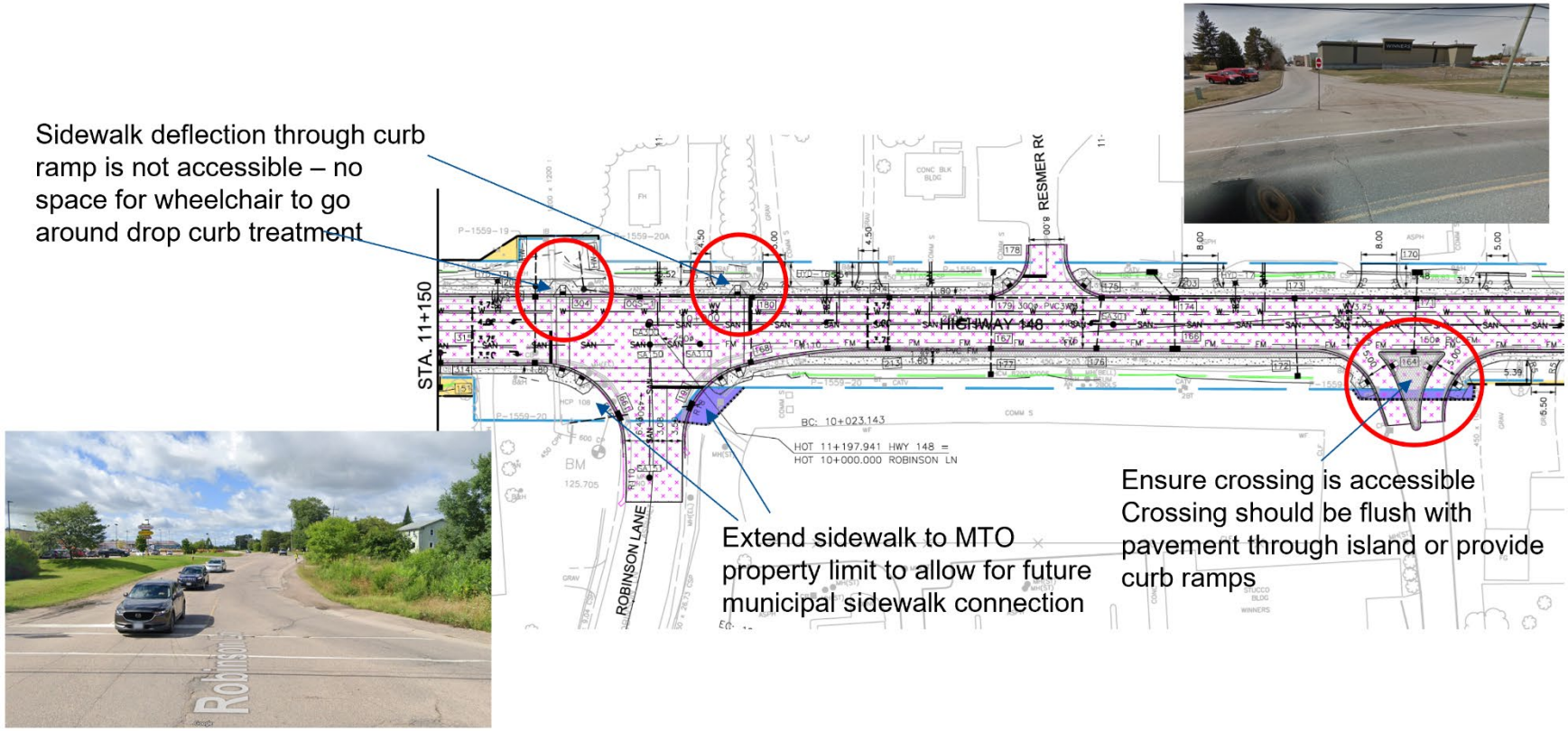


FIGURE 14 – ROBINSON LANE TO MALL ENTRANCE REVIEW AREAS

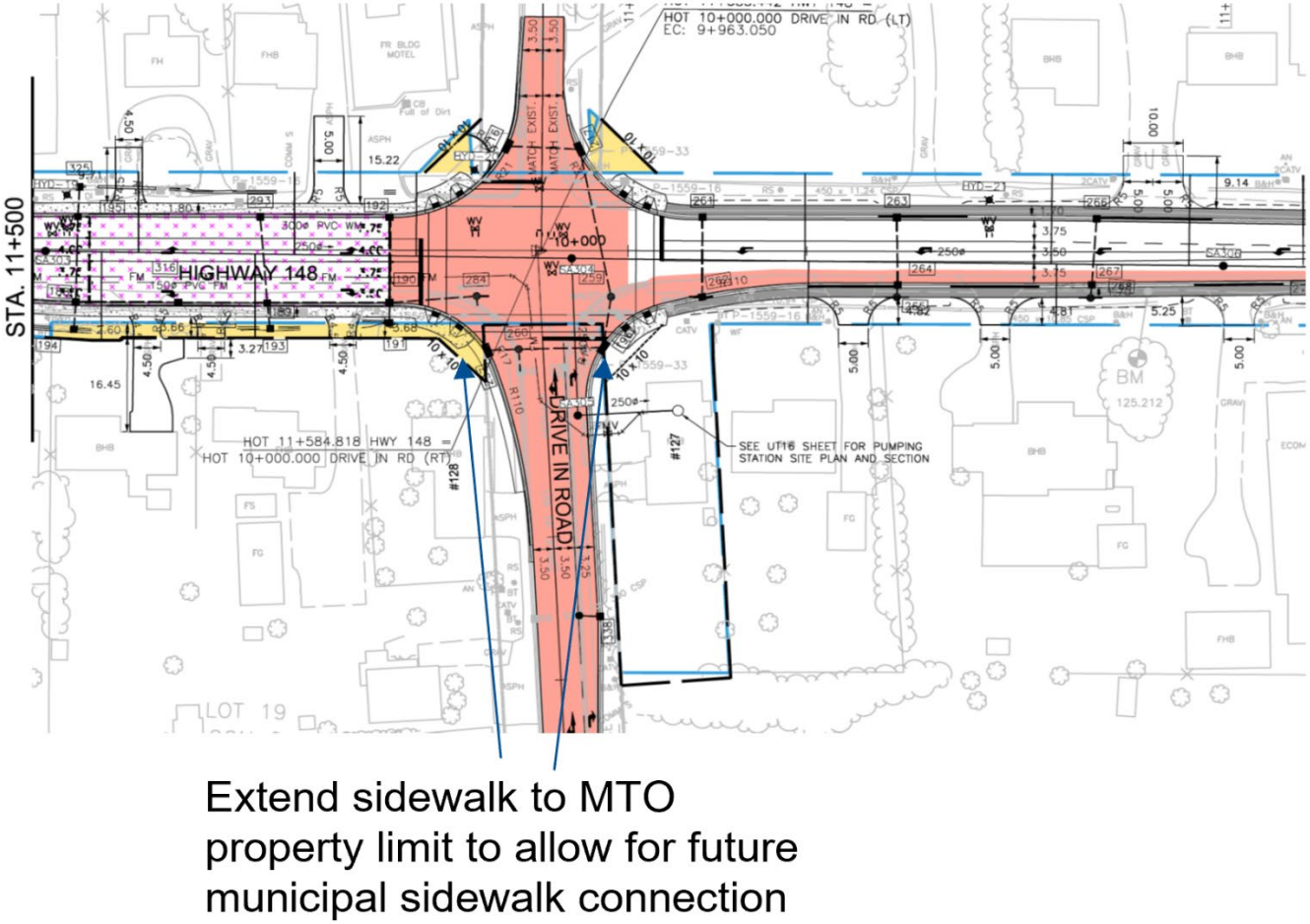


FIGURE 15 – DRIVE IN ROAD INTERSECTION REVIEW AREAS

Summary of Review Findings

As part of the Transportation Master Plan (TMP) scope of work, a review of the Highway 148 improvement project has been completed based on publicly available information on the project website and new traffic data obtained from the Ministry of Transportation and collected by Paradigm as part of the TMP project.

Our review has focussed on an assessment of the base traffic volumes and forecasts of future growth that underpinned the assessment, evaluation and recommendations for proposed improvements to Highway 148. We have also reviewed the proposed design and provided an assessment of some of the design decisions and design treatments reflected in the TESR and the TESR Addendum published by the Ministry.

In general, we have noted that the forecasts of future growth are in line with historical background growth on Highway 148, but they do not consider the additional traffic that may be generated if local development adjacent to the corridor is built out within the 2034 horizon year used for the Ministry study. The ongoing work on the Transportation Master Plan will fully consider the implications of future growth in the City and Township and will provide additional information to assess the future performance of Highway 148. The forecasts used in the Highway 148 project also do not account for summer peak periods, and based on our initial review there is potential that congestion on Highway 148 during the summer peak periods could approach the mid-block capacity of Highway 148 by 2034.

The recommended design for Highway 148 should provide noticeable improvements to the operation and safety of this important corridor in the medium term, notwithstanding the comments we have noted regarding the potential implications of summer peak conditions and new development growth over the longer-term.

We have noted potential concerns with the recommended curb faced sidewalk design approach incorporated into the latest design drawings from a user comfort and municipal maintenance perspective and suggest that this be further evaluated prior to finalizing the design. The lack of cycling facilities on the urban portion of Highway 148 may induce cyclists to ride on the new sidewalks, increasing the potential for conflicts with pedestrians.

We have also recommended that a review of the recommended design for the Highway 148 / Greenwood Road intersection be undertaken to reassess the potential benefits of a roundabout design treatment for this location.

We note that there is potential that planned growth adjacent to the Highway 148 corridor may conflict with the Access Management policies noted in the TESR. We encourage all parties to work cooperatively to consider the benefits of permitting the development of additional strategic intersections on the Highway 148 corridor, combined with a parallel local road network to link future development areas and take pressure off of Highway 148. The ongoing work in the TMP may be able to provide additional guidance in this regard.

We have also noted potential concerns related to future growth in the vicinity of the Angus Campbell Drive intersection, related to the offset alignment of the Rankin Stret approach to this intersection. The City/ Township and Ministry may want to investigate opportunities to protect for the future realignment of this leg of the intersection to ensure this design limitation does not impact future opportunities to consider new development on the east side of Highway 148.

Finally, our review of the preliminary design drawings has also noted a few localized design issues related to accessibility that should be considered to ensure that the new construction on Highway 148 can meet the needs of all users.

We are available to further discuss our review comments at your convenience.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Kevin Jones
Project Manager
Senior Consultant, Associate
Public Sector Practice Lead

cc B. Lewis – City of Pembroke
C. Belanger – MTO
D. Waters – MTO
Project File

Township of Laurentian Valley
City of Pembroke

Transportation Master Plan for East-West Traffic

Appendices – Volume 2

December 2024

Laurentian Valley

Pembroke
the heart of the ottawa valley

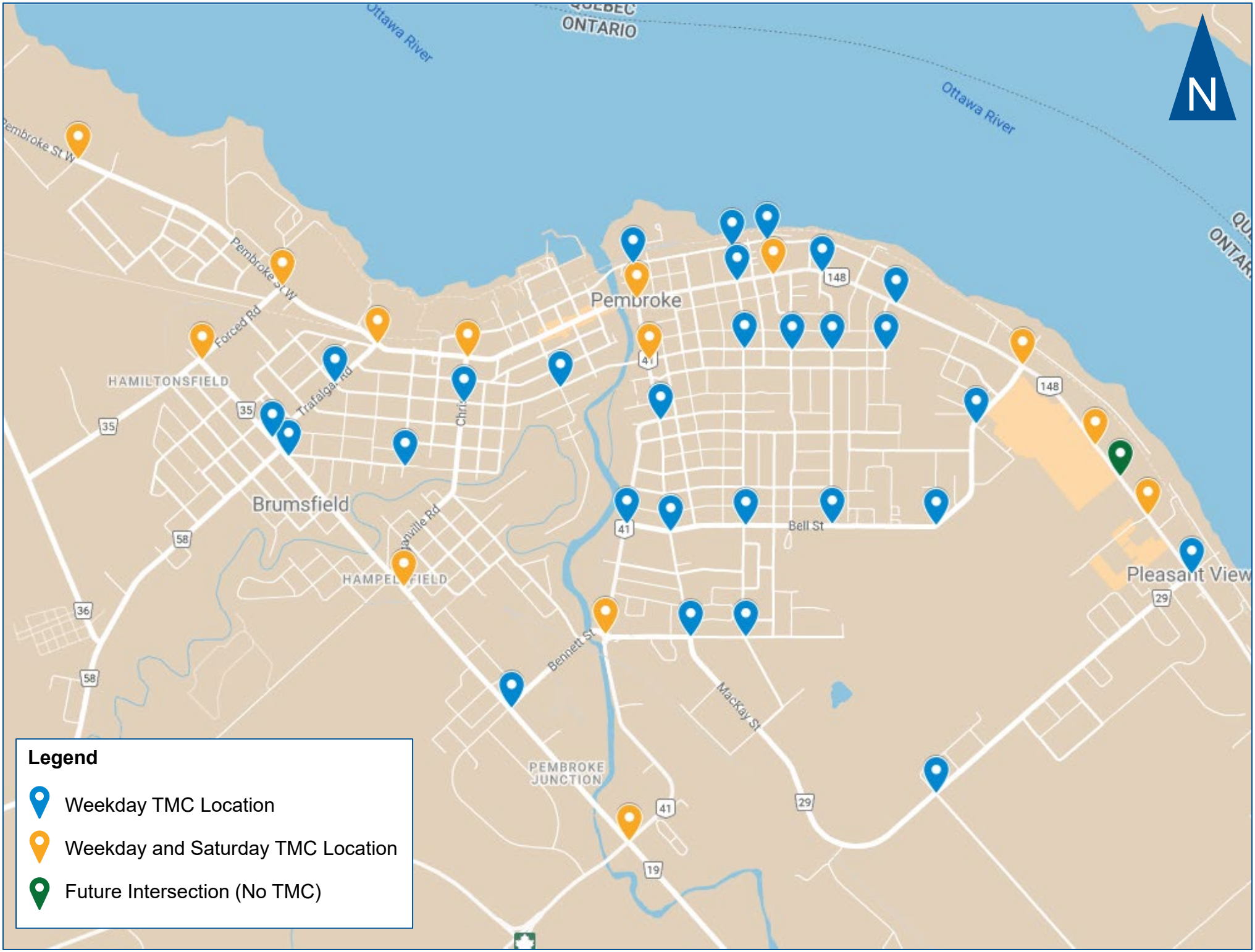
paradigm TRANSPORTATION SOLUTIONS LIMITED

Appendix J

Traffic Count Data

Township of Laurentian Valley and City of Pembroke
Transportation Master Plan for East-West Traffic

December 2024


Ottawa River
ONTARIO
Ottawa River
N
Pembroke St W
Pembroke St W
Forced Rd
HAMILTONSFIELD
Trafalgar Rd
Pembroke
Brumsfield
HAMPELSFIELD
Bell St
Pleasant View
Bennett St
MacKay St
PEMBROKE JUNCTION
148
41
35
58
36
29
19
Legend
Weekday TMC Location
Weekday and Saturday TMC Location
Future Intersection (No TMC)

Count Day	#	Intersection		Saturday Count	Notes
		East/West	North/South		
Wednesday, March 1	8	Drive In Road	Wilson Road		
	9	Drive In Road	Highway 148		
	14	Highway 148	Howard Street		
	18	Bell Street	O'Brien Street		
	19	Alfred Street	Cecelia Street		
	20	Matheson Drive	Angus Campbell Drive		
	22	Alfred Street	Broadview Drive		
	23	Alfred Street	Rosewood Avenue		
	24	Bell Street	Broadview Drive		
	31	Pembroke Street East	Broadview Drive		
	32	Nelson Street	Cecelia Street		
	33	Pembroke Street East	Cecelia Street		
	35	Nelson Street	Elizabeth Street		IPS
	38	Alfred Street	Fraser Street		
Saturday, March 4 and Tuesday, March 7	2	Town Line Road/Bennett Street	River Road	Yes	2 Cameras
	4	Pembroke Street East	MacKay Street	Yes	
	10	Robinson Lane	Highway 148	Yes	
	11	Walmart Entrance	Highway 148	Yes	
	13	Angus Campbell Drive	Highway 148	Yes	
	21	Alfred Street	MacKay Street	Yes	
	25	Pembroke Street West	Blakely Crescent	Yes	
	26	Eganville Road	Boundary Road East	Yes	
	30	Jean Avenue/Forced Road	Boundary Road East	Yes	
	34	Pembroke Street West	Christie Street	Yes	
	36	Pembroke Street East	Elizabeth Street	Yes	
	37	Pembroke Street West	Forced Road	Yes	
	43	Pembroke Street West	Trafalgar Road	Yes	
Thursday, March 9	3	River Road/Metcalfe Street	MacKay Street		
	5	Lake Street/Nelson Street	MacKay Street		
	6	Town Line Road	MacKay Street		
	7	D'Youville Drive	Cecelia Street		
	15	Bell Street	River Road		
	16	Bell Street	MacKay Street		
	17	Bell Street	Cecelia Street		
	27	McGee Street	Boundary Road East		
	28	Trafalgar Road	Boundary Road East		
	29	International Drive/Bennett Street	Boundary Road East		
	39	Mary Street	Christie Street		
	40	Mary Street	Trafalgar Road		
	41	Mary Street	Moffat Street		
	42	McGee Street	James Street		
April	1	Paul Martin Drive	Boundary Road East	Yes	
	44	Pembroke Street West	Forest Lea Road	Yes	
	45	Forest Lea Road	TV Tower Road	Yes	
	12	Laneway	Highway 148		NO COUNT

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

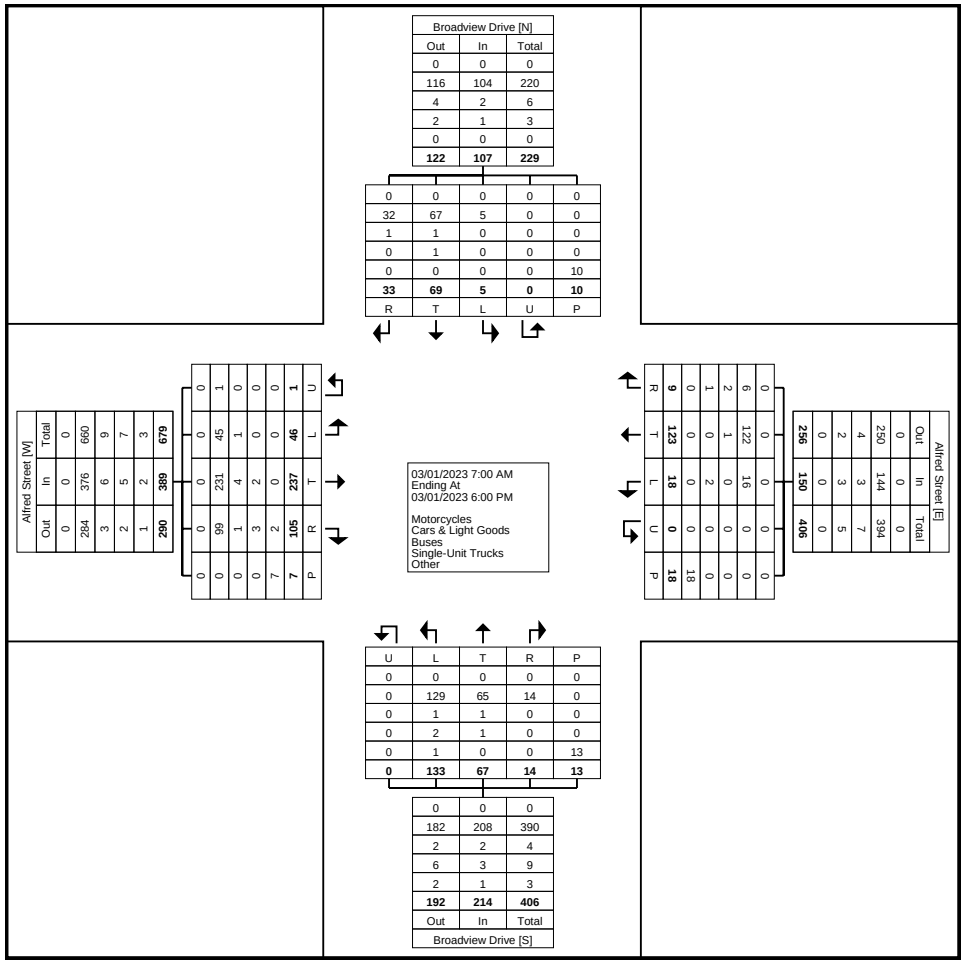
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	1	1	0	0	2	0	3	0	0	1	3	0	1	0	0	1	1	0	0	1	0	0	1	7
7:15 AM	0	5	3	0	0	8	0	5	0	0	0	5	2	1	0	0	0	3	0	2	1	0	0	3	19
7:30 AM	2	6	4	0	0	12	0	5	0	0	1	5	7	1	0	0	0	8	0	1	1	0	0	2	27
7:45 AM	1	6	2	0	0	9	1	3	0	0	2	4	9	0	2	0	3	11	0	2	3	0	1	5	29
Hourly Total	3	18	10	0	0	31	1	16	0	0	4	17	18	3	2	0	4	23	0	5	6	0	1	11	82
8:00 AM	1	8	5	0	0	14	2	3	0	0	0	5	5	2	1	0	0	8	0	2	0	0	0	2	29
8:15 AM	1	6	1	0	0	8	0	3	0	0	0	3	5	1	1	0	0	7	0	1	0	0	0	1	19
8:30 AM	0	4	1	0	0	5	0	3	0	0	0	3	8	1	0	0	0	9	0	0	0	0	0	0	17
8:45 AM	2	3	3	0	0	8	0	6	0	0	1	6	4	1	1	0	1	6	0	1	1	0	0	2	22
Hourly Total	4	21	10	0	0	35	2	15	0	0	1	17	22	5	3	0	1	30	0	4	1	0	0	5	87
9:00 AM	0	9	5	0	0	14	0	7	0	0	1	7	4	2	1	0	1	7	0	3	2	0	1	5	33
9:15 AM	0	15	2	0	0	17	1	5	3	0	0	9	12	2	0	0	1	14	1	3	2	0	0	6	46
9:30 AM	2	5	3	0	0	10	1	6	2	0	0	9	2	3	0	0	0	5	0	0	3	0	0	3	27
9:45 AM	1	6	3	0	0	10	0	3	0	0	0	3	3	1	1	0	0	5	0	0	0	0	0	0	18
Hourly Total	3	35	13	0	0	51	2	21	5	0	1	28	21	8	2	0	2	31	1	6	7	0	1	14	124
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	5	3	0	0	10	1	3	0	0	0	4	1	0	0	0	0	1	0	0	0	0	0	0	15
11:15 AM	0	9	3	1	0	13	1	2	0	0	0	3	3	2	0	0	0	5	0	1	1	0	1	2	23
11:30 AM	1	7	2	0	0	10	0	1	1	0	0	2	7	3	1	0	1	11	0	2	2	0	1	4	27
11:45 AM	0	9	1	0	1	10	0	6	1	0	1	7	4	1	0	0	0	5	1	3	0	0	0	4	26
Hourly Total	3	30	9	1	1	43	2	12	2	0	1	16	15	6	1	0	1	22	1	6	3	0	2	10	91
12:00 PM	3	8	2	0	0	13	0	4	1	0	0	5	3	1	0	0	0	4	0	2	2	0	0	4	26
12:15 PM	2	4	2	0	0	8	2	4	0	0	2	6	4	0	0	0	0	4	0	3	1	0	0	4	22
12:30 PM	1	4	4	0	1	9	0	2	0	0	0	2	5	2	0	0	0	7	0	0	1	0	0	1	19
12:45 PM	1	7	2	0	0	10	1	1	0	0	0	2	6	5	0	0	1	11	0	6	0	0	0	6	29
Hourly Total	7	23	10	0	1	40	3	11	1	0	2	15	18	8	0	0	1	26	0	11	4	0	0	15	96
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	7	5	0	2	13	1	4	0	0	0	5	1	5	1	0	1	7	0	2	1	0	0	3	28
3:15 PM	0	8	3	0	0	11	0	4	0	0	4	4	2	3	0	0	2	5	0	5	1	0	1	6	26
3:30 PM	2	13	6	0	0	21	2	5	0	0	0	7	5	2	0	0	0	7	0	6	2	0	3	8	43
3:45 PM	4	4	2	0	1	10	1	7	0	0	0	8	5	9	2	0	0	16	0	2	2	0	1	4	38
Hourly Total	7	32	16	0	3	55	4	20	0	0	4	24	13	19	3	0	3	35	0	15	6	0	5	21	135
4:00 PM	4	12	5	0	0	21	0	3	1	0	0	4	5	4	0	0	1	9	1	4	1	0	0	6	40
4:15 PM	4	15	7	0	0	26	1	6	0	0	4	7	2	4	1	0	0	7	0	1	0	0	0	1	41
4:30 PM	3	3	3	0	0	9	0	3	0	0	0	3	2	6	1	0	0	9	0	3	0	0	0	3	24

4:45 PM	5	10	4	0	2	19	3	4	0	0	0	7	4	1	0	0	0	5	0	5	2	0	0	7	38
Hourly Total	16	40	19	0	2	75	4	16	1	0	4	21	13	15	2	0	1	30	1	13	3	0	0	17	143
5:00 PM	2	13	4	0	0	19	0	4	0	0	1	4	3	0	0	0	0	3	0	3	1	0	0	4	30
5:15 PM	0	12	8	0	0	20	0	3	0	0	0	3	1	0	0	0	0	1	1	2	1	0	0	4	28
5:30 PM	1	9	4	0	0	14	0	3	0	0	0	3	3	1	1	0	0	5	0	3	0	0	1	3	25
5:45 PM	0	4	2	0	0	6	0	2	0	0	0	2	6	2	0	0	0	8	1	1	1	0	0	3	19
Hourly Total	3	38	18	0	0	59	0	12	0	0	1	12	13	3	1	0	0	17	2	9	3	0	1	14	102
Grand Total	46	237	105	1	7	389	18	123	9	0	18	150	133	67	14	0	13	214	5	69	33	0	10	107	860
Approach %	11.8	60.9	27.0	0.3	-	-	12.0	82.0	6.0	0.0	-	-	62.1	31.3	6.5	0.0	-	-	4.7	64.5	30.8	0.0	-	-	-
Total %	5.3	27.6	12.2	0.1	-	45.2	2.1	14.3	1.0	0.0	-	17.4	15.5	7.8	1.6	0.0	-	24.9	0.6	8.0	3.8	0.0	-	12.4	-
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	0.0
Cars & Light Goods	45	231	99	1	-	376	16	122	6	0	-	144	129	65	14	0	-	208	5	67	32	0	-	104	832
% Cars & Light Goods	97.8	97.5	94.3	100.0	-	96.7	88.9	99.2	66.7	-	-	96.0	97.0	97.0	100.0	-	-	97.2	100.0	97.1	97.0	-	-	97.2	96.7
Buses	1	4	1	0	-	6	0	1	2	0	-	3	1	1	0	0	-	2	0	1	1	0	-	2	13
% Buses	2.2	1.7	1.0	0.0	-	1.5	0.0	0.8	22.2	-	-	2.0	0.8	1.5	0.0	-	-	0.9	0.0	1.4	3.0	-	-	1.9	1.5
Single-Unit Trucks	0	2	3	0	-	5	2	0	1	0	-	3	2	1	0	0	-	3	0	1	0	0	-	1	12
% Single-Unit Trucks	0.0	0.8	2.9	0.0	-	1.3	11.1	0.0	11.1	-	-	2.0	1.5	1.5	0.0	-	-	1.4	0.0	1.4	0.0	-	-	0.9	1.4
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	1.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	1.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.8	0.0	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	18	-	-	-	-	-	13	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023


Alfred Street [W]
Out In Total
0 0 0
284 376 660
3 6 9
2 5 7
1 2 3
290 389 679
0 0 0
0 0 0
0 0 0
0 0 0
7 7 0
105 237 46
2 0 0
3 4 1
1 2 1
0 0 0
99 231 45
0 0 1
U L T R P
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0
7 0 0 0 0
0 0 0 0 0
0 0 0 0 0
0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (8:45 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive 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
8:45 AM	2	3	3	0	0	8	0	6	0	0	1	6	4	1	1	0	1	6	0	1	1	0	0	2	22
9:00 AM	0	9	5	0	0	14	0	7	0	0	1	7	4	2	1	0	1	7	0	3	2	0	1	5	33
9:15 AM	0	15	2	0	0	17	1	5	3	0	0	9	12	2	0	0	1	14	1	3	2	0	0	6	46
9:30 AM	2	5	3	0	0	10	1	6	2	0	0	9	2	3	0	0	0	5	0	0	3	0	0	3	27
Total	4	32	13	0	0	49	2	24	5	0	2	31	22	8	2	0	3	32	1	7	8	0	1	16	128
Approach %	8.2	65.3	26.5	0.0	-	-	6.5	77.4	16.1	0.0	-	-	68.8	25.0	6.3	0.0	-	-	6.3	43.8	50.0	0.0	-	-	-
Total %	3.1	25.0	10.2	0.0	-	38.3	1.6	18.8	3.9	0.0	-	24.2	17.2	6.3	1.6	0.0	-	25.0	0.8	5.5	6.3	0.0	-	12.5	-
PHF	0.500	0.533	0.650	0.000	-	0.721	0.500	0.857	0.417	0.000	-	0.861	0.458	0.667	0.500	0.000	-	0.571	0.250	0.583	0.667	0.000	-	0.667	0.696
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	4	29	13	0	-	46	2	24	3	0	-	29	21	8	2	0	-	31	1	7	7	0	-	15	121
% Cars & Light Goods	100.0	90.6	100.0	-	-	93.9	100.0	100.0	60.0	-	-	93.5	95.5	100.0	100.0	-	-	96.9	100.0	100.0	87.5	-	-	93.8	94.5
Buses	0	2	0	0	-	2	0	0	2	0	-	2	1	0	0	0	-	1	0	0	1	0	-	1	6
% Buses	0.0	6.3	0.0	-	-	4.1	0.0	0.0	40.0	-	-	6.5	4.5	0.0	0.0	-	-	3.1	0.0	0.0	12.5	-	-	6.3	4.7
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	3.1	0.0	-	-	2.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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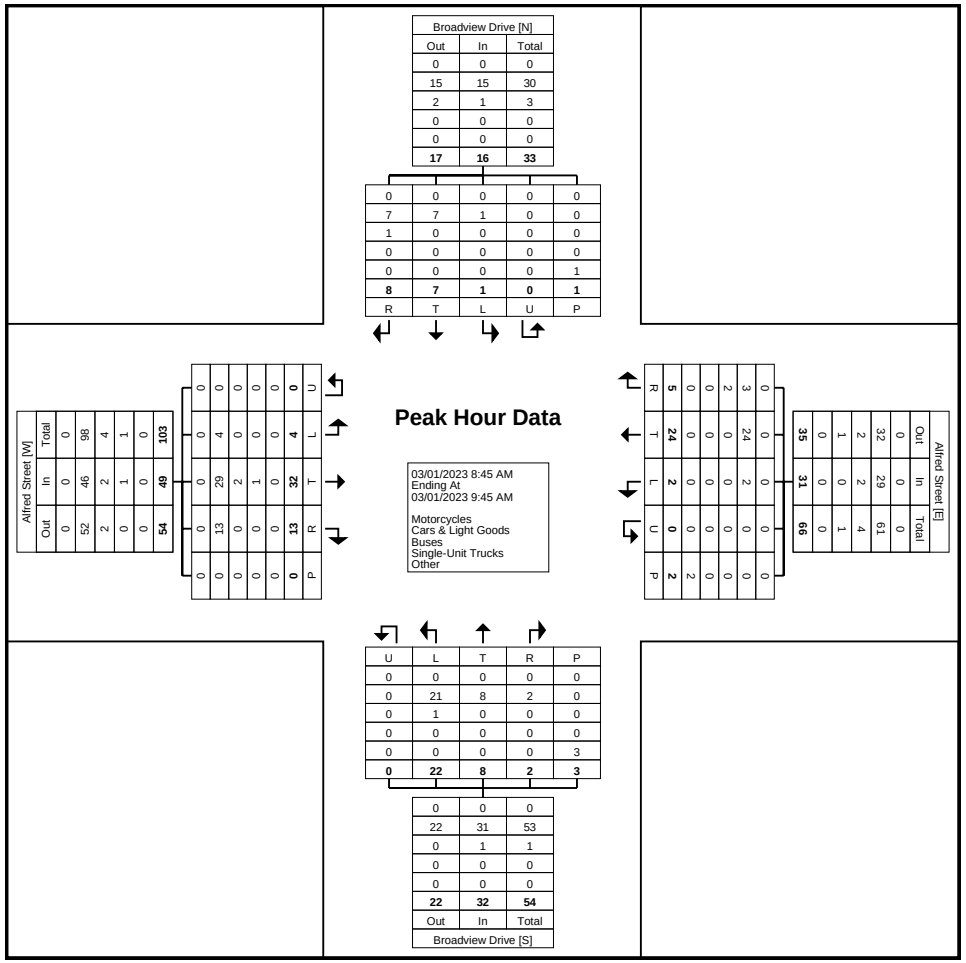
Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023


Broadview Drive [N]
Out In Total
0 0 0
15 15 30
2 1 3
0 0 0
0 0 0
17 16 33
0 0 0 0 0
7 7 1 0 0
1 0 0 0 0
0 0 0 0 0
0 0 0 0 1
8 7 1 0 1
R T L U P
Alfred Street [W]
Total In Out
0 0 0
98 46 52
4 2 2
1 1 0
0 0 0
103 49 54
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

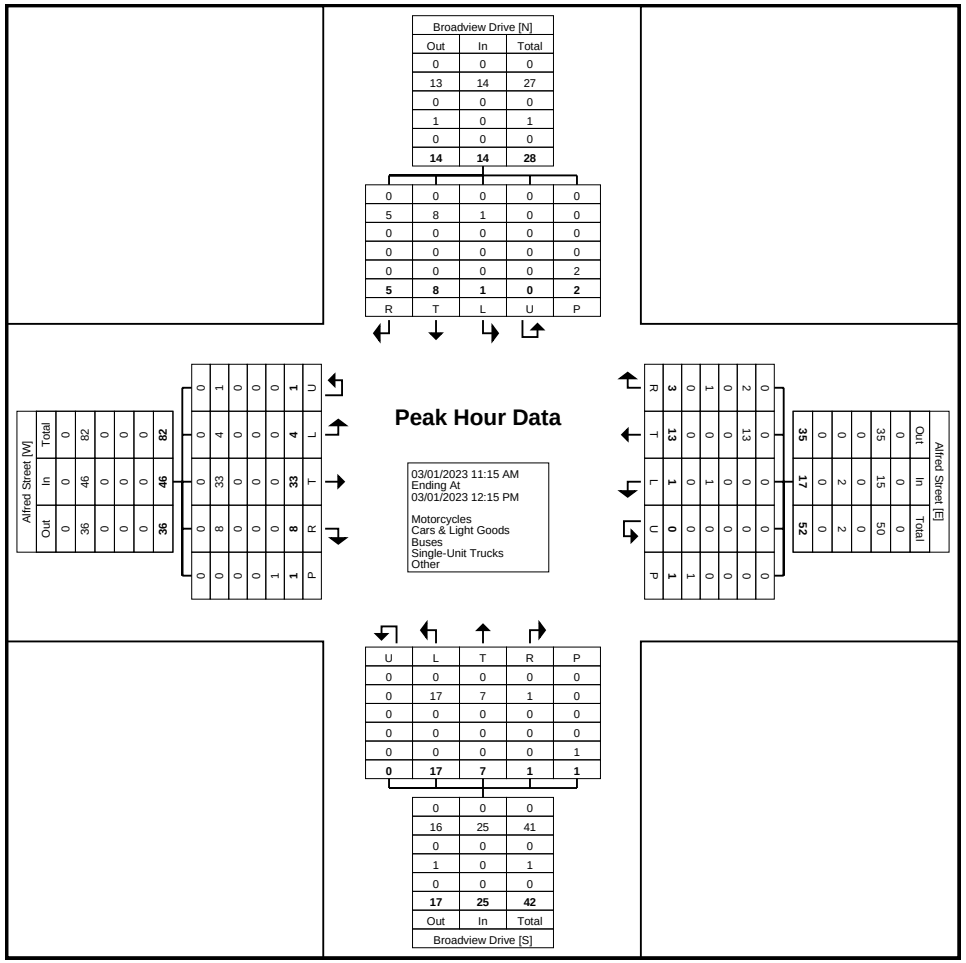
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive 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
11:15 AM	0	9	3	1	0	13	1	2	0	0	0	3	3	2	0	0	0	5	0	1	1	0	1	2	23
11:30 AM	1	7	2	0	0	10	0	1	1	0	0	2	7	3	1	0	1	11	0	2	2	0	1	4	27
11:45 AM	0	9	1	0	1	10	0	6	1	0	1	7	4	1	0	0	0	5	1	3	0	0	0	4	26
12:00 PM	3	8	2	0	0	13	0	4	1	0	0	5	3	1	0	0	0	4	0	2	2	0	0	4	26
Total	4	33	8	1	1	46	1	13	3	0	1	17	17	7	1	0	1	25	1	8	5	0	2	14	102
Approach %	8.7	71.7	17.4	2.2	-	-	5.9	76.5	17.6	0.0	-	-	68.0	28.0	4.0	0.0	-	-	7.1	57.1	35.7	0.0	-	-	-
Total %	3.9	32.4	7.8	1.0	-	45.1	1.0	12.7	2.9	0.0	-	16.7	16.7	6.9	1.0	0.0	-	24.5	1.0	7.8	4.9	0.0	-	13.7	-
PHF	0.333	0.917	0.667	0.250	-	0.885	0.250	0.542	0.750	0.000	-	0.607	0.607	0.583	0.250	0.000	-	0.568	0.250	0.667	0.625	0.000	-	0.875	0.944
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	0.0
Cars & Light Goods	4	33	8	1	-	46	0	13	2	0	-	15	17	7	1	0	-	25	1	8	5	0	-	14	100
% Cars & Light Goods	100.0	100.0	100.0	100.0	-	100.0	0.0	100.0	66.7	-	-	88.2	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	98.0
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	1	0	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Single-Unit Trucks	0.0	0.0	0.0	0.0	-	0.0	100.0	0.0	33.3	-	-	11.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

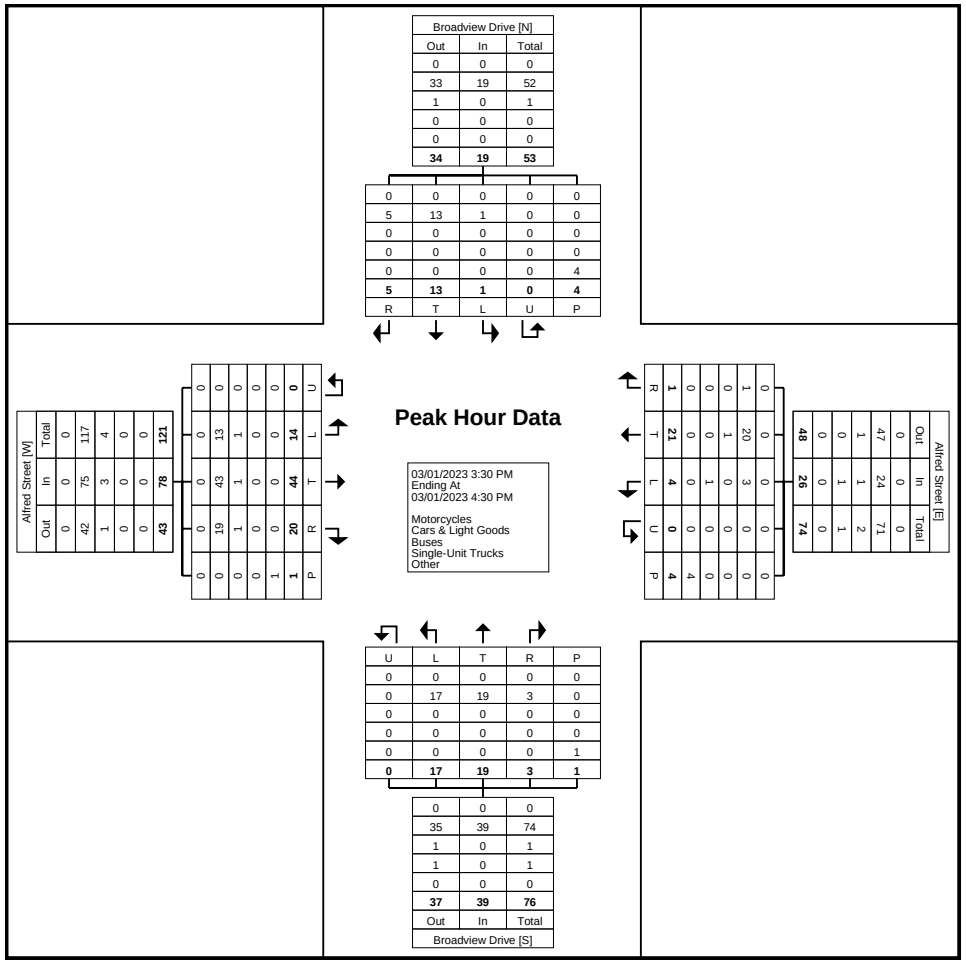
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive 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
3:30 PM	2	13	6	0	0	21	2	5	0	0	0	7	5	2	0	0	0	7	0	6	2	0	3	8	43
3:45 PM	4	4	2	0	1	10	1	7	0	0	0	8	5	9	2	0	0	16	0	2	2	0	1	4	38
4:00 PM	4	12	5	0	0	21	0	3	1	0	0	4	5	4	0	0	1	9	1	4	1	0	0	6	40
4:15 PM	4	15	7	0	0	26	1	6	0	0	4	7	2	4	1	0	0	7	0	1	0	0	0	1	41
Total	14	44	20	0	1	78	4	21	1	0	4	26	17	19	3	0	1	39	1	13	5	0	4	19	162
Approach %	17.9	56.4	25.6	0.0	-	-	15.4	80.8	3.8	0.0	-	-	43.6	48.7	7.7	0.0	-	-	5.3	68.4	26.3	0.0	-	-	-
Total %	8.6	27.2	12.3	0.0	-	48.1	2.5	13.0	0.6	0.0	-	16.0	10.5	11.7	1.9	0.0	-	24.1	0.6	8.0	3.1	0.0	-	11.7	-
PHF	0.875	0.733	0.714	0.000	-	0.750	0.500	0.750	0.250	0.000	-	0.813	0.850	0.528	0.375	0.000	-	0.609	0.250	0.542	0.625	0.000	-	0.594	0.942
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	13	43	19	0	-	75	3	20	1	0	-	24	17	19	3	0	-	39	1	13	5	0	-	19	157
% Cars & Light Goods	92.9	97.7	95.0	-	-	96.2	75.0	95.2	100.0	-	-	92.3	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	96.9
Buses	1	1	1	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	4
% Buses	7.1	2.3	5.0	-	-	3.8	0.0	4.8	0.0	-	-	3.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.5
Single-Unit Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	25.0	0.0	0.0	-	-	3.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

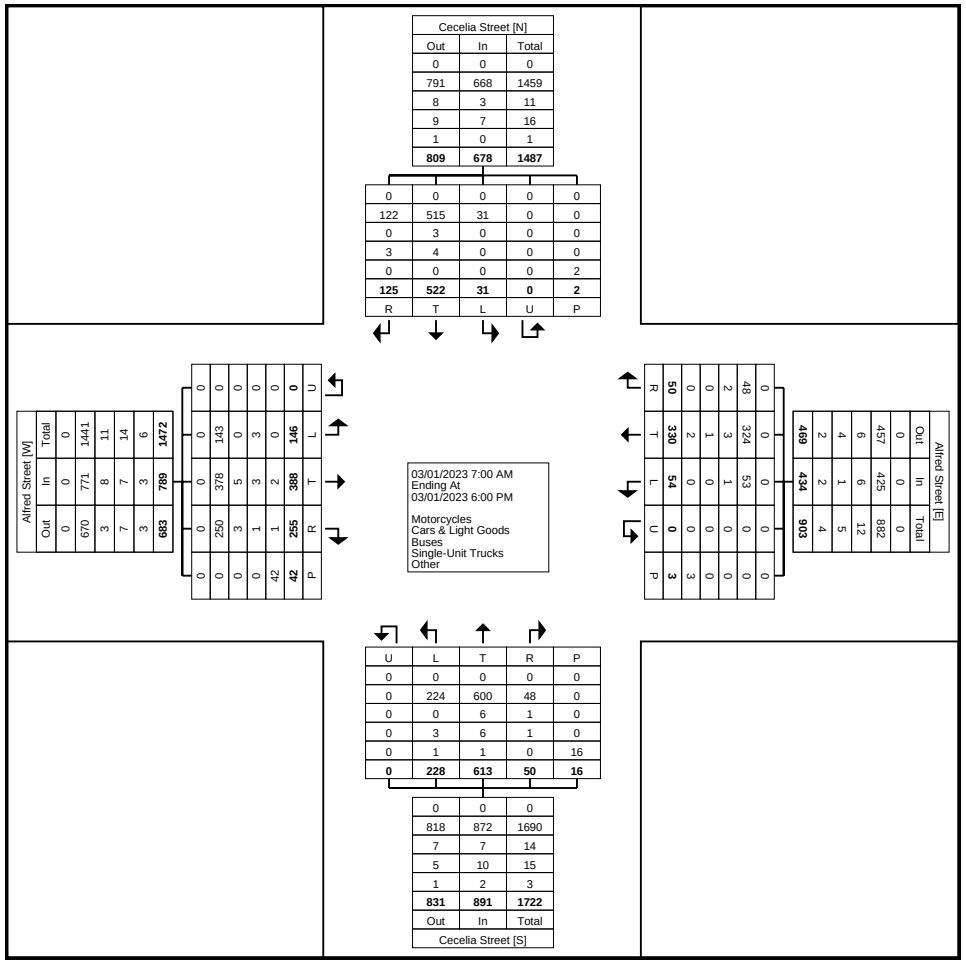
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	3	2	0	1	6	1	6	0	0	0	7	3	11	0	0	0	14	0	5	4	0	0	9	36
7:15 AM	1	6	1	0	0	8	3	9	0	0	0	12	6	11	2	0	0	19	0	7	1	0	0	8	47
7:30 AM	2	12	2	0	0	16	1	12	1	0	0	14	6	8	1	0	0	15	0	6	4	0	0	10	55
7:45 AM	6	8	11	0	0	25	3	8	3	0	0	14	4	11	1	0	2	16	0	17	4	0	0	21	76
Hourly Total	10	29	16	0	1	55	8	35	4	0	0	47	19	41	4	0	2	64	0	35	13	0	0	48	214
8:00 AM	2	12	7	0	0	21	1	15	2	0	0	18	11	17	1	0	0	29	0	8	3	0	0	11	79
8:15 AM	4	8	5	0	1	17	1	13	0	0	0	14	6	21	2	0	1	29	0	18	0	0	0	18	78
8:30 AM	3	6	9	0	0	18	1	15	2	0	0	18	8	14	0	0	0	22	0	16	8	0	0	24	82
8:45 AM	3	6	10	0	2	19	1	9	1	0	0	11	12	17	3	0	1	32	0	15	3	0	0	18	80
Hourly Total	12	32	31	0	3	75	4	52	5	0	0	61	37	69	6	0	2	112	0	57	14	0	0	71	319
9:00 AM	7	16	11	0	5	34	4	8	1	0	0	13	11	23	2	0	2	36	0	18	5	0	0	23	106
9:15 AM	8	17	15	0	5	40	2	21	3	0	2	26	10	26	1	0	0	37	0	12	3	0	0	15	118
9:30 AM	3	7	6	0	0	16	2	15	0	0	0	17	6	23	0	0	0	29	1	15	3	0	0	19	81
9:45 AM	1	10	16	0	0	27	0	8	1	0	0	9	9	25	1	0	1	35	3	14	2	0	0	19	90
Hourly Total	19	50	48	0	10	117	8	52	5	0	2	65	36	97	4	0	3	137	4	59	13	0	0	76	395
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	3	10	8	0	0	21	1	4	3	0	0	8	7	16	2	0	0	25	2	17	7	0	0	26	80
11:15 AM	3	11	3	0	3	17	1	10	1	0	0	12	4	19	1	0	1	24	2	17	6	0	0	25	78
11:30 AM	4	12	5	0	0	21	0	10	3	0	0	13	4	16	2	0	0	22	0	18	5	0	0	23	79
11:45 AM	7	8	9	0	0	24	0	15	2	0	0	17	7	19	0	0	0	26	1	15	2	0	0	18	85
Hourly Total	17	41	25	0	3	83	2	39	9	0	0	50	22	70	5	0	1	97	5	67	20	0	0	92	322
12:00 PM	10	15	5	0	1	30	1	11	0	0	0	12	3	24	2	0	0	29	2	25	3	0	0	30	101
12:15 PM	5	7	9	0	1	21	2	10	2	0	0	14	6	20	2	0	2	28	0	15	7	0	0	22	85
12:30 PM	3	9	3	0	1	15	5	7	4	0	0	16	16	28	2	0	0	46	1	10	1	0	0	12	89
12:45 PM	10	9	11	0	1	30	1	11	2	0	0	14	5	23	1	0	1	29	1	21	3	0	0	25	98
Hourly Total	28	40	28	0	4	96	9	39	8	0	0	56	30	95	7	0	3	132	4	71	14	0	0	89	373
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	15	9	0	1	28	4	7	1	0	0	12	7	23	2	0	1	32	0	18	6	0	0	24	96
3:15 PM	5	10	12	0	0	27	3	11	1	0	1	15	8	22	1	0	0	31	0	12	2	0	0	14	87
3:30 PM	5	22	12	0	6	39	4	12	1	0	0	17	7	29	4	0	2	40	1	27	6	0	1	34	130
3:45 PM	7	14	9	0	12	30	0	17	3	0	0	20	20	33	4	0	0	57	1	16	2	0	0	19	126
Hourly Total	21	61	42	0	19	124	11	47	6	0	1	64	42	107	11	0	3	160	2	73	16	0	1	91	439
4:00 PM	9	22	12	0	0	43	1	10	3	0	0	14	4	25	2	0	1	31	1	24	8	0	0	33	121
4:15 PM	5	22	12	0	0	39	3	10	1	0	0	14	6	25	2	0	0	33	1	23	6	0	0	30	116
4:30 PM	1	15	8	0	0	24	0	5	1	0	0	6	8	16	2	0	0	26	2	20	1	0	0	23	79

4:45 PM	6	16	6	0	0	28	2	10	4	0	0	16	6	22	1	0	0	29	3	19	3	0	1	25	98
Hourly Total	21	75	38	0	0	134	6	35	9	0	0	50	24	88	7	0	1	119	7	86	18	0	1	111	414
5:00 PM	5	20	11	0	0	36	3	12	0	0	0	15	4	13	3	0	0	20	4	27	2	0	0	33	104
5:15 PM	6	23	4	0	1	33	1	4	0	0	0	5	5	11	2	0	0	18	2	21	6	0	0	29	85
5:30 PM	4	9	3	0	1	16	0	5	3	0	0	8	3	17	1	0	1	21	2	15	4	0	0	21	66
5:45 PM	3	8	9	0	0	20	2	10	1	0	0	13	6	5	0	0	0	11	1	11	5	0	0	17	61
Hourly Total	18	60	27	0	2	105	6	31	4	0	0	41	18	46	6	0	1	70	9	74	17	0	0	100	316
Grand Total	146	388	255	0	42	789	54	330	50	0	3	434	228	613	50	0	16	891	31	522	125	0	2	678	2792
Approach %	18.5	49.2	32.3	0.0	-	-	12.4	76.0	11.5	0.0	-	-	25.6	68.8	5.6	0.0	-	-	4.6	77.0	18.4	0.0	-	-	-
Total %	5.2	13.9	9.1	0.0	-	28.3	1.9	11.8	1.8	0.0	-	15.5	8.2	22.0	1.8	0.0	-	31.9	1.1	18.7	4.5	0.0	-	24.3	-
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	143	378	250	0	-	771	53	324	48	0	-	425	224	600	48	0	-	872	31	515	122	0	-	668	2736
% Cars & Light Goods	97.9	97.4	98.0	-	-	97.7	98.1	98.2	96.0	-	-	97.9	98.2	97.9	96.0	-	-	97.9	100.0	98.7	97.6	-	-	98.5	98.0
Buses	0	5	3	0	-	8	1	3	2	0	-	6	0	6	1	0	-	7	0	3	0	0	-	3	24
% Buses	0.0	1.3	1.2	-	-	1.0	1.9	0.9	4.0	-	-	1.4	0.0	1.0	2.0	-	-	0.8	0.0	0.6	0.0	-	-	0.4	0.9
Single-Unit Trucks	3	3	1	0	-	7	0	1	0	0	-	1	3	6	1	0	-	10	0	4	3	0	-	7	25
% Single-Unit Trucks	2.1	0.8	0.4	-	-	0.9	0.0	0.3	0.0	-	-	0.2	1.3	1.0	2.0	-	-	1.1	0.0	0.8	2.4	-	-	1.0	0.9
Articulated Trucks	0	2	0	0	-	2	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.5	0.0	-	-	0.3	0.0	0.3	0.0	-	-	0.2	0.0	0.2	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	1	0	-	1	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.4	-	-	0.1	0.0	0.3	0.0	-	-	0.2	0.4	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	42	-	-	-	-	-	3	-	-	-	-	-	16	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023



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: Alfred Street & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (9:00 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia 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
9:00 AM	7	16	11	0	5	34	4	8	1	0	0	13	11	23	2	0	2	36	0	18	5	0	0	23	106
9:15 AM	8	17	15	0	5	40	2	21	3	0	2	26	10	26	1	0	0	37	0	12	3	0	0	15	118
9:30 AM	3	7	6	0	0	16	2	15	0	0	0	17	6	23	0	0	0	29	1	15	3	0	0	19	81
9:45 AM	1	10	16	0	0	27	0	8	1	0	0	9	9	25	1	0	1	35	3	14	2	0	0	19	90
Total	19	50	48	0	10	117	8	52	5	0	2	65	36	97	4	0	3	137	4	59	13	0	0	76	395
Approach %	16.2	42.7	41.0	0.0	-	-	12.3	80.0	7.7	0.0	-	-	26.3	70.8	2.9	0.0	-	-	5.3	77.6	17.1	0.0	-	-	-
Total %	4.8	12.7	12.2	0.0	-	29.6	2.0	13.2	1.3	0.0	-	16.5	9.1	24.6	1.0	0.0	-	34.7	1.0	14.9	3.3	0.0	-	19.2	-
PHF	0.594	0.735	0.750	0.000	-	0.731	0.500	0.619	0.417	0.000	-	0.625	0.818	0.933	0.500	0.000	-	0.926	0.333	0.819	0.650	0.000	-	0.826	0.837
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	19	48	47	0	-	114	7	50	5	0	-	62	36	94	4	0	-	134	4	57	13	0	-	74	384
% Cars & Light Goods	100.0	96.0	97.9	-	-	97.4	87.5	96.2	100.0	-	-	95.4	100.0	96.9	100.0	-	-	97.8	100.0	96.6	100.0	-	-	97.4	97.2
Buses	0	1	1	0	-	2	1	1	0	0	-	2	0	2	0	0	-	2	0	1	0	0	-	1	7
% Buses	0.0	2.0	2.1	-	-	1.7	12.5	1.9	0.0	-	-	3.1	0.0	2.1	0.0	-	-	1.5	0.0	1.7	0.0	-	-	1.3	1.8
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	2
% Single-Unit Trucks	0.0	2.0	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.7	0.0	-	-	1.3	0.5
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.9	0.0	-	-	1.5	0.0	1.0	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.5
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	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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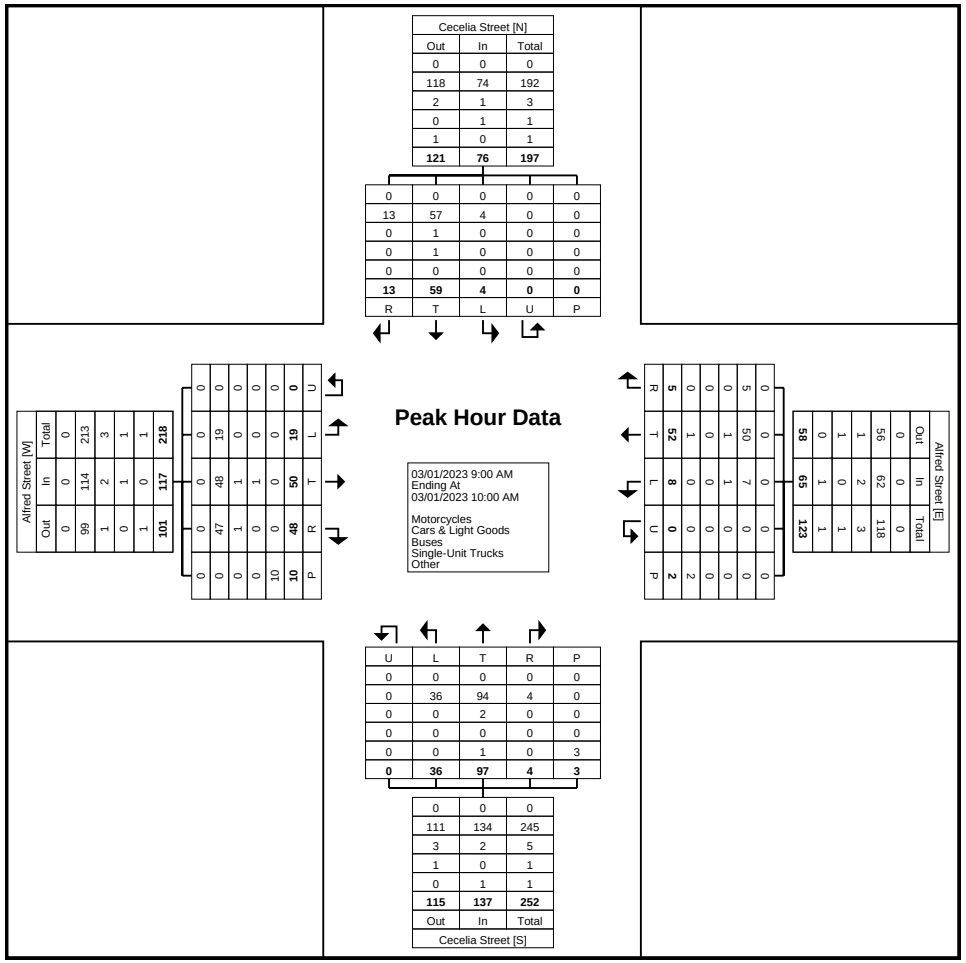
Cecelia Street [N]
Out In Total
0 0 0
118 74 192
2 1 3
0 1 1
1 0 1
121 76 197
0 0 0 0 0
13 57 4 0 0
0 1 0 0 0
0 1 0 0 0
0 0 0 0 0
13 59 4 0 0
R T L U P
Alfred Street [W]
Out In Total
0 0 0
99 114 213
1 2 3
1 1 1
0 0 1
101 117 218
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia 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
12:00 PM	10	15	5	0	1	30	1	11	0	0	0	12	3	24	2	0	0	29	2	25	3	0	0	30	101
12:15 PM	5	7	9	0	1	21	2	10	2	0	0	14	6	20	2	0	2	28	0	15	7	0	0	22	85
12:30 PM	3	9	3	0	1	15	5	7	4	0	0	16	16	28	2	0	0	46	1	10	1	0	0	12	89
12:45 PM	10	9	11	0	1	30	1	11	2	0	0	14	5	23	1	0	1	29	1	21	3	0	0	25	98
Total	28	40	28	0	4	96	9	39	8	0	0	56	30	95	7	0	3	132	4	71	14	0	0	89	373
Approach %	29.2	41.7	29.2	0.0	-	-	16.1	69.6	14.3	0.0	-	-	22.7	72.0	5.3	0.0	-	-	4.5	79.8	15.7	0.0	-	-	-
Total %	7.5	10.7	7.5	0.0	-	25.7	2.4	10.5	2.1	0.0	-	15.0	8.0	25.5	1.9	0.0	-	35.4	1.1	19.0	3.8	0.0	-	23.9	-
PHF	0.700	0.667	0.636	0.000	-	0.800	0.450	0.886	0.500	0.000	-	0.875	0.469	0.848	0.875	0.000	-	0.717	0.500	0.710	0.500	0.000	-	0.742	0.923
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	26	39	28	0	-	93	9	38	8	0	-	55	29	93	7	0	-	129	4	71	13	0	-	88	365
% Cars & Light Goods	92.9	97.5	100.0	-	-	96.9	100.0	97.4	100.0	-	-	98.2	96.7	97.9	100.0	-	-	97.7	100.0	100.0	92.9	-	-	98.9	97.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	2	1	0	0	-	3	0	0	0	0	-	0	1	2	0	0	-	3	0	0	1	0	-	1	7
% Single-Unit Trucks	7.1	2.5	0.0	-	-	3.1	0.0	0.0	0.0	-	-	0.0	3.3	2.1	0.0	-	-	2.3	0.0	0.0	7.1	-	-	1.1	1.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	2.6	0.0	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
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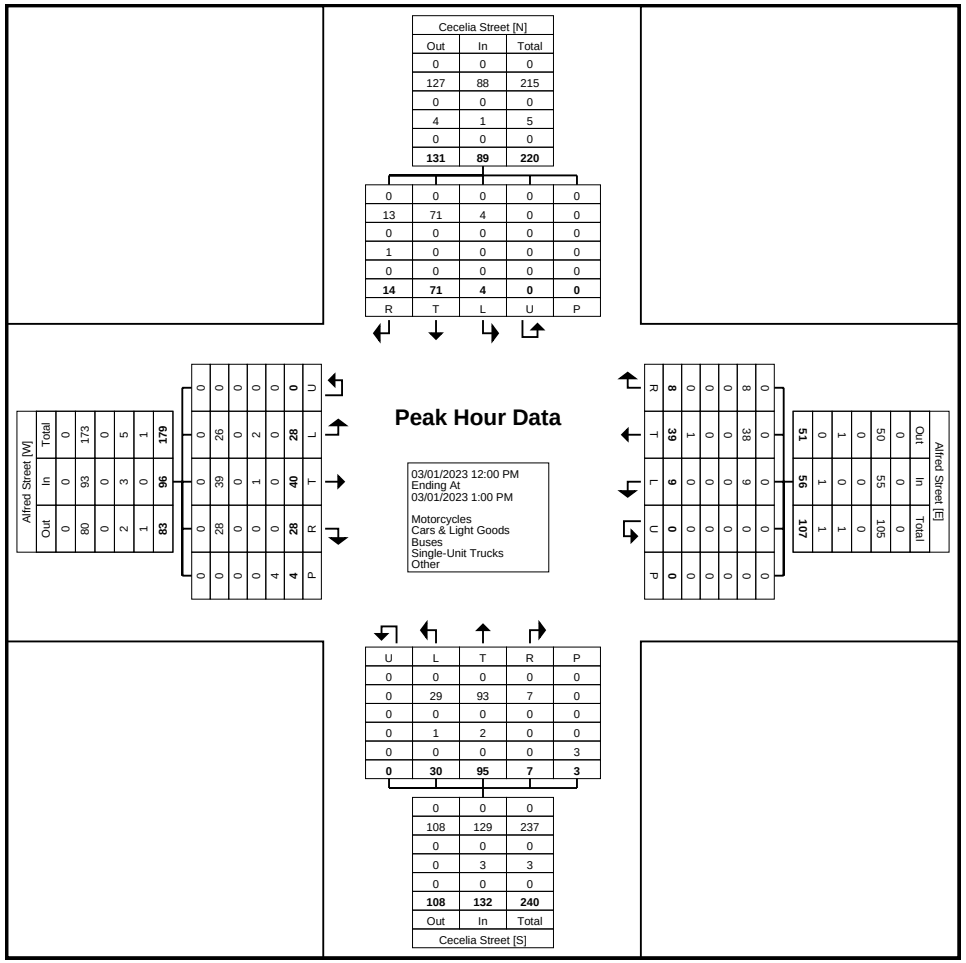

Turning Movement Peak Hour Data Plot (12:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia 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
3:30 PM	5	22	12	0	6	39	4	12	1	0	0	17	7	29	4	0	2	40	1	27	6	0	1	34	130
3:45 PM	7	14	9	0	12	30	0	17	3	0	0	20	20	33	4	0	0	57	1	16	2	0	0	19	126
4:00 PM	9	22	12	0	0	43	1	10	3	0	0	14	4	25	2	0	1	31	1	24	8	0	0	33	121
4:15 PM	5	22	12	0	0	39	3	10	1	0	0	14	6	25	2	0	0	33	1	23	6	0	0	30	116
Total	26	80	45	0	18	151	8	49	8	0	0	65	37	112	12	0	3	161	4	90	22	0	1	116	493
Approach %	17.2	53.0	29.8	0.0	-	-	12.3	75.4	12.3	0.0	-	-	23.0	69.6	7.5	0.0	-	-	3.4	77.6	19.0	0.0	-	-	-
Total %	5.3	16.2	9.1	0.0	-	30.6	1.6	9.9	1.6	0.0	-	13.2	7.5	22.7	2.4	0.0	-	32.7	0.8	18.3	4.5	0.0	-	23.5	-
PHF	0.722	0.909	0.938	0.000	-	0.878	0.500	0.721	0.667	0.000	-	0.813	0.463	0.848	0.750	0.000	-	0.706	1.000	0.833	0.688	0.000	-	0.853	0.948
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	26	79	44	0	-	149	8	48	7	0	-	63	37	109	11	0	-	157	4	87	22	0	-	113	482
% Cars & Light Goods	100.0	98.8	97.8	-	-	98.7	100.0	98.0	87.5	-	-	96.9	100.0	97.3	91.7	-	-	97.5	100.0	96.7	100.0	-	-	97.4	97.8
Buses	0	1	0	0	-	1	0	1	1	0	-	2	0	2	1	0	-	3	0	2	0	0	-	2	8
% Buses	0.0	1.3	0.0	-	-	0.7	0.0	2.0	12.5	-	-	3.1	0.0	1.8	8.3	-	-	1.9	0.0	2.2	0.0	-	-	1.7	1.6
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.6	0.0	1.1	0.0	-	-	0.9	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	2.2	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	18	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
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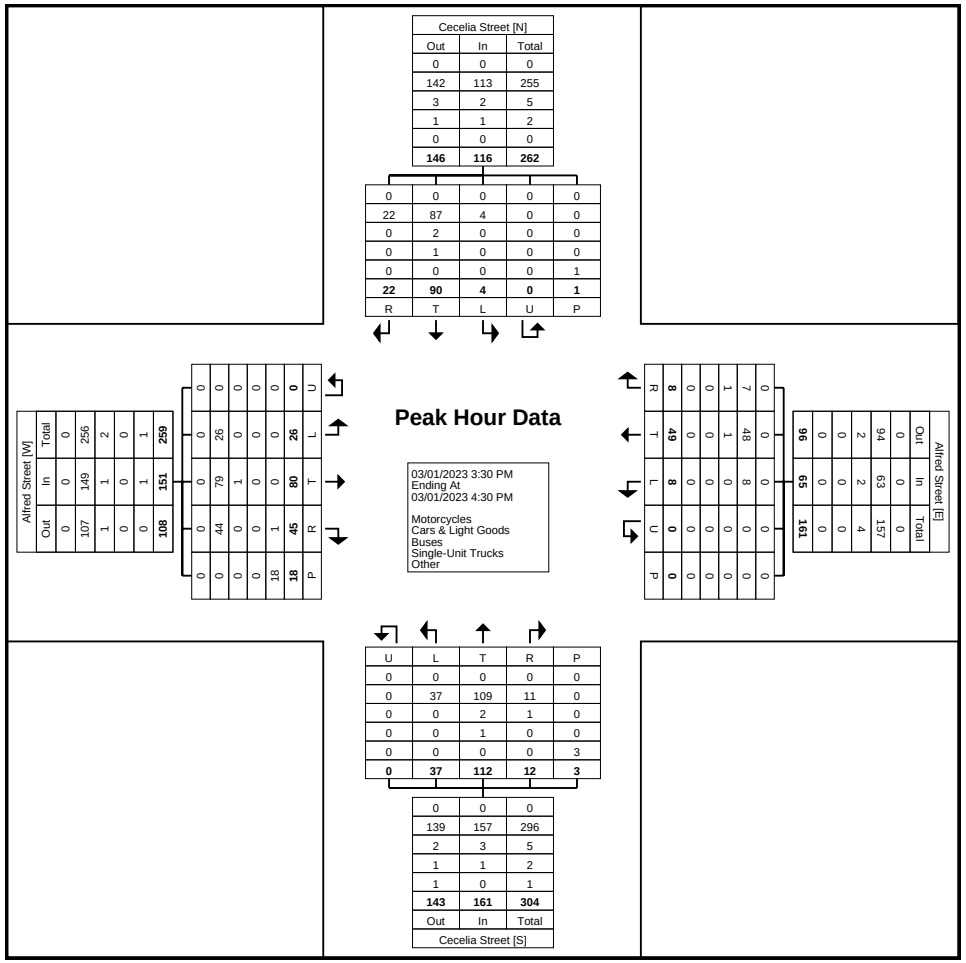


Turning Movement Peak Hour Data Plot (3:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

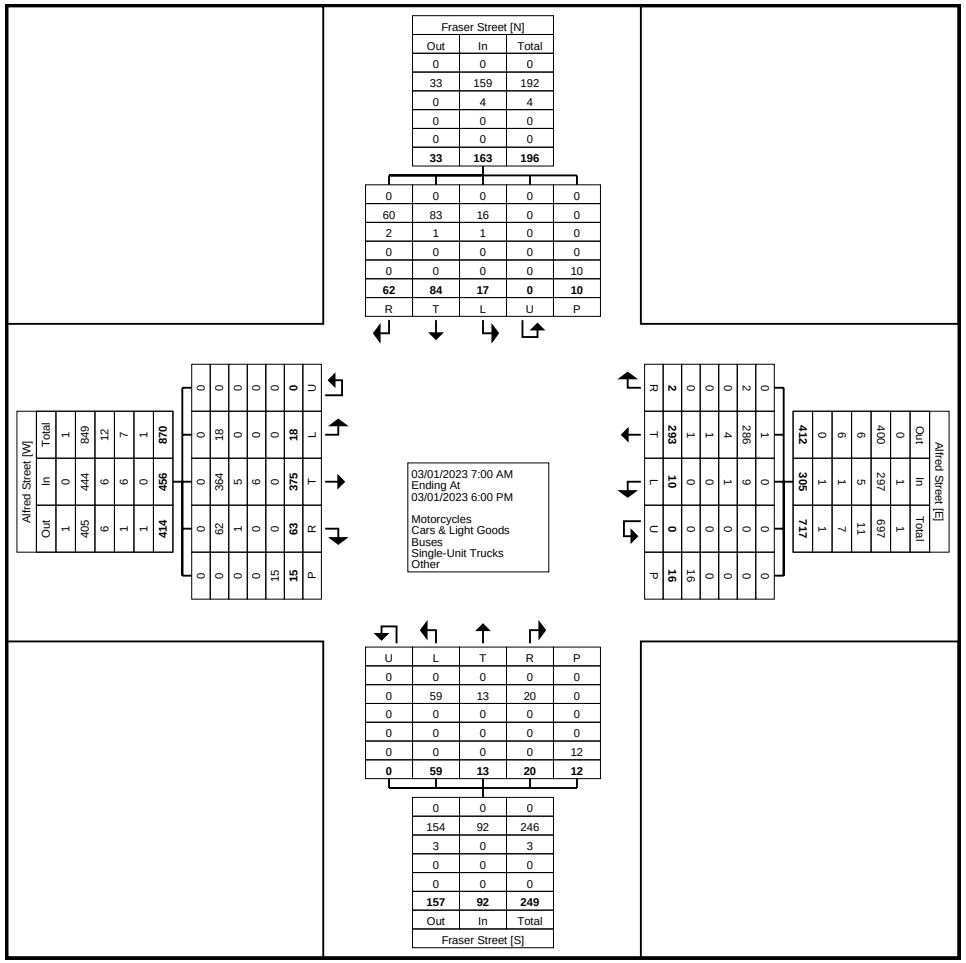
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	3	1	0	0	4	0	6	0	0	0	6	0	0	0	0	0	0	0	1	1	0	0	2	12
7:15 AM	1	8	0	0	0	9	0	9	0	0	1	9	1	0	0	0	1	1	0	1	1	0	0	2	21
7:30 AM	0	13	0	0	0	13	0	12	0	0	0	12	1	0	0	0	0	1	0	2	1	0	0	3	29
7:45 AM	0	9	0	0	1	9	1	12	0	0	0	13	1	0	0	0	2	1	0	3	1	0	1	4	27
Hourly Total	1	33	1	0	1	35	1	39	0	0	1	40	3	0	0	0	3	3	0	7	4	0	1	11	89
8:00 AM	0	11	2	0	1	13	0	11	0	0	0	11	1	0	1	0	0	2	0	1	5	0	1	6	32
8:15 AM	0	9	0	0	0	9	0	8	0	0	1	8	4	1	0	0	0	5	0	1	2	0	0	3	25
8:30 AM	0	6	0	0	0	6	0	11	0	0	0	11	3	0	0	0	0	3	0	0	2	0	0	2	22
8:45 AM	0	9	0	0	1	9	0	7	0	0	0	7	0	1	0	0	0	1	0	3	1	0	0	4	21
Hourly Total	0	35	2	0	2	37	0	37	0	0	1	37	8	2	1	0	0	11	0	5	10	0	1	15	100
9:00 AM	2	10	5	0	1	17	1	12	0	0	0	13	0	0	1	0	0	1	2	3	1	0	1	6	37
9:15 AM	1	15	3	0	0	19	0	19	0	0	0	19	3	0	1	0	0	4	1	5	1	0	0	7	49
9:30 AM	0	7	1	0	0	8	1	13	1	0	0	15	1	2	2	0	0	5	1	6	2	0	0	9	37
9:45 AM	0	11	1	0	0	12	0	6	0	0	1	6	2	0	0	0	0	2	1	6	0	0	0	7	27
Hourly Total	3	43	10	0	1	56	2	50	1	0	1	53	6	2	4	0	0	12	5	20	4	0	1	29	150
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	11	3	0	0	14	0	4	0	0	0	4	2	0	1	0	0	3	0	1	1	0	0	2	23
11:15 AM	2	11	1	0	1	14	0	8	0	0	1	8	3	0	0	0	0	3	2	4	1	0	0	7	32
11:30 AM	0	13	1	0	0	14	0	10	0	0	2	10	1	0	1	0	0	2	1	3	1	0	0	5	31
11:45 AM	0	7	2	0	0	9	0	10	0	0	0	10	2	0	0	0	0	2	0	4	5	0	0	9	30
Hourly Total	2	42	7	0	1	51	0	32	0	0	3	32	8	0	2	0	0	10	3	12	8	0	0	23	116
12:00 PM	0	12	4	0	0	16	2	9	0	0	0	11	1	1	0	0	0	2	2	2	2	0	0	6	35
12:15 PM	0	6	3	0	0	9	0	11	0	0	0	11	4	0	1	0	1	5	0	2	1	0	0	3	28
12:30 PM	0	9	1	0	0	10	0	6	0	0	0	6	4	0	0	0	0	4	0	3	1	0	0	4	24
12:45 PM	1	8	1	0	0	10	0	7	0	0	1	7	0	0	1	0	2	1	0	2	6	0	0	8	26
Hourly Total	1	35	9	0	0	45	2	33	0	0	1	35	9	1	2	0	3	12	2	9	10	0	0	21	113
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	16	2	0	1	19	0	6	0	0	1	6	1	0	0	0	0	1	0	1	4	0	1	5	31
3:15 PM	0	8	0	0	0	8	0	10	0	0	0	10	3	0	0	0	0	3	2	0	2	0	1	4	25
3:30 PM	1	21	5	0	0	27	1	11	0	0	0	12	4	2	1	0	2	7	0	3	3	0	1	6	52
3:45 PM	2	14	4	0	0	20	0	13	0	0	8	13	4	2	0	0	2	6	0	1	2	0	0	3	42
Hourly Total	4	59	11	0	1	74	1	40	0	0	9	41	12	4	1	0	4	17	2	5	11	0	3	18	150
4:00 PM	1	20	3	0	2	24	1	9	1	0	0	11	3	1	2	0	2	6	1	4	2	0	3	7	48
4:15 PM	1	23	1	0	0	25	0	9	0	0	0	9	0	1	1	0	0	2	0	3	5	0	0	8	44
4:30 PM	2	12	4	0	3	18	0	6	0	0	0	6	2	0	0	0	0	2	2	4	1	0	1	7	33

4:45 PM	0	17	2	0	1	19	1	11	0	0	0	12	3	0	3	0	0	6	0	1	0	0	0	1	38
Hourly Total	4	72	10	0	6	86	2	35	1	0	0	38	8	2	6	0	2	16	3	12	8	0	4	23	163
5:00 PM	1	20	5	0	1	26	0	9	0	0	0	9	1	1	2	0	0	4	0	6	4	0	0	10	49
5:15 PM	2	19	4	0	0	25	1	4	0	0	0	5	1	1	0	0	0	2	0	2	0	0	0	2	34
5:30 PM	0	10	2	0	1	12	0	6	0	0	0	6	2	0	1	0	0	3	2	3	0	0	0	5	26
5:45 PM	0	7	2	0	1	9	1	8	0	0	0	9	1	0	1	0	0	2	0	3	3	0	0	6	26
Hourly Total	3	56	13	0	3	72	2	27	0	0	0	29	5	2	4	0	0	11	2	14	7	0	0	23	135
Grand Total	18	375	63	0	15	456	10	293	2	0	16	305	59	13	20	0	12	92	17	84	62	0	10	163	1016
Approach %	3.9	82.2	13.8	0.0	-	-	3.3	96.1	0.7	0.0	-	-	64.1	14.1	21.7	0.0	-	-	10.4	51.5	38.0	0.0	-	-	-
Total %	1.8	36.9	6.2	0.0	-	44.9	1.0	28.8	0.2	0.0	-	30.0	5.8	1.3	2.0	0.0	-	9.1	1.7	8.3	6.1	0.0	-	16.0	-
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	18	364	62	0	-	444	9	286	2	0	-	297	59	13	20	0	-	92	16	83	60	0	-	159	992
% Cars & Light Goods	100.0	97.1	98.4	-	-	97.4	90.0	97.6	100.0	-	-	97.4	100.0	100.0	100.0	-	-	100.0	94.1	98.8	96.8	-	-	97.5	97.6
Buses	0	5	1	0	-	6	1	4	0	0	-	5	0	0	0	0	-	0	1	1	2	0	-	4	15
% Buses	0.0	1.3	1.6	-	-	1.3	10.0	1.4	0.0	-	-	1.6	0.0	0.0	0.0	-	-	0.0	5.9	1.2	3.2	-	-	2.5	1.5
Single-Unit Trucks	0	6	0	0	-	6	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	7
% Single-Unit Trucks	0.0	1.6	0.0	-	-	1.3	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	-	16	-	-	-	-	-	12	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023



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: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023

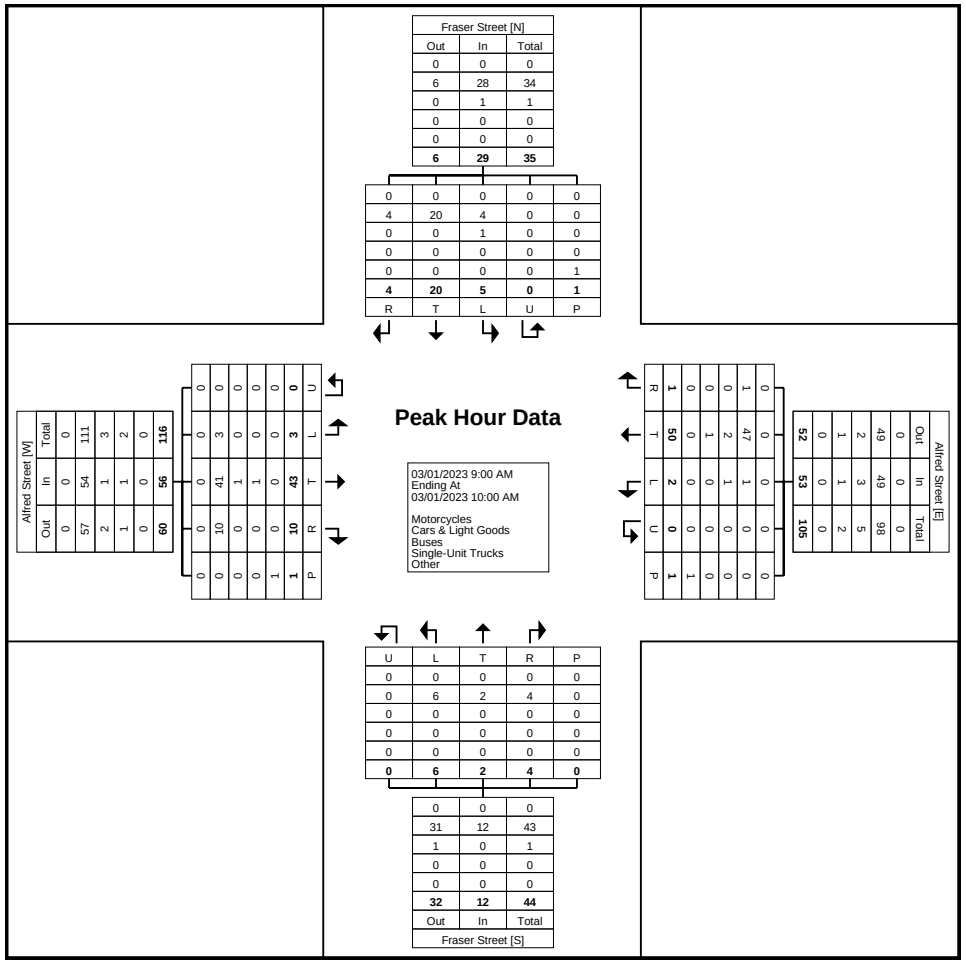
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser 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
9:00 AM	2	10	5	0	1	17	1	12	0	0	0	13	0	0	1	0	0	1	2	3	1	0	1	6	37
9:15 AM	1	15	3	0	0	19	0	19	0	0	0	19	3	0	1	0	0	4	1	5	1	0	0	7	49
9:30 AM	0	7	1	0	0	8	1	13	1	0	0	15	1	2	2	0	0	5	1	6	2	0	0	9	37
9:45 AM	0	11	1	0	0	12	0	6	0	0	1	6	2	0	0	0	0	2	1	6	0	0	0	7	27
Total	3	43	10	0	1	56	2	50	1	0	1	53	6	2	4	0	0	12	5	20	4	0	1	29	150
Approach %	5.4	76.8	17.9	0.0	-	-	3.8	94.3	1.9	0.0	-	-	50.0	16.7	33.3	0.0	-	-	17.2	69.0	13.8	0.0	-	-	-
Total %	2.0	28.7	6.7	0.0	-	37.3	1.3	33.3	0.7	0.0	-	35.3	4.0	1.3	2.7	0.0	-	8.0	3.3	13.3	2.7	0.0	-	19.3	-
PHF	0.375	0.717	0.500	0.000	-	0.737	0.500	0.658	0.250	0.000	-	0.697	0.500	0.250	0.500	0.000	-	0.600	0.625	0.833	0.500	0.000	-	0.806	0.765
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	41	10	0	-	54	1	47	1	0	-	49	6	2	4	0	-	12	4	20	4	0	-	28	143
% Cars & Light Goods	100.0	95.3	100.0	-	-	96.4	50.0	94.0	100.0	-	-	92.5	100.0	100.0	100.0	-	-	100.0	80.0	100.0	100.0	-	-	96.6	95.3
Buses	0	1	0	0	-	1	1	2	0	0	-	3	0	0	0	0	-	0	1	0	0	0	-	1	5
% Buses	0.0	2.3	0.0	-	-	1.8	50.0	4.0	0.0	-	-	5.7	0.0	0.0	0.0	-	-	0.0	20.0	0.0	0.0	-	-	3.4	3.3
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Single-Unit Trucks	0.0	2.3	0.0	-	-	1.8	0.0	2.0	0.0	-	-	1.9	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% 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: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023

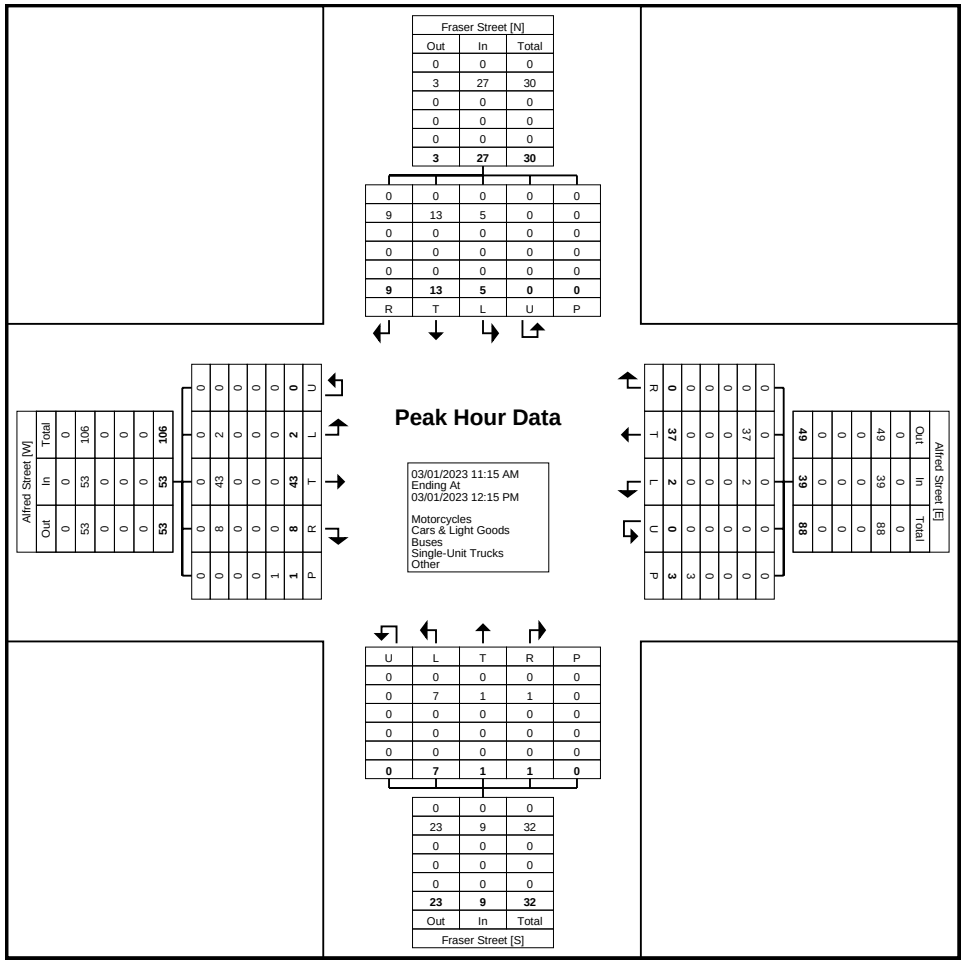
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser 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
11:15 AM	2	11	1	0	1	14	0	8	0	0	1	8	3	0	0	0	0	3	2	4	1	0	0	7	32
11:30 AM	0	13	1	0	0	14	0	10	0	0	2	10	1	0	1	0	0	2	1	3	1	0	0	5	31
11:45 AM	0	7	2	0	0	9	0	10	0	0	0	10	2	0	0	0	0	2	0	4	5	0	0	9	30
12:00 PM	0	12	4	0	0	16	2	9	0	0	0	11	1	1	0	0	0	2	2	2	2	0	0	6	35
Total	2	43	8	0	1	53	2	37	0	0	3	39	7	1	1	0	0	9	5	13	9	0	0	27	128
Approach %	3.8	81.1	15.1	0.0	-	-	5.1	94.9	0.0	0.0	-	-	77.8	11.1	11.1	0.0	-	-	18.5	48.1	33.3	0.0	-	-	-
Total %	1.6	33.6	6.3	0.0	-	41.4	1.6	28.9	0.0	0.0	-	30.5	5.5	0.8	0.8	0.0	-	7.0	3.9	10.2	7.0	0.0	-	21.1	-
PHF	0.250	0.827	0.500	0.000	-	0.828	0.250	0.925	0.000	0.000	-	0.886	0.583	0.250	0.250	0.000	-	0.750	0.625	0.813	0.450	0.000	-	0.750	0.914
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
Cars & Light Goods	2	43	8	0	-	53	2	37	0	0	-	39	7	1	1	0	-	9	5	13	9	0	-	27	128
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	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	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% 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: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser 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
3:30 PM	1	21	5	0	0	27	1	11	0	0	0	12	4	2	1	0	2	7	0	3	3	0	1	6	52
3:45 PM	2	14	4	0	0	20	0	13	0	0	8	13	4	2	0	0	2	6	0	1	2	0	0	3	42
4:00 PM	1	20	3	0	2	24	1	9	1	0	0	11	3	1	2	0	2	6	1	4	2	0	3	7	48
4:15 PM	1	23	1	0	0	25	0	9	0	0	0	9	0	1	1	0	0	2	0	3	5	0	0	8	44
Total	5	78	13	0	2	96	2	42	1	0	8	45	11	6	4	0	6	21	1	11	12	0	4	24	186
Approach %	5.2	81.3	13.5	0.0	-	-	4.4	93.3	2.2	0.0	-	-	52.4	28.6	19.0	0.0	-	-	4.2	45.8	50.0	0.0	-	-	-
Total %	2.7	41.9	7.0	0.0	-	51.6	1.1	22.6	0.5	0.0	-	24.2	5.9	3.2	2.2	0.0	-	11.3	0.5	5.9	6.5	0.0	-	12.9	-
PHF	0.625	0.848	0.650	0.000	-	0.889	0.500	0.808	0.250	0.000	-	0.865	0.688	0.750	0.500	0.000	-	0.750	0.250	0.688	0.600	0.000	-	0.750	0.894
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	5	75	13	0	-	93	2	41	1	0	-	44	11	6	4	0	-	21	1	10	11	0	-	22	180
% Cars & Light Goods	100.0	96.2	100.0	-	-	96.9	100.0	97.6	100.0	-	-	97.8	100.0	100.0	100.0	-	-	100.0	100.0	90.9	91.7	-	-	91.7	96.8
Buses	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	1	1	0	-	2	6
% Buses	0.0	3.8	0.0	-	-	3.1	0.0	2.4	0.0	-	-	2.2	0.0	0.0	0.0	-	-	0.0	0.0	9.1	8.3	-	-	8.3	3.2
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	6	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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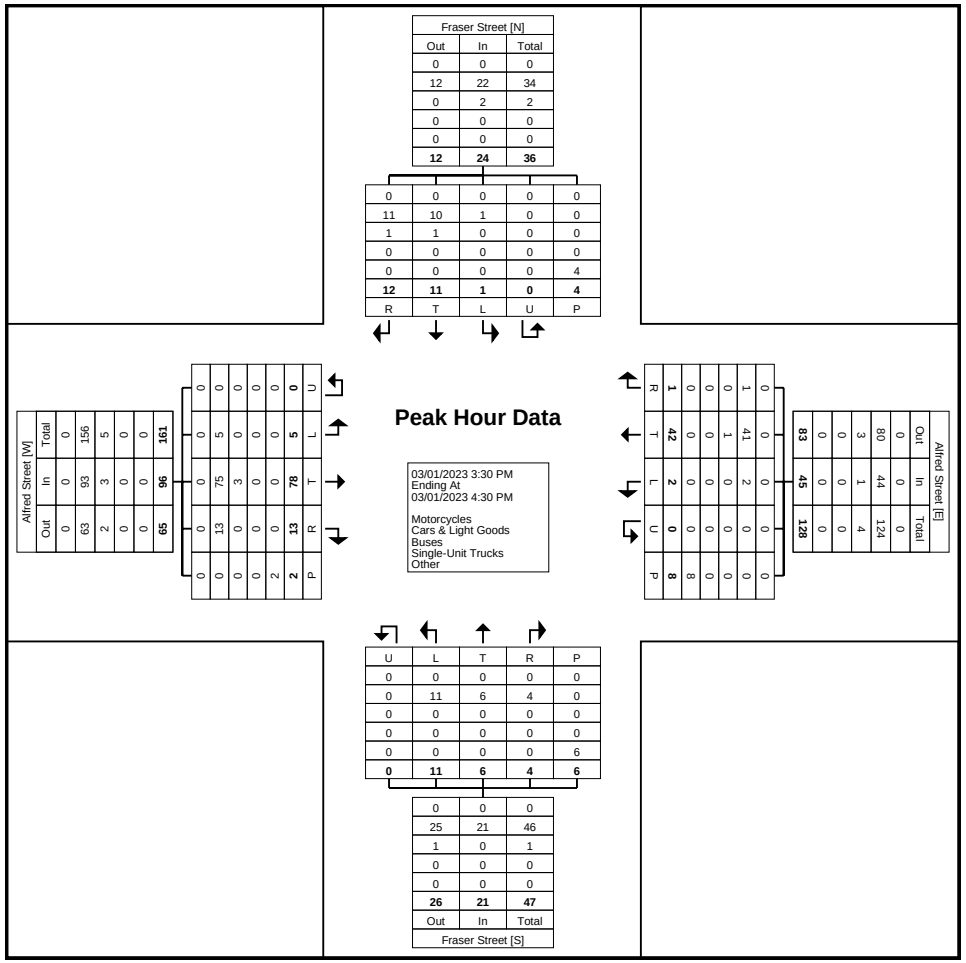
Count Name: Alfred Street & Fraser Street
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

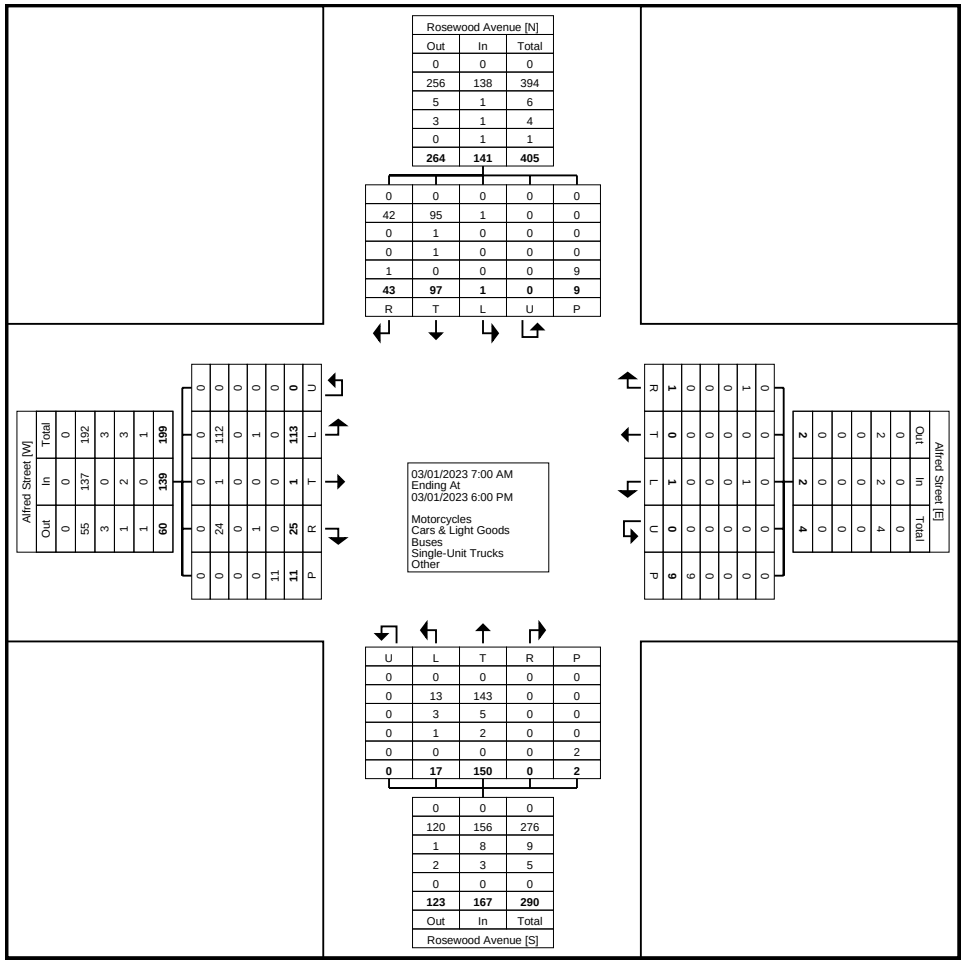
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
7:15 AM	4	0	0	0	0	4	0	0	0	0	0	0	1	4	0	0	0	5	0	1	0	0	0	1	10
7:30 AM	4	0	1	0	0	5	0	0	0	0	0	0	1	2	0	0	0	3	0	1	0	0	0	1	9
7:45 AM	4	0	1	0	0	5	0	0	0	0	0	0	0	2	0	0	0	2	0	6	0	0	1	6	13
Hourly Total	13	0	2	0	0	15	0	0	0	0	0	0	2	8	0	0	0	10	0	8	2	0	1	10	35
8:00 AM	6	0	0	0	0	6	0	0	0	0	0	0	1	5	0	0	0	6	0	2	2	0	0	4	16
8:15 AM	3	0	0	0	0	3	0	0	0	0	0	0	1	4	0	0	0	5	0	2	0	0	0	2	10
8:30 AM	2	0	0	0	0	2	0	0	0	0	0	0	1	4	0	0	0	5	0	3	1	0	1	4	11
8:45 AM	4	0	0	0	0	4	0	0	0	0	0	0	0	10	0	0	0	10	1	2	1	0	1	4	18
Hourly Total	15	0	0	0	0	15	0	0	0	0	0	0	3	23	0	0	0	26	1	9	4	0	2	14	55
9:00 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	8	0	0	0	8	0	4	0	0	0	4	15
9:15 AM	5	0	1	0	1	6	0	0	0	0	1	0	3	6	0	0	1	9	0	6	2	0	0	8	23
9:30 AM	1	0	2	0	0	3	0	0	0	0	0	0	0	5	0	0	0	5	0	2	2	0	0	4	12
9:45 AM	4	0	0	0	3	4	0	0	0	0	0	0	0	2	0	0	0	2	0	4	0	0	0	4	10
Hourly Total	10	0	6	0	4	16	0	0	0	0	1	0	3	21	0	0	1	24	0	16	4	0	0	20	60
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	1	0	1	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	5	2	0	0	7	11
11:15 AM	2	0	0	0	3	2	0	0	0	0	0	0	0	2	0	0	1	2	0	1	1	0	0	2	6
11:30 AM	2	0	1	0	0	3	0	0	1	0	0	1	1	2	0	0	0	3	0	1	0	0	0	1	8
11:45 AM	4	0	1	0	0	5	1	0	0	0	0	1	0	5	0	0	0	5	0	4	1	0	0	5	16
Hourly Total	9	0	3	0	3	12	1	0	1	0	0	2	1	11	0	0	1	12	0	11	4	0	0	15	41
12:00 PM	2	1	0	0	0	3	0	0	0	0	1	0	0	4	0	0	0	4	0	3	2	0	0	5	12
12:15 PM	3	0	0	0	0	3	0	0	0	0	0	0	0	6	0	0	0	6	0	4	2	0	0	6	15
12:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	0	1	1	0	0	2	9
12:45 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	3	0	0	0	3	6
Hourly Total	8	1	0	0	0	9	0	0	0	0	1	0	0	17	0	0	0	17	0	11	5	0	0	16	42
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	5	0	1	0	0	6	0	0	0	0	0	0	1	4	0	0	0	5	0	2	1	0	0	3	14
3:15 PM	5	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	0	3	0	2	3	0	1	5	13
3:30 PM	4	0	5	0	0	9	0	0	0	0	0	0	0	7	0	0	0	7	0	7	3	0	1	10	26
3:45 PM	4	0	2	0	0	6	0	0	0	0	3	0	4	12	0	0	0	16	0	3	2	0	2	5	27
Hourly Total	18	0	8	0	0	26	0	0	0	0	3	0	5	26	0	0	0	31	0	14	9	0	4	23	80
4:00 PM	6	0	1	0	1	7	0	0	0	0	0	0	0	7	0	0	0	7	0	2	0	0	0	2	16
4:15 PM	6	0	0	0	1	6	0	0	0	0	0	0	0	5	0	0	0	5	0	1	4	0	0	5	16
4:30 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	3	1	0	0	4	8

4:45 PM	2	0	1	0	0	3	0	0	0	0	0	0	0	6	0	0	0	6	0	4	4	0	0	8	17
Hourly Total	16	0	2	0	2	18	0	0	0	0	0	0	0	20	0	0	0	20	0	10	9	0	0	19	57
5:00 PM	6	0	3	0	0	9	0	0	0	0	2	0	1	8	0	0	0	9	0	4	1	0	0	5	23
5:15 PM	8	0	0	0	0	8	0	0	0	0	2	0	0	7	0	0	0	7	0	7	1	0	1	8	23
5:30 PM	6	0	1	0	2	7	0	0	0	0	0	0	2	5	0	0	0	7	0	5	0	0	1	5	19
5:45 PM	4	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	4	0	2	4	0	0	6	14
Hourly Total	24	0	4	0	2	28	0	0	0	0	4	0	3	24	0	0	0	27	0	18	6	0	2	24	79
Grand Total	113	1	25	0	11	139	1	0	1	0	9	2	17	150	0	0	2	167	1	97	43	0	9	141	449
Approach %	81.3	0.7	18.0	0.0	-	-	50.0	0.0	50.0	0.0	-	-	10.2	89.8	0.0	0.0	-	-	0.7	68.8	30.5	0.0	-	-	-
Total %	25.2	0.2	5.6	0.0	-	31.0	0.2	0.0	0.2	0.0	-	0.4	3.8	33.4	0.0	0.0	-	37.2	0.2	21.6	9.6	0.0	-	31.4	-
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
Cars & Light Goods	112	1	24	0	-	137	1	0	1	0	-	2	13	143	0	0	-	156	1	95	42	0	-	138	433
% Cars & Light Goods	99.1	100.0	96.0	-	-	98.6	100.0	-	100.0	-	-	100.0	76.5	95.3	-	-	-	93.4	100.0	97.9	97.7	-	-	97.9	96.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	3	5	0	0	-	8	0	1	0	0	-	1	9
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	17.6	3.3	-	-	-	4.8	0.0	1.0	0.0	-	-	0.7	2.0
Single-Unit Trucks	1	0	1	0	-	2	0	0	0	0	-	0	1	2	0	0	-	3	0	1	0	0	-	1	6
% Single-Unit Trucks	0.9	0.0	4.0	-	-	1.4	0.0	-	0.0	-	-	0.0	5.9	1.3	-	-	-	1.8	0.0	1.0	0.0	-	-	0.7	1.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	2.3	-	-	0.7	0.2
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	9	-	-	-	-	-	2	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023


Rosewood Avenue [N]
Out In Total
0 0 0
256 138 394
5 1 6
3 1 4
0 1 1
264 141 405
0 0 0 0 0
42 95 1 0 0
0 1 0 0 0
0 1 0 0 0
1 0 0 0 9
43 97 1 0 9
R T L U P
Alfred Street [W]
Out In Total
0 0 0
55 137 192
3 0 3
3 2 3
1 0 1
60 139 199
0 0 0 0

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Count Name: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (8:45 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue 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
8:45 AM	4	0	0	0	0	4	0	0	0	0	0	0	0	10	0	0	0	10	1	2	1	0	1	4	18
9:00 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	8	0	0	0	8	0	4	0	0	0	4	15
9:15 AM	5	0	1	0	1	6	0	0	0	0	1	0	3	6	0	0	1	9	0	6	2	0	0	8	23
9:30 AM	1	0	2	0	0	3	0	0	0	0	0	0	0	5	0	0	0	5	0	2	2	0	0	4	12
Total	10	0	6	0	1	16	0	0	0	0	1	0	3	29	0	0	1	32	1	14	5	0	1	20	68
Approach %	62.5	0.0	37.5	0.0	-	-	0.0	0.0	0.0	0.0	-	-	9.4	90.6	0.0	0.0	-	-	5.0	70.0	25.0	0.0	-	-	-
Total %	14.7	0.0	8.8	0.0	-	23.5	0.0	0.0	0.0	0.0	-	0.0	4.4	42.6	0.0	0.0	-	47.1	1.5	20.6	7.4	0.0	-	29.4	-
PHF	0.500	0.000	0.500	0.000	-	0.667	0.000	0.000	0.000	0.000	-	0.000	0.250	0.725	0.000	0.000	-	0.800	0.250	0.583	0.625	0.000	-	0.625	0.739
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	10	0	5	0	-	15	0	0	0	0	-	0	1	26	0	0	-	27	1	13	5	0	-	19	61
% Cars & Light Goods	100.0	-	83.3	-	-	93.8	-	-	-	-	-	-	33.3	89.7	-	-	-	84.4	100.0	92.9	100.0	-	-	95.0	89.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	2	2	0	0	-	4	0	0	0	0	-	0	4
% Buses	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	66.7	6.9	-	-	-	12.5	0.0	0.0	0.0	-	-	0.0	5.9
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	3
% Single-Unit Trucks	0.0	-	16.7	-	-	6.3	-	-	-	-	-	-	0.0	3.4	-	-	-	3.1	0.0	7.1	0.0	-	-	5.0	4.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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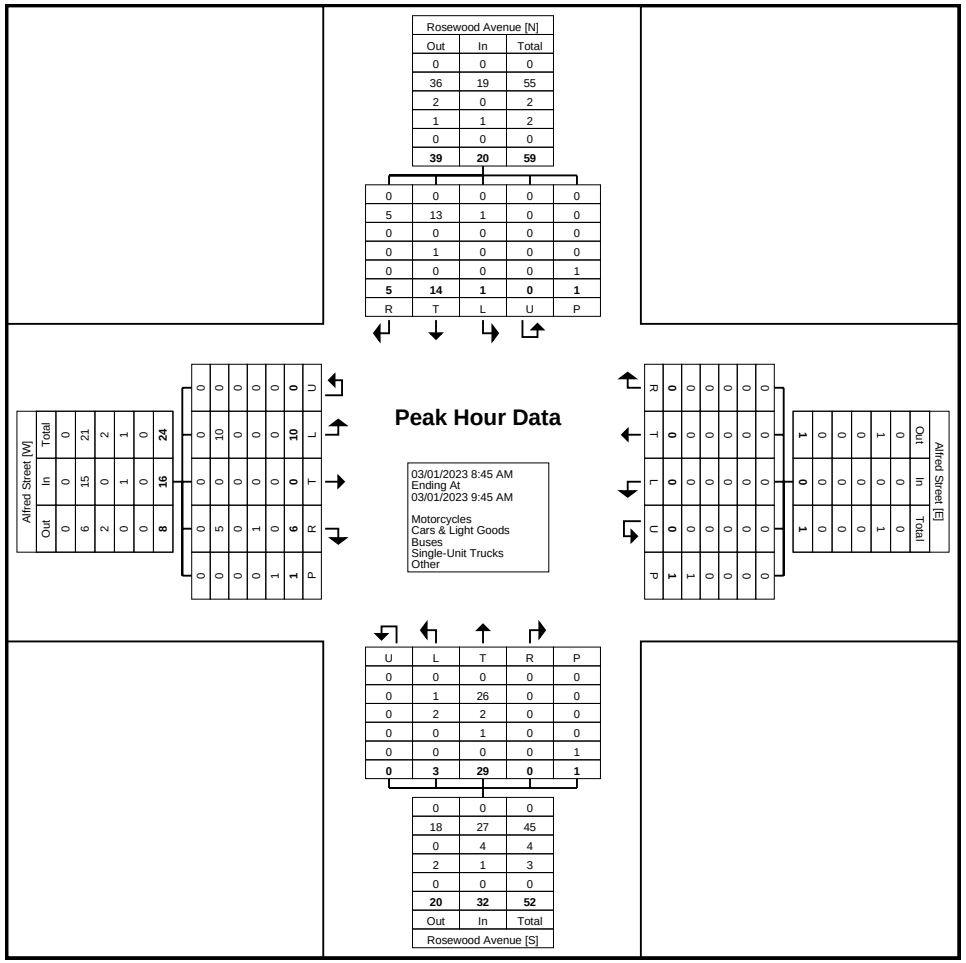
Start Date: 03/01/2023


Rosewood Avenue [N]
Out In Total
0 0 0
36 19 55
2 0 2
1 1 2
0 0 0
39 20 59
0 0 0 0 0
5 13 1 0 0
0 0 0 0 0
0 1 0 0 0
0 0 0 0 1
5 14 1 0 1
R T L U P
Alfred Street [W]
Out In Total
0 0 0
6 15 21
2 0 2
0 1 1
0 0 0
8 16 24
0 0 0 0

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Count Name: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue 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
11:45 AM	4	0	1	0	0	5	1	0	0	0	0	1	0	5	0	0	0	5	0	4	1	0	0	5	16
12:00 PM	2	1	0	0	0	3	0	0	0	0	1	0	0	4	0	0	0	4	0	3	2	0	0	5	12
12:15 PM	3	0	0	0	0	3	0	0	0	0	0	0	0	6	0	0	0	6	0	4	2	0	0	6	15
12:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	0	1	1	0	0	2	9
Total	10	1	1	0	0	12	1	0	0	0	1	1	0	21	0	0	0	21	0	12	6	0	0	18	52
Approach %	83.3	8.3	8.3	0.0	-	-	100.0	0.0	0.0	0.0	-	-	0.0	100.0	0.0	0.0	-	-	0.0	66.7	33.3	0.0	-	-	-
Total %	19.2	1.9	1.9	0.0	-	23.1	1.9	0.0	0.0	0.0	-	1.9	0.0	40.4	0.0	0.0	-	40.4	0.0	23.1	11.5	0.0	-	34.6	-
PHF	0.625	0.250	0.250	0.000	-	0.600	0.250	0.000	0.000	0.000	-	0.250	0.000	0.875	0.000	0.000	-	0.875	0.000	0.750	0.750	0.000	-	0.750	0.813
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
Cars & Light Goods	10	1	1	0	-	12	1	0	0	0	-	1	0	21	0	0	-	21	0	12	6	0	-	18	52
% Cars & Light Goods	100.0	100.0	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	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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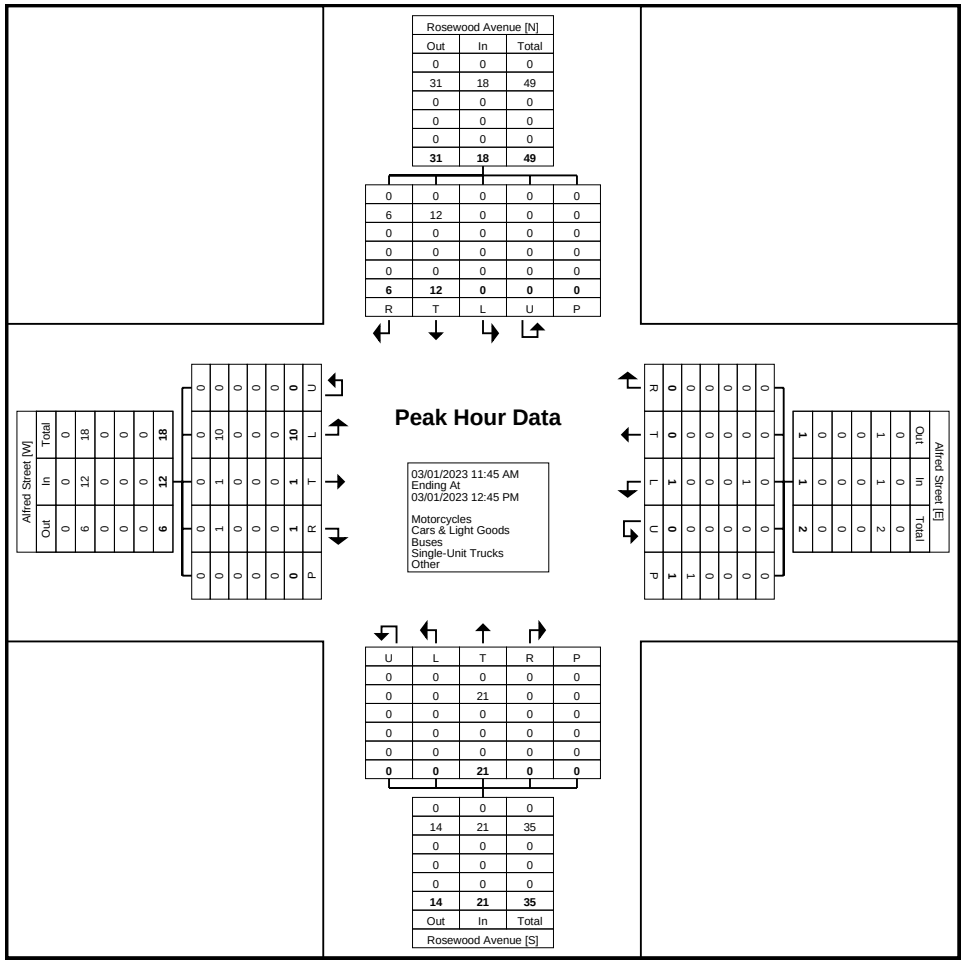
Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023

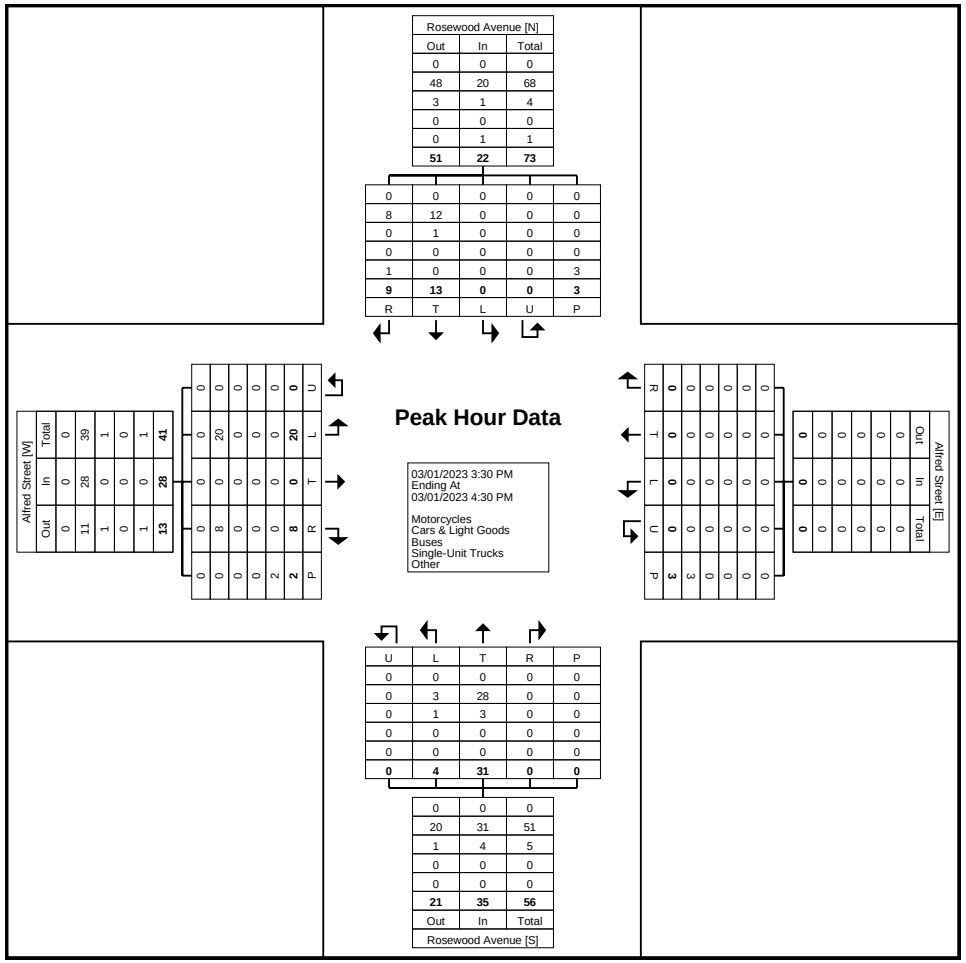
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue 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
3:30 PM	4	0	5	0	0	9	0	0	0	0	0	0	0	7	0	0	0	7	0	7	3	0	1	10	26
3:45 PM	4	0	2	0	0	6	0	0	0	0	3	0	4	12	0	0	0	16	0	3	2	0	2	5	27
4:00 PM	6	0	1	0	1	7	0	0	0	0	0	0	0	7	0	0	0	7	0	2	0	0	0	2	16
4:15 PM	6	0	0	0	1	6	0	0	0	0	0	0	0	5	0	0	0	5	0	1	4	0	0	5	16
Total	20	0	8	0	2	28	0	0	0	0	3	0	4	31	0	0	0	35	0	13	9	0	3	22	85
Approach %	71.4	0.0	28.6	0.0	-	-	0.0	0.0	0.0	0.0	-	-	11.4	88.6	0.0	0.0	-	-	0.0	59.1	40.9	0.0	-	-	-
Total %	23.5	0.0	9.4	0.0	-	32.9	0.0	0.0	0.0	0.0	-	0.0	4.7	36.5	0.0	0.0	-	41.2	0.0	15.3	10.6	0.0	-	25.9	-
PHF	0.833	0.000	0.400	0.000	-	0.778	0.000	0.000	0.000	0.000	-	0.000	0.250	0.646	0.000	0.000	-	0.547	0.000	0.464	0.563	0.000	-	0.550	0.787
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	20	0	8	0	-	28	0	0	0	0	-	0	3	28	0	0	-	31	0	12	8	0	-	20	79
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	-	-	-	-	-	-	75.0	90.3	-	-	-	88.6	-	92.3	88.9	-	-	90.9	92.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	1	3	0	0	-	4	0	1	0	0	-	1	5
% Buses	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	25.0	9.7	-	-	-	11.4	-	7.7	0.0	-	-	4.5	5.9
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	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	1	0	-	1	1
% Articulated Trucks	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	11.1	-	-	4.5	1.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	-	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% 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: Alfred Street & Rosewood Avenue
Site Code: 220694
Start Date: 03/01/2023


Rosewood Avenue [N]
Out In Total
0 0 0
48 20 68
3 1 4
0 0 0
0 1 1
51 22 73
0 0 0 0 0
8 12 0 0 0
0 1 0 0 0
0 0 0 0 0
1 0 0 0 3
9 13 0 0 3
R T L U P
Alfred Street [W]
Out In Total
0 0 0
11 28 39
1 0 1
0 0 0
0 0 1
13 28 41
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

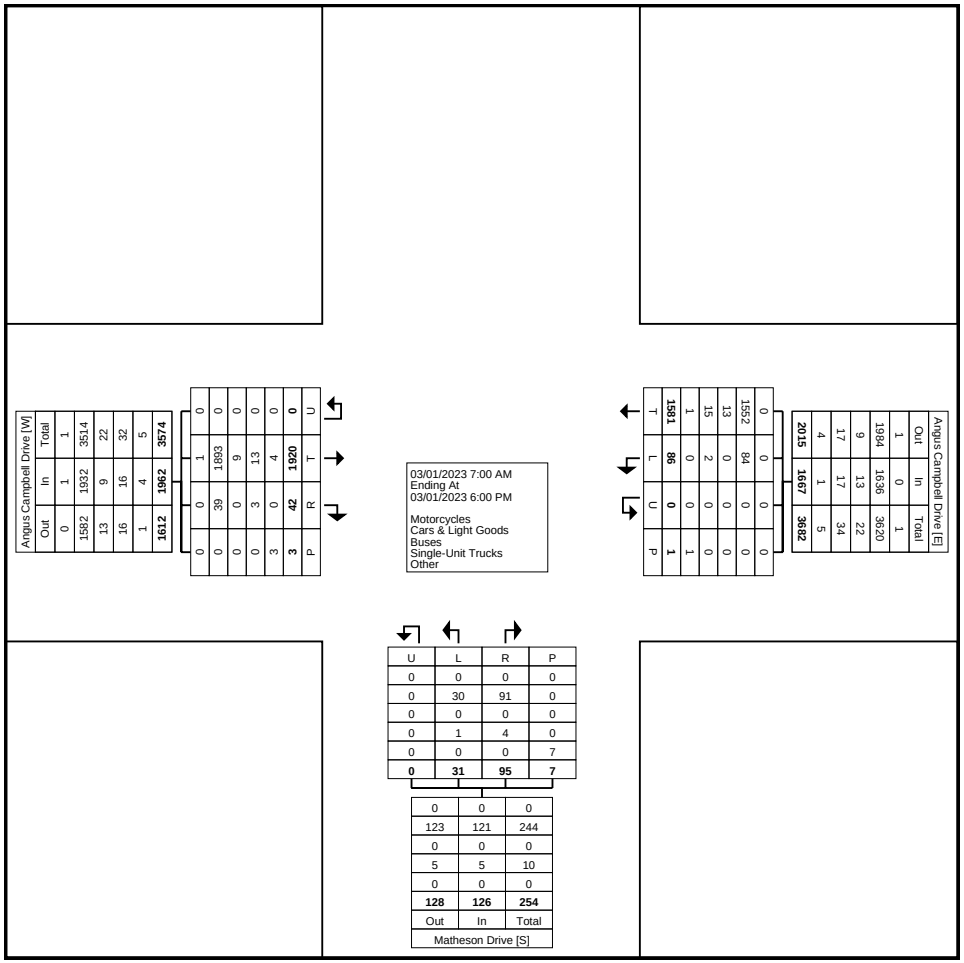
Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	28	2	0	0	30	5	16	0	0	21	0	1	0	1	1	52
7:15 AM	20	1	0	0	21	3	24	0	0	27	1	1	0	0	2	50
7:30 AM	32	0	0	0	32	1	30	0	0	31	1	3	0	1	4	67
7:45 AM	37	0	0	0	37	3	40	0	0	43	0	3	0	0	3	83
Hourly Total	117	3	0	0	120	12	110	0	0	122	2	8	0	2	10	252
8:00 AM	47	1	0	0	48	2	51	0	0	53	2	1	0	0	3	104
8:15 AM	48	1	0	0	49	1	33	0	0	34	2	4	0	0	6	89
8:30 AM	34	1	0	0	35	1	30	0	0	31	3	5	0	0	8	74
8:45 AM	55	1	0	0	56	1	28	0	1	29	3	1	0	1	4	89
Hourly Total	184	4	0	0	188	5	142	0	1	147	10	11	0	1	21	356
9:00 AM	63	1	0	0	64	2	28	0	0	30	1	1	0	1	2	96
9:15 AM	63	5	0	0	68	1	35	0	0	36	1	3	0	0	4	108
9:30 AM	58	2	0	1	60	1	34	0	0	35	4	4	0	1	8	103
9:45 AM	71	0	0	0	71	3	48	0	0	51	0	1	0	0	1	123
Hourly Total	255	8	0	1	263	7	145	0	0	152	6	9	0	2	15	430
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	82	2	0	0	84	1	45	0	0	46	0	3	0	0	3	133
11:15 AM	73	1	0	0	74	5	52	0	0	57	0	2	0	0	2	133
11:30 AM	56	0	0	0	56	6	58	0	0	64	2	2	0	0	4	124
11:45 AM	70	1	0	0	71	1	58	0	0	59	0	7	0	1	7	137
Hourly Total	281	4	0	0	285	13	213	0	0	226	2	14	0	1	16	527
12:00 PM	69	2	0	0	71	5	44	0	0	49	1	7	0	0	8	128
12:15 PM	51	0	0	0	51	4	52	0	0	56	0	1	0	0	1	108
12:30 PM	59	2	0	0	61	1	68	0	0	69	0	3	0	0	3	133
12:45 PM	60	2	0	0	62	2	65	0	0	67	0	5	0	0	5	134
Hourly Total	239	6	0	0	245	12	229	0	0	241	1	16	0	0	17	503
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	60	1	0	0	61	2	57	0	0	59	1	4	0	1	5	125
3:15 PM	56	1	0	0	57	1	62	0	0	63	3	4	0	0	7	127
3:30 PM	69	3	0	2	72	6	73	0	0	79	0	4	0	0	4	155
3:45 PM	114	2	0	0	116	1	66	0	0	67	0	3	0	0	3	186
Hourly Total	299	7	0	2	306	10	258	0	0	268	4	15	0	1	19	593
4:00 PM	117	3	0	0	120	5	66	0	0	71	3	2	0	0	5	196
4:15 PM	82	2	0	0	84	7	61	0	0	68	1	11	0	0	12	164
4:30 PM	64	1	0	0	65	4	76	0	0	80	0	2	0	0	2	147
4:45 PM	53	0	0	0	53	2	56	0	0	58	0	3	0	0	3	114

Hourly Total	316	6	0	0	322	18	259	0	0	277	4	18	0	0	22	621
5:00 PM	76	2	0	0	78	0	65	0	0	65	1	1	0	0	2	145
5:15 PM	54	0	0	0	54	3	59	0	0	62	1	1	0	0	2	118
5:30 PM	52	2	0	0	54	5	48	0	0	53	0	2	0	0	2	109
5:45 PM	47	0	0	0	47	1	53	0	0	54	0	0	0	0	0	101
Hourly Total	229	4	0	0	233	9	225	0	0	234	2	4	0	0	6	473
Grand Total	1920	42	0	3	1962	86	1581	0	1	1667	31	95	0	7	126	3755
Approach %	97.9	2.1	0.0	-	-	5.2	94.8	0.0	-	-	24.6	75.4	0.0	-	-	-
Total %	51.1	1.1	0.0	-	52.3	2.3	42.1	0.0	-	44.4	0.8	2.5	0.0	-	3.4	-
Motorcycles	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Motorcycles	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1893	39	0	-	1932	84	1552	0	-	1636	30	91	0	-	121	3689
% Cars & Light Goods	98.6	92.9	-	-	98.5	97.7	98.2	-	-	98.1	96.8	95.8	-	-	96.0	98.2
Buses	9	0	0	-	9	0	13	0	-	13	0	0	0	-	0	22
% Buses	0.5	0.0	-	-	0.5	0.0	0.8	-	-	0.8	0.0	0.0	-	-	0.0	0.6
Single-Unit Trucks	13	3	0	-	16	2	15	0	-	17	1	4	0	-	5	38
% Single-Unit Trucks	0.7	7.1	-	-	0.8	2.3	0.9	-	-	1.0	3.2	4.2	-	-	4.0	1.0
Articulated Trucks	2	0	0	-	2	0	1	0	-	1	0	0	0	-	0	3
% Articulated Trucks	0.1	0.0	-	-	0.1	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	2	0	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	3	-	-	-	-	1	-	-	-	-	7	-	-
% 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: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023



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: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (9:00 AM)

Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	63	1	0	0	64	2	28	0	0	30	1	1	0	1	2	96
9:15 AM	63	5	0	0	68	1	35	0	0	36	1	3	0	0	4	108
9:30 AM	58	2	0	1	60	1	34	0	0	35	4	4	0	1	8	103
9:45 AM	71	0	0	0	71	3	48	0	0	51	0	1	0	0	1	123
Total	255	8	0	1	263	7	145	0	0	152	6	9	0	2	15	430
Approach %	97.0	3.0	0.0	-	-	4.6	95.4	0.0	-	-	40.0	60.0	0.0	-	-	-
Total %	59.3	1.9	0.0	-	61.2	1.6	33.7	0.0	-	35.3	1.4	2.1	0.0	-	3.5	-
PHF	0.898	0.400	0.000	-	0.926	0.583	0.755	0.000	-	0.745	0.375	0.563	0.000	-	0.469	0.874
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	253	7	0	-	260	7	141	0	-	148	6	6	0	-	12	420
% Cars & Light Goods	99.2	87.5	-	-	98.9	100.0	97.2	-	-	97.4	100.0	66.7	-	-	80.0	97.7
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	2	1	0	-	3	0	3	0	-	3	0	3	0	-	3	9
% Single-Unit Trucks	0.8	12.5	-	-	1.1	0.0	2.1	-	-	2.0	0.0	33.3	-	-	20.0	2.1
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	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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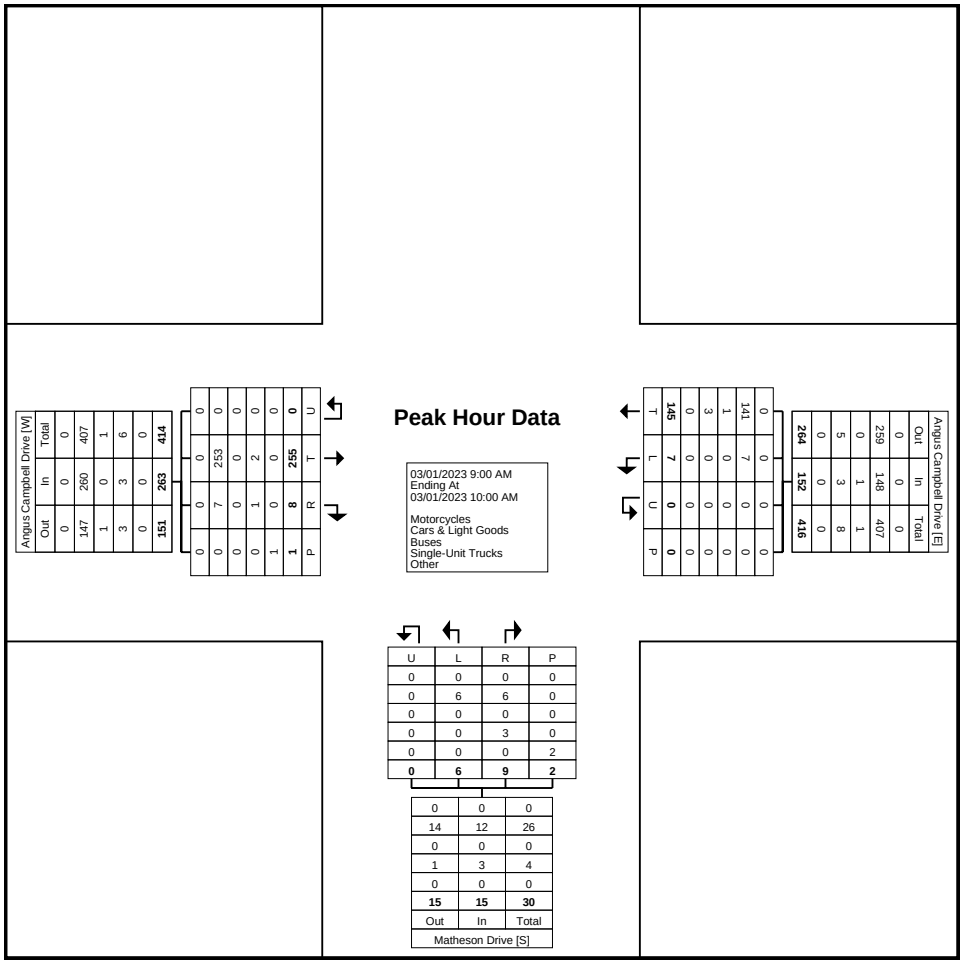
Count Name: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	82	2	0	0	84	1	45	0	0	46	0	3	0	0	3	133
11:15 AM	73	1	0	0	74	5	52	0	0	57	0	2	0	0	2	133
11:30 AM	56	0	0	0	56	6	58	0	0	64	2	2	0	0	4	124
11:45 AM	70	1	0	0	71	1	58	0	0	59	0	7	0	1	7	137
Total	281	4	0	0	285	13	213	0	0	226	2	14	0	1	16	527
Approach %	98.6	1.4	0.0	-	-	5.8	94.2	0.0	-	-	12.5	87.5	0.0	-	-	-
Total %	53.3	0.8	0.0	-	54.1	2.5	40.4	0.0	-	42.9	0.4	2.7	0.0	-	3.0	-
PHF	0.857	0.500	0.000	-	0.848	0.542	0.918	0.000	-	0.883	0.250	0.500	0.000	-	0.571	0.962
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	274	4	0	-	278	12	211	0	-	223	2	14	0	-	16	517
% Cars & Light Goods	97.5	100.0	-	-	97.5	92.3	99.1	-	-	98.7	100.0	100.0	-	-	100.0	98.1
Buses	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Buses	0.4	0.0	-	-	0.4	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	5	0	0	-	5	1	2	0	-	3	0	0	0	-	0	8
% Single-Unit Trucks	1.8	0.0	-	-	1.8	7.7	0.9	-	-	1.3	0.0	0.0	-	-	0.0	1.5
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.4	0.0	-	-	0.4	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
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	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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5A-150 Pinebush Rd

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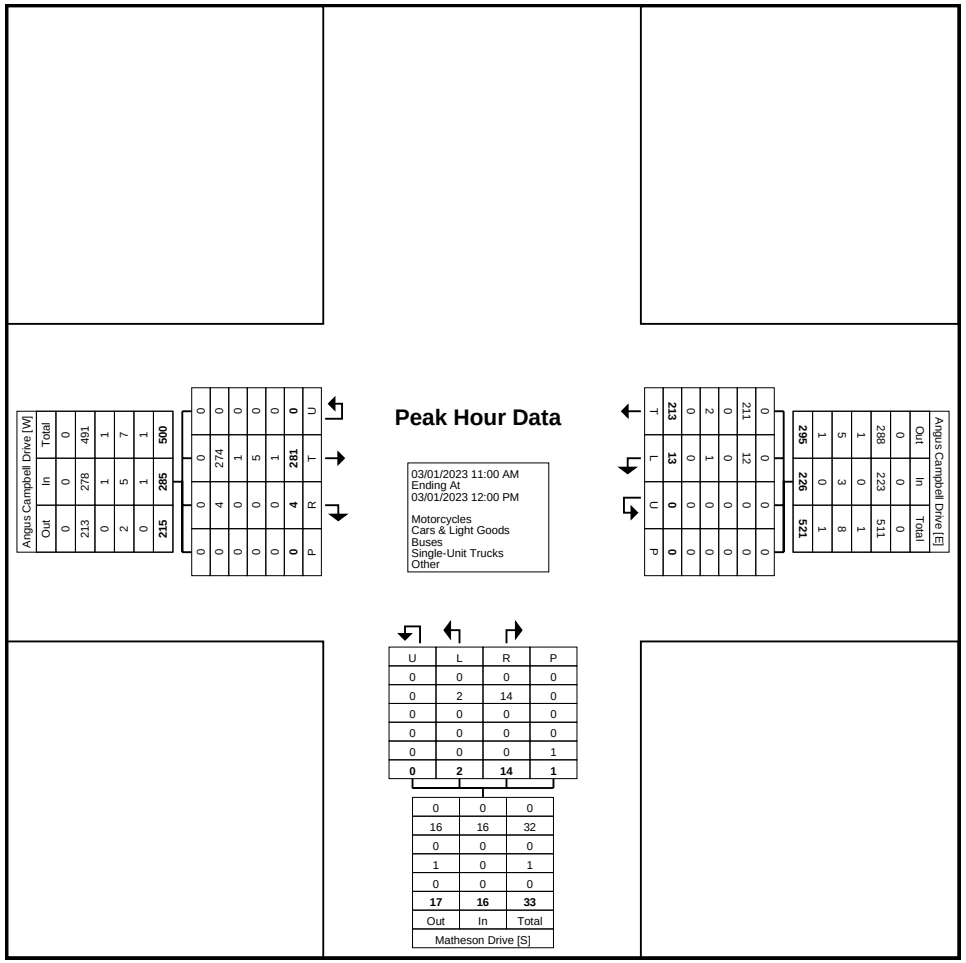
Count Name: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023


Peak Hour Data
03/01/2023 11:00 AM
Ending At
03/01/2023 12:00 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
Angus Campbell Drive [W]
Out In Total
0 0 0
0 278 491
213 1 1
0 7 7
2 5 5
0 1 1
215 285 500
0 0 0
0 274 274
0 1 1
0 5 5
0 0 0
0 1 1
0 281 281
0 4 4
0 0 0
U T R P
0 0 0 0
0 4 0 0
0 0 0 0
0 0 0 0
0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023

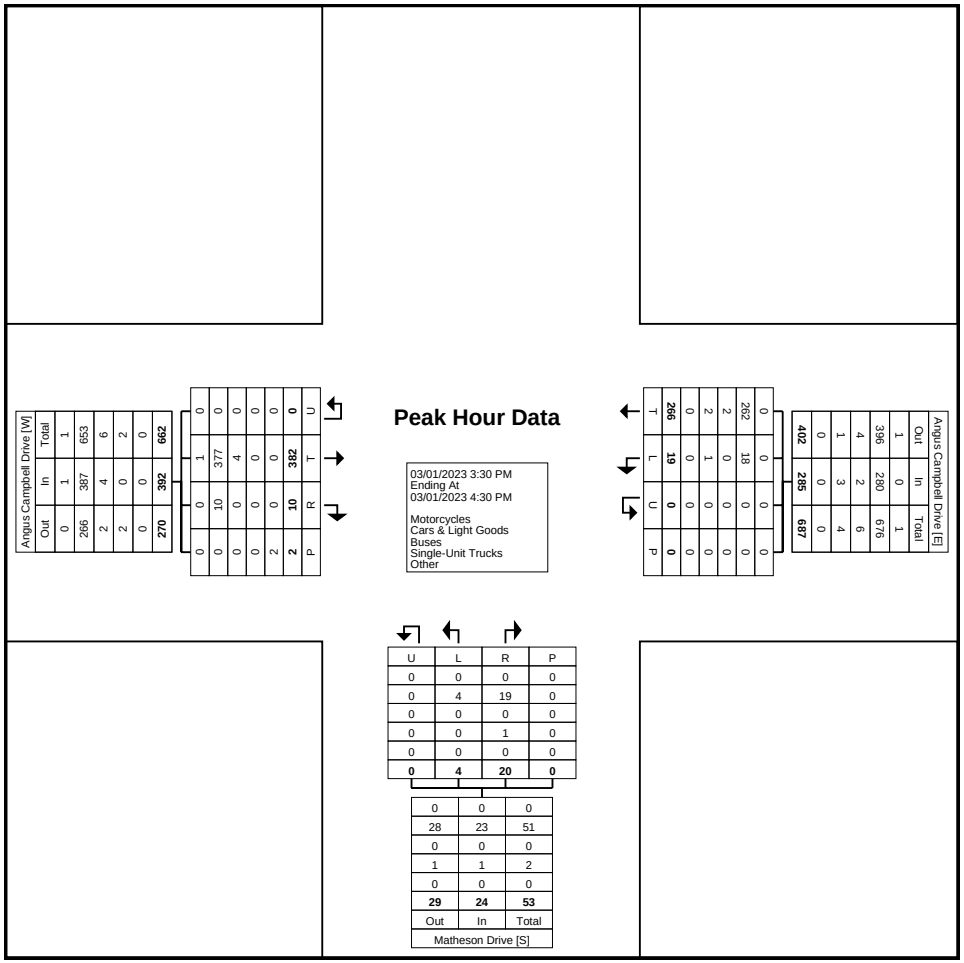
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:30 PM	69	3	0	2	72	6	73	0	0	79	0	4	0	0	4	155
3:45 PM	114	2	0	0	116	1	66	0	0	67	0	3	0	0	3	186
4:00 PM	117	3	0	0	120	5	66	0	0	71	3	2	0	0	5	196
4:15 PM	82	2	0	0	84	7	61	0	0	68	1	11	0	0	12	164
Total	382	10	0	2	392	19	266	0	0	285	4	20	0	0	24	701
Approach %	97.4	2.6	0.0	-	-	6.7	93.3	0.0	-	-	16.7	83.3	0.0	-	-	-
Total %	54.5	1.4	0.0	-	55.9	2.7	37.9	0.0	-	40.7	0.6	2.9	0.0	-	3.4	-
PHF	0.816	0.833	0.000	-	0.817	0.679	0.911	0.000	-	0.902	0.333	0.455	0.000	-	0.500	0.894
Motorcycles	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Motorcycles	0.3	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	377	10	0	-	387	18	262	0	-	280	4	19	0	-	23	690
% Cars & Light Goods	98.7	100.0	-	-	98.7	94.7	98.5	-	-	98.2	100.0	95.0	-	-	95.8	98.4
Buses	4	0	0	-	4	0	2	0	-	2	0	0	0	-	0	6
% Buses	1.0	0.0	-	-	1.0	0.0	0.8	-	-	0.7	0.0	0.0	-	-	0.0	0.9
Single-Unit Trucks	0	0	0	-	0	1	2	0	-	3	0	1	0	-	1	4
% Single-Unit Trucks	0.0	0.0	-	-	0.0	5.3	0.8	-	-	1.1	0.0	5.0	-	-	4.2	0.6
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	-	-	-	2	-	-	-	-	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: Angus Campbell Drive & Matheson Drive
Site Code: 220694
Start Date: 03/01/2023
Page No: 9



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

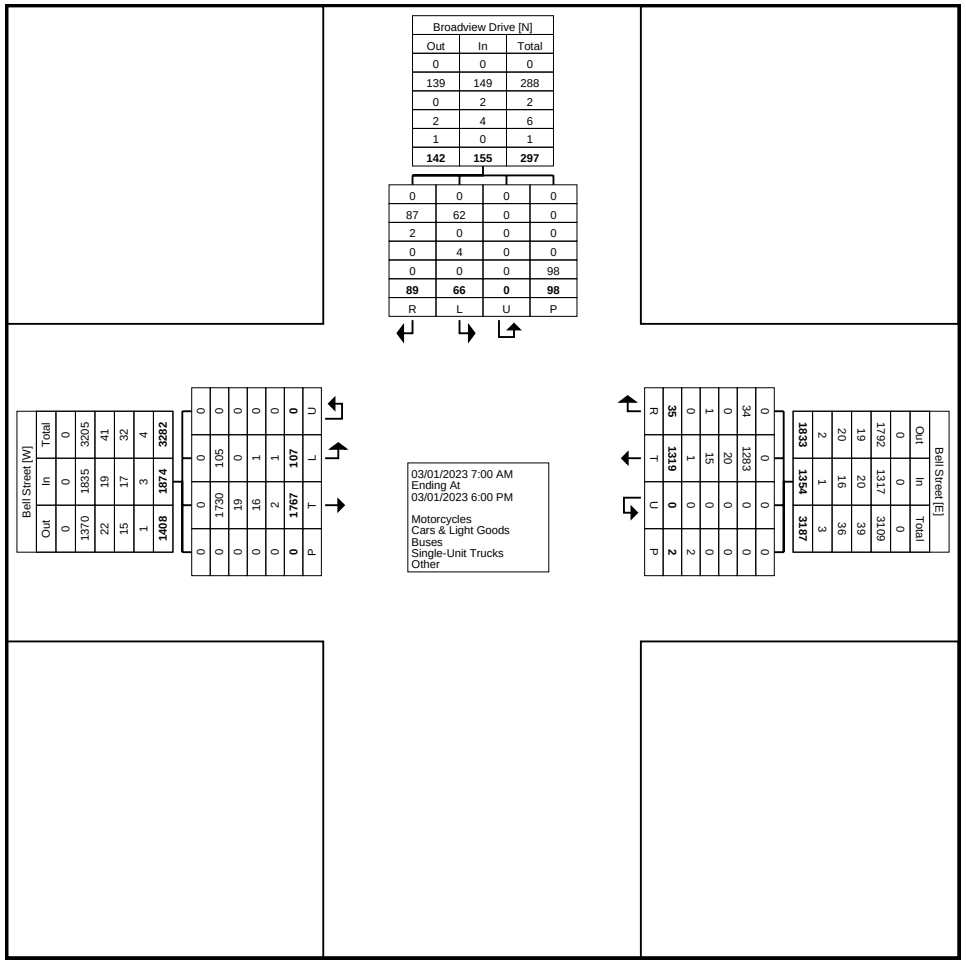
Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	3	27	0	0	30	10	0	0	0	10	2	3	0	1	5	45
7:15 AM	0	20	0	0	20	23	0	0	0	23	0	0	0	2	0	43
7:30 AM	1	45	0	0	46	23	1	0	0	24	2	3	0	3	5	75
7:45 AM	2	62	0	0	64	49	0	0	0	49	1	4	0	1	5	118
Hourly Total	6	154	0	0	160	105	1	0	0	106	5	10	0	7	15	281
8:00 AM	1	90	0	0	91	72	2	0	0	74	8	2	0	2	10	175
8:15 AM	1	45	0	0	46	41	1	0	0	42	0	2	0	3	2	90
8:30 AM	0	27	0	0	27	32	0	0	0	32	0	2	0	6	2	61
8:45 AM	0	53	0	0	53	21	0	0	0	21	1	1	0	2	2	76
Hourly Total	2	215	0	0	217	166	3	0	0	169	9	7	0	13	16	402
9:00 AM	6	52	0	0	58	24	2	0	1	26	3	8	0	3	11	95
9:15 AM	7	56	0	0	63	27	0	0	0	27	6	4	0	1	10	100
9:30 AM	2	57	0	0	59	39	1	0	0	40	0	6	0	0	6	105
9:45 AM	2	55	0	0	57	43	0	0	0	43	2	4	0	0	6	106
Hourly Total	17	220	0	0	237	133	3	0	1	136	11	22	0	4	33	406
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	66	0	0	68	45	1	0	0	46	3	3	0	5	6	120
11:15 AM	5	64	0	0	69	35	0	0	0	35	0	2	0	3	2	106
11:30 AM	1	58	0	0	59	36	1	0	0	37	2	1	0	3	3	99
11:45 AM	4	55	0	0	59	44	3	0	0	47	0	0	0	1	0	106
Hourly Total	12	243	0	0	255	160	5	0	0	165	5	6	0	12	11	431
12:00 PM	3	56	0	0	59	39	0	0	0	39	2	1	0	1	3	101
12:15 PM	5	42	0	0	47	41	0	0	0	41	4	0	0	2	4	92
12:30 PM	2	48	0	0	50	54	2	0	0	56	2	6	0	1	8	114
12:45 PM	4	59	0	0	63	51	0	0	0	51	4	6	0	0	10	124
Hourly Total	14	205	0	0	219	185	2	0	0	187	12	13	0	4	25	431
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	6	54	0	0	60	46	1	0	0	47	1	2	0	14	3	110
3:15 PM	3	53	0	0	56	51	3	0	0	54	0	5	0	21	5	115
3:30 PM	7	60	0	0	67	46	3	0	0	49	2	5	0	1	7	123
3:45 PM	15	106	0	0	121	46	1	0	0	47	8	5	0	8	13	181
Hourly Total	31	273	0	0	304	189	8	0	0	197	11	17	0	44	28	529
4:00 PM	7	93	0	0	100	60	2	0	0	62	3	3	0	3	6	168
4:15 PM	3	68	0	0	71	41	3	0	1	44	1	2	0	5	3	118
4:30 PM	4	51	0	0	55	65	2	0	0	67	4	3	0	0	7	129
4:45 PM	1	52	0	0	53	38	3	0	0	41	1	1	0	0	2	96

Hourly Total	15	264	0	0	279	204	10	0	1	214	9	9	0	8	18	511
5:00 PM	6	65	0	0	71	52	1	0	0	53	0	0	0	2	0	124
5:15 PM	2	49	0	0	51	42	2	0	0	44	2	0	0	0	2	97
5:30 PM	2	40	0	0	42	45	0	0	0	45	2	2	0	2	4	91
5:45 PM	0	39	0	0	39	38	0	0	0	38	0	3	0	2	3	80
Hourly Total	10	193	0	0	203	177	3	0	0	180	4	5	0	6	9	392
Grand Total	107	1767	0	0	1874	1319	35	0	2	1354	66	89	0	98	155	3383
Approach %	5.7	94.3	0.0	-	-	97.4	2.6	0.0	-	-	42.6	57.4	0.0	-	-	-
Total %	3.2	52.2	0.0	-	55.4	39.0	1.0	0.0	-	40.0	2.0	2.6	0.0	-	4.6	-
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	105	1730	0	-	1835	1283	34	0	-	1317	62	87	0	-	149	3301
% Cars & Light Goods	98.1	97.9	-	-	97.9	97.3	97.1	-	-	97.3	93.9	97.8	-	-	96.1	97.6
Buses	0	19	0	-	19	20	0	0	-	20	0	2	0	-	2	41
% Buses	0.0	1.1	-	-	1.0	1.5	0.0	-	-	1.5	0.0	2.2	-	-	1.3	1.2
Single-Unit Trucks	1	16	0	-	17	15	1	0	-	16	4	0	0	-	4	37
% Single-Unit Trucks	0.9	0.9	-	-	0.9	1.1	2.9	-	-	1.2	6.1	0.0	-	-	2.6	1.1
Articulated Trucks	1	1	0	-	2	1	0	0	-	1	0	0	0	-	0	3
% Articulated Trucks	0.9	0.1	-	-	0.1	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.1	-	-	0.1	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	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	98	-	-
% 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: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

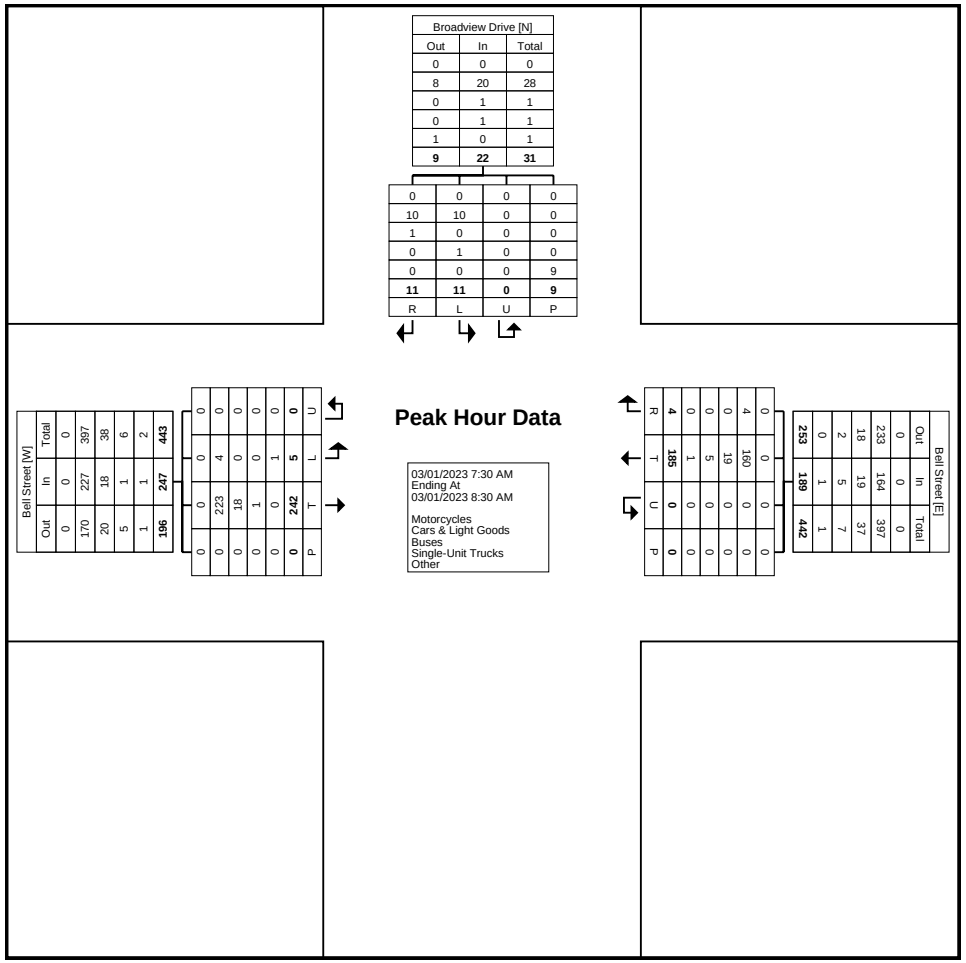
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	1	45	0	0	46	23	1	0	0	24	2	3	0	3	5	75
7:45 AM	2	62	0	0	64	49	0	0	0	49	1	4	0	1	5	118
8:00 AM	1	90	0	0	91	72	2	0	0	74	8	2	0	2	10	175
8:15 AM	1	45	0	0	46	41	1	0	0	42	0	2	0	3	2	90
Total	5	242	0	0	247	185	4	0	0	189	11	11	0	9	22	458
Approach %	2.0	98.0	0.0	-	-	97.9	2.1	0.0	-	-	50.0	50.0	0.0	-	-	-
Total %	1.1	52.8	0.0	-	53.9	40.4	0.9	0.0	-	41.3	2.4	2.4	0.0	-	4.8	-
PHF	0.625	0.672	0.000	-	0.679	0.642	0.500	0.000	-	0.639	0.344	0.688	0.000	-	0.550	0.654
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	4	223	0	-	227	160	4	0	-	164	10	10	0	-	20	411
% Cars & Light Goods	80.0	92.1	-	-	91.9	86.5	100.0	-	-	86.8	90.9	90.9	-	-	90.9	89.7
Buses	0	18	0	-	18	19	0	0	-	19	0	1	0	-	1	38
% Buses	0.0	7.4	-	-	7.3	10.3	0.0	-	-	10.1	0.0	9.1	-	-	4.5	8.3
Single-Unit Trucks	0	1	0	-	1	5	0	0	-	5	1	0	0	-	1	7
% Single-Unit Trucks	0.0	0.4	-	-	0.4	2.7	0.0	-	-	2.6	9.1	0.0	-	-	4.5	1.5
Articulated Trucks	1	0	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Articulated Trucks	20.0	0.0	-	-	0.4	0.5	0.0	-	-	0.5	0.0	0.0	-	-	0.0	0.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	2	66	0	0	68	45	1	0	0	46	3	3	0	5	6	120
11:15 AM	5	64	0	0	69	35	0	0	0	35	0	2	0	3	2	106
11:30 AM	1	58	0	0	59	36	1	0	0	37	2	1	0	3	3	99
11:45 AM	4	55	0	0	59	44	3	0	0	47	0	0	0	1	0	106
Total	12	243	0	0	255	160	5	0	0	165	5	6	0	12	11	431
Approach %	4.7	95.3	0.0	-	-	97.0	3.0	0.0	-	-	45.5	54.5	0.0	-	-	-
Total %	2.8	56.4	0.0	-	59.2	37.1	1.2	0.0	-	38.3	1.2	1.4	0.0	-	2.6	-
PHF	0.600	0.920	0.000	-	0.924	0.889	0.417	0.000	-	0.878	0.417	0.500	0.000	-	0.458	0.898
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	12	240	0	-	252	158	5	0	-	163	5	6	0	-	11	426
% Cars & Light Goods	100.0	98.8	-	-	98.8	98.8	100.0	-	-	98.8	100.0	100.0	-	-	100.0	98.8
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	3	0	-	3	2	0	0	-	2	0	0	0	-	0	5
% Single-Unit Trucks	0.0	1.2	-	-	1.2	1.3	0.0	-	-	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	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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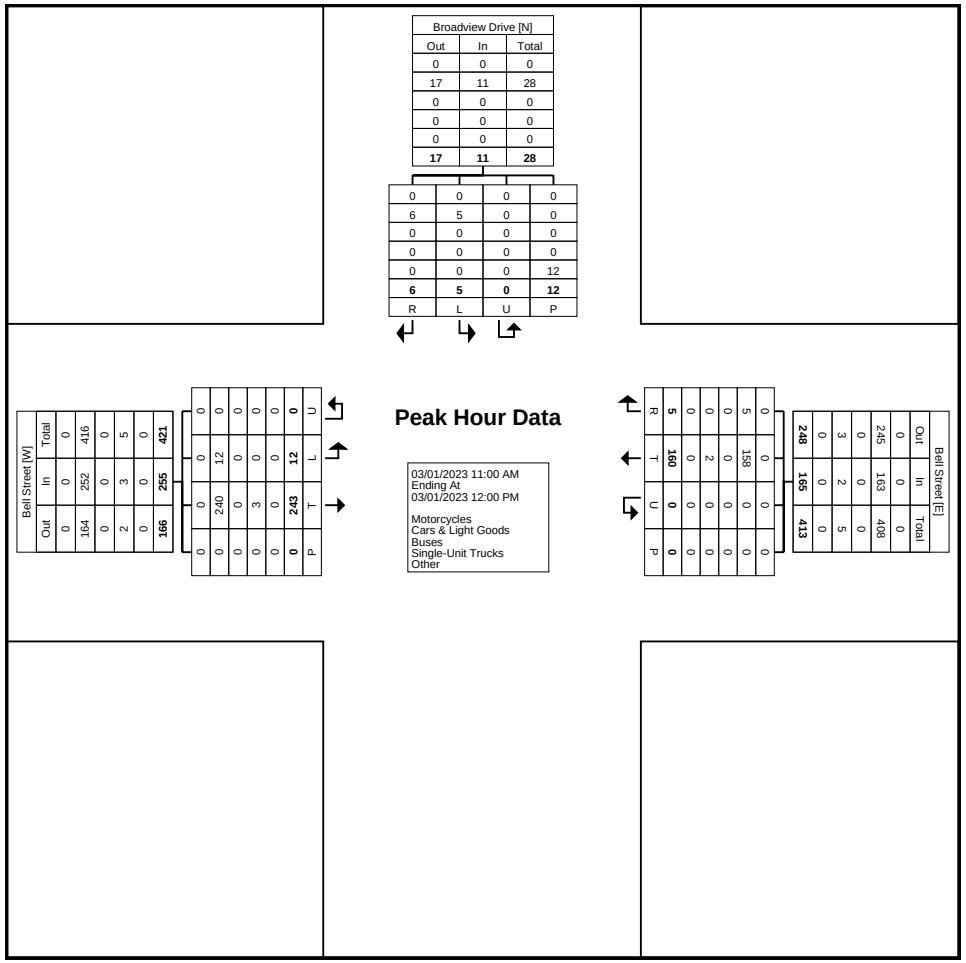
Count Name: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

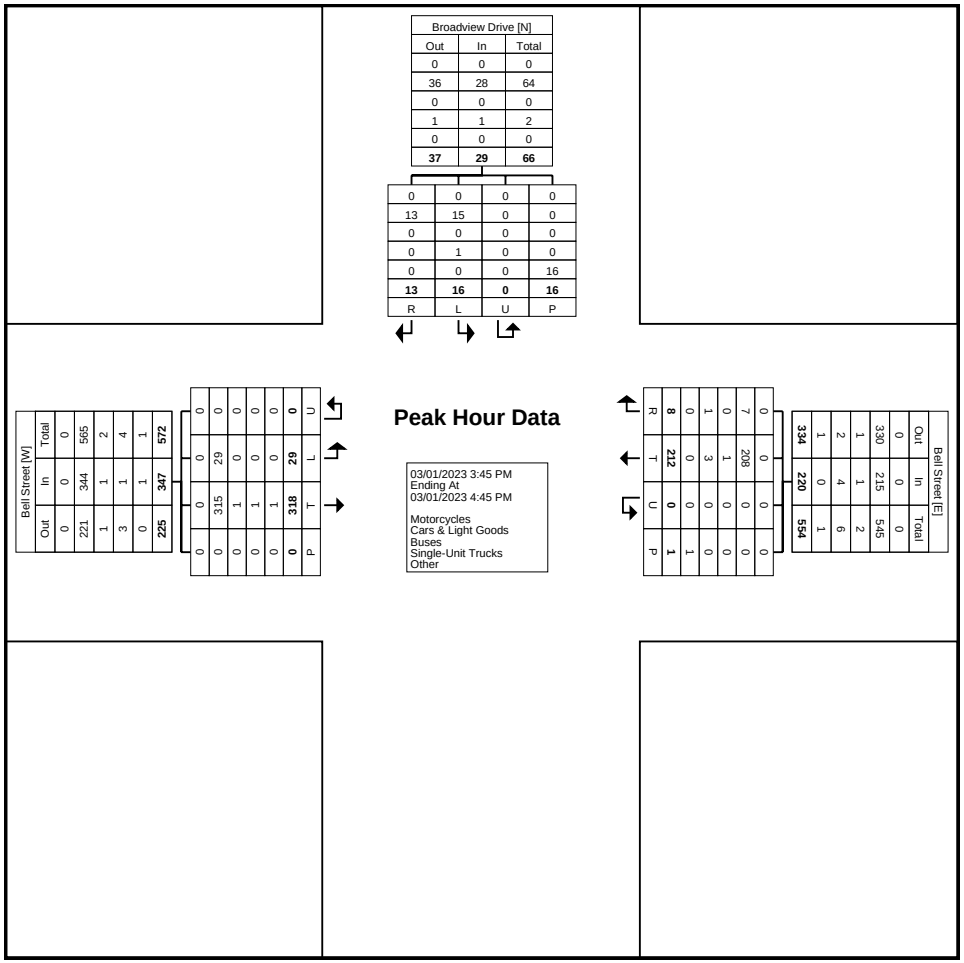
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:45 PM	15	106	0	0	121	46	1	0	0	47	8	5	0	8	13	181
4:00 PM	7	93	0	0	100	60	2	0	0	62	3	3	0	3	6	168
4:15 PM	3	68	0	0	71	41	3	0	1	44	1	2	0	5	3	118
4:30 PM	4	51	0	0	55	65	2	0	0	67	4	3	0	0	7	129
Total	29	318	0	0	347	212	8	0	1	220	16	13	0	16	29	596
Approach %	8.4	91.6	0.0	-	-	96.4	3.6	0.0	-	-	55.2	44.8	0.0	-	-	-
Total %	4.9	53.4	0.0	-	58.2	35.6	1.3	0.0	-	36.9	2.7	2.2	0.0	-	4.9	-
PHF	0.483	0.750	0.000	-	0.717	0.815	0.667	0.000	-	0.821	0.500	0.650	0.000	-	0.558	0.823
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	29	315	0	-	344	208	7	0	-	215	15	13	0	-	28	587
% Cars & Light Goods	100.0	99.1	-	-	99.1	98.1	87.5	-	-	97.7	93.8	100.0	-	-	96.6	98.5
Buses	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Buses	0.0	0.3	-	-	0.3	0.5	0.0	-	-	0.5	0.0	0.0	-	-	0.0	0.3
Single-Unit Trucks	0	1	0	-	1	3	1	0	-	4	1	0	0	-	1	6
% Single-Unit Trucks	0.0	0.3	-	-	0.3	1.4	12.5	-	-	1.8	6.3	0.0	-	-	3.4	1.0
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	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.3	-	-	0.3	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	16	-	-
% 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: Bell Street & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

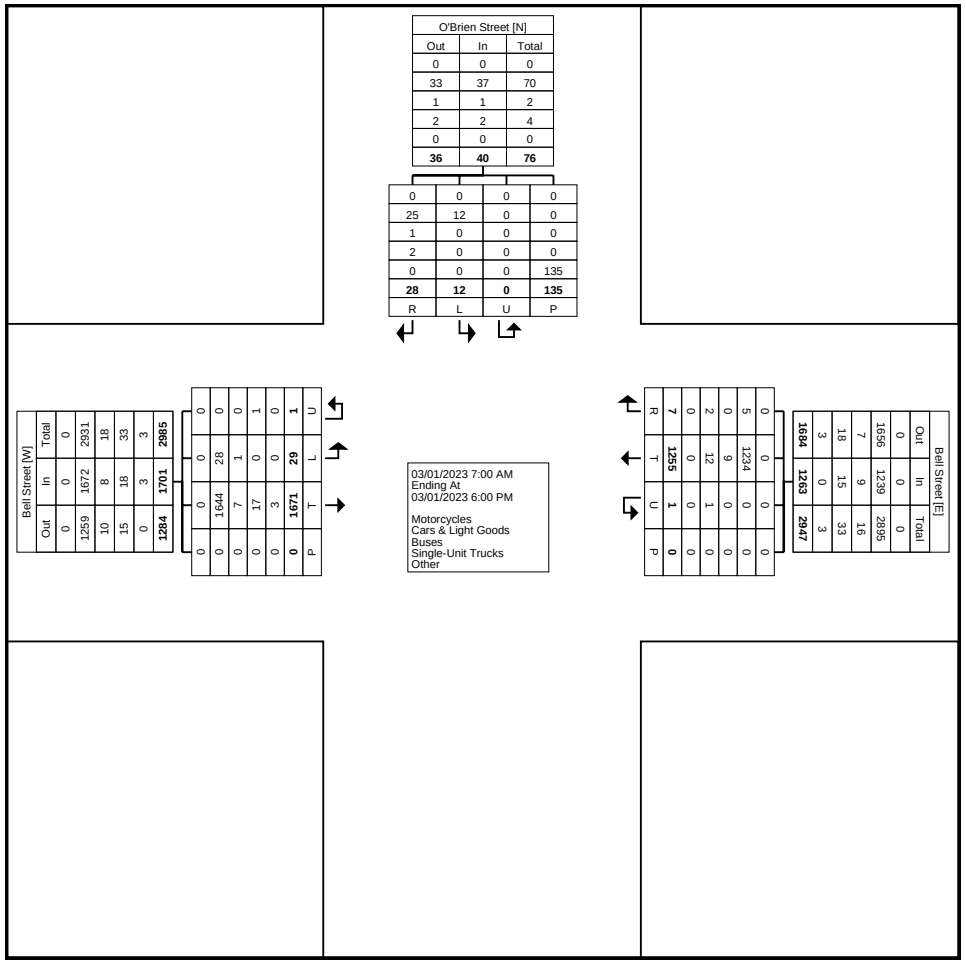
Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	22	0	0	22	7	0	0	0	7	0	1	0	1	1	30
7:15 AM	3	17	0	0	20	25	0	0	0	25	0	1	0	0	1	46
7:30 AM	0	26	0	0	26	30	0	0	0	30	0	1	0	2	1	57
7:45 AM	0	28	0	0	28	38	0	0	0	38	1	1	0	4	2	68
Hourly Total	3	93	0	0	96	100	0	0	0	100	1	4	0	7	5	201
8:00 AM	0	38	0	0	38	48	0	0	0	48	0	3	0	7	3	89
8:15 AM	1	37	0	0	38	28	0	0	0	28	1	0	0	1	1	67
8:30 AM	0	27	0	0	27	34	0	0	0	34	0	1	0	3	1	62
8:45 AM	1	50	0	0	51	18	0	0	0	18	0	2	0	1	2	71
Hourly Total	2	152	0	0	154	128	0	0	0	128	1	6	0	12	7	289
9:00 AM	0	50	0	0	50	22	1	0	0	23	0	0	0	1	0	73
9:15 AM	0	57	0	0	57	26	0	0	0	26	1	0	0	0	1	84
9:30 AM	0	55	0	0	55	32	1	1	0	34	0	1	0	1	1	90
9:45 AM	3	62	1	0	66	41	0	0	0	41	0	2	0	2	2	109
Hourly Total	3	224	1	0	228	121	2	1	0	124	1	3	0	4	4	356
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	75	0	0	77	36	0	0	0	36	0	1	0	24	1	114
11:15 AM	1	61	0	0	62	35	0	0	0	35	1	0	0	4	1	98
11:30 AM	0	51	0	0	51	38	0	0	0	38	1	3	0	28	4	93
11:45 AM	1	57	0	0	58	47	1	0	0	48	1	1	0	2	2	108
Hourly Total	4	244	0	0	248	156	1	0	0	157	3	5	0	58	8	413
12:00 PM	1	56	0	0	57	35	1	0	0	36	0	0	0	1	0	93
12:15 PM	0	46	0	0	46	35	0	0	0	35	0	0	0	3	0	81
12:30 PM	0	51	0	0	51	55	0	0	0	55	1	2	0	2	3	109
12:45 PM	0	58	0	0	58	55	0	0	0	55	1	0	0	1	1	114
Hourly Total	1	211	0	0	212	180	1	0	0	181	2	2	0	7	4	397
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	5	59	0	0	64	41	0	0	0	41	0	0	0	29	0	105
3:15 PM	1	50	0	0	51	50	0	0	0	50	0	2	0	4	2	103
3:30 PM	1	60	0	0	61	46	2	0	0	48	0	2	0	0	2	111
3:45 PM	2	104	0	0	106	49	1	0	0	50	1	0	0	4	1	157
Hourly Total	9	273	0	0	282	186	3	0	0	189	1	4	0	37	5	476
4:00 PM	0	101	0	0	101	51	0	0	0	51	1	1	0	2	2	154
4:15 PM	0	73	0	0	73	44	0	0	0	44	0	0	0	1	0	117
4:30 PM	1	57	0	0	58	64	0	0	0	64	0	1	0	3	1	123
4:45 PM	1	50	0	0	51	44	0	0	0	44	0	2	0	0	2	97

Hourly Total	2	281	0	0	283	203	0	0	0	203	1	4	0	6	5	491
5:00 PM	2	66	0	0	68	51	0	0	0	51	0	0	0	2	0	119
5:15 PM	2	49	0	0	51	50	0	0	0	50	0	0	0	0	0	101
5:30 PM	1	39	0	0	40	44	0	0	0	44	1	0	0	1	1	85
5:45 PM	0	39	0	0	39	36	0	0	0	36	1	0	0	1	1	76
Hourly Total	5	193	0	0	198	181	0	0	0	181	2	0	0	4	2	381
Grand Total	29	1671	1	0	1701	1255	7	1	0	1263	12	28	0	135	40	3004
Approach %	1.7	98.2	0.1	-	-	99.4	0.6	0.1	-	-	30.0	70.0	0.0	-	-	-
Total %	1.0	55.6	0.0	-	56.6	41.8	0.2	0.0	-	42.0	0.4	0.9	0.0	-	1.3	-
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	-	-	0.0	0.0
Cars & Light Goods	28	1644	0	-	1672	1234	5	0	-	1239	12	25	0	-	37	2948
% Cars & Light Goods	96.6	98.4	0.0	-	98.3	98.3	71.4	0.0	-	98.1	100.0	89.3	-	-	92.5	98.1
Buses	1	7	0	-	8	9	0	0	-	9	0	1	0	-	1	18
% Buses	3.4	0.4	0.0	-	0.5	0.7	0.0	0.0	-	0.7	0.0	3.6	-	-	2.5	0.6
Single-Unit Trucks	0	17	1	-	18	12	2	1	-	15	0	2	0	-	2	35
% Single-Unit Trucks	0.0	1.0	100.0	-	1.1	1.0	28.6	100.0	-	1.2	0.0	7.1	-	-	5.0	1.2
Articulated Trucks	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.1	0.0	-	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	1
% Bicycles on Road	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	135	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023
Page No: 3



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: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023

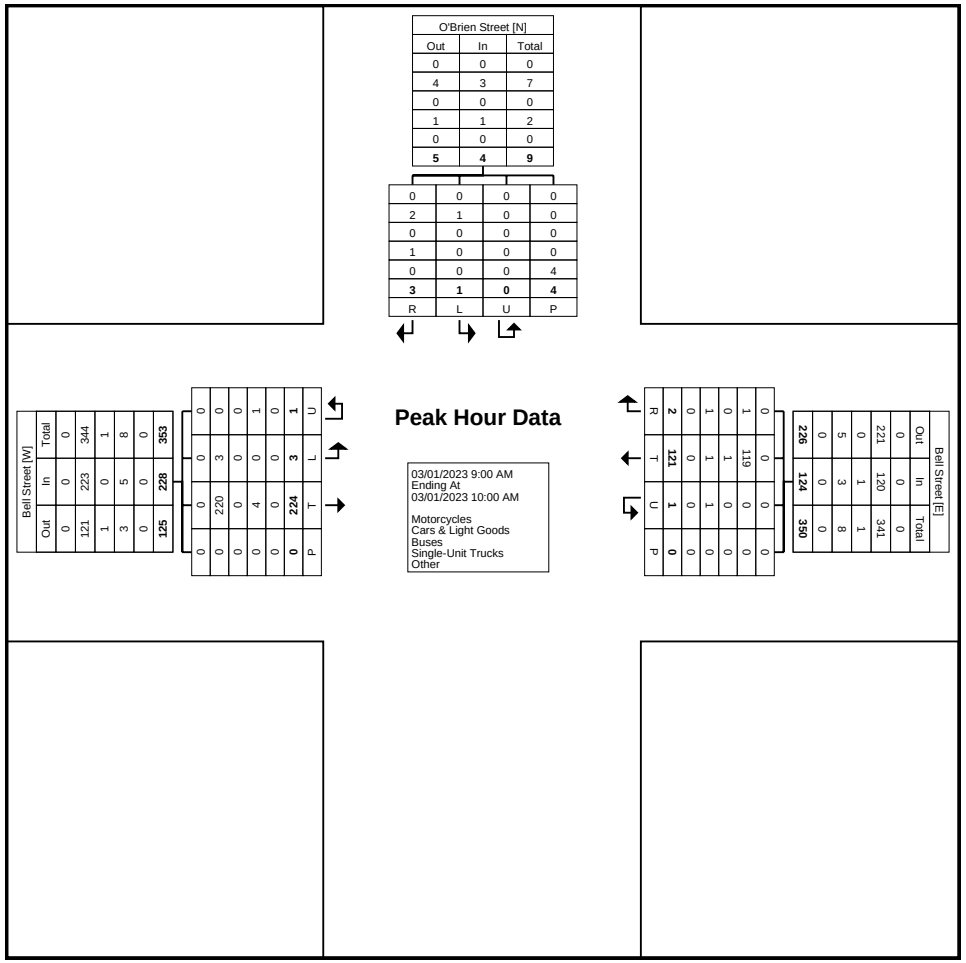
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	0	50	0	0	50	22	1	0	0	23	0	0	0	1	0	73
9:15 AM	0	57	0	0	57	26	0	0	0	26	1	0	0	0	1	84
9:30 AM	0	55	0	0	55	32	1	1	0	34	0	1	0	1	1	90
9:45 AM	3	62	1	0	66	41	0	0	0	41	0	2	0	2	2	109
Total	3	224	1	0	228	121	2	1	0	124	1	3	0	4	4	356
Approach %	1.3	98.2	0.4	-	-	97.6	1.6	0.8	-	-	25.0	75.0	0.0	-	-	-
Total %	0.8	62.9	0.3	-	64.0	34.0	0.6	0.3	-	34.8	0.3	0.8	0.0	-	1.1	-
PHF	0.250	0.903	0.250	-	0.864	0.738	0.500	0.250	-	0.756	0.250	0.375	0.000	-	0.500	0.817
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	-	-	0.0	0.0
Cars & Light Goods	3	220	0	-	223	119	1	0	-	120	1	2	0	-	3	346
% Cars & Light Goods	100.0	98.2	0.0	-	97.8	98.3	50.0	0.0	-	96.8	100.0	66.7	-	-	75.0	97.2
Buses	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	0.0	0.8	0.0	0.0	-	0.8	0.0	0.0	-	-	0.0	0.3
Single-Unit Trucks	0	4	1	-	5	1	1	1	-	3	0	1	0	-	1	9
% Single-Unit Trucks	0.0	1.8	100.0	-	2.2	0.8	50.0	100.0	-	2.4	0.0	33.3	-	-	25.0	2.5
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	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	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023

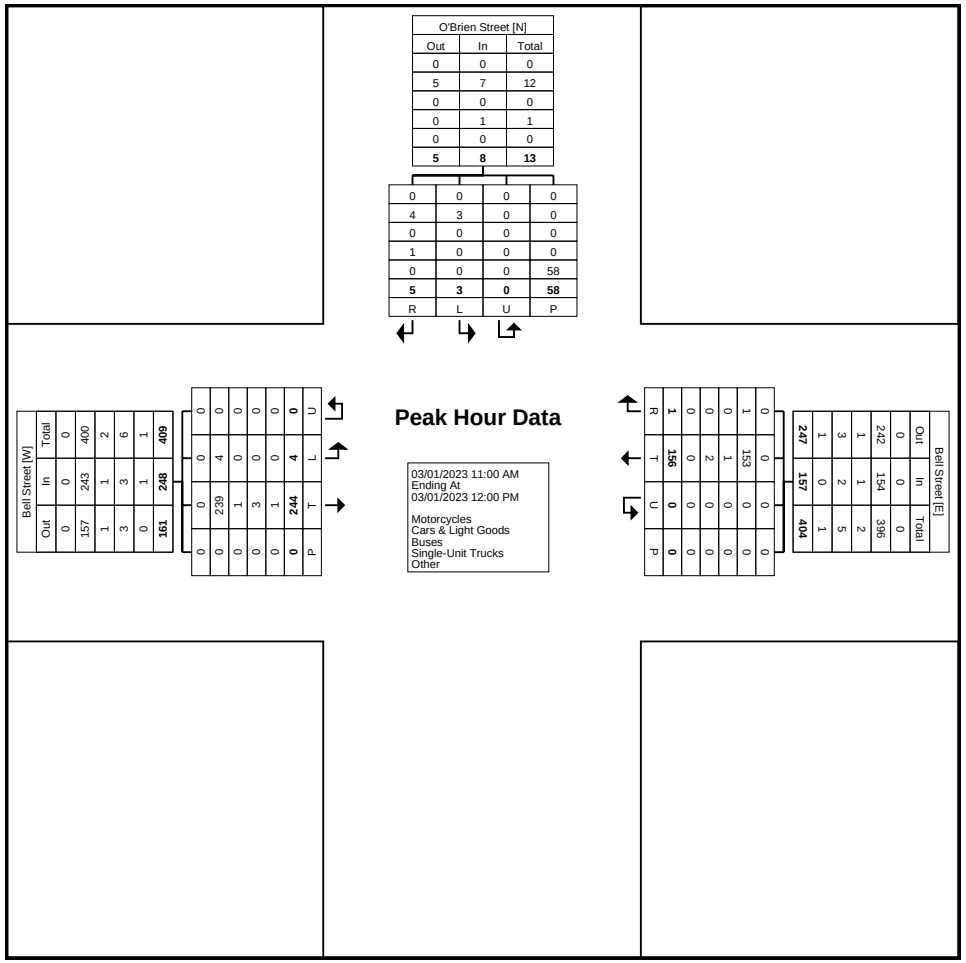
Turning Movement Peak Hour Data (11:00 AM)

Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	2	75	0	0	77	36	0	0	0	36	0	1	0	24	1	114
11:15 AM	1	61	0	0	62	35	0	0	0	35	1	0	0	4	1	98
11:30 AM	0	51	0	0	51	38	0	0	0	38	1	3	0	28	4	93
11:45 AM	1	57	0	0	58	47	1	0	0	48	1	1	0	2	2	108
Total	4	244	0	0	248	156	1	0	0	157	3	5	0	58	8	413
Approach %	1.6	98.4	0.0	-	-	99.4	0.6	0.0	-	-	37.5	62.5	0.0	-	-	-
Total %	1.0	59.1	0.0	-	60.0	37.8	0.2	0.0	-	38.0	0.7	1.2	0.0	-	1.9	-
PHF	0.500	0.813	0.000	-	0.805	0.830	0.250	0.000	-	0.818	0.750	0.417	0.000	-	0.500	0.906
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	4	239	0	-	243	153	1	0	-	154	3	4	0	-	7	404
% Cars & Light Goods	100.0	98.0	-	-	98.0	98.1	100.0	-	-	98.1	100.0	80.0	-	-	87.5	97.8
Buses	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Buses	0.0	0.4	-	-	0.4	0.6	0.0	-	-	0.6	0.0	0.0	-	-	0.0	0.5
Single-Unit Trucks	0	3	0	-	3	2	0	0	-	2	0	1	0	-	1	6
% Single-Unit Trucks	0.0	1.2	-	-	1.2	1.3	0.0	-	-	1.3	0.0	20.0	-	-	12.5	1.5
Articulated Trucks	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.4	-	-	0.4	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
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	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	58	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023

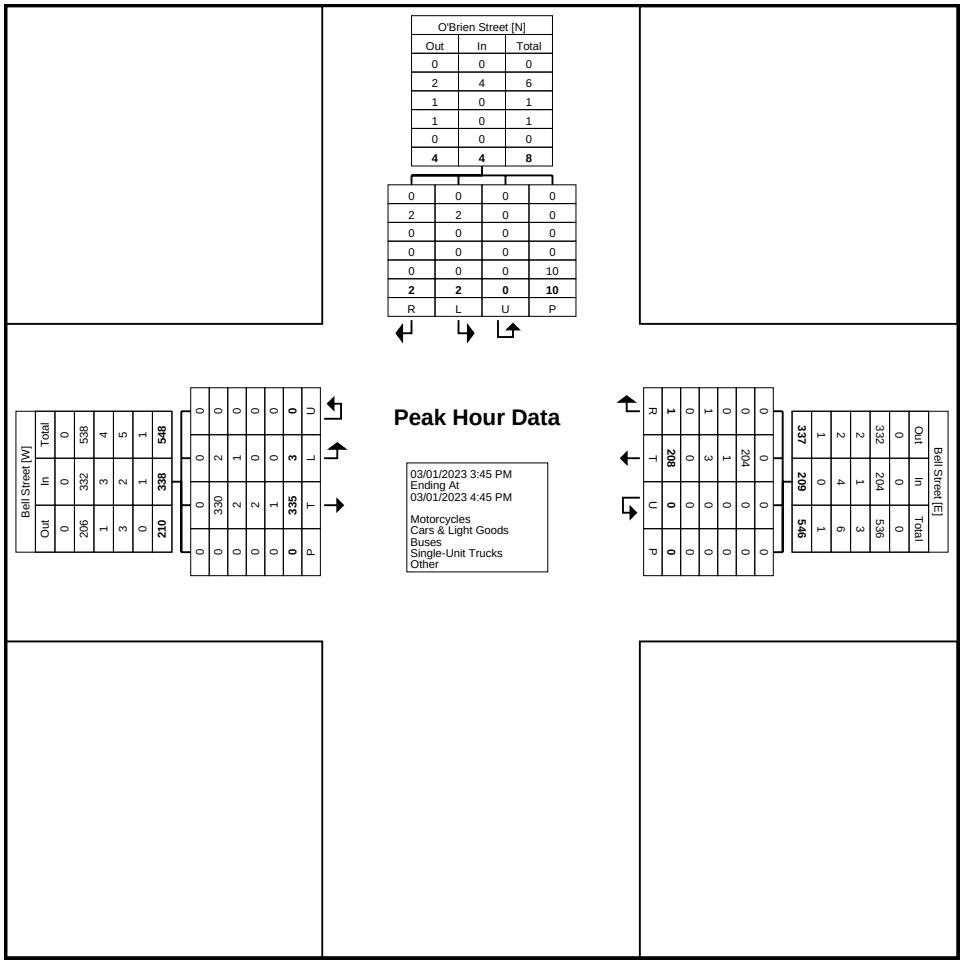
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:45 PM	2	104	0	0	106	49	1	0	0	50	1	0	0	4	1	157
4:00 PM	0	101	0	0	101	51	0	0	0	51	1	1	0	2	2	154
4:15 PM	0	73	0	0	73	44	0	0	0	44	0	0	0	1	0	117
4:30 PM	1	57	0	0	58	64	0	0	0	64	0	1	0	3	1	123
Total	3	335	0	0	338	208	1	0	0	209	2	2	0	10	4	551
Approach %	0.9	99.1	0.0	-	-	99.5	0.5	0.0	-	-	50.0	50.0	0.0	-	-	-
Total %	0.5	60.8	0.0	-	61.3	37.7	0.2	0.0	-	37.9	0.4	0.4	0.0	-	0.7	-
PHF	0.375	0.805	0.000	-	0.797	0.813	0.250	0.000	-	0.816	0.500	0.500	0.000	-	0.500	0.877
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	330	0	-	332	204	0	0	-	204	2	2	0	-	4	540
% Cars & Light Goods	66.7	98.5	-	-	98.2	98.1	0.0	-	-	97.6	100.0	100.0	-	-	100.0	98.0
Buses	1	2	0	-	3	1	0	0	-	1	0	0	0	-	0	4
% Buses	33.3	0.6	-	-	0.9	0.5	0.0	-	-	0.5	0.0	0.0	-	-	0.0	0.7
Single-Unit Trucks	0	2	0	-	2	3	1	0	-	4	0	0	0	-	0	6
% Single-Unit Trucks	0.0	0.6	-	-	0.6	1.4	100.0	-	-	1.9	0.0	0.0	-	-	0.0	1.1
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	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.3	-	-	0.3	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Bell Street & O'Brien Street
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Eganville Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

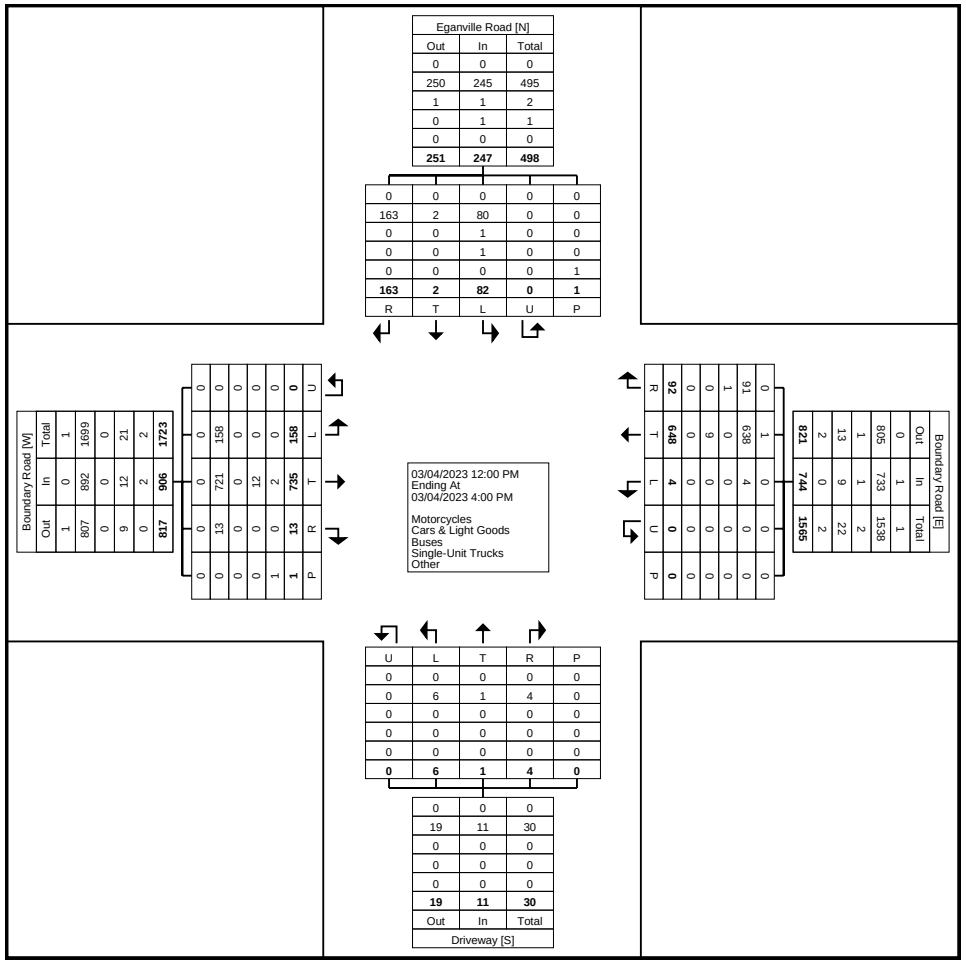
Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	13	36	1	0	0	50	0	33	4	0	0	37	0	0	0	0	0	0	1	0	12	0	0	13	100
12:15 PM	14	63	0	0	0	77	0	29	7	0	0	36	0	0	0	0	0	0	5	0	10	0	0	15	128
12:30 PM	15	46	1	0	0	62	0	38	7	0	0	45	0	0	1	0	0	1	2	1	12	0	0	15	123
12:45 PM	12	57	2	0	0	71	0	34	6	0	0	40	0	1	0	0	0	1	8	0	10	0	0	18	130
Hourly Total	54	202	4	0	0	260	0	134	24	0	0	158	0	1	1	0	0	2	16	1	44	0	0	61	481
1:00 PM	9	34	0	0	0	43	0	42	7	0	0	49	1	0	1	0	0	2	4	1	8	0	0	13	107
1:15 PM	10	31	0	0	0	41	0	41	8	0	0	49	0	0	0	0	0	0	4	0	11	0	0	15	105
1:30 PM	15	56	1	0	0	72	0	43	7	0	0	50	0	0	0	0	0	0	7	0	10	0	0	17	139
1:45 PM	10	37	2	0	0	49	3	38	5	0	0	46	0	0	0	0	0	0	4	0	11	0	0	15	110
Hourly Total	44	158	3	0	0	205	3	164	27	0	0	194	1	0	1	0	0	2	19	1	40	0	0	60	461
2:00 PM	7	33	1	0	0	41	0	37	6	0	0	43	1	0	0	0	0	1	7	0	8	0	0	15	100
2:15 PM	4	50	0	0	1	54	0	32	3	0	0	35	0	0	0	0	0	0	5	0	6	0	1	11	100
2:30 PM	5	46	0	0	0	51	0	32	2	0	0	34	0	0	0	0	0	0	4	0	11	0	0	15	100
2:45 PM	6	47	2	0	0	55	1	54	2	0	0	57	3	0	2	0	0	5	4	0	14	0	0	18	135
Hourly Total	22	176	3	0	1	201	1	155	13	0	0	169	4	0	2	0	0	6	20	0	39	0	1	59	435
3:00 PM	12	66	0	0	0	78	0	47	5	0	0	52	1	0	0	0	0	1	8	0	11	0	0	19	150
3:15 PM	8	37	1	0	0	46	0	36	9	0	0	45	0	0	0	0	0	0	4	0	7	0	0	11	102
3:30 PM	6	44	1	0	0	51	0	57	5	0	0	62	0	0	0	0	0	0	9	0	15	0	0	24	137
3:45 PM	12	52	1	0	0	65	0	55	9	0	0	64	0	0	0	0	0	0	6	0	7	0	0	13	142
Hourly Total	38	199	3	0	0	240	0	195	28	0	0	223	1	0	0	0	0	1	27	0	40	0	0	67	531
Grand Total	158	735	13	0	1	906	4	648	92	0	0	744	6	1	4	0	0	11	82	2	163	0	1	247	1908
Approach %	17.4	81.1	1.4	0.0	-	-	0.5	87.1	12.4	0.0	-	-	54.5	9.1	36.4	0.0	-	-	33.2	0.8	66.0	0.0	-	-	-
Total %	8.3	38.5	0.7	0.0	-	47.5	0.2	34.0	4.8	0.0	-	39.0	0.3	0.1	0.2	0.0	-	0.6	4.3	0.1	8.5	0.0	-	12.9	-
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	158	721	13	0	-	892	4	638	91	0	-	733	6	1	4	0	-	11	80	2	163	0	-	245	1881
% Cars & Light Goods	100.0	98.1	100.0	-	-	98.5	100.0	98.5	98.9	-	-	98.5	100.0	100.0	100.0	-	-	100.0	97.6	100.0	100.0	-	-	99.2	98.6
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.1	-	-	0.1	0.0	0.0	0.0	-	-	0.0	1.2	0.0	0.0	-	-	0.4	0.1
Single-Unit Trucks	0	12	0	0	-	12	0	9	0	0	-	9	0	0	0	0	-	0	1	0	0	0	-	1	22
% Single-Unit Trucks	0.0	1.6	0.0	-	-	1.3	0.0	1.4	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	1.2	0.0	0.0	-	-	0.4	1.2
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1

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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% 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: Boundary Road & Eganville Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



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: Boundary Road & Eganville Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

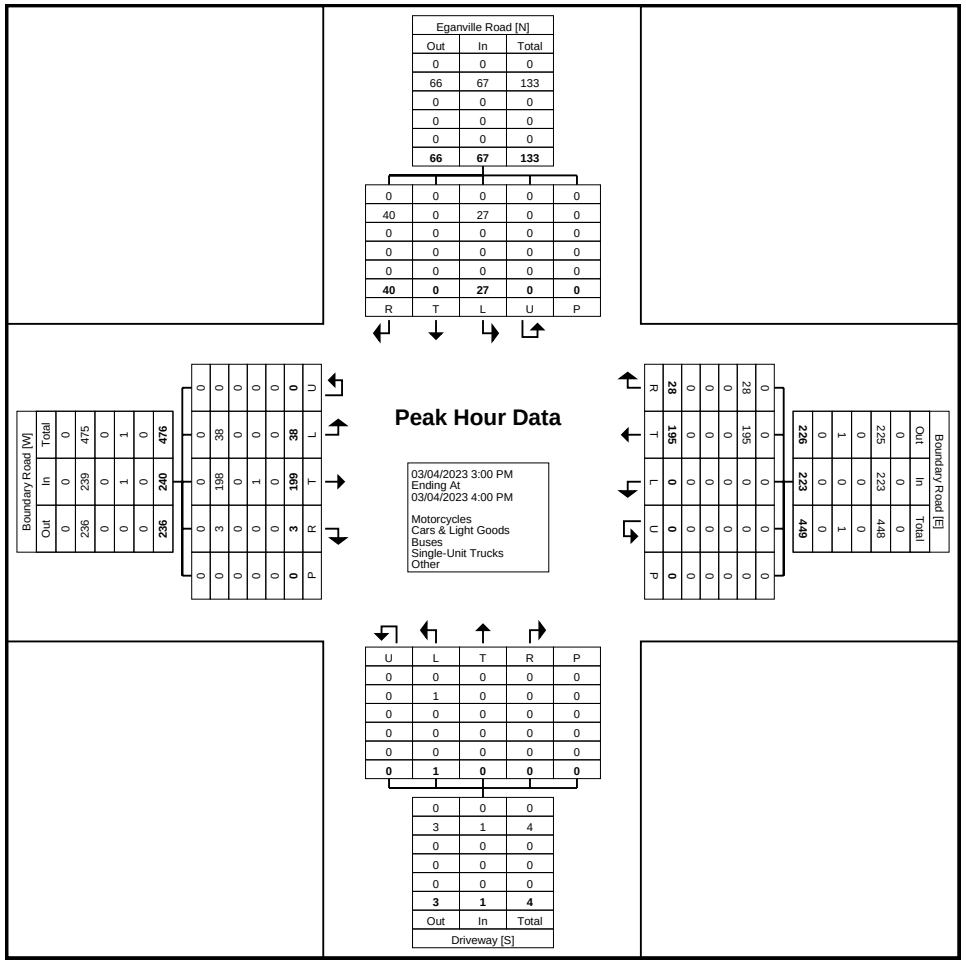
Turning Movement Peak Hour Data (3:00 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road 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
3:00 PM	12	66	0	0	0	78	0	47	5	0	0	52	1	0	0	0	0	1	8	0	11	0	0	19	150
3:15 PM	8	37	1	0	0	46	0	36	9	0	0	45	0	0	0	0	0	0	4	0	7	0	0	11	102
3:30 PM	6	44	1	0	0	51	0	57	5	0	0	62	0	0	0	0	0	0	9	0	15	0	0	24	137
3:45 PM	12	52	1	0	0	65	0	55	9	0	0	64	0	0	0	0	0	0	6	0	7	0	0	13	142
Total	38	199	3	0	0	240	0	195	28	0	0	223	1	0	0	0	0	1	27	0	40	0	0	67	531
Approach %	15.8	82.9	1.3	0.0	-	-	0.0	87.4	12.6	0.0	-	-	100.0	0.0	0.0	0.0	-	-	40.3	0.0	59.7	0.0	-	-	-
Total %	7.2	37.5	0.6	0.0	-	45.2	0.0	36.7	5.3	0.0	-	42.0	0.2	0.0	0.0	0.0	-	0.2	5.1	0.0	7.5	0.0	-	12.6	-
PHF	0.792	0.754	0.750	0.000	-	0.769	0.000	0.855	0.778	0.000	-	0.871	0.250	0.000	0.000	0.000	-	0.250	0.750	0.000	0.667	0.000	-	0.698	0.885
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
Cars & Light Goods	38	198	3	0	-	239	0	195	28	0	-	223	1	0	0	0	-	1	27	0	40	0	-	67	530
% Cars & Light Goods	100.0	99.5	100.0	-	-	99.6	-	100.0	100.0	-	-	100.0	100.0	-	-	-	-	100.0	100.0	-	100.0	-	-	100.0	99.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.5	0.0	-	-	0.4	-	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
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
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: Boundary Road & Eganville Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (3:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

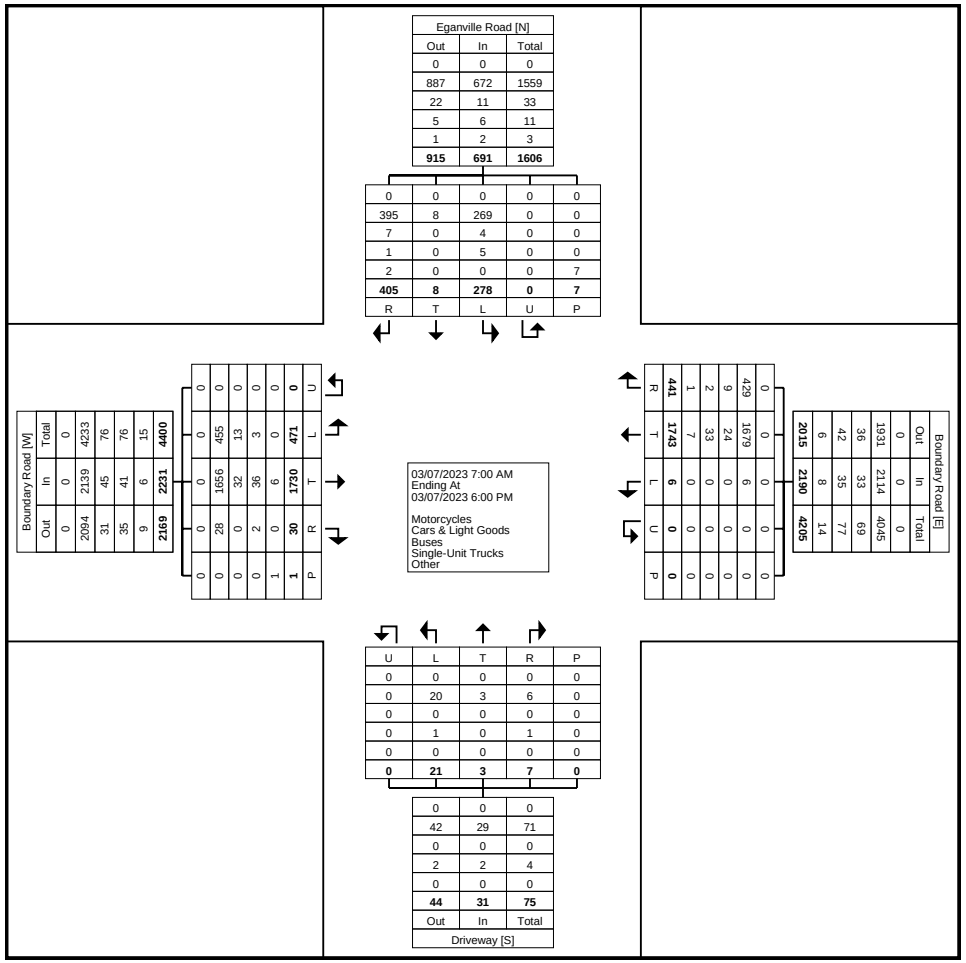
Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	4	25	0	0	0	29	0	49	7	0	0	56	0	0	0	0	0	0	6	0	5	0	1	11	96
7:15 AM	9	48	0	0	0	57	0	34	19	0	0	53	0	0	0	0	0	0	5	0	3	0	0	8	118
7:30 AM	22	47	0	0	0	69	0	58	28	0	0	86	0	0	1	0	0	1	6	0	10	0	0	16	172
7:45 AM	34	69	0	0	0	103	0	67	32	0	0	99	1	0	0	0	0	1	4	0	14	0	0	18	221
Hourly Total	69	189	0	0	0	258	0	208	86	0	0	294	1	0	1	0	0	2	21	0	32	0	1	53	607
8:00 AM	38	45	0	0	0	83	0	57	19	0	0	76	1	0	0	0	0	1	8	0	19	0	0	27	187
8:15 AM	17	48	3	0	0	68	0	53	25	0	0	78	1	0	0	0	0	1	7	0	12	0	0	19	166
8:30 AM	18	61	2	0	0	81	1	44	17	0	0	62	1	1	0	0	0	2	7	1	11	0	0	19	164
8:45 AM	22	43	1	0	0	66	1	57	17	0	0	75	2	0	0	0	0	2	2	0	10	0	0	12	155
Hourly Total	95	197	6	0	0	298	2	211	78	0	0	291	5	1	0	0	0	6	24	1	52	0	0	77	672
9:00 AM	18	48	1	0	0	67	0	37	13	0	0	50	0	0	0	0	0	0	3	0	5	0	0	8	125
9:15 AM	11	45	2	0	0	58	0	53	9	0	0	62	0	0	0	0	0	0	4	0	12	0	0	16	136
9:30 AM	17	45	0	0	0	62	0	48	15	0	0	63	1	0	0	0	0	1	3	0	9	0	1	12	138
9:45 AM	6	37	1	0	0	44	0	42	12	0	0	54	0	0	0	0	0	0	6	0	13	0	0	19	117
Hourly Total	52	175	4	0	0	231	0	180	49	0	0	229	1	0	0	0	0	1	16	0	39	0	1	55	516
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	5	39	0	0	0	44	1	41	12	0	0	54	0	0	0	0	0	0	7	1	11	0	0	19	117
11:15 AM	13	39	4	0	0	56	0	61	9	0	0	70	1	0	0	0	0	1	8	0	11	0	1	19	146
11:30 AM	15	43	1	0	0	59	0	50	14	0	0	64	0	0	1	0	0	1	10	1	13	0	0	24	148
11:45 AM	7	44	1	0	0	52	0	52	9	0	0	61	0	0	0	0	0	0	11	1	17	0	0	29	142
Hourly Total	40	165	6	0	0	211	1	204	44	0	0	249	1	0	1	0	0	2	36	3	52	0	1	91	553
12:00 PM	17	43	0	0	0	60	0	52	13	0	0	65	0	0	0	0	0	0	12	0	8	0	0	20	145
12:15 PM	12	62	0	0	0	74	0	48	16	0	0	64	0	0	0	0	0	0	12	0	12	0	1	24	162
12:30 PM	9	56	3	0	0	68	0	49	6	0	0	55	2	0	0	0	0	2	7	0	17	0	1	24	149
12:45 PM	18	61	2	0	0	81	1	44	12	0	0	57	0	0	0	0	0	0	5	0	10	0	0	15	153
Hourly Total	56	222	5	0	0	283	1	193	47	0	0	241	2	0	0	0	0	2	36	0	47	0	2	83	609
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	9	65	0	0	0	74	0	64	7	0	0	71	1	0	0	0	0	1	11	0	16	0	0	27	173
3:15 PM	15	57	1	0	0	73	0	51	13	0	0	64	0	0	0	0	0	0	10	1	16	0	0	27	164
3:30 PM	14	68	0	0	0	82	0	81	20	0	0	101	1	1	2	0	0	4	14	1	14	0	0	29	216
3:45 PM	12	67	0	0	1	79	0	58	9	0	0	67	0	0	0	0	0	0	14	0	13	0	0	27	173
Hourly Total	50	257	1	0	1	308	0	254	49	0	0	303	2	1	2	0	0	5	49	2	59	0	0	110	726
4:00 PM	9	79	3	0	0	91	0	96	11	0	0	107	2	0	0	0	0	2	15	1	20	0	0	36	236
4:15 PM	14	76	0	0	0	90	0	67	16	0	0	83	2	0	1	0	0	3	23	1	21	0	0	45	221
4:30 PM	12	82	0	0	0	94	0	68	12	0	0	80	0	1	1	0	0	2	14	0	19	0	0	33	209

4:45 PM	18	69	1	0	0	88	0	66	10	0	0	76	2	0	1	0	0	3	3	0	22	0	0	25	192
Hourly Total	53	306	4	0	0	363	0	297	49	0	0	346	6	1	3	0	0	10	55	2	82	0	0	139	858
5:00 PM	20	73	0	0	0	93	0	56	13	0	0	69	1	0	0	0	0	1	17	0	10	0	0	27	190
5:15 PM	13	49	1	0	0	63	0	66	12	0	0	78	1	0	0	0	0	1	7	0	13	0	1	20	162
5:30 PM	9	48	0	0	0	57	1	40	6	0	0	47	0	0	0	0	0	0	13	0	11	0	1	24	128
5:45 PM	14	49	3	0	0	66	1	34	8	0	0	43	1	0	0	0	0	1	4	0	8	0	0	12	122
Hourly Total	56	219	4	0	0	279	2	196	39	0	0	237	3	0	0	0	0	3	41	0	42	0	2	83	602
Grand Total	471	1730	30	0	1	2231	6	1743	441	0	0	2190	21	3	7	0	0	31	278	8	405	0	7	691	5143
Approach %	21.1	77.5	1.3	0.0	-	-	0.3	79.6	20.1	0.0	-	-	67.7	9.7	22.6	0.0	-	-	40.2	1.2	58.6	0.0	-	-	-
Total %	9.2	33.6	0.6	0.0	-	43.4	0.1	33.9	8.6	0.0	-	42.6	0.4	0.1	0.1	0.0	-	0.6	5.4	0.2	7.9	0.0	-	13.4	-
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	455	1656	28	0	-	2139	6	1679	429	0	-	2114	20	3	6	0	-	29	269	8	395	0	-	672	4954
% Cars & Light Goods	96.6	95.7	93.3	-	-	95.9	100.0	96.3	97.3	-	-	96.5	95.2	100.0	85.7	-	-	93.5	96.8	100.0	97.5	-	-	97.3	96.3
Buses	13	32	0	0	-	45	0	24	9	0	-	33	0	0	0	0	-	0	4	0	7	0	-	11	89
% Buses	2.8	1.8	0.0	-	-	2.0	0.0	1.4	2.0	-	-	1.5	0.0	0.0	0.0	-	-	0.0	1.4	0.0	1.7	-	-	1.6	1.7
Single-Unit Trucks	3	36	2	0	-	41	0	33	2	0	-	35	1	0	1	0	-	2	5	0	1	0	-	6	84
% Single-Unit Trucks	0.6	2.1	6.7	-	-	1.8	0.0	1.9	0.5	-	-	1.6	4.8	0.0	14.3	-	-	6.5	1.8	0.0	0.2	-	-	0.9	1.6
Articulated Trucks	0	5	0	0	-	5	0	7	1	0	-	8	0	0	0	0	-	0	0	0	2	0	-	2	15
% Articulated Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.4	0.2	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.5	-	-	0.3	0.3
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	0.0	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	7	-	-
% 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: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023
Page No: 3



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: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

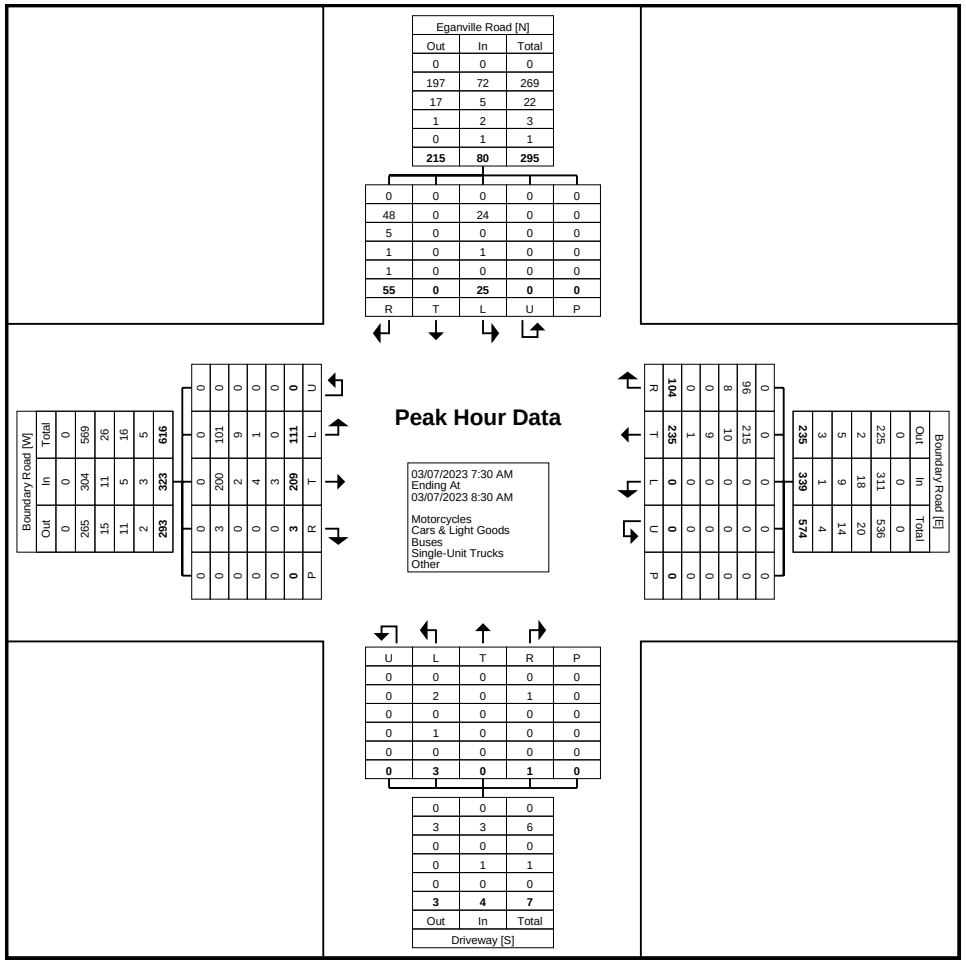
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road 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
7:30 AM	22	47	0	0	0	69	0	58	28	0	0	86	0	0	1	0	0	1	6	0	10	0	0	16	172
7:45 AM	34	69	0	0	0	103	0	67	32	0	0	99	1	0	0	0	0	1	4	0	14	0	0	18	221
8:00 AM	38	45	0	0	0	83	0	57	19	0	0	76	1	0	0	0	0	1	8	0	19	0	0	27	187
8:15 AM	17	48	3	0	0	68	0	53	25	0	0	78	1	0	0	0	0	1	7	0	12	0	0	19	166
Total	111	209	3	0	0	323	0	235	104	0	0	339	3	0	1	0	0	4	25	0	55	0	0	80	746
Approach %	34.4	64.7	0.9	0.0	-	-	0.0	69.3	30.7	0.0	-	-	75.0	0.0	25.0	0.0	-	-	31.3	0.0	68.8	0.0	-	-	-
Total %	14.9	28.0	0.4	0.0	-	43.3	0.0	31.5	13.9	0.0	-	45.4	0.4	0.0	0.1	0.0	-	0.5	3.4	0.0	7.4	0.0	-	10.7	-
PHF	0.730	0.757	0.250	0.000	-	0.784	0.000	0.877	0.813	0.000	-	0.856	0.750	0.000	0.250	0.000	-	1.000	0.781	0.000	0.724	0.000	-	0.741	0.844
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
Cars & Light Goods	101	200	3	0	-	304	0	215	96	0	-	311	2	0	1	0	-	3	24	0	48	0	-	72	690
% Cars & Light Goods	91.0	95.7	100.0	-	-	94.1	-	91.5	92.3	-	-	91.7	66.7	-	100.0	-	-	75.0	96.0	-	87.3	-	-	90.0	92.5
Buses	9	2	0	0	-	11	0	10	8	0	-	18	0	0	0	0	-	0	0	0	5	0	-	5	34
% Buses	8.1	1.0	0.0	-	-	3.4	-	4.3	7.7	-	-	5.3	0.0	-	0.0	-	-	0.0	0.0	-	9.1	-	-	6.3	4.6
Single-Unit Trucks	1	4	0	0	-	5	0	9	0	0	-	9	1	0	0	0	-	1	1	0	1	0	-	2	17
% Single-Unit Trucks	0.9	1.9	0.0	-	-	1.5	-	3.8	0.0	-	-	2.7	33.3	-	0.0	-	-	25.0	4.0	-	1.8	-	-	2.5	2.3
Articulated Trucks	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	5
% Articulated Trucks	0.0	1.4	0.0	-	-	0.9	-	0.4	0.0	-	-	0.3	0.0	-	0.0	-	-	0.0	0.0	-	1.8	-	-	1.3	0.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

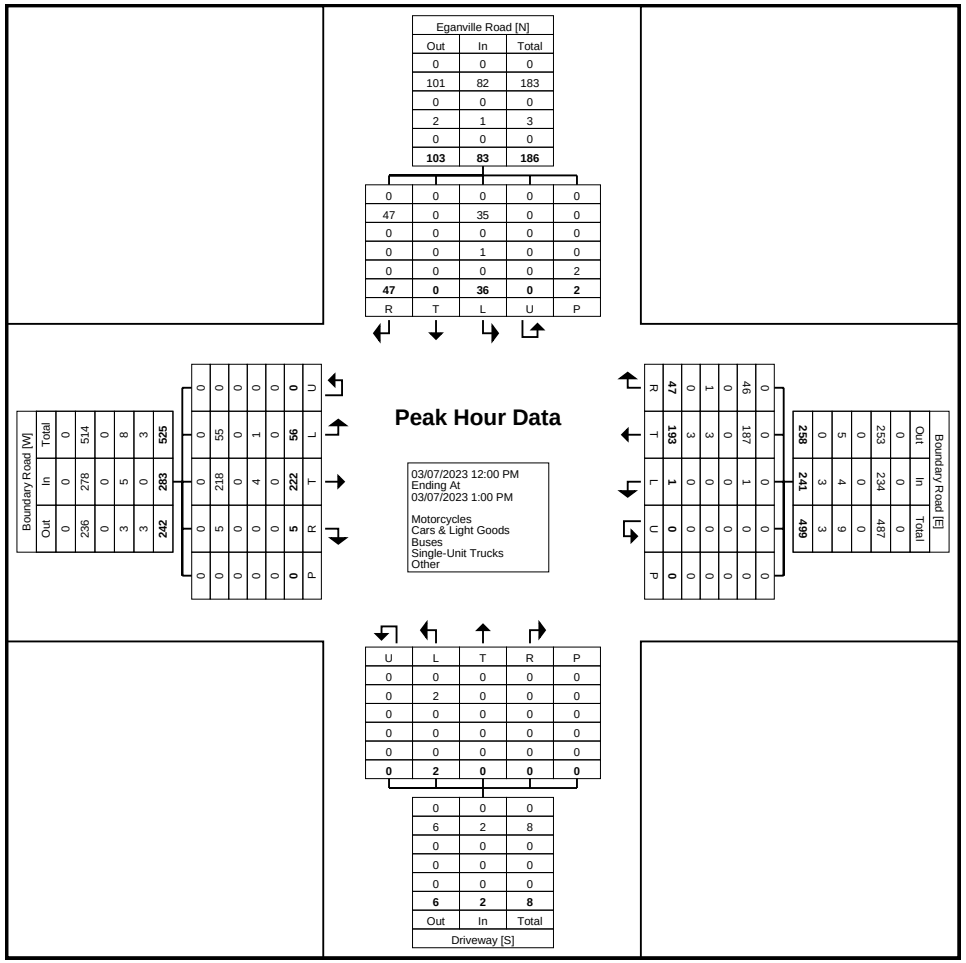
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road 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
12:00 PM	17	43	0	0	0	60	0	52	13	0	0	65	0	0	0	0	0	0	12	0	8	0	0	20	145
12:15 PM	12	62	0	0	0	74	0	48	16	0	0	64	0	0	0	0	0	0	12	0	12	0	1	24	162
12:30 PM	9	56	3	0	0	68	0	49	6	0	0	55	2	0	0	0	0	2	7	0	17	0	1	24	149
12:45 PM	18	61	2	0	0	81	1	44	12	0	0	57	0	0	0	0	0	0	5	0	10	0	0	15	153
Total	56	222	5	0	0	283	1	193	47	0	0	241	2	0	0	0	0	2	36	0	47	0	2	83	609
Approach %	19.8	78.4	1.8	0.0	-	-	0.4	80.1	19.5	0.0	-	-	100.0	0.0	0.0	0.0	-	-	43.4	0.0	56.6	0.0	-	-	-
Total %	9.2	36.5	0.8	0.0	-	46.5	0.2	31.7	7.7	0.0	-	39.6	0.3	0.0	0.0	0.0	-	0.3	5.9	0.0	7.7	0.0	-	13.6	-
PHF	0.778	0.895	0.417	0.000	-	0.873	0.250	0.928	0.734	0.000	-	0.927	0.250	0.000	0.000	0.000	-	0.250	0.750	0.000	0.691	0.000	-	0.865	0.940
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
Cars & Light Goods	55	218	5	0	-	278	1	187	46	0	-	234	2	0	0	0	-	2	35	0	47	0	-	82	596
% Cars & Light Goods	98.2	98.2	100.0	-	-	98.2	100.0	96.9	97.9	-	-	97.1	100.0	-	-	-	-	100.0	97.2	-	100.0	-	-	98.8	97.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	4	0	0	-	5	0	3	1	0	-	4	0	0	0	0	-	0	1	0	0	0	-	1	10
% Single-Unit Trucks	1.8	1.8	0.0	-	-	1.8	0.0	1.6	2.1	-	-	1.7	0.0	-	-	-	-	0.0	2.8	-	0.0	-	-	1.2	1.6
Articulated Trucks	0	0	0	0	-	0	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.6	0.0	-	-	1.2	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.5
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	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

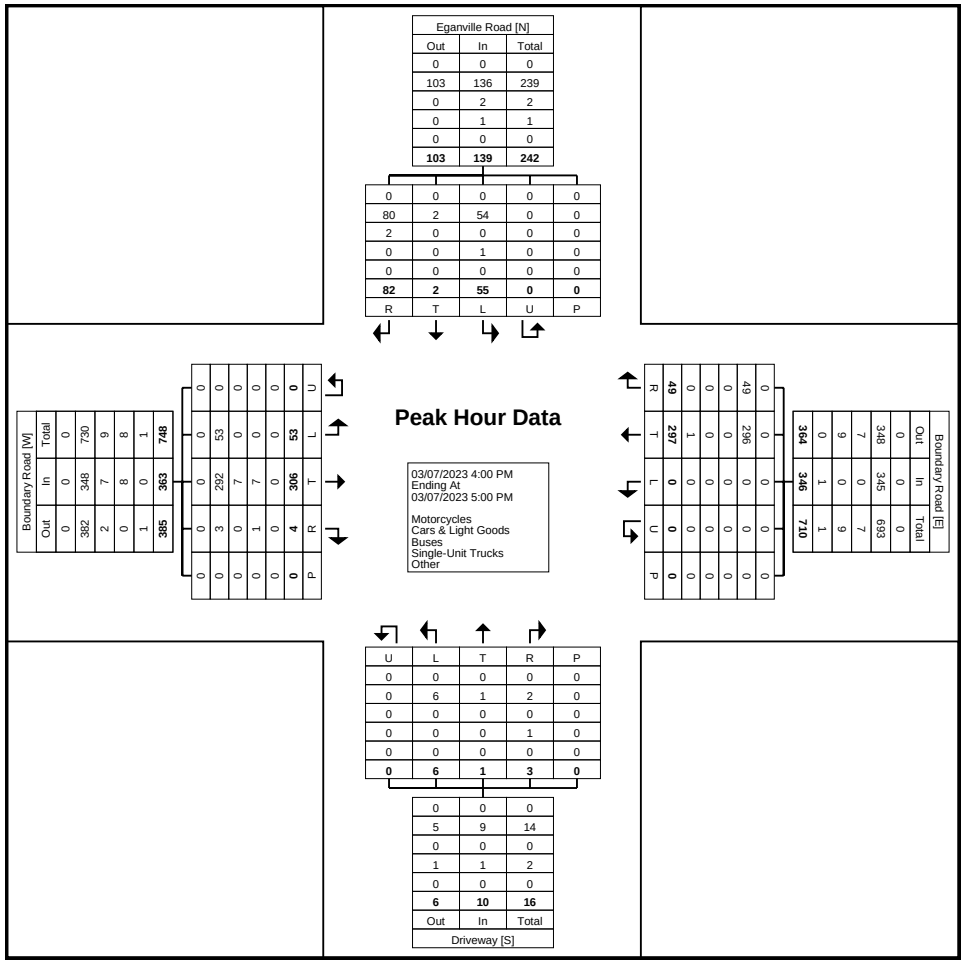
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road 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	9	79	3	0	0	91	0	96	11	0	0	107	2	0	0	0	0	2	15	1	20	0	0	36	236
4:15 PM	14	76	0	0	0	90	0	67	16	0	0	83	2	0	1	0	0	3	23	1	21	0	0	45	221
4:30 PM	12	82	0	0	0	94	0	68	12	0	0	80	0	1	1	0	0	2	14	0	19	0	0	33	209
4:45 PM	18	69	1	0	0	88	0	66	10	0	0	76	2	0	1	0	0	3	3	0	22	0	0	25	192
Total	53	306	4	0	0	363	0	297	49	0	0	346	6	1	3	0	0	10	55	2	82	0	0	139	858
Approach %	14.6	84.3	1.1	0.0	-	-	0.0	85.8	14.2	0.0	-	-	60.0	10.0	30.0	0.0	-	-	39.6	1.4	59.0	0.0	-	-	-
Total %	6.2	35.7	0.5	0.0	-	42.3	0.0	34.6	5.7	0.0	-	40.3	0.7	0.1	0.3	0.0	-	1.2	6.4	0.2	9.6	0.0	-	16.2	-
PHF	0.736	0.933	0.333	0.000	-	0.965	0.000	0.773	0.766	0.000	-	0.808	0.750	0.250	0.750	0.000	-	0.833	0.598	0.500	0.932	0.000	-	0.772	0.909
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
Cars & Light Goods	53	292	3	0	-	348	0	296	49	0	-	345	6	1	2	0	-	9	54	2	80	0	-	136	838
% Cars & Light Goods	100.0	95.4	75.0	-	-	95.9	-	99.7	100.0	-	-	99.7	100.0	100.0	66.7	-	-	90.0	98.2	100.0	97.6	-	-	97.8	97.7
Buses	0	7	0	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	9
% Buses	0.0	2.3	0.0	-	-	1.9	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.4	-	-	1.4	1.0
Single-Unit Trucks	0	7	1	0	-	8	0	0	0	0	-	0	0	0	1	0	-	1	1	0	0	0	-	1	10
% Single-Unit Trucks	0.0	2.3	25.0	-	-	2.2	-	0.0	0.0	-	-	0.0	0.0	0.0	33.3	-	-	10.0	1.8	0.0	0.0	-	-	0.7	1.2
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	-	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
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	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 cbowness@ptsl.com

Count Name: Boundary Road & Eganville Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Boundary Road & International Drive Bennett Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

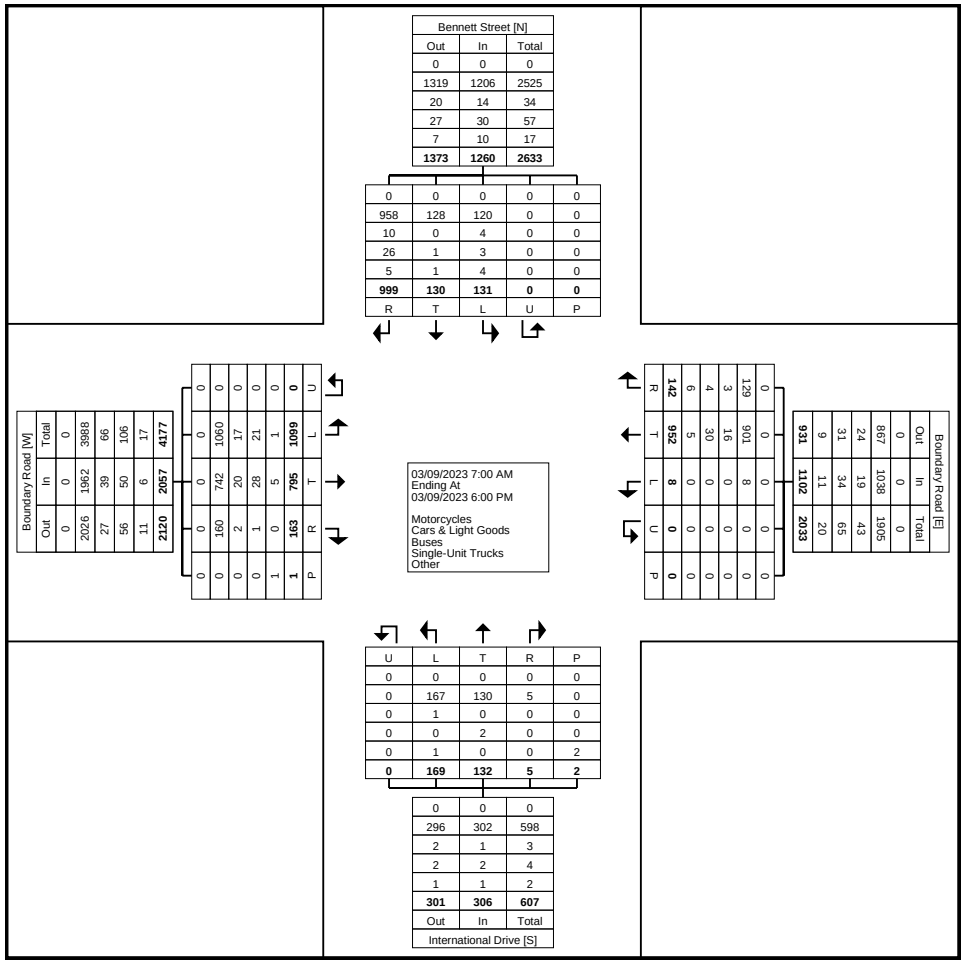
Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	23	19	3	0	0	45	0	17	3	0	0	20	5	3	0	0	0	8	4	3	14	0	0	21	94
7:15 AM	27	20	3	0	1	50	0	26	0	0	0	26	2	0	0	0	0	2	0	4	22	0	0	26	104
7:30 AM	24	16	3	0	0	43	1	45	2	0	0	48	4	3	0	0	2	7	4	5	20	0	0	29	127
7:45 AM	50	23	10	0	0	83	0	62	6	0	0	68	5	8	0	0	0	13	8	7	24	0	0	39	203
Hourly Total	124	78	19	0	1	221	1	150	11	0	0	162	16	14	0	0	2	30	16	19	80	0	0	115	528
8:00 AM	37	19	5	0	0	61	0	40	3	0	0	43	4	2	0	0	0	6	9	2	27	0	0	38	148
8:15 AM	38	21	4	0	0	63	0	40	5	0	0	45	2	2	0	0	0	4	4	3	28	0	0	35	147
8:30 AM	38	32	7	0	0	77	0	38	6	0	0	44	6	1	0	0	0	7	5	8	26	0	0	39	167
8:45 AM	34	28	6	0	0	68	0	28	1	0	0	29	4	3	0	0	0	7	1	9	24	0	0	34	138
Hourly Total	147	100	22	0	0	269	0	146	15	0	0	161	16	8	0	0	0	24	19	22	105	0	0	146	600
9:00 AM	31	17	1	0	0	49	1	29	4	0	0	34	2	1	0	0	0	3	0	4	27	0	0	31	117
9:15 AM	42	22	4	0	0	68	0	17	2	0	0	19	2	2	0	0	0	4	3	1	30	0	0	34	125
9:30 AM	33	20	6	0	0	59	0	27	3	0	0	30	4	2	0	0	0	6	1	6	25	0	0	32	127
9:45 AM	29	14	9	0	0	52	1	29	1	0	0	31	5	3	1	0	0	9	1	0	21	0	0	22	114
Hourly Total	135	73	20	0	0	228	2	102	10	0	0	114	13	8	1	0	0	22	5	11	103	0	0	119	483
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	20	20	2	0	0	42	0	25	4	0	0	29	5	4	0	0	0	9	8	3	23	0	0	34	114
11:15 AM	25	28	4	0	0	57	0	22	7	0	0	29	5	2	0	0	0	7	3	2	31	0	0	36	129
11:30 AM	40	17	5	0	0	62	2	22	9	0	0	33	5	4	0	0	0	9	6	3	21	0	0	30	134
11:45 AM	31	25	3	0	0	59	0	23	5	0	0	28	6	3	0	0	0	9	3	6	29	0	0	38	134
Hourly Total	116	90	14	0	0	220	2	92	25	0	0	119	21	13	0	0	0	34	20	14	104	0	0	138	511
12:00 PM	33	21	6	0	0	60	0	23	3	0	0	26	14	11	0	0	0	25	6	3	39	0	0	48	159
12:15 PM	31	20	6	0	0	57	0	31	4	0	0	35	5	7	0	0	0	12	2	4	29	0	0	35	139
12:30 PM	38	24	7	0	0	69	0	22	2	0	0	24	5	5	1	0	0	11	6	6	38	0	0	50	154
12:45 PM	36	26	9	0	0	71	0	20	2	0	0	22	5	3	2	0	0	10	3	12	31	0	0	46	149
Hourly Total	138	91	28	0	0	257	0	96	11	0	0	107	29	26	3	0	0	58	17	25	137	0	0	179	601
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	29	18	5	0	0	52	0	19	5	0	0	24	2	5	0	0	0	7	4	2	39	0	0	45	128
3:15 PM	38	28	7	0	0	73	0	25	2	0	0	27	6	8	0	0	0	14	3	3	43	0	0	49	163
3:30 PM	37	34	6	0	0	77	2	45	13	0	0	60	8	3	0	0	0	11	5	5	52	0	0	62	210
3:45 PM	41	24	5	0	0	70	0	28	6	0	0	34	3	3	0	0	0	6	3	7	38	0	0	48	158
Hourly Total	145	104	23	0	0	272	2	117	26	0	0	145	19	19	0	0	0	38	15	17	172	0	0	204	659
4:00 PM	42	41	9	0	0	92	0	46	5	0	0	51	20	10	0	0	0	30	8	2	57	0	0	67	240
4:15 PM	41	45	2	0	0	88	0	42	6	0	0	48	8	11	1	0	0	20	9	4	35	0	0	48	204
4:30 PM	47	38	3	0	0	88	0	24	10	0	0	34	7	3	0	0	0	10	4	4	46	0	0	54	186

4:45 PM	47	30	4	0	0	81	1	21	5	0	0	27	5	4	0	0	0	9	4	2	33	0	0	39	156
Hourly Total	177	154	18	0	0	349	1	133	26	0	0	160	40	28	1	0	0	69	25	12	171	0	0	208	786
5:00 PM	32	33	5	0	0	70	0	40	7	0	0	47	3	11	0	0	0	14	3	4	49	0	0	56	187
5:15 PM	36	31	5	0	0	72	0	31	1	0	0	32	6	2	0	0	0	8	3	4	31	0	0	38	150
5:30 PM	23	19	6	0	0	48	0	25	2	0	0	27	4	2	0	0	0	6	1	0	19	0	0	20	101
5:45 PM	26	22	3	0	0	51	0	20	8	0	0	28	2	1	0	0	0	3	7	2	28	0	0	37	119
Hourly Total	117	105	19	0	0	241	0	116	18	0	0	134	15	16	0	0	0	31	14	10	127	0	0	151	557
Grand Total	1099	795	163	0	1	2057	8	952	142	0	0	1102	169	132	5	0	2	306	131	130	999	0	0	1260	4725
Approach %	53.4	38.6	7.9	0.0	-	-	0.7	86.4	12.9	0.0	-	-	55.2	43.1	1.6	0.0	-	-	10.4	10.3	79.3	0.0	-	-	-
Total %	23.3	16.8	3.4	0.0	-	43.5	0.2	20.1	3.0	0.0	-	23.3	3.6	2.8	0.1	0.0	-	6.5	2.8	2.8	21.1	0.0	-	26.7	-
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	1060	742	160	0	-	1962	8	901	129	0	-	1038	167	130	5	0	-	302	120	128	958	0	-	1206	4508
% Cars & Light Goods	96.5	93.3	98.2	-	-	95.4	100.0	94.6	90.8	-	-	94.2	98.8	98.5	100.0	-	-	98.7	91.6	98.5	95.9	-	-	95.7	95.4
Buses	17	20	2	0	-	39	0	16	3	0	-	19	1	0	0	0	-	1	4	0	10	0	-	14	73
% Buses	1.5	2.5	1.2	-	-	1.9	0.0	1.7	2.1	-	-	1.7	0.6	0.0	0.0	-	-	0.3	3.1	0.0	1.0	-	-	1.1	1.5
Single-Unit Trucks	21	28	1	0	-	50	0	30	4	0	-	34	0	2	0	0	-	2	3	1	26	0	-	30	116
% Single-Unit Trucks	1.9	3.5	0.6	-	-	2.4	0.0	3.2	2.8	-	-	3.1	0.0	1.5	0.0	-	-	0.7	2.3	0.8	2.6	-	-	2.4	2.5
Articulated Trucks	1	5	0	0	-	6	0	5	6	0	-	11	1	0	0	0	-	1	4	0	5	0	-	9	27
% Articulated Trucks	0.1	0.6	0.0	-	-	0.3	0.0	0.5	4.2	-	-	1.0	0.6	0.0	0.0	-	-	0.3	3.1	0.0	0.5	-	-	0.7	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% 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: Boundary Road & International Drive Bennett Street
Site Code: 220694
Start Date: 03/09/2023
Page No: 3



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: Boundary Road & International Drive Bennett Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett 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
7:45 AM	50	23	10	0	0	83	0	62	6	0	0	68	5	8	0	0	0	13	8	7	24	0	0	39	203
8:00 AM	37	19	5	0	0	61	0	40	3	0	0	43	4	2	0	0	0	6	9	2	27	0	0	38	148
8:15 AM	38	21	4	0	0	63	0	40	5	0	0	45	2	2	0	0	0	4	4	3	28	0	0	35	147
8:30 AM	38	32	7	0	0	77	0	38	6	0	0	44	6	1	0	0	0	7	5	8	26	0	0	39	167
Total	163	95	26	0	0	284	0	180	20	0	0	200	17	13	0	0	0	30	26	20	105	0	0	151	665
Approach %	57.4	33.5	9.2	0.0	-	-	0.0	90.0	10.0	0.0	-	-	56.7	43.3	0.0	0.0	-	-	17.2	13.2	69.5	0.0	-	-	-
Total %	24.5	14.3	3.9	0.0	-	42.7	0.0	27.1	3.0	0.0	-	30.1	2.6	2.0	0.0	0.0	-	4.5	3.9	3.0	15.8	0.0	-	22.7	-
PHF	0.815	0.742	0.650	0.000	-	0.855	0.000	0.726	0.833	0.000	-	0.735	0.708	0.406	0.000	0.000	-	0.577	0.722	0.625	0.938	0.000	-	0.968	0.819
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
Cars & Light Goods	159	87	26	0	-	272	0	164	18	0	-	182	17	13	0	0	-	30	24	19	97	0	-	140	624
% Cars & Light Goods	97.5	91.6	100.0	-	-	95.8	-	91.1	90.0	-	-	91.0	100.0	100.0	-	-	-	100.0	92.3	95.0	92.4	-	-	92.7	93.8
Buses	2	4	0	0	-	6	0	11	1	0	-	12	0	0	0	0	-	0	2	0	3	0	-	5	23
% Buses	1.2	4.2	0.0	-	-	2.1	-	6.1	5.0	-	-	6.0	0.0	0.0	-	-	-	0.0	7.7	0.0	2.9	-	-	3.3	3.5
Single-Unit Trucks	2	2	0	0	-	4	0	5	0	0	-	5	0	0	0	0	-	0	0	0	5	0	-	5	14
% Single-Unit Trucks	1.2	2.1	0.0	-	-	1.4	-	2.8	0.0	-	-	2.5	0.0	0.0	-	-	-	0.0	0.0	0.0	4.8	-	-	3.3	2.1
Articulated Trucks	0	2	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	0.0	2.1	0.0	-	-	0.7	-	0.0	5.0	-	-	0.5	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	5.0	0.0	-	-	0.7	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
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Count Name: Boundary Road & International Drive Bennett Street
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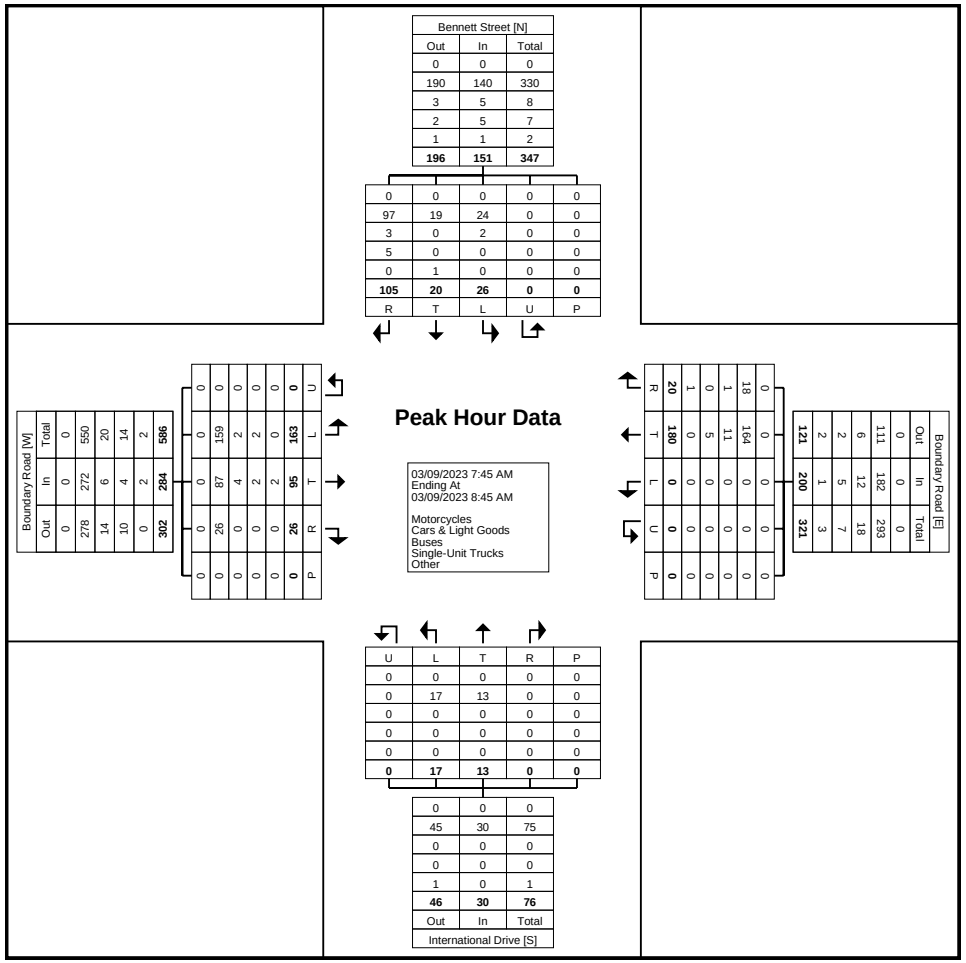
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & International Drive Bennett Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett 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
12:00 PM	33	21	6	0	0	60	0	23	3	0	0	26	14	11	0	0	0	25	6	3	39	0	0	48	159
12:15 PM	31	20	6	0	0	57	0	31	4	0	0	35	5	7	0	0	0	12	2	4	29	0	0	35	139
12:30 PM	38	24	7	0	0	69	0	22	2	0	0	24	5	5	1	0	0	11	6	6	38	0	0	50	154
12:45 PM	36	26	9	0	0	71	0	20	2	0	0	22	5	3	2	0	0	10	3	12	31	0	0	46	149
Total	138	91	28	0	0	257	0	96	11	0	0	107	29	26	3	0	0	58	17	25	137	0	0	179	601
Approach %	53.7	35.4	10.9	0.0	-	-	0.0	89.7	10.3	0.0	-	-	50.0	44.8	5.2	0.0	-	-	9.5	14.0	76.5	0.0	-	-	-
Total %	23.0	15.1	4.7	0.0	-	42.8	0.0	16.0	1.8	0.0	-	17.8	4.8	4.3	0.5	0.0	-	9.7	2.8	4.2	22.8	0.0	-	29.8	-
PHF	0.908	0.875	0.778	0.000	-	0.905	0.000	0.774	0.688	0.000	-	0.764	0.518	0.591	0.375	0.000	-	0.580	0.708	0.521	0.878	0.000	-	0.895	0.945
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
Cars & Light Goods	135	83	28	0	-	246	0	91	11	0	-	102	29	26	3	0	-	58	16	25	131	0	-	172	578
% Cars & Light Goods	97.8	91.2	100.0	-	-	95.7	-	94.8	100.0	-	-	95.3	100.0	100.0	100.0	-	-	100.0	94.1	100.0	95.6	-	-	96.1	96.2
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	1.1	0.0	-	-	0.4	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	3	6	0	0	-	9	0	5	0	0	-	5	0	0	0	0	-	0	0	0	6	0	-	6	20
% Single-Unit Trucks	2.2	6.6	0.0	-	-	3.5	-	5.2	0.0	-	-	4.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	4.4	-	-	3.4	3.3
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	2
% Articulated Trucks	0.0	1.1	0.0	-	-	0.4	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	5.9	0.0	0.0	-	-	0.6	0.3
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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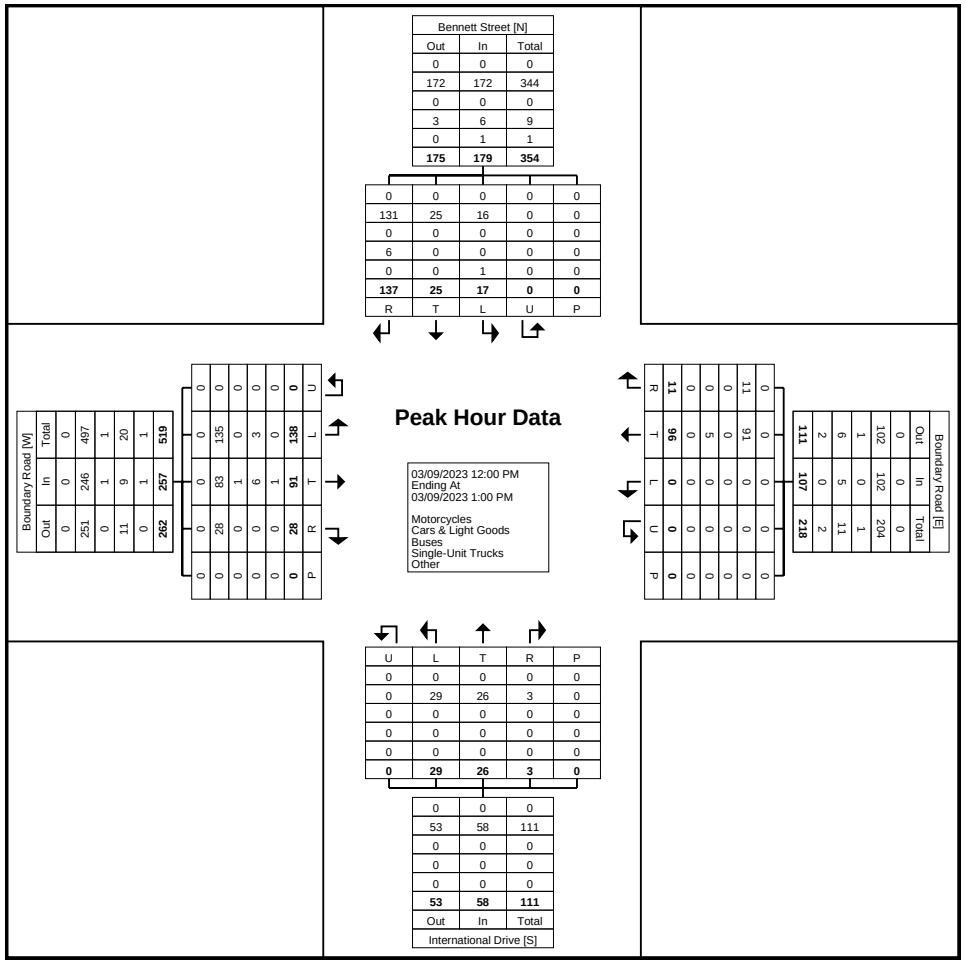

Turning Movement Peak Hour Data Plot (12:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & International Drive Bennett Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett 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
3:30 PM	37	34	6	0	0	77	2	45	13	0	0	60	8	3	0	0	0	11	5	5	52	0	0	62	210
3:45 PM	41	24	5	0	0	70	0	28	6	0	0	34	3	3	0	0	0	6	3	7	38	0	0	48	158
4:00 PM	42	41	9	0	0	92	0	46	5	0	0	51	20	10	0	0	0	30	8	2	57	0	0	67	240
4:15 PM	41	45	2	0	0	88	0	42	6	0	0	48	8	11	1	0	0	20	9	4	35	0	0	48	204
Total	161	144	22	0	0	327	2	161	30	0	0	193	39	27	1	0	0	67	25	18	182	0	0	225	812
Approach %	49.2	44.0	6.7	0.0	-	-	1.0	83.4	15.5	0.0	-	-	58.2	40.3	1.5	0.0	-	-	11.1	8.0	80.9	0.0	-	-	-
Total %	19.8	17.7	2.7	0.0	-	40.3	0.2	19.8	3.7	0.0	-	23.8	4.8	3.3	0.1	0.0	-	8.3	3.1	2.2	22.4	0.0	-	27.7	-
PHF	0.958	0.800	0.611	0.000	-	0.889	0.250	0.875	0.577	0.000	-	0.804	0.488	0.614	0.250	0.000	-	0.558	0.694	0.643	0.798	0.000	-	0.840	0.846
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	155	131	21	0	-	307	2	153	30	0	-	185	39	27	1	0	-	67	22	17	178	0	-	217	776
% Cars & Light Goods	96.3	91.0	95.5	-	-	93.9	100.0	95.0	100.0	-	-	95.9	100.0	100.0	100.0	-	-	100.0	88.0	94.4	97.8	-	-	96.4	95.6
Buses	1	9	1	0	-	11	0	0	0	0	-	0	0	0	0	0	-	0	2	0	2	0	-	4	15
% Buses	0.6	6.3	4.5	-	-	3.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	8.0	0.0	1.1	-	-	1.8	1.8
Single-Unit Trucks	5	4	0	0	-	9	0	6	0	0	-	6	0	0	0	0	-	0	0	1	2	0	-	3	18
% Single-Unit Trucks	3.1	2.8	0.0	-	-	2.8	0.0	3.7	0.0	-	-	3.1	0.0	0.0	0.0	-	-	0.0	0.0	5.6	1.1	-	-	1.3	2.2
Articulated Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	1	0	0	0	-	1	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.2	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	4.0	0.0	0.0	-	-	0.4	0.4
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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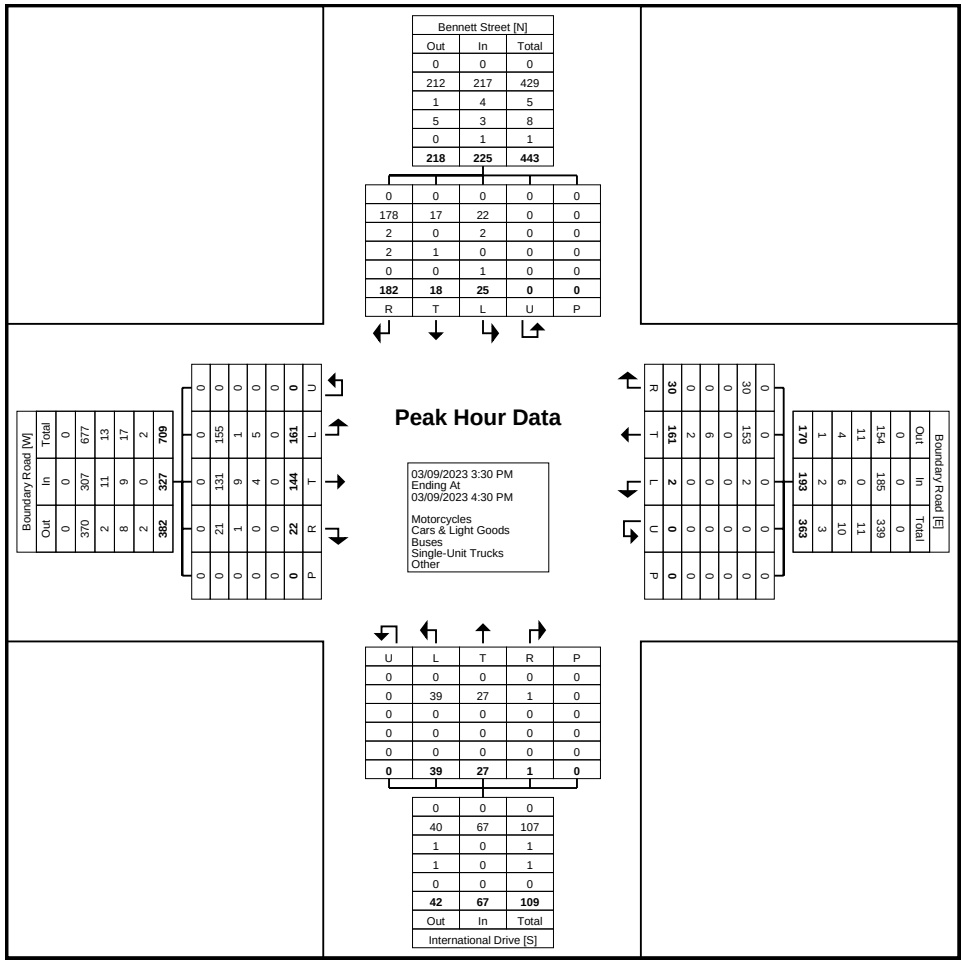
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Jean Avenue
Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road 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
12:00 PM	0	0	0	0	0	0	13	0	20	0	0	33	0	6	11	0	0	17	18	8	0	0	0	26	76
12:15 PM	0	0	0	0	0	0	11	0	19	0	0	30	0	6	16	0	0	22	19	8	0	0	0	27	79
12:30 PM	0	0	0	0	0	0	10	0	20	0	0	30	0	4	16	0	0	20	14	7	0	0	0	21	71
12:45 PM	0	0	0	0	2	0	15	0	18	0	0	33	0	4	20	0	0	24	22	7	0	0	0	29	86
Hourly Total	0	0	0	0	2	0	49	0	77	0	0	126	0	20	63	0	0	83	73	30	0	0	0	103	312
1:00 PM	0	0	0	0	0	0	18	0	21	0	0	39	0	7	6	0	0	13	18	4	0	0	0	22	74
1:15 PM	0	0	0	0	0	0	13	0	24	0	0	37	1	5	11	0	0	17	17	5	0	0	0	22	76
1:30 PM	0	0	0	0	0	0	17	0	18	0	0	35	0	7	19	0	0	26	21	1	0	0	0	22	83
1:45 PM	0	0	0	0	0	0	22	0	17	0	0	39	0	6	17	0	0	23	13	6	0	0	0	19	81
Hourly Total	0	0	0	0	0	0	70	0	80	0	0	150	1	25	53	0	0	79	69	16	0	0	0	85	314
2:00 PM	0	0	0	0	0	0	9	1	19	0	0	29	0	4	10	0	0	14	19	3	0	0	0	22	65
2:15 PM	0	1	0	0	0	1	15	0	23	0	2	38	0	4	13	0	0	17	27	6	0	0	0	33	89
2:30 PM	0	0	0	0	0	0	17	0	17	0	0	34	0	3	20	0	0	23	22	0	0	0	0	22	79
2:45 PM	0	0	0	0	0	0	15	0	27	0	0	42	0	3	19	0	0	22	13	6	0	0	0	19	83
Hourly Total	0	1	0	0	0	1	56	1	86	0	2	143	0	14	62	0	0	76	81	15	0	0	0	96	316
3:00 PM	0	0	0	0	0	0	13	0	30	0	0	43	0	7	15	0	0	22	27	10	0	0	0	37	102
3:15 PM	0	0	0	0	0	0	12	0	21	0	0	33	0	7	16	0	0	23	26	11	0	0	0	37	93
3:30 PM	0	0	0	0	0	0	23	0	33	0	0	56	0	9	12	0	0	21	22	3	0	0	0	25	102
3:45 PM	0	0	0	0	0	0	12	0	21	0	0	33	0	3	18	0	0	21	22	7	0	0	0	29	83
Hourly Total	0	0	0	0	0	0	60	0	105	0	0	165	0	26	61	0	0	87	97	31	0	0	0	128	380
Grand Total	0	1	0	0	2	1	235	1	348	0	2	584	1	85	239	0	0	325	320	92	0	0	0	412	1322
Approach %	0.0	100.0	0.0	0.0	-	-	40.2	0.2	59.6	0.0	-	-	0.3	26.2	73.5	0.0	-	-	77.7	22.3	0.0	0.0	-	-	-
Total %	0.0	0.1	0.0	0.0	-	0.1	17.8	0.1	26.3	0.0	-	44.2	0.1	6.4	18.1	0.0	-	24.6	24.2	7.0	0.0	0.0	-	31.2	-
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
Cars & Light Goods	0	1	0	0	-	1	229	1	342	0	-	572	0	83	232	0	-	315	317	91	0	0	-	408	1296
% Cars & Light Goods	-	100.0	-	-	-	100.0	97.4	100.0	98.3	-	-	97.9	0.0	97.6	97.1	-	-	96.9	99.1	98.9	-	-	-	99.0	98.0
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	6	0	6	0	-	12	0	2	7	0	-	9	3	0	0	0	-	3	24
% Single-Unit Trucks	-	0.0	-	-	-	0.0	2.6	0.0	1.7	-	-	2.1	0.0	2.4	2.9	-	-	2.8	0.9	0.0	-	-	-	0.7	1.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	1	0	0	-	1	2
% Articulated Trucks	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	100.0	0.0	0.0	-	-	0.3	0.0	1.1	-	-	-	0.2	0.2

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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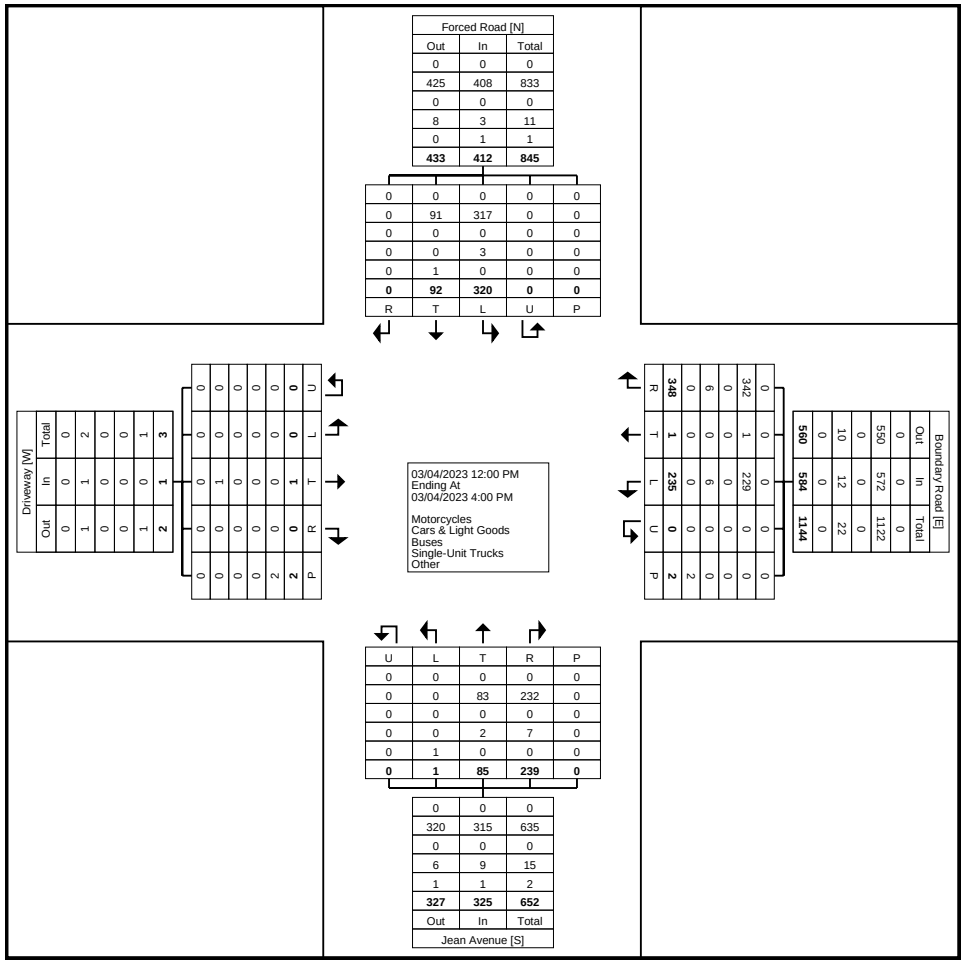
Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Data Plot

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Count Name: Boundary Road & Jean Avenue
Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Peak Hour Data (2:45 PM)

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road 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
2:45 PM	0	0	0	0	0	0	15	0	27	0	0	42	0	3	19	0	0	22	13	6	0	0	0	19	83
3:00 PM	0	0	0	0	0	0	13	0	30	0	0	43	0	7	15	0	0	22	27	10	0	0	0	37	102
3:15 PM	0	0	0	0	0	0	12	0	21	0	0	33	0	7	16	0	0	23	26	11	0	0	0	37	93
3:30 PM	0	0	0	0	0	0	23	0	33	0	0	56	0	9	12	0	0	21	22	3	0	0	0	25	102
Total	0	0	0	0	0	0	63	0	111	0	0	174	0	26	62	0	0	88	88	30	0	0	0	118	380
Approach %	0.0	0.0	0.0	0.0	-	-	36.2	0.0	63.8	0.0	-	-	0.0	29.5	70.5	0.0	-	-	74.6	25.4	0.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	16.6	0.0	29.2	0.0	-	45.8	0.0	6.8	16.3	0.0	-	23.2	23.2	7.9	0.0	0.0	-	31.1	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.685	0.000	0.841	0.000	-	0.777	0.000	0.722	0.816	0.000	-	0.957	0.815	0.682	0.000	0.000	-	0.797	0.931
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Cars & Light Goods	0	0	0	0	-	0	62	0	109	0	-	171	0	26	62	0	-	88	88	30	0	0	-	118	377
% Cars & Light Goods	-	-	-	-	-	-	98.4	-	98.2	-	-	98.3	-	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	99.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	1	0	2	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	-	-	-	-	-	-	1.6	-	1.8	-	-	1.7	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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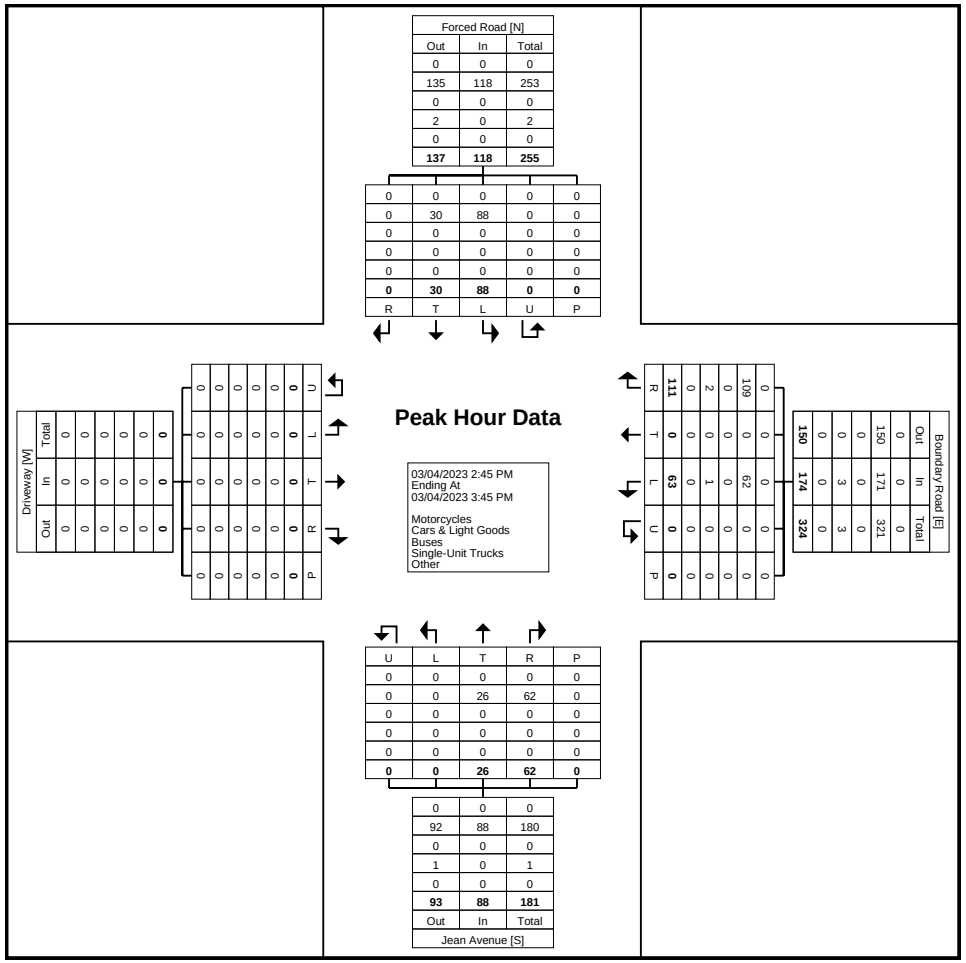

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Count Name: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

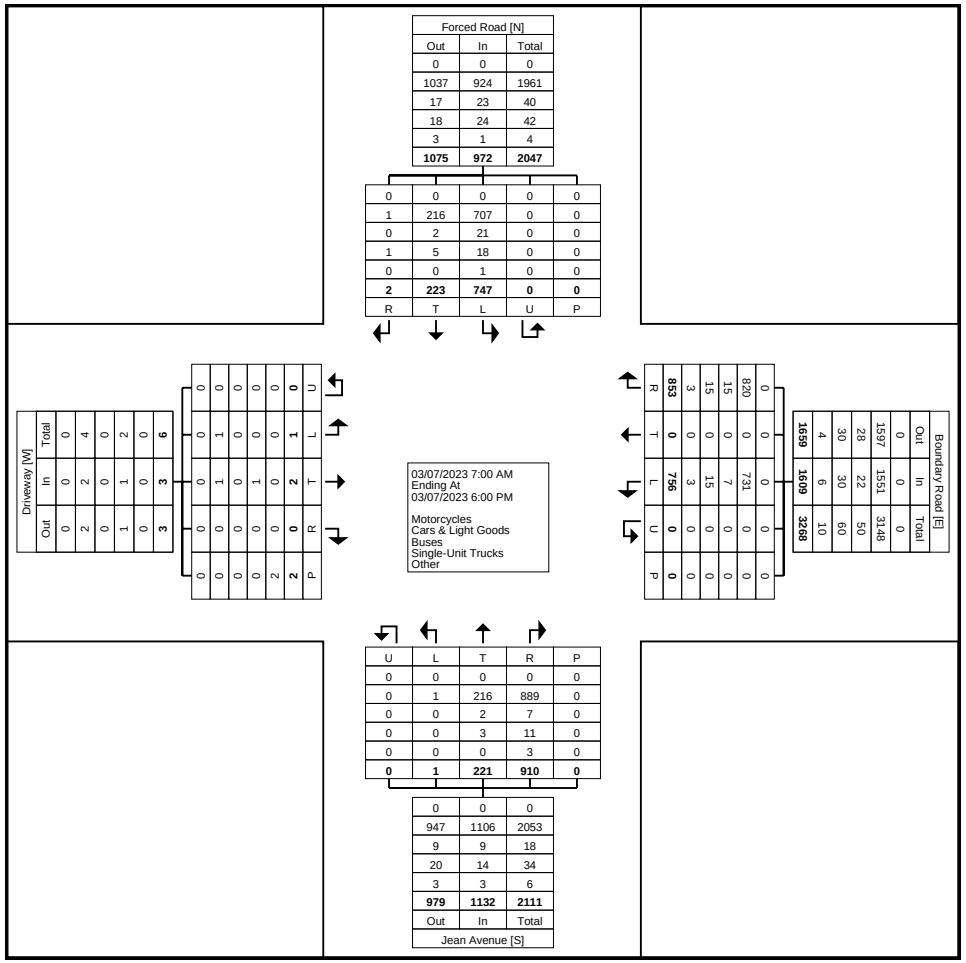
Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	25	0	24	0	0	49	0	6	10	0	0	16	6	4	0	0	0	10	75
7:15 AM	0	0	0	0	0	0	26	0	19	0	0	45	0	5	20	0	0	25	13	6	0	0	0	19	89
7:30 AM	0	0	0	0	0	0	31	0	32	0	0	63	0	5	27	0	0	32	12	3	0	0	0	15	110
7:45 AM	0	0	0	0	0	0	42	0	28	0	0	70	0	14	51	0	0	65	14	4	1	0	0	19	154
Hourly Total	0	0	0	0	0	0	124	0	103	0	0	227	0	30	108	0	0	138	45	17	1	0	0	63	428
8:00 AM	1	0	0	0	0	1	26	0	35	0	0	61	0	7	37	0	0	44	13	3	0	0	0	16	122
8:15 AM	0	0	0	0	0	0	23	0	36	0	0	59	0	10	37	0	0	47	14	7	0	0	0	21	127
8:30 AM	0	0	0	0	0	0	25	0	24	0	0	49	0	8	34	0	0	42	22	3	0	0	0	25	116
8:45 AM	0	0	0	0	0	0	38	0	33	0	0	71	0	7	20	0	0	27	21	11	0	0	0	32	130
Hourly Total	1	0	0	0	0	1	112	0	128	0	0	240	0	32	128	0	0	160	70	24	0	0	0	94	495
9:00 AM	0	0	0	0	0	0	15	0	21	0	0	36	0	9	20	0	0	29	16	3	0	0	0	19	84
9:15 AM	0	0	0	0	0	0	26	0	17	0	0	43	0	10	23	0	0	33	10	3	0	0	0	13	89
9:30 AM	0	0	0	0	0	0	18	0	39	0	0	57	0	5	16	0	0	21	9	1	1	0	0	11	89
9:45 AM	0	1	0	0	0	1	19	0	28	0	0	47	0	9	16	0	0	25	14	4	0	0	0	18	91
Hourly Total	0	1	0	0	0	1	78	0	105	0	0	183	0	33	75	0	0	108	49	11	1	0	0	61	353
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	0	0	0	0	0	16	0	25	0	0	41	0	5	14	0	0	19	28	6	0	0	0	34	94
11:15 AM	0	0	0	0	2	0	19	0	37	0	0	56	1	5	17	0	0	23	27	7	0	0	0	34	113
11:30 AM	0	1	0	0	0	1	15	0	28	0	0	43	0	6	14	0	0	20	24	8	0	0	0	32	96
11:45 AM	0	0	0	0	0	0	19	0	25	0	0	44	0	6	20	0	0	26	21	3	0	0	0	24	94
Hourly Total	0	1	0	0	2	1	69	0	115	0	0	184	1	22	65	0	0	88	100	24	0	0	0	124	397
12:00 PM	0	0	0	0	0	0	21	0	19	0	0	40	0	5	28	0	0	33	30	7	0	0	0	37	110
12:15 PM	0	0	0	0	0	0	19	0	27	0	0	46	0	8	34	0	0	42	24	5	0	0	0	29	117
12:30 PM	0	0	0	0	0	0	12	0	32	0	0	44	0	7	24	0	0	31	30	9	0	0	0	39	114
12:45 PM	0	0	0	0	0	0	24	0	22	0	0	46	0	7	20	0	0	27	32	10	0	0	0	42	115
Hourly Total	0	0	0	0	0	0	76	0	100	0	0	176	0	27	106	0	0	133	116	31	0	0	0	147	456
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	0	0	0	0	0	35	0	30	0	0	65	0	5	22	0	0	27	32	5	0	0	0	37	129
3:15 PM	0	0	0	0	0	0	22	0	11	0	0	33	0	2	33	0	0	35	22	7	0	0	0	29	97
3:30 PM	0	0	0	0	0	0	24	0	23	0	0	47	0	8	39	0	0	47	24	14	0	0	0	38	132
3:45 PM	0	0	0	0	0	0	27	0	24	0	0	51	0	7	38	0	0	45	26	14	0	0	0	40	136
Hourly Total	0	0	0	0	0	0	108	0	88	0	0	196	0	22	132	0	0	154	104	40	0	0	0	144	494
4:00 PM	0	0	0	0	0	0	35	0	33	0	0	68	0	10	44	0	0	54	43	10	0	0	0	53	175
4:15 PM	0	0	0	0	0	0	24	0	32	0	0	56	0	11	32	0	0	43	36	9	0	0	0	45	144
4:30 PM	0	0	0	0	0	0	26	0	27	0	0	53	0	5	45	0	0	50	33	11	0	0	0	44	147

4:45 PM	0	0	0	0	0	0	29	0	29	0	0	58	0	4	40	0	0	44	41	15	0	0	0	56	158
Hourly Total	0	0	0	0	0	0	114	0	121	0	0	235	0	30	161	0	0	191	153	45	0	0	0	198	624
5:00 PM	0	0	0	0	0	0	24	0	23	0	0	47	0	8	58	0	0	66	38	7	0	0	0	45	158
5:15 PM	0	0	0	0	0	0	21	0	32	0	0	53	0	5	29	0	0	34	29	10	0	0	0	39	126
5:30 PM	0	0	0	0	0	0	16	0	18	0	0	34	0	6	28	0	0	34	29	11	0	0	0	40	108
5:45 PM	0	0	0	0	0	0	14	0	20	0	0	34	0	6	20	0	0	26	14	3	0	0	0	17	77
Hourly Total	0	0	0	0	0	0	75	0	93	0	0	168	0	25	135	0	0	160	110	31	0	0	0	141	469
Grand Total	1	2	0	0	2	3	756	0	853	0	0	1609	1	221	910	0	0	1132	747	223	2	0	0	972	3716
Approach %	33.3	66.7	0.0	0.0	-	-	47.0	0.0	53.0	0.0	-	-	0.1	19.5	80.4	0.0	-	-	76.9	22.9	0.2	0.0	-	-	-
Total %	0.0	0.1	0.0	0.0	-	0.1	20.3	0.0	23.0	0.0	-	43.3	0.0	5.9	24.5	0.0	-	30.5	20.1	6.0	0.1	0.0	-	26.2	-
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
Cars & Light Goods	1	1	0	0	-	2	731	0	820	0	-	1551	1	216	889	0	-	1106	707	216	1	0	-	924	3583
% Cars & Light Goods	100.0	50.0	-	-	-	66.7	96.7	-	96.1	-	-	96.4	100.0	97.7	97.7	-	-	97.7	94.6	96.9	50.0	-	-	95.1	96.4
Buses	0	0	0	0	-	0	7	0	15	0	-	22	0	2	7	0	-	9	21	2	0	0	-	23	54
% Buses	0.0	0.0	-	-	-	0.0	0.9	-	1.8	-	-	1.4	0.0	0.9	0.8	-	-	0.8	2.8	0.9	0.0	-	-	2.4	1.5
Single-Unit Trucks	0	1	0	0	-	1	15	0	15	0	-	30	0	3	11	0	-	14	18	5	1	0	-	24	69
% Single-Unit Trucks	0.0	50.0	-	-	-	33.3	2.0	-	1.8	-	-	1.9	0.0	1.4	1.2	-	-	1.2	2.4	2.2	50.0	-	-	2.5	1.9
Articulated Trucks	0	0	0	0	-	0	3	0	3	0	-	6	0	0	3	0	-	3	1	0	0	0	-	1	10
% Articulated Trucks	0.0	0.0	-	-	-	0.0	0.4	-	0.4	-	-	0.4	0.0	0.0	0.3	-	-	0.3	0.1	0.0	0.0	-	-	0.1	0.3
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	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: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023
Page No: 3



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: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

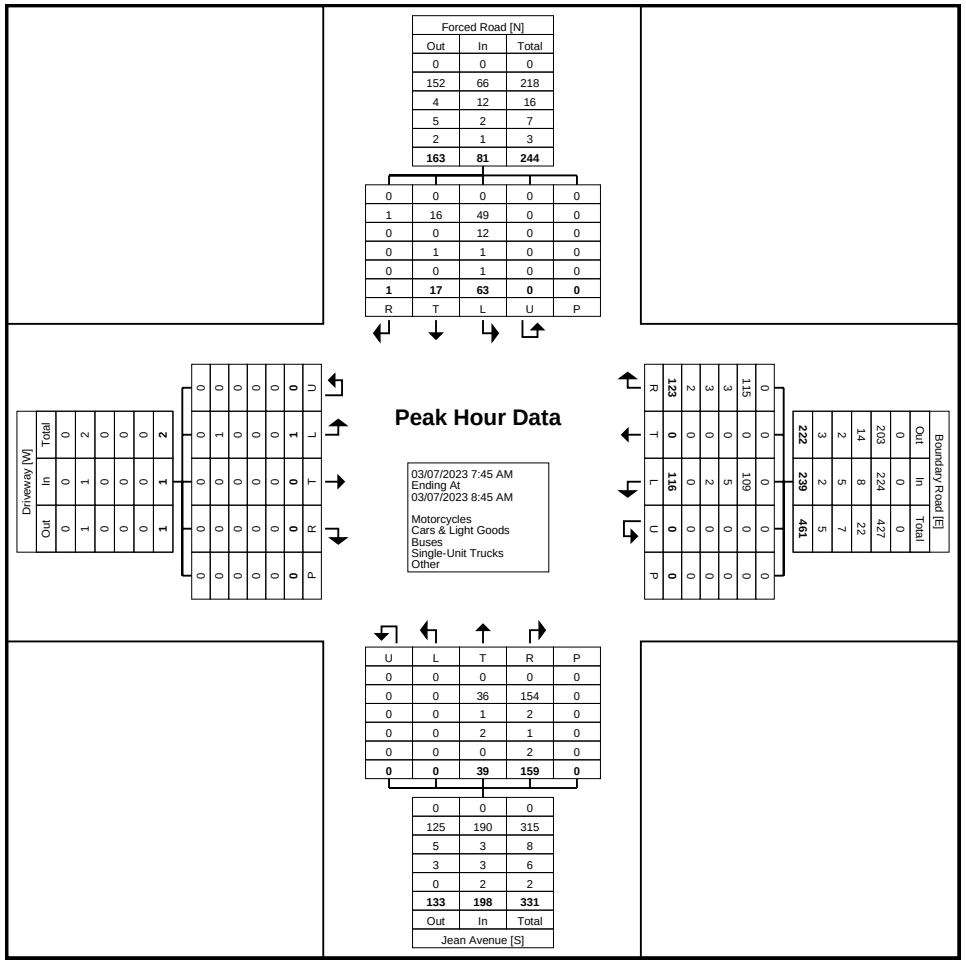
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road 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
7:45 AM	0	0	0	0	0	0	42	0	28	0	0	70	0	14	51	0	0	65	14	4	1	0	0	19	154
8:00 AM	1	0	0	0	0	1	26	0	35	0	0	61	0	7	37	0	0	44	13	3	0	0	0	16	122
8:15 AM	0	0	0	0	0	0	23	0	36	0	0	59	0	10	37	0	0	47	14	7	0	0	0	21	127
8:30 AM	0	0	0	0	0	0	25	0	24	0	0	49	0	8	34	0	0	42	22	3	0	0	0	25	116
Total	1	0	0	0	0	1	116	0	123	0	0	239	0	39	159	0	0	198	63	17	1	0	0	81	519
Approach %	100.0	0.0	0.0	0.0	-	-	48.5	0.0	51.5	0.0	-	-	0.0	19.7	80.3	0.0	-	-	77.8	21.0	1.2	0.0	-	-	-
Total %	0.2	0.0	0.0	0.0	-	0.2	22.4	0.0	23.7	0.0	-	46.1	0.0	7.5	30.6	0.0	-	38.2	12.1	3.3	0.2	0.0	-	15.6	-
PHF	0.250	0.000	0.000	0.000	-	0.250	0.690	0.000	0.854	0.000	-	0.854	0.000	0.696	0.779	0.000	-	0.762	0.716	0.607	0.250	0.000	-	0.810	0.843
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
Cars & Light Goods	1	0	0	0	-	1	109	0	115	0	-	224	0	36	154	0	-	190	49	16	1	0	-	66	481
% Cars & Light Goods	100.0	-	-	-	-	100.0	94.0	-	93.5	-	-	93.7	-	92.3	96.9	-	-	96.0	77.8	94.1	100.0	-	-	81.5	92.7
Buses	0	0	0	0	-	0	5	0	3	0	-	8	0	1	2	0	-	3	12	0	0	0	-	12	23
% Buses	0.0	-	-	-	-	0.0	4.3	-	2.4	-	-	3.3	-	2.6	1.3	-	-	1.5	19.0	0.0	0.0	-	-	14.8	4.4
Single-Unit Trucks	0	0	0	0	-	0	2	0	3	0	-	5	0	2	1	0	-	3	1	1	0	0	-	2	10
% Single-Unit Trucks	0.0	-	-	-	-	0.0	1.7	-	2.4	-	-	2.1	-	5.1	0.6	-	-	1.5	1.6	5.9	0.0	-	-	2.5	1.9
Articulated Trucks	0	0	0	0	-	0	0	0	2	0	-	2	0	0	2	0	-	2	1	0	0	0	-	1	5
% Articulated Trucks	0.0	-	-	-	-	0.0	0.0	-	1.6	-	-	0.8	-	0.0	1.3	-	-	1.0	1.6	0.0	0.0	-	-	1.2	1.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
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: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road 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
12:00 PM	0	0	0	0	0	0	21	0	19	0	0	40	0	5	28	0	0	33	30	7	0	0	0	37	110
12:15 PM	0	0	0	0	0	0	19	0	27	0	0	46	0	8	34	0	0	42	24	5	0	0	0	29	117
12:30 PM	0	0	0	0	0	0	12	0	32	0	0	44	0	7	24	0	0	31	30	9	0	0	0	39	114
12:45 PM	0	0	0	0	0	0	24	0	22	0	0	46	0	7	20	0	0	27	32	10	0	0	0	42	115
Total	0	0	0	0	0	0	76	0	100	0	0	176	0	27	106	0	0	133	116	31	0	0	0	147	456
Approach %	0.0	0.0	0.0	0.0	-	-	43.2	0.0	56.8	0.0	-	-	0.0	20.3	79.7	0.0	-	-	78.9	21.1	0.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	16.7	0.0	21.9	0.0	-	38.6	0.0	5.9	23.2	0.0	-	29.2	25.4	6.8	0.0	0.0	-	32.2	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.792	0.000	0.781	0.000	-	0.957	0.000	0.844	0.779	0.000	-	0.792	0.906	0.775	0.000	0.000	-	0.875	0.974
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Cars & Light Goods	0	0	0	0	-	0	72	0	99	0	-	171	0	27	104	0	-	131	112	30	0	0	-	142	444
% Cars & Light Goods	-	-	-	-	-	-	94.7	-	99.0	-	-	97.2	-	100.0	98.1	-	-	98.5	96.6	96.8	-	-	-	96.6	97.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	3	0	1	0	-	4	0	0	2	0	-	2	4	1	0	0	-	5	11
% Single-Unit Trucks	-	-	-	-	-	-	3.9	-	1.0	-	-	2.3	-	0.0	1.9	-	-	1.5	3.4	3.2	-	-	-	3.4	2.4
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	-	-	-	-	-	-	1.3	-	0.0	-	-	0.6	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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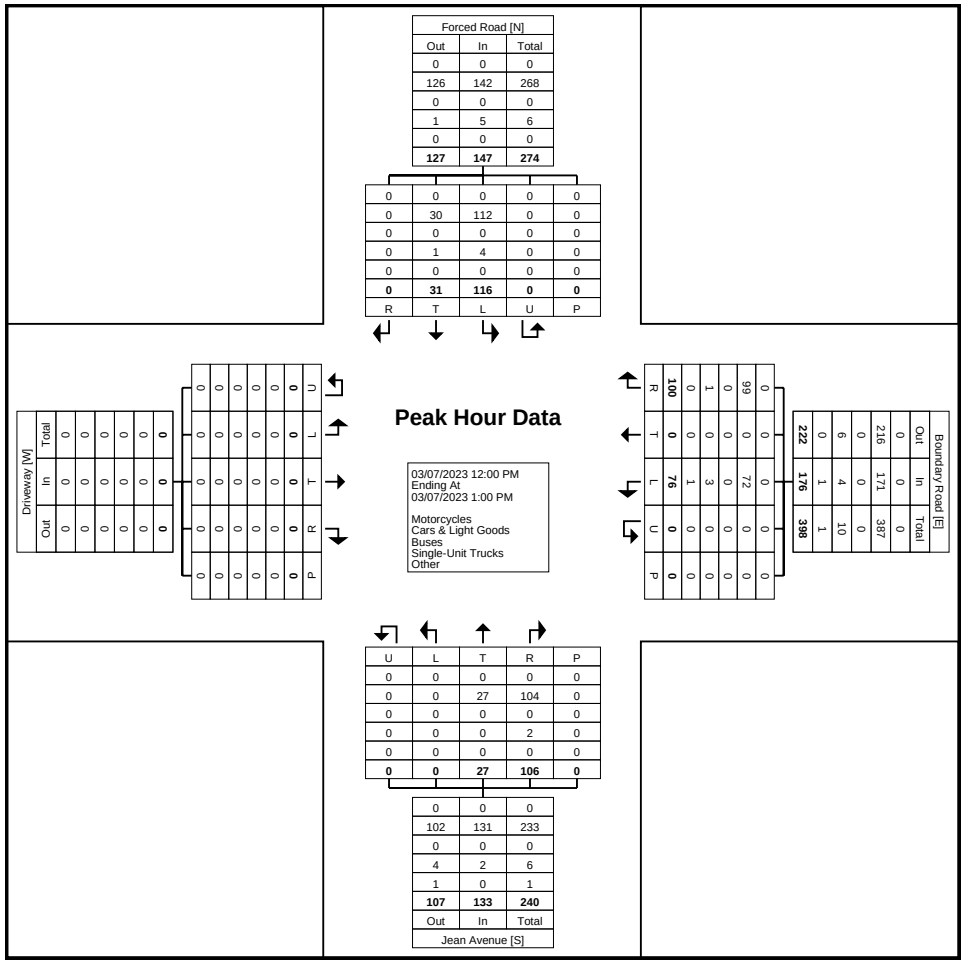
Site Code: 220694
Start Date: 03/07/2023



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: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

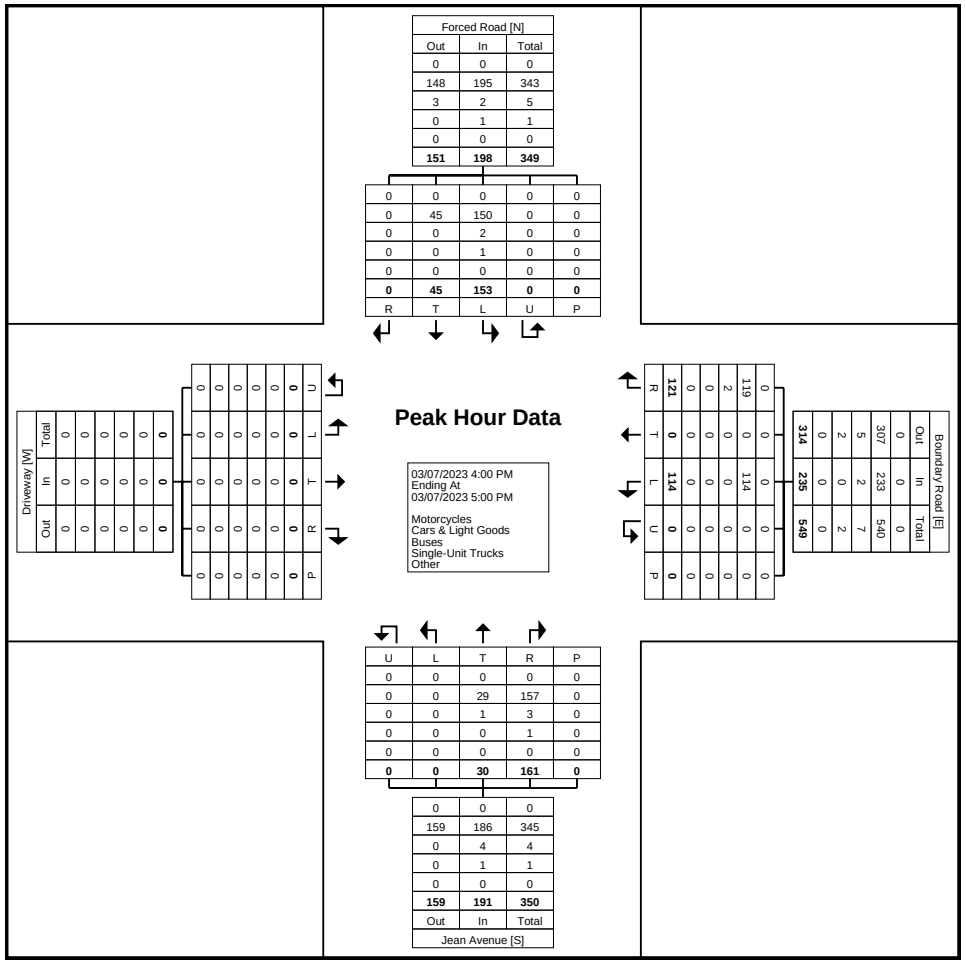
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road 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	0	0	0	0	0	35	0	33	0	0	68	0	10	44	0	0	54	43	10	0	0	0	53	175
4:15 PM	0	0	0	0	0	0	24	0	32	0	0	56	0	11	32	0	0	43	36	9	0	0	0	45	144
4:30 PM	0	0	0	0	0	0	26	0	27	0	0	53	0	5	45	0	0	50	33	11	0	0	0	44	147
4:45 PM	0	0	0	0	0	0	29	0	29	0	0	58	0	4	40	0	0	44	41	15	0	0	0	56	158
Total	0	0	0	0	0	0	114	0	121	0	0	235	0	30	161	0	0	191	153	45	0	0	0	198	624
Approach %	0.0	0.0	0.0	0.0	-	-	48.5	0.0	51.5	0.0	-	-	0.0	15.7	84.3	0.0	-	-	77.3	22.7	0.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	18.3	0.0	19.4	0.0	-	37.7	0.0	4.8	25.8	0.0	-	30.6	24.5	7.2	0.0	0.0	-	31.7	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.814	0.000	0.917	0.000	-	0.864	0.000	0.682	0.894	0.000	-	0.884	0.890	0.750	0.000	0.000	-	0.884	0.891
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Cars & Light Goods	0	0	0	0	-	0	114	0	119	0	-	233	0	29	157	0	-	186	150	45	0	0	-	195	614
% Cars & Light Goods	-	-	-	-	-	-	100.0	-	98.3	-	-	99.1	-	96.7	97.5	-	-	97.4	98.0	100.0	-	-	-	98.5	98.4
Buses	0	0	0	0	-	0	0	0	2	0	-	2	0	1	3	0	-	4	2	0	0	0	-	2	8
% Buses	-	-	-	-	-	-	0.0	-	1.7	-	-	0.9	-	3.3	1.9	-	-	2.1	1.3	0.0	-	-	-	1.0	1.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1	0	0	0	-	1	2
% Single-Unit Trucks	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.6	-	-	0.5	0.7	0.0	-	-	-	0.5	0.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Boundary Road & Jean Avenue
Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

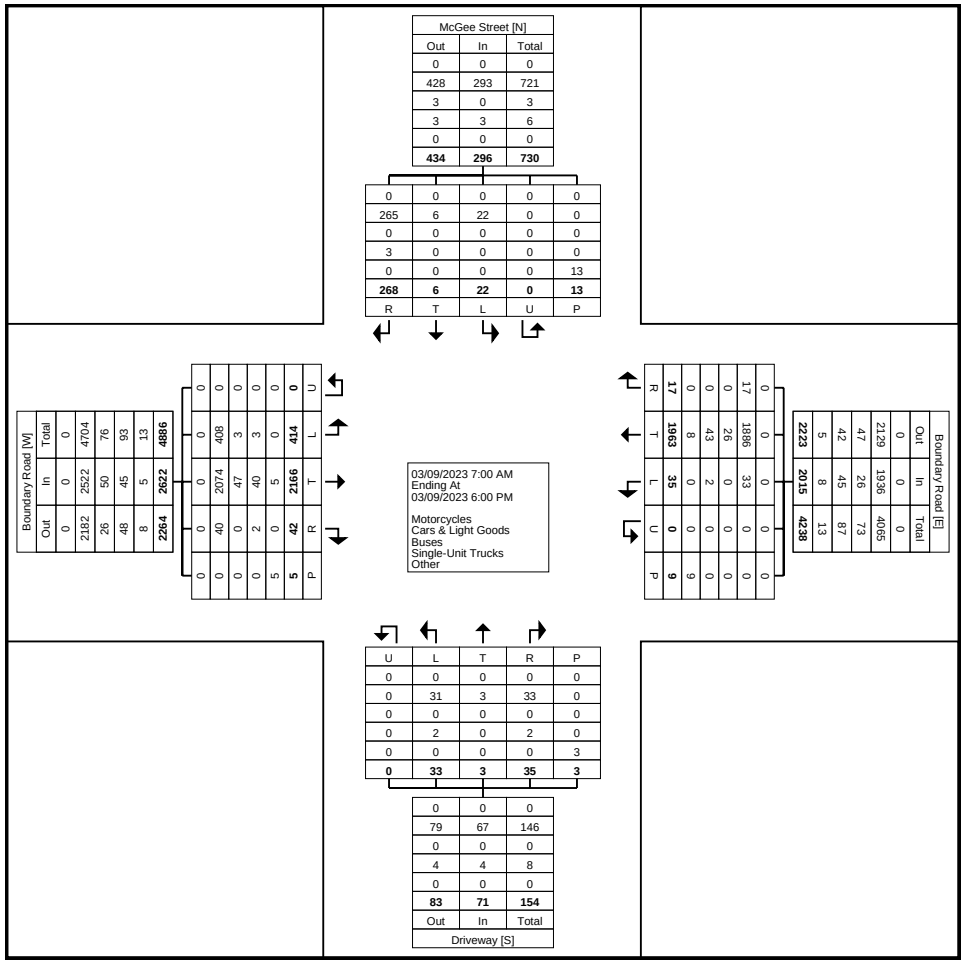
Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	4	43	0	0	0	47	0	40	0	0	0	40	0	0	0	0	0	0	0	0	3	0	0	3	90
7:15 AM	9	43	0	0	2	52	0	53	1	0	0	54	0	0	0	0	0	0	0	0	4	0	0	4	110
7:30 AM	15	45	0	0	1	60	0	65	1	0	0	66	0	0	0	0	0	0	0	0	7	0	0	7	133
7:45 AM	17	92	0	0	0	109	0	73	1	0	1	74	0	0	0	0	0	0	1	0	10	0	1	11	194
Hourly Total	45	223	0	0	3	268	0	231	3	0	1	234	0	0	0	0	0	0	1	0	24	0	1	25	527
8:00 AM	22	83	0	0	0	105	0	69	0	0	2	69	0	0	0	0	0	0	0	0	11	0	1	11	185
8:15 AM	12	67	0	0	0	79	1	74	1	0	0	76	0	0	0	0	0	0	0	0	10	0	0	10	165
8:30 AM	29	64	0	0	0	93	1	63	0	0	0	64	0	0	1	0	0	1	2	0	8	0	2	10	168
8:45 AM	14	64	0	0	0	78	0	50	0	0	2	50	0	0	0	0	0	0	2	0	5	0	0	7	135
Hourly Total	77	278	0	0	0	355	2	256	1	0	4	259	0	0	1	0	0	1	4	0	34	0	3	38	653
9:00 AM	13	48	0	0	0	61	0	57	1	0	0	58	0	0	0	0	0	0	0	0	8	0	0	8	127
9:15 AM	20	55	0	0	0	75	0	41	0	0	0	41	0	0	0	0	0	0	1	0	5	0	0	6	122
9:30 AM	8	55	0	0	0	63	0	54	0	0	0	54	0	0	0	0	0	0	2	0	4	0	0	6	123
9:45 AM	8	49	1	0	0	58	0	36	1	0	0	37	0	0	0	0	0	0	0	0	5	0	0	5	100
Hourly Total	49	207	1	0	0	257	0	188	2	0	0	190	0	0	0	0	0	0	3	0	22	0	0	25	472
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	10	36	0	0	0	46	0	52	0	0	0	52	0	0	0	0	0	0	0	0	2	0	1	2	100
11:15 AM	8	50	2	0	0	60	5	48	1	0	0	54	1	0	2	0	0	3	1	0	7	0	0	8	125
11:30 AM	11	54	2	0	0	67	0	47	0	0	0	47	0	0	4	0	0	4	0	0	12	0	0	12	130
11:45 AM	9	66	3	0	0	78	2	49	1	0	0	52	3	0	0	0	0	3	0	0	2	0	2	2	135
Hourly Total	38	206	7	0	0	251	7	196	2	0	0	205	4	0	6	0	0	10	1	0	23	0	3	24	490
12:00 PM	7	54	3	0	0	64	4	54	0	0	1	58	2	0	3	0	0	5	0	0	4	0	1	4	131
12:15 PM	7	51	5	0	0	63	1	55	1	0	0	57	2	0	3	0	0	5	1	0	1	0	0	2	127
12:30 PM	11	64	3	0	0	78	2	52	0	0	0	54	5	0	1	0	0	6	1	0	8	0	2	9	147
12:45 PM	7	80	2	0	0	89	0	59	0	0	0	59	3	0	2	0	1	5	1	2	10	0	0	13	166
Hourly Total	32	249	13	0	0	294	7	220	1	0	1	228	12	0	9	0	1	21	3	2	23	0	3	28	571
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	14	61	0	0	0	75	0	74	1	0	0	75	0	0	1	0	2	1	1	1	8	0	0	10	161
3:15 PM	8	76	0	0	0	84	1	67	0	0	0	68	2	0	0	0	0	2	0	0	4	0	1	4	158
3:30 PM	15	84	1	0	0	100	1	97	0	0	0	98	0	0	0	0	0	0	2	2	10	0	0	14	212
3:45 PM	20	84	4	0	0	108	2	63	1	0	2	66	0	0	4	0	0	4	2	0	14	0	0	16	194
Hourly Total	57	305	5	0	0	367	4	301	2	0	2	307	2	0	5	0	2	7	5	3	36	0	1	44	725
4:00 PM	17	104	0	0	0	121	4	94	3	0	0	101	3	1	3	0	0	7	2	0	24	0	0	26	255
4:15 PM	22	108	2	0	0	132	1	79	0	0	0	80	0	0	2	0	0	2	0	0	14	0	0	14	228
4:30 PM	17	102	2	0	0	121	1	75	0	0	1	76	2	1	2	0	0	5	2	1	14	0	0	17	219

4:45 PM	14	98	3	0	2	115	0	63	1	0	0	64	2	1	2	0	0	5	0	0	11	0	0	11	195
Hourly Total	70	412	7	0	2	489	6	311	4	0	1	321	7	3	9	0	0	19	4	1	63	0	0	68	897
5:00 PM	11	105	1	0	0	117	1	87	0	0	0	88	2	0	2	0	0	4	1	0	11	0	2	12	221
5:15 PM	12	70	2	0	0	84	4	57	0	0	0	61	2	0	1	0	0	3	0	0	12	0	0	12	160
5:30 PM	10	60	2	0	0	72	3	58	0	0	0	61	2	0	2	0	0	4	0	0	12	0	0	12	149
5:45 PM	13	51	4	0	0	68	1	58	2	0	0	61	2	0	0	0	0	2	0	0	8	0	0	8	139
Hourly Total	46	286	9	0	0	341	9	260	2	0	0	271	8	0	5	0	0	13	1	0	43	0	2	44	669
Grand Total	414	2166	42	0	5	2622	35	1963	17	0	9	2015	33	3	35	0	3	71	22	6	268	0	13	296	5004
Approach %	15.8	82.6	1.6	0.0	-	-	1.7	97.4	0.8	0.0	-	-	46.5	4.2	49.3	0.0	-	-	7.4	2.0	90.5	0.0	-	-	-
Total %	8.3	43.3	0.8	0.0	-	52.4	0.7	39.2	0.3	0.0	-	40.3	0.7	0.1	0.7	0.0	-	1.4	0.4	0.1	5.4	0.0	-	5.9	-
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	408	2074	40	0	-	2522	33	1886	17	0	-	1936	31	3	33	0	-	67	22	6	265	0	-	293	4818
% Cars & Light Goods	98.6	95.8	95.2	-	-	96.2	94.3	96.1	100.0	-	-	96.1	93.9	100.0	94.3	-	-	94.4	100.0	100.0	98.9	-	-	99.0	96.3
Buses	3	47	0	0	-	50	0	26	0	0	-	26	0	0	0	0	-	0	0	0	0	0	-	0	76
% Buses	0.7	2.2	0.0	-	-	1.9	0.0	1.3	0.0	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.5
Single-Unit Trucks	3	40	2	0	-	45	2	43	0	0	-	45	2	0	2	0	-	4	0	0	3	0	-	3	97
% Single-Unit Trucks	0.7	1.8	4.8	-	-	1.7	5.7	2.2	0.0	-	-	2.2	6.1	0.0	5.7	-	-	5.6	0.0	0.0	1.1	-	-	1.0	1.9
Articulated Trucks	0	5	0	0	-	5	0	7	0	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	12
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023
Page No: 3



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: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023

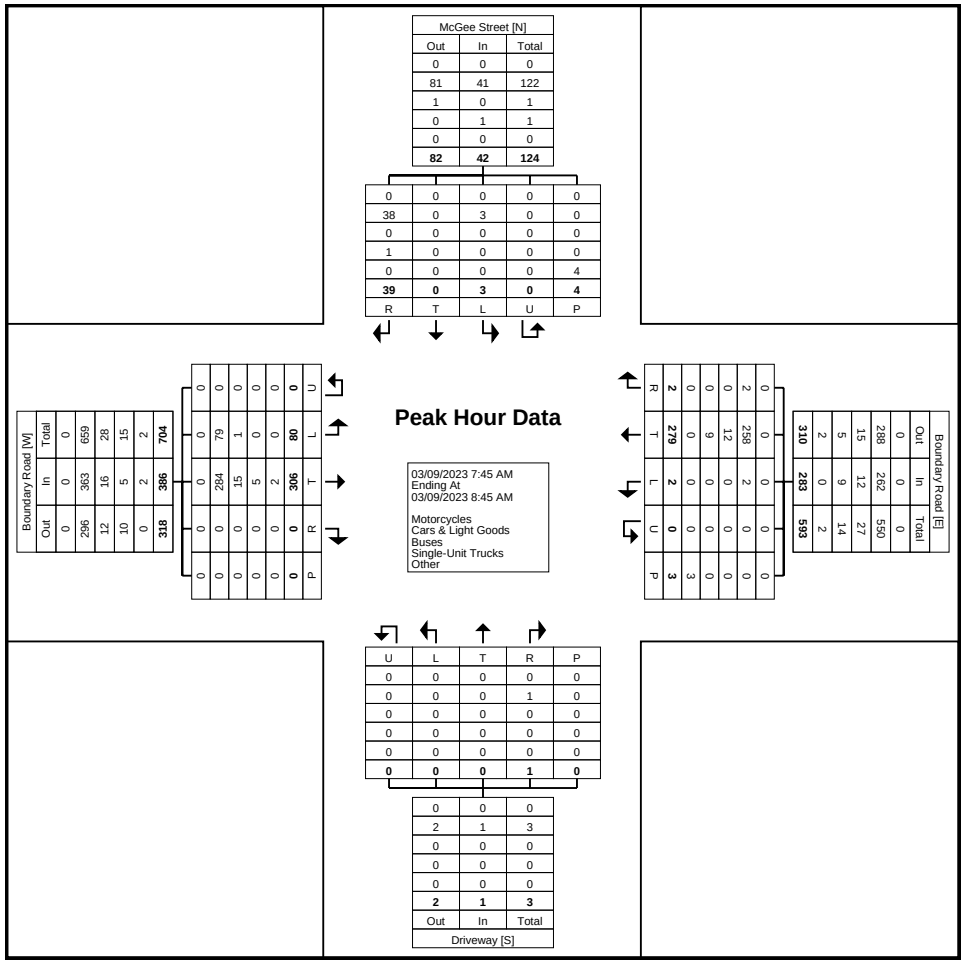
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee 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
7:45 AM	17	92	0	0	0	109	0	73	1	0	1	74	0	0	0	0	0	0	1	0	10	0	1	11	194
8:00 AM	22	83	0	0	0	105	0	69	0	0	2	69	0	0	0	0	0	0	0	0	11	0	1	11	185
8:15 AM	12	67	0	0	0	79	1	74	1	0	0	76	0	0	0	0	0	0	0	0	10	0	0	10	165
8:30 AM	29	64	0	0	0	93	1	63	0	0	0	64	0	0	1	0	0	1	2	0	8	0	2	10	168
Total	80	306	0	0	0	386	2	279	2	0	3	283	0	0	1	0	0	1	3	0	39	0	4	42	712
Approach %	20.7	79.3	0.0	0.0	-	-	0.7	98.6	0.7	0.0	-	-	0.0	0.0	100.0	0.0	-	-	7.1	0.0	92.9	0.0	-	-	-
Total %	11.2	43.0	0.0	0.0	-	54.2	0.3	39.2	0.3	0.0	-	39.7	0.0	0.0	0.1	0.0	-	0.1	0.4	0.0	5.5	0.0	-	5.9	-
PHF	0.690	0.832	0.000	0.000	-	0.885	0.500	0.943	0.500	0.000	-	0.931	0.000	0.000	0.250	0.000	-	0.250	0.375	0.000	0.886	0.000	-	0.955	0.918
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
Cars & Light Goods	79	284	0	0	-	363	2	258	2	0	-	262	0	0	1	0	-	1	3	0	38	0	-	41	667
% Cars & Light Goods	98.8	92.8	-	-	-	94.0	100.0	92.5	100.0	-	-	92.6	-	-	100.0	-	-	100.0	100.0	-	97.4	-	-	97.6	93.7
Buses	1	15	0	0	-	16	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	28
% Buses	1.3	4.9	-	-	-	4.1	0.0	4.3	0.0	-	-	4.2	-	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	3.9
Single-Unit Trucks	0	5	0	0	-	5	0	9	0	0	-	9	0	0	0	0	-	0	0	0	1	0	-	1	15
% Single-Unit Trucks	0.0	1.6	-	-	-	1.3	0.0	3.2	0.0	-	-	3.2	-	-	0.0	-	-	0.0	0.0	-	2.6	-	-	2.4	2.1
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.7	-	-	-	0.5	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.3
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% 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: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023


McGee Street [N]
Out In Total
0 0 0
81 41 122
1 0 1
0 1 1
0 0 0
82 42 124
0 0 0 0 0
38 0 3 0 0
0 0 0 0 0
1 0 0 0 0
0 0 0 0 4
39 0 3 0 4
R T L U P
Boundary Road [W]
Out In Total
0 0 0
296 363 659
12 16 28
10 5 15
0 2 2
318 386 704
0 0 0
0 0 0
0 284 284
0 15 15
0 5 5
0 2 2
0 306 306
0 0 0
0 80 80
0 79 79
0 1 1
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023

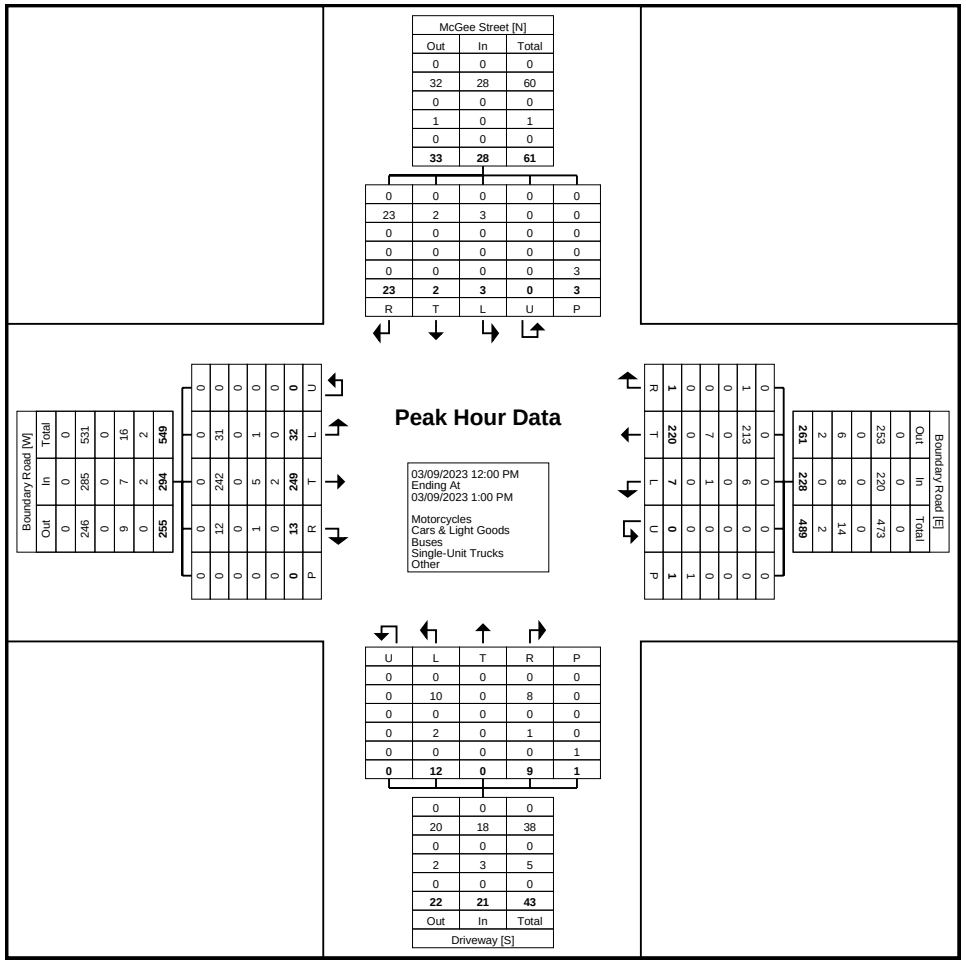
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee 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
12:00 PM	7	54	3	0	0	64	4	54	0	0	1	58	2	0	3	0	0	5	0	0	4	0	1	4	131
12:15 PM	7	51	5	0	0	63	1	55	1	0	0	57	2	0	3	0	0	5	1	0	1	0	0	2	127
12:30 PM	11	64	3	0	0	78	2	52	0	0	0	54	5	0	1	0	0	6	1	0	8	0	2	9	147
12:45 PM	7	80	2	0	0	89	0	59	0	0	0	59	3	0	2	0	1	5	1	2	10	0	0	13	166
Total	32	249	13	0	0	294	7	220	1	0	1	228	12	0	9	0	1	21	3	2	23	0	3	28	571
Approach %	10.9	84.7	4.4	0.0	-	-	3.1	96.5	0.4	0.0	-	-	57.1	0.0	42.9	0.0	-	-	10.7	7.1	82.1	0.0	-	-	-
Total %	5.6	43.6	2.3	0.0	-	51.5	1.2	38.5	0.2	0.0	-	39.9	2.1	0.0	1.6	0.0	-	3.7	0.5	0.4	4.0	0.0	-	4.9	-
PHF	0.727	0.778	0.650	0.000	-	0.826	0.438	0.932	0.250	0.000	-	0.966	0.600	0.000	0.750	0.000	-	0.875	0.750	0.250	0.575	0.000	-	0.538	0.860
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
Cars & Light Goods	31	242	12	0	-	285	6	213	1	0	-	220	10	0	8	0	-	18	3	2	23	0	-	28	551
% Cars & Light Goods	96.9	97.2	92.3	-	-	96.9	85.7	96.8	100.0	-	-	96.5	83.3	-	88.9	-	-	85.7	100.0	100.0	100.0	-	-	100.0	96.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	5	1	0	-	7	1	7	0	0	-	8	2	0	1	0	-	3	0	0	0	0	-	0	18
% Single-Unit Trucks	3.1	2.0	7.7	-	-	2.4	14.3	3.2	0.0	-	-	3.5	16.7	-	11.1	-	-	14.3	0.0	0.0	0.0	-	-	0.0	3.2
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.8	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	3	-	-
% 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: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023



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: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023

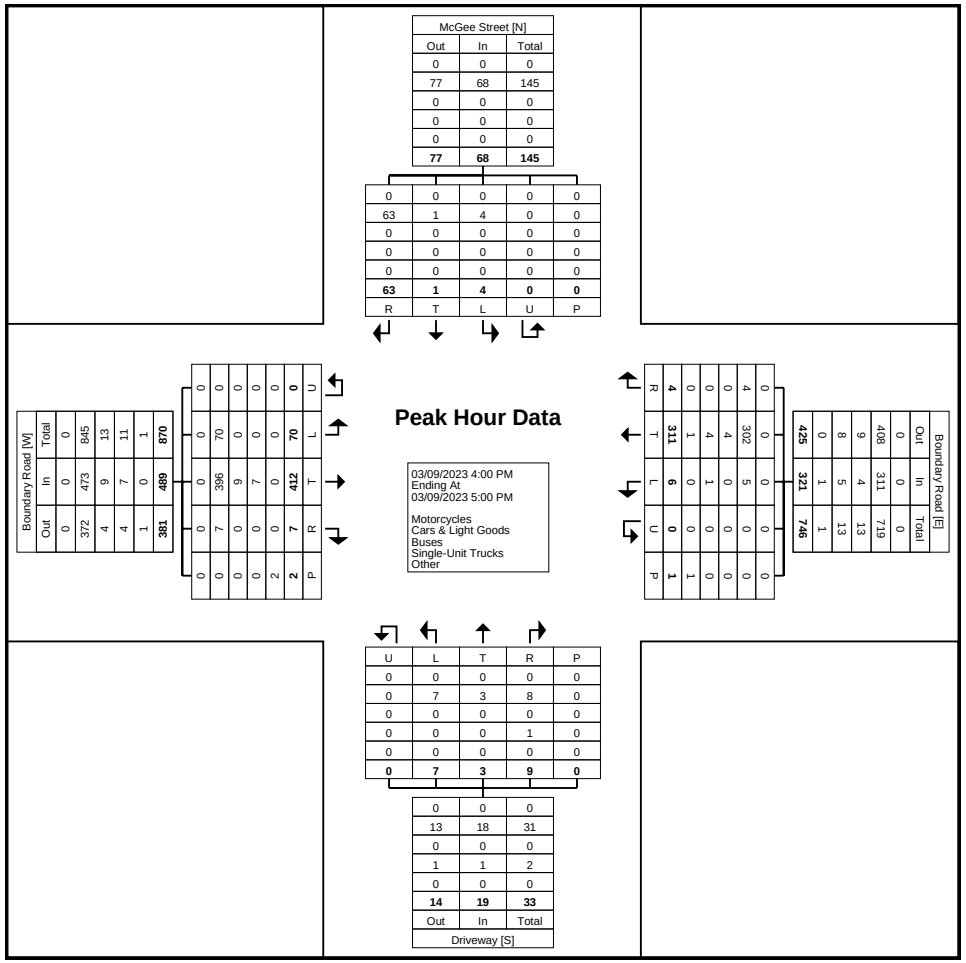
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee 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	17	104	0	0	0	121	4	94	3	0	0	101	3	1	3	0	0	7	2	0	24	0	0	26	255
4:15 PM	22	108	2	0	0	132	1	79	0	0	0	80	0	0	2	0	0	2	0	0	14	0	0	14	228
4:30 PM	17	102	2	0	0	121	1	75	0	0	1	76	2	1	2	0	0	5	2	1	14	0	0	17	219
4:45 PM	14	98	3	0	2	115	0	63	1	0	0	64	2	1	2	0	0	5	0	0	11	0	0	11	195
Total	70	412	7	0	2	489	6	311	4	0	1	321	7	3	9	0	0	19	4	1	63	0	0	68	897
Approach %	14.3	84.3	1.4	0.0	-	-	1.9	96.9	1.2	0.0	-	-	36.8	15.8	47.4	0.0	-	-	5.9	1.5	92.6	0.0	-	-	-
Total %	7.8	45.9	0.8	0.0	-	54.5	0.7	34.7	0.4	0.0	-	35.8	0.8	0.3	1.0	0.0	-	2.1	0.4	0.1	7.0	0.0	-	7.6	-
PHF	0.795	0.954	0.583	0.000	-	0.926	0.375	0.827	0.333	0.000	-	0.795	0.583	0.750	0.750	0.000	-	0.679	0.500	0.250	0.656	0.000	-	0.654	0.879
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	70	396	7	0	-	473	5	302	4	0	-	311	7	3	8	0	-	18	4	1	63	0	-	68	870
% Cars & Light Goods	100.0	96.1	100.0	-	-	96.7	83.3	97.1	100.0	-	-	96.9	100.0	100.0	88.9	-	-	94.7	100.0	100.0	100.0	-	-	100.0	97.0
Buses	0	9	0	0	-	9	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	13
% Buses	0.0	2.2	0.0	-	-	1.8	0.0	1.3	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.4
Single-Unit Trucks	0	7	0	0	-	7	1	4	0	0	-	5	0	0	1	0	-	1	0	0	0	0	-	0	13
% Single-Unit Trucks	0.0	1.7	0.0	-	-	1.4	16.7	1.3	0.0	-	-	1.6	0.0	0.0	11.1	-	-	5.3	0.0	0.0	0.0	-	-	0.0	1.4
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% 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: Boundary Road & McGee Street
Site Code: 220694
Start Date: 03/09/2023


McGee Street [N]
Out In Total
0 0 0
77 68 145
0 0 0
0 0 0
0 0 0
77 68 145
0 0 0 0 0
63 1 4 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0
63 1 4 0 0
R T L U P
Boundary Road [W]
Out In Total
0 0 0
372 473 845
4 9 13
4 7 11
1 0 1
381 489 870
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia 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
7:00 AM	1	16	1	0	0	18	3	16	1	0	0	20	6	2	12	0	0	20	1	9	3	0	1	13	71
7:15 AM	3	6	1	0	0	10	3	19	0	0	0	22	5	7	13	0	0	25	1	2	1	0	1	4	61
7:30 AM	2	18	1	0	0	21	7	24	3	0	0	34	4	2	14	0	0	20	2	7	4	0	0	13	88
7:45 AM	5	37	4	0	1	46	13	32	2	0	0	47	2	5	21	0	1	28	3	5	2	0	1	10	131
Hourly Total	11	77	7	0	1	95	26	91	6	0	0	123	17	16	60	0	1	93	7	23	10	0	3	40	351
8:00 AM	1	46	1	0	0	48	14	34	8	0	0	56	4	9	28	0	0	41	9	7	7	0	1	23	168
8:15 AM	7	31	2	0	3	40	8	31	5	0	0	44	2	12	24	0	0	38	3	8	3	0	2	14	136
8:30 AM	2	28	2	0	2	32	7	19	4	0	0	30	7	12	13	0	0	32	6	16	0	0	1	22	116
8:45 AM	1	29	4	0	0	34	5	23	3	0	0	31	4	20	15	0	0	39	2	10	1	0	0	13	117
Hourly Total	11	134	9	0	5	154	34	107	20	0	0	161	17	53	80	0	0	150	20	41	11	0	4	72	537
9:00 AM	2	31	3	0	1	36	15	25	2	0	0	42	1	19	24	0	0	44	11	4	3	0	0	18	140
9:15 AM	2	49	3	0	1	54	21	38	5	0	0	64	4	18	24	0	0	46	10	8	4	0	0	22	186
9:30 AM	2	23	3	0	2	28	17	31	3	0	0	51	5	11	19	0	0	35	3	12	2	0	0	17	131
9:45 AM	2	27	7	0	0	36	7	27	1	0	0	35	5	7	24	0	0	36	1	12	2	0	0	15	122
Hourly Total	8	130	16	0	4	154	60	121	11	0	0	192	15	55	91	0	0	161	25	36	11	0	0	72	579
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	29	1	0	1	32	5	28	9	0	0	42	3	7	28	0	1	38	1	12	4	0	0	17	129
11:15 AM	4	25	3	0	0	32	6	39	1	0	2	46	1	15	20	0	0	36	2	6	4	0	2	12	126
11:30 AM	6	32	2	0	2	40	14	32	3	0	0	49	3	10	23	0	0	36	4	11	1	0	5	16	141
11:45 AM	2	41	6	0	0	49	9	38	2	0	1	49	2	14	24	0	0	40	7	14	4	0	0	25	163
Hourly Total	14	127	12	0	3	153	34	137	15	0	3	186	9	46	95	0	1	150	14	43	13	0	7	70	559
12:00 PM	3	49	6	0	1	58	11	37	4	0	0	52	3	13	25	0	0	41	5	10	2	0	1	17	168
12:15 PM	1	31	3	0	3	35	10	31	4	0	0	45	2	8	19	0	0	29	6	15	1	0	2	22	131
12:30 PM	4	35	3	0	1	42	11	30	2	0	0	43	5	17	16	0	0	38	5	9	3	0	4	17	140
12:45 PM	4	27	3	0	0	34	20	41	8	0	0	69	4	17	11	0	0	32	2	20	4	0	0	26	161
Hourly Total	12	142	15	0	5	169	52	139	18	0	0	209	14	55	71	0	0	140	18	54	10	0	7	82	600
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	42	6	0	3	52	12	40	3	0	0	55	6	20	24	0	0	50	3	13	5	0	2	21	178
3:15 PM	4	39	1	0	0	44	7	32	3	0	0	42	3	14	26	0	0	43	10	9	6	0	4	25	154
3:30 PM	5	53	1	0	1	59	7	36	2	0	1	45	4	15	29	0	0	48	10	8	3	0	0	21	173
3:45 PM	3	43	4	0	3	50	15	63	11	0	0	89	0	16	33	0	0	49	11	24	3	0	4	38	226
Hourly Total	16	177	12	0	7	205	41	171	19	0	1	231	13	65	112	0	0	190	34	54	17	0	10	105	731
4:00 PM	5	38	3	0	3	46	19	48	9	0	0	76	3	13	33	0	0	49	7	13	1	0	1	21	192
4:15 PM	1	35	6	0	1	42	10	39	3	0	0	52	4	18	22	0	0	44	4	13	2	0	2	19	157
4:30 PM	4	32	2	0	3	38	12	30	4	0	0	46	2	4	25	0	0	31	3	16	3	0	0	22	137

4:45 PM	0	38	4	0	0	42	13	38	0	0	0	51	5	13	21	0	2	39	10	6	1	0	1	17	149
Hourly Total	10	143	15	0	7	168	54	155	16	0	0	225	14	48	101	0	2	163	24	48	7	0	4	79	635
5:00 PM	3	38	3	0	1	44	8	30	2	0	0	40	1	14	20	0	0	35	3	3	2	0	2	8	127
5:15 PM	1	35	1	0	0	37	8	32	3	0	0	43	3	5	26	0	0	34	6	9	2	0	0	17	131
5:30 PM	3	24	2	0	1	29	7	22	3	0	0	32	0	4	16	0	0	20	3	9	0	0	2	12	93
5:45 PM	2	20	0	0	0	22	11	22	4	0	0	37	2	5	15	0	0	22	1	5	2	0	1	8	89
Hourly Total	9	117	6	0	2	132	34	106	12	0	0	152	6	28	77	0	0	111	13	26	6	0	5	45	440
Grand Total	91	1047	92	0	34	1230	335	1027	117	0	4	1479	105	366	687	0	4	1158	155	325	85	0	40	565	4432
Approach %	7.4	85.1	7.5	0.0	-	-	22.7	69.4	7.9	0.0	-	-	9.1	31.6	59.3	0.0	-	-	27.4	57.5	15.0	0.0	-	-	-
Total %	2.1	23.6	2.1	0.0	-	27.8	7.6	23.2	2.6	0.0	-	33.4	2.4	8.3	15.5	0.0	-	26.1	3.5	7.3	1.9	0.0	-	12.7	-
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	88	1018	89	0	-	1195	321	992	114	0	-	1427	101	350	676	0	-	1127	146	303	83	0	-	532	4281
% Cars & Light Goods	96.7	97.2	96.7	-	-	97.2	95.8	96.6	97.4	-	-	96.5	96.2	95.6	98.4	-	-	97.3	94.2	93.2	97.6	-	-	94.2	96.6
Buses	0	24	0	0	-	24	12	29	3	0	-	44	0	2	5	0	-	7	8	9	0	0	-	17	92
% Buses	0.0	2.3	0.0	-	-	2.0	3.6	2.8	2.6	-	-	3.0	0.0	0.5	0.7	-	-	0.6	5.2	2.8	0.0	-	-	3.0	2.1
Single-Unit Trucks	2	5	2	0	-	9	2	5	0	0	-	7	2	12	6	0	-	20	1	12	1	0	-	14	50
% Single-Unit Trucks	2.2	0.5	2.2	-	-	0.7	0.6	0.5	0.0	-	-	0.5	1.9	3.3	0.9	-	-	1.7	0.6	3.7	1.2	-	-	2.5	1.1
Articulated Trucks	0	0	1	0	-	1	0	1	0	0	-	1	2	1	0	0	-	3	0	1	1	0	-	2	7
% Articulated Trucks	0.0	0.0	1.1	-	-	0.1	0.0	0.1	0.0	-	-	0.1	1.9	0.3	0.0	-	-	0.3	0.0	0.3	1.2	-	-	0.4	0.2
Bicycles on Road	1	0	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	1.1	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	34	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	40	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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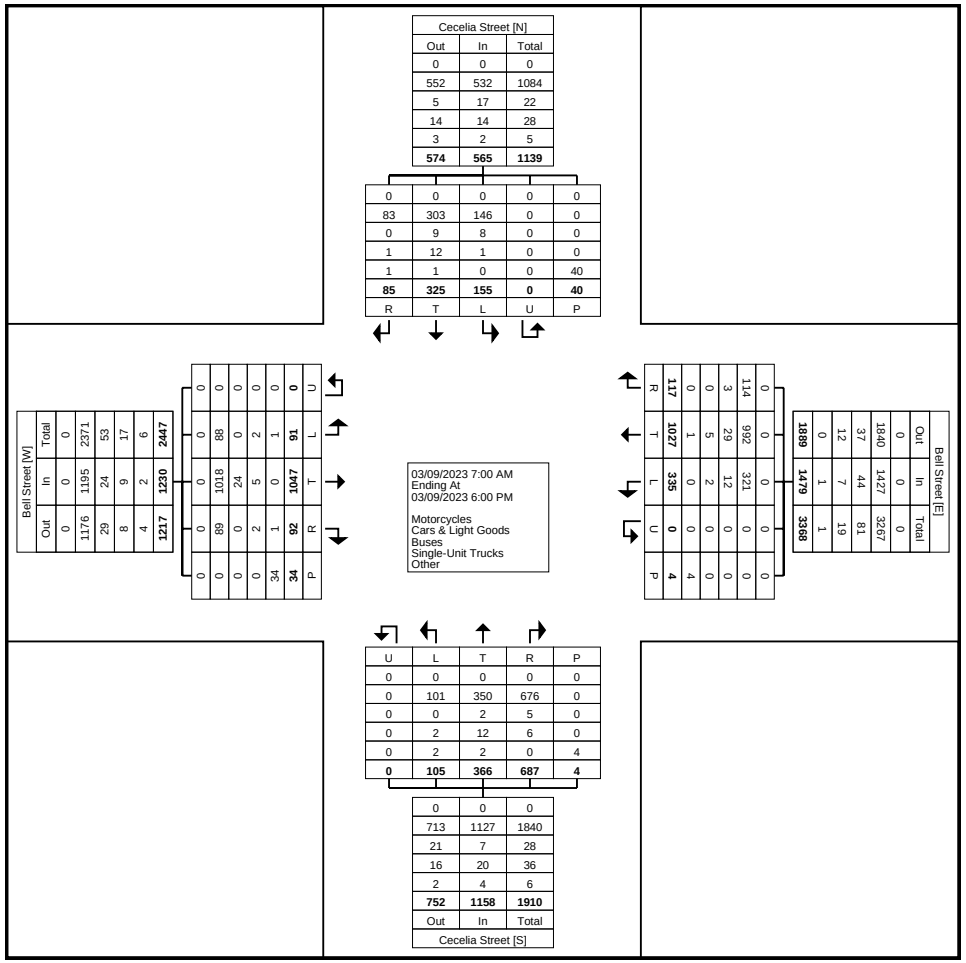
Start Date: 03/09/2023



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: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

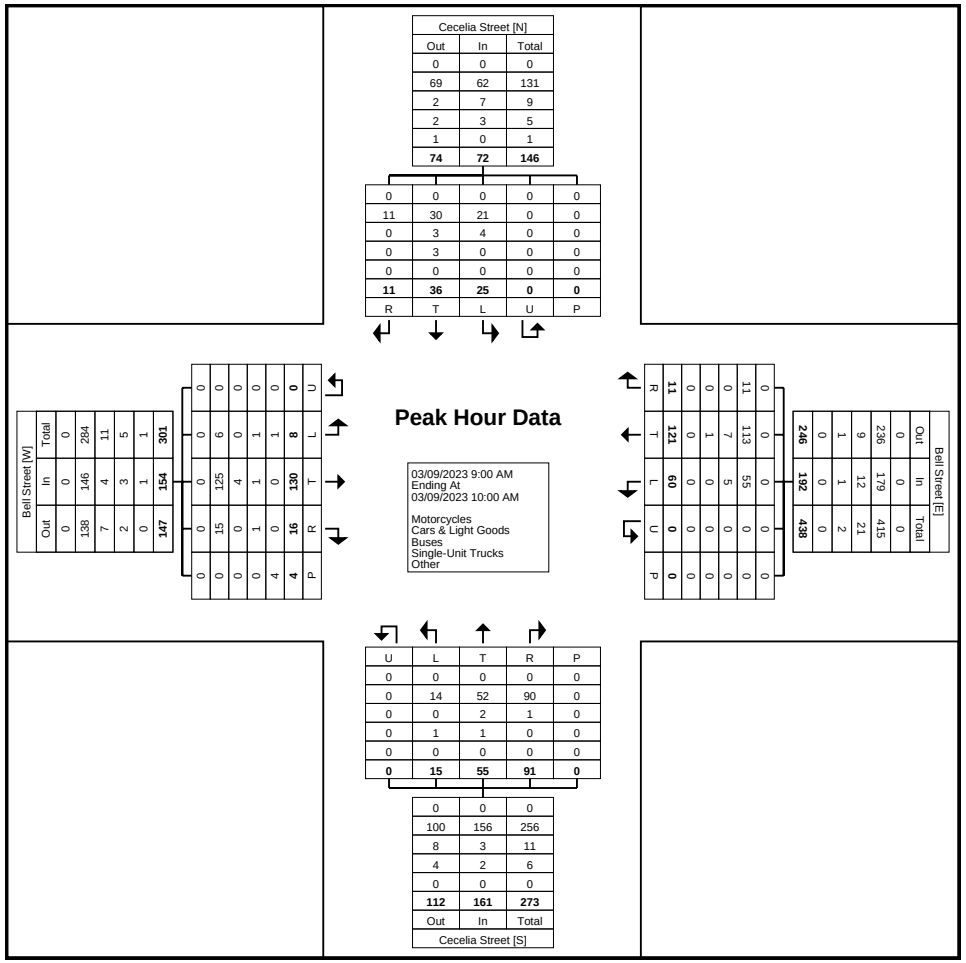
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia 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
9:00 AM	2	31	3	0	1	36	15	25	2	0	0	42	1	19	24	0	0	44	11	4	3	0	0	18	140
9:15 AM	2	49	3	0	1	54	21	38	5	0	0	64	4	18	24	0	0	46	10	8	4	0	0	22	186
9:30 AM	2	23	3	0	2	28	17	31	3	0	0	51	5	11	19	0	0	35	3	12	2	0	0	17	131
9:45 AM	2	27	7	0	0	36	7	27	1	0	0	35	5	7	24	0	0	36	1	12	2	0	0	15	122
Total	8	130	16	0	4	154	60	121	11	0	0	192	15	55	91	0	0	161	25	36	11	0	0	72	579
Approach %	5.2	84.4	10.4	0.0	-	-	31.3	63.0	5.7	0.0	-	-	9.3	34.2	56.5	0.0	-	-	34.7	50.0	15.3	0.0	-	-	-
Total %	1.4	22.5	2.8	0.0	-	26.6	10.4	20.9	1.9	0.0	-	33.2	2.6	9.5	15.7	0.0	-	27.8	4.3	6.2	1.9	0.0	-	12.4	-
PHF	1.000	0.663	0.571	0.000	-	0.713	0.714	0.796	0.550	0.000	-	0.750	0.750	0.724	0.948	0.000	-	0.875	0.568	0.750	0.688	0.000	-	0.818	0.778
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	6	125	15	0	-	146	55	113	11	0	-	179	14	52	90	0	-	156	21	30	11	0	-	62	543
% Cars & Light Goods	75.0	96.2	93.8	-	-	94.8	91.7	93.4	100.0	-	-	93.2	93.3	94.5	98.9	-	-	96.9	84.0	83.3	100.0	-	-	86.1	93.8
Buses	0	4	0	0	-	4	5	7	0	0	-	12	0	2	1	0	-	3	4	3	0	0	-	7	26
% Buses	0.0	3.1	0.0	-	-	2.6	8.3	5.8	0.0	-	-	6.3	0.0	3.6	1.1	-	-	1.9	16.0	8.3	0.0	-	-	9.7	4.5
Single-Unit Trucks	1	1	1	0	-	3	0	1	0	0	-	1	1	1	0	0	-	2	0	3	0	0	-	3	9
% Single-Unit Trucks	12.5	0.8	6.3	-	-	1.9	0.0	0.8	0.0	-	-	0.5	6.7	1.8	0.0	-	-	1.2	0.0	8.3	0.0	-	-	4.2	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	12.5	0.0	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	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: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

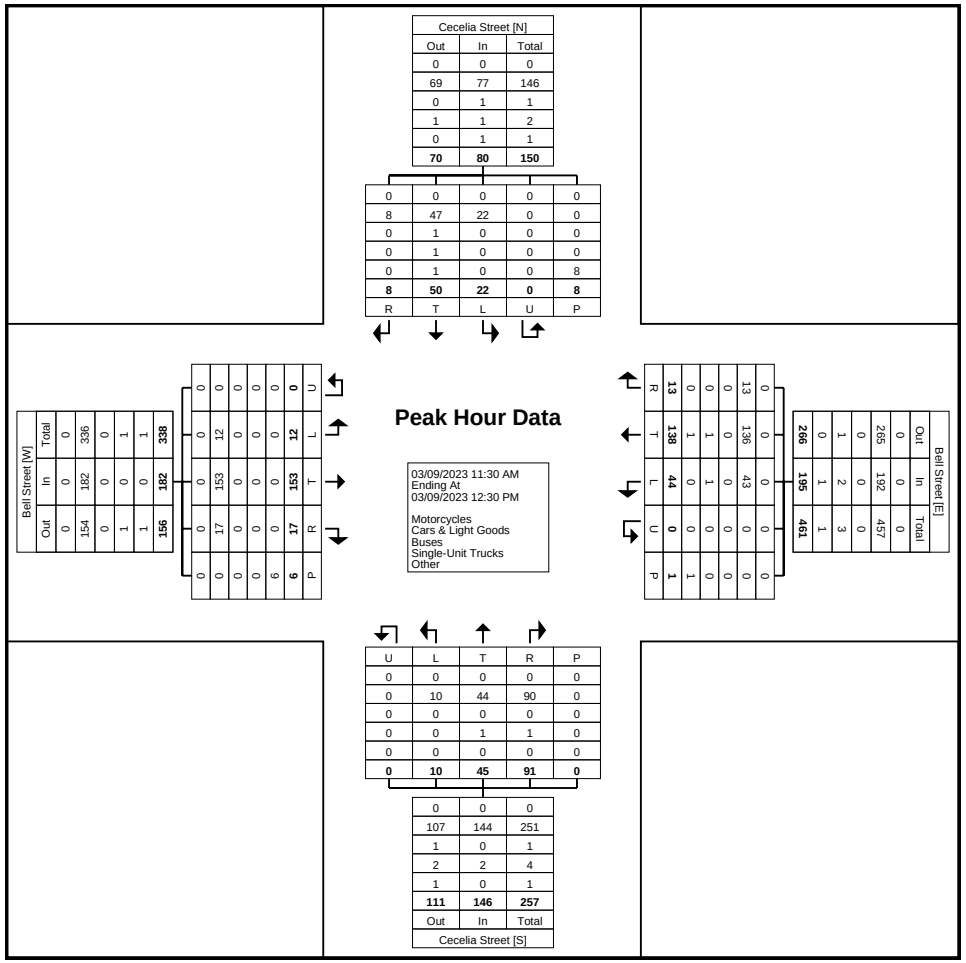
Turning Movement Peak Hour Data (11:30 AM)

Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia 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
11:30 AM	6	32	2	0	2	40	14	32	3	0	0	49	3	10	23	0	0	36	4	11	1	0	5	16	141
11:45 AM	2	41	6	0	0	49	9	38	2	0	1	49	2	14	24	0	0	40	7	14	4	0	0	25	163
12:00 PM	3	49	6	0	1	58	11	37	4	0	0	52	3	13	25	0	0	41	5	10	2	0	1	17	168
12:15 PM	1	31	3	0	3	35	10	31	4	0	0	45	2	8	19	0	0	29	6	15	1	0	2	22	131
Total	12	153	17	0	6	182	44	138	13	0	1	195	10	45	91	0	0	146	22	50	8	0	8	80	603
Approach %	6.6	84.1	9.3	0.0	-	-	22.6	70.8	6.7	0.0	-	-	6.8	30.8	62.3	0.0	-	-	27.5	62.5	10.0	0.0	-	-	-
Total %	2.0	25.4	2.8	0.0	-	30.2	7.3	22.9	2.2	0.0	-	32.3	1.7	7.5	15.1	0.0	-	24.2	3.6	8.3	1.3	0.0	-	13.3	-
PHF	0.500	0.781	0.708	0.000	-	0.784	0.786	0.908	0.813	0.000	-	0.938	0.833	0.804	0.910	0.000	-	0.890	0.786	0.833	0.500	0.000	-	0.800	0.897
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	12	153	17	0	-	182	43	136	13	0	-	192	10	44	90	0	-	144	22	47	8	0	-	77	595
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	97.7	98.6	100.0	-	-	98.5	100.0	97.8	98.9	-	-	98.6	100.0	94.0	100.0	-	-	96.3	98.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.0	0.0	-	-	1.3	0.2
Single-Unit Trucks	0	0	0	0	-	0	1	1	0	0	-	2	0	1	1	0	-	2	0	1	0	0	-	1	5
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	2.3	0.7	0.0	-	-	1.0	0.0	2.2	1.1	-	-	1.4	0.0	2.0	0.0	-	-	1.3	0.8
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	2.0	0.0	-	-	1.3	0.3
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	8	-	-
% 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: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia 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
3:30 PM	5	53	1	0	1	59	7	36	2	0	1	45	4	15	29	0	0	48	10	8	3	0	0	21	173
3:45 PM	3	43	4	0	3	50	15	63	11	0	0	89	0	16	33	0	0	49	11	24	3	0	4	38	226
4:00 PM	5	38	3	0	3	46	19	48	9	0	0	76	3	13	33	0	0	49	7	13	1	0	1	21	192
4:15 PM	1	35	6	0	1	42	10	39	3	0	0	52	4	18	22	0	0	44	4	13	2	0	2	19	157
Total	14	169	14	0	8	197	51	186	25	0	1	262	11	62	117	0	0	190	32	58	9	0	7	99	748
Approach %	7.1	85.8	7.1	0.0	-	-	19.5	71.0	9.5	0.0	-	-	5.8	32.6	61.6	0.0	-	-	32.3	58.6	9.1	0.0	-	-	-
Total %	1.9	22.6	1.9	0.0	-	26.3	6.8	24.9	3.3	0.0	-	35.0	1.5	8.3	15.6	0.0	-	25.4	4.3	7.8	1.2	0.0	-	13.2	-
PHF	0.700	0.797	0.583	0.000	-	0.835	0.671	0.738	0.568	0.000	-	0.736	0.688	0.861	0.886	0.000	-	0.969	0.727	0.604	0.750	0.000	-	0.651	0.827
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	14	166	13	0	-	193	48	179	23	0	-	250	10	61	115	0	-	186	29	56	9	0	-	94	723
% Cars & Light Goods	100.0	98.2	92.9	-	-	98.0	94.1	96.2	92.0	-	-	95.4	90.9	98.4	98.3	-	-	97.9	90.6	96.6	100.0	-	-	94.9	96.7
Buses	0	3	0	0	-	3	2	7	2	0	-	11	0	0	1	0	-	1	3	2	0	0	-	5	20
% Buses	0.0	1.8	0.0	-	-	1.5	3.9	3.8	8.0	-	-	4.2	0.0	0.0	0.9	-	-	0.5	9.4	3.4	0.0	-	-	5.1	2.7
Single-Unit Trucks	0	0	1	0	-	1	1	0	0	0	-	1	1	0	1	0	-	2	0	0	0	0	-	0	4
% Single-Unit Trucks	0.0	0.0	7.1	-	-	0.5	2.0	0.0	0.0	-	-	0.4	9.1	0.0	0.9	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	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	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.6	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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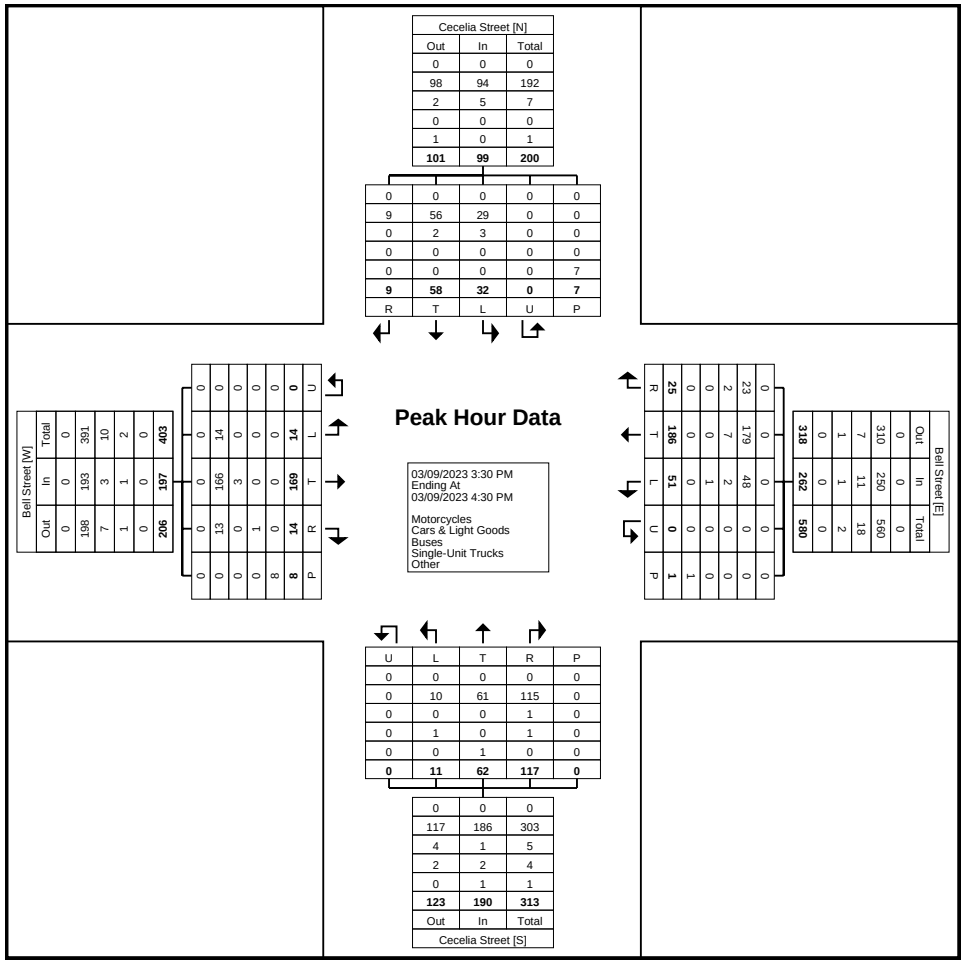
519-896-3163 cbowness@ptsl.com

Count Name: Cecelia Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023


Cecelia Street [N]
Out In Total
0 0 0
98 94 192
2 5 7
0 0 0
1 0 1
101 99 200
0 0 0 0 0
9 56 29 0 0
0 2 3 0 0
0 0 0 0 0
0 0 0 0 7
9 58 32 0 7
R T L U P
Bell Street [W]
Out In Total
0 0 0
198 193 391
7 3 10
1 1 2
0 0 0
206 197 403
0 0 0 0 0
0 13 0 0 0
0 14 166 3 0
0 0 0 0 0
0 0 0 0 0
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

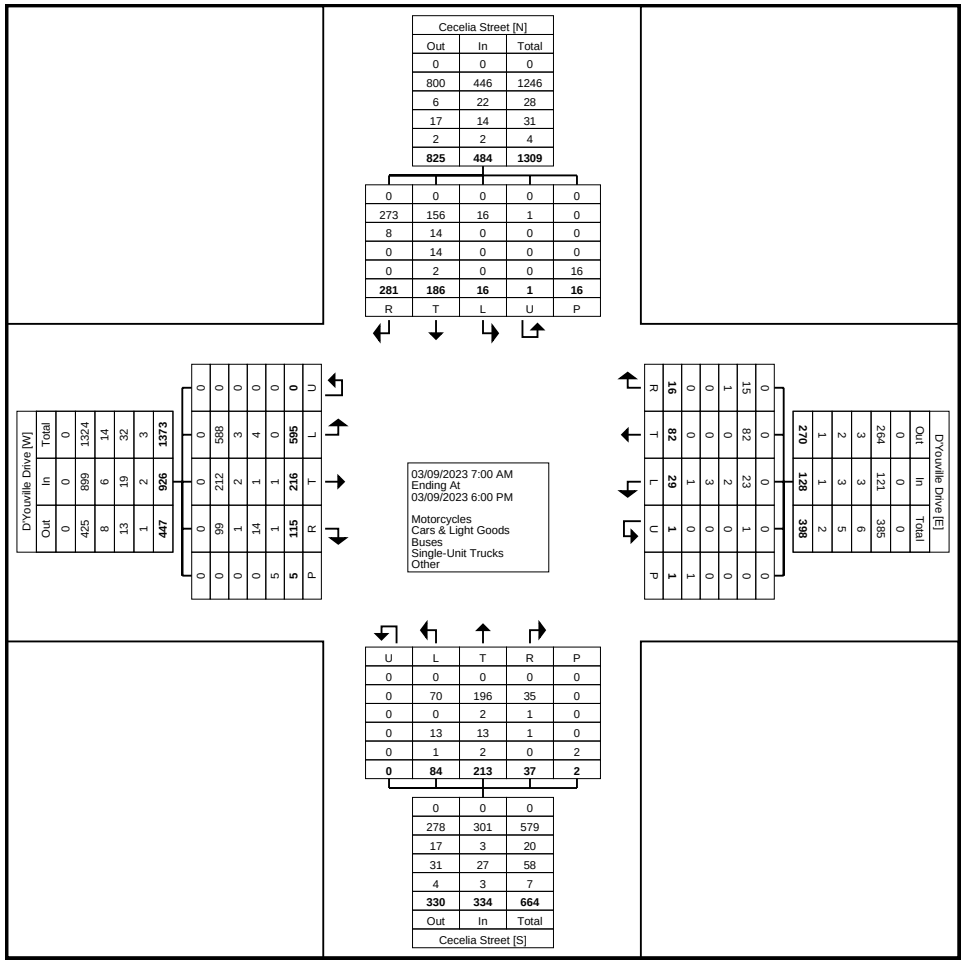
Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	11	4	4	0	0	19	0	5	1	0	0	6	5	1	1	0	0	7	1	5	4	0	1	10	42
7:15 AM	11	5	2	0	0	18	0	1	0	0	0	1	1	8	0	0	0	9	0	1	3	0	0	4	32
7:30 AM	12	4	6	0	0	22	0	4	0	0	0	4	2	5	1	0	0	8	0	2	6	0	0	8	42
7:45 AM	23	8	8	0	0	39	0	5	0	0	0	5	3	7	0	0	0	10	0	6	11	0	0	17	71
Hourly Total	57	21	20	0	0	98	0	15	1	0	0	16	11	21	2	0	0	34	1	14	24	0	1	39	187
8:00 AM	31	7	11	0	0	49	1	4	0	0	0	5	1	7	1	0	1	9	0	9	7	0	0	16	79
8:15 AM	22	6	8	0	0	36	0	4	0	0	0	4	3	8	0	0	0	11	0	4	4	0	0	8	59
8:30 AM	19	4	4	0	0	27	0	4	0	0	0	4	5	7	2	0	0	14	0	7	8	0	0	15	60
8:45 AM	17	7	5	0	0	29	1	2	3	0	0	6	11	9	2	0	0	22	1	2	5	0	0	8	65
Hourly Total	89	24	28	0	0	141	2	14	3	0	0	19	20	31	5	0	1	56	1	22	24	0	0	47	263
9:00 AM	26	7	2	0	1	35	1	1	0	0	0	2	1	9	3	0	0	13	0	6	10	0	0	16	66
9:15 AM	25	7	4	0	0	36	1	2	0	0	0	3	0	6	3	0	0	9	2	7	12	0	1	21	69
9:30 AM	16	1	1	0	0	18	0	2	0	0	0	2	3	12	1	0	0	16	0	7	11	0	0	18	54
9:45 AM	18	7	4	0	0	29	1	2	0	0	0	3	4	7	0	0	0	11	0	3	5	0	0	8	51
Hourly Total	85	22	11	0	1	118	3	7	0	0	0	10	8	34	7	0	0	49	2	23	38	0	1	63	240
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	25	2	3	0	3	30	0	1	0	0	0	1	0	6	2	0	1	8	0	8	5	0	2	13	52
11:15 AM	15	6	3	0	0	24	1	1	0	0	0	2	2	7	4	0	0	13	1	2	5	0	1	8	47
11:30 AM	17	8	0	0	0	25	1	0	0	0	0	1	2	4	1	0	0	7	0	5	15	0	0	20	53
11:45 AM	14	3	3	0	0	20	1	2	1	0	0	4	2	6	1	0	0	9	0	8	13	0	0	21	54
Hourly Total	71	19	9	0	3	99	3	4	1	0	0	8	6	23	8	0	1	37	1	23	38	0	3	62	206
12:00 PM	15	6	2	0	0	23	1	2	1	0	0	4	2	11	0	0	0	13	0	8	7	0	0	15	55
12:15 PM	12	8	4	0	0	24	0	2	0	0	0	2	1	5	1	0	0	7	1	3	11	0	0	15	48
12:30 PM	15	3	2	0	0	20	3	3	1	0	0	7	1	8	0	0	0	9	1	6	3	0	0	10	46
12:45 PM	10	7	2	0	0	19	1	0	2	1	0	4	4	7	1	0	0	12	0	11	14	0	1	25	60
Hourly Total	52	24	10	0	0	86	5	7	4	1	0	17	8	31	2	0	0	41	2	28	35	0	1	65	209
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	18	5	2	0	0	25	0	6	2	0	0	8	1	2	0	0	0	3	1	8	9	0	1	18	54
3:15 PM	14	8	4	0	0	26	0	1	1	0	0	2	2	7	0	0	0	9	0	5	8	0	0	13	50
3:30 PM	22	10	5	0	0	37	1	3	0	0	0	4	2	15	1	0	0	18	0	7	9	0	3	16	75
3:45 PM	28	7	4	0	0	39	2	4	0	0	0	6	4	6	1	0	0	11	2	14	13	1	2	30	86
Hourly Total	82	30	15	0	0	127	3	14	3	0	0	20	9	30	2	0	0	41	3	34	39	1	6	77	265
4:00 PM	23	8	5	0	0	36	3	3	2	0	0	8	3	9	3	0	0	15	0	11	20	0	1	31	90
4:15 PM	23	9	4	0	1	36	3	2	0	0	0	5	1	7	2	0	0	10	0	9	10	0	0	19	70
4:30 PM	21	7	6	0	0	34	0	3	0	0	0	3	7	4	2	0	0	13	2	7	14	0	0	23	73

4:45 PM	19	9	3	0	0	31	0	2	0	0	0	2	3	5	1	0	0	9	0	4	10	0	0	14	56
Hourly Total	86	33	18	0	1	137	6	10	2	0	0	18	14	25	8	0	0	47	2	31	54	0	1	87	289
5:00 PM	22	8	0	0	0	30	3	1	1	0	0	5	5	10	0	0	0	15	0	3	7	0	0	10	60
5:15 PM	22	14	0	0	0	36	3	3	0	0	1	6	1	5	2	0	0	8	1	3	8	0	0	12	62
5:30 PM	15	12	2	0	0	29	0	4	1	0	0	5	1	2	0	0	0	3	2	4	5	0	1	11	48
5:45 PM	14	9	2	0	0	25	1	3	0	0	0	4	1	1	1	0	0	3	1	1	9	0	2	11	43
Hourly Total	73	43	4	0	0	120	7	11	2	0	1	20	8	18	3	0	0	29	4	11	29	0	3	44	213
Grand Total	595	216	115	0	5	926	29	82	16	1	1	128	84	213	37	0	2	334	16	186	281	1	16	484	1872
Approach %	64.3	23.3	12.4	0.0	-	-	22.7	64.1	12.5	0.8	-	-	25.1	63.8	11.1	0.0	-	-	3.3	38.4	58.1	0.2	-	-	-
Total %	31.8	11.5	6.1	0.0	-	49.5	1.5	4.4	0.9	0.1	-	6.8	4.5	11.4	2.0	0.0	-	17.8	0.9	9.9	15.0	0.1	-	25.9	-
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	-	0.0	0.0
Cars & Light Goods	588	212	99	0	-	899	23	82	15	1	-	121	70	196	35	0	-	301	16	156	273	1	-	446	1767
% Cars & Light Goods	98.8	98.1	86.1	-	-	97.1	79.3	100.0	93.8	100.0	-	94.5	83.3	92.0	94.6	-	-	90.1	100.0	83.9	97.2	100.0	-	92.1	94.4
Buses	3	2	1	0	-	6	2	0	1	0	-	3	0	2	1	0	-	3	0	14	8	0	-	22	34
% Buses	0.5	0.9	0.9	-	-	0.6	6.9	0.0	6.3	0.0	-	2.3	0.0	0.9	2.7	-	-	0.9	0.0	7.5	2.8	0.0	-	4.5	1.8
Single-Unit Trucks	4	1	14	0	-	19	3	0	0	0	-	3	13	13	1	0	-	27	0	14	0	0	-	14	63
% Single-Unit Trucks	0.7	0.5	12.2	-	-	2.1	10.3	0.0	0.0	0.0	-	2.3	15.5	6.1	2.7	-	-	8.1	0.0	7.5	0.0	0.0	-	2.9	3.4
Articulated Trucks	0	1	1	0	-	2	0	0	0	0	-	0	1	2	0	0	-	3	0	2	0	0	-	2	7
% Articulated Trucks	0.0	0.5	0.9	-	-	0.2	0.0	0.0	0.0	0.0	-	0.0	1.2	0.9	0.0	-	-	0.9	0.0	1.1	0.0	0.0	-	0.4	0.4
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	3.4	0.0	0.0	0.0	-	0.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023



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: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023

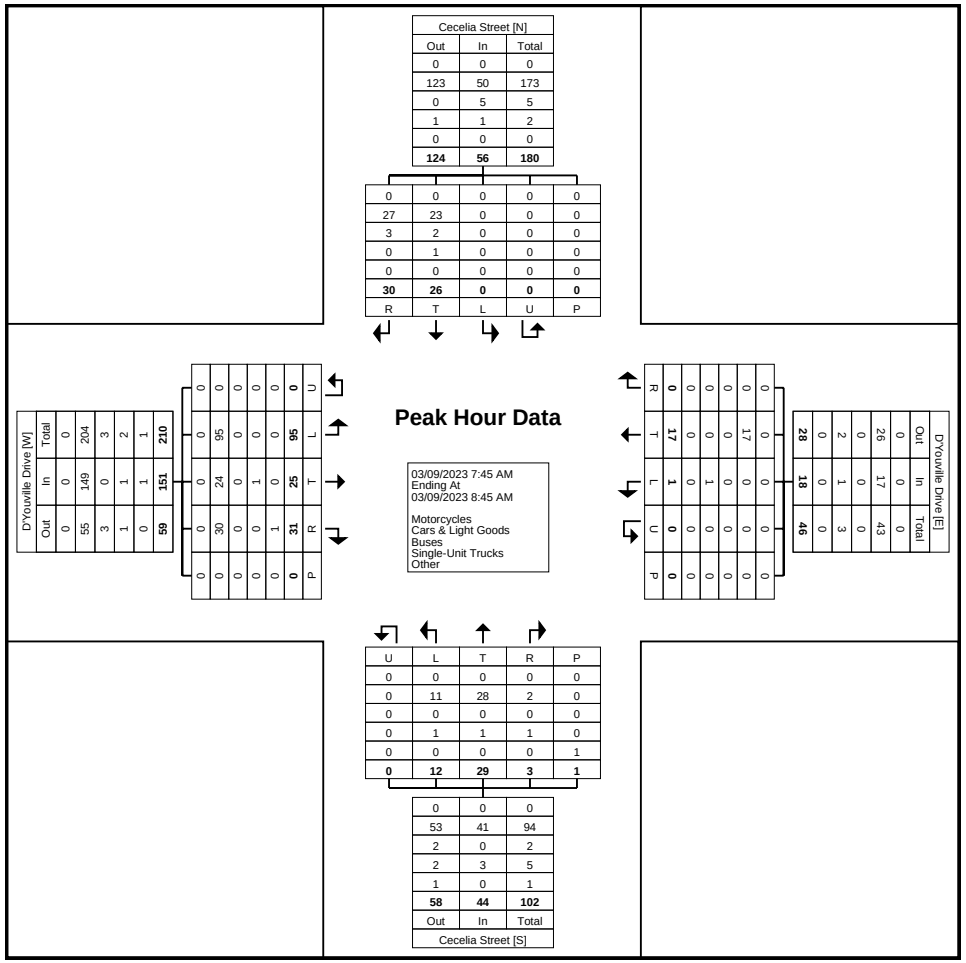
Turning Movement Peak Hour Data (7:45 AM)

Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia 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
7:45 AM	23	8	8	0	0	39	0	5	0	0	0	5	3	7	0	0	0	10	0	6	11	0	0	17	71
8:00 AM	31	7	11	0	0	49	1	4	0	0	0	5	1	7	1	0	1	9	0	9	7	0	0	16	79
8:15 AM	22	6	8	0	0	36	0	4	0	0	0	4	3	8	0	0	0	11	0	4	4	0	0	8	59
8:30 AM	19	4	4	0	0	27	0	4	0	0	0	4	5	7	2	0	0	14	0	7	8	0	0	15	60
Total	95	25	31	0	0	151	1	17	0	0	0	18	12	29	3	0	1	44	0	26	30	0	0	56	269
Approach %	62.9	16.6	20.5	0.0	-	-	5.6	94.4	0.0	0.0	-	-	27.3	65.9	6.8	0.0	-	-	0.0	46.4	53.6	0.0	-	-	-
Total %	35.3	9.3	11.5	0.0	-	56.1	0.4	6.3	0.0	0.0	-	6.7	4.5	10.8	1.1	0.0	-	16.4	0.0	9.7	11.2	0.0	-	20.8	-
PHF	0.766	0.781	0.705	0.000	-	0.770	0.250	0.850	0.000	0.000	-	0.900	0.600	0.906	0.375	0.000	-	0.786	0.000	0.722	0.682	0.000	-	0.824	0.851
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
Cars & Light Goods	95	24	30	0	-	149	0	17	0	0	-	17	11	28	2	0	-	41	0	23	27	0	-	50	257
% Cars & Light Goods	100.0	96.0	96.8	-	-	98.7	0.0	100.0	-	-	-	94.4	91.7	96.6	66.7	-	-	93.2	-	88.5	90.0	-	-	89.3	95.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	3	0	-	5	5
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	7.7	10.0	-	-	8.9	1.9
Single-Unit Trucks	0	1	0	0	-	1	1	0	0	0	-	1	1	1	1	0	-	3	0	1	0	0	-	1	6
% Single-Unit Trucks	0.0	4.0	0.0	-	-	0.7	100.0	0.0	-	-	-	5.6	8.3	3.4	33.3	-	-	6.8	-	3.8	0.0	-	-	1.8	2.2
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	3.2	-	-	0.7	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.4
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (11:30 AM)

Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia 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
11:30 AM	17	8	0	0	0	25	1	0	0	0	0	1	2	4	1	0	0	7	0	5	15	0	0	20	53
11:45 AM	14	3	3	0	0	20	1	2	1	0	0	4	2	6	1	0	0	9	0	8	13	0	0	21	54
12:00 PM	15	6	2	0	0	23	1	2	1	0	0	4	2	11	0	0	0	13	0	8	7	0	0	15	55
12:15 PM	12	8	4	0	0	24	0	2	0	0	0	2	1	5	1	0	0	7	1	3	11	0	0	15	48
Total	58	25	9	0	0	92	3	6	2	0	0	11	7	26	3	0	0	36	1	24	46	0	0	71	210
Approach %	63.0	27.2	9.8	0.0	-	-	27.3	54.5	18.2	0.0	-	-	19.4	72.2	8.3	0.0	-	-	1.4	33.8	64.8	0.0	-	-	-
Total %	27.6	11.9	4.3	0.0	-	43.8	1.4	2.9	1.0	0.0	-	5.2	3.3	12.4	1.4	0.0	-	17.1	0.5	11.4	21.9	0.0	-	33.8	-
PHF	0.853	0.781	0.563	0.000	-	0.920	0.750	0.750	0.500	0.000	-	0.688	0.875	0.591	0.750	0.000	-	0.692	0.250	0.750	0.767	0.000	-	0.845	0.955
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	58	24	8	0	-	90	3	6	2	0	-	11	6	25	3	0	-	34	1	20	46	0	-	67	202
% Cars & Light Goods	100.0	96.0	88.9	-	-	97.8	100.0	100.0	100.0	-	-	100.0	85.7	96.2	100.0	-	-	94.4	100.0	83.3	100.0	-	-	94.4	96.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	4.2	0.0	-	-	1.4	0.5
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	0	2	0	0	-	2	5
% Single-Unit Trucks	0.0	0.0	11.1	-	-	1.1	0.0	0.0	0.0	-	-	0.0	14.3	3.8	0.0	-	-	5.6	0.0	8.3	0.0	-	-	2.8	2.4
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	2
% Articulated Trucks	0.0	4.0	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	4.2	0.0	-	-	1.4	1.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	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
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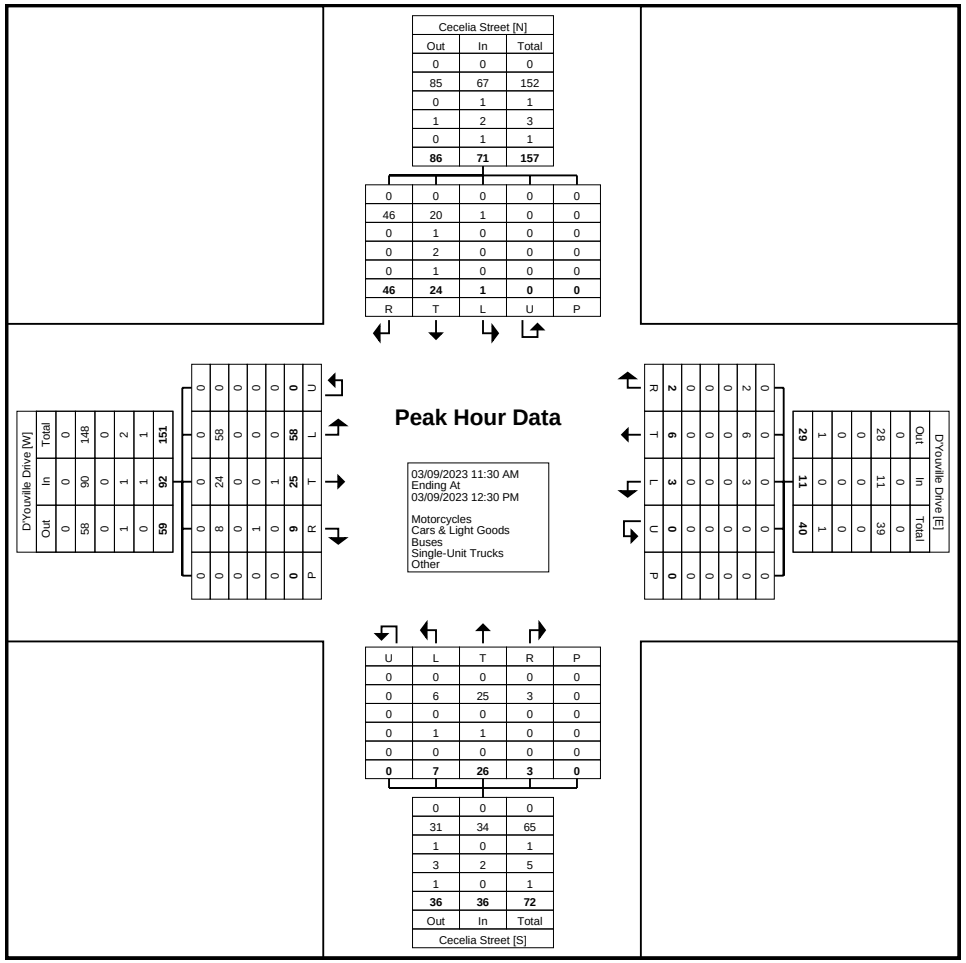
Start Date: 03/09/2023


Cecelia Street [N]
Out In Total
0 0 0
85 67 152
0 1 1
1 2 3
0 1 1
86 71 157
0 0 0 0 0
46 20 1 0 0
0 1 0 0 0
0 2 0 0 0
0 1 0 0 0
46 24 1 0 0
R T L U P
D'Youville Drive [W]
Out In Total
0 0 0
58 90 148
0 0 0
8 1 2
0 1 1
0 1 1
59 92 151
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023

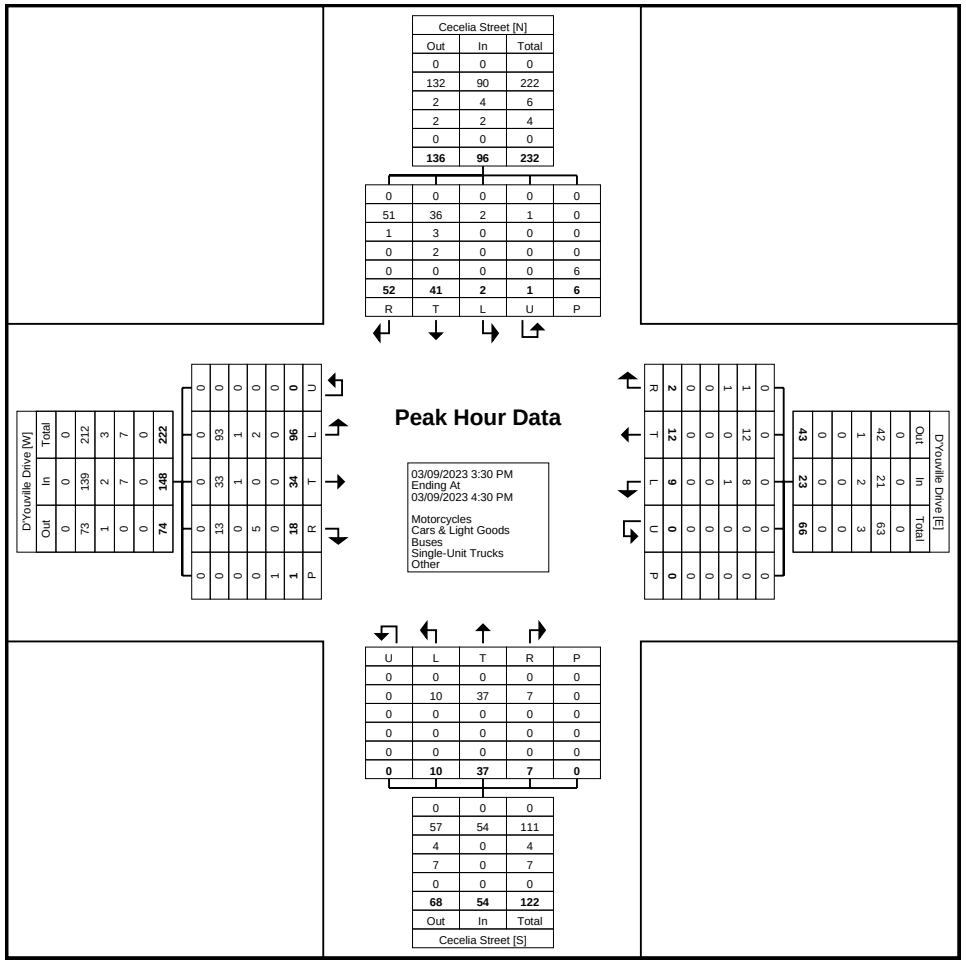
Turning Movement Peak Hour Data (3:30 PM)

Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia 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
3:30 PM	22	10	5	0	0	37	1	3	0	0	0	4	2	15	1	0	0	18	0	7	9	0	3	16	75
3:45 PM	28	7	4	0	0	39	2	4	0	0	0	6	4	6	1	0	0	11	2	14	13	1	2	30	86
4:00 PM	23	8	5	0	0	36	3	3	2	0	0	8	3	9	3	0	0	15	0	11	20	0	1	31	90
4:15 PM	23	9	4	0	1	36	3	2	0	0	0	5	1	7	2	0	0	10	0	9	10	0	0	19	70
Total	96	34	18	0	1	148	9	12	2	0	0	23	10	37	7	0	0	54	2	41	52	1	6	96	321
Approach %	64.9	23.0	12.2	0.0	-	-	39.1	52.2	8.7	0.0	-	-	18.5	68.5	13.0	0.0	-	-	2.1	42.7	54.2	1.0	-	-	-
Total %	29.9	10.6	5.6	0.0	-	46.1	2.8	3.7	0.6	0.0	-	7.2	3.1	11.5	2.2	0.0	-	16.8	0.6	12.8	16.2	0.3	-	29.9	-
PHF	0.857	0.850	0.900	0.000	-	0.949	0.750	0.750	0.250	0.000	-	0.719	0.625	0.617	0.583	0.000	-	0.750	0.250	0.732	0.650	0.250	-	0.774	0.892
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	0.0
Cars & Light Goods	93	33	13	0	-	139	8	12	1	0	-	21	10	37	7	0	-	54	2	36	51	1	-	90	304
% Cars & Light Goods	96.9	97.1	72.2	-	-	93.9	88.9	100.0	50.0	-	-	91.3	100.0	100.0	100.0	-	-	100.0	100.0	87.8	98.1	100.0	-	93.8	94.7
Buses	1	1	0	0	-	2	1	0	1	0	-	2	0	0	0	0	-	0	0	3	1	0	-	4	8
% Buses	1.0	2.9	0.0	-	-	1.4	11.1	0.0	50.0	-	-	8.7	0.0	0.0	0.0	-	-	0.0	0.0	7.3	1.9	0.0	-	4.2	2.5
Single-Unit Trucks	2	0	5	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	9
% Single-Unit Trucks	2.1	0.0	27.8	-	-	4.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	4.9	0.0	0.0	-	2.1	2.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	6	-	-
% 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: Cecelia Street & D'Youville Drive
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

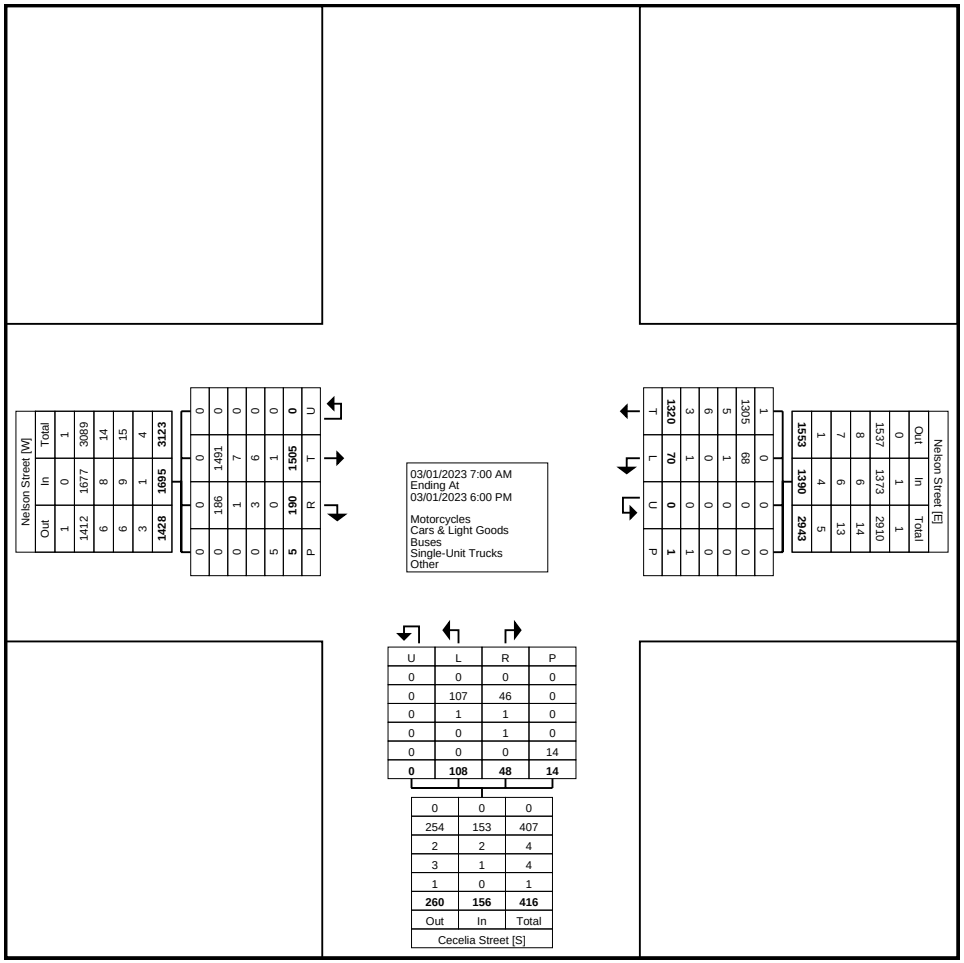
Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	10	0	0	0	10	2	8	0	0	10	0	0	0	0	0	20
7:15 AM	8	1	0	0	9	2	13	0	0	15	2	1	0	0	3	27
7:30 AM	10	2	0	0	12	2	20	0	0	22	3	2	0	0	5	39
7:45 AM	22	1	0	0	23	2	41	0	1	43	2	1	0	0	3	69
Hourly Total	50	4	0	0	54	8	82	0	1	90	7	4	0	0	11	155
8:00 AM	8	1	0	0	9	0	42	0	0	42	3	2	0	0	5	56
8:15 AM	26	3	0	0	29	0	52	0	0	52	1	0	0	0	1	82
8:30 AM	20	2	0	0	22	1	29	0	0	30	3	0	0	0	3	55
8:45 AM	25	10	0	3	35	2	31	0	0	33	3	1	0	0	4	72
Hourly Total	79	16	0	3	95	3	154	0	0	157	10	3	0	0	13	265
9:00 AM	24	5	0	0	29	6	28	0	0	34	1	1	0	2	2	65
9:15 AM	42	4	0	0	46	4	32	0	0	36	5	2	0	0	7	89
9:30 AM	39	2	0	0	41	2	33	0	0	35	8	3	0	0	11	87
9:45 AM	39	4	0	0	43	2	44	0	0	46	6	1	0	1	7	96
Hourly Total	144	15	0	0	159	14	137	0	0	151	20	7	0	3	27	337
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	60	9	0	0	69	1	46	0	0	47	3	2	0	0	5	121
11:15 AM	56	7	0	0	63	1	48	0	0	49	4	4	0	0	8	120
11:30 AM	54	9	0	0	63	2	54	0	0	56	2	3	0	0	5	124
11:45 AM	69	10	0	0	79	3	49	0	0	52	2	0	0	0	2	133
Hourly Total	239	35	0	0	274	7	197	0	0	204	11	9	0	0	20	498
12:00 PM	63	11	0	0	74	1	52	0	0	53	4	2	0	0	6	133
12:15 PM	70	4	0	0	74	5	42	0	0	47	5	3	0	0	8	129
12:30 PM	56	2	0	0	58	0	60	0	0	60	6	2	0	0	8	126
12:45 PM	57	9	0	0	66	0	67	0	0	67	7	0	0	0	7	140
Hourly Total	246	26	0	0	272	6	221	0	0	227	22	7	0	0	29	528
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	62	12	0	0	74	3	52	0	0	55	5	1	0	1	6	135
3:15 PM	72	11	0	0	83	3	53	0	0	56	1	2	0	1	3	142
3:30 PM	62	13	0	0	75	1	48	0	0	49	6	1	0	0	7	131
3:45 PM	75	15	0	2	90	0	47	0	0	47	5	1	0	5	6	143
Hourly Total	271	51	0	2	322	7	200	0	0	207	17	5	0	7	22	551
4:00 PM	78	6	0	0	84	3	46	0	0	49	4	3	0	2	7	140
4:15 PM	75	6	0	0	81	5	50	0	0	55	0	4	0	0	4	140
4:30 PM	67	7	0	0	74	4	44	0	0	48	5	1	0	0	6	128
4:45 PM	68	3	0	0	71	3	41	0	0	44	4	2	0	1	6	121

Hourly Total	288	22	0	0	310	15	181	0	0	196	13	10	0	3	23	529
5:00 PM	61	11	0	0	72	5	54	0	0	59	3	2	0	0	5	136
5:15 PM	44	4	0	0	48	3	39	0	0	42	4	0	0	0	4	94
5:30 PM	46	4	0	0	50	0	28	0	0	28	1	1	0	0	2	80
5:45 PM	37	2	0	0	39	2	27	0	0	29	0	0	0	1	0	68
Hourly Total	188	21	0	0	209	10	148	0	0	158	8	3	0	1	11	378
Grand Total	1505	190	0	5	1695	70	1320	0	1	1390	108	48	0	14	156	3241
Approach %	88.8	11.2	0.0	-	-	5.0	95.0	0.0	-	-	69.2	30.8	0.0	-	-	-
Total %	46.4	5.9	0.0	-	52.3	2.2	40.7	0.0	-	42.9	3.3	1.5	0.0	-	4.8	-
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1491	186	0	-	1677	68	1305	0	-	1373	107	46	0	-	153	3203
% Cars & Light Goods	99.1	97.9	-	-	98.9	97.1	98.9	-	-	98.8	99.1	95.8	-	-	98.1	98.8
Buses	7	1	0	-	8	1	5	0	-	6	1	1	0	-	2	16
% Buses	0.5	0.5	-	-	0.5	1.4	0.4	-	-	0.4	0.9	2.1	-	-	1.3	0.5
Single-Unit Trucks	6	3	0	-	9	0	6	0	-	6	0	1	0	-	1	16
% Single-Unit Trucks	0.4	1.6	-	-	0.5	0.0	0.5	-	-	0.4	0.0	2.1	-	-	0.6	0.5
Articulated Trucks	1	0	0	-	1	0	3	0	-	3	0	0	0	-	0	4
% Articulated Trucks	0.1	0.0	-	-	0.1	0.0	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	-	-	0.0	1.4	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	5	-	-	-	-	1	-	-	-	-	14	-	-
% 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: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023
Page No: 3



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: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

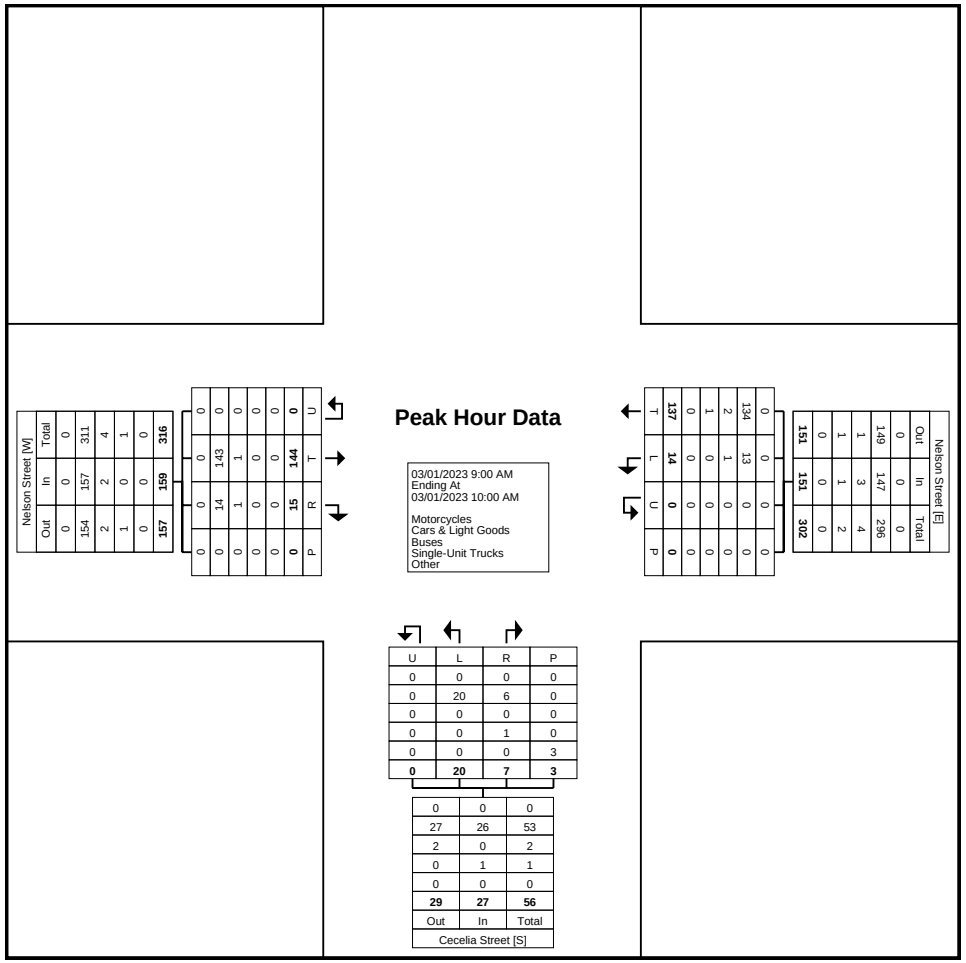
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	24	5	0	0	29	6	28	0	0	34	1	1	0	2	2	65
9:15 AM	42	4	0	0	46	4	32	0	0	36	5	2	0	0	7	89
9:30 AM	39	2	0	0	41	2	33	0	0	35	8	3	0	0	11	87
9:45 AM	39	4	0	0	43	2	44	0	0	46	6	1	0	1	7	96
Total	144	15	0	0	159	14	137	0	0	151	20	7	0	3	27	337
Approach %	90.6	9.4	0.0	-	-	9.3	90.7	0.0	-	-	74.1	25.9	0.0	-	-	-
Total %	42.7	4.5	0.0	-	47.2	4.2	40.7	0.0	-	44.8	5.9	2.1	0.0	-	8.0	-
PHF	0.857	0.750	0.000	-	0.864	0.583	0.778	0.000	-	0.821	0.625	0.583	0.000	-	0.614	0.878
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	143	14	0	-	157	13	134	0	-	147	20	6	0	-	26	330
% Cars & Light Goods	99.3	93.3	-	-	98.7	92.9	97.8	-	-	97.4	100.0	85.7	-	-	96.3	97.9
Buses	1	1	0	-	2	1	2	0	-	3	0	0	0	-	0	5
% Buses	0.7	6.7	-	-	1.3	7.1	1.5	-	-	2.0	0.0	0.0	-	-	0.0	1.5
Single-Unit Trucks	0	0	0	-	0	0	1	0	-	1	0	1	0	-	1	2
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.7	0.0	14.3	-	-	3.7	0.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023



U	L	R	P
0	0	0	0
0	20	6	0
0	0	0	0
0	0	1	0
0	0	0	3
0	**20**	**7**	**3**

0	0	0
27	26	53
2	0	2
0	1	1
0	0	0
29	**27**	**56**
Out	In	Total
Cecelia Street [S]		

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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

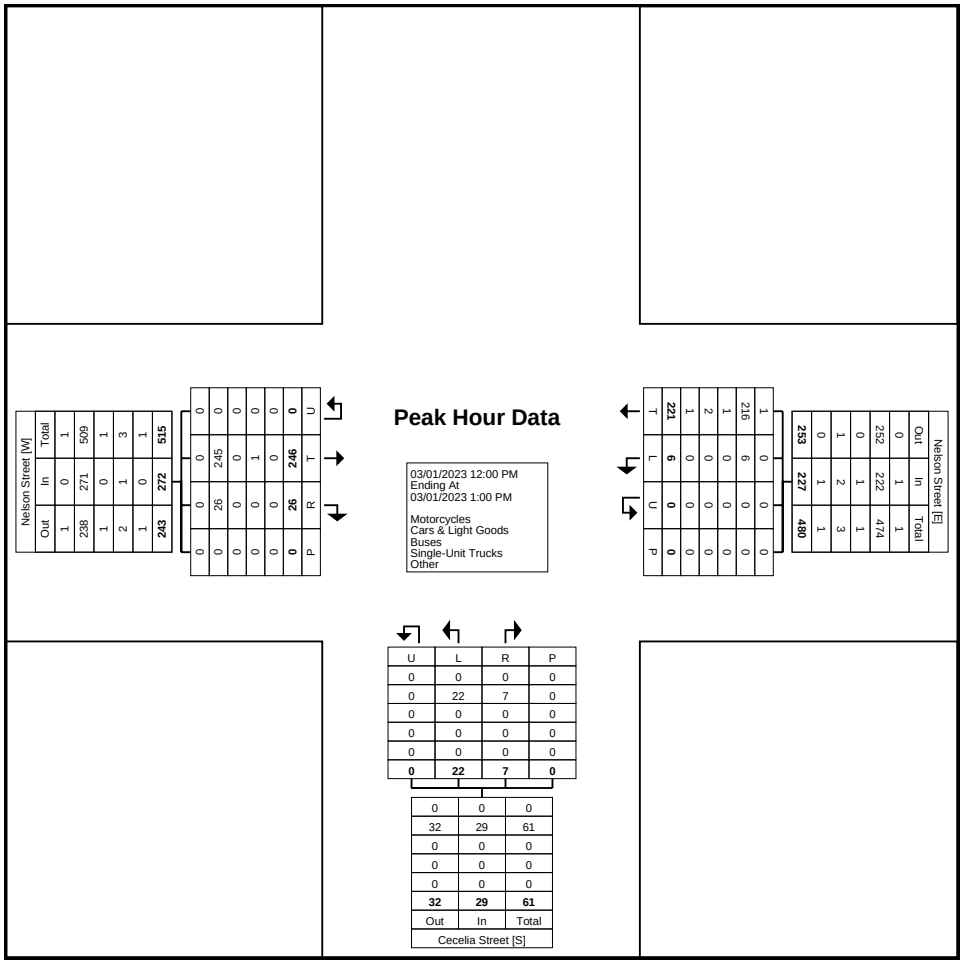
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	63	11	0	0	74	1	52	0	0	53	4	2	0	0	6	133
12:15 PM	70	4	0	0	74	5	42	0	0	47	5	3	0	0	8	129
12:30 PM	56	2	0	0	58	0	60	0	0	60	6	2	0	0	8	126
12:45 PM	57	9	0	0	66	0	67	0	0	67	7	0	0	0	7	140
Total	246	26	0	0	272	6	221	0	0	227	22	7	0	0	29	528
Approach %	90.4	9.6	0.0	-	-	2.6	97.4	0.0	-	-	75.9	24.1	0.0	-	-	-
Total %	46.6	4.9	0.0	-	51.5	1.1	41.9	0.0	-	43.0	4.2	1.3	0.0	-	5.5	-
PHF	0.879	0.591	0.000	-	0.919	0.300	0.825	0.000	-	0.847	0.786	0.583	0.000	-	0.906	0.943
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.4	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	245	26	0	-	271	6	216	0	-	222	22	7	0	-	29	522
% Cars & Light Goods	99.6	100.0	-	-	99.6	100.0	97.7	-	-	97.8	100.0	100.0	-	-	100.0	98.9
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.4	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	1	0	0	-	1	0	2	0	-	2	0	0	0	-	0	3
% Single-Unit Trucks	0.4	0.0	-	-	0.4	0.0	0.9	-	-	0.9	0.0	0.0	-	-	0.0	0.6
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.4	0.0	0.0	-	-	0.0	0.2
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	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: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023



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: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

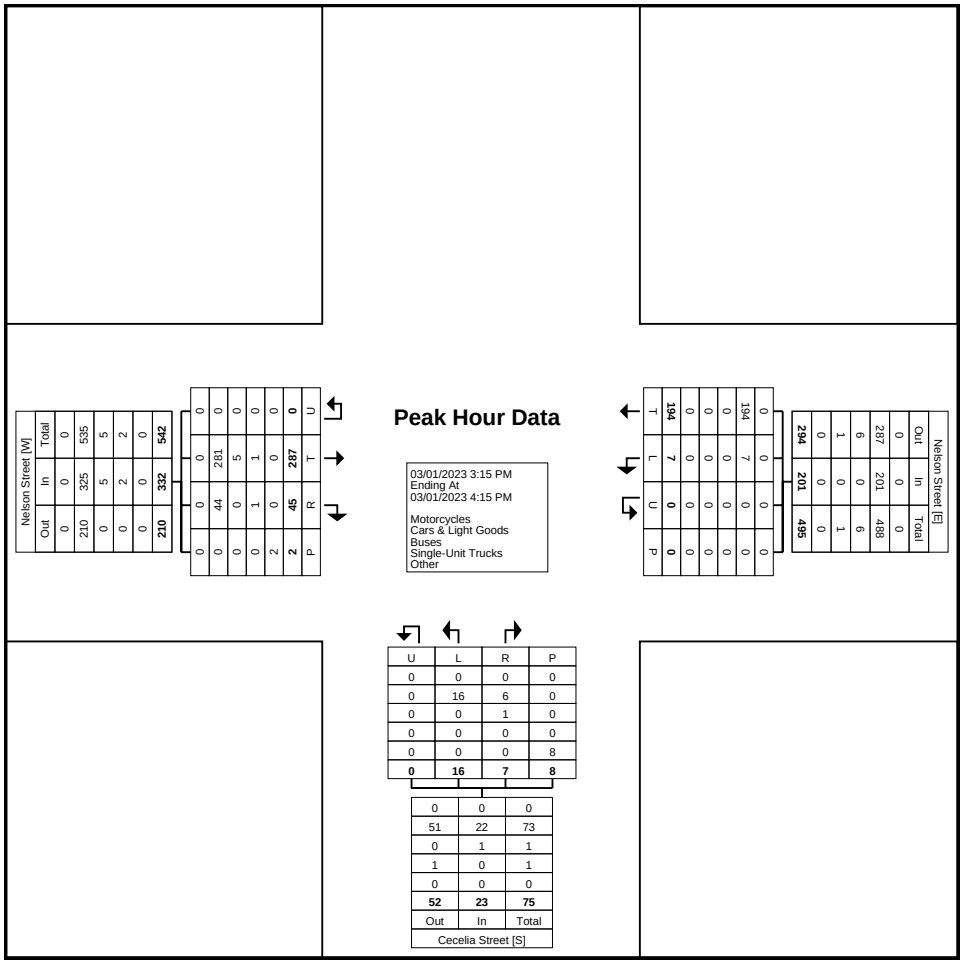
Turning Movement Peak Hour Data (3:15 PM)

Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:15 PM	72	11	0	0	83	3	53	0	0	56	1	2	0	1	3	142
3:30 PM	62	13	0	0	75	1	48	0	0	49	6	1	0	0	7	131
3:45 PM	75	15	0	2	90	0	47	0	0	47	5	1	0	5	6	143
4:00 PM	78	6	0	0	84	3	46	0	0	49	4	3	0	2	7	140
Total	287	45	0	2	332	7	194	0	0	201	16	7	0	8	23	556
Approach %	86.4	13.6	0.0	-	-	3.5	96.5	0.0	-	-	69.6	30.4	0.0	-	-	-
Total %	51.6	8.1	0.0	-	59.7	1.3	34.9	0.0	-	36.2	2.9	1.3	0.0	-	4.1	-
PHF	0.920	0.750	0.000	-	0.922	0.583	0.915	0.000	-	0.897	0.667	0.583	0.000	-	0.821	0.972
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	281	44	0	-	325	7	194	0	-	201	16	6	0	-	22	548
% Cars & Light Goods	97.9	97.8	-	-	97.9	100.0	100.0	-	-	100.0	100.0	85.7	-	-	95.7	98.6
Buses	5	0	0	-	5	0	0	0	-	0	0	1	0	-	1	6
% Buses	1.7	0.0	-	-	1.5	0.0	0.0	-	-	0.0	0.0	14.3	-	-	4.3	1.1
Single-Unit Trucks	1	1	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Single-Unit Trucks	0.3	2.2	-	-	0.6	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.4
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	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	8	-	-
% 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: Cecelia Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (3:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

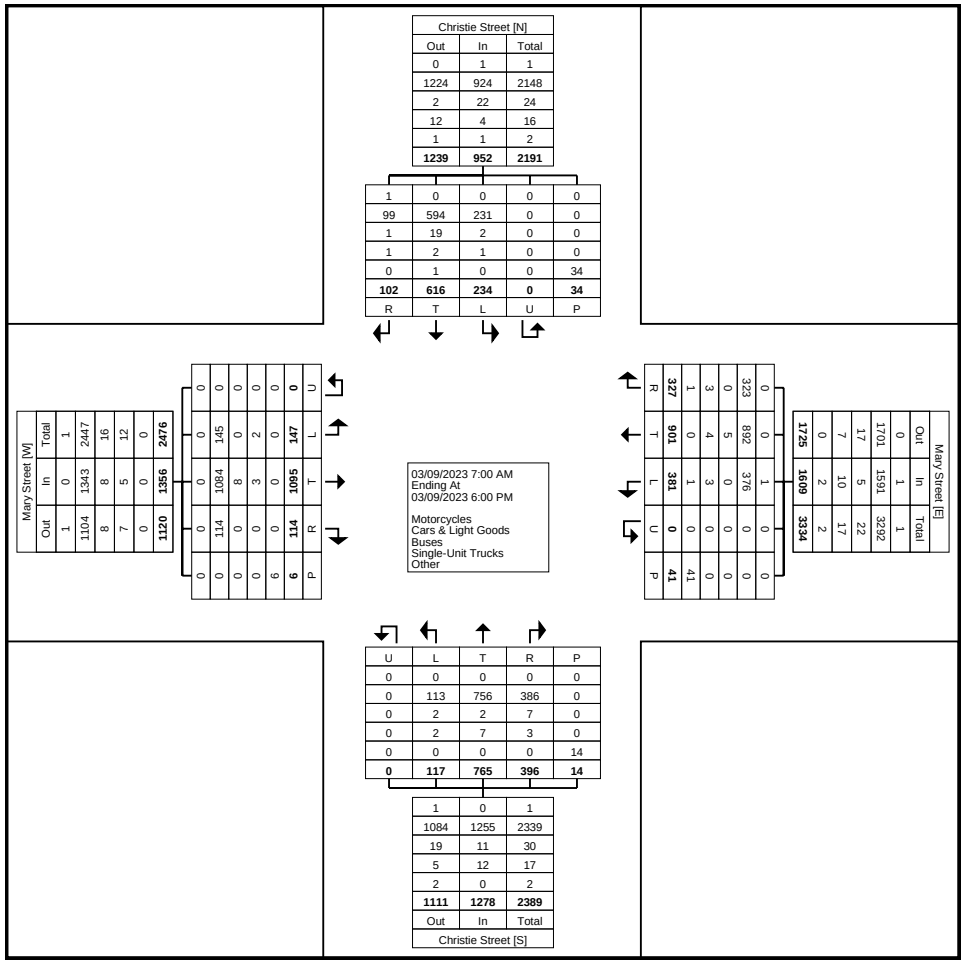
Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	9	2	0	0	12	5	13	12	0	0	30	0	12	7	0	0	19	5	3	0	0	0	8	69
7:15 AM	5	19	3	0	0	27	1	6	4	0	2	11	2	22	7	0	0	31	3	7	2	0	1	12	81
7:30 AM	6	33	1	0	0	40	13	14	10	0	0	37	2	21	13	0	0	36	7	10	2	0	0	19	132
7:45 AM	8	50	2	0	0	60	17	24	8	0	2	49	6	54	29	0	0	89	5	15	3	0	0	23	221
Hourly Total	20	111	8	0	0	139	36	57	34	0	4	127	10	109	56	0	0	175	20	35	7	0	1	62	503
8:00 AM	7	36	9	0	0	52	16	26	12	0	2	54	9	32	19	0	0	60	6	9	3	0	0	18	184
8:15 AM	6	37	4	0	0	47	6	33	12	0	0	51	6	37	22	0	0	65	2	11	0	0	1	13	176
8:30 AM	9	41	5	0	0	55	11	26	9	0	0	46	5	25	10	0	1	40	11	20	1	0	2	32	173
8:45 AM	8	44	3	0	1	55	7	13	11	0	4	31	7	22	13	0	0	42	6	10	1	0	0	17	145
Hourly Total	30	158	21	0	1	209	40	98	44	0	6	182	27	116	64	0	1	207	25	50	5	0	3	80	678
9:00 AM	4	44	2	0	0	50	11	32	8	0	2	51	4	18	18	0	0	40	6	13	2	0	2	21	162
9:15 AM	1	44	3	0	0	48	13	42	11	0	0	66	4	22	12	0	0	38	8	14	2	0	3	24	176
9:30 AM	3	31	2	0	0	36	9	27	10	0	0	46	2	28	8	0	0	38	3	12	3	0	0	18	138
9:45 AM	3	21	4	0	0	28	6	18	4	0	4	28	2	31	11	0	2	44	4	16	4	0	1	24	124
Hourly Total	11	140	11	0	0	162	39	119	33	0	6	191	12	99	49	0	2	160	21	55	11	0	6	87	600
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	4	24	1	0	0	29	13	24	14	0	0	51	4	46	9	0	0	59	3	15	4	0	2	22	161
11:15 AM	4	34	0	0	1	38	14	21	9	0	1	44	2	19	12	0	0	33	4	20	2	0	0	26	141
11:30 AM	8	19	5	0	0	32	11	15	12	0	2	38	2	20	10	0	1	32	10	22	3	0	1	35	137
11:45 AM	4	23	4	0	0	31	13	18	9	0	1	40	3	21	9	0	0	33	9	28	3	0	1	40	144
Hourly Total	20	100	10	0	1	130	51	78	44	0	4	173	11	106	40	0	1	157	26	85	12	0	4	123	583
12:00 PM	7	28	4	0	2	39	7	42	11	0	2	60	2	15	12	0	3	29	14	28	3	0	2	45	173
12:15 PM	3	26	3	0	0	32	9	26	11	0	3	46	2	14	8	0	0	24	10	19	1	0	0	30	132
12:30 PM	7	32	1	0	0	40	7	28	8	0	3	43	3	22	13	0	0	38	11	18	6	0	3	35	156
12:45 PM	6	36	4	0	0	46	9	26	5	0	0	40	7	27	11	0	0	45	6	19	5	0	2	30	161
Hourly Total	23	122	12	0	2	157	32	122	35	0	8	189	14	78	44	0	3	136	41	84	15	0	7	140	622
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	42	3	0	0	48	12	34	11	0	1	57	2	18	9	0	0	29	6	21	3	0	1	30	164
3:15 PM	8	41	3	0	0	52	14	33	19	0	1	66	4	22	18	0	0	44	9	27	4	0	3	40	202
3:30 PM	2	57	3	0	0	62	16	37	6	0	2	59	1	27	12	0	0	40	9	35	2	0	0	46	207
3:45 PM	2	41	8	0	0	51	23	59	17	0	3	99	5	17	10	0	1	32	6	33	2	0	2	41	223
Hourly Total	15	181	17	0	0	213	65	163	53	0	7	281	12	84	49	0	1	145	30	116	11	0	6	157	796
4:00 PM	2	43	8	0	0	53	22	47	18	0	0	87	4	28	7	0	0	39	8	41	9	0	0	58	237
4:15 PM	4	42	6	0	0	52	15	46	13	0	0	74	2	23	13	0	2	38	6	27	3	0	2	36	200
4:30 PM	4	38	6	0	0	48	16	33	9	0	1	58	5	16	17	0	0	38	15	20	12	0	0	47	191

4:45 PM	4	44	6	0	0	54	9	35	10	0	0	54	6	26	21	0	2	53	9	23	1	0	5	33	194
Hourly Total	14	167	26	0	0	207	62	161	50	0	1	273	17	93	58	0	4	168	38	111	25	0	7	174	822
5:00 PM	3	40	2	0	2	45	27	38	9	0	1	74	8	18	12	0	0	38	9	26	7	0	0	42	199
5:15 PM	5	20	4	0	0	29	11	29	13	0	0	53	2	21	13	0	0	36	9	18	3	0	0	30	148
5:30 PM	1	36	2	0	0	39	8	15	8	0	3	31	3	21	5	0	1	29	7	18	4	0	0	29	128
5:45 PM	5	20	1	0	0	26	10	21	4	0	1	35	1	20	6	0	1	27	8	18	2	0	0	28	116
Hourly Total	14	116	9	0	2	139	56	103	34	0	5	193	14	80	36	0	2	130	33	80	16	0	0	129	591
Grand Total	147	1095	114	0	6	1356	381	901	327	0	41	1609	117	765	396	0	14	1278	234	616	102	0	34	952	5195
Approach %	10.8	80.8	8.4	0.0	-	-	23.7	56.0	20.3	0.0	-	-	9.2	59.9	31.0	0.0	-	-	24.6	64.7	10.7	0.0	-	-	-
Total %	2.8	21.1	2.2	0.0	-	26.1	7.3	17.3	6.3	0.0	-	31.0	2.3	14.7	7.6	0.0	-	24.6	4.5	11.9	2.0	0.0	-	18.3	-
Motorcycles	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	2
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.0	-	-	0.1	0.0
Cars & Light Goods	145	1084	114	0	-	1343	376	892	323	0	-	1591	113	756	386	0	-	1255	231	594	99	0	-	924	5113
% Cars & Light Goods	98.6	99.0	100.0	-	-	99.0	98.7	99.0	98.8	-	-	98.9	96.6	98.8	97.5	-	-	98.2	98.7	96.4	97.1	-	-	97.1	98.4
Buses	0	8	0	0	-	8	0	5	0	0	-	5	2	2	7	0	-	11	2	19	1	0	-	22	46
% Buses	0.0	0.7	0.0	-	-	0.6	0.0	0.6	0.0	-	-	0.3	1.7	0.3	1.8	-	-	0.9	0.9	3.1	1.0	-	-	2.3	0.9
Single-Unit Trucks	2	3	0	0	-	5	3	4	3	0	-	10	2	7	3	0	-	12	1	2	1	0	-	4	31
% Single-Unit Trucks	1.4	0.3	0.0	-	-	0.4	0.8	0.4	0.9	-	-	0.6	1.7	0.9	0.8	-	-	0.9	0.4	0.3	1.0	-	-	0.4	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.1	0.0
Bicycles on Road	0	0	0	0	-	0	1	0	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.3	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	2.4	-	-	-	-	-	0.0	-	-	-	-	-	11.8	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	40	-	-	-	-	-	14	-	-	-	-	-	30	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	97.6	-	-	-	-	-	100.0	-	-	-	-	-	88.2	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023



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: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023

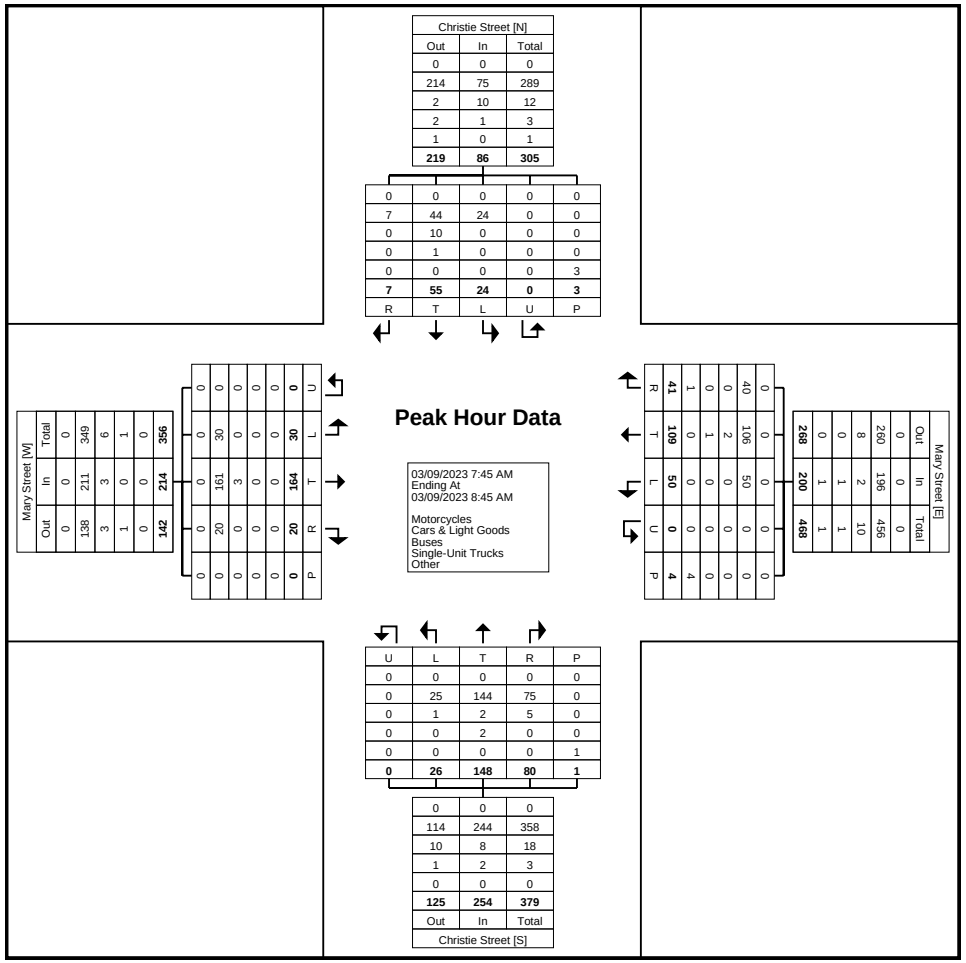
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie 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
7:45 AM	8	50	2	0	0	60	17	24	8	0	2	49	6	54	29	0	0	89	5	15	3	0	0	23	221
8:00 AM	7	36	9	0	0	52	16	26	12	0	2	54	9	32	19	0	0	60	6	9	3	0	0	18	184
8:15 AM	6	37	4	0	0	47	6	33	12	0	0	51	6	37	22	0	0	65	2	11	0	0	1	13	176
8:30 AM	9	41	5	0	0	55	11	26	9	0	0	46	5	25	10	0	1	40	11	20	1	0	2	32	173
Total	30	164	20	0	0	214	50	109	41	0	4	200	26	148	80	0	1	254	24	55	7	0	3	86	754
Approach %	14.0	76.6	9.3	0.0	-	-	25.0	54.5	20.5	0.0	-	-	10.2	58.3	31.5	0.0	-	-	27.9	64.0	8.1	0.0	-	-	-
Total %	4.0	21.8	2.7	0.0	-	28.4	6.6	14.5	5.4	0.0	-	26.5	3.4	19.6	10.6	0.0	-	33.7	3.2	7.3	0.9	0.0	-	11.4	-
PHF	0.833	0.820	0.556	0.000	-	0.892	0.735	0.826	0.854	0.000	-	0.926	0.722	0.685	0.690	0.000	-	0.713	0.545	0.688	0.583	0.000	-	0.672	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	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	30	161	20	0	-	211	50	106	40	0	-	196	25	144	75	0	-	244	24	44	7	0	-	75	726
% Cars & Light Goods	100.0	98.2	100.0	-	-	98.6	100.0	97.2	97.6	-	-	98.0	96.2	97.3	93.8	-	-	96.1	100.0	80.0	100.0	-	-	87.2	96.3
Buses	0	3	0	0	-	3	0	2	0	0	-	2	1	2	5	0	-	8	0	10	0	0	-	10	23
% Buses	0.0	1.8	0.0	-	-	1.4	0.0	1.8	0.0	-	-	1.0	3.8	1.4	6.3	-	-	3.1	0.0	18.2	0.0	-	-	11.6	3.1
Single-Unit Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	2	0	0	-	2	0	1	0	0	-	1	4
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.5	0.0	1.4	0.0	-	-	0.8	0.0	1.8	0.0	-	-	1.2	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.4	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	3	-	-
% 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: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023


Christie Street [N]
Out In Total
0 0 0
214 75 289
2 10 12
2 1 3
1 0 1
219 86 305
0 0 0 0 0
7 44 24 0 0
0 10 0 0 0
0 1 0 0 0
0 0 0 0 3
7 55 24 0 3
R T L U P
Mary Street [W]
Out In Total
0 0 0
138 211 349
3 3 6
1 0 1
0 0 0
142 214 356
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023

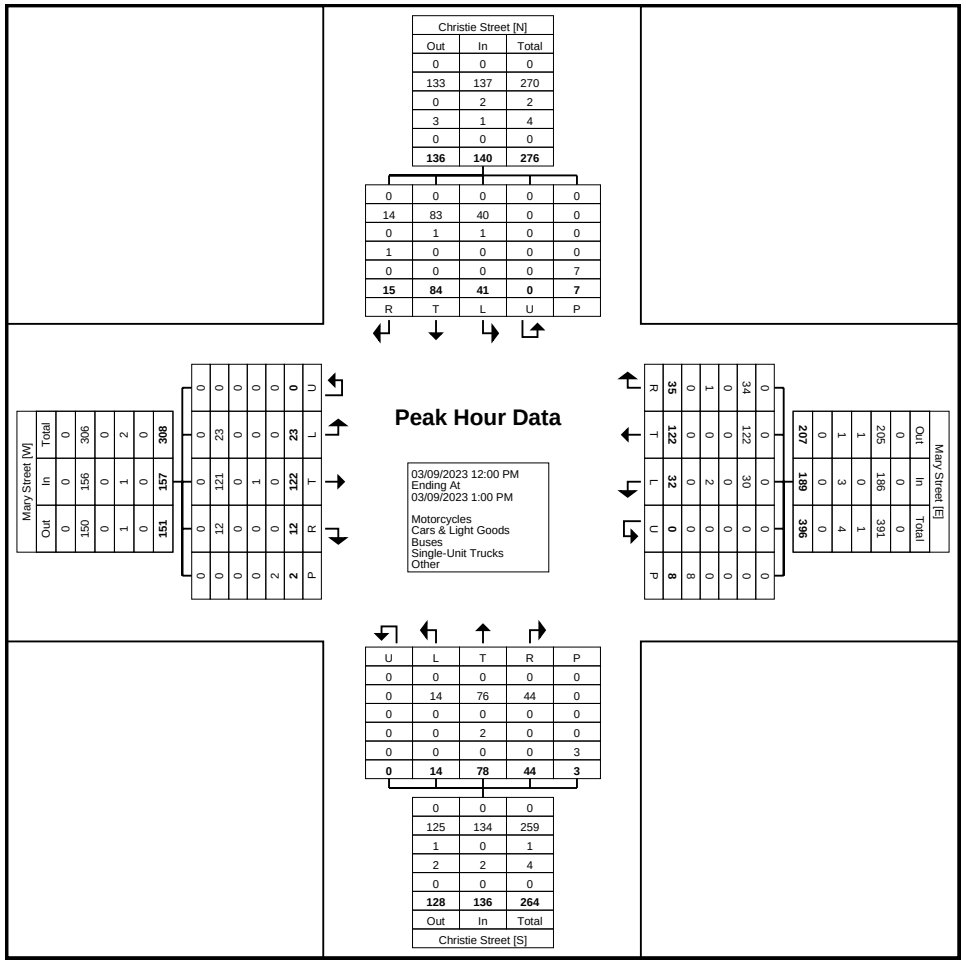
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie 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
12:00 PM	7	28	4	0	2	39	7	42	11	0	2	60	2	15	12	0	3	29	14	28	3	0	2	45	173
12:15 PM	3	26	3	0	0	32	9	26	11	0	3	46	2	14	8	0	0	24	10	19	1	0	0	30	132
12:30 PM	7	32	1	0	0	40	7	28	8	0	3	43	3	22	13	0	0	38	11	18	6	0	3	35	156
12:45 PM	6	36	4	0	0	46	9	26	5	0	0	40	7	27	11	0	0	45	6	19	5	0	2	30	161
Total	23	122	12	0	2	157	32	122	35	0	8	189	14	78	44	0	3	136	41	84	15	0	7	140	622
Approach %	14.6	77.7	7.6	0.0	-	-	16.9	64.6	18.5	0.0	-	-	10.3	57.4	32.4	0.0	-	-	29.3	60.0	10.7	0.0	-	-	-
Total %	3.7	19.6	1.9	0.0	-	25.2	5.1	19.6	5.6	0.0	-	30.4	2.3	12.5	7.1	0.0	-	21.9	6.6	13.5	2.4	0.0	-	22.5	-
PHF	0.821	0.847	0.750	0.000	-	0.853	0.889	0.726	0.795	0.000	-	0.788	0.500	0.722	0.846	0.000	-	0.756	0.732	0.750	0.625	0.000	-	0.778	0.899
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	23	121	12	0	-	156	30	122	34	0	-	186	14	76	44	0	-	134	40	83	14	0	-	137	613
% Cars & Light Goods	100.0	99.2	100.0	-	-	99.4	93.8	100.0	97.1	-	-	98.4	100.0	97.4	100.0	-	-	98.5	97.6	98.8	93.3	-	-	97.9	98.6
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.4	1.2	0.0	-	-	1.4	0.3
Single-Unit Trucks	0	1	0	0	-	1	2	0	1	0	-	3	0	2	0	0	-	2	0	0	1	0	-	1	7
% Single-Unit Trucks	0.0	0.8	0.0	-	-	0.6	6.3	0.0	2.9	-	-	1.6	0.0	2.6	0.0	-	-	1.5	0.0	0.0	6.7	-	-	0.7	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023



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: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023

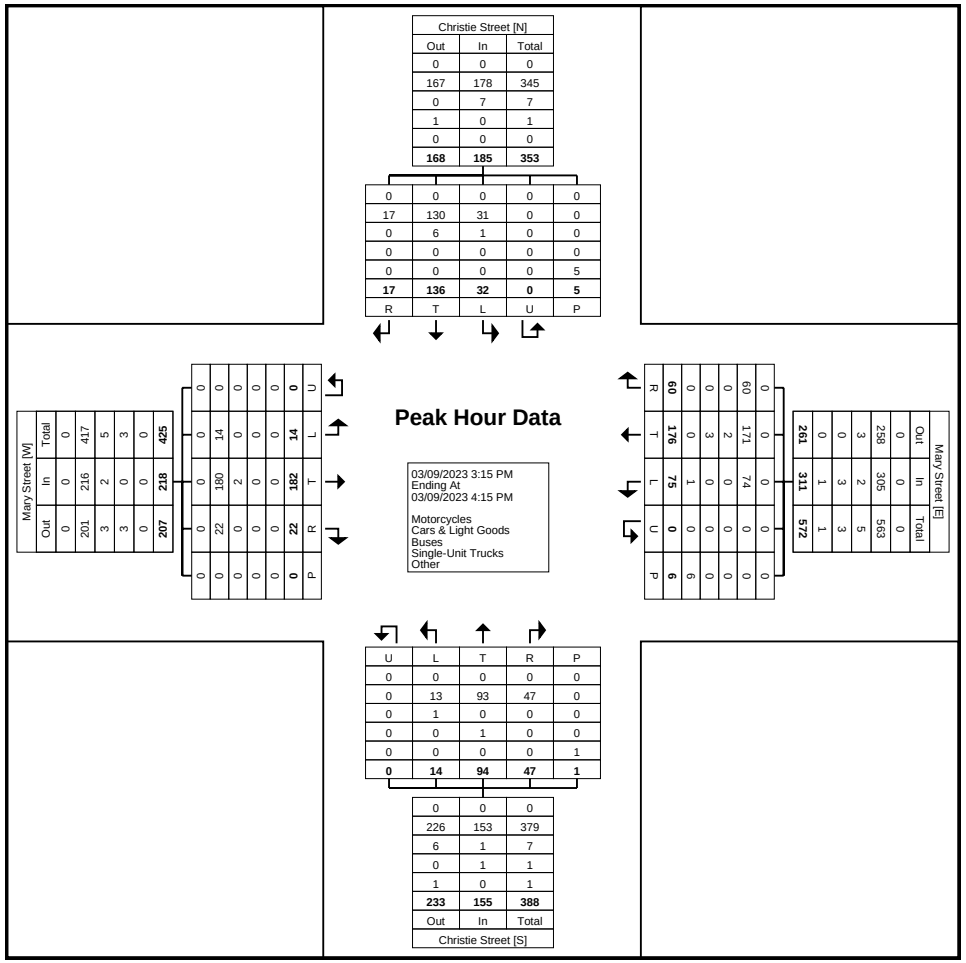
Turning Movement Peak Hour Data (3:15 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie 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
3:15 PM	8	41	3	0	0	52	14	33	19	0	1	66	4	22	18	0	0	44	9	27	4	0	3	40	202
3:30 PM	2	57	3	0	0	62	16	37	6	0	2	59	1	27	12	0	0	40	9	35	2	0	0	46	207
3:45 PM	2	41	8	0	0	51	23	59	17	0	3	99	5	17	10	0	1	32	6	33	2	0	2	41	223
4:00 PM	2	43	8	0	0	53	22	47	18	0	0	87	4	28	7	0	0	39	8	41	9	0	0	58	237
Total	14	182	22	0	0	218	75	176	60	0	6	311	14	94	47	0	1	155	32	136	17	0	5	185	869
Approach %	6.4	83.5	10.1	0.0	-	-	24.1	56.6	19.3	0.0	-	-	9.0	60.6	30.3	0.0	-	-	17.3	73.5	9.2	0.0	-	-	-
Total %	1.6	20.9	2.5	0.0	-	25.1	8.6	20.3	6.9	0.0	-	35.8	1.6	10.8	5.4	0.0	-	17.8	3.7	15.7	2.0	0.0	-	21.3	-
PHF	0.438	0.798	0.688	0.000	-	0.879	0.815	0.746	0.789	0.000	-	0.785	0.700	0.839	0.653	0.000	-	0.881	0.889	0.829	0.472	0.000	-	0.797	0.917
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	14	180	22	0	-	216	74	171	60	0	-	305	13	93	47	0	-	153	31	130	17	0	-	178	852
% Cars & Light Goods	100.0	98.9	100.0	-	-	99.1	98.7	97.2	100.0	-	-	98.1	92.9	98.9	100.0	-	-	98.7	96.9	95.6	100.0	-	-	96.2	98.0
Buses	0	2	0	0	-	2	0	2	0	0	-	2	1	0	0	0	-	1	1	6	0	0	-	7	12
% Buses	0.0	1.1	0.0	-	-	0.9	0.0	1.1	0.0	-	-	0.6	7.1	0.0	0.0	-	-	0.6	3.1	4.4	0.0	-	-	3.8	1.4
Single-Unit Trucks	0	0	0	0	-	0	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	4
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.7	0.0	-	-	1.0	0.0	1.1	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	1.3	0.0	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	20.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	80.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Christie Street & Mary Street
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (3:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Drive-in Road & Wilson Road
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

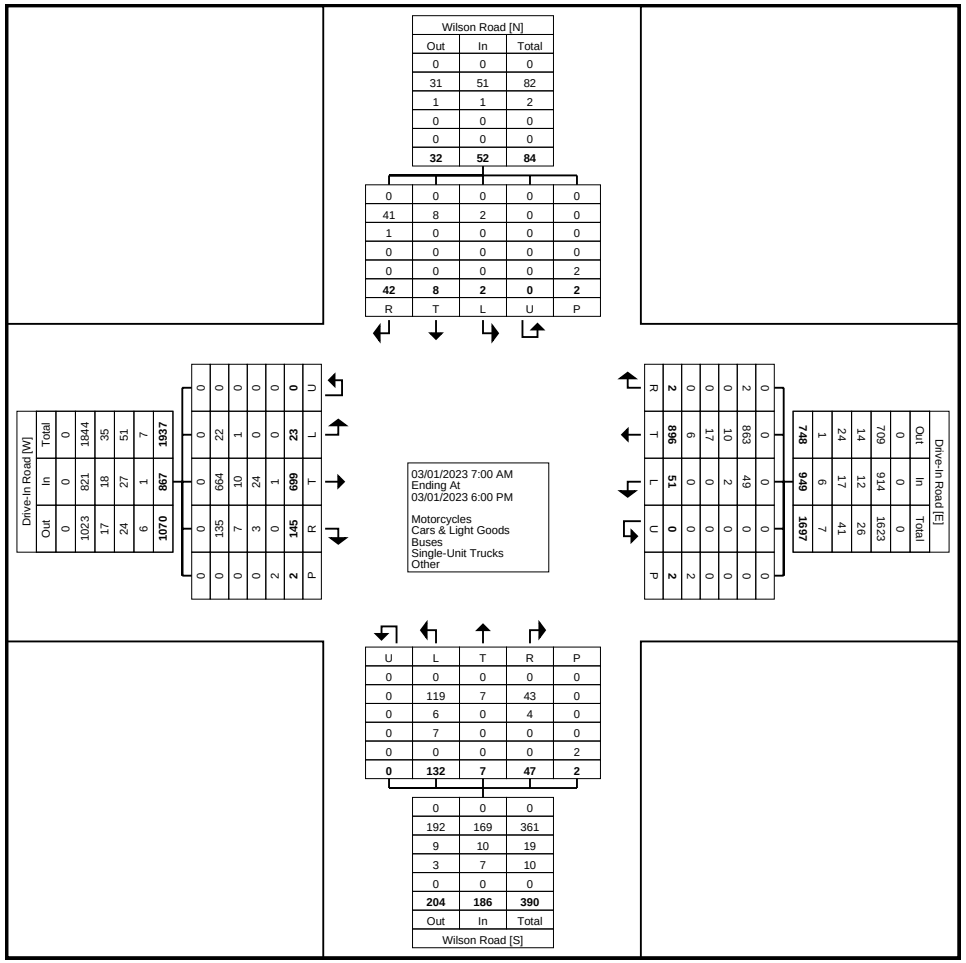
Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	13	4	0	0	17	0	23	0	0	0	23	7	0	0	0	0	7	0	0	0	0	0	0	47
7:15 AM	1	10	1	0	0	12	1	33	0	0	0	34	2	0	1	0	0	3	0	3	1	0	0	4	53
7:30 AM	2	18	2	0	0	22	3	34	1	0	0	38	15	0	1	0	0	16	0	0	4	0	0	4	80
7:45 AM	0	17	1	0	0	18	0	50	0	0	0	50	11	0	2	0	0	13	0	0	2	0	0	2	83
Hourly Total	3	58	8	0	0	69	4	140	1	0	0	145	35	0	4	0	0	39	0	3	7	0	0	10	263
8:00 AM	0	14	2	0	0	16	1	31	0	0	0	32	7	0	1	0	0	8	0	0	6	0	0	6	62
8:15 AM	0	20	4	0	1	24	1	45	0	0	0	46	3	0	2	0	0	5	0	0	3	0	1	3	78
8:30 AM	1	10	2	0	0	13	2	34	0	0	0	36	5	0	2	0	0	7	0	0	1	0	0	1	57
8:45 AM	0	18	4	0	0	22	0	21	0	0	0	21	4	0	2	0	0	6	0	0	2	0	0	2	51
Hourly Total	1	62	12	0	1	75	4	131	0	0	0	135	19	0	7	0	0	26	0	0	12	0	1	12	248
9:00 AM	0	8	2	0	0	10	1	33	0	0	0	34	3	0	0	0	0	3	0	0	1	0	0	1	48
9:15 AM	0	18	3	0	0	21	1	23	0	0	0	24	4	0	0	0	0	4	0	0	0	0	0	0	49
9:30 AM	0	18	6	0	0	24	2	24	0	0	0	26	1	0	1	0	0	2	0	1	0	0	0	1	53
9:45 AM	0	22	2	0	0	24	3	21	0	0	0	24	4	0	1	0	0	5	0	0	0	0	0	0	53
Hourly Total	0	66	13	0	0	79	7	101	0	0	0	108	12	0	2	0	0	14	0	1	1	0	0	2	203
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	1	11	5	0	0	17	1	22	0	0	0	23	4	0	1	0	0	5	1	1	0	0	0	2	47
11:15 AM	0	16	4	0	0	20	1	21	0	0	0	22	2	0	0	0	0	2	0	0	0	0	0	0	44
11:30 AM	0	14	1	0	0	15	3	21	0	0	0	24	0	0	2	0	0	2	0	0	2	0	0	2	43
11:45 AM	0	20	5	0	0	25	0	23	0	0	0	23	4	0	1	0	0	5	1	0	1	0	0	2	55
Hourly Total	1	61	15	0	0	77	5	87	0	0	0	92	10	0	4	0	0	14	2	1	3	0	0	6	189
12:00 PM	3	29	4	0	0	36	0	32	0	0	0	32	1	1	0	0	0	2	0	0	0	0	0	0	70
12:15 PM	0	14	2	0	0	16	1	18	0	0	0	19	3	1	1	0	0	5	0	0	1	0	0	1	41
12:30 PM	0	13	6	0	0	19	6	25	0	0	0	31	2	0	1	0	0	3	0	0	1	0	0	1	54
12:45 PM	0	18	2	0	0	20	0	22	0	0	0	22	6	0	1	0	0	7	0	0	3	0	0	3	52
Hourly Total	3	74	14	0	0	91	7	97	0	0	0	104	12	2	3	0	0	17	0	0	5	0	0	5	217
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	27	5	0	0	32	3	27	0	0	0	30	2	1	3	0	0	6	0	0	0	0	0	0	68
3:15 PM	1	27	3	0	0	31	2	29	0	0	0	31	3	0	3	0	0	6	0	0	0	0	0	0	68
3:30 PM	2	33	8	0	0	43	0	39	0	0	0	39	4	0	3	0	0	7	0	0	3	0	0	3	92
3:45 PM	1	34	11	0	0	46	4	28	0	0	0	32	4	1	3	0	0	8	0	0	1	0	0	1	87
Hourly Total	4	121	27	0	0	152	9	123	0	0	0	132	13	2	12	0	0	27	0	0	4	0	0	4	315
4:00 PM	3	46	14	0	0	63	2	30	0	0	0	32	3	0	1	0	0	4	0	0	1	0	0	1	100
4:15 PM	2	41	7	0	0	50	3	29	0	0	0	32	4	0	3	0	0	7	0	1	2	0	0	3	92
4:30 PM	0	46	7	0	0	53	2	32	1	0	0	35	6	0	0	0	1	6	0	0	2	0	1	2	96

4:45 PM	0	25	8	0	1	33	2	26	0	0	0	28	6	2	3	0	0	11	0	0	1	0	0	1	73
Hourly Total	5	158	36	0	1	199	9	117	1	0	0	127	19	2	7	0	1	28	0	1	6	0	1	7	361
5:00 PM	4	37	9	0	0	50	2	24	0	0	0	26	4	1	2	0	0	7	0	1	2	0	0	3	86
5:15 PM	1	20	6	0	0	27	3	27	0	0	1	30	0	0	2	0	0	2	0	0	2	0	0	2	61
5:30 PM	0	23	2	0	0	25	1	27	0	0	0	28	7	0	3	0	0	10	0	1	0	0	0	1	64
5:45 PM	1	19	3	0	0	23	0	22	0	0	1	22	1	0	1	0	1	2	0	0	0	0	0	0	47
Hourly Total	6	99	20	0	0	125	6	100	0	0	2	106	12	1	8	0	1	21	0	2	4	0	0	6	258
Grand Total	23	699	145	0	2	867	51	896	2	0	2	949	132	7	47	0	2	186	2	8	42	0	2	52	2054
Approach %	2.7	80.6	16.7	0.0	-	-	5.4	94.4	0.2	0.0	-	-	71.0	3.8	25.3	0.0	-	-	3.8	15.4	80.8	0.0	-	-	-
Total %	1.1	34.0	7.1	0.0	-	42.2	2.5	43.6	0.1	0.0	-	46.2	6.4	0.3	2.3	0.0	-	9.1	0.1	0.4	2.0	0.0	-	2.5	-
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	22	664	135	0	-	821	49	863	2	0	-	914	119	7	43	0	-	169	2	8	41	0	-	51	1955
% Cars & Light Goods	95.7	95.0	93.1	-	-	94.7	96.1	96.3	100.0	-	-	96.3	90.2	100.0	91.5	-	-	90.9	100.0	100.0	97.6	-	-	98.1	95.2
Buses	1	10	7	0	-	18	2	10	0	0	-	12	6	0	4	0	-	10	0	0	1	0	-	1	41
% Buses	4.3	1.4	4.8	-	-	2.1	3.9	1.1	0.0	-	-	1.3	4.5	0.0	8.5	-	-	5.4	0.0	0.0	2.4	-	-	1.9	2.0
Single-Unit Trucks	0	24	3	0	-	27	0	17	0	0	-	17	7	0	0	0	-	7	0	0	0	0	-	0	51
% Single-Unit Trucks	0.0	3.4	2.1	-	-	3.1	0.0	1.9	0.0	-	-	1.8	5.3	0.0	0.0	-	-	3.8	0.0	0.0	0.0	-	-	0.0	2.5
Articulated Trucks	0	1	0	0	-	1	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	0.0	0.1	0.0	-	-	0.1	0.0	0.6	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	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	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Drive-in Road & Wilson Road
Site Code: 220694
Start Date: 03/01/2023



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: Drive-in Road & Wilson Road
Site Code: 220694
Start Date: 03/01/2023

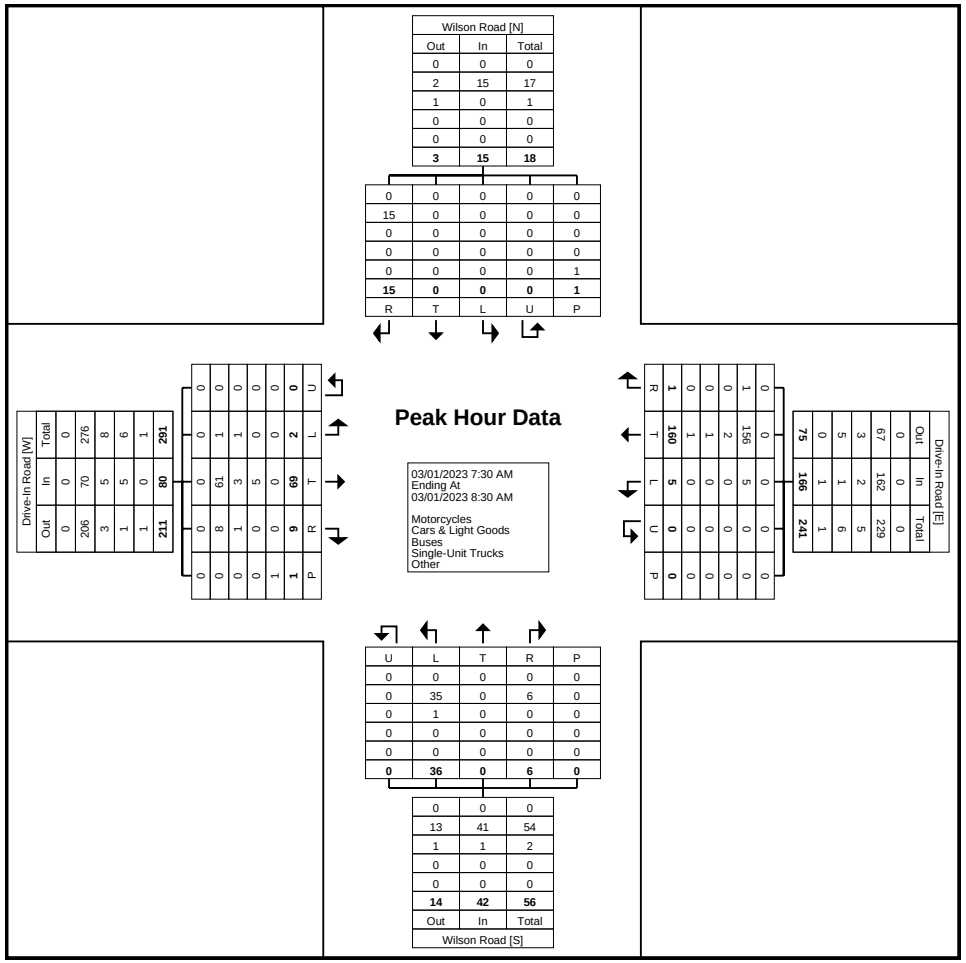
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road 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
7:30 AM	2	18	2	0	0	22	3	34	1	0	0	38	15	0	1	0	0	16	0	0	4	0	0	4	80
7:45 AM	0	17	1	0	0	18	0	50	0	0	0	50	11	0	2	0	0	13	0	0	2	0	0	2	83
8:00 AM	0	14	2	0	0	16	1	31	0	0	0	32	7	0	1	0	0	8	0	0	6	0	0	6	62
8:15 AM	0	20	4	0	1	24	1	45	0	0	0	46	3	0	2	0	0	5	0	0	3	0	1	3	78
Total	2	69	9	0	1	80	5	160	1	0	0	166	36	0	6	0	0	42	0	0	15	0	1	15	303
Approach %	2.5	86.3	11.3	0.0	-	-	3.0	96.4	0.6	0.0	-	-	85.7	0.0	14.3	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.7	22.8	3.0	0.0	-	26.4	1.7	52.8	0.3	0.0	-	54.8	11.9	0.0	2.0	0.0	-	13.9	0.0	0.0	5.0	0.0	-	5.0	-
PHF	0.250	0.863	0.563	0.000	-	0.833	0.417	0.800	0.250	0.000	-	0.830	0.600	0.000	0.750	0.000	-	0.656	0.000	0.000	0.625	0.000	-	0.625	0.913
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
Cars & Light Goods	1	61	8	0	-	70	5	156	1	0	-	162	35	0	6	0	-	41	0	0	15	0	-	15	288
% Cars & Light Goods	50.0	88.4	88.9	-	-	87.5	100.0	97.5	100.0	-	-	97.6	97.2	-	100.0	-	-	97.6	-	-	100.0	-	-	100.0	95.0
Buses	1	3	1	0	-	5	0	2	0	0	-	2	1	0	0	0	-	1	0	0	0	0	-	0	8
% Buses	50.0	4.3	11.1	-	-	6.3	0.0	1.3	0.0	-	-	1.2	2.8	-	0.0	-	-	2.4	-	-	0.0	-	-	0.0	2.6
Single-Unit Trucks	0	5	0	0	-	5	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	6
% Single-Unit Trucks	0.0	7.2	0.0	-	-	6.3	0.0	0.6	0.0	-	-	0.6	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	2.0
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.0	-	-	0.6	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% 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: Drive-in Road & Wilson Road
Site Code: 220694
Start Date: 03/01/2023



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: Drive-in Road & Wilson Road
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road 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
11:45 AM	0	20	5	0	0	25	0	23	0	0	0	23	4	0	1	0	0	5	1	0	1	0	0	2	55
12:00 PM	3	29	4	0	0	36	0	32	0	0	0	32	1	1	0	0	0	2	0	0	0	0	0	0	70
12:15 PM	0	14	2	0	0	16	1	18	0	0	0	19	3	1	1	0	0	5	0	0	1	0	0	1	41
12:30 PM	0	13	6	0	0	19	6	25	0	0	0	31	2	0	1	0	0	3	0	0	1	0	0	1	54
Total	3	76	17	0	0	96	7	98	0	0	0	105	10	2	3	0	0	15	1	0	3	0	0	4	220
Approach %	3.1	79.2	17.7	0.0	-	-	6.7	93.3	0.0	0.0	-	-	66.7	13.3	20.0	0.0	-	-	25.0	0.0	75.0	0.0	-	-	-
Total %	1.4	34.5	7.7	0.0	-	43.6	3.2	44.5	0.0	0.0	-	47.7	4.5	0.9	1.4	0.0	-	6.8	0.5	0.0	1.4	0.0	-	1.8	-
PHF	0.250	0.655	0.708	0.000	-	0.667	0.292	0.766	0.000	0.000	-	0.820	0.625	0.500	0.750	0.000	-	0.750	0.250	0.000	0.750	0.000	-	0.500	0.786
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
Cars & Light Goods	3	72	15	0	-	90	7	97	0	0	-	104	10	2	3	0	-	15	1	0	3	0	-	4	213
% Cars & Light Goods	100.0	94.7	88.2	-	-	93.8	100.0	99.0	-	-	-	99.0	100.0	100.0	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	96.8
Buses	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	5.9	-	-	1.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.5
Single-Unit Trucks	0	4	1	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5
% Single-Unit Trucks	0.0	5.3	5.9	-	-	5.2	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	2.3
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.0	-	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.5
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	-	-	-	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
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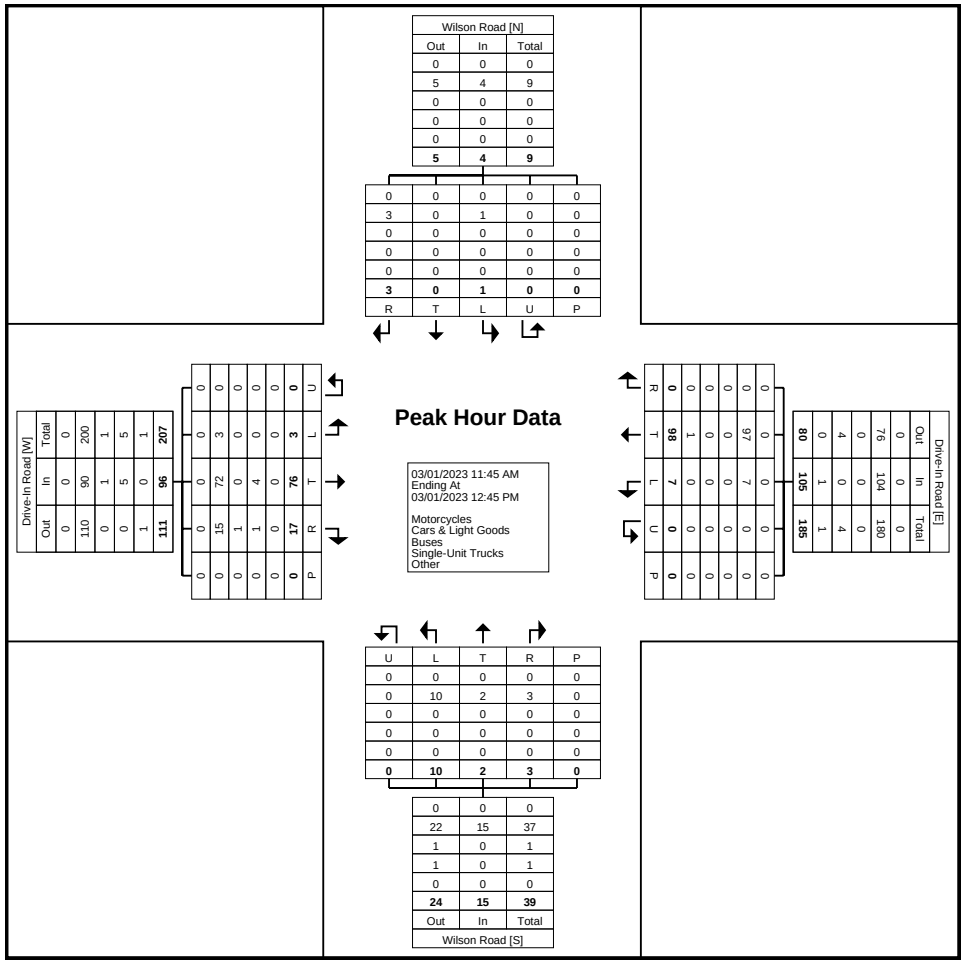


Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

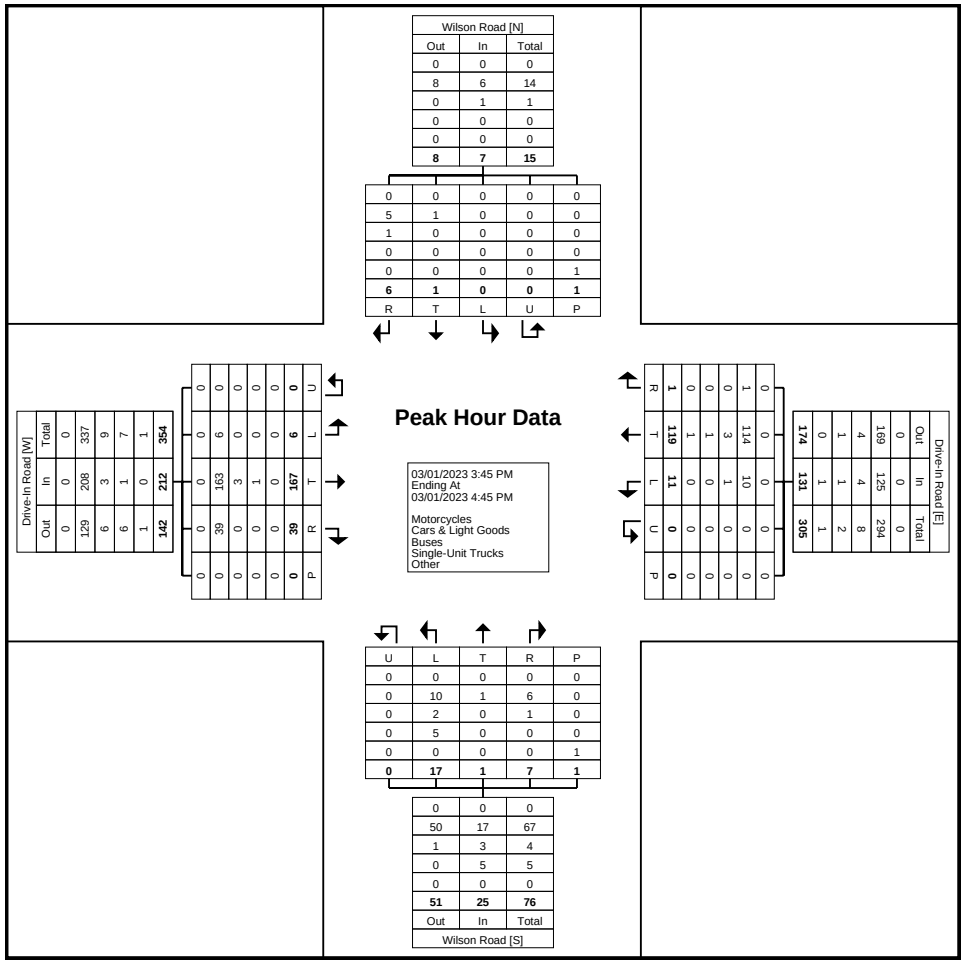
Count Name: Drive-in Road & Wilson Road
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (3:45 PM)

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road 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
3:45 PM	1	34	11	0	0	46	4	28	0	0	0	32	4	1	3	0	0	8	0	0	1	0	0	1	87
4:00 PM	3	46	14	0	0	63	2	30	0	0	0	32	3	0	1	0	0	4	0	0	1	0	0	1	100
4:15 PM	2	41	7	0	0	50	3	29	0	0	0	32	4	0	3	0	0	7	0	1	2	0	0	3	92
4:30 PM	0	46	7	0	0	53	2	32	1	0	0	35	6	0	0	0	1	6	0	0	2	0	1	2	96
Total	6	167	39	0	0	212	11	119	1	0	0	131	17	1	7	0	1	25	0	1	6	0	1	7	375
Approach %	2.8	78.8	18.4	0.0	-	-	8.4	90.8	0.8	0.0	-	-	68.0	4.0	28.0	0.0	-	-	0.0	14.3	85.7	0.0	-	-	-
Total %	1.6	44.5	10.4	0.0	-	56.5	2.9	31.7	0.3	0.0	-	34.9	4.5	0.3	1.9	0.0	-	6.7	0.0	0.3	1.6	0.0	-	1.9	-
PHF	0.500	0.908	0.696	0.000	-	0.841	0.688	0.930	0.250	0.000	-	0.936	0.708	0.250	0.583	0.000	-	0.781	0.000	0.250	0.750	0.000	-	0.583	0.938
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
Cars & Light Goods	6	163	39	0	-	208	10	114	1	0	-	125	10	1	6	0	-	17	0	1	5	0	-	6	356
% Cars & Light Goods	100.0	97.6	100.0	-	-	98.1	90.9	95.8	100.0	-	-	95.4	58.8	100.0	85.7	-	-	68.0	-	100.0	83.3	-	-	85.7	94.9
Buses	0	3	0	0	-	3	1	3	0	0	-	4	2	0	1	0	-	3	0	0	1	0	-	1	11
% Buses	0.0	1.8	0.0	-	-	1.4	9.1	2.5	0.0	-	-	3.1	11.8	0.0	14.3	-	-	12.0	-	0.0	16.7	-	-	14.3	2.9
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	5	0	0	0	-	5	0	0	0	0	-	0	7
% Single-Unit Trucks	0.0	0.6	0.0	-	-	0.5	0.0	0.8	0.0	-	-	0.8	29.4	0.0	0.0	-	-	20.0	-	0.0	0.0	-	-	0.0	1.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

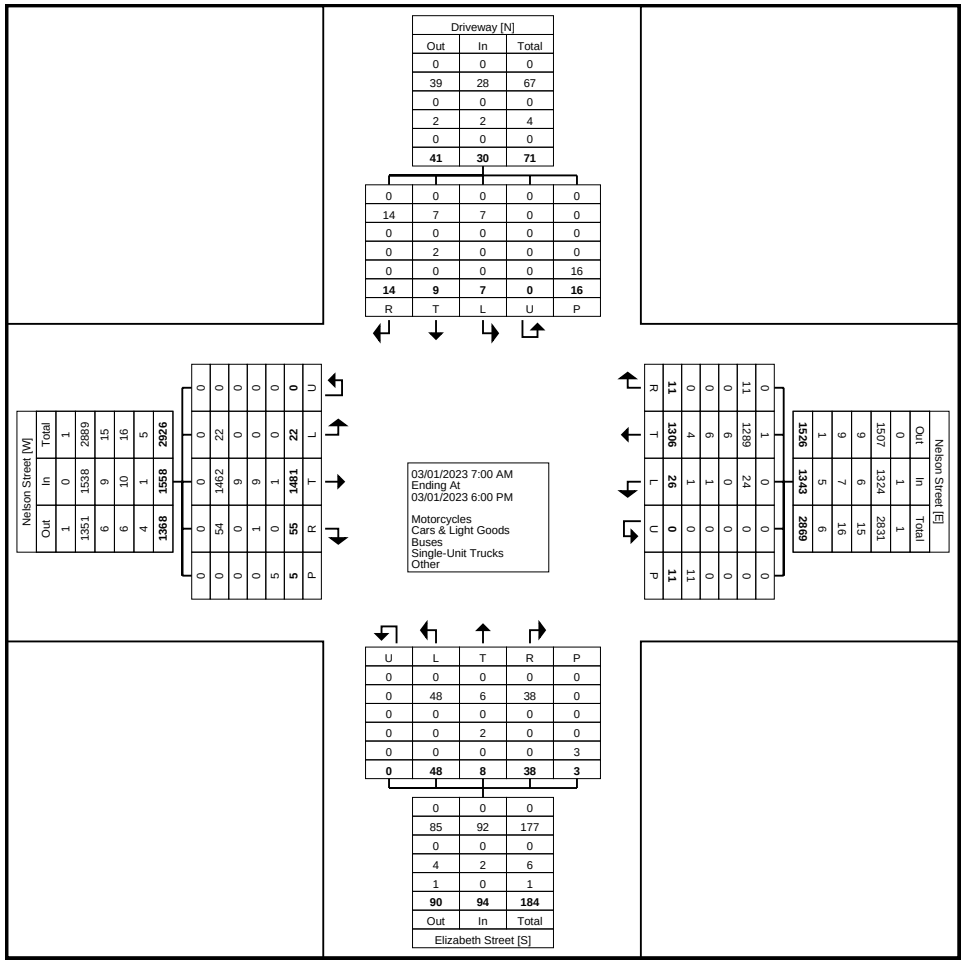
Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	11	0	0	0	11	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	18
7:15 AM	0	8	1	0	0	9	1	17	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	27
7:30 AM	0	10	0	0	0	10	1	21	0	0	0	22	0	0	0	0	0	0	0	0	2	0	0	2	34
7:45 AM	0	23	2	0	1	25	0	39	0	0	0	39	0	0	0	0	1	0	0	0	0	0	0	0	64
Hourly Total	0	52	3	0	1	55	2	84	0	0	0	86	0	0	0	0	1	0	0	0	2	0	0	2	143
8:00 AM	0	9	0	0	0	9	1	43	0	0	0	44	2	0	1	0	0	3	0	0	0	0	0	0	56
8:15 AM	0	28	0	0	0	28	0	48	0	0	0	48	0	1	0	0	0	1	0	0	1	0	0	1	78
8:30 AM	0	19	1	0	1	20	0	31	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	51
8:45 AM	1	25	0	0	0	26	0	31	0	0	0	31	1	1	1	0	0	3	0	1	0	0	2	1	61
Hourly Total	1	81	1	0	1	83	1	153	0	0	0	154	3	2	2	0	0	7	0	1	1	0	2	2	246
9:00 AM	0	26	0	0	0	26	1	32	0	0	0	33	0	1	0	0	0	1	0	1	0	0	0	1	61
9:15 AM	0	39	1	0	1	40	2	34	0	0	0	36	3	0	1	0	0	4	0	0	0	0	0	0	80
9:30 AM	0	38	0	0	0	38	1	30	0	0	0	31	3	1	4	0	0	8	1	2	1	0	1	4	81
9:45 AM	0	44	2	0	0	46	0	42	0	0	0	42	0	0	1	0	0	1	0	0	0	0	0	0	89
Hourly Total	0	147	3	0	1	150	4	138	0	0	0	142	6	2	6	0	0	14	1	3	1	0	1	5	311
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	56	5	0	0	61	1	47	0	0	0	48	0	0	1	0	0	1	1	0	0	0	0	1	111
11:15 AM	0	56	2	0	0	58	3	47	2	0	0	52	2	0	0	0	0	2	0	0	0	0	0	0	112
11:30 AM	0	54	2	0	0	56	1	51	0	0	1	52	3	0	3	0	0	6	1	0	1	0	1	2	116
11:45 AM	0	69	1	0	0	70	1	50	0	0	1	51	2	0	1	0	0	3	0	0	0	0	0	0	124
Hourly Total	0	235	10	0	0	245	6	195	2	0	2	203	7	0	5	0	0	12	2	0	1	0	1	3	463
12:00 PM	0	62	2	0	0	64	1	52	0	0	0	53	2	1	1	0	0	4	0	0	0	0	1	0	121
12:15 PM	0	71	4	0	0	75	1	42	1	0	0	44	2	0	2	0	0	4	0	0	1	0	0	1	124
12:30 PM	2	58	0	0	0	60	0	58	3	0	0	61	1	1	3	0	0	5	0	0	0	0	0	0	126
12:45 PM	0	54	3	0	0	57	2	65	0	0	0	67	4	1	0	0	0	5	2	1	0	0	0	3	132
Hourly Total	2	245	9	0	0	256	4	217	4	0	0	225	9	3	6	0	0	18	2	1	1	0	1	4	503
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	62	2	0	0	65	1	54	0	0	1	55	4	0	3	0	0	7	0	0	0	0	0	0	127
3:15 PM	2	71	1	0	1	74	0	51	0	0	3	51	0	0	1	0	1	1	1	0	0	0	2	1	127
3:30 PM	1	61	1	0	0	63	0	47	0	0	0	47	2	0	4	0	0	6	0	0	2	0	0	2	118
3:45 PM	3	68	2	0	1	73	0	45	1	0	0	46	1	0	0	0	0	1	1	1	1	0	4	3	123
Hourly Total	7	262	6	0	2	275	1	197	1	0	4	199	7	0	8	0	1	15	2	1	3	0	6	6	495
4:00 PM	3	83	1	0	0	87	0	43	0	0	4	43	3	0	1	0	0	4	0	0	0	0	1	0	134
4:15 PM	0	72	5	0	0	77	4	51	0	0	0	55	2	0	3	0	0	5	0	0	0	0	0	0	137
4:30 PM	1	67	1	0	0	69	0	44	1	0	0	45	1	0	3	0	0	4	0	0	2	0	2	2	120

4:45 PM	1	62	6	0	0	69	2	43	0	0	0	45	2	0	2	0	0	4	0	0	0	0	1	0	118
Hourly Total	5	284	13	0	0	302	6	181	1	0	4	188	8	0	9	0	0	17	0	0	2	0	4	2	509
5:00 PM	3	56	2	0	0	61	0	53	1	0	0	54	2	0	0	0	0	2	0	1	1	0	0	2	119
5:15 PM	0	44	2	0	0	46	2	34	1	0	0	37	3	1	1	0	0	5	0	1	2	0	0	3	91
5:30 PM	4	39	5	0	0	48	0	26	1	0	1	27	2	0	0	0	0	2	0	0	0	0	0	0	77
5:45 PM	0	36	1	0	0	37	0	28	0	0	0	28	1	0	1	0	1	2	0	1	0	0	1	1	68
Hourly Total	7	175	10	0	0	192	2	141	3	0	1	146	8	1	2	0	1	11	0	3	3	0	1	6	355
Grand Total	22	1481	55	0	5	1558	26	1306	11	0	11	1343	48	8	38	0	3	94	7	9	14	0	16	30	3025
Approach %	1.4	95.1	3.5	0.0	-	-	1.9	97.2	0.8	0.0	-	-	51.1	8.5	40.4	0.0	-	-	23.3	30.0	46.7	0.0	-	-	-
Total %	0.7	49.0	1.8	0.0	-	51.5	0.9	43.2	0.4	0.0	-	44.4	1.6	0.3	1.3	0.0	-	3.1	0.2	0.3	0.5	0.0	-	1.0	-
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	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	-	-	0.0	0.0
Cars & Light Goods	22	1462	54	0	-	1538	24	1289	11	0	-	1324	48	6	38	0	-	92	7	7	14	0	-	28	2982
% Cars & Light Goods	100.0	98.7	98.2	-	-	98.7	92.3	98.7	100.0	-	-	98.6	100.0	75.0	100.0	-	-	97.9	100.0	77.8	100.0	-	-	93.3	98.6
Buses	0	9	0	0	-	9	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	15
% Buses	0.0	0.6	0.0	-	-	0.6	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.5
Single-Unit Trucks	0	9	1	0	-	10	1	6	0	0	-	7	0	2	0	0	-	2	0	2	0	0	-	2	21
% Single-Unit Trucks	0.0	0.6	1.8	-	-	0.6	3.8	0.5	0.0	-	-	0.5	0.0	25.0	0.0	-	-	2.1	0.0	22.2	0.0	-	-	6.7	0.7
Articulated Trucks	0	1	0	0	-	1	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.1	0.0	-	-	0.1	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	3.8	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	11	-	-	-	-	-	3	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023



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: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

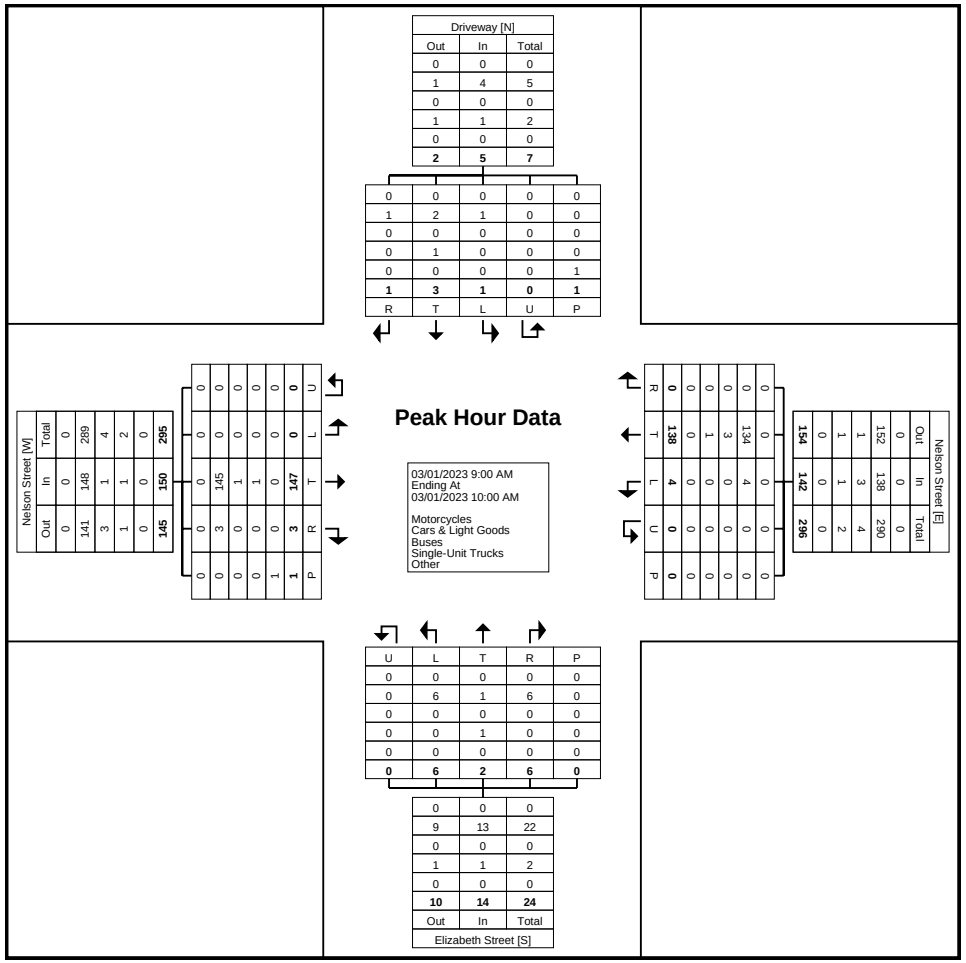
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	0	26	0	0	0	26	1	32	0	0	0	33	0	1	0	0	0	1	0	1	0	0	0	1	61
9:15 AM	0	39	1	0	1	40	2	34	0	0	0	36	3	0	1	0	0	4	0	0	0	0	0	0	80
9:30 AM	0	38	0	0	0	38	1	30	0	0	0	31	3	1	4	0	0	8	1	2	1	0	1	4	81
9:45 AM	0	44	2	0	0	46	0	42	0	0	0	42	0	0	1	0	0	1	0	0	0	0	0	0	89
Total	0	147	3	0	1	150	4	138	0	0	0	142	6	2	6	0	0	14	1	3	1	0	1	5	311
Approach %	0.0	98.0	2.0	0.0	-	-	2.8	97.2	0.0	0.0	-	-	42.9	14.3	42.9	0.0	-	-	20.0	60.0	20.0	0.0	-	-	-
Total %	0.0	47.3	1.0	0.0	-	48.2	1.3	44.4	0.0	0.0	-	45.7	1.9	0.6	1.9	0.0	-	4.5	0.3	1.0	0.3	0.0	-	1.6	-
PHF	0.000	0.835	0.375	0.000	-	0.815	0.500	0.821	0.000	0.000	-	0.845	0.500	0.500	0.375	0.000	-	0.438	0.250	0.375	0.250	0.000	-	0.313	0.874
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
Cars & Light Goods	0	145	3	0	-	148	4	134	0	0	-	138	6	1	6	0	-	13	1	2	1	0	-	4	303
% Cars & Light Goods	-	98.6	100.0	-	-	98.7	100.0	97.1	-	-	-	97.2	100.0	50.0	100.0	-	-	92.9	100.0	66.7	100.0	-	-	80.0	97.4
Buses	0	1	0	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Buses	-	0.7	0.0	-	-	0.7	0.0	2.2	-	-	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.3
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	1	0	0	-	1	0	1	0	0	-	1	4
% Single-Unit Trucks	-	0.7	0.0	-	-	0.7	0.0	0.7	-	-	-	0.7	0.0	50.0	0.0	-	-	7.1	0.0	33.3	0.0	-	-	20.0	1.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% 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: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

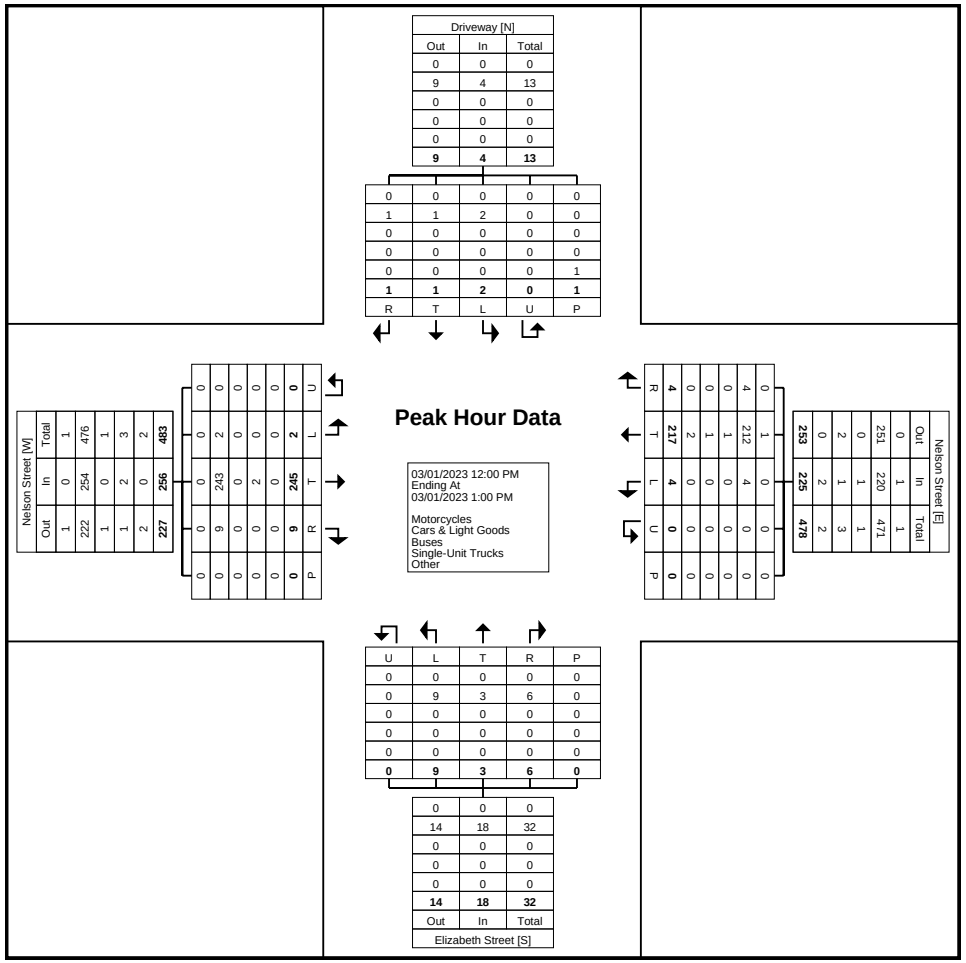
Count Name: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	0	62	2	0	0	64	1	52	0	0	0	53	2	1	1	0	0	4	0	0	0	0	1	0	121
12:15 PM	0	71	4	0	0	75	1	42	1	0	0	44	2	0	2	0	0	4	0	0	1	0	0	1	124
12:30 PM	2	58	0	0	0	60	0	58	3	0	0	61	1	1	3	0	0	5	0	0	0	0	0	0	126
12:45 PM	0	54	3	0	0	57	2	65	0	0	0	67	4	1	0	0	0	5	2	1	0	0	0	3	132
Total	2	245	9	0	0	256	4	217	4	0	0	225	9	3	6	0	0	18	2	1	1	0	1	4	503
Approach %	0.8	95.7	3.5	0.0	-	-	1.8	96.4	1.8	0.0	-	-	50.0	16.7	33.3	0.0	-	-	50.0	25.0	25.0	0.0	-	-	-
Total %	0.4	48.7	1.8	0.0	-	50.9	0.8	43.1	0.8	0.0	-	44.7	1.8	0.6	1.2	0.0	-	3.6	0.4	0.2	0.2	0.0	-	0.8	-
PHF	0.250	0.863	0.563	0.000	-	0.853	0.500	0.835	0.333	0.000	-	0.840	0.563	0.750	0.500	0.000	-	0.900	0.250	0.250	0.250	0.000	-	0.333	0.953
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	2	243	9	0	-	254	4	212	4	0	-	220	9	3	6	0	-	18	2	1	1	0	-	4	496
% Cars & Light Goods	100.0	99.2	100.0	-	-	99.2	100.0	97.7	100.0	-	-	97.8	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	98.6
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.8	0.0	-	-	0.8	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Articulated Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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


Peak Hour Data
03/01/2023 12:00 PM
Ending At
03/01/2023 1:00 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
Driveway [N]
Out In Total
0 0 0
9 4 13
0 0 0
0 0 0
0 0 0
9 4 13
0 0 0 0 0
1 1 2 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0 0 1
1 1 2 0 1
R T L U P
Nelson Street [W]
Out In Total
1 0 1
222 254 476
1 0 1
1 2 3
2 0 2
227 256 483
0 0 0 0 0
0 2 2 0 0
0 243 0 2 0
0 9 0 0 0
0 0 0 0 0
0 0 0 0 0
0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023

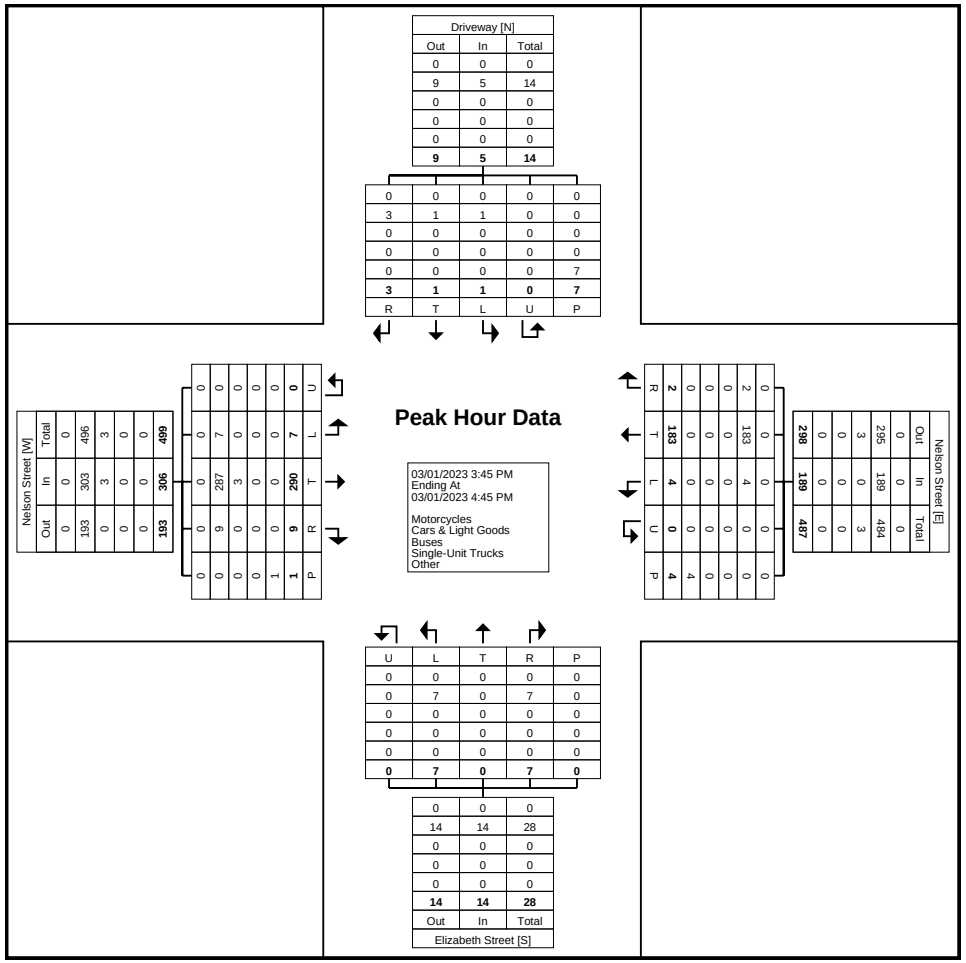
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
3:45 PM	3	68	2	0	1	73	0	45	1	0	0	46	1	0	0	0	0	1	1	1	1	0	4	3	123
4:00 PM	3	83	1	0	0	87	0	43	0	0	4	43	3	0	1	0	0	4	0	0	0	0	1	0	134
4:15 PM	0	72	5	0	0	77	4	51	0	0	0	55	2	0	3	0	0	5	0	0	0	0	0	0	137
4:30 PM	1	67	1	0	0	69	0	44	1	0	0	45	1	0	3	0	0	4	0	0	2	0	2	2	120
Total	7	290	9	0	1	306	4	183	2	0	4	189	7	0	7	0	0	14	1	1	3	0	7	5	514
Approach %	2.3	94.8	2.9	0.0	-	-	2.1	96.8	1.1	0.0	-	-	50.0	0.0	50.0	0.0	-	-	20.0	20.0	60.0	0.0	-	-	-
Total %	1.4	56.4	1.8	0.0	-	59.5	0.8	35.6	0.4	0.0	-	36.8	1.4	0.0	1.4	0.0	-	2.7	0.2	0.2	0.6	0.0	-	1.0	-
PHF	0.583	0.873	0.450	0.000	-	0.879	0.250	0.897	0.500	0.000	-	0.859	0.583	0.000	0.583	0.000	-	0.700	0.250	0.250	0.375	0.000	-	0.417	0.938
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
Cars & Light Goods	7	287	9	0	-	303	4	183	2	0	-	189	7	0	7	0	-	14	1	1	3	0	-	5	511
% Cars & Light Goods	100.0	99.0	100.0	-	-	99.0	100.0	100.0	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	99.4
Buses	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Buses	0.0	1.0	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	7	-	-
% 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: Elizabeth Street & Nelson Street
Site Code: 220694
Start Date: 03/01/2023


Nelson Street [W]
Out In Total
0 0 0
193 303 496
0 3 3
0 0 0
0 0 0
193 306 499
0 0 0
0 7 7
0 287 287
0 6 6
0 3 3
0 0 0
0 0 0
1 0 1
1 290 291
9 7 9
0 0 0
0 7 7
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

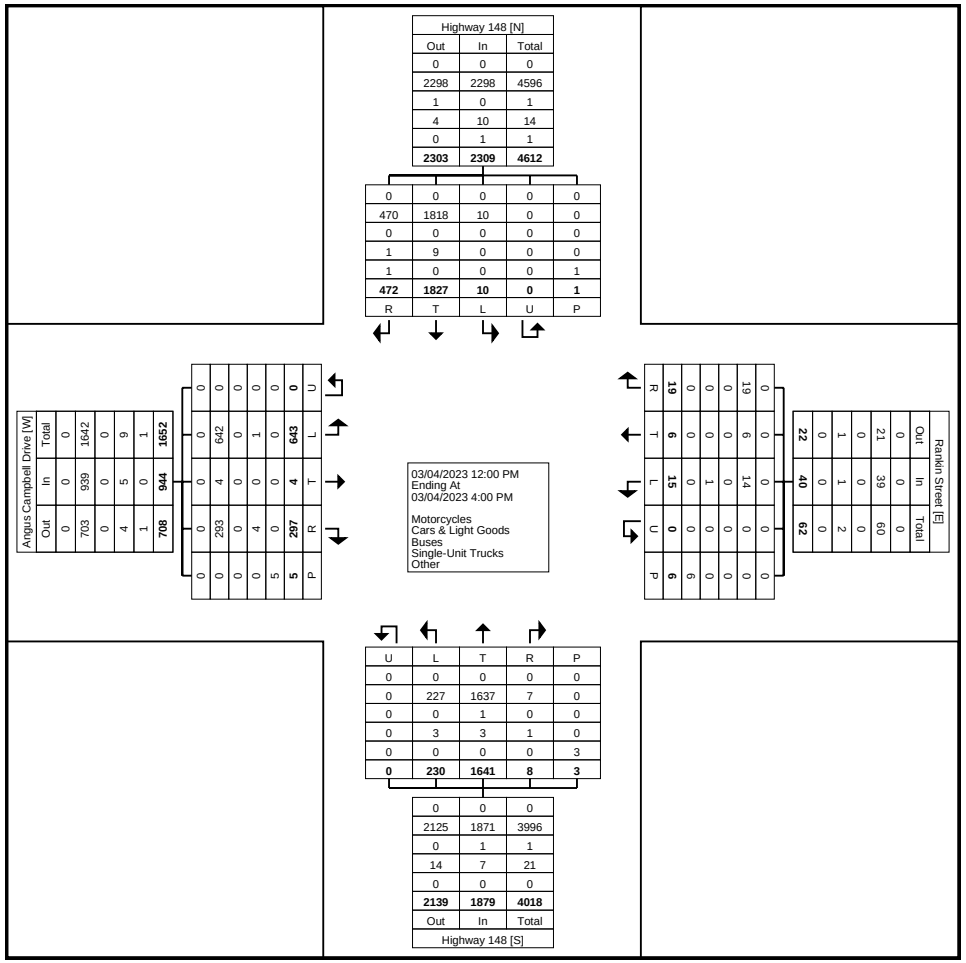
Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	42	0	19	0	0	61	0	2	0	0	0	2	7	94	2	0	0	103	0	111	20	0	0	131	297
12:15 PM	34	0	18	0	0	52	0	0	1	0	2	1	13	92	0	0	2	105	1	122	26	0	0	149	307
12:30 PM	31	0	19	0	0	50	1	1	2	0	1	4	20	108	1	0	0	129	1	96	38	0	0	135	318
12:45 PM	30	1	19	0	1	50	1	0	1	0	0	2	11	108	0	0	0	119	0	118	28	0	0	146	317
Hourly Total	137	1	75	0	1	213	2	3	4	0	3	9	51	402	3	0	2	456	2	447	112	0	0	561	1239
1:00 PM	44	1	16	0	0	61	2	0	2	0	0	4	13	96	0	0	0	109	1	109	41	0	0	151	325
1:15 PM	46	0	21	0	0	67	0	1	3	0	0	4	16	82	0	0	0	98	0	103	27	0	1	130	299
1:30 PM	36	0	13	0	4	49	0	0	1	0	0	1	14	101	3	0	0	118	2	133	24	0	0	159	327
1:45 PM	42	0	28	0	0	70	1	2	0	0	0	3	12	99	0	0	0	111	0	110	34	0	0	144	328
Hourly Total	168	1	78	0	4	247	3	3	6	0	0	12	55	378	3	0	0	436	3	455	126	0	1	584	1279
2:00 PM	46	1	20	0	0	67	1	0	0	0	2	1	18	87	0	0	0	105	0	123	36	0	0	159	332
2:15 PM	45	0	22	0	0	67	1	0	0	0	0	1	8	103	0	0	0	111	0	110	22	0	0	132	311
2:30 PM	42	0	16	0	0	58	0	0	2	0	0	2	15	99	0	0	0	114	0	107	29	0	0	136	310
2:45 PM	44	1	22	0	0	67	2	0	1	0	0	3	16	107	0	0	0	123	2	128	40	0	0	170	363
Hourly Total	177	2	80	0	0	259	4	0	3	0	2	7	57	396	0	0	0	453	2	468	127	0	0	597	1316
3:00 PM	44	0	28	0	0	72	1	0	2	0	1	3	18	112	1	0	1	131	1	131	24	0	0	156	362
3:15 PM	41	0	16	0	0	57	1	0	1	0	0	2	17	115	0	0	0	132	0	109	25	0	0	134	325
3:30 PM	43	0	12	0	0	55	4	0	2	0	0	6	14	118	1	0	0	133	1	100	32	0	0	133	327
3:45 PM	33	0	8	0	0	41	0	0	1	0	0	1	18	120	0	0	0	138	1	117	26	0	0	144	324
Hourly Total	161	0	64	0	0	225	6	0	6	0	1	12	67	465	2	0	1	534	3	457	107	0	0	567	1338
Grand Total	643	4	297	0	5	944	15	6	19	0	6	40	230	1641	8	0	3	1879	10	1827	472	0	1	2309	5172
Approach %	68.1	0.4	31.5	0.0	-	-	37.5	15.0	47.5	0.0	-	-	12.2	87.3	0.4	0.0	-	-	0.4	79.1	20.4	0.0	-	-	-
Total %	12.4	0.1	5.7	0.0	-	18.3	0.3	0.1	0.4	0.0	-	0.8	4.4	31.7	0.2	0.0	-	36.3	0.2	35.3	9.1	0.0	-	44.6	-
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	642	4	293	0	-	939	14	6	19	0	-	39	227	1637	7	0	-	1871	10	1818	470	0	-	2298	5147
% Cars & Light Goods	99.8	100.0	98.7	-	-	99.5	93.3	100.0	100.0	-	-	97.5	98.7	99.8	87.5	-	-	99.6	100.0	99.5	99.6	-	-	99.5	99.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	0	4	0	-	5	1	0	0	0	-	1	3	3	1	0	-	7	0	9	1	0	-	10	23
% Single-Unit Trucks	0.2	0.0	1.3	-	-	0.5	6.7	0.0	0.0	-	-	2.5	1.3	0.2	12.5	-	-	0.4	0.0	0.5	0.2	-	-	0.4	0.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.2	-	-	0.0	0.0

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Saturday
Site Code: 220694
Start Date: 03/04/2023



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: Highway 148 & Angus Campbell Drive - Saturday
Site Code: 220694
Start Date: 03/04/2023

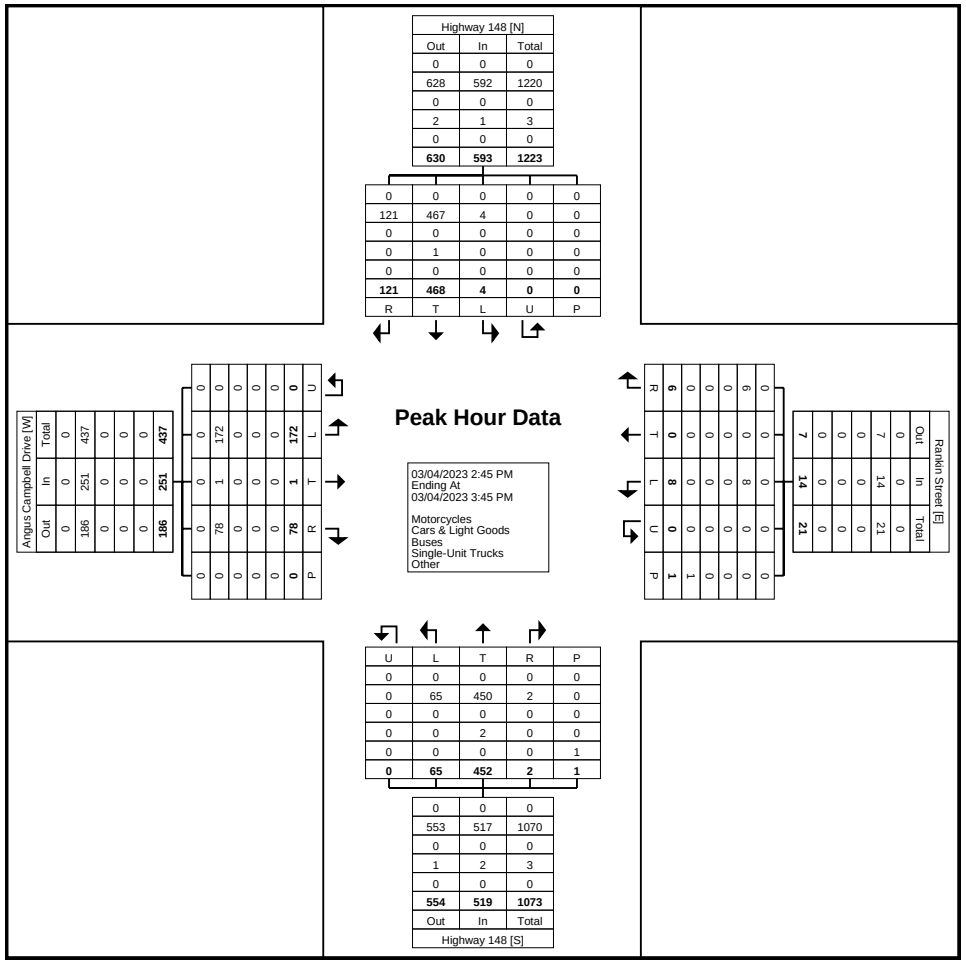
Turning Movement Peak Hour Data (2:45 PM)

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 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
2:45 PM	44	1	22	0	0	67	2	0	1	0	0	3	16	107	0	0	0	123	2	128	40	0	0	170	363
3:00 PM	44	0	28	0	0	72	1	0	2	0	1	3	18	112	1	0	1	131	1	131	24	0	0	156	362
3:15 PM	41	0	16	0	0	57	1	0	1	0	0	2	17	115	0	0	0	132	0	109	25	0	0	134	325
3:30 PM	43	0	12	0	0	55	4	0	2	0	0	6	14	118	1	0	0	133	1	100	32	0	0	133	327
Total	172	1	78	0	0	251	8	0	6	0	1	14	65	452	2	0	1	519	4	468	121	0	0	593	1377
Approach %	68.5	0.4	31.1	0.0	-	-	57.1	0.0	42.9	0.0	-	-	12.5	87.1	0.4	0.0	-	-	0.7	78.9	20.4	0.0	-	-	-
Total %	12.5	0.1	5.7	0.0	-	18.2	0.6	0.0	0.4	0.0	-	1.0	4.7	32.8	0.1	0.0	-	37.7	0.3	34.0	8.8	0.0	-	43.1	-
PHF	0.977	0.250	0.696	0.000	-	0.872	0.500	0.000	0.750	0.000	-	0.583	0.903	0.958	0.500	0.000	-	0.976	0.500	0.893	0.756	0.000	-	0.872	0.948
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
Cars & Light Goods	172	1	78	0	-	251	8	0	6	0	-	14	65	450	2	0	-	517	4	467	121	0	-	592	1374
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	100.0	99.6	100.0	-	-	99.6	100.0	99.8	100.0	-	-	99.8	99.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	1	0	0	-	1	3
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	0.0	0.2	0.0	-	-	0.2	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% 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: Highway 148 & Angus Campbell Drive - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (2:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

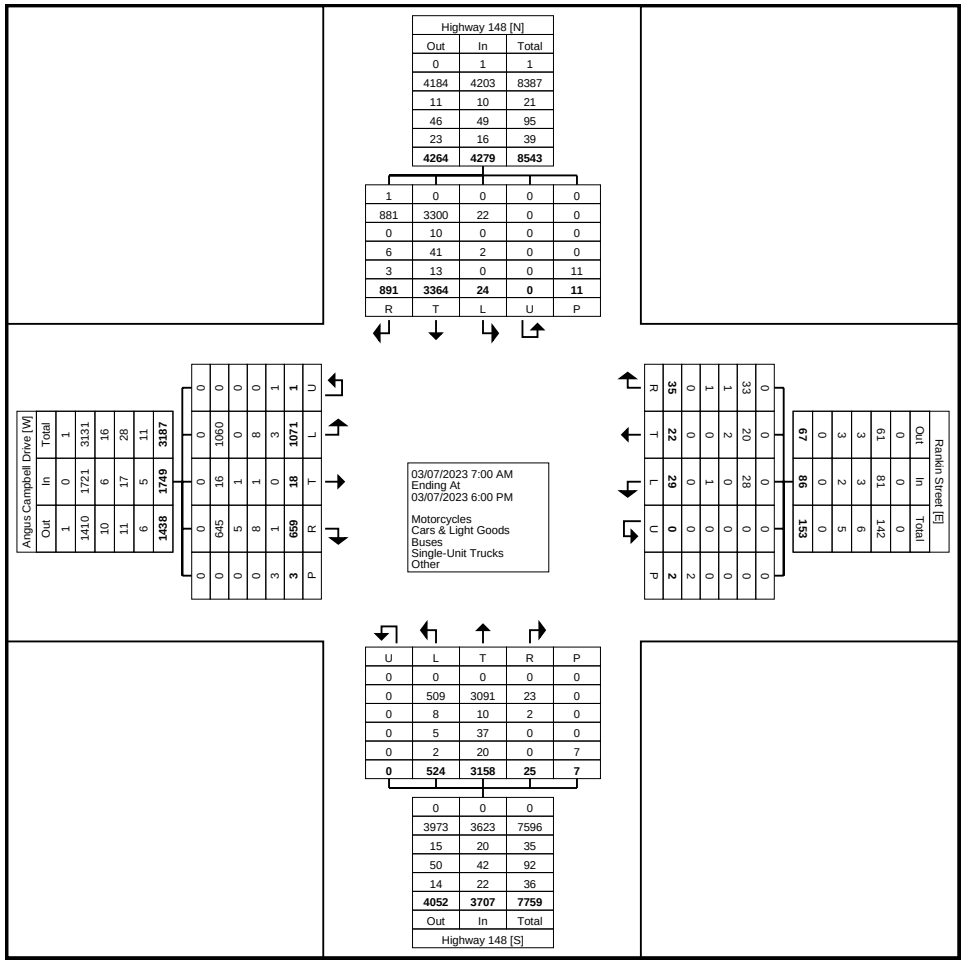
Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	8	0	10	0	0	18	0	1	2	0	0	3	9	44	2	0	0	55	1	32	9	0	0	42	118
7:15 AM	4	1	10	0	0	15	1	0	3	0	0	4	9	69	1	0	0	79	0	39	4	0	0	43	141
7:30 AM	12	0	10	0	0	22	0	0	1	0	0	1	23	93	2	0	0	118	0	45	6	0	0	51	192
7:45 AM	16	0	19	0	0	35	0	2	1	0	0	3	30	127	1	0	0	158	1	54	16	0	1	71	267
Hourly Total	40	1	49	0	0	90	1	3	7	0	0	11	71	333	6	0	0	410	2	170	35	0	1	207	718
8:00 AM	19	1	20	0	0	40	0	2	0	0	0	2	27	108	0	0	0	135	0	32	14	0	0	46	223
8:15 AM	24	0	23	0	0	47	0	0	0	0	0	0	17	99	0	0	0	116	0	64	20	0	0	84	247
8:30 AM	19	2	17	0	0	38	0	1	0	0	0	1	10	104	1	0	0	115	0	64	13	0	0	77	231
8:45 AM	18	0	20	0	0	38	1	0	1	0	0	2	19	99	1	0	0	119	1	61	25	0	0	87	246
Hourly Total	80	3	80	0	0	163	1	3	1	0	0	5	73	410	2	0	0	485	1	221	72	0	0	294	947
9:00 AM	31	0	12	1	0	44	1	2	1	0	0	4	21	83	1	0	1	105	2	72	16	0	0	90	243
9:15 AM	36	0	22	0	0	58	0	0	1	0	0	1	26	86	0	0	1	112	1	88	23	0	0	112	283
9:30 AM	36	1	15	0	1	52	4	0	0	0	0	4	11	100	0	0	0	111	0	110	25	0	0	135	302
9:45 AM	50	0	14	0	1	64	2	1	0	0	0	3	16	135	2	0	0	153	1	96	36	0	0	133	353
Hourly Total	153	1	63	1	2	218	7	3	2	0	0	12	74	404	3	0	2	481	4	366	100	0	0	470	1181
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	54	0	40	0	0	94	0	1	1	0	0	2	16	93	0	0	0	109	1	95	40	0	1	136	341
11:15 AM	40	0	20	0	0	60	0	0	0	0	0	0	15	112	1	0	2	128	0	134	35	0	1	169	357
11:30 AM	46	0	17	0	0	63	1	1	1	0	0	3	19	100	1	0	0	120	0	127	50	0	0	177	363
11:45 AM	46	0	17	0	0	63	0	0	1	0	0	1	13	115	1	0	0	129	0	142	49	0	0	191	384
Hourly Total	186	0	94	0	0	280	1	2	3	0	0	6	63	420	3	0	2	486	1	498	174	0	2	673	1445
12:00 PM	54	0	19	0	0	73	1	1	0	0	0	2	15	98	0	0	0	113	0	153	46	0	1	199	387
12:15 PM	55	0	26	0	0	81	1	1	2	0	0	4	18	115	1	0	0	134	0	131	36	0	0	167	386
12:30 PM	44	2	18	0	0	64	1	0	1	0	0	2	20	126	0	0	0	146	0	114	28	0	3	142	354
12:45 PM	32	1	21	0	0	54	1	0	1	0	0	2	20	126	2	0	0	148	0	136	27	0	0	163	367
Hourly Total	185	3	84	0	0	272	4	2	4	0	0	10	73	465	3	0	0	541	0	534	137	0	4	671	1494
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	29	0	36	0	0	65	1	0	2	0	1	3	10	89	2	0	2	101	2	105	32	0	0	139	308
3:15 PM	30	1	16	0	0	47	2	0	2	0	0	4	20	107	0	0	0	127	2	146	36	0	0	184	362
3:30 PM	41	0	25	0	0	66	1	3	1	0	0	5	18	79	0	0	0	97	4	138	32	0	0	174	342
3:45 PM	50	2	45	0	0	97	1	1	2	0	0	4	15	105	0	0	0	120	1	129	44	0	1	174	395
Hourly Total	150	3	122	0	0	275	5	4	7	0	1	16	63	380	2	0	2	445	9	518	144	0	1	671	1407
4:00 PM	39	3	38	0	0	80	2	2	2	0	0	6	13	119	1	0	0	133	2	155	38	0	0	195	414
4:15 PM	37	1	20	0	0	58	1	0	3	0	0	4	20	110	0	0	0	130	0	136	33	0	0	169	361
4:30 PM	34	1	19	0	0	54	2	1	0	0	0	3	13	102	1	0	0	116	1	166	28	0	0	195	368

4:45 PM	46	1	18	0	0	65	0	0	0	0	0	0	15	80	0	0	0	95	1	128	20	0	0	149	309
Hourly Total	156	6	95	0	0	257	5	3	5	0	0	13	61	411	2	0	0	474	4	585	119	0	0	708	1452
5:00 PM	35	1	24	0	1	60	2	1	3	0	0	6	15	84	2	0	0	101	2	156	35	0	1	193	360
5:15 PM	31	0	21	0	0	52	0	0	2	0	0	2	12	91	1	0	0	104	0	125	33	0	1	158	316
5:30 PM	34	0	18	0	0	52	2	0	0	0	1	2	10	84	0	0	1	94	1	113	27	0	0	141	289
5:45 PM	21	0	9	0	0	30	1	1	1	0	0	3	9	76	1	0	0	86	0	78	15	0	1	93	212
Hourly Total	121	1	72	0	1	194	5	2	6	0	1	13	46	335	4	0	1	385	3	472	110	0	3	585	1177
Grand Total	1071	18	659	1	3	1749	29	22	35	0	2	86	524	3158	25	0	7	3707	24	3364	891	0	11	4279	9821
Approach %	61.2	1.0	37.7	0.1	-	-	33.7	25.6	40.7	0.0	-	-	14.1	85.2	0.7	0.0	-	-	0.6	78.6	20.8	0.0	-	-	-
Total %	10.9	0.2	6.7	0.0	-	17.8	0.3	0.2	0.4	0.0	-	0.9	5.3	32.2	0.3	0.0	-	37.7	0.2	34.3	9.1	0.0	-	43.6	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% 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	0.1	-	-	0.0	0.0
Cars & Light Goods	1060	16	645	0	-	1721	28	20	33	0	-	81	509	3091	23	0	-	3623	22	3300	881	0	-	4203	9628
% Cars & Light Goods	99.0	88.9	97.9	0.0	-	98.4	96.6	90.9	94.3	-	-	94.2	97.1	97.9	92.0	-	-	97.7	91.7	98.1	98.9	-	-	98.2	98.0
Buses	0	1	5	0	-	6	0	2	1	0	-	3	8	10	2	0	-	20	0	10	0	0	-	10	39
% Buses	0.0	5.6	0.8	0.0	-	0.3	0.0	9.1	2.9	-	-	3.5	1.5	0.3	8.0	-	-	0.5	0.0	0.3	0.0	-	-	0.2	0.4
Single-Unit Trucks	8	1	8	0	-	17	1	0	1	0	-	2	5	37	0	0	-	42	2	41	6	0	-	49	110
% Single-Unit Trucks	0.7	5.6	1.2	0.0	-	1.0	3.4	0.0	2.9	-	-	2.3	1.0	1.2	0.0	-	-	1.1	8.3	1.2	0.7	-	-	1.1	1.1
Articulated Trucks	3	0	1	1	-	5	0	0	0	0	-	0	2	19	0	0	-	21	0	12	3	0	-	15	41
% Articulated Trucks	0.3	0.0	0.2	100.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.4	0.6	0.0	-	-	0.6	0.0	0.4	0.3	-	-	0.4	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% 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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	28.6	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	71.4	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023

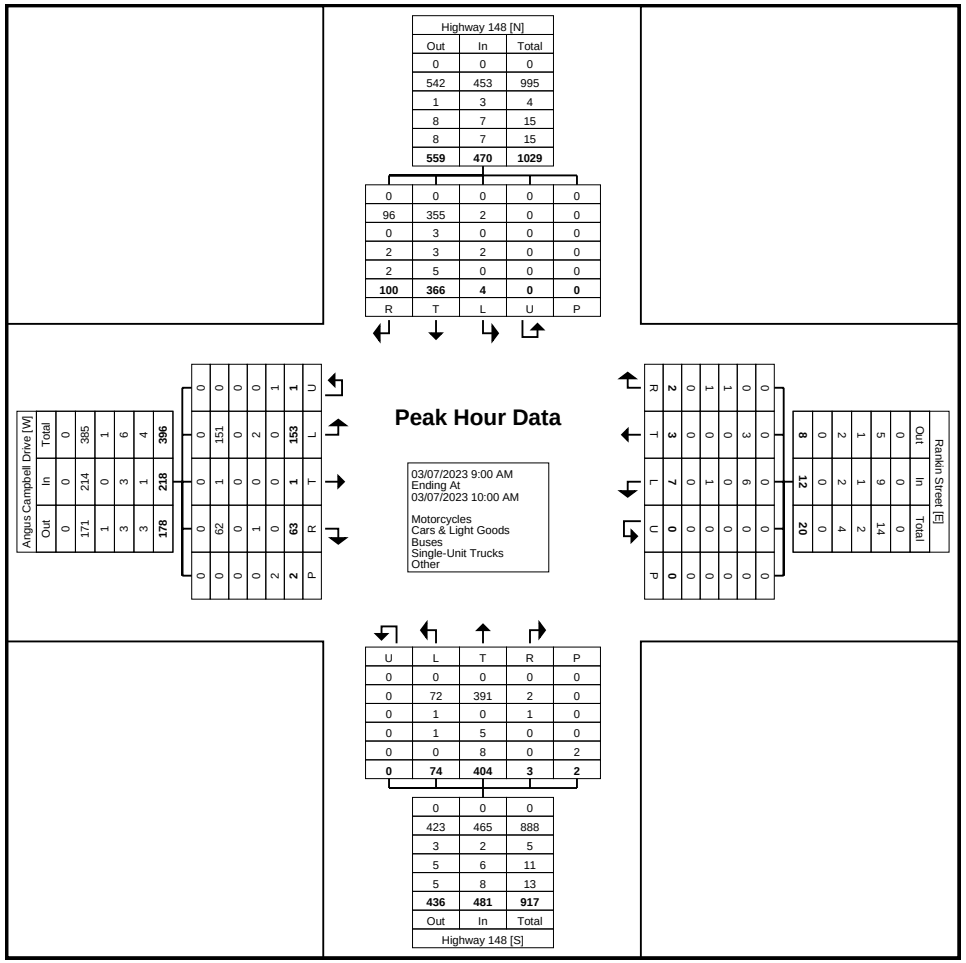
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 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
9:00 AM	31	0	12	1	0	44	1	2	1	0	0	4	21	83	1	0	1	105	2	72	16	0	0	90	243
9:15 AM	36	0	22	0	0	58	0	0	1	0	0	1	26	86	0	0	1	112	1	88	23	0	0	112	283
9:30 AM	36	1	15	0	1	52	4	0	0	0	0	4	11	100	0	0	0	111	0	110	25	0	0	135	302
9:45 AM	50	0	14	0	1	64	2	1	0	0	0	3	16	135	2	0	0	153	1	96	36	0	0	133	353
Total	153	1	63	1	2	218	7	3	2	0	0	12	74	404	3	0	2	481	4	366	100	0	0	470	1181
Approach %	70.2	0.5	28.9	0.5	-	-	58.3	25.0	16.7	0.0	-	-	15.4	84.0	0.6	0.0	-	-	0.9	77.9	21.3	0.0	-	-	-
Total %	13.0	0.1	5.3	0.1	-	18.5	0.6	0.3	0.2	0.0	-	1.0	6.3	34.2	0.3	0.0	-	40.7	0.3	31.0	8.5	0.0	-	39.8	-
PHF	0.765	0.250	0.716	0.250	-	0.852	0.438	0.375	0.500	0.000	-	0.750	0.712	0.748	0.375	0.000	-	0.786	0.500	0.832	0.694	0.000	-	0.870	0.836
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	0.0
Cars & Light Goods	151	1	62	0	-	214	6	3	0	0	-	9	72	391	2	0	-	465	2	355	96	0	-	453	1141
% Cars & Light Goods	98.7	100.0	98.4	0.0	-	98.2	85.7	100.0	0.0	-	-	75.0	97.3	96.8	66.7	-	-	96.7	50.0	97.0	96.0	-	-	96.4	96.6
Buses	0	0	0	0	-	0	0	0	1	0	-	1	1	0	1	0	-	2	0	3	0	0	-	3	6
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	50.0	-	-	8.3	1.4	0.0	33.3	-	-	0.4	0.0	0.8	0.0	-	-	0.6	0.5
Single-Unit Trucks	2	0	1	0	-	3	1	0	1	0	-	2	1	5	0	0	-	6	2	3	2	0	-	7	18
% Single-Unit Trucks	1.3	0.0	1.6	0.0	-	1.4	14.3	0.0	50.0	-	-	16.7	1.4	1.2	0.0	-	-	1.2	50.0	0.8	2.0	-	-	1.5	1.5
Articulated Trucks	0	0	0	1	-	1	0	0	0	0	-	0	0	7	0	0	-	7	0	5	2	0	-	7	15
% Articulated Trucks	0.0	0.0	0.0	100.0	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	1.7	0.0	-	-	1.5	0.0	1.4	2.0	-	-	1.5	1.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023

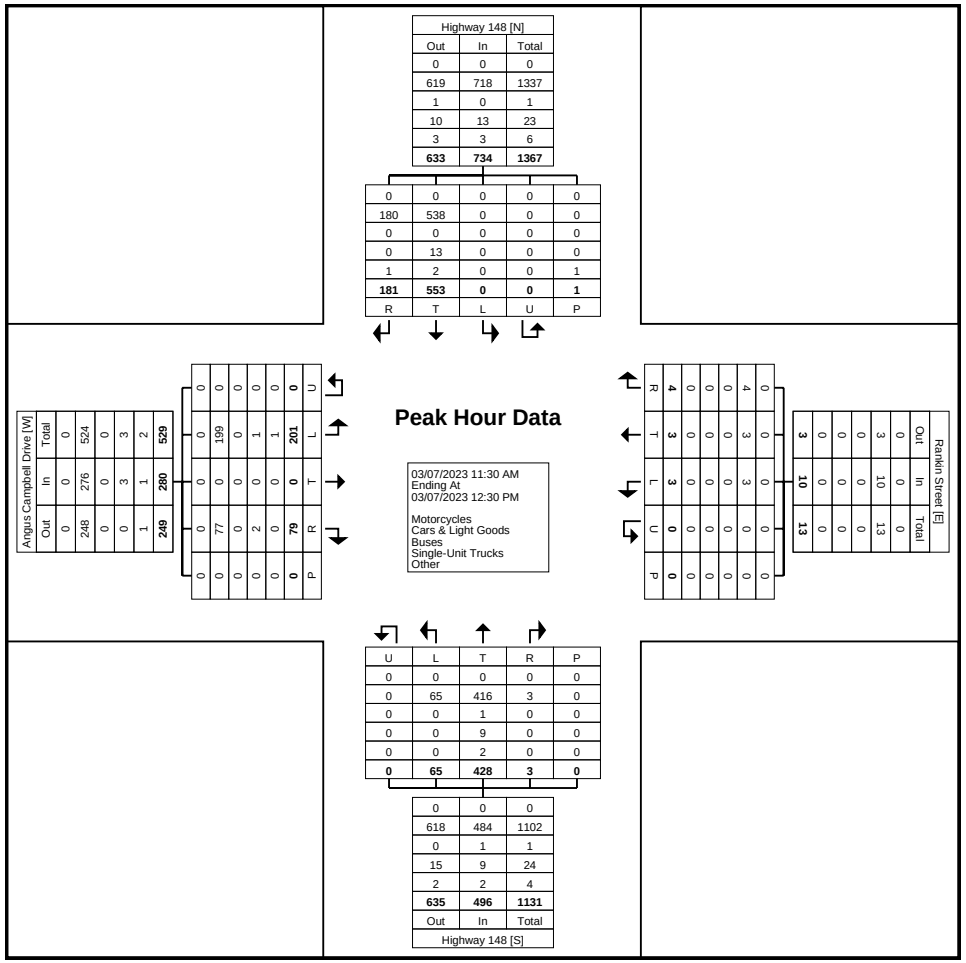
Turning Movement Peak Hour Data (11:30 AM)

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 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
11:30 AM	46	0	17	0	0	63	1	1	1	0	0	3	19	100	1	0	0	120	0	127	50	0	0	177	363
11:45 AM	46	0	17	0	0	63	0	0	1	0	0	1	13	115	1	0	0	129	0	142	49	0	0	191	384
12:00 PM	54	0	19	0	0	73	1	1	0	0	0	2	15	98	0	0	0	113	0	153	46	0	1	199	387
12:15 PM	55	0	26	0	0	81	1	1	2	0	0	4	18	115	1	0	0	134	0	131	36	0	0	167	386
Total	201	0	79	0	0	280	3	3	4	0	0	10	65	428	3	0	0	496	0	553	181	0	1	734	1520
Approach %	71.8	0.0	28.2	0.0	-	-	30.0	30.0	40.0	0.0	-	-	13.1	86.3	0.6	0.0	-	-	0.0	75.3	24.7	0.0	-	-	-
Total %	13.2	0.0	5.2	0.0	-	18.4	0.2	0.2	0.3	0.0	-	0.7	4.3	28.2	0.2	0.0	-	32.6	0.0	36.4	11.9	0.0	-	48.3	-
PHF	0.914	0.000	0.760	0.000	-	0.864	0.750	0.750	0.500	0.000	-	0.625	0.855	0.930	0.750	0.000	-	0.925	0.000	0.904	0.905	0.000	-	0.922	0.982
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
Cars & Light Goods	199	0	77	0	-	276	3	3	4	0	-	10	65	416	3	0	-	484	0	538	180	0	-	718	1488
% Cars & Light Goods	99.0	-	97.5	-	-	98.6	100.0	100.0	100.0	-	-	100.0	100.0	97.2	100.0	-	-	97.6	-	97.3	99.4	-	-	97.8	97.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	-	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	1	0	2	0	-	3	0	0	0	0	-	0	0	9	0	0	-	9	0	13	0	0	-	13	25
% Single-Unit Trucks	0.5	-	2.5	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	2.1	0.0	-	-	1.8	-	2.4	0.0	-	-	1.8	1.6
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	0	2	1	0	-	3	6
% Articulated Trucks	0.5	-	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	-	0.4	0.6	-	-	0.4	0.4
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
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: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023

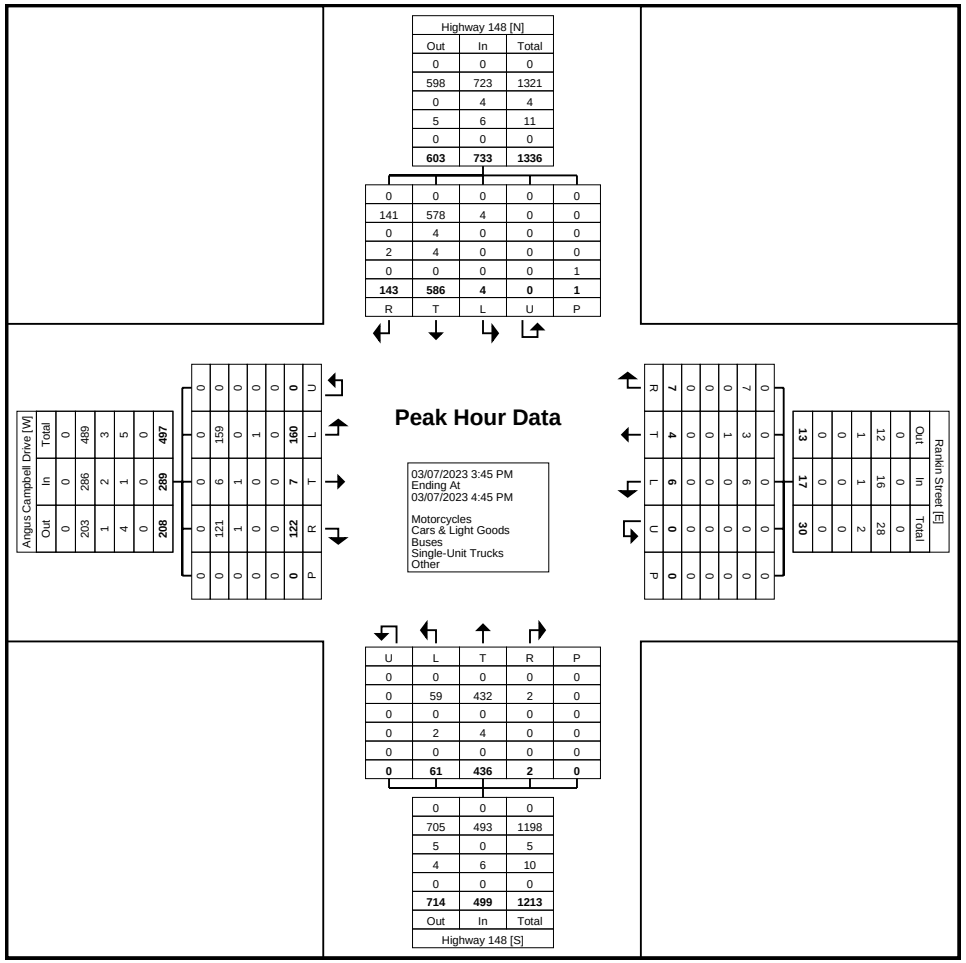
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 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
3:45 PM	50	2	45	0	0	97	1	1	2	0	0	4	15	105	0	0	0	120	1	129	44	0	1	174	395
4:00 PM	39	3	38	0	0	80	2	2	2	0	0	6	13	119	1	0	0	133	2	155	38	0	0	195	414
4:15 PM	37	1	20	0	0	58	1	0	3	0	0	4	20	110	0	0	0	130	0	136	33	0	0	169	361
4:30 PM	34	1	19	0	0	54	2	1	0	0	0	3	13	102	1	0	0	116	1	166	28	0	0	195	368
Total	160	7	122	0	0	289	6	4	7	0	0	17	61	436	2	0	0	499	4	586	143	0	1	733	1538
Approach %	55.4	2.4	42.2	0.0	-	-	35.3	23.5	41.2	0.0	-	-	12.2	87.4	0.4	0.0	-	-	0.5	79.9	19.5	0.0	-	-	-
Total %	10.4	0.5	7.9	0.0	-	18.8	0.4	0.3	0.5	0.0	-	1.1	4.0	28.3	0.1	0.0	-	32.4	0.3	38.1	9.3	0.0	-	47.7	-
PHF	0.800	0.583	0.678	0.000	-	0.745	0.750	0.500	0.583	0.000	-	0.708	0.763	0.916	0.500	0.000	-	0.938	0.500	0.883	0.813	0.000	-	0.940	0.929
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	159	6	121	0	-	286	6	3	7	0	-	16	59	432	2	0	-	493	4	578	141	0	-	723	1518
% Cars & Light Goods	99.4	85.7	99.2	-	-	99.0	100.0	75.0	100.0	-	-	94.1	96.7	99.1	100.0	-	-	98.8	100.0	98.6	98.6	-	-	98.6	98.7
Buses	0	1	1	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	4	0	0	-	4	7
% Buses	0.0	14.3	0.8	-	-	0.7	0.0	25.0	0.0	-	-	5.9	0.0	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	-	0.5	0.5
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	2	4	0	0	-	6	0	4	2	0	-	6	13
% Single-Unit Trucks	0.6	0.0	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	3.3	0.9	0.0	-	-	1.2	0.0	0.7	1.4	-	-	0.8	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	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: Highway 148 & Angus Campbell Drive - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Drive-in Road
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

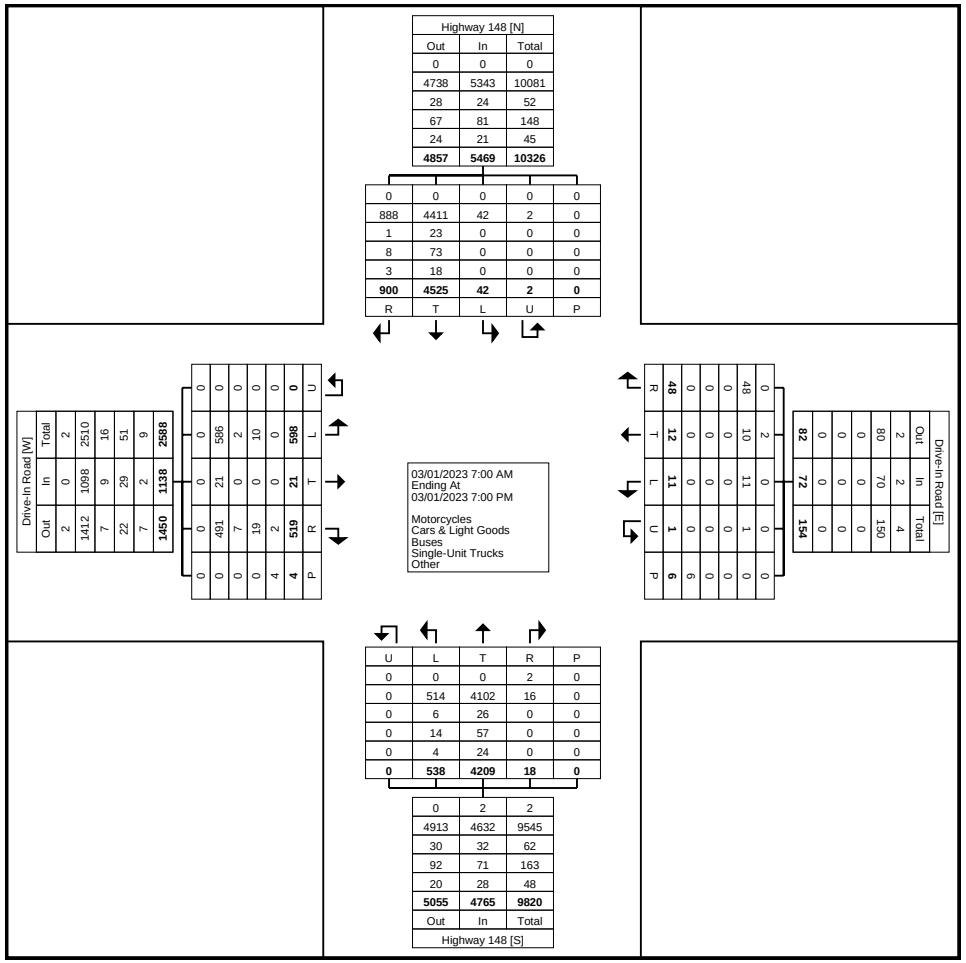
Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Highway 148 Northbound						Highway 148 Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	7	1	7	0	0	15	0	0	0	0	0	0	15	82	0	0	0	97	0	30	9	0	0	39	151
7:15 AM	8	0	8	0	0	16	0	0	1	0	0	1	15	93	0	0	0	108	1	32	9	0	0	42	167
7:30 AM	15	0	13	0	0	28	0	0	2	0	0	2	12	115	0	0	0	127	0	41	16	0	0	57	214
7:45 AM	14	0	13	0	1	27	1	0	0	0	0	1	25	150	0	0	0	175	1	52	10	0	0	63	266
Hourly Total	44	1	41	0	1	86	1	0	3	0	0	4	67	440	0	0	0	507	2	155	44	0	0	201	798
8:00 AM	13	0	9	0	0	22	0	1	2	0	0	3	16	138	1	0	0	155	1	53	12	0	0	66	246
8:15 AM	15	0	12	0	0	27	0	0	2	0	0	2	18	119	0	0	0	137	0	52	13	0	0	65	231
8:30 AM	7	0	8	0	0	15	1	0	1	0	1	2	14	120	0	0	0	134	0	41	13	0	0	54	205
8:45 AM	9	0	7	0	0	16	0	0	2	0	0	2	9	120	1	0	0	130	0	51	11	0	0	62	210
Hourly Total	44	0	36	0	0	80	1	1	7	0	1	9	57	497	2	0	0	556	1	197	49	0	0	247	892
9:00 AM	16	0	9	0	0	25	0	1	1	0	0	2	10	80	0	0	0	90	0	40	13	0	0	53	170
9:15 AM	9	0	7	0	0	16	0	1	0	0	0	1	9	88	0	0	0	97	2	49	11	0	0	62	176
9:30 AM	11	2	6	0	0	19	0	0	1	0	0	1	9	124	0	0	0	133	0	61	10	0	0	71	224
9:45 AM	20	1	5	0	0	26	0	0	2	0	0	2	14	108	0	0	0	122	0	65	13	1	0	79	229
Hourly Total	56	3	27	0	0	86	0	2	4	0	0	6	42	400	0	0	0	442	2	215	47	1	0	265	799
10:00 AM	15	1	6	0	1	22	1	0	1	0	0	2	16	107	0	0	0	123	2	72	16	0	0	90	237
10:15 AM	25	0	5	0	0	30	0	0	0	0	0	0	10	89	0	0	0	99	0	86	18	1	0	105	234
10:30 AM	15	0	5	0	0	20	0	1	2	0	0	3	10	92	0	0	0	102	0	61	17	0	0	78	203
10:45 AM	11	0	7	0	0	18	0	0	1	0	0	1	5	77	1	0	0	83	3	67	15	0	0	85	187
Hourly Total	66	1	23	0	1	90	1	1	4	0	0	6	41	365	1	0	0	407	5	286	66	1	0	358	861
11:00 AM	11	0	10	0	0	21	0	0	0	0	1	0	5	83	1	0	0	89	0	84	19	0	0	103	213
11:15 AM	14	0	5	0	0	19	0	0	2	0	1	2	12	98	0	0	0	110	0	97	16	0	0	113	244
11:30 AM	14	1	5	0	0	20	0	0	1	0	0	1	6	108	0	0	0	114	1	82	24	0	0	107	242
11:45 AM	14	0	7	0	1	21	0	1	0	0	0	1	11	90	1	0	0	102	0	97	14	0	0	111	235
Hourly Total	53	1	27	0	1	81	0	1	3	0	2	4	34	379	2	0	0	415	1	360	73	0	0	434	934
12:00 PM	17	0	13	0	0	30	1	0	0	0	1	1	8	77	2	0	0	87	1	83	22	0	0	106	224
12:15 PM	11	0	10	0	0	21	0	0	0	0	0	0	4	67	0	0	0	71	0	102	29	0	0	131	223
12:30 PM	22	0	6	0	0	28	0	0	1	0	0	1	9	94	1	0	0	104	0	99	16	0	0	115	248
12:45 PM	6	0	10	0	0	16	1	0	2	0	0	3	11	91	0	0	0	102	1	105	23	0	0	129	250
Hourly Total	56	0	39	0	0	95	2	0	3	0	1	5	32	329	3	0	0	364	2	389	90	0	0	481	945
1:00 PM	10	1	6	0	0	17	0	0	0	0	0	0	12	81	1	0	0	94	1	100	14	0	0	115	226
1:15 PM	6	0	6	0	0	12	1	0	2	0	0	3	11	68	0	0	0	79	1	102	22	0	0	125	219
1:30 PM	12	0	6	0	0	18	0	0	2	0	0	2	13	89	1	0	0	103	0	105	23	0	0	128	251
1:45 PM	10	1	8	0	0	19	0	0	0	0	0	0	9	87	0	0	0	96	2	102	18	0	0	122	237
Hourly Total	38	2	26	0	0	66	1	0	4	0	0	5	45	325	2	0	0	372	4	409	77	0	0	490	933

2:00 PM	12	0	7	0	0	19	0	0	1	0	0	1	11	70	1	0	0	82	0	119	16	0	0	135	237
2:15 PM	13	0	11	0	0	24	0	0	1	0	0	1	10	78	1	0	0	89	2	104	19	0	0	125	239
2:30 PM	9	1	13	0	0	23	0	0	2	1	0	3	8	80	0	0	0	88	0	118	32	0	0	150	264
2:45 PM	14	0	18	0	0	32	0	0	1	0	0	1	9	85	0	0	0	94	3	119	24	0	0	146	273
Hourly Total	48	1	49	0	0	98	0	0	5	1	0	6	38	313	2	0	0	353	5	460	91	0	0	556	1013
3:00 PM	16	0	15	0	0	31	0	0	0	0	0	0	12	78	0	0	0	90	2	118	21	0	0	141	262
3:15 PM	11	2	13	0	0	26	1	0	2	0	0	3	15	81	0	0	0	96	0	134	29	0	0	163	288
3:30 PM	16	0	19	0	0	35	0	1	1	0	0	2	20	79	0	0	0	99	3	155	22	0	0	180	316
3:45 PM	15	0	18	0	0	33	1	0	0	0	0	1	11	84	2	0	0	97	2	142	27	0	0	171	302
Hourly Total	58	2	65	0	0	125	2	1	3	0	0	6	58	322	2	0	0	382	7	549	99	0	0	655	1168
4:00 PM	12	1	22	0	0	35	0	1	2	0	0	3	13	88	0	0	0	101	2	164	42	0	0	208	347
4:15 PM	10	0	25	0	1	35	0	1	1	0	0	2	11	98	0	0	0	109	1	167	21	0	0	189	335
4:30 PM	10	1	23	0	0	34	0	0	1	0	0	1	10	79	0	0	0	89	2	182	31	0	0	215	339
4:45 PM	18	0	21	0	0	39	2	1	2	0	1	5	13	99	0	0	0	112	0	159	16	0	0	175	331
Hourly Total	50	2	91	0	1	143	2	3	6	0	1	11	47	364	0	0	0	411	5	672	110	0	0	787	1352
5:00 PM	15	2	23	0	0	40	1	0	0	0	1	1	19	77	0	0	0	96	2	159	26	0	0	187	324
5:15 PM	9	2	14	0	0	25	0	0	2	0	0	2	13	62	0	0	0	75	0	146	26	0	0	172	274
5:30 PM	7	1	12	0	0	20	0	0	0	0	0	0	8	64	1	0	0	73	2	125	21	0	0	148	241
5:45 PM	10	2	10	0	0	22	0	0	1	0	0	1	3	60	2	0	0	65	0	87	17	0	0	104	192
Hourly Total	41	7	59	0	0	107	1	0	3	0	1	4	43	263	3	0	0	309	4	517	90	0	0	611	1031
6:00 PM	10	1	15	0	0	26	0	1	0	0	0	1	8	47	0	0	0	55	1	94	20	0	0	115	197
6:15 PM	14	0	7	0	0	21	0	0	2	0	0	2	9	56	0	0	0	65	2	73	15	0	0	90	178
6:30 PM	10	0	8	0	0	18	0	0	0	0	0	0	10	60	1	0	0	71	1	79	18	0	0	98	187
6:45 PM	10	0	6	0	0	16	0	2	1	0	0	3	7	49	0	0	0	56	0	70	11	0	0	81	156
Hourly Total	44	1	36	0	0	81	0	3	3	0	0	6	34	212	1	0	0	247	4	316	64	0	0	384	718
Grand Total	598	21	519	0	4	1138	11	12	48	1	6	72	538	4209	18	0	0	4765	42	4525	900	2	0	5469	11444
Approach %	52.5	1.8	45.6	0.0	-	-	15.3	16.7	66.7	1.4	-	-	11.3	88.3	0.4	0.0	-	-	0.8	82.7	16.5	0.0	-	-	-
Total %	5.2	0.2	4.5	0.0	-	9.9	0.1	0.1	0.4	0.0	-	0.6	4.7	36.8	0.2	0.0	-	41.6	0.4	39.5	7.9	0.0	-	47.8	-
Motorcycles	0	0	0	0	-	0	0	2	0	0	-	2	0	0	2	0	-	2	0	0	0	0	-	0	4
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	16.7	0.0	0.0	-	2.8	0.0	0.0	11.1	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	586	21	491	0	-	1098	11	10	48	1	-	70	514	4102	16	0	-	4632	42	4411	888	2	-	5343	11143
% Cars & Light Goods	98.0	100.0	94.6	-	-	96.5	100.0	83.3	100.0	100.0	-	97.2	95.5	97.5	88.9	-	-	97.2	100.0	97.5	98.7	100.0	-	97.7	97.4
Buses	2	0	7	0	-	9	0	0	0	0	-	0	6	26	0	0	-	32	0	23	1	0	-	24	65
% Buses	0.3	0.0	1.3	-	-	0.8	0.0	0.0	0.0	0.0	-	0.0	1.1	0.6	0.0	-	-	0.7	0.0	0.5	0.1	0.0	-	0.4	0.6
Single-Unit Trucks	10	0	19	0	-	29	0	0	0	0	-	0	14	57	0	0	-	71	0	73	8	0	-	81	181
% Single-Unit Trucks	1.7	0.0	3.7	-	-	2.5	0.0	0.0	0.0	0.0	-	0.0	2.6	1.4	0.0	-	-	1.5	0.0	1.6	0.9	0.0	-	1.5	1.6
Articulated Trucks	0	0	2	0	-	2	0	0	0	0	-	0	4	24	0	0	-	28	0	18	2	0	-	20	50
% Articulated Trucks	0.0	0.0	0.4	-	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.7	0.6	0.0	-	-	0.6	0.0	0.4	0.2	0.0	-	0.4	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.1	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% 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: Highway 148 & Drive-in Road
Site Code: 220694
Start Date: 03/01/2023


Highway 148 [N]
Out In Total
0 0 0
4738 5343 10081
28 24 52
67 81 148
24 21 45
4857 5469 10326
0 0 0 0 0
888 4411 42 2 0
1 23 0 0 0
8 73 0 0 0
3 18 0 0 0
900 4525 42 2 0
R T L U P
03/01/2023 7:00 AM
Ending At
03/01/2023 7:00 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
U L T R P
0 0 0 2 0
0 514 4102 16 0
0 6 26 0 0
0 14 57 0 0
0 4 24 0 0
0 538 4209 18 0
0 2 2
4913 4632 9545
30 32 62
92 71 163
20 28 48
5055 4765 9820
Out In Total
Highway 148 [S]
Drive-In Road [W]
Out In Total
2 0 2
1412 1098 2510
7 9 16
22 29 51
7 2 9
1450 1138 2588
0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Drive-in Road
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Highway 148 Northbound						Highway 148 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
7:30 AM	15	0	13	0	0	28	0	0	2	0	0	2	12	115	0	0	0	127	0	41	16	0	0	57	214
7:45 AM	14	0	13	0	1	27	1	0	0	0	0	1	25	150	0	0	0	175	1	52	10	0	0	63	266
8:00 AM	13	0	9	0	0	22	0	1	2	0	0	3	16	138	1	0	0	155	1	53	12	0	0	66	246
8:15 AM	15	0	12	0	0	27	0	0	2	0	0	2	18	119	0	0	0	137	0	52	13	0	0	65	231
Total	57	0	47	0	1	104	1	1	6	0	0	8	71	522	1	0	0	594	2	198	51	0	0	251	957
Approach %	54.8	0.0	45.2	0.0	-	-	12.5	12.5	75.0	0.0	-	-	12.0	87.9	0.2	0.0	-	-	0.8	78.9	20.3	0.0	-	-	-
Total %	6.0	0.0	4.9	0.0	-	10.9	0.1	0.1	0.6	0.0	-	0.8	7.4	54.5	0.1	0.0	-	62.1	0.2	20.7	5.3	0.0	-	26.2	-
PHF	0.950	0.000	0.904	0.000	-	0.929	0.250	0.250	0.750	0.000	-	0.667	0.710	0.870	0.250	0.000	-	0.849	0.500	0.934	0.797	0.000	-	0.951	0.899
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
Cars & Light Goods	54	0	40	0	-	94	1	1	6	0	-	8	69	508	1	0	-	578	2	180	50	0	-	232	912
% Cars & Light Goods	94.7	-	85.1	-	-	90.4	100.0	100.0	100.0	-	-	100.0	97.2	97.3	100.0	-	-	97.3	100.0	90.9	98.0	-	-	92.4	95.3
Buses	1	0	3	0	-	4	0	0	0	0	-	0	1	9	0	0	-	10	0	4	0	0	-	4	18
% Buses	1.8	-	6.4	-	-	3.8	0.0	0.0	0.0	-	-	0.0	1.4	1.7	0.0	-	-	1.7	0.0	2.0	0.0	-	-	1.6	1.9
Single-Unit Trucks	2	0	3	0	-	5	0	0	0	0	-	0	0	4	0	0	-	4	0	11	1	0	-	12	21
% Single-Unit Trucks	3.5	-	6.4	-	-	4.8	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.7	0.0	5.6	2.0	-	-	4.8	2.2
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	0	3	0	0	-	3	6
% Articulated Trucks	0.0	-	2.1	-	-	1.0	0.0	0.0	0.0	-	-	0.0	1.4	0.2	0.0	-	-	0.3	0.0	1.5	0.0	-	-	1.2	0.6
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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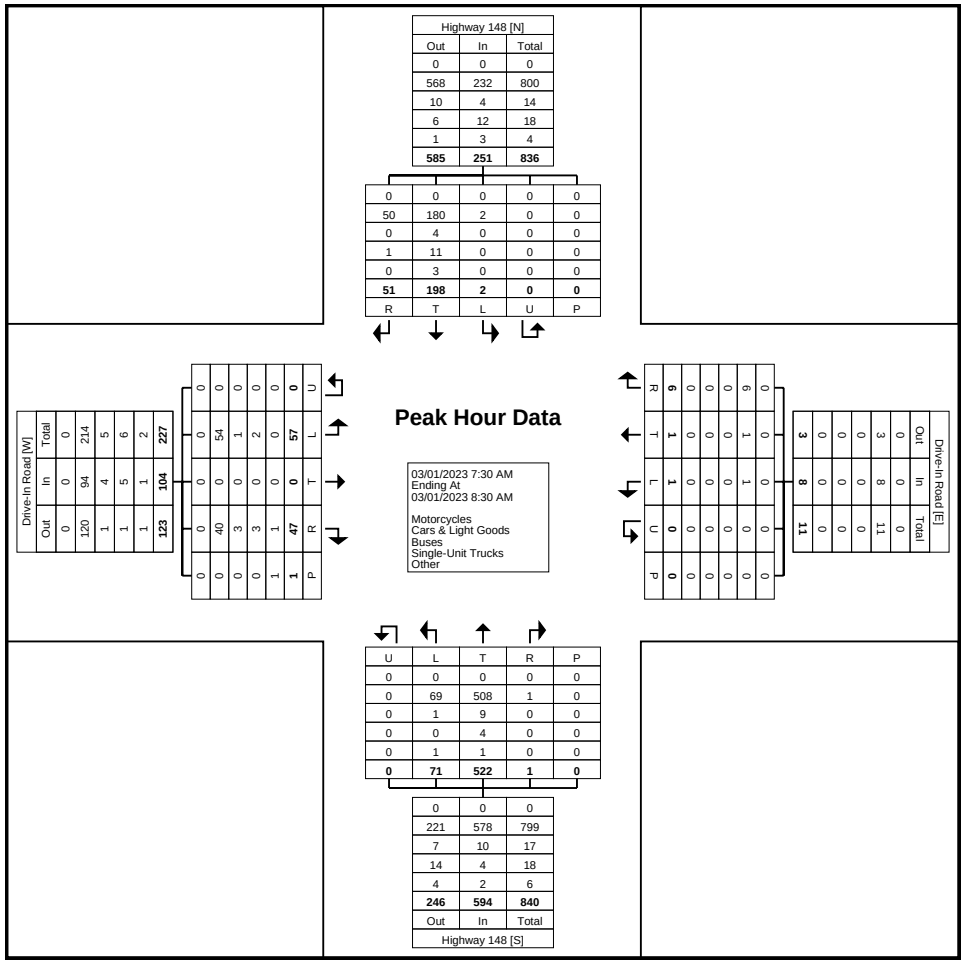


Turning Movement Peak Hour Data Plot (7:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Drive-in Road
Site Code: 220694
Start Date: 03/01/2023

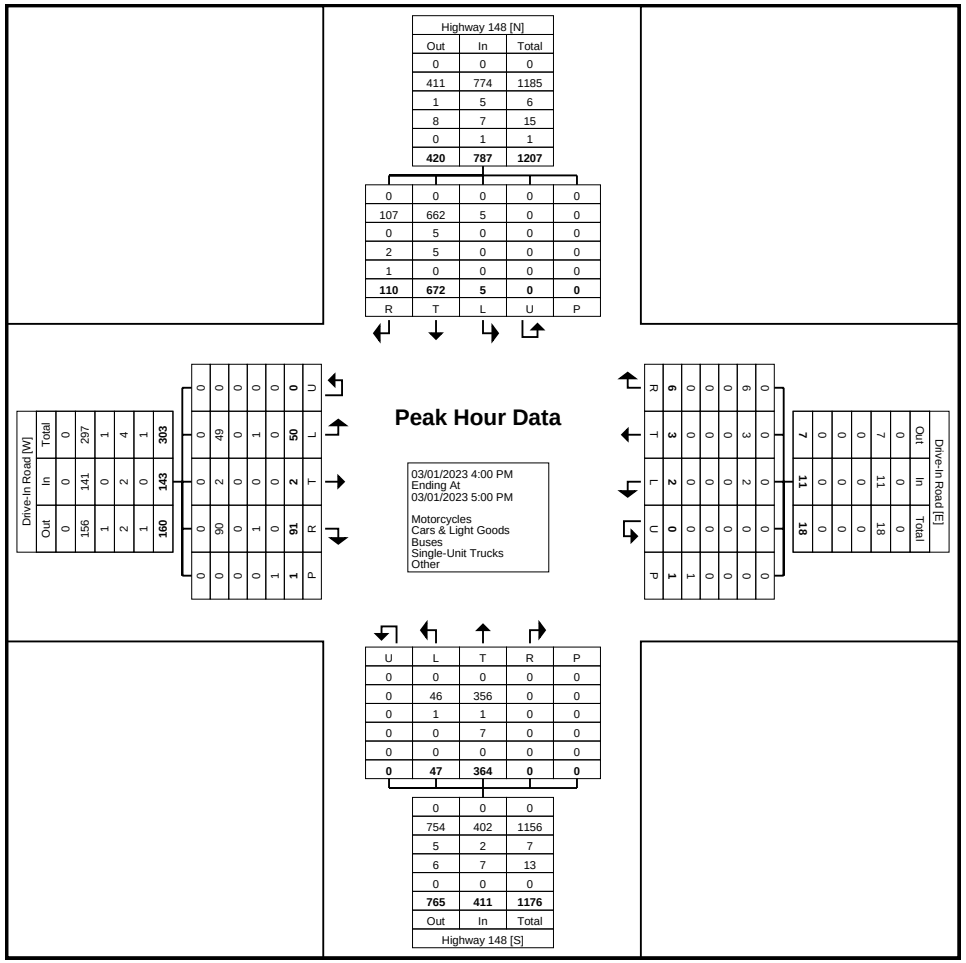
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Highway 148 Northbound						Highway 148 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	12	1	22	0	0	35	0	1	2	0	0	3	13	88	0	0	0	101	2	164	42	0	0	208	347
4:15 PM	10	0	25	0	1	35	0	1	1	0	0	2	11	98	0	0	0	109	1	167	21	0	0	189	335
4:30 PM	10	1	23	0	0	34	0	0	1	0	0	1	10	79	0	0	0	89	2	182	31	0	0	215	339
4:45 PM	18	0	21	0	0	39	2	1	2	0	1	5	13	99	0	0	0	112	0	159	16	0	0	175	331
Total	50	2	91	0	1	143	2	3	6	0	1	11	47	364	0	0	0	411	5	672	110	0	0	787	1352
Approach %	35.0	1.4	63.6	0.0	-	-	18.2	27.3	54.5	0.0	-	-	11.4	88.6	0.0	0.0	-	-	0.6	85.4	14.0	0.0	-	-	-
Total %	3.7	0.1	6.7	0.0	-	10.6	0.1	0.2	0.4	0.0	-	0.8	3.5	26.9	0.0	0.0	-	30.4	0.4	49.7	8.1	0.0	-	58.2	-
PHF	0.694	0.500	0.910	0.000	-	0.917	0.250	0.750	0.750	0.000	-	0.550	0.904	0.919	0.000	0.000	-	0.917	0.625	0.923	0.655	0.000	-	0.915	0.974
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
Cars & Light Goods	49	2	90	0	-	141	2	3	6	0	-	11	46	356	0	0	-	402	5	662	107	0	-	774	1328
% Cars & Light Goods	98.0	100.0	98.9	-	-	98.6	100.0	100.0	100.0	-	-	100.0	97.9	97.8	-	-	-	97.8	100.0	98.5	97.3	-	-	98.3	98.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	0	5	0	0	-	5	7
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.1	0.3	-	-	-	0.5	0.0	0.7	0.0	-	-	0.6	0.5
Single-Unit Trucks	1	0	1	0	-	2	0	0	0	0	-	0	0	7	0	0	-	7	0	5	2	0	-	7	16
% Single-Unit Trucks	2.0	0.0	1.1	-	-	1.4	0.0	0.0	0.0	-	-	0.0	0.0	1.9	-	-	-	1.7	0.0	0.7	1.8	-	-	0.9	1.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.9	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% 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: Highway 148 & Drive-in Road
Site Code: 220694
Start Date: 03/01/2023



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: Highway 148 & Howard Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

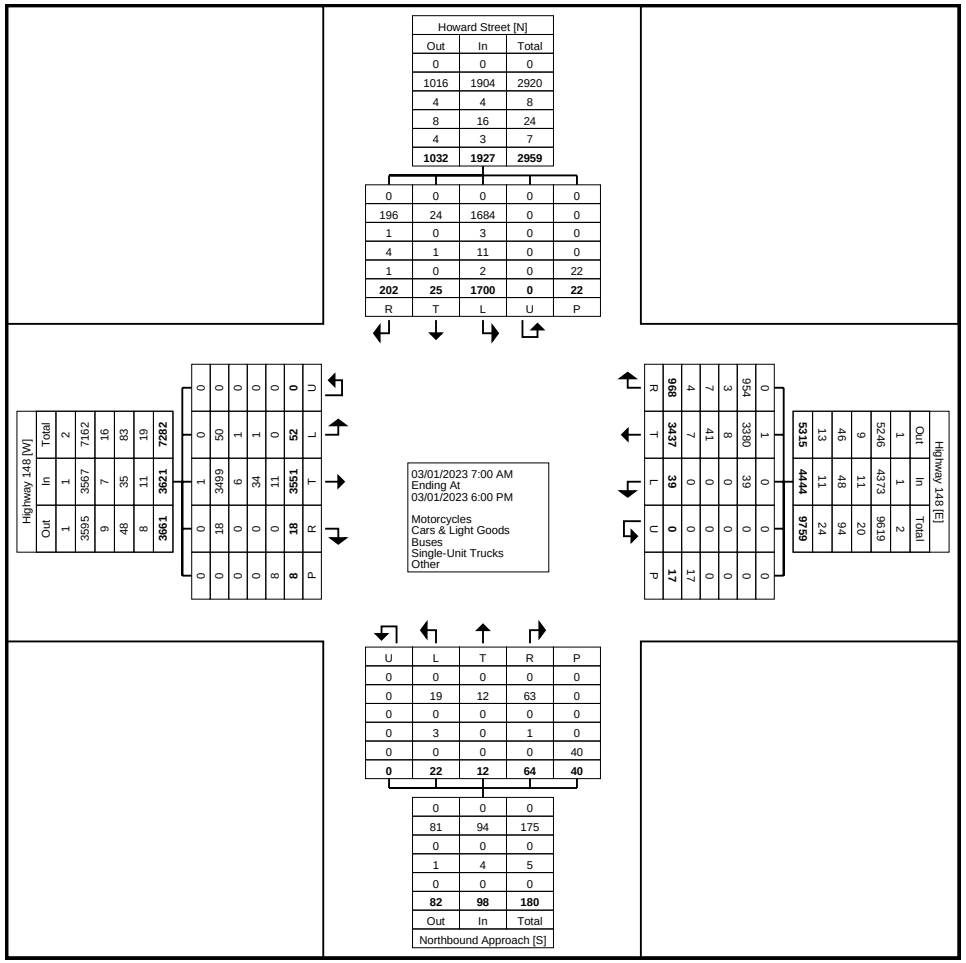
Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	43	0	0	0	43	0	63	5	0	0	68	0	0	0	0	2	0	12	0	0	0	0	12	123
7:15 AM	1	51	0	0	0	52	0	61	12	0	0	73	0	0	0	0	2	0	8	0	1	0	0	9	134
7:30 AM	1	53	0	0	0	54	0	81	20	0	0	101	0	0	0	0	1	0	10	0	1	0	0	11	166
7:45 AM	2	73	0	0	0	75	0	93	42	0	0	135	0	0	0	0	1	0	21	0	5	0	0	26	236
Hourly Total	4	220	0	0	0	224	0	298	79	0	0	377	0	0	0	0	6	0	51	0	7	0	0	58	659
8:00 AM	1	62	0	0	0	63	0	104	32	0	0	136	0	0	2	0	2	2	18	0	3	0	0	21	222
8:15 AM	0	72	0	0	0	72	4	98	35	0	0	137	0	0	1	0	3	1	24	0	2	0	0	26	236
8:30 AM	1	64	1	0	0	66	4	93	29	0	1	126	0	0	3	0	1	3	26	1	7	0	0	34	229
8:45 AM	1	116	0	0	0	117	4	84	29	0	0	117	0	0	4	0	1	4	17	0	6	0	1	23	261
Hourly Total	3	314	1	0	0	318	12	379	125	0	1	516	0	0	10	0	7	10	85	1	18	0	1	104	948
9:00 AM	1	80	0	0	0	81	0	84	25	0	0	109	0	0	1	0	0	1	31	1	6	0	0	38	229
9:15 AM	4	103	2	0	0	109	0	86	23	0	0	109	1	0	0	0	0	1	47	1	5	0	0	53	272
9:30 AM	1	108	2	0	0	111	3	104	32	0	0	139	0	1	4	0	1	5	45	0	7	0	3	52	307
9:45 AM	1	108	3	0	0	112	3	95	33	0	3	131	0	1	5	0	2	6	49	1	9	0	1	59	308
Hourly Total	7	399	7	0	0	413	6	369	113	0	3	488	1	2	10	0	3	13	172	3	27	0	4	202	1116
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	1	108	0	0	3	109	0	107	35	0	0	142	0	0	2	0	4	2	53	1	11	0	0	65	318
11:15 AM	3	110	1	0	0	114	3	108	46	0	1	157	1	1	4	0	1	6	71	2	7	0	0	80	357
11:30 AM	3	126	1	0	0	130	0	113	40	0	6	153	0	2	3	0	4	5	69	1	8	0	0	78	366
11:45 AM	3	147	0	0	0	150	2	122	33	0	0	157	2	1	2	0	0	5	68	2	8	0	0	78	390
Hourly Total	10	491	2	0	3	503	5	450	154	0	7	609	3	4	11	0	9	18	261	6	34	0	0	301	1431
12:00 PM	1	143	1	0	0	145	1	129	32	0	0	162	0	0	2	0	3	2	78	1	9	0	0	88	397
12:15 PM	4	130	0	0	0	134	2	112	26	0	1	140	2	0	3	0	3	5	83	1	7	0	0	91	370
12:30 PM	1	143	0	0	0	144	2	118	39	0	0	159	1	0	3	0	1	4	58	3	8	0	1	69	376
12:45 PM	2	117	1	0	0	120	2	130	40	0	0	172	0	1	3	0	0	4	62	3	7	0	0	72	368
Hourly Total	8	533	2	0	0	543	7	489	137	0	1	633	3	1	11	0	7	15	281	8	31	0	1	320	1511
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	109	1	0	0	114	2	121	45	0	0	168	0	0	0	0	0	0	63	3	10	0	0	76	358
3:15 PM	1	147	2	0	2	150	1	125	32	0	0	158	0	3	2	0	1	5	76	1	11	0	4	88	401
3:30 PM	3	167	1	0	0	171	0	126	30	0	1	156	0	1	2	0	1	3	83	0	8	0	2	91	421
3:45 PM	2	152	0	0	0	154	1	105	25	0	1	131	4	0	0	0	1	4	71	0	7	0	1	78	367
Hourly Total	10	575	4	0	2	589	4	477	132	0	2	613	4	4	4	0	3	12	293	4	36	0	7	333	1547
4:00 PM	0	153	1	0	0	154	4	134	21	0	0	159	4	0	1	0	0	5	90	0	2	0	0	92	410
4:15 PM	2	133	0	0	1	135	0	142	47	0	1	189	1	0	3	0	1	4	92	2	7	0	1	101	429
4:30 PM	5	128	1	0	2	134	1	115	31	0	2	147	1	0	3	0	1	4	76	0	8	0	2	84	369

4:45 PM	0	138	0	0	0	138	0	131	32	0	0	163	2	1	1	0	0	4	75	0	8	0	0	83	388
Hourly Total	7	552	2	0	3	561	5	522	131	0	3	658	8	1	8	0	2	17	333	2	25	0	3	360	1596
5:00 PM	1	119	0	0	0	120	0	138	36	0	0	174	2	0	5	0	2	7	78	0	6	0	0	84	385
5:15 PM	0	134	0	0	0	134	0	105	25	0	0	130	1	0	3	0	0	4	52	0	8	0	3	60	328
5:30 PM	1	107	0	0	0	108	0	107	25	0	0	132	0	0	1	0	0	1	45	1	7	0	1	53	294
5:45 PM	1	107	0	0	0	108	0	103	11	0	0	114	0	0	1	0	1	1	49	0	3	0	2	52	275
Hourly Total	3	467	0	0	0	470	0	453	97	0	0	550	3	0	10	0	3	13	224	1	24	0	6	249	1282
Grand Total	52	3551	18	0	8	3621	39	3437	968	0	17	4444	22	12	64	0	40	98	1700	25	202	0	22	1927	10090
Approach %	1.4	98.1	0.5	0.0	-	-	0.9	77.3	21.8	0.0	-	-	22.4	12.2	65.3	0.0	-	-	88.2	1.3	10.5	0.0	-	-	-
Total %	0.5	35.2	0.2	0.0	-	35.9	0.4	34.1	9.6	0.0	-	44.0	0.2	0.1	0.6	0.0	-	1.0	16.8	0.2	2.0	0.0	-	19.1	-
Motorcycles	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% 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	50	3499	18	0	-	3567	39	3380	954	0	-	4373	19	12	63	0	-	94	1684	24	196	0	-	1904	9938
% Cars & Light Goods	96.2	98.5	100.0	-	-	98.5	100.0	98.3	98.6	-	-	98.4	86.4	100.0	98.4	-	-	95.9	99.1	96.0	97.0	-	-	98.8	98.5
Buses	1	6	0	0	-	7	0	8	3	0	-	11	0	0	0	0	-	0	3	0	1	0	-	4	22
% Buses	1.9	0.2	0.0	-	-	0.2	0.0	0.2	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.2	0.0	0.5	-	-	0.2	0.2
Single-Unit Trucks	1	34	0	0	-	35	0	41	7	0	-	48	3	0	1	0	-	4	11	1	4	0	-	16	103
% Single-Unit Trucks	1.9	1.0	0.0	-	-	1.0	0.0	1.2	0.7	-	-	1.1	13.6	0.0	1.6	-	-	4.1	0.6	4.0	2.0	-	-	0.8	1.0
Articulated Trucks	0	10	0	0	-	10	0	6	3	0	-	9	0	0	0	0	-	0	2	0	1	0	-	3	22
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	0.0	0.2	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1	0.0	0.5	-	-	0.2	0.2
Bicycles on Road	0	1	0	0	-	1	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.1	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	17	-	-	-	-	-	40	-	-	-	-	-	22	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Howard Street
Site Code: 220694
Start Date: 03/01/2023


Highway 148 [W]
Out In Total
1 1 2
3595 3567 7162
9 7 16
48 35 83
8 11 19
3661 3621 7282
0 0 0
0 50 50
18 3499 3517
0 6 6
0 1 1
0 34 34
8 11 19
8 3551 3559
0 52 52
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Howard Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (9:00 AM)

Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard 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
9:00 AM	1	80	0	0	0	81	0	84	25	0	0	109	0	0	1	0	0	1	31	1	6	0	0	38	229
9:15 AM	4	103	2	0	0	109	0	86	23	0	0	109	1	0	0	0	0	1	47	1	5	0	0	53	272
9:30 AM	1	108	2	0	0	111	3	104	32	0	0	139	0	1	4	0	1	5	45	0	7	0	3	52	307
9:45 AM	1	108	3	0	0	112	3	95	33	0	3	131	0	1	5	0	2	6	49	1	9	0	1	59	308
Total	7	399	7	0	0	413	6	369	113	0	3	488	1	2	10	0	3	13	172	3	27	0	4	202	1116
Approach %	1.7	96.6	1.7	0.0	-	-	1.2	75.6	23.2	0.0	-	-	7.7	15.4	76.9	0.0	-	-	85.1	1.5	13.4	0.0	-	-	-
Total %	0.6	35.8	0.6	0.0	-	37.0	0.5	33.1	10.1	0.0	-	43.7	0.1	0.2	0.9	0.0	-	1.2	15.4	0.3	2.4	0.0	-	18.1	-
PHF	0.438	0.924	0.583	0.000	-	0.922	0.500	0.887	0.856	0.000	-	0.878	0.250	0.500	0.500	0.000	-	0.542	0.878	0.750	0.750	0.000	-	0.856	0.906
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	6	394	7	0	-	407	6	357	110	0	-	473	1	2	10	0	-	13	170	3	27	0	-	200	1093
% Cars & Light Goods	85.7	98.7	100.0	-	-	98.5	100.0	96.7	97.3	-	-	96.9	100.0	100.0	100.0	-	-	100.0	98.8	100.0	100.0	-	-	99.0	97.9
Buses	1	1	0	0	-	2	0	2	1	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	14.3	0.3	0.0	-	-	0.5	0.0	0.5	0.9	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	0	1	0	0	-	1	0	8	1	0	-	9	0	0	0	0	-	0	1	0	0	0	-	1	11
% Single-Unit Trucks	0.0	0.3	0.0	-	-	0.2	0.0	2.2	0.9	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.6	0.0	0.0	-	-	0.5	1.0
Articulated Trucks	0	3	0	0	-	3	0	1	1	0	-	2	0	0	0	0	-	0	1	0	0	0	-	1	6
% Articulated Trucks	0.0	0.8	0.0	-	-	0.7	0.0	0.3	0.9	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.6	0.0	0.0	-	-	0.5	0.5
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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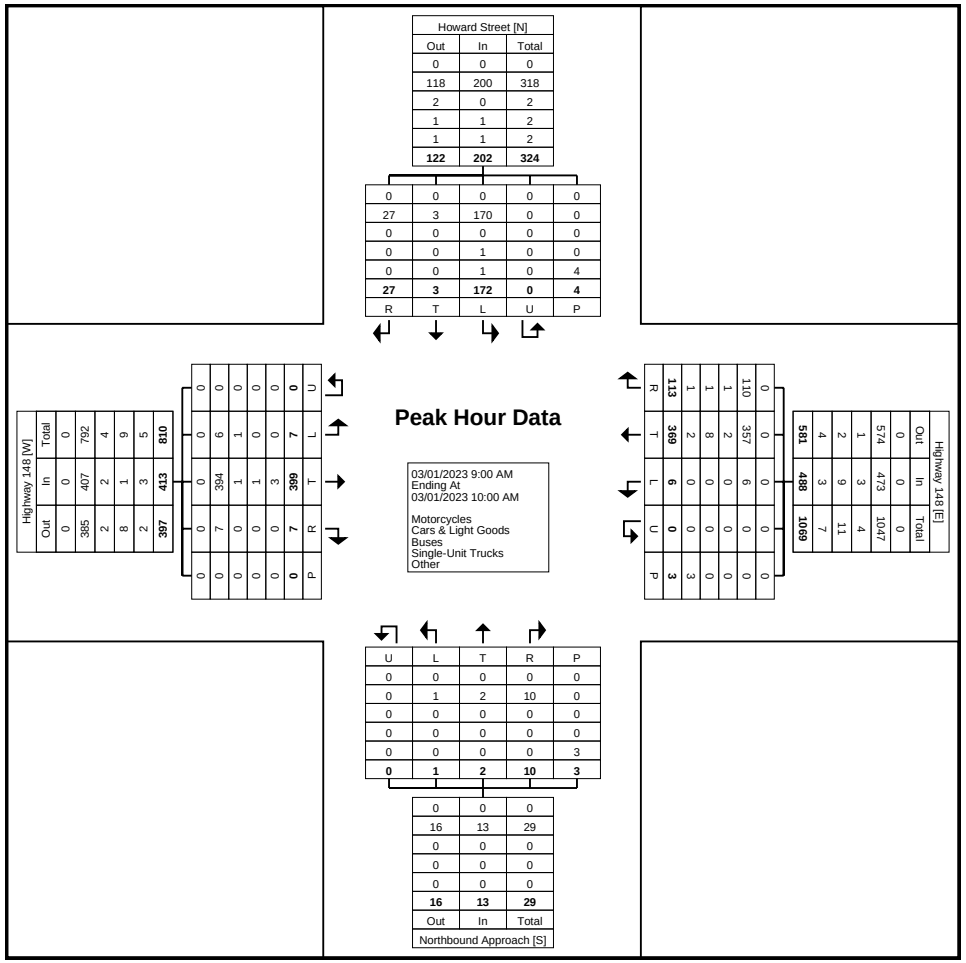


Turning Movement Peak Hour Data Plot (9:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Howard Street
Site Code: 220694
Start Date: 03/01/2023

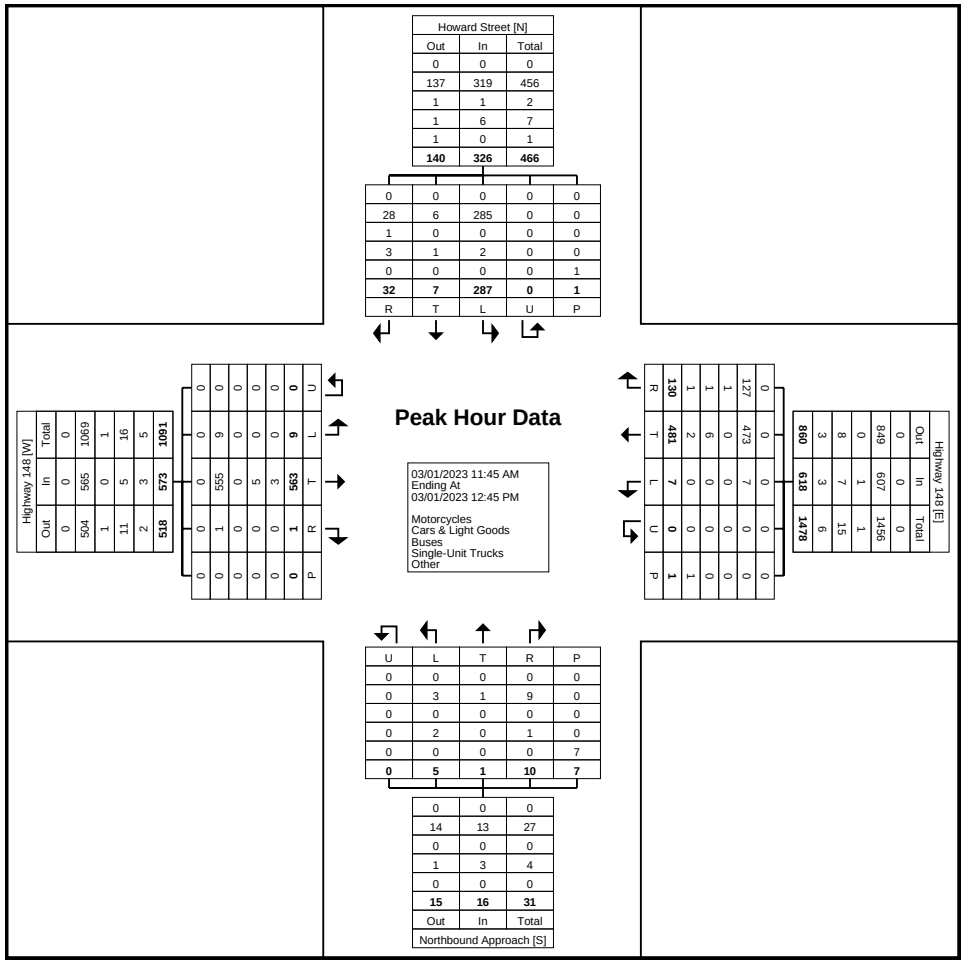
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard 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
11:45 AM	3	147	0	0	0	150	2	122	33	0	0	157	2	1	2	0	0	5	68	2	8	0	0	78	390
12:00 PM	1	143	1	0	0	145	1	129	32	0	0	162	0	0	2	0	3	2	78	1	9	0	0	88	397
12:15 PM	4	130	0	0	0	134	2	112	26	0	1	140	2	0	3	0	3	5	83	1	7	0	0	91	370
12:30 PM	1	143	0	0	0	144	2	118	39	0	0	159	1	0	3	0	1	4	58	3	8	0	1	69	376
Total	9	563	1	0	0	573	7	481	130	0	1	618	5	1	10	0	7	16	287	7	32	0	1	326	1533
Approach %	1.6	98.3	0.2	0.0	-	-	1.1	77.8	21.0	0.0	-	-	31.3	6.3	62.5	0.0	-	-	88.0	2.1	9.8	0.0	-	-	-
Total %	0.6	36.7	0.1	0.0	-	37.4	0.5	31.4	8.5	0.0	-	40.3	0.3	0.1	0.7	0.0	-	1.0	18.7	0.5	2.1	0.0	-	21.3	-
PHF	0.563	0.957	0.250	0.000	-	0.955	0.875	0.932	0.833	0.000	-	0.954	0.625	0.250	0.833	0.000	-	0.800	0.864	0.583	0.889	0.000	-	0.896	0.965
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	9	555	1	0	-	565	7	473	127	0	-	607	3	1	9	0	-	13	285	6	28	0	-	319	1504
% Cars & Light Goods	100.0	98.6	100.0	-	-	98.6	100.0	98.3	97.7	-	-	98.2	60.0	100.0	90.0	-	-	81.3	99.3	85.7	87.5	-	-	97.9	98.1
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.8	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	3.1	-	-	0.3	0.1
Single-Unit Trucks	0	5	0	0	-	5	0	6	1	0	-	7	2	0	1	0	-	3	2	1	3	0	-	6	21
% Single-Unit Trucks	0.0	0.9	0.0	-	-	0.9	0.0	1.2	0.8	-	-	1.1	40.0	0.0	10.0	-	-	18.8	0.7	14.3	9.4	-	-	1.8	1.4
Articulated Trucks	0	2	0	0	-	2	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.4	0.0	-	-	0.3	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.8	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	1	-	-
% 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: Highway 148 & Howard Street
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Howard Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard 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
3:30 PM	3	167	1	0	0	171	0	126	30	0	1	156	0	1	2	0	1	3	83	0	8	0	2	91	421
3:45 PM	2	152	0	0	0	154	1	105	25	0	1	131	4	0	0	0	1	4	71	0	7	0	1	78	367
4:00 PM	0	153	1	0	0	154	4	134	21	0	0	159	4	0	1	0	0	5	90	0	2	0	0	92	410
4:15 PM	2	133	0	0	1	135	0	142	47	0	1	189	1	0	3	0	1	4	92	2	7	0	1	101	429
Total	7	605	2	0	1	614	5	507	123	0	3	635	9	1	6	0	3	16	336	2	24	0	4	362	1627
Approach %	1.1	98.5	0.3	0.0	-	-	0.8	79.8	19.4	0.0	-	-	56.3	6.3	37.5	0.0	-	-	92.8	0.6	6.6	0.0	-	-	-
Total %	0.4	37.2	0.1	0.0	-	37.7	0.3	31.2	7.6	0.0	-	39.0	0.6	0.1	0.4	0.0	-	1.0	20.7	0.1	1.5	0.0	-	22.2	-
PHF	0.583	0.906	0.500	0.000	-	0.898	0.313	0.893	0.654	0.000	-	0.840	0.563	0.250	0.500	0.000	-	0.800	0.913	0.250	0.750	0.000	-	0.896	0.948
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	7	597	2	0	-	606	5	501	123	0	-	629	9	1	6	0	-	16	332	2	24	0	-	358	1609
% Cars & Light Goods	100.0	98.7	100.0	-	-	98.7	100.0	98.8	100.0	-	-	99.1	100.0	100.0	100.0	-	-	100.0	98.8	100.0	100.0	-	-	98.9	98.9
Buses	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	3	0	0	0	-	3	7
% Buses	0.0	0.5	0.0	-	-	0.5	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.9	0.0	0.0	-	-	0.8	0.4
Single-Unit Trucks	0	5	0	0	-	5	0	4	0	0	-	4	0	0	0	0	-	0	1	0	0	0	-	1	10
% Single-Unit Trucks	0.0	0.8	0.0	-	-	0.8	0.0	0.8	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	-	0.3	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
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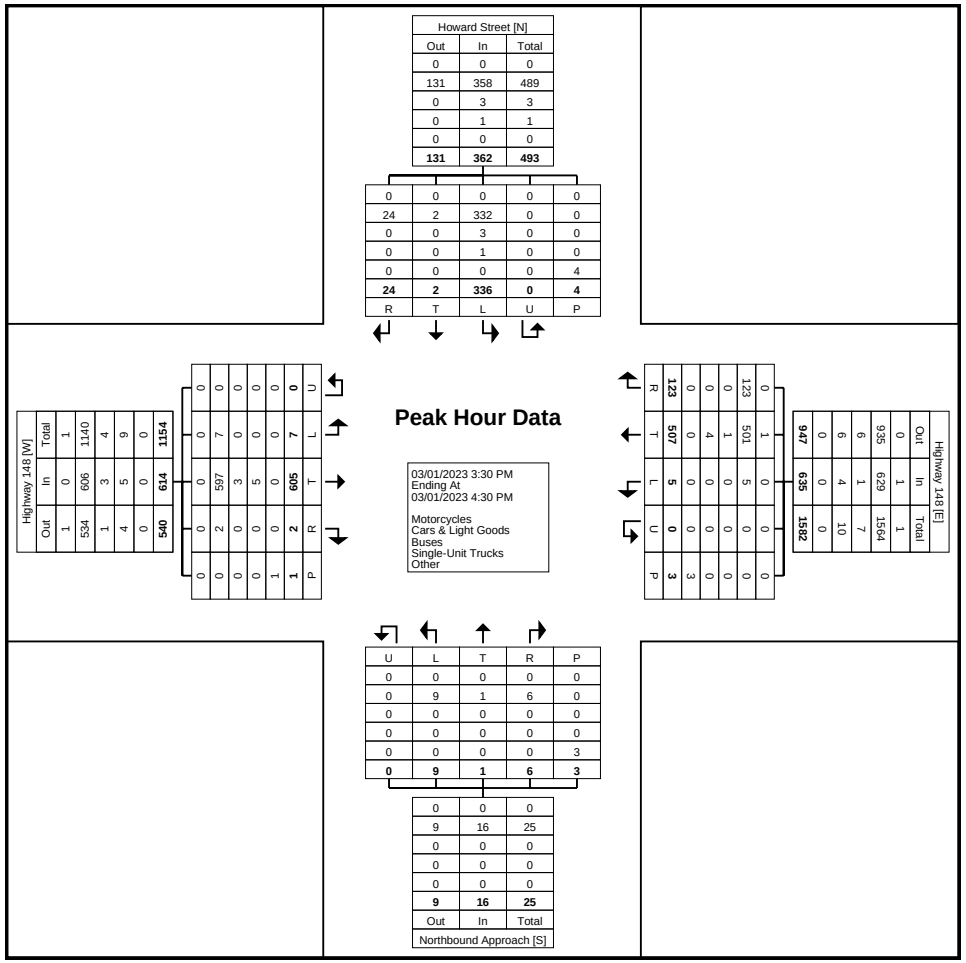


Turning Movement Peak Hour Data Plot (3:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

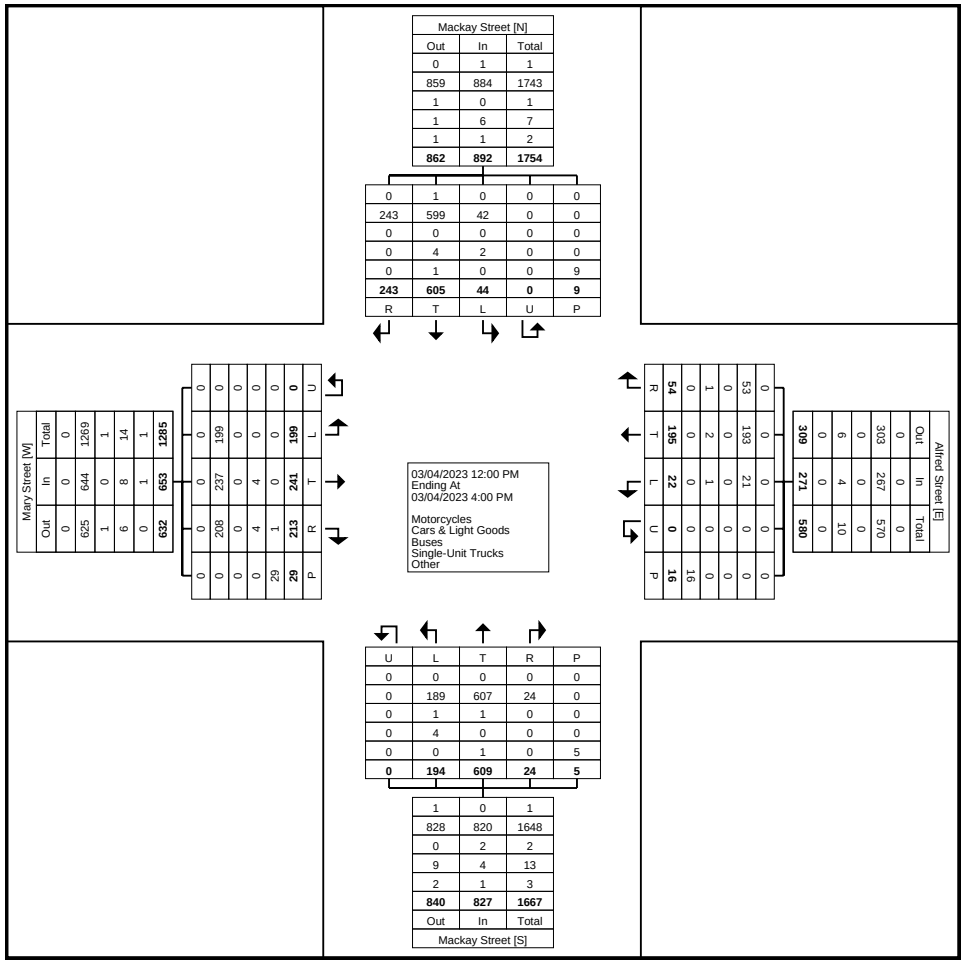
Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	7	10	18	0	1	35	0	14	2	0	2	16	8	50	2	0	1	60	1	43	12	0	0	56	167
12:15 PM	15	16	12	0	2	43	2	10	6	0	0	18	7	40	0	0	0	47	4	37	19	0	0	60	168
12:30 PM	12	14	13	0	2	39	2	13	2	0	0	17	20	45	1	0	1	66	5	38	14	0	0	57	179
12:45 PM	13	11	10	0	1	34	3	8	5	0	1	16	25	37	1	0	0	63	2	37	10	0	0	49	162
Hourly Total	47	51	53	0	6	151	7	45	15	0	3	67	60	172	4	0	2	236	12	155	55	0	0	222	676
1:00 PM	14	11	13	0	0	38	0	9	1	0	1	10	18	34	2	0	0	54	2	30	17	0	0	49	151
1:15 PM	10	19	8	0	2	37	1	13	4	0	0	18	6	39	1	0	0	46	4	38	17	0	0	59	160
1:30 PM	18	22	18	0	2	58	3	12	4	0	2	19	16	44	1	0	0	61	1	35	15	0	1	51	189
1:45 PM	15	14	14	0	2	43	3	16	6	0	0	25	7	42	2	0	3	51	2	35	9	0	0	46	165
Hourly Total	57	66	53	0	6	176	7	50	15	0	3	72	47	159	6	0	3	212	9	138	58	0	1	205	665
2:00 PM	16	13	13	0	1	42	4	12	2	0	0	18	10	32	1	0	0	43	5	31	17	0	0	53	156
2:15 PM	7	13	16	0	4	36	0	9	8	0	1	17	9	34	1	0	0	44	4	45	14	0	0	63	160
2:30 PM	9	12	16	0	2	37	2	11	5	0	2	18	11	29	1	0	0	41	2	42	25	0	2	69	165
2:45 PM	16	20	22	0	0	58	1	13	2	0	2	16	11	37	1	0	0	49	2	38	12	0	2	52	175
Hourly Total	48	58	67	0	7	173	7	45	17	0	5	69	41	132	4	0	0	177	13	156	68	0	4	237	656
3:00 PM	15	21	16	0	1	52	0	13	1	0	3	14	19	45	3	0	0	67	1	32	22	0	1	55	188
3:15 PM	11	19	9	0	2	39	0	13	0	0	1	13	10	35	1	0	0	46	3	39	15	0	1	57	155
3:30 PM	10	12	9	0	4	31	1	11	2	0	1	14	10	32	5	0	0	47	3	44	18	0	2	65	157
3:45 PM	11	14	6	0	3	31	0	18	4	0	0	22	7	34	1	0	0	42	3	41	7	0	0	51	146
Hourly Total	47	66	40	0	10	153	1	55	7	0	5	63	46	146	10	0	0	202	10	156	62	0	4	228	646
Grand Total	199	241	213	0	29	653	22	195	54	0	16	271	194	609	24	0	5	827	44	605	243	0	9	892	2643
Approach %	30.5	36.9	32.6	0.0	-	-	8.1	72.0	19.9	0.0	-	-	23.5	73.6	2.9	0.0	-	-	4.9	67.8	27.2	0.0	-	-	-
Total %	7.5	9.1	8.1	0.0	-	24.7	0.8	7.4	2.0	0.0	-	10.3	7.3	23.0	0.9	0.0	-	31.3	1.7	22.9	9.2	0.0	-	33.7	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% 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	0.2	0.0	-	-	0.1	0.0
Cars & Light Goods	199	237	208	0	-	644	21	193	53	0	-	267	189	607	24	0	-	820	42	599	243	0	-	884	2615
% Cars & Light Goods	100.0	98.3	97.7	-	-	98.6	95.5	99.0	98.1	-	-	98.5	97.4	99.7	100.0	-	-	99.2	95.5	99.0	100.0	-	-	99.1	98.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.5	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	4	4	0	-	8	1	2	1	0	-	4	4	0	0	0	-	4	2	4	0	0	-	6	22
% Single-Unit Trucks	0.0	1.7	1.9	-	-	1.2	4.5	1.0	1.9	-	-	1.5	2.1	0.0	0.0	-	-	0.5	4.5	0.7	0.0	-	-	0.7	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.1	0.0	0.2	0.0	-	-	0.1	0.1

Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.5	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	29	-	-	-	-	-	16	-	-	-	-	-	5	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Saturday
Site Code: 220694
Start Date: 03/04/2023


Mary Street [W]
Out In Total
0 0 0
625 644 1269
1 0 1
6 8 14
0 1 1
632 653 1285
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

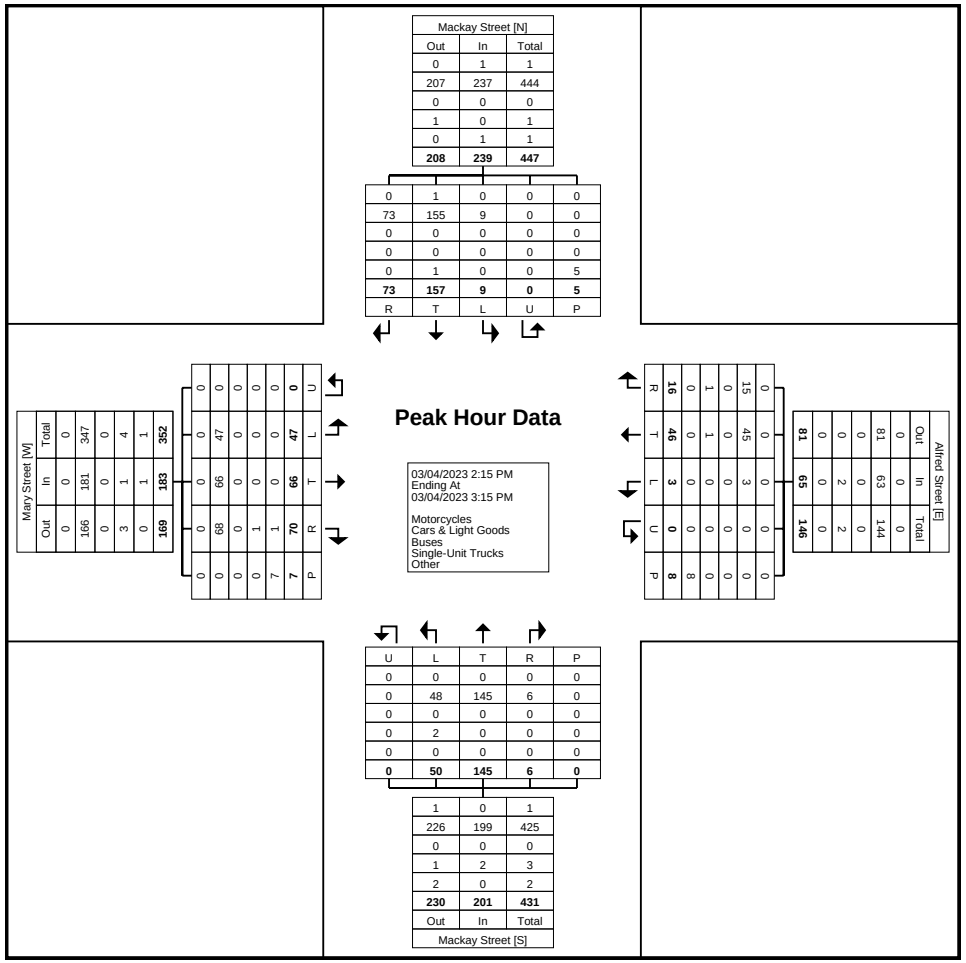
Turning Movement Peak Hour Data (2:15 PM)

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay 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
2:15 PM	7	13	16	0	4	36	0	9	8	0	1	17	9	34	1	0	0	44	4	45	14	0	0	63	160
2:30 PM	9	12	16	0	2	37	2	11	5	0	2	18	11	29	1	0	0	41	2	42	25	0	2	69	165
2:45 PM	16	20	22	0	0	58	1	13	2	0	2	16	11	37	1	0	0	49	2	38	12	0	2	52	175
3:00 PM	15	21	16	0	1	52	0	13	1	0	3	14	19	45	3	0	0	67	1	32	22	0	1	55	188
Total	47	66	70	0	7	183	3	46	16	0	8	65	50	145	6	0	0	201	9	157	73	0	5	239	688
Approach %	25.7	36.1	38.3	0.0	-	-	4.6	70.8	24.6	0.0	-	-	24.9	72.1	3.0	0.0	-	-	3.8	65.7	30.5	0.0	-	-	-
Total %	6.8	9.6	10.2	0.0	-	26.6	0.4	6.7	2.3	0.0	-	9.4	7.3	21.1	0.9	0.0	-	29.2	1.3	22.8	10.6	0.0	-	34.7	-
PHF	0.734	0.786	0.795	0.000	-	0.789	0.375	0.885	0.500	0.000	-	0.903	0.658	0.806	0.500	0.000	-	0.750	0.563	0.872	0.730	0.000	-	0.866	0.915
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% 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	0.6	0.0	-	-	0.4	0.1
Cars & Light Goods	47	66	68	0	-	181	3	45	15	0	-	63	48	145	6	0	-	199	9	155	73	0	-	237	680
% Cars & Light Goods	100.0	100.0	97.1	-	-	98.9	100.0	97.8	93.8	-	-	96.9	96.0	100.0	100.0	-	-	99.0	100.0	98.7	100.0	-	-	99.2	98.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	1	0	-	1	0	1	1	0	-	2	2	0	0	0	-	2	0	0	0	0	-	0	5
% Single-Unit Trucks	0.0	0.0	1.4	-	-	0.5	0.0	2.2	6.3	-	-	3.1	4.0	0.0	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.0	-	-	0.4	0.1
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	1.4	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	5	-	-
% 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: Mackay Street & Alfred Street - Saturday
Site Code: 220694
Start Date: 03/04/2023


Mary Street [W]
Out In Total
0 0 0
166 181 347
0 0 0
3 1 4
0 1 1
169 183 352
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 0
0 47 47
0 66 66
0 69 69
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 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

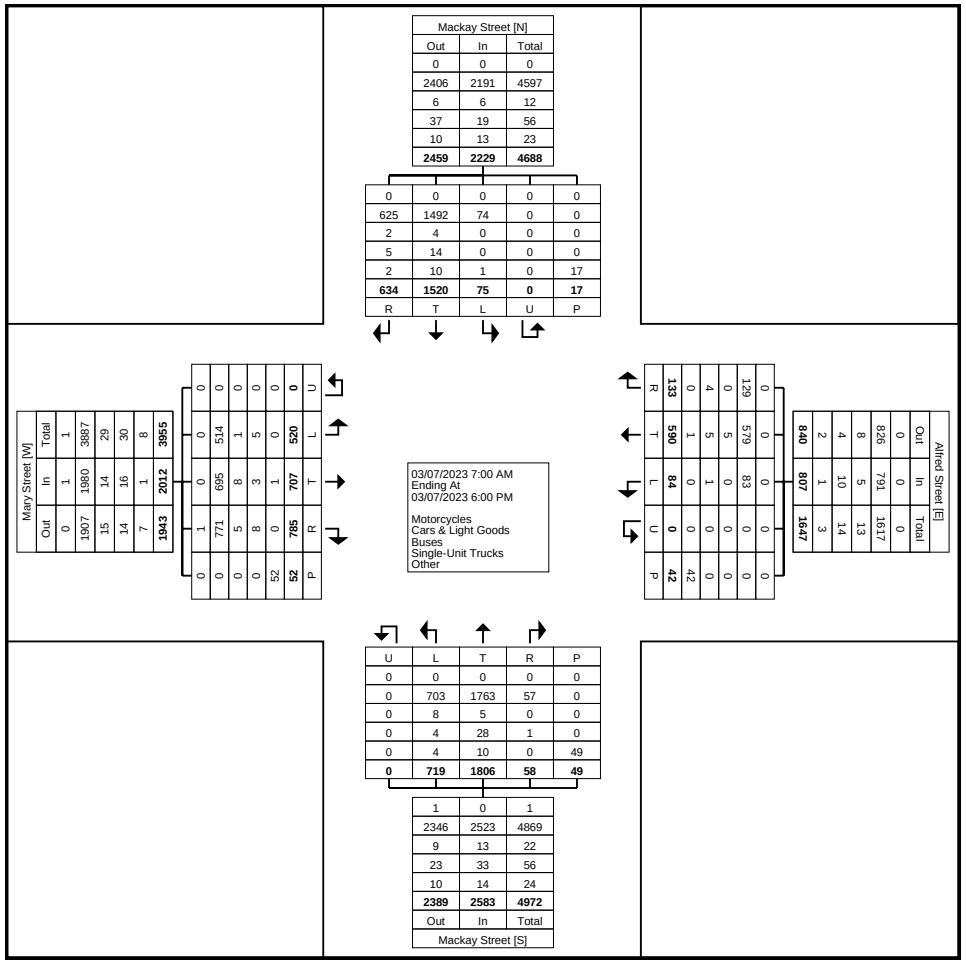
Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	14	3	8	0	0	25	1	3	2	0	1	6	13	37	1	0	1	51	0	32	11	0	0	43	125
7:15 AM	12	6	18	0	4	36	5	15	5	0	2	25	11	26	0	0	0	37	2	25	16	0	1	43	141
7:30 AM	23	8	20	0	2	51	4	11	6	0	2	21	18	44	0	0	0	62	1	30	11	0	1	42	176
7:45 AM	20	24	28	0	0	72	2	21	5	0	0	28	29	70	0	0	4	99	4	40	27	0	0	71	270
Hourly Total	69	41	74	0	6	184	12	50	18	0	5	80	71	177	1	0	5	249	7	127	65	0	2	199	712
8:00 AM	18	19	26	0	1	63	2	16	1	0	1	19	24	50	1	0	2	75	1	37	28	0	0	66	223
8:15 AM	20	19	16	0	3	55	4	23	4	0	0	31	25	56	2	0	0	83	1	42	22	0	0	65	234
8:30 AM	16	34	30	0	2	80	0	27	7	0	0	34	24	53	1	0	0	78	3	35	13	0	0	51	243
8:45 AM	14	26	27	0	1	67	0	25	6	0	2	31	19	62	1	0	3	82	0	43	18	0	1	61	241
Hourly Total	68	98	99	0	7	265	6	91	18	0	3	115	92	221	5	0	5	318	5	157	81	0	1	243	941
9:00 AM	13	45	21	0	2	79	3	23	3	0	1	29	11	54	0	0	5	65	2	37	13	0	2	52	225
9:15 AM	28	23	26	0	0	77	2	26	8	0	3	36	35	72	0	0	5	107	4	41	21	0	3	66	286
9:30 AM	13	16	19	0	1	48	5	18	5	0	0	28	15	57	1	0	1	73	3	44	21	0	0	68	217
9:45 AM	16	13	20	0	0	49	5	13	7	0	0	25	29	71	0	0	0	100	1	48	24	0	0	73	247
Hourly Total	70	97	86	0	3	253	15	80	23	0	4	118	90	254	1	0	11	345	10	170	79	0	5	259	975
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	16	18	29	0	1	63	2	18	0	0	0	20	11	64	2	0	1	77	1	38	15	0	0	54	214
11:15 AM	11	14	12	0	0	37	4	8	2	0	3	14	17	65	4	0	0	86	0	55	17	0	2	72	209
11:30 AM	14	13	20	0	2	47	3	7	7	0	4	17	14	59	1	0	1	74	4	44	23	0	2	71	209
11:45 AM	12	24	24	0	2	60	4	17	2	0	0	23	17	65	1	0	0	83	3	41	19	0	0	63	229
Hourly Total	53	69	85	0	5	207	13	50	11	0	7	74	59	253	8	0	2	320	8	178	74	0	4	260	861
12:00 PM	16	16	19	0	0	51	3	17	5	0	1	25	23	66	3	0	0	92	1	57	24	0	0	82	250
12:15 PM	10	25	21	0	5	56	0	15	3	0	0	18	17	52	1	0	1	70	2	52	16	0	0	70	214
12:30 PM	16	27	32	0	2	75	3	21	6	0	3	30	34	59	2	0	1	95	4	71	19	0	2	94	294
12:45 PM	19	16	27	0	0	62	6	16	3	0	1	25	32	67	3	0	3	102	2	52	20	0	0	74	263
Hourly Total	61	84	99	0	7	244	12	69	17	0	5	98	106	244	9	0	5	359	9	232	79	0	2	320	1021
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	10	21	21	0	0	52	2	12	2	0	0	16	29	66	2	0	0	97	4	69	19	0	0	92	257
3:15 PM	8	35	34	0	2	77	2	20	0	0	0	22	26	56	5	0	1	87	3	50	19	0	0	72	258
3:30 PM	17	43	27	0	1	87	1	17	6	0	1	24	30	69	2	0	2	101	6	59	21	0	0	86	298
3:45 PM	25	28	49	0	2	102	2	35	5	0	0	42	36	56	3	0	10	95	2	54	26	0	0	82	321
Hourly Total	60	127	131	0	5	318	7	84	13	0	1	104	121	247	12	0	13	380	15	232	85	0	0	332	1134
4:00 PM	16	27	37	0	2	80	3	28	7	0	2	38	46	67	5	0	1	118	2	70	26	0	2	98	334
4:15 PM	12	39	31	0	2	82	2	18	4	0	0	24	24	49	3	0	0	76	4	49	21	0	0	74	256
4:30 PM	20	24	34	0	3	78	2	30	7	0	2	39	14	49	4	0	1	67	1	59	21	0	0	81	265

4:45 PM	18	20	26	0	1	64	2	19	5	0	2	26	20	61	1	0	0	82	2	57	21	0	1	80	252
Hourly Total	66	110	128	0	8	304	9	95	23	0	6	127	104	226	13	0	2	343	9	235	89	0	3	333	1107
5:00 PM	28	31	27	0	3	86	6	22	2	0	2	30	19	62	1	0	0	82	2	59	24	0	0	85	283
5:15 PM	18	18	19	0	1	55	2	19	4	0	1	25	19	39	1	0	0	59	5	51	27	0	0	83	222
5:30 PM	17	16	20	0	1	53	1	16	2	0	1	19	14	36	4	0	0	54	3	38	15	0	0	56	182
5:45 PM	10	16	17	0	6	43	1	14	2	0	7	17	24	47	3	0	6	74	2	41	16	0	0	59	193
Hourly Total	73	81	83	0	11	237	10	71	10	0	11	91	76	184	9	0	6	269	12	189	82	0	0	283	880
Grand Total	520	707	785	0	52	2012	84	590	133	0	42	807	719	1806	58	0	49	2583	75	1520	634	0	17	2229	7631
Approach %	25.8	35.1	39.0	0.0	-	-	10.4	73.1	16.5	0.0	-	-	27.8	69.9	2.2	0.0	-	-	3.4	68.2	28.4	0.0	-	-	-
Total %	6.8	9.3	10.3	0.0	-	26.4	1.1	7.7	1.7	0.0	-	10.6	9.4	23.7	0.8	0.0	-	33.8	1.0	19.9	8.3	0.0	-	29.2	-
Motorcycles	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.1	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	514	695	771	0	-	1980	83	579	129	0	-	791	703	1763	57	0	-	2523	74	1492	625	0	-	2191	7485
% Cars & Light Goods	98.8	98.3	98.2	-	-	98.4	98.8	98.1	97.0	-	-	98.0	97.8	97.6	98.3	-	-	97.7	98.7	98.2	98.6	-	-	98.3	98.1
Buses	1	8	5	0	-	14	0	5	0	0	-	5	8	5	0	0	-	13	0	4	2	0	-	6	38
% Buses	0.2	1.1	0.6	-	-	0.7	0.0	0.8	0.0	-	-	0.6	1.1	0.3	0.0	-	-	0.5	0.0	0.3	0.3	-	-	0.3	0.5
Single-Unit Trucks	5	3	8	0	-	16	1	5	4	0	-	10	4	28	1	0	-	33	0	14	5	0	-	19	78
% Single-Unit Trucks	1.0	0.4	1.0	-	-	0.8	1.2	0.8	3.0	-	-	1.2	0.6	1.6	1.7	-	-	1.3	0.0	0.9	0.8	-	-	0.9	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	2	9	0	0	-	11	1	10	1	0	-	12	23
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3	0.5	0.0	-	-	0.4	1.3	0.7	0.2	-	-	0.5	0.3
Bicycles on Road	0	1	0	0	-	1	0	1	0	0	-	1	2	1	0	0	-	3	0	0	1	0	-	1	6
% Bicycles on Road	0.0	0.1	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.1	0.3	0.1	0.0	-	-	0.1	0.0	0.0	0.2	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	2.4	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	52	-	-	-	-	-	41	-	-	-	-	-	49	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	97.6	-	-	-	-	-	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: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023


Mary Street [W]
Out In Total
0 1 1
1907 1980 3887
15 14 29
14 16 30
7 1 8
1943 2012 3955
0 0 0
1 0 1
771 695 514
5 8 1
8 3 5
0 1 0
52 0 0
52 785 707 520 0
0 1 1
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

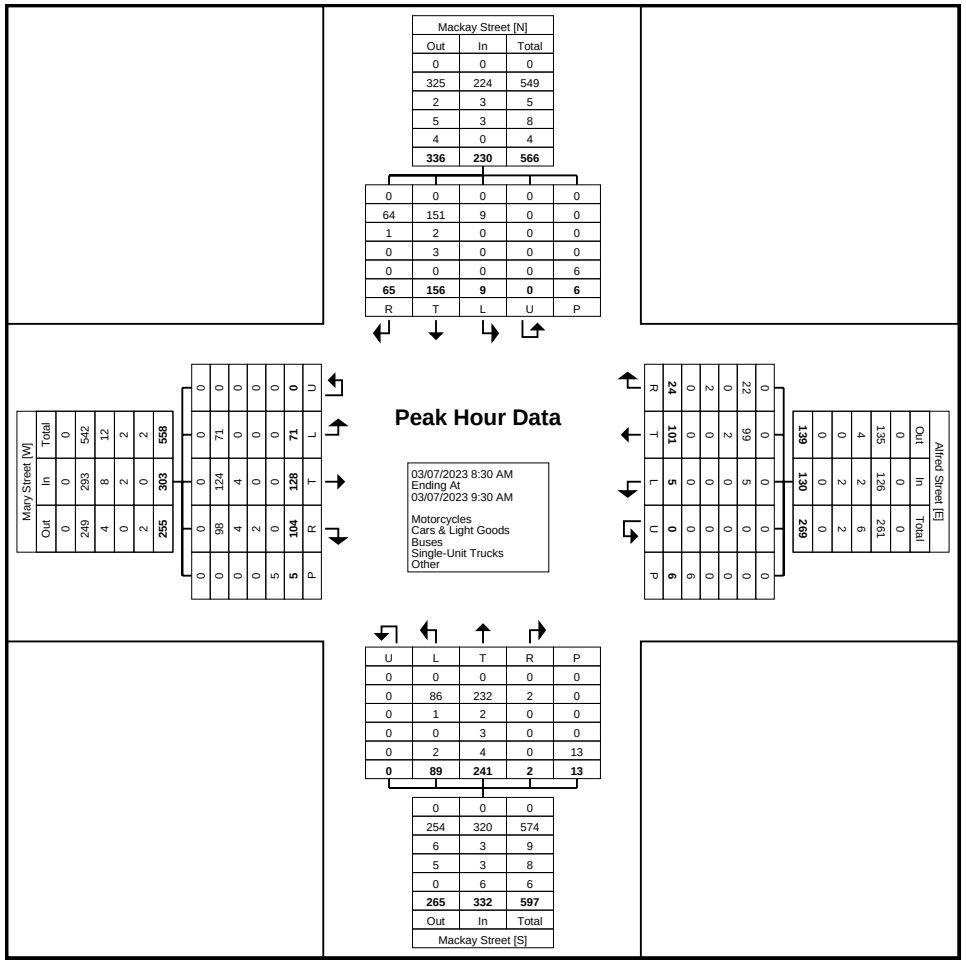
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay 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
8:30 AM	16	34	30	0	2	80	0	27	7	0	0	34	24	53	1	0	0	78	3	35	13	0	0	51	243
8:45 AM	14	26	27	0	1	67	0	25	6	0	2	31	19	62	1	0	3	82	0	43	18	0	1	61	241
9:00 AM	13	45	21	0	2	79	3	23	3	0	1	29	11	54	0	0	5	65	2	37	13	0	2	52	225
9:15 AM	28	23	26	0	0	77	2	26	8	0	3	36	35	72	0	0	5	107	4	41	21	0	3	66	286
Total	71	128	104	0	5	303	5	101	24	0	6	130	89	241	2	0	13	332	9	156	65	0	6	230	995
Approach %	23.4	42.2	34.3	0.0	-	-	3.8	77.7	18.5	0.0	-	-	26.8	72.6	0.6	0.0	-	-	3.9	67.8	28.3	0.0	-	-	-
Total %	7.1	12.9	10.5	0.0	-	30.5	0.5	10.2	2.4	0.0	-	13.1	8.9	24.2	0.2	0.0	-	33.4	0.9	15.7	6.5	0.0	-	23.1	-
PHF	0.634	0.711	0.867	0.000	-	0.947	0.417	0.935	0.750	0.000	-	0.903	0.636	0.837	0.500	0.000	-	0.776	0.563	0.907	0.774	0.000	-	0.871	0.870
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	71	124	98	0	-	293	5	99	22	0	-	126	86	232	2	0	-	320	9	151	64	0	-	224	963
% Cars & Light Goods	100.0	96.9	94.2	-	-	96.7	100.0	98.0	91.7	-	-	96.9	96.6	96.3	100.0	-	-	96.4	100.0	96.8	98.5	-	-	97.4	96.8
Buses	0	4	4	0	-	8	0	2	0	0	-	2	1	2	0	0	-	3	0	2	1	0	-	3	16
% Buses	0.0	3.1	3.8	-	-	2.6	0.0	2.0	0.0	-	-	1.5	1.1	0.8	0.0	-	-	0.9	0.0	1.3	1.5	-	-	1.3	1.6
Single-Unit Trucks	0	0	2	0	-	2	0	0	2	0	-	2	0	3	0	0	-	3	0	3	0	0	-	3	10
% Single-Unit Trucks	0.0	0.0	1.9	-	-	0.7	0.0	0.0	8.3	-	-	1.5	0.0	1.2	0.0	-	-	0.9	0.0	1.9	0.0	-	-	1.3	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	2	4	0	0	-	6	0	0	0	0	-	0	6
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.2	1.7	0.0	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.6
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	13	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

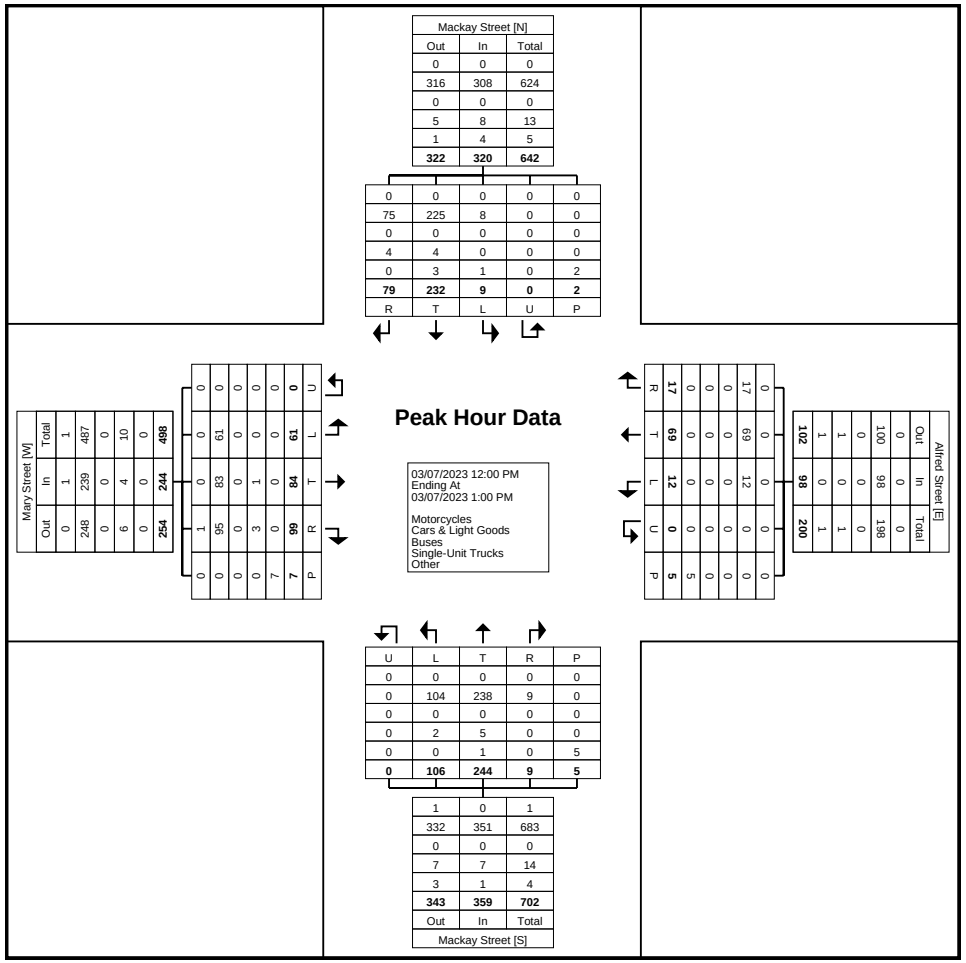
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay 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
12:00 PM	16	16	19	0	0	51	3	17	5	0	1	25	23	66	3	0	0	92	1	57	24	0	0	82	250
12:15 PM	10	25	21	0	5	56	0	15	3	0	0	18	17	52	1	0	1	70	2	52	16	0	0	70	214
12:30 PM	16	27	32	0	2	75	3	21	6	0	3	30	34	59	2	0	1	95	4	71	19	0	2	94	294
12:45 PM	19	16	27	0	0	62	6	16	3	0	1	25	32	67	3	0	3	102	2	52	20	0	0	74	263
Total	61	84	99	0	7	244	12	69	17	0	5	98	106	244	9	0	5	359	9	232	79	0	2	320	1021
Approach %	25.0	34.4	40.6	0.0	-	-	12.2	70.4	17.3	0.0	-	-	29.5	68.0	2.5	0.0	-	-	2.8	72.5	24.7	0.0	-	-	-
Total %	6.0	8.2	9.7	0.0	-	23.9	1.2	6.8	1.7	0.0	-	9.6	10.4	23.9	0.9	0.0	-	35.2	0.9	22.7	7.7	0.0	-	31.3	-
PHF	0.803	0.778	0.773	0.000	-	0.813	0.500	0.821	0.708	0.000	-	0.817	0.779	0.910	0.750	0.000	-	0.880	0.563	0.817	0.823	0.000	-	0.851	0.868
Motorcycles	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	1.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	61	83	95	0	-	239	12	69	17	0	-	98	104	238	9	0	-	351	8	225	75	0	-	308	996
% Cars & Light Goods	100.0	98.8	96.0	-	-	98.0	100.0	100.0	100.0	-	-	100.0	98.1	97.5	100.0	-	-	97.8	88.9	97.0	94.9	-	-	96.3	97.6
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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	3	0	-	4	0	0	0	0	-	0	2	5	0	0	-	7	0	4	4	0	-	8	19
% Single-Unit Trucks	0.0	1.2	3.0	-	-	1.6	0.0	0.0	0.0	-	-	0.0	1.9	2.0	0.0	-	-	1.9	0.0	1.7	5.1	-	-	2.5	1.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1	3	0	0	-	4	5
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.3	11.1	1.3	0.0	-	-	1.3	0.5
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	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	5	-	-	-	-	-	5	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023


Mary Street [W]
Out In Total
0 1 1
248 239 487
0 0 0
6 4 10
0 0 0
254 244 498
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
0 1 1
1 83 84
95 61 99
3 0 7
0 7 7
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

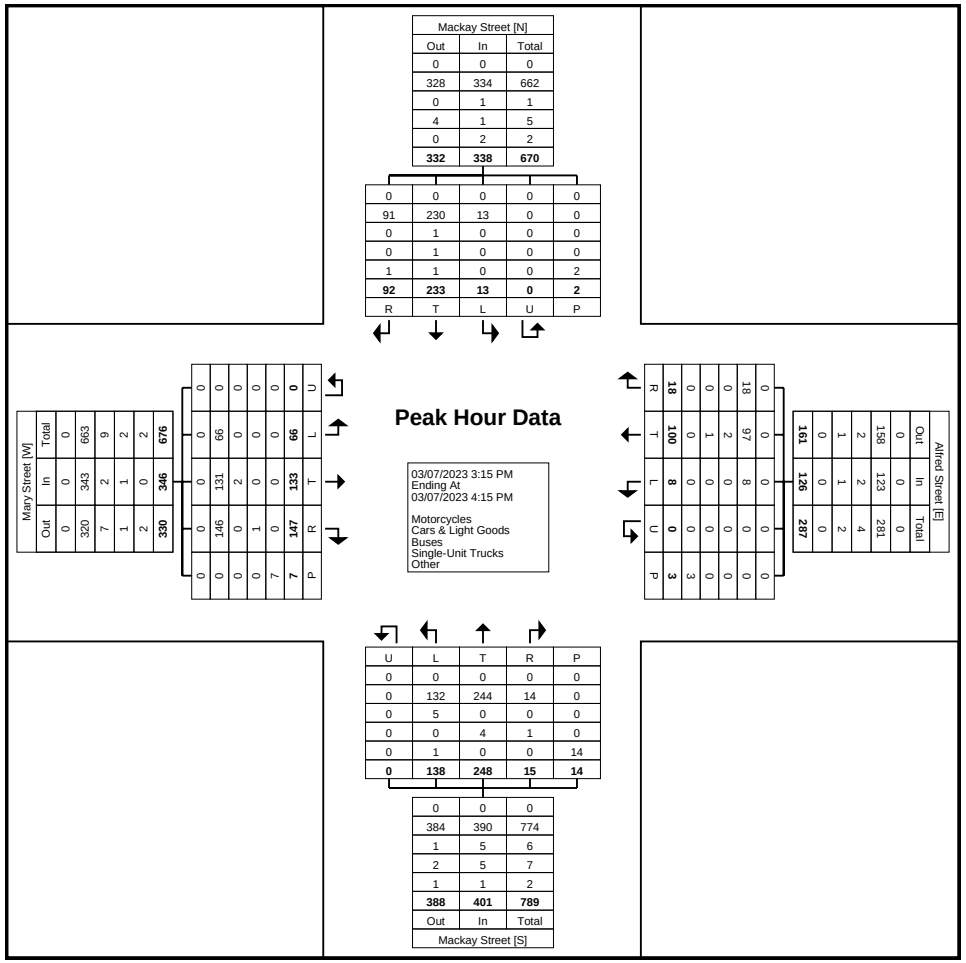
Turning Movement Peak Hour Data (3:15 PM)

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay 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
3:15 PM	8	35	34	0	2	77	2	20	0	0	0	22	26	56	5	0	1	87	3	50	19	0	0	72	258
3:30 PM	17	43	27	0	1	87	1	17	6	0	1	24	30	69	2	0	2	101	6	59	21	0	0	86	298
3:45 PM	25	28	49	0	2	102	2	35	5	0	0	42	36	56	3	0	10	95	2	54	26	0	0	82	321
4:00 PM	16	27	37	0	2	80	3	28	7	0	2	38	46	67	5	0	1	118	2	70	26	0	2	98	334
Total	66	133	147	0	7	346	8	100	18	0	3	126	138	248	15	0	14	401	13	233	92	0	2	338	1211
Approach %	19.1	38.4	42.5	0.0	-	-	6.3	79.4	14.3	0.0	-	-	34.4	61.8	3.7	0.0	-	-	3.8	68.9	27.2	0.0	-	-	-
Total %	5.5	11.0	12.1	0.0	-	28.6	0.7	8.3	1.5	0.0	-	10.4	11.4	20.5	1.2	0.0	-	33.1	1.1	19.2	7.6	0.0	-	27.9	-
PHF	0.660	0.773	0.750	0.000	-	0.848	0.667	0.714	0.643	0.000	-	0.750	0.750	0.899	0.750	0.000	-	0.850	0.542	0.832	0.885	0.000	-	0.862	0.906
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	66	131	146	0	-	343	8	97	18	0	-	123	132	244	14	0	-	390	13	230	91	0	-	334	1190
% Cars & Light Goods	100.0	98.5	99.3	-	-	99.1	100.0	97.0	100.0	-	-	97.6	95.7	98.4	93.3	-	-	97.3	100.0	98.7	98.9	-	-	98.8	98.3
Buses	0	2	0	0	-	2	0	2	0	0	-	2	5	0	0	0	-	5	0	1	0	0	-	1	10
% Buses	0.0	1.5	0.0	-	-	0.6	0.0	2.0	0.0	-	-	1.6	3.6	0.0	0.0	-	-	1.2	0.0	0.4	0.0	-	-	0.3	0.8
Single-Unit Trucks	0	0	1	0	-	1	0	1	0	0	-	1	0	4	1	0	-	5	0	1	0	0	-	1	8
% Single-Unit Trucks	0.0	0.0	0.7	-	-	0.3	0.0	1.0	0.0	-	-	0.8	0.0	1.6	6.7	-	-	1.2	0.0	0.4	0.0	-	-	0.3	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	1	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.4	1.1	-	-	0.6	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7	0.0	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	14	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	66.7	-	-	-	-	-	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: Mackay Street & Alfred Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (3:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay 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
7:00 AM	0	7	1	0	0	8	4	14	10	0	0	28	0	11	5	0	0	16	3	13	1	0	0	17	69
7:15 AM	0	4	0	0	0	4	0	11	10	0	0	21	0	10	5	0	0	15	6	9	0	0	0	15	55
7:30 AM	0	18	1	0	0	19	2	14	6	0	0	22	0	16	5	0	1	21	13	16	0	0	0	29	91
7:45 AM	0	33	1	0	1	34	2	21	7	0	0	30	1	38	6	0	1	45	18	24	0	0	0	42	151
Hourly Total	0	62	3	0	1	65	8	60	33	0	0	101	1	75	21	0	2	97	40	62	1	0	0	103	366
8:00 AM	0	24	0	0	0	24	4	20	16	0	0	40	0	13	8	0	0	21	23	21	0	0	0	44	129
8:15 AM	0	20	1	0	2	21	5	15	16	0	2	36	1	17	13	0	0	31	8	18	2	0	0	28	116
8:30 AM	1	12	0	0	0	13	6	11	10	0	0	27	1	28	13	0	0	42	15	21	1	0	0	37	119
8:45 AM	0	15	1	0	2	16	7	9	13	0	1	29	0	27	8	0	0	35	12	31	3	0	0	46	126
Hourly Total	1	71	2	0	4	74	22	55	55	0	3	132	2	85	42	0	0	129	58	91	6	0	0	155	490
9:00 AM	1	16	2	0	4	19	4	15	11	0	2	30	0	21	7	0	1	28	14	18	3	0	1	35	112
9:15 AM	0	28	0	0	0	28	2	24	19	0	2	45	1	36	10	0	0	47	16	23	3	0	0	42	162
9:30 AM	0	9	0	0	0	9	5	11	20	0	0	36	0	21	9	0	0	30	16	27	0	0	0	43	118
9:45 AM	0	13	3	0	2	16	7	16	9	0	1	32	1	24	6	0	0	31	18	15	1	0	0	34	113
Hourly Total	1	66	5	0	6	72	18	66	59	0	5	143	2	102	32	0	1	136	64	83	7	0	1	154	505
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	18	2	0	3	20	2	24	11	0	1	37	0	23	12	0	0	35	6	22	2	0	1	30	122
11:15 AM	0	10	0	0	0	10	9	30	7	0	5	46	1	27	7	0	0	35	12	15	1	0	3	28	119
11:30 AM	0	18	2	0	0	20	4	24	6	0	2	34	1	32	11	0	2	44	11	21	4	0	0	36	134
11:45 AM	1	20	3	0	0	24	3	32	15	0	1	50	1	26	14	0	0	41	11	19	0	0	0	30	145
Hourly Total	1	66	7	0	3	74	18	110	39	0	9	167	3	108	44	0	2	155	40	77	7	0	4	124	520
12:00 PM	0	24	0	0	1	24	2	26	19	0	0	47	0	42	17	0	0	59	15	30	3	0	0	48	178
12:15 PM	0	21	1	0	0	22	4	19	7	0	0	30	0	32	5	0	0	37	13	26	0	0	0	39	128
12:30 PM	0	15	1	0	0	16	5	21	12	0	2	38	0	30	8	0	1	38	20	38	1	0	0	59	151
12:45 PM	0	18	2	0	2	20	6	25	16	0	6	47	1	21	5	0	2	27	13	23	0	0	2	36	130
Hourly Total	0	78	4	0	3	82	17	91	54	0	8	162	1	125	35	0	3	161	61	117	4	0	2	182	587
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	21	0	0	1	21	8	32	28	0	1	68	3	36	6	0	0	45	13	30	1	0	0	44	178
3:15 PM	1	13	2	0	2	16	5	29	12	0	0	46	1	28	7	0	0	36	17	17	2	0	0	36	134
3:30 PM	0	24	2	0	0	26	10	36	11	0	0	57	1	36	15	0	0	52	15	22	2	0	0	39	174
3:45 PM	1	15	1	0	0	17	4	46	20	0	0	70	1	21	14	0	0	36	17	20	1	0	0	38	161
Hourly Total	2	73	5	0	3	80	27	143	71	0	1	241	6	121	42	0	0	169	62	89	6	0	0	157	647
4:00 PM	0	19	0	0	0	19	5	48	17	0	0	70	0	37	4	0	0	41	11	30	2	0	0	43	173
4:15 PM	0	20	0	0	2	20	5	25	19	0	1	49	0	21	5	0	0	26	13	31	2	0	0	46	141
4:30 PM	0	18	1	0	2	19	2	29	13	0	4	44	0	21	6	0	0	27	14	18	1	0	0	33	123

4:45 PM	2	22	1	0	1	25	3	28	14	0	0	45	0	29	6	0	0	35	10	27	1	0	0	38	143
Hourly Total	2	79	2	0	5	83	15	130	63	0	5	208	0	108	21	0	0	129	48	106	6	0	0	160	580
5:00 PM	1	17	3	0	1	21	2	24	13	0	1	39	0	24	8	0	0	32	16	16	1	0	0	33	125
5:15 PM	1	22	0	0	0	23	2	24	9	0	0	35	0	15	4	0	0	19	12	15	1	0	0	28	105
5:30 PM	0	12	0	0	1	12	1	19	4	0	1	24	0	14	6	0	0	20	9	15	2	0	0	26	82
5:45 PM	0	12	0	0	2	12	2	14	8	0	2	24	0	9	1	0	0	10	8	11	1	0	0	20	66
Hourly Total	2	63	3	0	4	68	7	81	34	0	4	122	0	62	19	0	0	81	45	57	5	0	0	107	378
Grand Total	9	558	31	0	29	598	132	736	408	0	35	1276	15	786	256	0	8	1057	418	682	42	0	7	1142	4073
Approach %	1.5	93.3	5.2	0.0	-	-	10.3	57.7	32.0	0.0	-	-	1.4	74.4	24.2	0.0	-	-	36.6	59.7	3.7	0.0	-	-	-
Total %	0.2	13.7	0.8	0.0	-	14.7	3.2	18.1	10.0	0.0	-	31.3	0.4	19.3	6.3	0.0	-	26.0	10.3	16.7	1.0	0.0	-	28.0	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	9	534	29	0	-	572	130	700	403	0	-	1233	14	760	247	0	-	1021	412	659	42	0	-	1113	3939
% Cars & Light Goods	100.0	95.7	93.5	-	-	95.7	98.5	95.1	98.8	-	-	96.6	93.3	96.7	96.5	-	-	96.6	98.6	96.6	100.0	-	-	97.5	96.7
Buses	0	18	1	0	-	19	0	26	2	0	-	28	1	8	2	0	-	11	2	6	0	0	-	8	66
% Buses	0.0	3.2	3.2	-	-	3.2	0.0	3.5	0.5	-	-	2.2	6.7	1.0	0.8	-	-	1.0	0.5	0.9	0.0	-	-	0.7	1.6
Single-Unit Trucks	0	6	1	0	-	7	1	8	2	0	-	11	0	14	6	0	-	20	4	15	0	0	-	19	57
% Single-Unit Trucks	0.0	1.1	3.2	-	-	1.2	0.8	1.1	0.5	-	-	0.9	0.0	1.8	2.3	-	-	1.9	1.0	2.2	0.0	-	-	1.7	1.4
Articulated Trucks	0	0	0	0	-	0	1	2	1	0	-	4	0	3	1	0	-	4	0	2	0	0	-	2	10
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.8	0.3	0.2	-	-	0.3	0.0	0.4	0.4	-	-	0.4	0.0	0.3	0.0	-	-	0.2	0.2
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	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	29	-	-	-	-	-	35	-	-	-	-	-	7	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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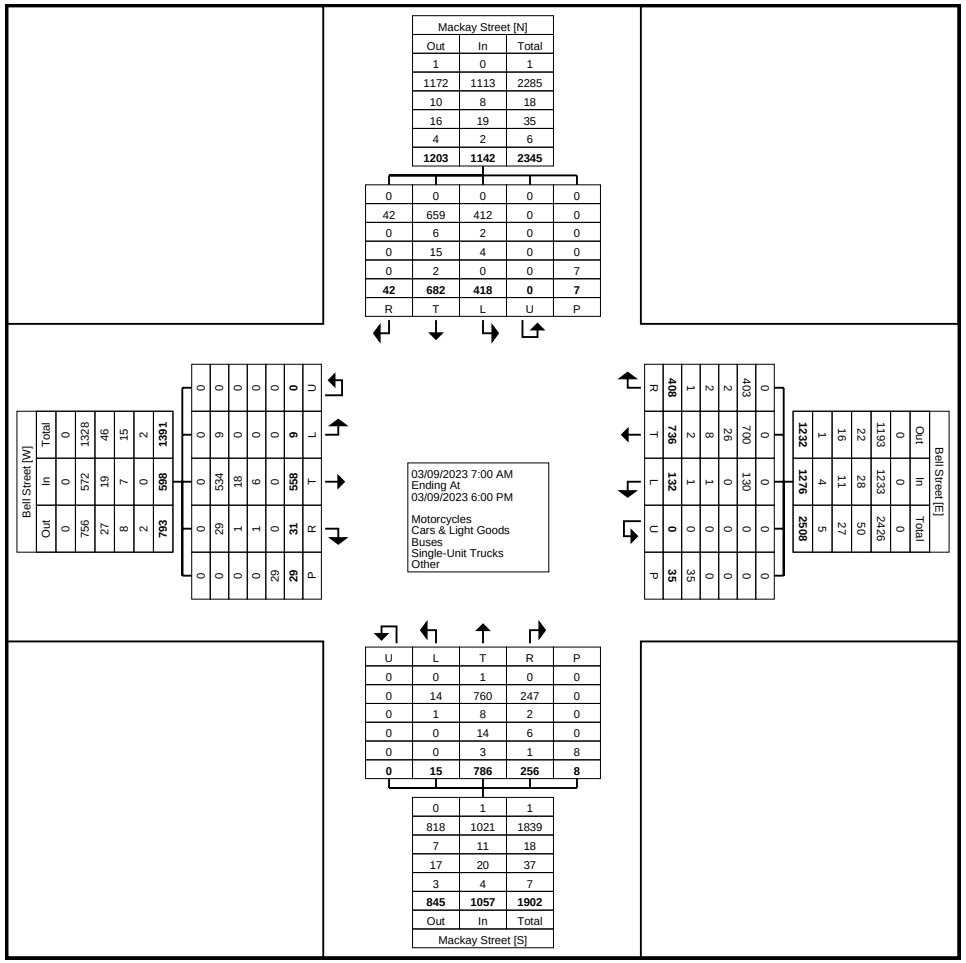
Count Name: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023
Page No: 3



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: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

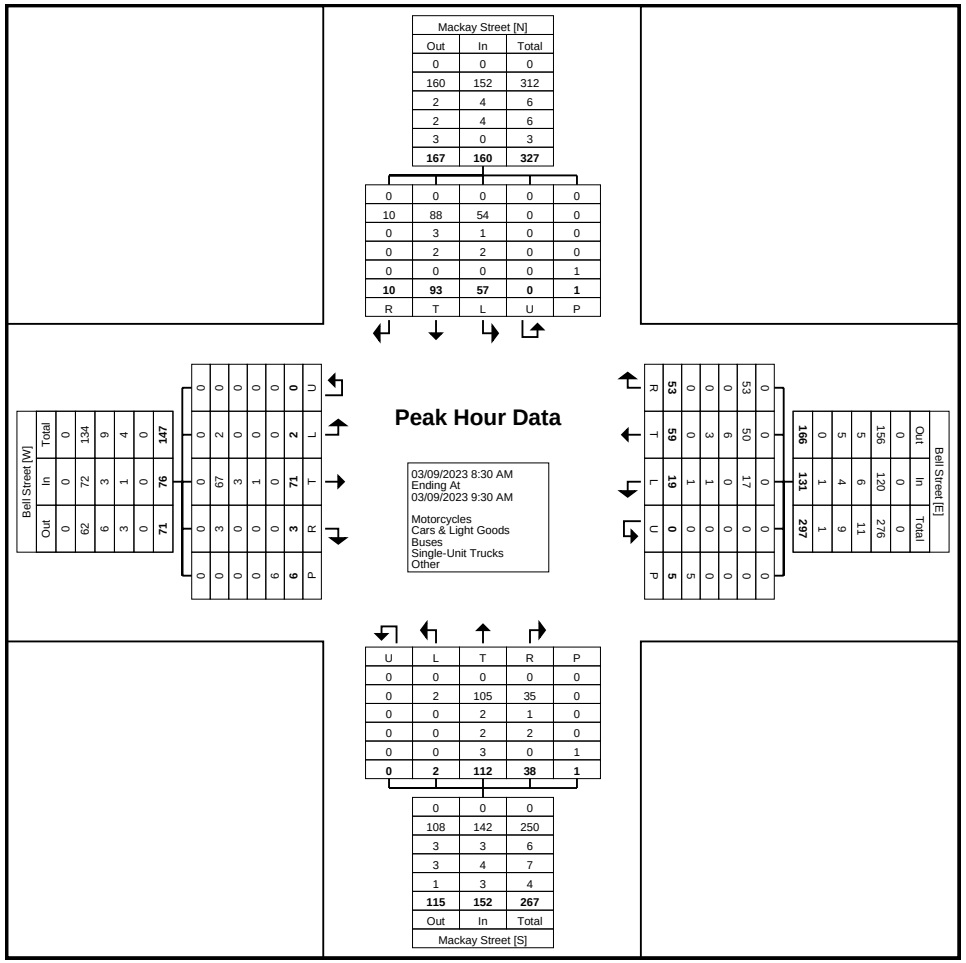
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay 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
8:30 AM	1	12	0	0	0	13	6	11	10	0	0	27	1	28	13	0	0	42	15	21	1	0	0	37	119
8:45 AM	0	15	1	0	2	16	7	9	13	0	1	29	0	27	8	0	0	35	12	31	3	0	0	46	126
9:00 AM	1	16	2	0	4	19	4	15	11	0	2	30	0	21	7	0	1	28	14	18	3	0	1	35	112
9:15 AM	0	28	0	0	0	28	2	24	19	0	2	45	1	36	10	0	0	47	16	23	3	0	0	42	162
Total	2	71	3	0	6	76	19	59	53	0	5	131	2	112	38	0	1	152	57	93	10	0	1	160	519
Approach %	2.6	93.4	3.9	0.0	-	-	14.5	45.0	40.5	0.0	-	-	1.3	73.7	25.0	0.0	-	-	35.6	58.1	6.3	0.0	-	-	-
Total %	0.4	13.7	0.6	0.0	-	14.6	3.7	11.4	10.2	0.0	-	25.2	0.4	21.6	7.3	0.0	-	29.3	11.0	17.9	1.9	0.0	-	30.8	-
PHF	0.500	0.634	0.375	0.000	-	0.679	0.679	0.615	0.697	0.000	-	0.728	0.500	0.778	0.731	0.000	-	0.809	0.891	0.750	0.833	0.000	-	0.870	0.801
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	2	67	3	0	-	72	17	50	53	0	-	120	2	105	35	0	-	142	54	88	10	0	-	152	486
% Cars & Light Goods	100.0	94.4	100.0	-	-	94.7	89.5	84.7	100.0	-	-	91.6	100.0	93.8	92.1	-	-	93.4	94.7	94.6	100.0	-	-	95.0	93.6
Buses	0	3	0	0	-	3	0	6	0	0	-	6	0	2	1	0	-	3	1	3	0	0	-	4	16
% Buses	0.0	4.2	0.0	-	-	3.9	0.0	10.2	0.0	-	-	4.6	0.0	1.8	2.6	-	-	2.0	1.8	3.2	0.0	-	-	2.5	3.1
Single-Unit Trucks	0	1	0	0	-	1	1	3	0	0	-	4	0	2	2	0	-	4	2	2	0	0	-	4	13
% Single-Unit Trucks	0.0	1.4	0.0	-	-	1.3	5.3	5.1	0.0	-	-	3.1	0.0	1.8	5.3	-	-	2.6	3.5	2.2	0.0	-	-	2.5	2.5
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	5.3	0.0	0.0	-	-	0.8	0.0	2.7	0.0	-	-	2.0	0.0	0.0	0.0	-	-	0.0	0.8
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	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023



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: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

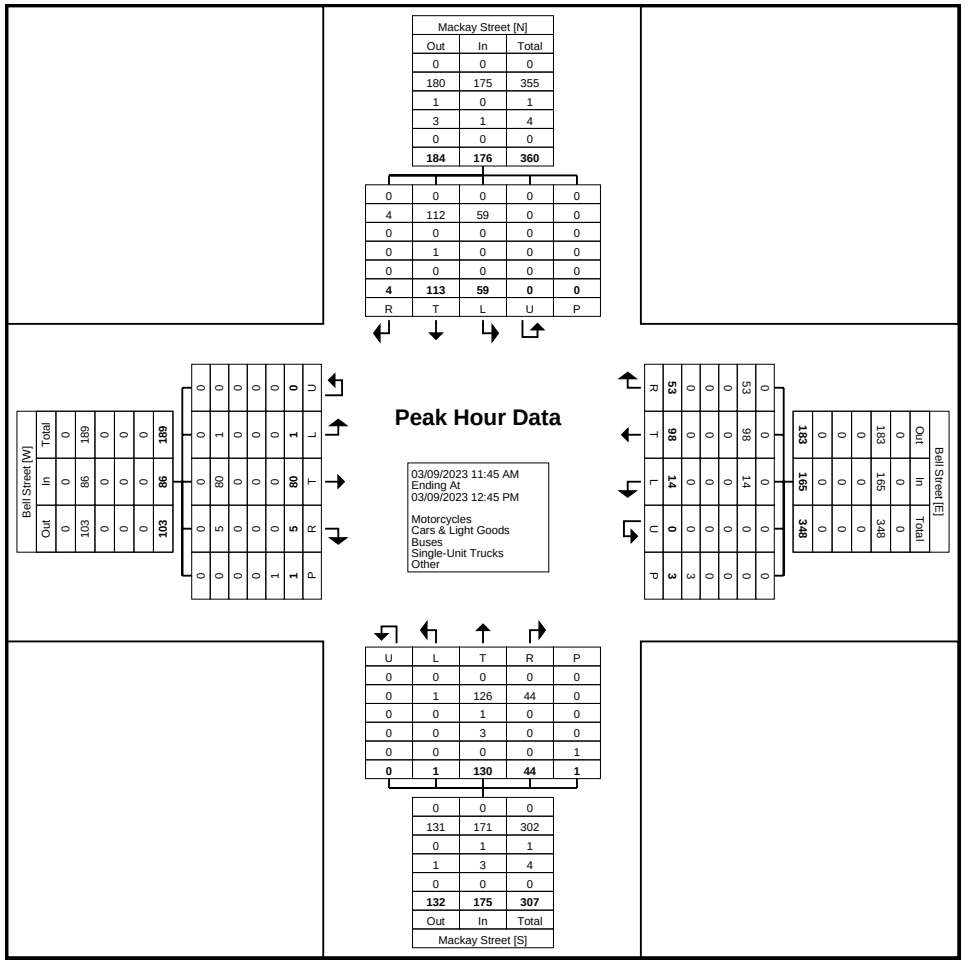
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay 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
11:45 AM	1	20	3	0	0	24	3	32	15	0	1	50	1	26	14	0	0	41	11	19	0	0	0	30	145
12:00 PM	0	24	0	0	1	24	2	26	19	0	0	47	0	42	17	0	0	59	15	30	3	0	0	48	178
12:15 PM	0	21	1	0	0	22	4	19	7	0	0	30	0	32	5	0	0	37	13	26	0	0	0	39	128
12:30 PM	0	15	1	0	0	16	5	21	12	0	2	38	0	30	8	0	1	38	20	38	1	0	0	59	151
Total	1	80	5	0	1	86	14	98	53	0	3	165	1	130	44	0	1	175	59	113	4	0	0	176	602
Approach %	1.2	93.0	5.8	0.0	-	-	8.5	59.4	32.1	0.0	-	-	0.6	74.3	25.1	0.0	-	-	33.5	64.2	2.3	0.0	-	-	-
Total %	0.2	13.3	0.8	0.0	-	14.3	2.3	16.3	8.8	0.0	-	27.4	0.2	21.6	7.3	0.0	-	29.1	9.8	18.8	0.7	0.0	-	29.2	-
PHF	0.250	0.833	0.417	0.000	-	0.896	0.700	0.766	0.697	0.000	-	0.825	0.250	0.774	0.647	0.000	-	0.742	0.738	0.743	0.333	0.000	-	0.746	0.846
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	1	80	5	0	-	86	14	98	53	0	-	165	1	126	44	0	-	171	59	112	4	0	-	175	597
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	96.9	100.0	-	-	97.7	100.0	99.1	100.0	-	-	99.4	99.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% 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	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	3	0	0	-	3	0	1	0	0	-	1	4
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.3	0.0	-	-	1.7	0.0	0.9	0.0	-	-	0.6	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% 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: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023

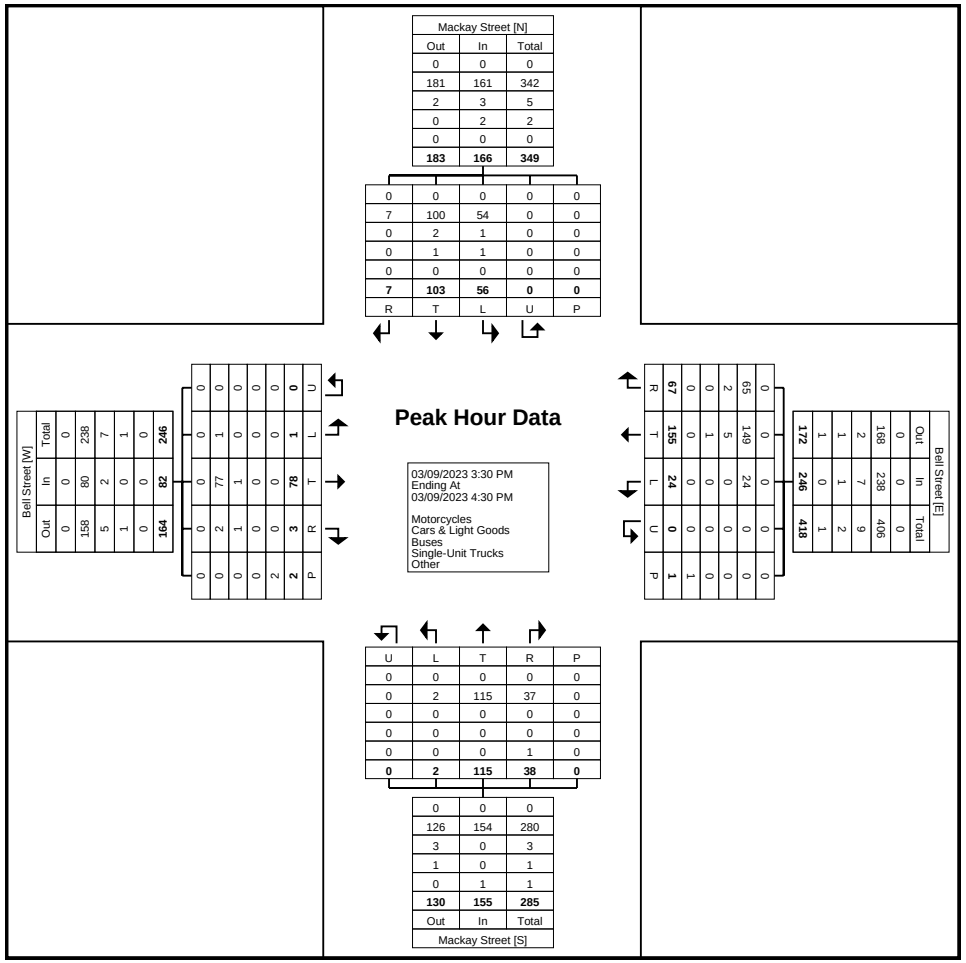
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay 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
3:30 PM	0	24	2	0	0	26	10	36	11	0	0	57	1	36	15	0	0	52	15	22	2	0	0	39	174
3:45 PM	1	15	1	0	0	17	4	46	20	0	0	70	1	21	14	0	0	36	17	20	1	0	0	38	161
4:00 PM	0	19	0	0	0	19	5	48	17	0	0	70	0	37	4	0	0	41	11	30	2	0	0	43	173
4:15 PM	0	20	0	0	2	20	5	25	19	0	1	49	0	21	5	0	0	26	13	31	2	0	0	46	141
Total	1	78	3	0	2	82	24	155	67	0	1	246	2	115	38	0	0	155	56	103	7	0	0	166	649
Approach %	1.2	95.1	3.7	0.0	-	-	9.8	63.0	27.2	0.0	-	-	1.3	74.2	24.5	0.0	-	-	33.7	62.0	4.2	0.0	-	-	-
Total %	0.2	12.0	0.5	0.0	-	12.6	3.7	23.9	10.3	0.0	-	37.9	0.3	17.7	5.9	0.0	-	23.9	8.6	15.9	1.1	0.0	-	25.6	-
PHF	0.250	0.813	0.375	0.000	-	0.788	0.600	0.807	0.838	0.000	-	0.879	0.500	0.777	0.633	0.000	-	0.745	0.824	0.831	0.875	0.000	-	0.902	0.932
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	1	77	2	0	-	80	24	149	65	0	-	238	2	115	37	0	-	154	54	100	7	0	-	161	633
% Cars & Light Goods	100.0	98.7	66.7	-	-	97.6	100.0	96.1	97.0	-	-	96.7	100.0	100.0	97.4	-	-	99.4	96.4	97.1	100.0	-	-	97.0	97.5
Buses	0	1	1	0	-	2	0	5	2	0	-	7	0	0	0	0	-	0	1	2	0	0	-	3	12
% Buses	0.0	1.3	33.3	-	-	2.4	0.0	3.2	3.0	-	-	2.8	0.0	0.0	0.0	-	-	0.0	1.8	1.9	0.0	-	-	1.8	1.8
Single-Unit Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	3
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	1.8	1.0	0.0	-	-	1.2	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.6	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.2
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% 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: Mackay Street & Bell Street
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Lake Street
Nelson Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

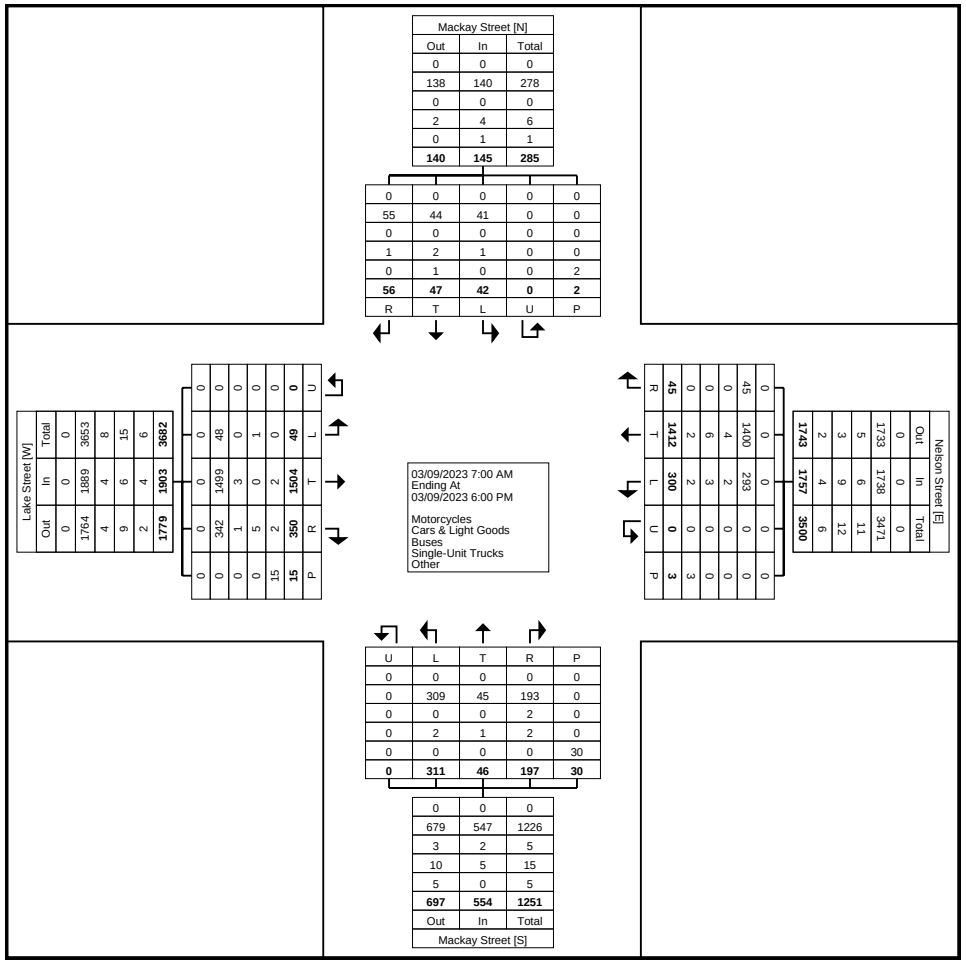
Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	4	1	0	1	6	1	10	0	0	0	11	2	0	0	0	0	2	0	2	1	0	0	3	22
7:15 AM	1	14	2	0	0	17	6	19	0	0	0	25	4	1	0	0	0	5	1	1	0	0	0	2	49
7:30 AM	0	20	4	0	0	24	1	29	1	0	0	31	7	2	1	0	2	10	0	0	0	0	0	0	65
7:45 AM	2	25	5	0	0	32	3	33	0	0	0	36	12	0	4	0	0	16	0	2	1	0	0	3	87
Hourly Total	4	63	12	0	1	79	11	91	1	0	0	103	25	3	5	0	2	33	1	5	2	0	0	8	223
8:00 AM	1	28	14	0	0	43	10	18	3	0	0	31	14	1	1	0	0	16	0	0	0	0	0	0	90
8:15 AM	1	18	7	0	1	26	6	43	1	0	0	50	15	2	3	0	0	20	1	1	0	0	0	2	98
8:30 AM	2	19	4	0	0	25	4	35	1	0	0	40	16	0	8	0	2	24	1	1	2	0	0	4	93
8:45 AM	3	30	6	0	0	39	3	42	2	0	0	47	9	1	6	0	2	16	1	0	1	0	0	2	104
Hourly Total	7	95	31	0	1	133	23	138	7	0	0	168	54	4	18	0	4	76	3	2	3	0	0	8	385
9:00 AM	2	30	15	0	0	47	1	40	3	0	0	44	8	2	4	0	0	14	3	1	1	0	0	5	110
9:15 AM	3	29	8	0	1	40	7	41	0	0	0	48	5	4	5	0	0	14	1	0	3	0	0	4	106
9:30 AM	1	31	8	0	0	40	5	42	1	0	1	48	12	1	5	0	0	18	0	3	3	0	0	6	112
9:45 AM	4	40	12	0	0	56	4	41	2	0	0	47	16	2	10	0	2	28	1	2	3	0	0	6	137
Hourly Total	10	130	43	0	1	183	17	164	6	0	1	187	41	9	24	0	2	74	5	6	10	0	0	21	465
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	2	63	9	0	0	74	9	51	1	0	0	61	12	1	6	0	0	19	1	2	2	0	0	5	159
11:15 AM	0	52	17	0	0	69	11	40	1	0	0	52	17	5	6	0	0	28	1	2	2	0	0	5	154
11:30 AM	2	57	14	0	0	73	14	48	3	0	0	65	11	1	8	0	0	20	5	0	1	0	0	6	164
11:45 AM	0	65	12	0	0	77	13	56	6	0	0	75	7	4	11	0	0	22	2	4	4	0	1	10	184
Hourly Total	4	237	52	0	0	293	47	195	11	0	0	253	47	11	31	0	0	89	9	8	9	0	1	26	661
12:00 PM	3	83	21	0	0	107	12	52	4	0	0	68	13	0	11	0	0	24	3	2	5	0	0	10	209
12:15 PM	2	55	12	0	0	69	18	61	3	0	0	82	13	0	2	0	0	15	0	0	4	0	0	4	170
12:30 PM	4	57	14	0	0	75	10	70	1	0	0	81	18	3	11	0	1	32	2	2	0	0	0	4	192
12:45 PM	3	53	13	0	0	69	10	58	4	0	0	72	8	4	9	0	0	21	0	3	4	0	0	7	169
Hourly Total	12	248	60	0	0	320	50	241	12	0	0	303	52	7	33	0	1	92	5	7	13	0	0	25	740
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	2	53	10	0	3	65	12	50	2	0	2	64	6	1	13	0	1	20	3	3	4	0	0	10	159
3:15 PM	1	61	11	0	0	73	9	49	1	0	0	59	7	2	8	0	4	17	0	1	0	0	0	1	150
3:30 PM	2	62	18	0	4	82	12	44	0	0	0	56	10	2	8	0	5	20	2	1	1	0	0	4	162
3:45 PM	0	64	16	0	0	80	9	55	1	0	0	65	16	4	10	0	1	30	2	3	2	0	0	7	182
Hourly Total	5	240	55	0	7	300	42	198	4	0	2	244	39	9	39	0	11	87	7	8	7	0	0	22	653
4:00 PM	1	73	28	0	1	102	19	49	1	0	0	69	9	0	8	0	1	17	3	2	5	0	0	10	198
4:15 PM	2	57	12	0	0	71	13	41	1	0	0	55	3	2	9	0	0	14	2	2	4	0	0	8	148
4:30 PM	0	72	20	0	1	92	19	52	1	0	0	72	7	1	7	0	4	15	1	0	0	0	1	1	180

4:45 PM	1	75	4	0	0	80	9	46	1	0	0	56	14	0	7	0	0	21	1	1	0	0	0	2	159
Hourly Total	4	277	64	0	2	345	60	188	4	0	0	252	33	3	31	0	5	67	7	5	9	0	1	21	685
5:00 PM	1	62	13	0	0	76	18	59	0	0	0	77	5	0	5	0	2	10	2	2	1	0	0	5	168
5:15 PM	2	52	6	0	1	60	9	50	0	0	0	59	4	0	7	0	1	11	1	3	1	0	0	5	135
5:30 PM	0	59	5	0	2	64	14	42	0	0	0	56	8	0	3	0	2	11	2	0	0	0	0	2	133
5:45 PM	0	41	9	0	0	50	9	46	0	0	0	55	3	0	1	0	0	4	0	1	1	0	0	2	111
Hourly Total	3	214	33	0	3	250	50	197	0	0	0	247	20	0	16	0	5	36	5	6	3	0	0	14	547
Grand Total	49	1504	350	0	15	1903	300	1412	45	0	3	1757	311	46	197	0	30	554	42	47	56	0	2	145	4359
Approach %	2.6	79.0	18.4	0.0	-	-	17.1	80.4	2.6	0.0	-	-	56.1	8.3	35.6	0.0	-	-	29.0	32.4	38.6	0.0	-	-	-
Total %	1.1	34.5	8.0	0.0	-	43.7	6.9	32.4	1.0	0.0	-	40.3	7.1	1.1	4.5	0.0	-	12.7	1.0	1.1	1.3	0.0	-	3.3	-
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	48	1499	342	0	-	1889	293	1400	45	0	-	1738	309	45	193	0	-	547	41	44	55	0	-	140	4314
% Cars & Light Goods	98.0	99.7	97.7	-	-	99.3	97.7	99.2	100.0	-	-	98.9	99.4	97.8	98.0	-	-	98.7	97.6	93.6	98.2	-	-	96.6	99.0
Buses	0	3	1	0	-	4	2	4	0	0	-	6	0	0	2	0	-	2	0	0	0	0	-	0	12
% Buses	0.0	0.2	0.3	-	-	0.2	0.7	0.3	0.0	-	-	0.3	0.0	0.0	1.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.3
Single-Unit Trucks	1	0	5	0	-	6	3	6	0	0	-	9	2	1	2	0	-	5	1	2	1	0	-	4	24
% Single-Unit Trucks	2.0	0.0	1.4	-	-	0.3	1.0	0.4	0.0	-	-	0.5	0.6	2.2	1.0	-	-	0.9	2.4	4.3	1.8	-	-	2.8	0.6
Articulated Trucks	0	1	0	0	-	1	2	1	0	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	5
% Articulated Trucks	0.0	0.1	0.0	-	-	0.1	0.7	0.1	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	2.1	0.0	-	-	0.7	0.1
Bicycles on Road	0	1	2	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	4
% Bicycles on Road	0.0	0.1	0.6	-	-	0.2	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	3.3	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	-	3	-	-	-	-	-	29	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	96.7	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Lake Street
Nelson Street
Site Code: 220694
Start Date: 03/09/2023


Lake Street [W]
Out In Total
0 0 0
1764 1889 3653
4 4 8
9 9 15
2 4 9
1779 1903 3682
0 0 0
342 1499 48
1 3 0
5 0 1
2 2 0
350 1504 49
15 0 0
0 0 0
0 0 0
0

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Nelson Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (9:00 AM)

Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay 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
9:00 AM	2	30	15	0	0	47	1	40	3	0	0	44	8	2	4	0	0	14	3	1	1	0	0	5	110
9:15 AM	3	29	8	0	1	40	7	41	0	0	0	48	5	4	5	0	0	14	1	0	3	0	0	4	106
9:30 AM	1	31	8	0	0	40	5	42	1	0	1	48	12	1	5	0	0	18	0	3	3	0	0	6	112
9:45 AM	4	40	12	0	0	56	4	41	2	0	0	47	16	2	10	0	2	28	1	2	3	0	0	6	137
Total	10	130	43	0	1	183	17	164	6	0	1	187	41	9	24	0	2	74	5	6	10	0	0	21	465
Approach %	5.5	71.0	23.5	0.0	-	-	9.1	87.7	3.2	0.0	-	-	55.4	12.2	32.4	0.0	-	-	23.8	28.6	47.6	0.0	-	-	-
Total %	2.2	28.0	9.2	0.0	-	39.4	3.7	35.3	1.3	0.0	-	40.2	8.8	1.9	5.2	0.0	-	15.9	1.1	1.3	2.2	0.0	-	4.5	-
PHF	0.625	0.813	0.717	0.000	-	0.817	0.607	0.976	0.500	0.000	-	0.974	0.641	0.563	0.600	0.000	-	0.661	0.417	0.500	0.833	0.000	-	0.875	0.849
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	10	130	43	0	-	183	17	161	6	0	-	184	39	8	24	0	-	71	5	5	10	0	-	20	458
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	100.0	98.2	100.0	-	-	98.4	95.1	88.9	100.0	-	-	95.9	100.0	83.3	100.0	-	-	95.2	98.5
Buses	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	1.2	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	0	0	0	0	-	0	0	1	0	0	-	1	2	1	0	0	-	3	0	1	0	0	-	1	5
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.0	-	-	0.5	4.9	11.1	0.0	-	-	4.1	0.0	16.7	0.0	-	-	4.8	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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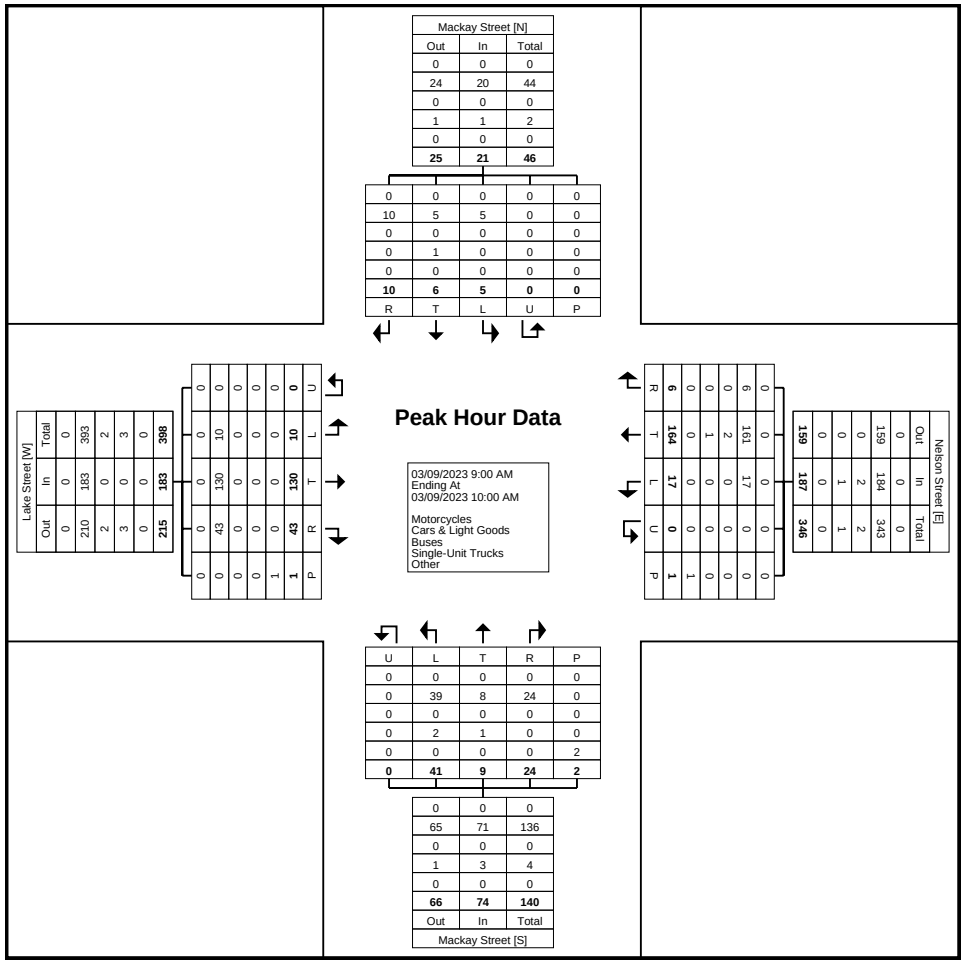

Turning Movement Peak Hour Data Plot (9:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Lake Street
Nelson Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay 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
11:45 AM	0	65	12	0	0	77	13	56	6	0	0	75	7	4	11	0	0	22	2	4	4	0	1	10	184
12:00 PM	3	83	21	0	0	107	12	52	4	0	0	68	13	0	11	0	0	24	3	2	5	0	0	10	209
12:15 PM	2	55	12	0	0	69	18	61	3	0	0	82	13	0	2	0	0	15	0	0	4	0	0	4	170
12:30 PM	4	57	14	0	0	75	10	70	1	0	0	81	18	3	11	0	1	32	2	2	0	0	0	4	192
Total	9	260	59	0	0	328	53	239	14	0	0	306	51	7	35	0	1	93	7	8	13	0	1	28	755
Approach %	2.7	79.3	18.0	0.0	-	-	17.3	78.1	4.6	0.0	-	-	54.8	7.5	37.6	0.0	-	-	25.0	28.6	46.4	0.0	-	-	-
Total %	1.2	34.4	7.8	0.0	-	43.4	7.0	31.7	1.9	0.0	-	40.5	6.8	0.9	4.6	0.0	-	12.3	0.9	1.1	1.7	0.0	-	3.7	-
PHF	0.563	0.783	0.702	0.000	-	0.766	0.736	0.854	0.583	0.000	-	0.933	0.708	0.438	0.795	0.000	-	0.727	0.583	0.500	0.650	0.000	-	0.700	0.903
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	9	260	58	0	-	327	53	238	14	0	-	305	51	7	35	0	-	93	7	8	13	0	-	28	753
% Cars & Light Goods	100.0	100.0	98.3	-	-	99.7	100.0	99.6	100.0	-	-	99.7	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	99.7
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.0	1.7	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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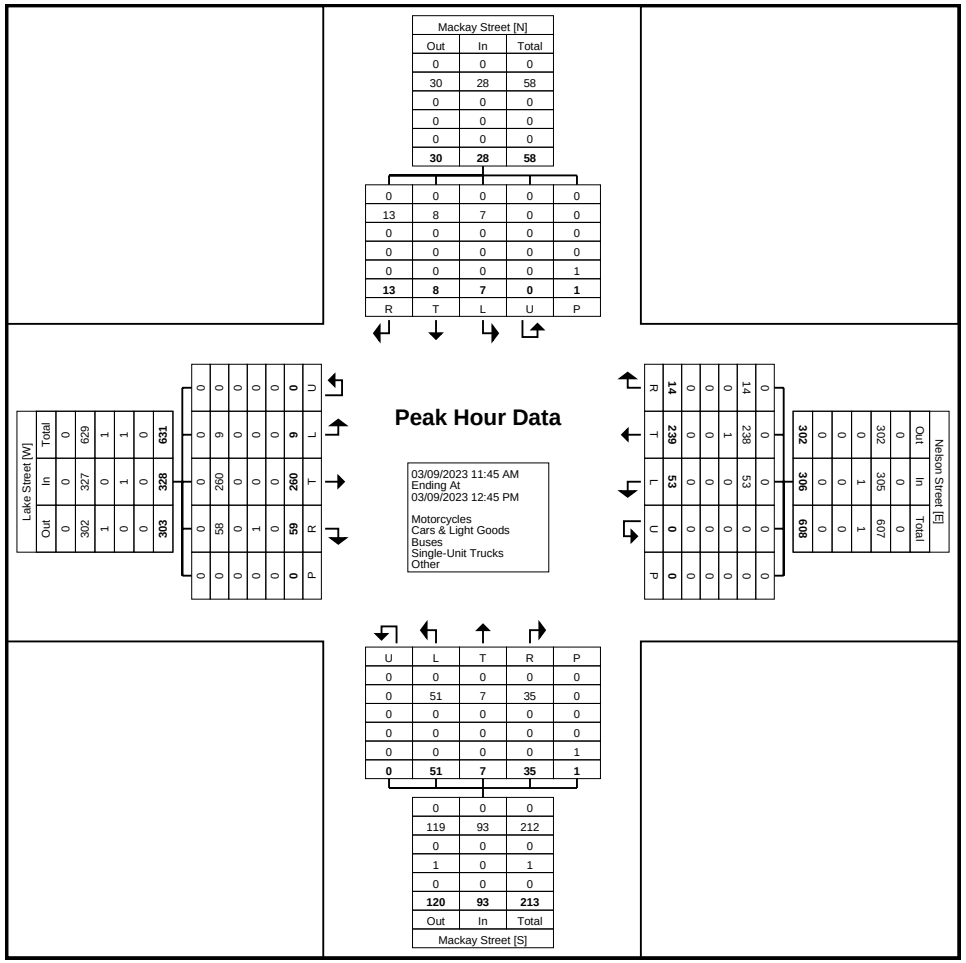

Turning Movement Peak Hour Data Plot (11:45 AM)

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5A-150 Pinebush Rd

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Count Name: Mackay Street & Lake Street
Nelson Street
Site Code: 220694
Start Date: 03/09/2023

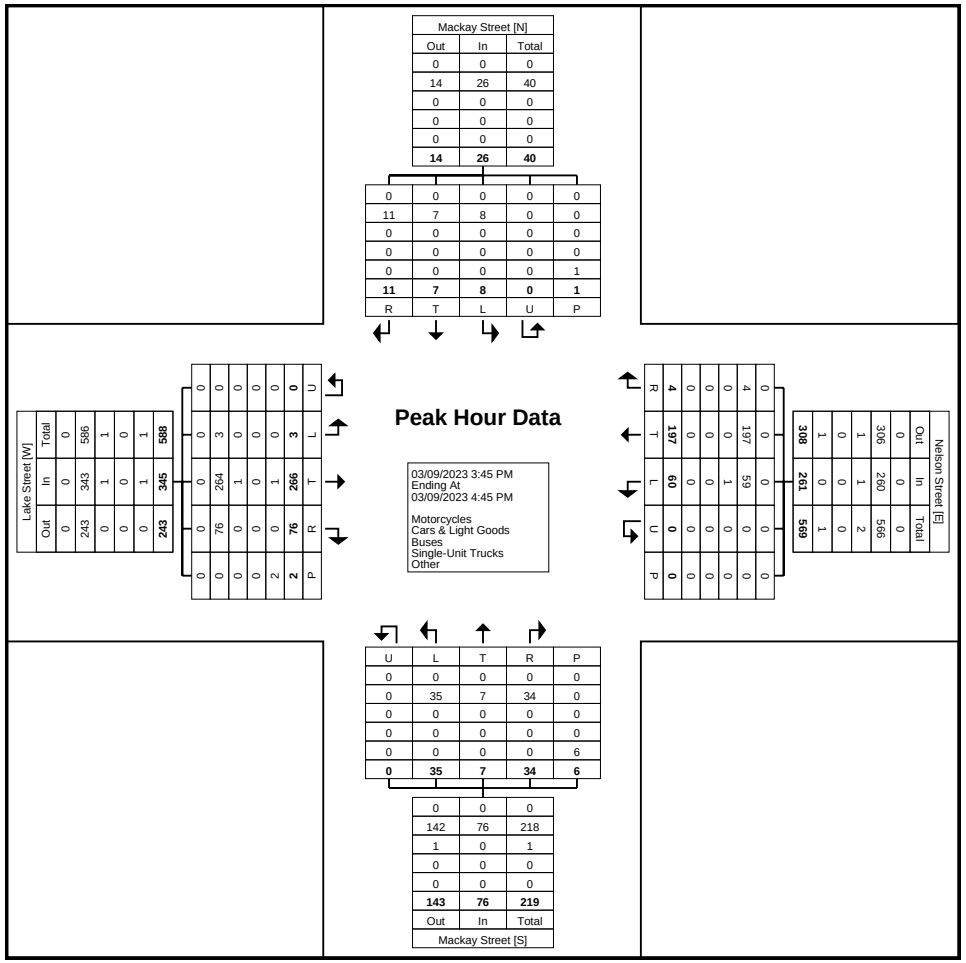
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay 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
3:45 PM	0	64	16	0	0	80	9	55	1	0	0	65	16	4	10	0	1	30	2	3	2	0	0	7	182
4:00 PM	1	73	28	0	1	102	19	49	1	0	0	69	9	0	8	0	1	17	3	2	5	0	0	10	198
4:15 PM	2	57	12	0	0	71	13	41	1	0	0	55	3	2	9	0	0	14	2	2	4	0	0	8	148
4:30 PM	0	72	20	0	1	92	19	52	1	0	0	72	7	1	7	0	4	15	1	0	0	0	1	1	180
Total	3	266	76	0	2	345	60	197	4	0	0	261	35	7	34	0	6	76	8	7	11	0	1	26	708
Approach %	0.9	77.1	22.0	0.0	-	-	23.0	75.5	1.5	0.0	-	-	46.1	9.2	44.7	0.0	-	-	30.8	26.9	42.3	0.0	-	-	-
Total %	0.4	37.6	10.7	0.0	-	48.7	8.5	27.8	0.6	0.0	-	36.9	4.9	1.0	4.8	0.0	-	10.7	1.1	1.0	1.6	0.0	-	3.7	-
PHF	0.375	0.911	0.679	0.000	-	0.846	0.789	0.895	1.000	0.000	-	0.906	0.547	0.438	0.850	0.000	-	0.633	0.667	0.583	0.550	0.000	-	0.650	0.894
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	264	76	0	-	343	59	197	4	0	-	260	35	7	34	0	-	76	8	7	11	0	-	26	705
% Cars & Light Goods	100.0	99.2	100.0	-	-	99.4	98.3	100.0	100.0	-	-	99.6	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	99.6
Buses	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.0	0.4	0.0	-	-	0.3	1.7	0.0	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
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	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	1	-	-
% 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: Mackay Street & Lake Street
Nelson Street
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

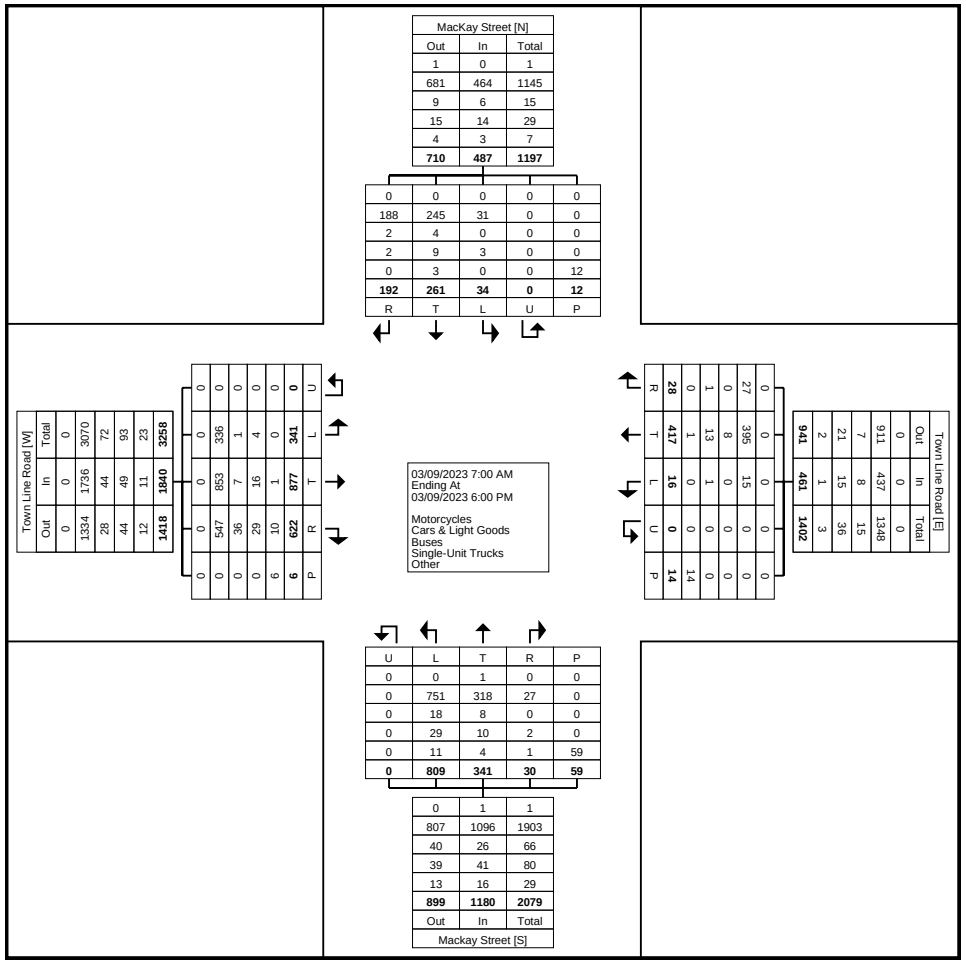
Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						MacKay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	6	14	13	0	0	33	0	16	0	0	0	16	19	7	2	0	0	28	1	10	10	0	1	21	98
7:15 AM	9	17	18	0	0	44	0	5	0	0	0	5	33	11	0	0	4	44	0	2	3	0	0	5	98
7:30 AM	6	19	12	0	0	37	0	9	2	0	0	11	32	12	1	0	0	45	2	2	2	0	0	6	99
7:45 AM	10	42	17	0	2	69	1	18	1	0	0	20	28	35	0	0	0	63	2	6	6	0	0	14	166
Hourly Total	31	92	60	0	2	183	1	48	3	0	0	52	112	65	3	0	4	180	5	20	21	0	1	46	461
8:00 AM	9	44	20	0	0	73	1	12	1	0	0	14	41	7	0	0	0	48	4	6	10	0	1	20	155
8:15 AM	14	33	17	0	0	64	0	9	2	0	2	11	27	14	0	0	6	41	1	5	5	0	1	11	127
8:30 AM	9	25	19	0	2	53	0	13	4	0	0	17	17	11	2	0	0	30	1	9	3	0	0	13	113
8:45 AM	15	27	14	0	1	56	0	17	1	0	0	18	32	10	0	0	0	42	1	7	5	0	2	13	129
Hourly Total	47	129	70	0	3	246	1	51	8	0	2	60	117	42	2	0	6	161	7	27	23	0	4	57	524
9:00 AM	10	37	11	0	0	58	0	10	1	0	0	11	14	11	2	0	0	27	1	3	5	0	0	9	105
9:15 AM	12	31	18	0	0	61	2	14	0	0	1	16	18	10	2	0	1	30	2	8	3	0	0	13	120
9:30 AM	15	20	14	0	0	49	0	17	0	0	1	17	22	9	0	0	3	31	0	5	4	0	1	9	106
9:45 AM	12	25	12	0	0	49	0	9	0	0	0	9	20	14	2	0	0	36	1	4	3	0	0	8	102
Hourly Total	49	113	55	0	0	217	2	50	1	0	2	53	74	44	6	0	4	124	4	20	15	0	1	39	433
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	19	26	14	0	0	59	0	6	0	0	0	6	17	7	0	0	0	24	0	4	6	0	1	10	99
11:15 AM	10	22	10	0	0	42	1	9	2	0	3	12	21	12	3	0	4	36	1	8	4	0	0	13	103
11:30 AM	8	24	18	0	0	50	2	14	1	0	0	17	22	5	0	0	1	27	2	8	3	0	0	13	107
11:45 AM	14	18	23	0	0	55	1	16	0	0	0	17	21	11	1	0	5	33	3	7	5	0	0	15	120
Hourly Total	51	90	65	0	0	206	4	45	3	0	3	52	81	35	4	0	10	120	6	27	18	0	1	51	429
12:00 PM	11	25	20	0	0	56	1	9	1	0	0	11	23	9	1	0	2	33	1	12	9	0	0	22	122
12:15 PM	8	24	13	0	0	45	1	14	1	0	0	16	18	13	0	0	11	31	0	8	4	0	0	12	104
12:30 PM	10	17	26	0	0	53	2	7	0	0	0	9	26	8	0	0	8	34	2	13	4	0	0	19	115
12:45 PM	10	19	18	0	0	47	0	17	2	0	0	19	23	10	0	0	1	33	0	4	3	0	1	7	106
Hourly Total	39	85	77	0	0	201	4	47	4	0	0	55	90	40	1	0	22	131	3	37	20	0	1	60	447
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	9	23	20	0	0	52	1	13	0	0	0	14	31	15	0	0	0	46	0	11	10	0	0	21	133
3:15 PM	10	28	20	0	0	58	1	8	0	0	0	9	27	9	2	0	0	38	1	7	7	0	0	15	120
3:30 PM	25	29	25	0	0	79	0	11	1	0	0	12	34	22	4	0	1	60	0	13	8	0	0	21	172
3:45 PM	17	39	30	0	0	86	0	21	2	0	0	23	26	5	2	0	1	33	2	12	12	0	2	26	168
Hourly Total	61	119	95	0	0	275	2	53	3	0	0	58	118	51	8	0	2	177	3	43	37	0	2	83	593
4:00 PM	8	35	26	0	1	69	0	25	4	0	2	29	32	15	1	0	8	48	0	15	15	0	0	30	176
4:15 PM	7	33	27	0	0	67	1	15	0	0	0	16	28	11	3	0	0	42	0	17	16	0	1	33	158
4:30 PM	7	35	36	0	0	78	1	23	0	0	0	24	34	5	1	0	2	40	1	10	4	0	0	15	157

4:45 PM	11	29	28	0	0	68	0	15	0	0	4	15	28	13	1	0	0	42	1	13	3	0	0	17	142
Hourly Total	33	132	117	0	1	282	2	78	4	0	6	84	122	44	6	0	10	172	2	55	38	0	1	95	633
5:00 PM	9	29	29	0	0	67	0	12	2	0	0	14	35	9	0	0	0	44	1	9	8	0	0	18	143
5:15 PM	6	36	17	0	0	59	0	11	0	0	0	11	16	5	0	0	0	21	0	8	4	0	1	12	103
5:30 PM	9	28	14	0	0	51	0	11	0	0	1	11	24	2	0	0	1	26	2	5	5	0	0	12	100
5:45 PM	6	24	23	0	0	53	0	11	0	0	0	11	20	4	0	0	0	24	1	10	3	0	0	14	102
Hourly Total	30	117	83	0	0	230	0	45	2	0	1	47	95	20	0	0	1	115	4	32	20	0	1	56	448
Grand Total	341	877	622	0	6	1840	16	417	28	0	14	461	809	341	30	0	59	1180	34	261	192	0	12	487	3968
Approach %	18.5	47.7	33.8	0.0	-	-	3.5	90.5	6.1	0.0	-	-	68.6	28.9	2.5	0.0	-	-	7.0	53.6	39.4	0.0	-	-	-
Total %	8.6	22.1	15.7	0.0	-	46.4	0.4	10.5	0.7	0.0	-	11.6	20.4	8.6	0.8	0.0	-	29.7	0.9	6.6	4.8	0.0	-	12.3	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	336	853	547	0	-	1736	15	395	27	0	-	437	751	318	27	0	-	1096	31	245	188	0	-	464	3733
% Cars & Light Goods	98.5	97.3	87.9	-	-	94.3	93.8	94.7	96.4	-	-	94.8	92.8	93.3	90.0	-	-	92.9	91.2	93.9	97.9	-	-	95.3	94.1
Buses	1	7	36	0	-	44	0	8	0	0	-	8	18	8	0	0	-	26	0	4	2	0	-	6	84
% Buses	0.3	0.8	5.8	-	-	2.4	0.0	1.9	0.0	-	-	1.7	2.2	2.3	0.0	-	-	2.2	0.0	1.5	1.0	-	-	1.2	2.1
Single-Unit Trucks	4	16	29	0	-	49	1	13	1	0	-	15	29	10	2	0	-	41	3	9	2	0	-	14	119
% Single-Unit Trucks	1.2	1.8	4.7	-	-	2.7	6.3	3.1	3.6	-	-	3.3	3.6	2.9	6.7	-	-	3.5	8.8	3.4	1.0	-	-	2.9	3.0
Articulated Trucks	0	1	10	0	-	11	0	1	0	0	-	1	11	4	1	0	-	16	0	3	0	0	-	3	31
% Articulated Trucks	0.0	0.1	1.6	-	-	0.6	0.0	0.2	0.0	-	-	0.2	1.4	1.2	3.3	-	-	1.4	0.0	1.1	0.0	-	-	0.6	0.8
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	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	16.7	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	14	-	-	-	-	-	59	-	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	83.3	-	-	-	-	-	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: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023
Page No: 3



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: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023

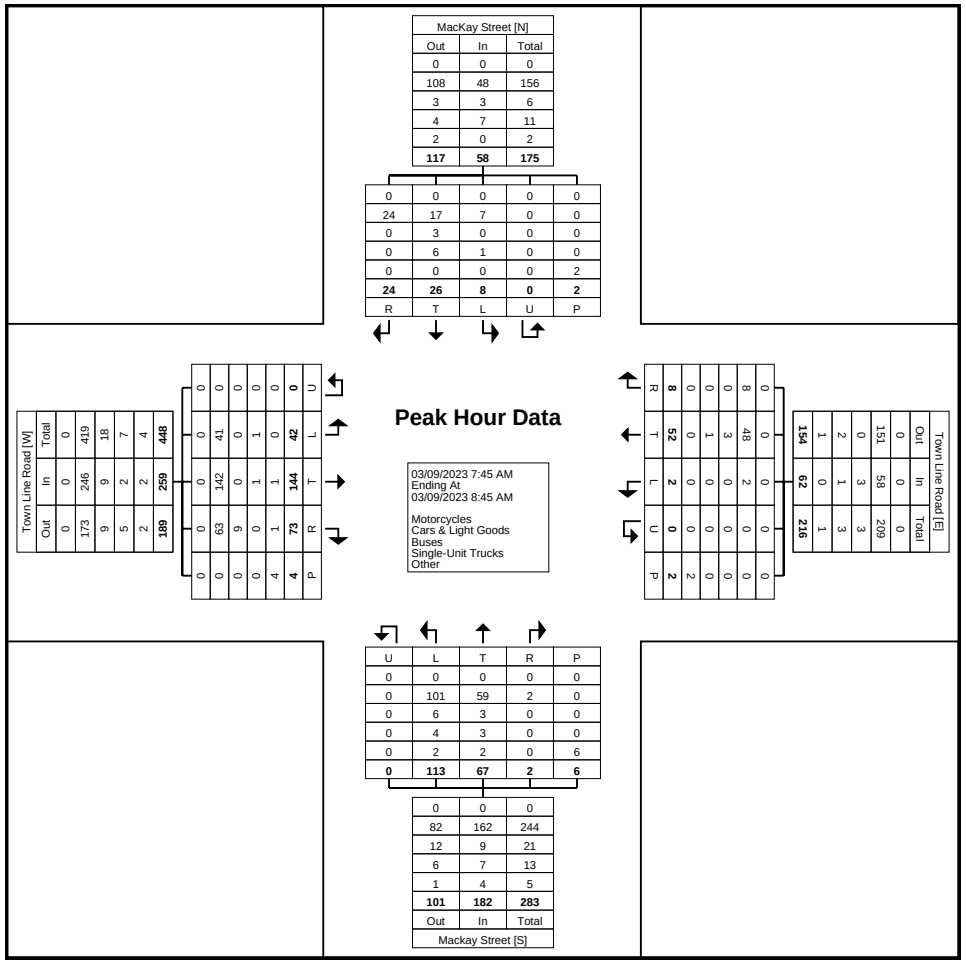
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						MacKay 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
7:45 AM	10	42	17	0	2	69	1	18	1	0	0	20	28	35	0	0	0	63	2	6	6	0	0	14	166
8:00 AM	9	44	20	0	0	73	1	12	1	0	0	14	41	7	0	0	0	48	4	6	10	0	1	20	155
8:15 AM	14	33	17	0	0	64	0	9	2	0	2	11	27	14	0	0	6	41	1	5	5	0	1	11	127
8:30 AM	9	25	19	0	2	53	0	13	4	0	0	17	17	11	2	0	0	30	1	9	3	0	0	13	113
Total	42	144	73	0	4	259	2	52	8	0	2	62	113	67	2	0	6	182	8	26	24	0	2	58	561
Approach %	16.2	55.6	28.2	0.0	-	-	3.2	83.9	12.9	0.0	-	-	62.1	36.8	1.1	0.0	-	-	13.8	44.8	41.4	0.0	-	-	-
Total %	7.5	25.7	13.0	0.0	-	46.2	0.4	9.3	1.4	0.0	-	11.1	20.1	11.9	0.4	0.0	-	32.4	1.4	4.6	4.3	0.0	-	10.3	-
PHF	0.750	0.818	0.913	0.000	-	0.887	0.500	0.722	0.500	0.000	-	0.775	0.689	0.479	0.250	0.000	-	0.722	0.500	0.722	0.600	0.000	-	0.725	0.845
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	41	142	63	0	-	246	2	48	8	0	-	58	101	59	2	0	-	162	7	17	24	0	-	48	514
% Cars & Light Goods	97.6	98.6	86.3	-	-	95.0	100.0	92.3	100.0	-	-	93.5	89.4	88.1	100.0	-	-	89.0	87.5	65.4	100.0	-	-	82.8	91.6
Buses	0	0	9	0	-	9	0	3	0	0	-	3	6	3	0	0	-	9	0	3	0	0	-	3	24
% Buses	0.0	0.0	12.3	-	-	3.5	0.0	5.8	0.0	-	-	4.8	5.3	4.5	0.0	-	-	4.9	0.0	11.5	0.0	-	-	5.2	4.3
Single-Unit Trucks	1	1	0	0	-	2	0	1	0	0	-	1	4	3	0	0	-	7	1	6	0	0	-	7	17
% Single-Unit Trucks	2.4	0.7	0.0	-	-	0.8	0.0	1.9	0.0	-	-	1.6	3.5	4.5	0.0	-	-	3.8	12.5	23.1	0.0	-	-	12.1	3.0
Articulated Trucks	0	1	1	0	-	2	0	0	0	0	-	0	2	2	0	0	-	4	0	0	0	0	-	0	6
% Articulated Trucks	0.0	0.7	1.4	-	-	0.8	0.0	0.0	0.0	-	-	0.0	1.8	3.0	0.0	-	-	2.2	0.0	0.0	0.0	-	-	0.0	1.1
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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023

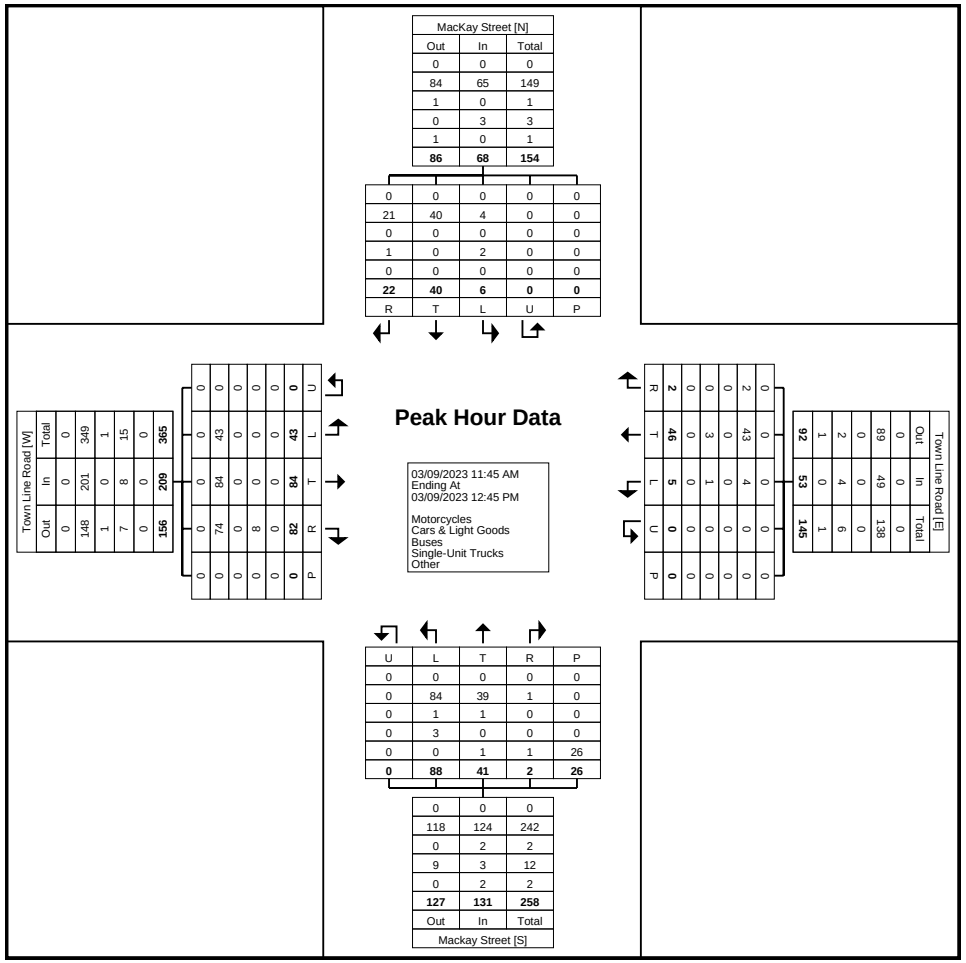
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						MacKay 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
11:45 AM	14	18	23	0	0	55	1	16	0	0	0	17	21	11	1	0	5	33	3	7	5	0	0	15	120
12:00 PM	11	25	20	0	0	56	1	9	1	0	0	11	23	9	1	0	2	33	1	12	9	0	0	22	122
12:15 PM	8	24	13	0	0	45	1	14	1	0	0	16	18	13	0	0	11	31	0	8	4	0	0	12	104
12:30 PM	10	17	26	0	0	53	2	7	0	0	0	9	26	8	0	0	8	34	2	13	4	0	0	19	115
Total	43	84	82	0	0	209	5	46	2	0	0	53	88	41	2	0	26	131	6	40	22	0	0	68	461
Approach %	20.6	40.2	39.2	0.0	-	-	9.4	86.8	3.8	0.0	-	-	67.2	31.3	1.5	0.0	-	-	8.8	58.8	32.4	0.0	-	-	-
Total %	9.3	18.2	17.8	0.0	-	45.3	1.1	10.0	0.4	0.0	-	11.5	19.1	8.9	0.4	0.0	-	28.4	1.3	8.7	4.8	0.0	-	14.8	-
PHF	0.768	0.840	0.788	0.000	-	0.933	0.625	0.719	0.500	0.000	-	0.779	0.846	0.788	0.500	0.000	-	0.963	0.500	0.769	0.611	0.000	-	0.773	0.945
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	43	84	74	0	-	201	4	43	2	0	-	49	84	39	1	0	-	124	4	40	21	0	-	65	439
% Cars & Light Goods	100.0	100.0	90.2	-	-	96.2	80.0	93.5	100.0	-	-	92.5	95.5	95.1	50.0	-	-	94.7	66.7	100.0	95.5	-	-	95.6	95.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	0	0	0	0	-	0	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.1	2.4	0.0	-	-	1.5	0.0	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	0	0	8	0	-	8	1	3	0	0	-	4	3	0	0	0	-	3	2	0	1	0	-	3	18
% Single-Unit Trucks	0.0	0.0	9.8	-	-	3.8	20.0	6.5	0.0	-	-	7.5	3.4	0.0	0.0	-	-	2.3	33.3	0.0	4.5	-	-	4.4	3.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	1	0	-	2	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.4	50.0	-	-	1.5	0.0	0.0	0.0	-	-	0.0	0.4
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	26	-	-	-	-	-	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: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023

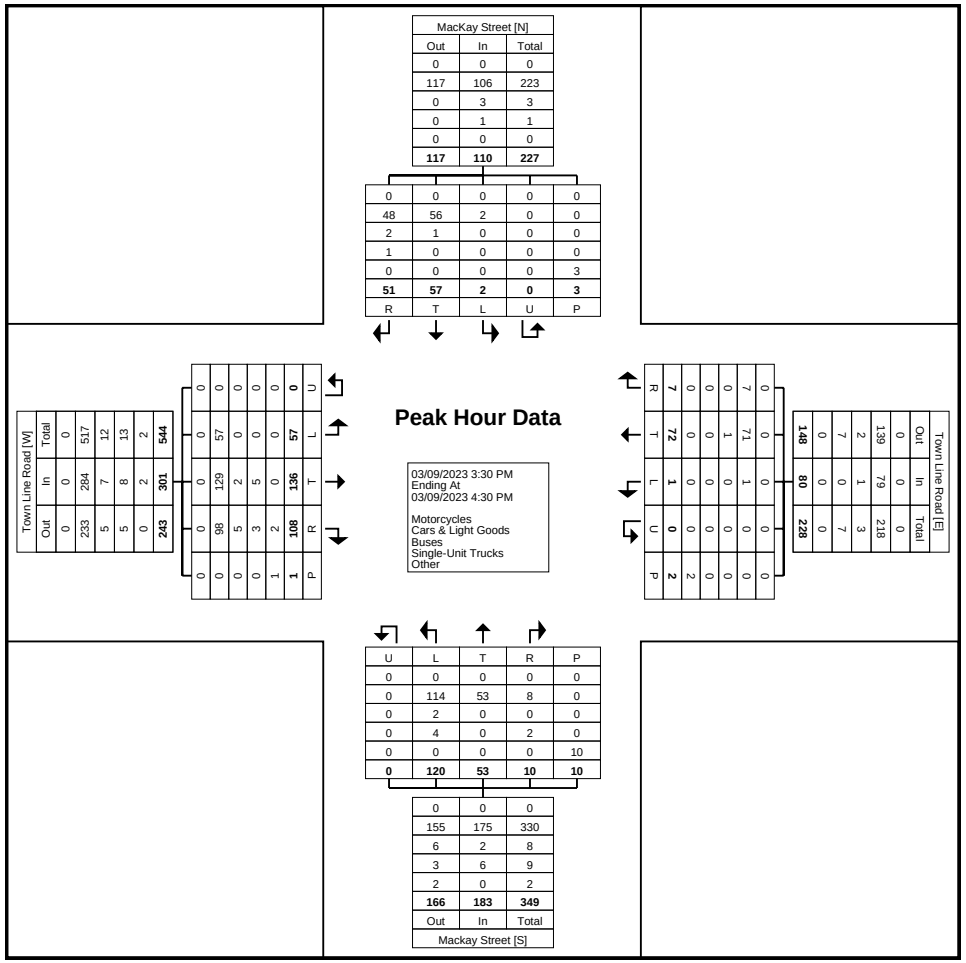
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						MacKay 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
3:30 PM	25	29	25	0	0	79	0	11	1	0	0	12	34	22	4	0	1	60	0	13	8	0	0	21	172
3:45 PM	17	39	30	0	0	86	0	21	2	0	0	23	26	5	2	0	1	33	2	12	12	0	2	26	168
4:00 PM	8	35	26	0	1	69	0	25	4	0	2	29	32	15	1	0	8	48	0	15	15	0	0	30	176
4:15 PM	7	33	27	0	0	67	1	15	0	0	0	16	28	11	3	0	0	42	0	17	16	0	1	33	158
Total	57	136	108	0	1	301	1	72	7	0	2	80	120	53	10	0	10	183	2	57	51	0	3	110	674
Approach %	18.9	45.2	35.9	0.0	-	-	1.3	90.0	8.8	0.0	-	-	65.6	29.0	5.5	0.0	-	-	1.8	51.8	46.4	0.0	-	-	-
Total %	8.5	20.2	16.0	0.0	-	44.7	0.1	10.7	1.0	0.0	-	11.9	17.8	7.9	1.5	0.0	-	27.2	0.3	8.5	7.6	0.0	-	16.3	-
PHF	0.570	0.872	0.900	0.000	-	0.875	0.250	0.720	0.438	0.000	-	0.690	0.882	0.602	0.625	0.000	-	0.763	0.250	0.838	0.797	0.000	-	0.833	0.957
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	57	129	98	0	-	284	1	71	7	0	-	79	114	53	8	0	-	175	2	56	48	0	-	106	644
% Cars & Light Goods	100.0	94.9	90.7	-	-	94.4	100.0	98.6	100.0	-	-	98.8	95.0	100.0	80.0	-	-	95.6	100.0	98.2	94.1	-	-	96.4	95.5
Buses	0	2	5	0	-	7	0	1	0	0	-	1	2	0	0	0	-	2	0	1	2	0	-	3	13
% Buses	0.0	1.5	4.6	-	-	2.3	0.0	1.4	0.0	-	-	1.3	1.7	0.0	0.0	-	-	1.1	0.0	1.8	3.9	-	-	2.7	1.9
Single-Unit Trucks	0	5	3	0	-	8	0	0	0	0	-	0	4	0	2	0	-	6	0	0	1	0	-	1	15
% Single-Unit Trucks	0.0	3.7	2.8	-	-	2.7	0.0	0.0	0.0	-	-	0.0	3.3	0.0	20.0	-	-	3.3	0.0	0.0	2.0	-	-	0.9	2.2
Articulated Trucks	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	1.9	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	10	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Town Line Road
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt 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
7:00 AM	3	23	0	0	1	26	0	31	2	0	1	33	3	0	5	0	0	8	0	0	1	0	2	1	68
7:15 AM	2	27	0	0	0	29	2	12	2	0	1	16	1	1	4	0	0	6	1	0	1	0	0	2	53
7:30 AM	3	51	1	0	0	55	1	36	5	0	0	42	5	0	5	0	0	10	5	0	6	0	0	11	118
7:45 AM	4	72	2	0	0	78	2	37	2	0	0	41	2	1	4	0	4	7	1	2	2	0	1	5	131
Hourly Total	12	173	3	0	1	188	5	116	11	0	2	132	11	2	18	0	4	31	7	2	10	0	3	19	370
8:00 AM	2	62	1	0	0	65	3	54	3	0	2	60	1	1	4	0	3	6	3	0	2	0	3	5	136
8:15 AM	3	54	3	0	0	60	5	51	1	0	0	57	0	2	6	0	1	8	6	0	2	0	3	8	133
8:30 AM	3	62	0	0	0	65	0	42	6	0	0	48	3	1	4	0	0	8	6	1	3	0	0	10	131
8:45 AM	5	66	2	0	5	73	1	32	4	0	1	37	3	1	3	0	6	7	3	0	2	0	0	5	122
Hourly Total	13	244	6	0	5	263	9	179	14	0	3	202	7	5	17	0	10	29	18	1	9	0	6	28	522
9:00 AM	10	58	1	0	0	69	2	49	4	0	0	55	2	0	5	0	1	7	4	0	3	0	0	7	138
9:15 AM	7	63	2	0	0	72	8	69	11	0	0	88	3	3	5	0	2	11	3	0	2	0	2	5	176
9:30 AM	4	47	1	0	0	52	2	41	4	0	0	47	1	2	0	0	1	3	2	0	3	0	1	5	107
9:45 AM	1	38	0	0	1	39	2	41	4	0	2	47	0	1	3	0	1	4	5	1	2	0	1	8	98
Hourly Total	22	206	4	0	1	232	14	200	23	0	2	237	6	6	13	0	5	25	14	1	10	0	4	25	519
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	6	35	2	0	0	43	2	38	2	0	2	42	4	0	4	0	4	8	2	0	4	0	7	6	99
11:15 AM	0	48	1	0	3	49	0	41	3	0	3	44	0	0	2	0	3	2	3	1	1	0	1	5	100
11:30 AM	4	37	4	0	2	45	2	35	3	0	4	40	0	1	0	0	7	1	4	0	2	0	8	6	92
11:45 AM	6	35	2	0	1	43	3	42	4	0	0	49	1	1	2	0	1	4	2	3	5	0	1	10	106
Hourly Total	16	155	9	0	6	180	7	156	12	0	9	175	5	2	8	0	15	15	11	4	12	0	17	27	397
12:00 PM	3	42	3	0	0	48	3	52	3	0	0	58	2	0	2	0	2	4	5	2	3	0	3	10	120
12:15 PM	1	48	3	0	1	52	5	50	9	0	1	64	1	1	5	0	3	7	1	1	4	0	2	6	129
12:30 PM	5	57	6	0	1	68	3	37	6	0	2	46	2	0	6	0	2	8	3	0	3	0	6	6	128
12:45 PM	3	51	2	0	2	56	2	39	3	0	0	44	2	0	7	0	0	9	3	0	3	0	2	6	115
Hourly Total	12	198	14	0	4	224	13	178	21	0	3	212	7	1	20	0	7	28	12	3	13	0	13	28	492
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	50	2	0	3	55	5	49	5	0	0	59	1	0	3	0	2	4	3	1	3	0	2	7	125
3:15 PM	4	69	1	0	1	74	7	48	8	0	2	63	3	0	6	0	1	9	7	1	5	0	7	13	159
3:30 PM	9	65	3	0	4	77	10	56	6	0	0	72	0	6	6	0	2	12	7	2	4	0	5	13	174
3:45 PM	6	51	4	0	1	61	7	92	8	0	5	107	1	5	5	0	1	11	10	2	8	0	6	20	199
Hourly Total	22	235	10	0	9	267	29	245	27	0	7	301	5	11	20	0	6	36	27	6	20	0	20	53	657
4:00 PM	3	49	8	0	0	60	5	84	5	0	3	94	4	1	5	0	6	10	9	2	8	0	3	19	183
4:15 PM	1	54	3	0	0	58	4	62	4	0	1	70	3	1	3	0	0	7	10	1	9	0	2	20	155
4:30 PM	4	62	7	0	0	73	2	53	2	0	1	57	3	0	2	0	1	5	5	4	4	0	0	13	148

4:45 PM	4	70	4	0	1	78	3	43	2	0	4	48	2	2	1	0	4	5	5	3	9	0	0	17	148
Hourly Total	12	235	22	0	1	269	14	242	13	0	9	269	12	4	11	0	11	27	29	10	30	0	5	69	634
5:00 PM	7	52	4	0	0	63	7	63	2	0	1	72	3	1	1	0	0	5	4	1	7	0	0	12	152
5:15 PM	2	42	7	0	1	51	1	49	3	0	2	53	1	3	2	0	2	6	2	1	6	0	1	9	119
5:30 PM	3	47	2	0	0	52	6	33	1	0	1	40	0	1	1	0	2	2	4	3	1	0	0	8	102
5:45 PM	2	44	1	0	4	47	2	27	1	0	1	30	3	3	3	0	1	9	2	1	2	0	0	5	91
Hourly Total	14	185	14	0	5	213	16	172	7	0	5	195	7	8	7	0	5	22	12	6	16	0	1	34	464
Grand Total	123	1631	82	0	32	1836	107	1488	128	0	40	1723	60	39	114	0	63	213	130	33	120	0	69	283	4055
Approach %	6.7	88.8	4.5	0.0	-	-	6.2	86.4	7.4	0.0	-	-	28.2	18.3	53.5	0.0	-	-	45.9	11.7	42.4	0.0	-	-	-
Total %	3.0	40.2	2.0	0.0	-	45.3	2.6	36.7	3.2	0.0	-	42.5	1.5	1.0	2.8	0.0	-	5.3	3.2	0.8	3.0	0.0	-	7.0	-
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	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	-	-	0.0	0.0
Cars & Light Goods	122	1604	81	0	-	1807	106	1471	123	0	-	1700	59	39	113	0	-	211	122	32	116	0	-	270	3988
% Cars & Light Goods	99.2	98.3	98.8	-	-	98.4	99.1	98.9	96.1	-	-	98.7	98.3	100.0	99.1	-	-	99.1	93.8	97.0	96.7	-	-	95.4	98.3
Buses	1	14	0	0	-	15	0	5	2	0	-	7	0	0	0	0	-	0	6	0	1	0	-	7	29
% Buses	0.8	0.9	0.0	-	-	0.8	0.0	0.3	1.6	-	-	0.4	0.0	0.0	0.0	-	-	0.0	4.6	0.0	0.8	-	-	2.5	0.7
Single-Unit Trucks	0	12	1	0	-	13	1	10	3	0	-	14	1	0	1	0	-	2	2	1	3	0	-	6	35
% Single-Unit Trucks	0.0	0.7	1.2	-	-	0.7	0.9	0.7	2.3	-	-	0.8	1.7	0.0	0.9	-	-	0.9	1.5	3.0	2.5	-	-	2.1	0.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.1	0.0	-	-	0.1	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	5.8	-	-
Pedestrians	-	-	-	-	32	-	-	-	-	-	40	-	-	-	-	-	63	-	-	-	-	-	65	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	94.2	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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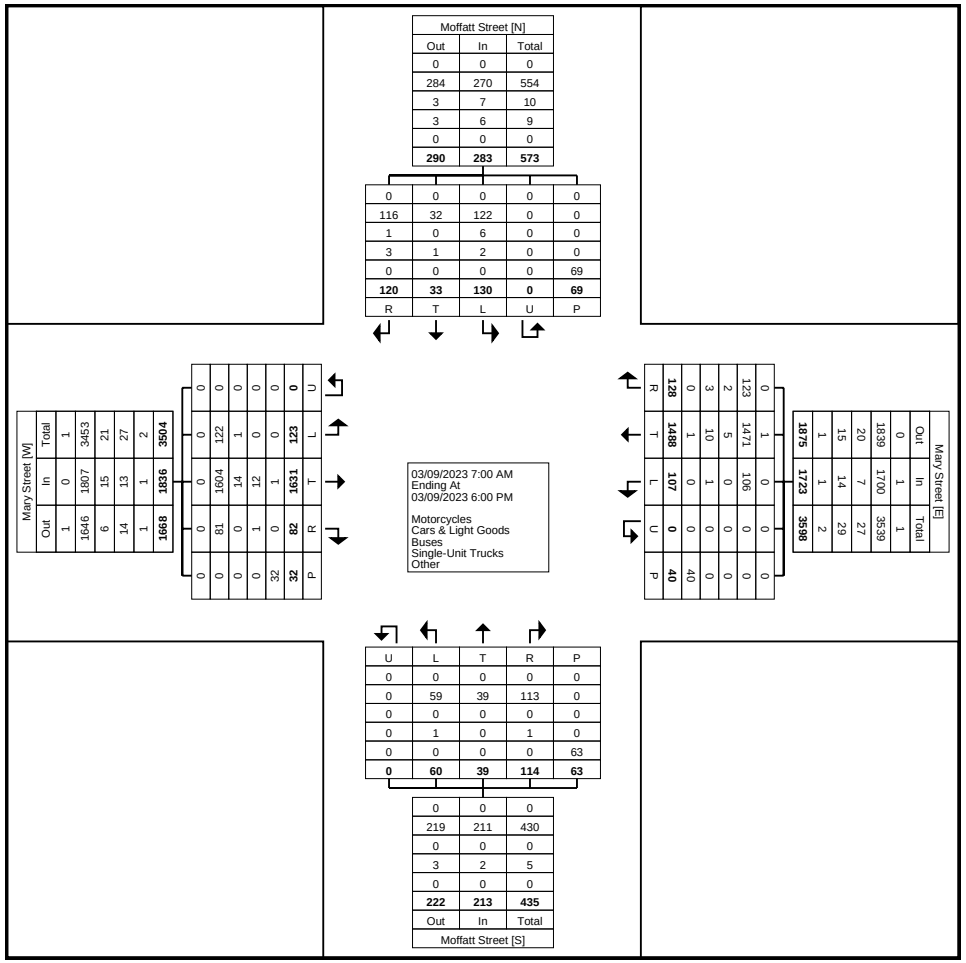
Count Name: Mary Street & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023



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 & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023

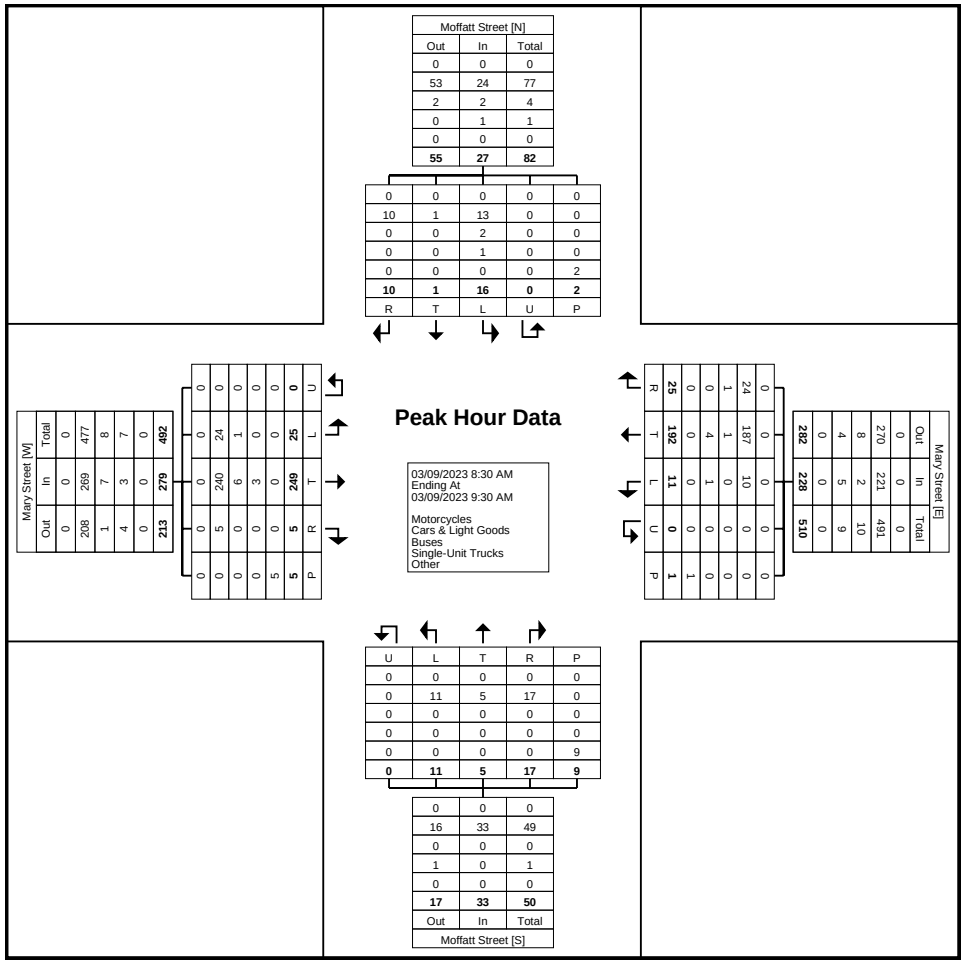
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt 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
8:30 AM	3	62	0	0	0	65	0	42	6	0	0	48	3	1	4	0	0	8	6	1	3	0	0	10	131
8:45 AM	5	66	2	0	5	73	1	32	4	0	1	37	3	1	3	0	6	7	3	0	2	0	0	5	122
9:00 AM	10	58	1	0	0	69	2	49	4	0	0	55	2	0	5	0	1	7	4	0	3	0	0	7	138
9:15 AM	7	63	2	0	0	72	8	69	11	0	0	88	3	3	5	0	2	11	3	0	2	0	2	5	176
Total	25	249	5	0	5	279	11	192	25	0	1	228	11	5	17	0	9	33	16	1	10	0	2	27	567
Approach %	9.0	89.2	1.8	0.0	-	-	4.8	84.2	11.0	0.0	-	-	33.3	15.2	51.5	0.0	-	-	59.3	3.7	37.0	0.0	-	-	-
Total %	4.4	43.9	0.9	0.0	-	49.2	1.9	33.9	4.4	0.0	-	40.2	1.9	0.9	3.0	0.0	-	5.8	2.8	0.2	1.8	0.0	-	4.8	-
PHF	0.625	0.943	0.625	0.000	-	0.955	0.344	0.696	0.568	0.000	-	0.648	0.917	0.417	0.850	0.000	-	0.750	0.667	0.250	0.833	0.000	-	0.675	0.805
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	24	240	5	0	-	269	10	187	24	0	-	221	11	5	17	0	-	33	13	1	10	0	-	24	547
% Cars & Light Goods	96.0	96.4	100.0	-	-	96.4	90.9	97.4	96.0	-	-	96.9	100.0	100.0	100.0	-	-	100.0	81.3	100.0	100.0	-	-	88.9	96.5
Buses	1	6	0	0	-	7	0	1	1	0	-	2	0	0	0	0	-	0	2	0	0	0	-	2	11
% Buses	4.0	2.4	0.0	-	-	2.5	0.0	0.5	4.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	12.5	0.0	0.0	-	-	7.4	1.9
Single-Unit Trucks	0	3	0	0	-	3	1	4	0	0	-	5	0	0	0	0	-	0	1	0	0	0	-	1	9
% Single-Unit Trucks	0.0	1.2	0.0	-	-	1.1	9.1	2.1	0.0	-	-	2.2	0.0	0.0	0.0	-	-	0.0	6.3	0.0	0.0	-	-	3.7	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	9	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023



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 & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023

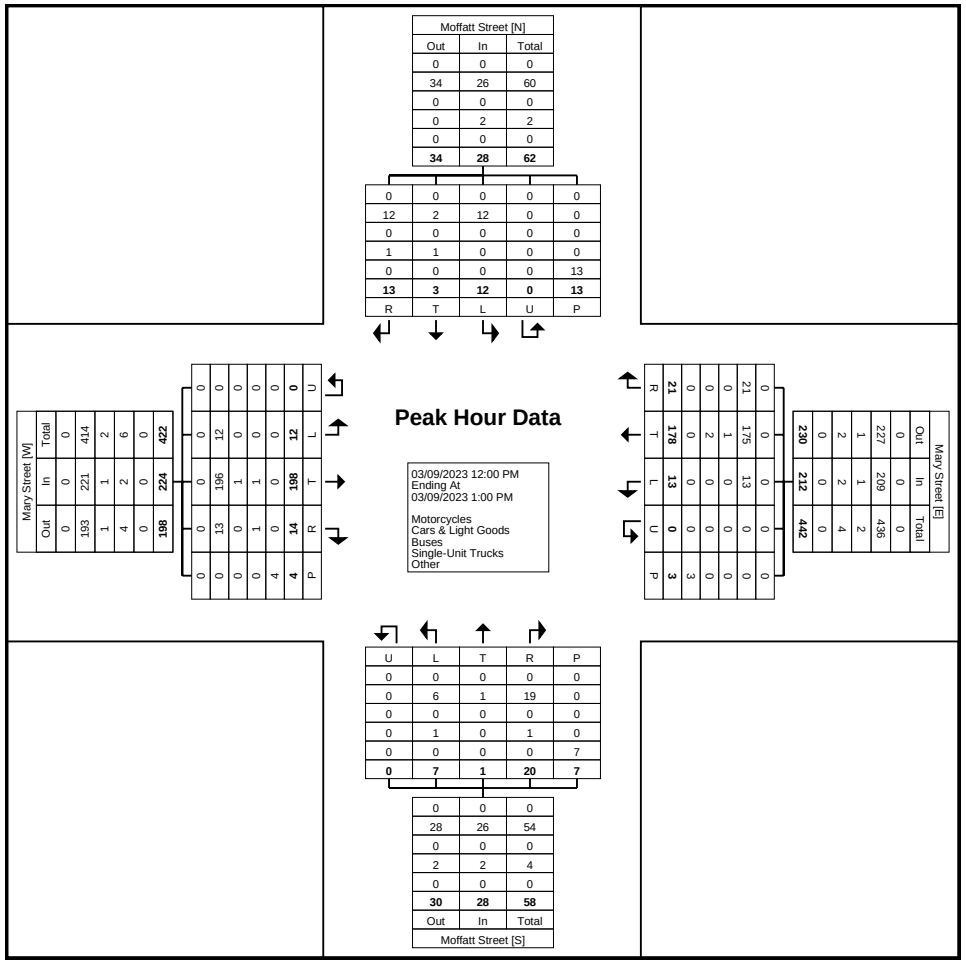
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt 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
12:00 PM	3	42	3	0	0	48	3	52	3	0	0	58	2	0	2	0	2	4	5	2	3	0	3	10	120
12:15 PM	1	48	3	0	1	52	5	50	9	0	1	64	1	1	5	0	3	7	1	1	4	0	2	6	129
12:30 PM	5	57	6	0	1	68	3	37	6	0	2	46	2	0	6	0	2	8	3	0	3	0	6	6	128
12:45 PM	3	51	2	0	2	56	2	39	3	0	0	44	2	0	7	0	0	9	3	0	3	0	2	6	115
Total	12	198	14	0	4	224	13	178	21	0	3	212	7	1	20	0	7	28	12	3	13	0	13	28	492
Approach %	5.4	88.4	6.3	0.0	-	-	6.1	84.0	9.9	0.0	-	-	25.0	3.6	71.4	0.0	-	-	42.9	10.7	46.4	0.0	-	-	-
Total %	2.4	40.2	2.8	0.0	-	45.5	2.6	36.2	4.3	0.0	-	43.1	1.4	0.2	4.1	0.0	-	5.7	2.4	0.6	2.6	0.0	-	5.7	-
PHF	0.600	0.868	0.583	0.000	-	0.824	0.650	0.856	0.583	0.000	-	0.828	0.875	0.250	0.714	0.000	-	0.778	0.600	0.375	0.813	0.000	-	0.700	0.953
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	12	196	13	0	-	221	13	175	21	0	-	209	6	1	19	0	-	26	12	2	12	0	-	26	482
% Cars & Light Goods	100.0	99.0	92.9	-	-	98.7	100.0	98.3	100.0	-	-	98.6	85.7	100.0	95.0	-	-	92.9	100.0	66.7	92.3	-	-	92.9	98.0
Buses	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.0	0.5	0.0	-	-	0.4	0.0	0.6	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	0	1	1	0	-	2	0	2	0	0	-	2	1	0	1	0	-	2	0	1	1	0	-	2	8
% Single-Unit Trucks	0.0	0.5	7.1	-	-	0.9	0.0	1.1	0.0	-	-	0.9	14.3	0.0	5.0	-	-	7.1	0.0	33.3	7.7	-	-	7.1	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	3	-	-	-	-	-	7	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023



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 & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023

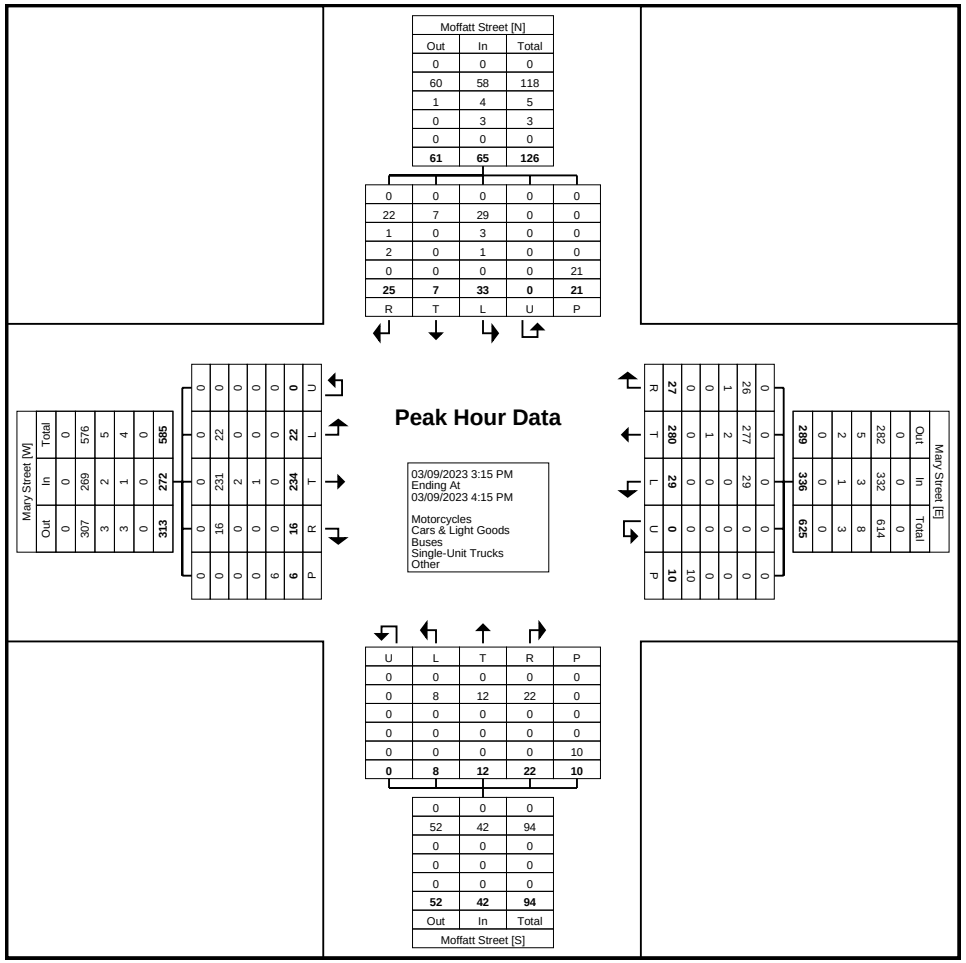
Turning Movement Peak Hour Data (3:15 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt 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
3:15 PM	4	69	1	0	1	74	7	48	8	0	2	63	3	0	6	0	1	9	7	1	5	0	7	13	159
3:30 PM	9	65	3	0	4	77	10	56	6	0	0	72	0	6	6	0	2	12	7	2	4	0	5	13	174
3:45 PM	6	51	4	0	1	61	7	92	8	0	5	107	1	5	5	0	1	11	10	2	8	0	6	20	199
4:00 PM	3	49	8	0	0	60	5	84	5	0	3	94	4	1	5	0	6	10	9	2	8	0	3	19	183
Total	22	234	16	0	6	272	29	280	27	0	10	336	8	12	22	0	10	42	33	7	25	0	21	65	715
Approach %	8.1	86.0	5.9	0.0	-	-	8.6	83.3	8.0	0.0	-	-	19.0	28.6	52.4	0.0	-	-	50.8	10.8	38.5	0.0	-	-	-
Total %	3.1	32.7	2.2	0.0	-	38.0	4.1	39.2	3.8	0.0	-	47.0	1.1	1.7	3.1	0.0	-	5.9	4.6	1.0	3.5	0.0	-	9.1	-
PHF	0.611	0.848	0.500	0.000	-	0.883	0.725	0.761	0.844	0.000	-	0.785	0.500	0.500	0.917	0.000	-	0.875	0.825	0.875	0.781	0.000	-	0.813	0.898
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	22	231	16	0	-	269	29	277	26	0	-	332	8	12	22	0	-	42	29	7	22	0	-	58	701
% Cars & Light Goods	100.0	98.7	100.0	-	-	98.9	100.0	98.9	96.3	-	-	98.8	100.0	100.0	100.0	-	-	100.0	87.9	100.0	88.0	-	-	89.2	98.0
Buses	0	2	0	0	-	2	0	2	1	0	-	3	0	0	0	0	-	0	3	0	1	0	-	4	9
% Buses	0.0	0.9	0.0	-	-	0.7	0.0	0.7	3.7	-	-	0.9	0.0	0.0	0.0	-	-	0.0	9.1	0.0	4.0	-	-	6.2	1.3
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	1	0	2	0	-	3	5
% Single-Unit Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	3.0	0.0	8.0	-	-	4.6	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	9.5	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	10	-	-	-	-	-	10	-	-	-	-	-	19	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	90.5	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Mary Street & Moffatt Street
Site Code: 220694
Start Date: 03/09/2023


Moffatt Street [N]
Out In Total
0 0 0
60 58 118
1 4 5
0 3 3
0 0 0
61 65 126
0 0 0 0 0
22 7 29 0 0
1 0 3 0 0
2 0 1 0 0
0 0 0 0 21
25 7 33 0 21
R T L U P
Peak Hour Data
03/09/2023 3:15 PM
Ending At
03/09/2023 4:15 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
Mary Street [W]
Out In Total
0 0 0
307 269 576
3 2 5
3 1 4
0 0 0
313 272 585
0 0 0 0 0
16 231 22 0
0 2 0 0
0 1 0 0
6 0 0 0
16 234 22 0
R T L U
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

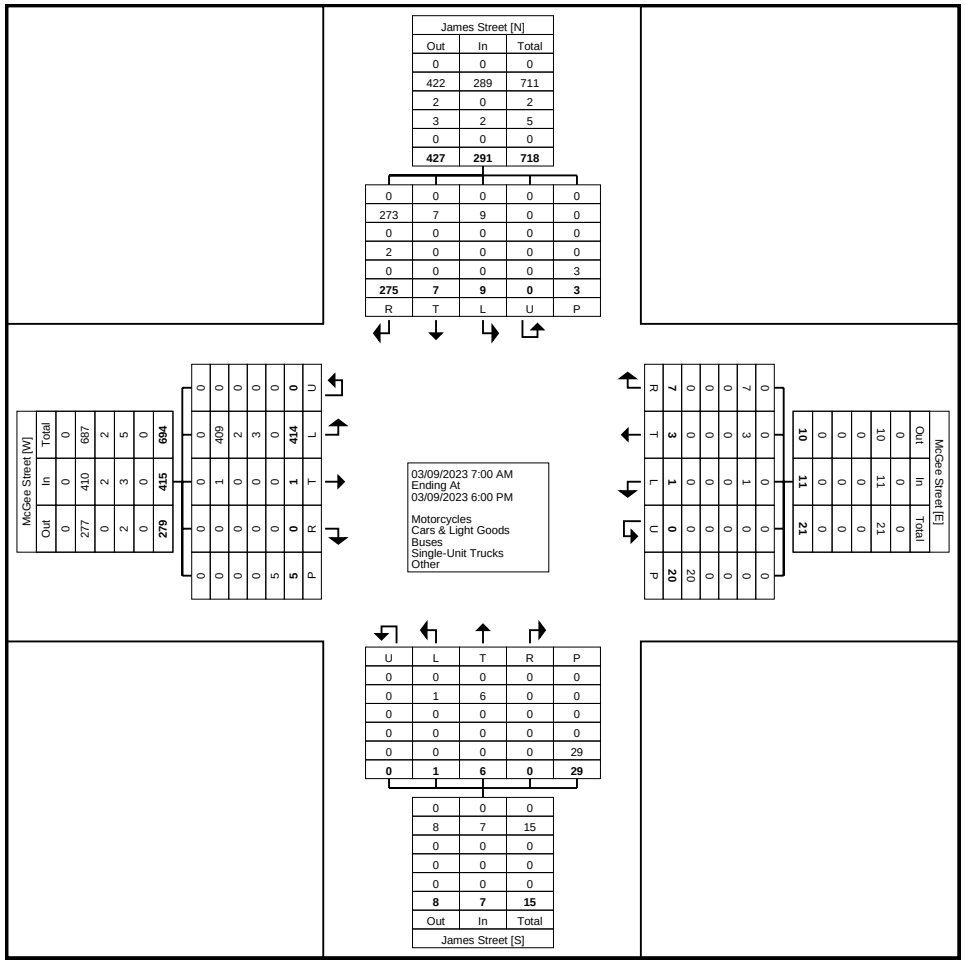
Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	6
7:15 AM	9	0	0	0	0	9	0	0	0	0	1	0	0	0	0	0	2	0	0	0	4	0	0	4	13
7:30 AM	12	0	0	0	0	12	0	0	0	0	1	0	0	0	0	0	1	0	0	0	8	0	0	8	20
7:45 AM	24	0	0	0	0	24	0	0	0	0	0	0	1	0	0	0	1	1	0	0	7	0	0	7	32
Hourly Total	48	0	0	0	0	48	0	0	0	0	2	0	1	0	0	0	4	1	0	0	22	0	0	22	71
8:00 AM	20	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	29
8:15 AM	14	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	24
8:30 AM	28	0	0	0	0	28	0	1	0	0	4	1	0	0	0	0	4	0	1	0	4	0	0	5	34
8:45 AM	16	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	18
Hourly Total	78	0	0	0	0	78	0	1	0	0	4	1	0	0	0	0	4	0	1	0	25	0	0	26	105
9:00 AM	15	0	0	0	0	15	0	0	1	0	0	1	0	0	0	0	0	0	1	0	4	0	0	5	21
9:15 AM	21	0	0	0	0	21	0	0	0	0	1	0	0	0	0	0	1	0	0	0	5	0	0	5	26
9:30 AM	8	0	0	0	0	8	0	0	0	0	1	0	0	1	0	0	1	1	0	0	4	0	0	4	13
9:45 AM	12	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	17
Hourly Total	56	0	0	0	0	56	0	0	1	0	2	1	0	1	0	0	2	1	1	0	18	0	0	19	77
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	10	0	0	0	0	10	1	0	0	0	0	1	0	1	0	0	0	1	1	0	4	0	0	5	17
11:15 AM	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	14
11:30 AM	11	0	0	0	0	11	0	0	1	0	0	1	0	0	0	0	0	0	0	0	5	0	0	5	17
11:45 AM	8	1	0	0	0	9	0	0	0	0	1	0	0	1	0	0	0	1	1	0	2	0	0	3	13
Hourly Total	36	1	0	0	0	37	1	0	1	0	1	2	0	2	0	0	0	2	2	0	18	0	0	20	61
12:00 PM	9	0	0	0	0	9	0	0	2	0	0	2	0	0	0	0	0	0	1	1	9	0	0	11	22
12:15 PM	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	11
12:30 PM	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6	0	0	7	18
12:45 PM	13	0	0	0	0	13	0	0	1	0	1	1	0	0	0	0	1	0	0	0	14	0	0	14	28
Hourly Total	40	0	0	0	0	40	0	0	3	0	1	3	0	0	0	0	2	0	1	2	33	0	0	36	79
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	13	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	15	0	0	15	28
3:15 PM	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	16
3:30 PM	15	0	0	0	2	15	0	0	0	0	0	0	0	0	0	0	5	0	0	0	11	0	2	11	26
3:45 PM	14	0	0	0	0	14	0	1	0	0	0	1	0	0	0	0	0	0	0	0	13	0	0	13	28
Hourly Total	50	0	0	0	2	50	0	1	0	0	0	1	0	0	0	0	6	0	0	0	47	0	2	47	98
4:00 PM	20	0	0	0	0	20	0	0	1	0	0	1	0	0	0	0	0	0	0	1	22	0	0	23	44
4:15 PM	19	0	0	0	2	19	0	0	0	0	2	0	0	0	0	0	3	0	3	0	12	0	0	15	34
4:30 PM	13	0	0	0	0	13	0	1	0	0	2	1	0	0	0	0	2	0	0	0	20	0	0	20	34

4:45 PM	10	0	0	0	0	10	0	0	0	0	4	0	0	0	0	0	3	0	0	0	14	0	0	14	24
Hourly Total	62	0	0	0	2	62	0	1	1	0	8	2	0	0	0	0	8	0	3	1	68	0	0	72	136
5:00 PM	12	0	0	0	0	12	0	0	1	0	1	1	0	0	0	0	1	0	0	0	17	0	0	17	30
5:15 PM	9	0	0	0	0	9	0	0	0	0	0	0	0	1	0	0	1	1	0	1	13	0	0	14	24
5:30 PM	12	0	0	0	0	12	0	0	0	0	1	0	0	2	0	0	1	2	1	2	9	0	0	12	26
5:45 PM	11	0	0	0	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	1	6	17
Hourly Total	44	0	0	0	1	44	0	0	1	0	2	1	0	3	0	0	3	3	1	4	44	0	1	49	97
Grand Total	414	1	0	0	5	415	1	3	7	0	20	11	1	6	0	0	29	7	9	7	275	0	3	291	724
Approach %	99.8	0.2	0.0	0.0	-	-	9.1	27.3	63.6	0.0	-	-	14.3	85.7	0.0	0.0	-	-	3.1	2.4	94.5	0.0	-	-	-
Total %	57.2	0.1	0.0	0.0	-	57.3	0.1	0.4	1.0	0.0	-	1.5	0.1	0.8	0.0	0.0	-	1.0	1.2	1.0	38.0	0.0	-	40.2	-
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
Cars & Light Goods	409	1	0	0	-	410	1	3	7	0	-	11	1	6	0	0	-	7	9	7	273	0	-	289	717
% Cars & Light Goods	98.8	100.0	-	-	-	98.8	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	99.3	-	-	99.3	99.0
Buses	2	0	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.5	0.0	-	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Single-Unit Trucks	3	0	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	5
% Single-Unit Trucks	0.7	0.0	-	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.7	-	-	0.7	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	20	-	-	-	-	-	29	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023



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: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023

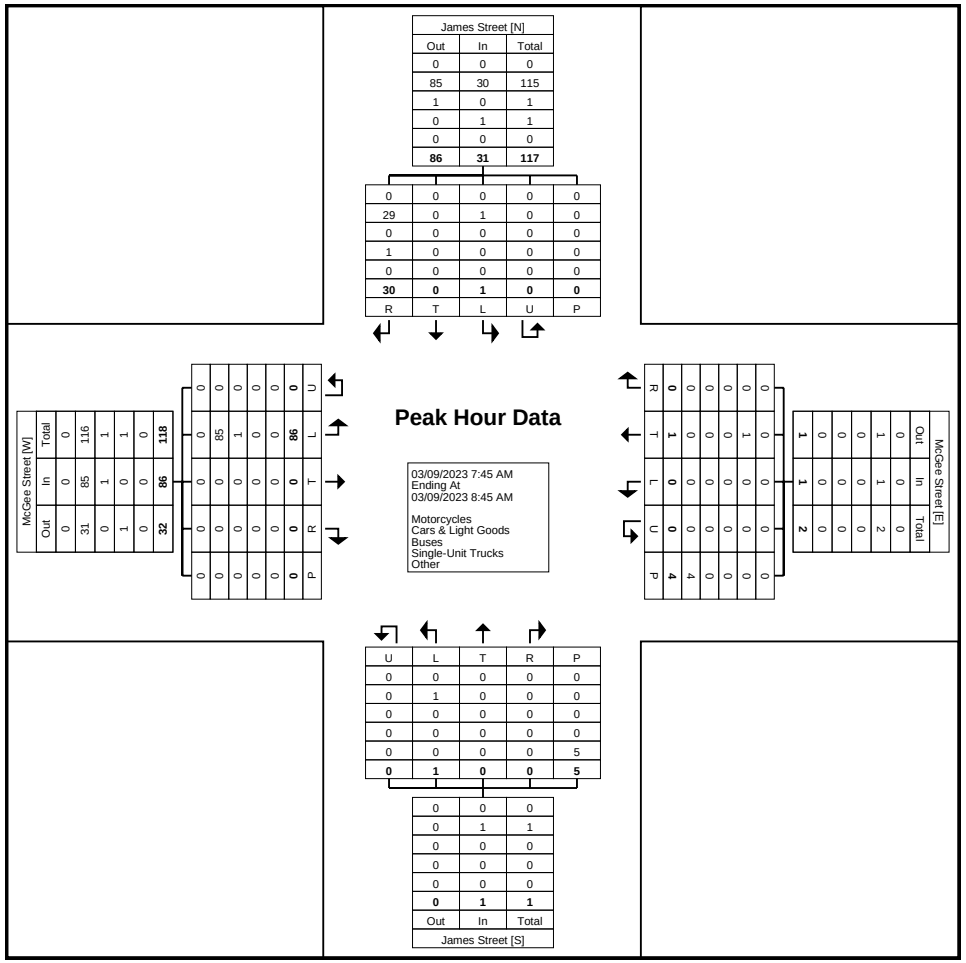
Turning Movement Peak Hour Data (7:45 AM)

Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James 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
7:45 AM	24	0	0	0	0	24	0	0	0	0	0	0	1	0	0	0	1	1	0	0	7	0	0	7	32
8:00 AM	20	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	29
8:15 AM	14	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	24
8:30 AM	28	0	0	0	0	28	0	1	0	0	4	1	0	0	0	0	4	0	1	0	4	0	0	5	34
Total	86	0	0	0	0	86	0	1	0	0	4	1	1	0	0	0	5	1	1	0	30	0	0	31	119
Approach %	100.0	0.0	0.0	0.0	-	-	0.0	100.0	0.0	0.0	-	-	100.0	0.0	0.0	0.0	-	-	3.2	0.0	96.8	0.0	-	-	-
Total %	72.3	0.0	0.0	0.0	-	72.3	0.0	0.8	0.0	0.0	-	0.8	0.8	0.0	0.0	0.0	-	0.8	0.8	0.0	25.2	0.0	-	26.1	-
PHF	0.768	0.000	0.000	0.000	-	0.768	0.000	0.250	0.000	0.000	-	0.250	0.250	0.000	0.000	0.000	-	0.250	0.250	0.000	0.750	0.000	-	0.775	0.875
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	85	0	0	0	-	85	0	1	0	0	-	1	1	0	0	0	-	1	1	0	29	0	-	30	117
% Cars & Light Goods	98.8	-	-	-	-	98.8	-	100.0	-	-	-	100.0	100.0	-	-	-	-	100.0	100.0	-	96.7	-	-	96.8	98.3
Buses	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	1.2	-	-	-	-	1.2	-	0.0	-	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.8
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	1
% Single-Unit Trucks	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	3.3	-	-	3.2	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	-	-	-	0.0	-	0.0	-	-	-	0.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% 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: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023

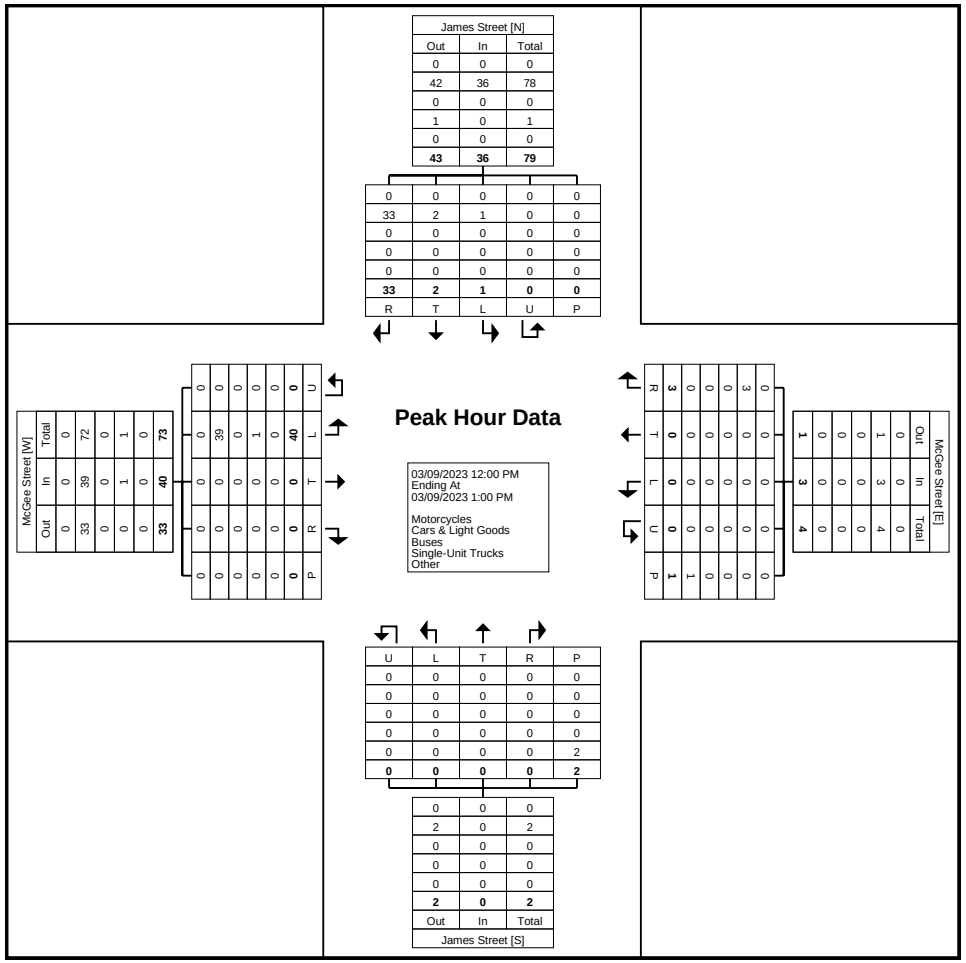
Turning Movement Peak Hour Data (12:00 PM)

Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James 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
12:00 PM	9	0	0	0	0	9	0	0	2	0	0	2	0	0	0	0	0	0	1	1	9	0	0	11	22
12:15 PM	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	11
12:30 PM	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	1	0	0	1	6	0	0	7	18
12:45 PM	13	0	0	0	0	13	0	0	1	0	1	1	0	0	0	0	1	0	0	0	14	0	0	14	28
Total	40	0	0	0	0	40	0	0	3	0	1	3	0	0	0	0	2	0	1	2	33	0	0	36	79
Approach %	100.0	0.0	0.0	0.0	-	-	0.0	0.0	100.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	2.8	5.6	91.7	0.0	-	-	-
Total %	50.6	0.0	0.0	0.0	-	50.6	0.0	0.0	3.8	0.0	-	3.8	0.0	0.0	0.0	0.0	-	0.0	1.3	2.5	41.8	0.0	-	45.6	-
PHF	0.769	0.000	0.000	0.000	-	0.769	0.000	0.000	0.375	0.000	-	0.375	0.000	0.000	0.000	0.000	-	0.000	0.250	0.500	0.589	0.000	-	0.643	0.705
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
Cars & Light Goods	39	0	0	0	-	39	0	0	3	0	-	3	0	0	0	0	-	0	1	2	33	0	-	36	78
% Cars & Light Goods	97.5	-	-	-	-	97.5	-	-	100.0	-	-	100.0	-	-	-	-	-	-	100.0	100.0	100.0	-	-	100.0	98.7
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	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	2.5	-	-	-	-	2.5	-	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	1.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	-	-	-	-	0.0	-	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	0.0
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023



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: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023

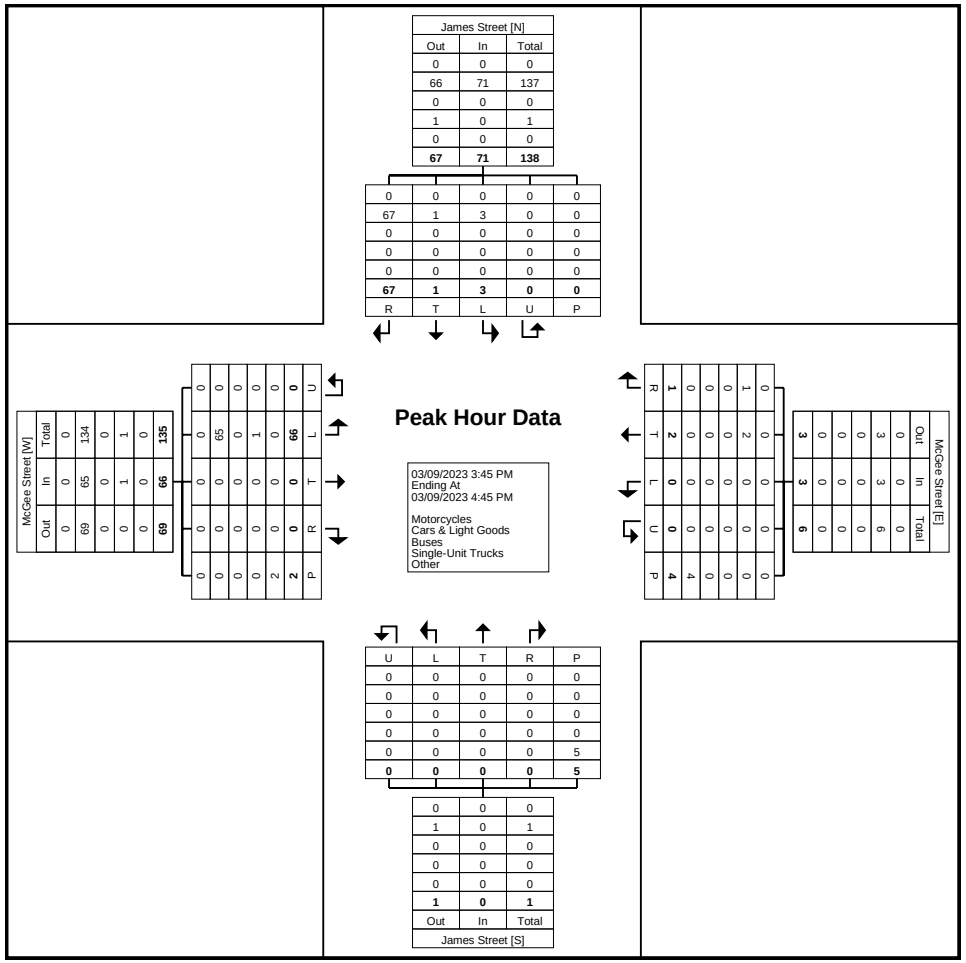
Turning Movement Peak Hour Data (3:45 PM)

Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James 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
3:45 PM	14	0	0	0	0	14	0	1	0	0	0	1	0	0	0	0	0	0	0	0	13	0	0	13	28
4:00 PM	20	0	0	0	0	20	0	0	1	0	0	1	0	0	0	0	0	0	0	1	22	0	0	23	44
4:15 PM	19	0	0	0	2	19	0	0	0	0	2	0	0	0	0	0	3	0	3	0	12	0	0	15	34
4:30 PM	13	0	0	0	0	13	0	1	0	0	2	1	0	0	0	0	2	0	0	0	20	0	0	20	34
Total	66	0	0	0	2	66	0	2	1	0	4	3	0	0	0	0	5	0	3	1	67	0	0	71	140
Approach %	100.0	0.0	0.0	0.0	-	-	0.0	66.7	33.3	0.0	-	-	0.0	0.0	0.0	0.0	-	-	4.2	1.4	94.4	0.0	-	-	-
Total %	47.1	0.0	0.0	0.0	-	47.1	0.0	1.4	0.7	0.0	-	2.1	0.0	0.0	0.0	0.0	-	0.0	2.1	0.7	47.9	0.0	-	50.7	-
PHF	0.825	0.000	0.000	0.000	-	0.825	0.000	0.500	0.250	0.000	-	0.750	0.000	0.000	0.000	0.000	-	0.000	0.250	0.250	0.761	0.000	-	0.772	0.795
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	-	-	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	65	0	0	0	-	65	0	2	1	0	-	3	0	0	0	0	-	0	3	1	67	0	-	71	139
% Cars & Light Goods	98.5	-	-	-	-	98.5	-	100.0	100.0	-	-	100.0	-	-	-	-	-	-	100.0	100.0	100.0	-	-	100.0	99.3
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	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	1.5	-	-	-	-	1.5	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	-	-	-	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	-	-	-	0.0	-	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-	5	-	-	-	-	-	0	-	-
% 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: McGee Street & James Street
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

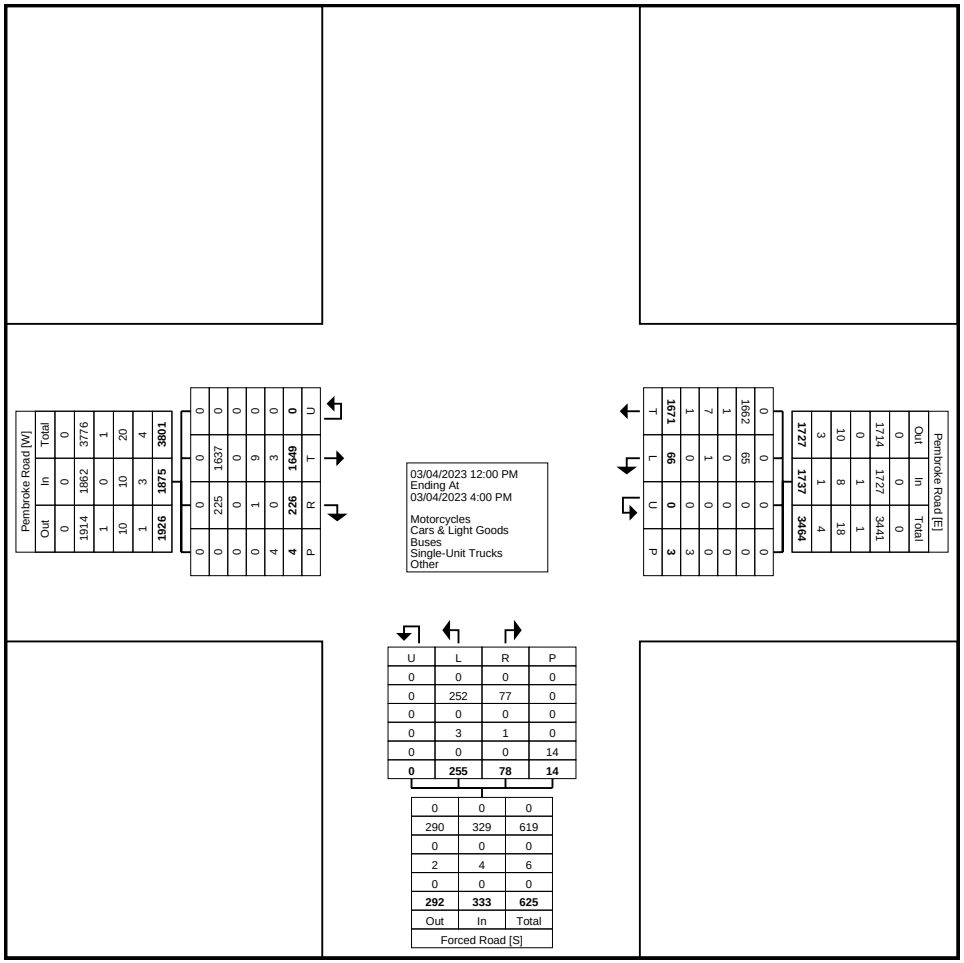
Start Time	Pembroke Road Eastbound					Pembroke Road Westbound					Forced Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	82	19	0	0	101	4	106	0	0	110	11	5	0	0	16	227
12:15 PM	110	12	0	0	122	2	86	0	0	88	14	6	0	0	20	230
12:30 PM	104	15	0	0	119	5	98	0	0	103	15	3	0	1	18	240
12:45 PM	106	14	0	0	120	7	103	0	0	110	15	3	0	2	18	248
Hourly Total	402	60	0	0	462	18	393	0	0	411	55	17	0	3	72	945
1:00 PM	114	11	0	2	125	2	97	0	0	99	16	7	0	0	23	247
1:15 PM	117	12	0	0	129	5	94	0	0	99	24	2	0	0	26	254
1:30 PM	85	12	0	0	97	2	96	0	0	98	13	4	0	0	17	212
1:45 PM	107	8	0	0	115	2	96	0	0	98	22	8	0	1	30	243
Hourly Total	423	43	0	2	466	11	383	0	0	394	75	21	0	1	96	956
2:00 PM	87	17	0	2	104	4	109	0	0	113	14	5	0	1	19	236
2:15 PM	106	16	0	0	122	4	103	0	0	107	15	3	0	1	18	247
2:30 PM	104	12	0	0	116	3	117	0	0	120	11	7	0	1	18	254
2:45 PM	123	10	0	0	133	2	117	0	1	119	13	5	0	0	18	270
Hourly Total	420	55	0	2	475	13	446	0	1	459	53	20	0	3	73	1007
3:00 PM	96	15	0	0	111	4	124	0	1	128	27	5	0	0	32	271
3:15 PM	94	19	0	0	113	5	116	0	1	121	10	2	0	3	12	246
3:30 PM	107	20	0	0	127	3	112	0	0	115	18	7	0	1	25	267
3:45 PM	107	14	0	0	121	12	97	0	0	109	17	6	0	3	23	253
Hourly Total	404	68	0	0	472	24	449	0	2	473	72	20	0	7	92	1037
Grand Total	1649	226	0	4	1875	66	1671	0	3	1737	255	78	0	14	333	3945
Approach %	87.9	12.1	0.0	-	-	3.8	96.2	0.0	-	-	76.6	23.4	0.0	-	-	-
Total %	41.8	5.7	0.0	-	47.5	1.7	42.4	0.0	-	44.0	6.5	2.0	0.0	-	8.4	-
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	1637	225	0	-	1862	65	1662	0	-	1727	252	77	0	-	329	3918
% Cars & Light Goods	99.3	99.6	-	-	99.3	98.5	99.5	-	-	99.4	98.8	98.7	-	-	98.8	99.3
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	9	1	0	-	10	1	7	0	-	8	3	1	0	-	4	22
% Single-Unit Trucks	0.5	0.4	-	-	0.5	1.5	0.4	-	-	0.5	1.2	1.3	-	-	1.2	0.6
Articulated Trucks	2	0	0	-	2	0	1	0	-	1	0	0	0	-	0	3
% Articulated Trucks	0.1	0.0	-	-	0.1	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.1	0.0	-	-	0.1	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	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	4	-	-	-	-	3	-	-	-	-	14	-	-
% 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: Pembroke Road & Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



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: Pembroke Road & Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

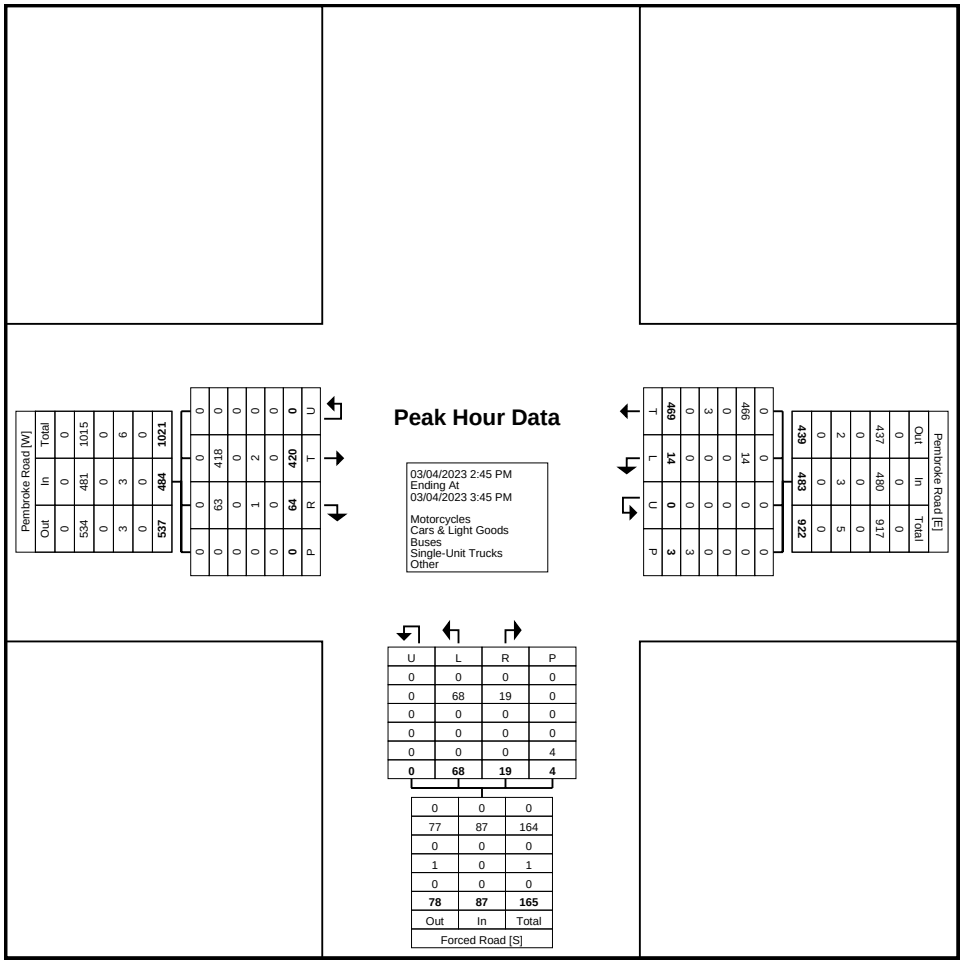
Turning Movement Peak Hour Data (2:45 PM)

Start Time	Pembroke Road Eastbound					Pembroke Road Westbound					Forced Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
2:45 PM	123	10	0	0	133	2	117	0	1	119	13	5	0	0	18	270
3:00 PM	96	15	0	0	111	4	124	0	1	128	27	5	0	0	32	271
3:15 PM	94	19	0	0	113	5	116	0	1	121	10	2	0	3	12	246
3:30 PM	107	20	0	0	127	3	112	0	0	115	18	7	0	1	25	267
Total	420	64	0	0	484	14	469	0	3	483	68	19	0	4	87	1054
Approach %	86.8	13.2	0.0	-	-	2.9	97.1	0.0	-	-	78.2	21.8	0.0	-	-	-
Total %	39.8	6.1	0.0	-	45.9	1.3	44.5	0.0	-	45.8	6.5	1.8	0.0	-	8.3	-
PHF	0.854	0.800	0.000	-	0.910	0.700	0.946	0.000	-	0.943	0.630	0.679	0.000	-	0.680	0.972
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	418	63	0	-	481	14	466	0	-	480	68	19	0	-	87	1048
% Cars & Light Goods	99.5	98.4	-	-	99.4	100.0	99.4	-	-	99.4	100.0	100.0	-	-	100.0	99.4
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	2	1	0	-	3	0	3	0	-	3	0	0	0	-	0	6
% Single-Unit Trucks	0.5	1.6	-	-	0.6	0.0	0.6	-	-	0.6	0.0	0.0	-	-	0.0	0.6
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	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	3	-	-	-	-	4	-	-
% 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: Pembroke Road & Forced Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (2:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

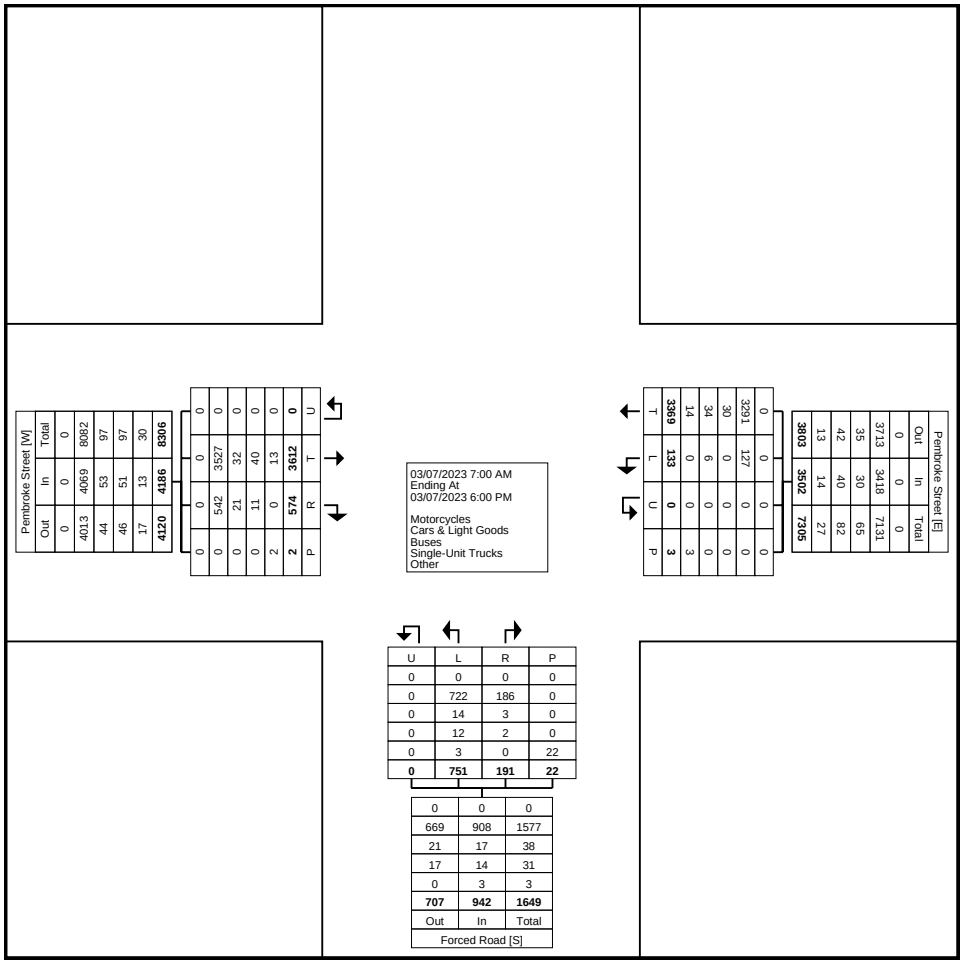
Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	50	8	0	0	58	1	47	0	1	48	23	2	0	0	25	131
7:15 AM	60	9	0	0	69	3	75	0	0	78	11	6	0	0	17	164
7:30 AM	96	7	0	0	103	3	76	0	0	79	28	3	0	2	31	213
7:45 AM	111	10	0	0	121	2	76	0	0	78	26	8	0	1	34	233
Hourly Total	317	34	0	0	351	9	274	0	1	283	88	19	0	3	107	741
8:00 AM	85	7	0	0	92	0	81	0	0	81	41	2	0	0	43	216
8:15 AM	128	8	0	0	136	5	99	0	0	104	38	5	0	0	43	283
8:30 AM	116	14	0	0	130	0	88	0	0	88	20	7	0	0	27	245
8:45 AM	104	17	0	0	121	2	89	0	0	91	28	7	0	0	35	247
Hourly Total	433	46	0	0	479	7	357	0	0	364	127	21	0	0	148	991
9:00 AM	112	9	0	0	121	5	72	0	0	77	14	7	0	0	21	219
9:15 AM	115	5	0	0	120	1	88	0	1	89	21	7	0	0	28	237
9:30 AM	115	7	0	0	122	3	92	0	1	95	20	7	0	0	27	244
9:45 AM	106	17	0	0	123	3	90	0	0	93	21	7	0	2	28	244
Hourly Total	448	38	0	0	486	12	342	0	2	354	76	28	0	2	104	944
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	120	20	0	0	140	4	118	0	0	122	17	7	0	0	24	286
11:15 AM	132	21	0	0	153	5	111	0	0	116	29	6	0	1	35	304
11:30 AM	130	16	0	0	146	3	112	0	0	115	25	8	0	0	33	294
11:45 AM	98	13	0	0	111	2	117	0	0	119	15	6	0	0	21	251
Hourly Total	480	70	0	0	550	14	458	0	0	472	86	27	0	1	113	1135
12:00 PM	104	21	0	0	125	5	140	0	0	145	22	5	0	1	27	297
12:15 PM	102	19	0	1	121	1	111	0	0	112	23	4	0	0	27	260
12:30 PM	119	30	0	1	149	7	124	0	0	131	29	14	0	1	43	323
12:45 PM	133	20	0	0	153	8	71	0	0	79	28	3	0	1	31	263
Hourly Total	458	90	0	2	548	21	446	0	0	467	102	26	0	3	128	1143
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	118	16	0	0	134	5	132	0	0	137	29	10	0	1	39	310
3:15 PM	148	16	0	0	164	4	149	0	0	153	20	3	0	0	23	340
3:30 PM	130	18	0	0	148	4	129	0	0	133	21	0	0	1	21	302
3:45 PM	133	32	0	0	165	8	113	0	0	121	24	5	0	1	29	315
Hourly Total	529	82	0	0	611	21	523	0	0	544	94	18	0	3	112	1267
4:00 PM	109	30	0	0	139	11	161	0	0	172	31	7	0	2	38	349
4:15 PM	133	35	0	0	168	4	144	0	0	148	27	6	0	2	33	349
4:30 PM	139	34	0	0	173	7	140	0	0	147	24	3	0	3	27	347
4:45 PM	135	34	0	0	169	5	116	0	0	121	23	7	0	0	30	320

Hourly Total	516	133	0	0	649	27	561	0	0	588	105	23	0	7	128	1365
5:00 PM	129	27	0	0	156	6	121	0	0	127	18	4	0	2	22	305
5:15 PM	110	23	0	0	133	9	118	0	0	127	23	8	0	0	31	291
5:30 PM	86	22	0	0	108	4	88	0	0	92	15	6	0	0	21	221
5:45 PM	106	9	0	0	115	3	81	0	0	84	17	11	0	1	28	227
Hourly Total	431	81	0	0	512	22	408	0	0	430	73	29	0	3	102	1044
Grand Total	3612	574	0	2	4186	133	3369	0	3	3502	751	191	0	22	942	8630
Approach %	86.3	13.7	0.0	-	-	3.8	96.2	0.0	-	-	79.7	20.3	0.0	-	-	-
Total %	41.9	6.7	0.0	-	48.5	1.5	39.0	0.0	-	40.6	8.7	2.2	0.0	-	10.9	-
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	3527	542	0	-	4069	127	3291	0	-	3418	722	186	0	-	908	8395
% Cars & Light Goods	97.6	94.4	-	-	97.2	95.5	97.7	-	-	97.6	96.1	97.4	-	-	96.4	97.3
Buses	32	21	0	-	53	0	30	0	-	30	14	3	0	-	17	100
% Buses	0.9	3.7	-	-	1.3	0.0	0.9	-	-	0.9	1.9	1.6	-	-	1.8	1.2
Single-Unit Trucks	40	11	0	-	51	6	34	0	-	40	12	2	0	-	14	105
% Single-Unit Trucks	1.1	1.9	-	-	1.2	4.5	1.0	-	-	1.1	1.6	1.0	-	-	1.5	1.2
Articulated Trucks	12	0	0	-	12	0	12	0	-	12	3	0	0	-	3	27
% Articulated Trucks	0.3	0.0	-	-	0.3	0.0	0.4	-	-	0.3	0.4	0.0	-	-	0.3	0.3
Bicycles on Road	1	0	0	-	1	0	2	0	-	2	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	2	-	-	-	-	3	-	-	-	-	22	-	-
% 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: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023
Page No: 3



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: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

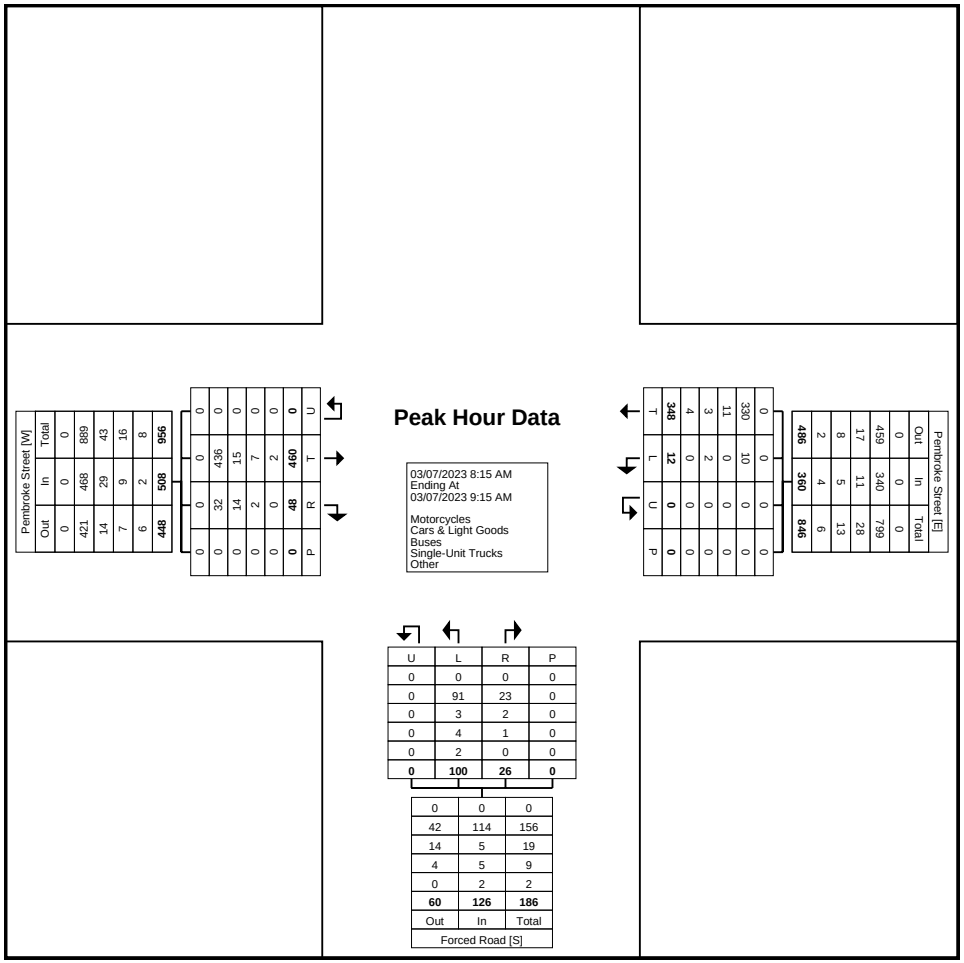
Turning Movement Peak Hour Data (8:15 AM)

Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
8:15 AM	128	8	0	0	136	5	99	0	0	104	38	5	0	0	43	283
8:30 AM	116	14	0	0	130	0	88	0	0	88	20	7	0	0	27	245
8:45 AM	104	17	0	0	121	2	89	0	0	91	28	7	0	0	35	247
9:00 AM	112	9	0	0	121	5	72	0	0	77	14	7	0	0	21	219
Total	460	48	0	0	508	12	348	0	0	360	100	26	0	0	126	994
Approach %	90.6	9.4	0.0	-	-	3.3	96.7	0.0	-	-	79.4	20.6	0.0	-	-	-
Total %	46.3	4.8	0.0	-	51.1	1.2	35.0	0.0	-	36.2	10.1	2.6	0.0	-	12.7	-
PHF	0.898	0.706	0.000	-	0.934	0.600	0.879	0.000	-	0.865	0.658	0.929	0.000	-	0.733	0.878
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	436	32	0	-	468	10	330	0	-	340	91	23	0	-	114	922
% Cars & Light Goods	94.8	66.7	-	-	92.1	83.3	94.8	-	-	94.4	91.0	88.5	-	-	90.5	92.8
Buses	15	14	0	-	29	0	11	0	-	11	3	2	0	-	5	45
% Buses	3.3	29.2	-	-	5.7	0.0	3.2	-	-	3.1	3.0	7.7	-	-	4.0	4.5
Single-Unit Trucks	7	2	0	-	9	2	3	0	-	5	4	1	0	-	5	19
% Single-Unit Trucks	1.5	4.2	-	-	1.8	16.7	0.9	-	-	1.4	4.0	3.8	-	-	4.0	1.9
Articulated Trucks	2	0	0	-	2	0	2	0	-	2	2	0	0	-	2	6
% Articulated Trucks	0.4	0.0	-	-	0.4	0.0	0.6	-	-	0.6	2.0	0.0	-	-	1.6	0.6
Bicycles on Road	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.6	-	-	0.6	0.0	0.0	-	-	0.0	0.2
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: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

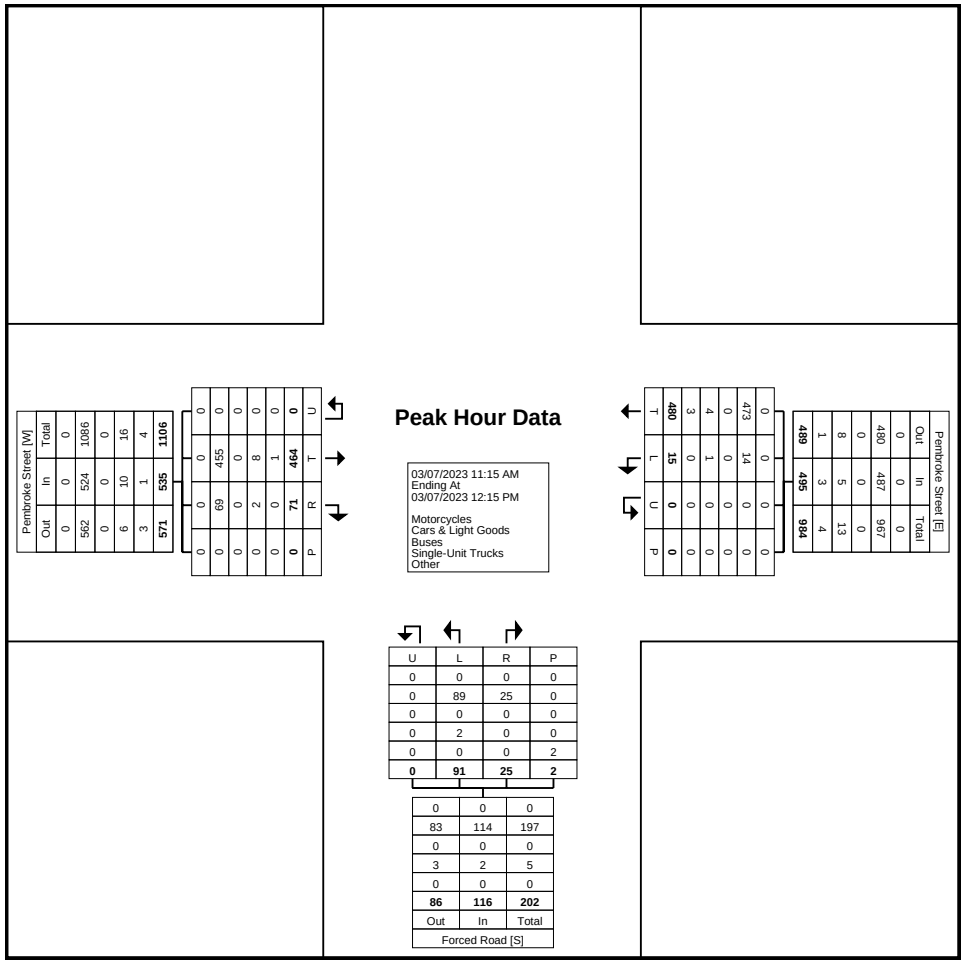
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:15 AM	132	21	0	0	153	5	111	0	0	116	29	6	0	1	35	304
11:30 AM	130	16	0	0	146	3	112	0	0	115	25	8	0	0	33	294
11:45 AM	98	13	0	0	111	2	117	0	0	119	15	6	0	0	21	251
12:00 PM	104	21	0	0	125	5	140	0	0	145	22	5	0	1	27	297
Total	464	71	0	0	535	15	480	0	0	495	91	25	0	2	116	1146
Approach %	86.7	13.3	0.0	-	-	3.0	97.0	0.0	-	-	78.4	21.6	0.0	-	-	-
Total %	40.5	6.2	0.0	-	46.7	1.3	41.9	0.0	-	43.2	7.9	2.2	0.0	-	10.1	-
PHF	0.879	0.845	0.000	-	0.874	0.750	0.857	0.000	-	0.853	0.784	0.781	0.000	-	0.829	0.942
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	455	69	0	-	524	14	473	0	-	487	89	25	0	-	114	1125
% Cars & Light Goods	98.1	97.2	-	-	97.9	93.3	98.5	-	-	98.4	97.8	100.0	-	-	98.3	98.2
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	8	2	0	-	10	1	4	0	-	5	2	0	0	-	2	17
% Single-Unit Trucks	1.7	2.8	-	-	1.9	6.7	0.8	-	-	1.0	2.2	0.0	-	-	1.7	1.5
Articulated Trucks	1	0	0	-	1	0	3	0	-	3	0	0	0	-	0	4
% Articulated Trucks	0.2	0.0	-	-	0.2	0.0	0.6	-	-	0.6	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

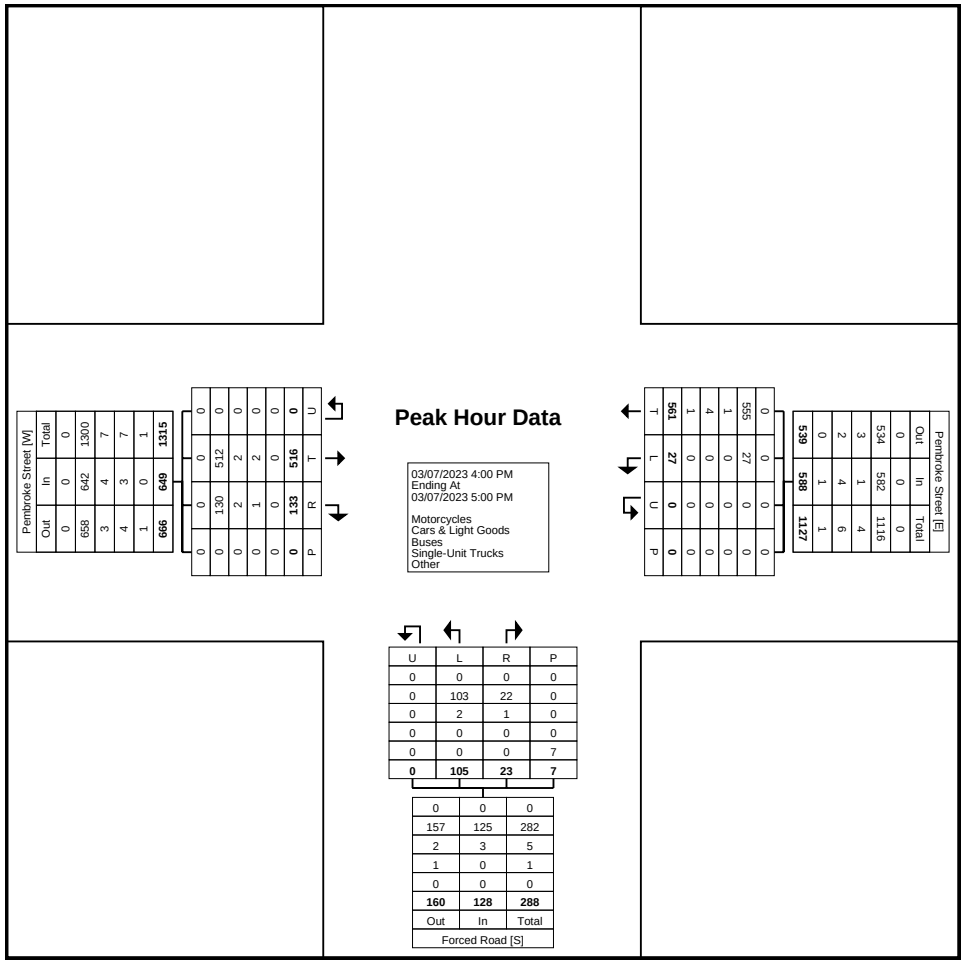
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	109	30	0	0	139	11	161	0	0	172	31	7	0	2	38	349
4:15 PM	133	35	0	0	168	4	144	0	0	148	27	6	0	2	33	349
4:30 PM	139	34	0	0	173	7	140	0	0	147	24	3	0	3	27	347
4:45 PM	135	34	0	0	169	5	116	0	0	121	23	7	0	0	30	320
Total	516	133	0	0	649	27	561	0	0	588	105	23	0	7	128	1365
Approach %	79.5	20.5	0.0	-	-	4.6	95.4	0.0	-	-	82.0	18.0	0.0	-	-	-
Total %	37.8	9.7	0.0	-	47.5	2.0	41.1	0.0	-	43.1	7.7	1.7	0.0	-	9.4	-
PHF	0.928	0.950	0.000	-	0.938	0.614	0.871	0.000	-	0.855	0.847	0.821	0.000	-	0.842	0.978
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	512	130	0	-	642	27	555	0	-	582	103	22	0	-	125	1349
% Cars & Light Goods	99.2	97.7	-	-	98.9	100.0	98.9	-	-	99.0	98.1	95.7	-	-	97.7	98.8
Buses	2	2	0	-	4	0	1	0	-	1	2	1	0	-	3	8
% Buses	0.4	1.5	-	-	0.6	0.0	0.2	-	-	0.2	1.9	4.3	-	-	2.3	0.6
Single-Unit Trucks	2	1	0	-	3	0	4	0	-	4	0	0	0	-	0	7
% Single-Unit Trucks	0.4	0.8	-	-	0.5	0.0	0.7	-	-	0.7	0.0	0.0	-	-	0.0	0.5
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Pembroke Street & Blakely Cres - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

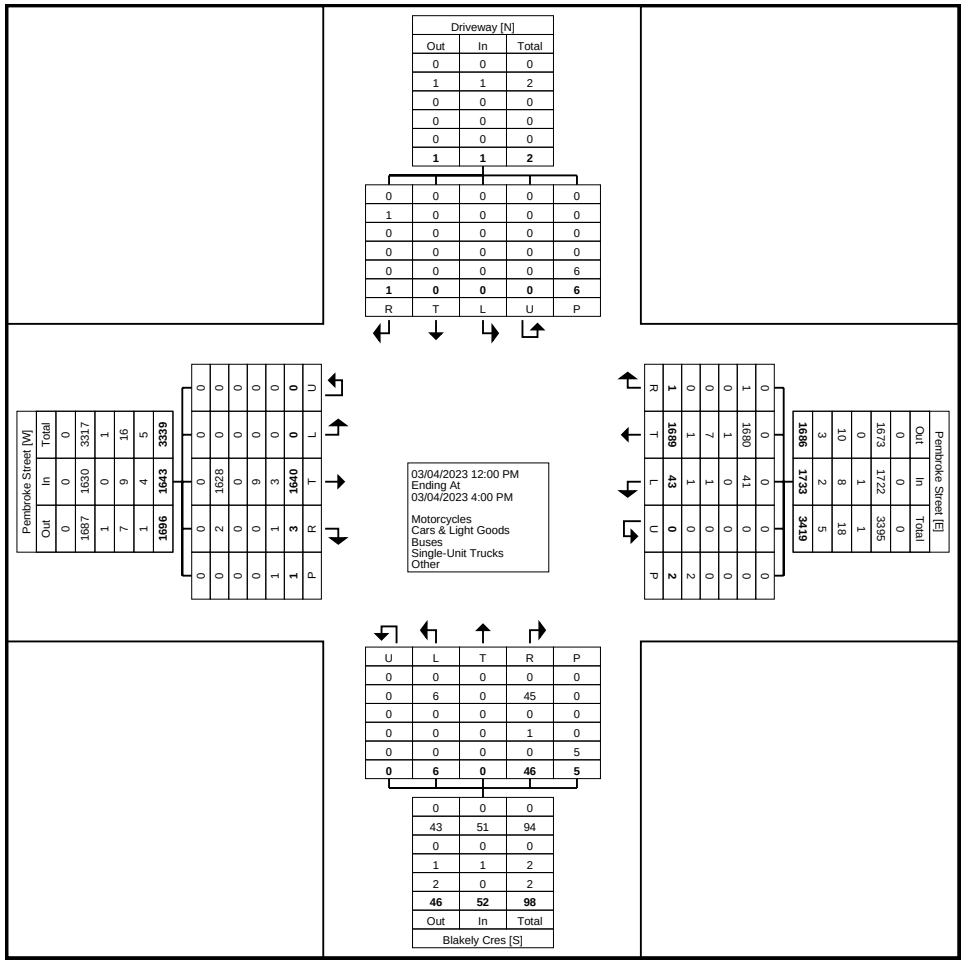
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	0	100	0	0	0	100	3	99	0	0	0	102	0	0	1	0	0	1	0	0	0	0	0	0	203
12:15 PM	0	123	0	0	0	123	2	89	0	0	0	91	0	0	5	0	0	5	0	0	0	0	0	0	219
12:30 PM	0	86	0	0	0	86	0	98	0	0	0	98	0	0	1	0	0	1	0	0	0	0	0	0	185
12:45 PM	0	101	0	0	0	101	3	102	0	0	0	105	0	0	2	0	0	2	0	0	0	0	0	0	208
Hourly Total	0	410	0	0	0	410	8	388	0	0	0	396	0	0	9	0	0	9	0	0	0	0	0	0	815
1:00 PM	0	112	1	0	0	113	2	94	0	0	0	96	0	0	4	0	0	4	0	0	0	0	0	0	213
1:15 PM	0	110	1	0	0	111	2	102	0	0	0	104	0	0	1	0	0	1	0	0	0	0	0	0	216
1:30 PM	0	104	0	0	0	104	2	86	0	0	0	88	1	0	1	0	0	2	0	0	0	0	0	0	194
1:45 PM	0	102	0	0	0	102	3	110	0	0	0	113	1	0	3	0	0	4	0	0	0	0	0	0	219
Hourly Total	0	428	2	0	0	430	9	392	0	0	0	401	2	0	9	0	0	11	0	0	0	0	0	0	842
2:00 PM	0	80	0	0	0	80	2	119	0	0	0	121	0	0	3	0	1	3	0	0	0	0	0	0	204
2:15 PM	0	129	0	0	0	129	3	104	0	0	0	107	1	0	2	0	0	3	0	0	0	0	0	0	239
2:30 PM	0	89	0	0	0	89	1	117	0	0	1	118	0	0	3	0	2	3	0	0	0	0	1	0	210
2:45 PM	0	121	0	0	0	121	4	108	0	0	0	112	0	0	1	0	0	1	0	0	0	0	0	0	234
Hourly Total	0	419	0	0	0	419	10	448	0	0	1	458	1	0	9	0	3	10	0	0	0	0	1	0	887
3:00 PM	0	95	0	0	0	95	5	118	1	0	0	124	1	0	7	0	0	8	0	0	1	0	0	1	228
3:15 PM	0	97	0	0	1	97	6	111	0	0	0	117	0	0	4	0	0	4	0	0	0	0	3	0	218
3:30 PM	0	87	1	0	0	88	3	124	0	0	1	127	2	0	4	0	2	6	0	0	0	0	2	0	221
3:45 PM	0	104	0	0	0	104	2	108	0	0	0	110	0	0	4	0	0	4	0	0	0	0	0	0	218
Hourly Total	0	383	1	0	1	384	16	461	1	0	1	478	3	0	19	0	2	22	0	0	1	0	5	1	885
Grand Total	0	1640	3	0	1	1643	43	1689	1	0	2	1733	6	0	46	0	5	52	0	0	1	0	6	1	3429
Approach %	0.0	99.8	0.2	0.0	-	-	2.5	97.5	0.1	0.0	-	-	11.5	0.0	88.5	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.0	47.8	0.1	0.0	-	47.9	1.3	49.3	0.0	0.0	-	50.5	0.2	0.0	1.3	0.0	-	1.5	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
% 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
Cars & Light Goods	0	1628	2	0	-	1630	41	1680	1	0	-	1722	6	0	45	0	-	51	0	0	1	0	-	1	3404
% Cars & Light Goods	-	99.3	66.7	-	-	99.2	95.3	99.5	100.0	-	-	99.4	100.0	-	97.8	-	-	98.1	-	-	100.0	-	-	100.0	99.3
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	9	0	0	-	9	1	7	0	0	-	8	0	0	1	0	-	1	0	0	0	0	-	0	18
% Single-Unit Trucks	-	0.5	0.0	-	-	0.5	2.3	0.4	0.0	-	-	0.5	0.0	-	2.2	-	-	1.9	-	-	0.0	-	-	0.0	0.5
Articulated Trucks	0	3	1	0	-	4	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	-	0.2	33.3	-	-	0.2	2.3	0.1	0.0	-	-	0.1	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.2

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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Blakely Cres - Saturday
Site Code: 220694
Start Date: 03/04/2023


Pembroke Street [W]
Out In Total
0 0 0
1687 1630 3317
1 0 1
7 9 16
1 4 5
1696 1643 3339
0 0 0
2 0 2
0 0 0
0 0 0
1 1 2
1 3 4
P R T
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
0 6 6
0 1640 1640
L T
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
U
03/04/2023 12:00 PM
Ending At
03/04/2023 4:00 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
Pembroke Street [E]
Out In Total
0 0 0
1673 1722 3395
0 1 1
10 8 18
3 2 5
1696 1733 3419
0 0 0
1 0 1
0 0 0
1 1 2
0 0 0
0 0 0
1 41 42
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0
0 0 0

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Count Name: Pembroke Street & Blakely Cres - Saturday
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Start Date: 03/04/2023

Turning Movement Peak Hour Data (2:15 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
2:15 PM	0	129	0	0	0	129	3	104	0	0	0	107	1	0	2	0	0	3	0	0	0	0	0	0	239
2:30 PM	0	89	0	0	0	89	1	117	0	0	1	118	0	0	3	0	2	3	0	0	0	0	1	0	210
2:45 PM	0	121	0	0	0	121	4	108	0	0	0	112	0	0	1	0	0	1	0	0	0	0	0	0	234
3:00 PM	0	95	0	0	0	95	5	118	1	0	0	124	1	0	7	0	0	8	0	0	1	0	0	1	228
Total	0	434	0	0	0	434	13	447	1	0	1	461	2	0	13	0	2	15	0	0	1	0	1	1	911
Approach %	0.0	100.0	0.0	0.0	-	-	2.8	97.0	0.2	0.0	-	-	13.3	0.0	86.7	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.0	47.6	0.0	0.0	-	47.6	1.4	49.1	0.1	0.0	-	50.6	0.2	0.0	1.4	0.0	-	1.6	0.0	0.0	0.1	0.0	-	0.1	-
PHF	0.000	0.841	0.000	0.000	-	0.841	0.650	0.947	0.250	0.000	-	0.929	0.500	0.000	0.464	0.000	-	0.469	0.000	0.000	0.250	0.000	-	0.250	0.953
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
Cars & Light Goods	0	432	0	0	-	432	12	446	1	0	-	459	2	0	12	0	-	14	0	0	1	0	-	1	906
% Cars & Light Goods	-	99.5	-	-	-	99.5	92.3	99.8	100.0	-	-	99.6	100.0	-	92.3	-	-	93.3	-	-	100.0	-	-	100.0	99.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	0	-	2	1	1	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	5
% Single-Unit Trucks	-	0.5	-	-	-	0.5	7.7	0.2	0.0	-	-	0.4	0.0	-	7.7	-	-	6.7	-	-	0.0	-	-	0.0	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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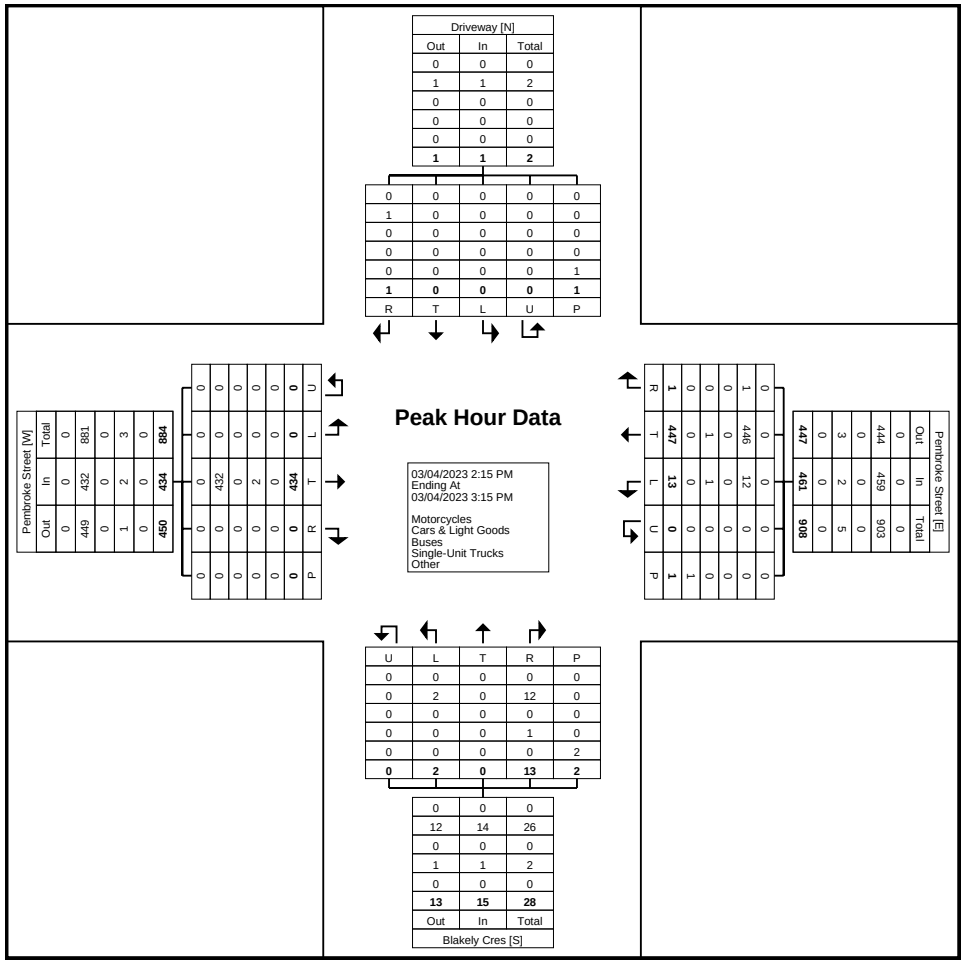
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (2:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Blakely Cres - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

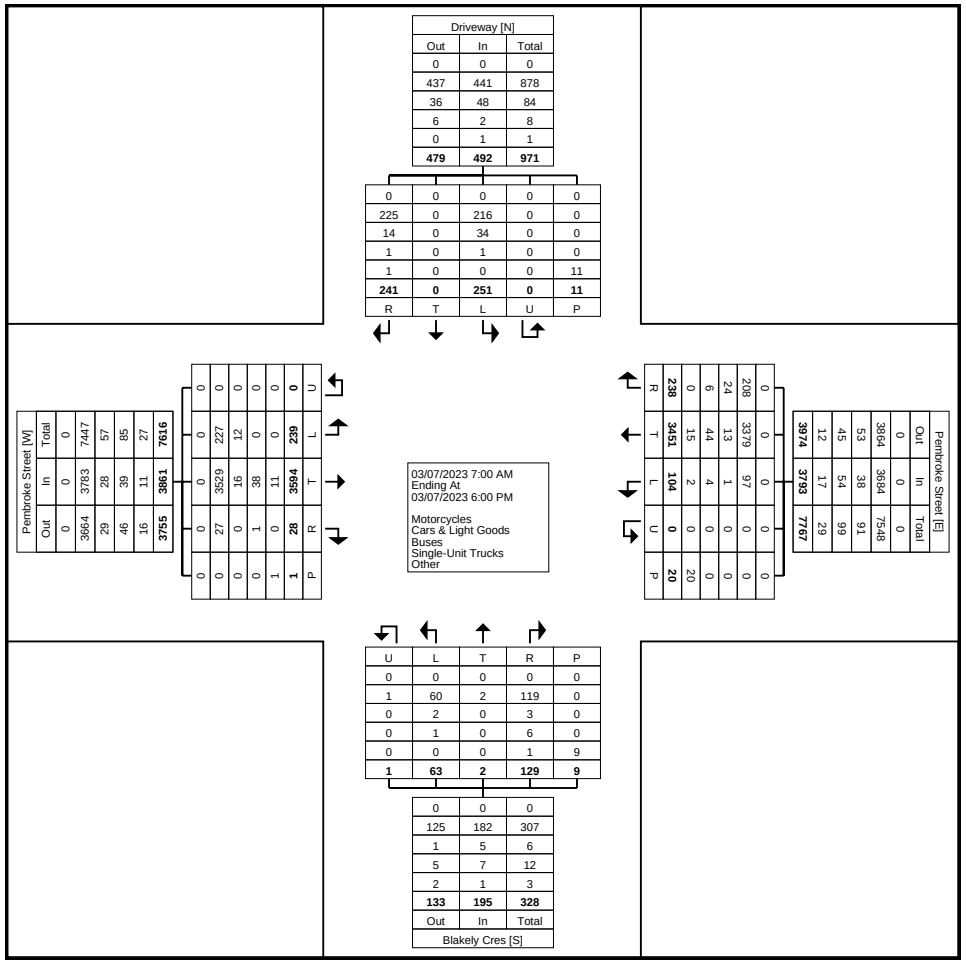
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	3	63	0	0	0	66	3	67	2	0	0	72	0	0	2	0	0	2	0	0	0	0	0	0	140
7:15 AM	5	62	0	0	0	67	4	68	5	0	0	77	1	0	1	0	0	2	0	0	0	0	0	0	146
7:30 AM	16	117	0	0	0	133	5	86	9	0	0	100	1	0	0	0	0	1	1	0	3	0	0	4	238
7:45 AM	21	120	3	0	0	144	4	85	12	0	0	101	0	0	3	0	0	3	0	0	9	0	0	9	257
Hourly Total	45	362	3	0	0	410	16	306	28	0	0	350	2	0	6	0	0	8	1	0	12	0	0	13	781
8:00 AM	26	96	2	0	0	124	3	85	26	0	0	114	1	0	5	0	1	6	6	0	5	0	0	11	255
8:15 AM	38	107	3	0	0	148	4	91	23	0	0	118	2	0	4	0	0	6	26	0	13	0	0	39	311
8:30 AM	19	114	0	0	0	133	1	91	28	0	0	120	2	0	5	0	0	7	28	0	11	0	0	39	299
8:45 AM	12	119	2	0	0	133	11	91	7	0	0	109	0	0	5	1	0	6	11	0	8	0	0	19	267
Hourly Total	95	436	7	0	0	538	19	358	84	0	0	461	5	0	19	1	1	25	71	0	37	0	0	108	1132
9:00 AM	2	109	1	0	0	112	2	81	7	0	1	90	1	0	3	0	0	4	5	0	5	0	0	10	216
9:15 AM	3	111	1	0	0	115	2	69	5	0	1	76	1	0	1	0	0	2	6	0	1	0	1	7	200
9:30 AM	2	113	0	0	0	115	1	89	1	0	1	91	2	1	3	0	0	6	1	0	3	0	0	4	216
9:45 AM	0	114	2	0	0	116	1	75	1	0	0	77	0	0	2	0	0	2	2	0	1	0	0	3	198
Hourly Total	7	447	4	0	0	458	6	314	14	0	3	334	4	1	9	0	0	14	14	0	10	0	1	24	830
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	107	0	0	0	107	4	94	2	0	1	100	1	1	7	0	0	9	4	0	1	0	0	5	221
11:15 AM	3	116	0	0	0	119	0	111	6	0	0	117	1	0	4	0	0	5	3	0	2	0	0	5	246
11:30 AM	1	97	0	0	0	98	3	86	2	0	8	91	2	0	4	0	4	6	6	0	5	0	0	11	206
11:45 AM	2	105	1	0	0	108	6	109	2	0	5	117	3	0	4	0	0	7	2	0	3	0	0	5	237
Hourly Total	6	425	1	0	0	432	13	400	12	0	14	425	7	1	19	0	4	27	15	0	11	0	0	26	910
12:00 PM	3	111	2	0	1	116	5	132	6	0	0	143	7	0	7	0	0	14	2	0	4	0	5	6	279
12:15 PM	2	111	2	0	0	115	5	114	4	0	3	123	1	0	2	0	0	3	3	0	1	0	0	4	245
12:30 PM	0	124	1	0	0	125	2	126	3	0	0	131	2	0	9	0	1	11	4	0	1	0	0	5	272
12:45 PM	2	122	0	0	0	124	7	96	2	0	0	105	3	0	4	0	0	7	1	0	2	0	0	3	239
Hourly Total	7	468	5	0	1	480	19	468	15	0	3	502	13	0	22	0	1	35	10	0	8	0	5	18	1035
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	10	118	2	0	0	130	1	133	16	0	0	150	0	0	5	0	0	5	11	0	11	0	0	22	307
3:15 PM	3	109	0	0	0	112	3	127	10	0	0	140	2	0	4	0	1	6	35	0	31	0	5	66	324
3:30 PM	2	117	0	0	0	119	1	157	3	0	0	161	0	0	2	0	1	2	9	0	18	0	0	27	309
3:45 PM	7	137	0	0	0	144	3	128	2	0	0	133	1	0	3	0	1	4	2	0	4	0	0	6	287
Hourly Total	22	481	2	0	0	505	8	545	31	0	0	584	3	0	14	0	3	17	57	0	64	0	5	121	1227
4:00 PM	8	114	1	0	0	123	2	152	7	0	0	161	7	0	2	0	0	9	7	0	6	0	0	13	306
4:15 PM	27	145	2	0	0	174	3	161	27	0	0	191	5	0	5	0	0	10	7	0	15	0	0	22	397
4:30 PM	14	118	0	0	0	132	8	149	12	0	0	169	8	0	13	0	0	21	45	0	51	0	0	96	418

4:45 PM	4	129	1	0	0	134	4	144	4	0	0	152	2	0	2	0	0	4	10	0	10	0	0	20	310
Hourly Total	53	506	4	0	0	563	17	606	50	0	0	673	22	0	22	0	0	44	69	0	82	0	0	151	1431
5:00 PM	4	150	2	0	0	156	3	136	4	0	0	143	4	0	7	0	0	11	9	0	11	0	0	20	330
5:15 PM	0	121	0	0	0	121	2	124	0	0	0	126	0	0	3	0	0	3	2	0	5	0	0	7	257
5:30 PM	0	95	0	0	0	95	1	111	0	0	0	112	3	0	4	0	0	7	2	0	1	0	0	3	217
5:45 PM	0	103	0	0	0	103	0	83	0	0	0	83	0	0	4	0	0	4	1	0	0	0	0	1	191
Hourly Total	4	469	2	0	0	475	6	454	4	0	0	464	7	0	18	0	0	25	14	0	17	0	0	31	995
Grand Total	239	3594	28	0	1	3861	104	3451	238	0	20	3793	63	2	129	1	9	195	251	0	241	0	11	492	8341
Approach %	6.2	93.1	0.7	0.0	-	-	2.7	91.0	6.3	0.0	-	-	32.3	1.0	66.2	0.5	-	-	51.0	0.0	49.0	0.0	-	-	-
Total %	2.9	43.1	0.3	0.0	-	46.3	1.2	41.4	2.9	0.0	-	45.5	0.8	0.0	1.5	0.0	-	2.3	3.0	0.0	2.9	0.0	-	5.9	-
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	227	3529	27	0	-	3783	97	3379	208	0	-	3684	60	2	119	1	-	182	216	0	225	0	-	441	8090
% Cars & Light Goods	95.0	98.2	96.4	-	-	98.0	93.3	97.9	87.4	-	-	97.1	95.2	100.0	92.2	100.0	-	93.3	86.1	-	93.4	-	-	89.6	97.0
Buses	12	16	0	0	-	28	1	13	24	0	-	38	2	0	3	0	-	5	34	0	14	0	-	48	119
% Buses	5.0	0.4	0.0	-	-	0.7	1.0	0.4	10.1	-	-	1.0	3.2	0.0	2.3	0.0	-	2.6	13.5	-	5.8	-	-	9.8	1.4
Single-Unit Trucks	0	38	1	0	-	39	4	44	6	0	-	54	1	0	6	0	-	7	1	0	1	0	-	2	102
% Single-Unit Trucks	0.0	1.1	3.6	-	-	1.0	3.8	1.3	2.5	-	-	1.4	1.6	0.0	4.7	0.0	-	3.6	0.4	-	0.4	-	-	0.4	1.2
Articulated Trucks	0	10	0	0	-	10	1	14	0	0	-	15	0	0	1	0	-	1	0	0	1	0	-	1	27
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	1.0	0.4	0.0	-	-	0.4	0.0	0.0	0.8	0.0	-	0.5	0.0	-	0.4	-	-	0.2	0.3
Bicycles on Road	0	1	0	0	-	1	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	1.0	0.0	0.0	-	-	0.1	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	5.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	19	-	-	-	-	-	9	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	95.0	-	-	-	-	-	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: Pembroke Street & Blakely Cres - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Pembroke Street & Blakely Cres - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:00 AM	26	96	2	0	0	124	3	85	26	0	0	114	1	0	5	0	1	6	6	0	5	0	0	11	255
8:15 AM	38	107	3	0	0	148	4	91	23	0	0	118	2	0	4	0	0	6	26	0	13	0	0	39	311
8:30 AM	19	114	0	0	0	133	1	91	28	0	0	120	2	0	5	0	0	7	28	0	11	0	0	39	299
8:45 AM	12	119	2	0	0	133	11	91	7	0	0	109	0	0	5	1	0	6	11	0	8	0	0	19	267
Total	95	436	7	0	0	538	19	358	84	0	0	461	5	0	19	1	1	25	71	0	37	0	0	108	1132
Approach %	17.7	81.0	1.3	0.0	-	-	4.1	77.7	18.2	0.0	-	-	20.0	0.0	76.0	4.0	-	-	65.7	0.0	34.3	0.0	-	-	-
Total %	8.4	38.5	0.6	0.0	-	47.5	1.7	31.6	7.4	0.0	-	40.7	0.4	0.0	1.7	0.1	-	2.2	6.3	0.0	3.3	0.0	-	9.5	-
PHF	0.625	0.916	0.583	0.000	-	0.909	0.432	0.984	0.750	0.000	-	0.960	0.625	0.000	0.950	0.250	-	0.893	0.634	0.000	0.712	0.000	-	0.692	0.910
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
Cars & Light Goods	84	418	7	0	-	509	16	341	69	0	-	426	3	0	16	1	-	20	48	0	35	0	-	83	1038
% Cars & Light Goods	88.4	95.9	100.0	-	-	94.6	84.2	95.3	82.1	-	-	92.4	60.0	-	84.2	100.0	-	80.0	67.6	-	94.6	-	-	76.9	91.7
Buses	11	6	0	0	-	17	1	1	11	0	-	13	1	0	2	0	-	3	22	0	2	0	-	24	57
% Buses	11.6	1.4	0.0	-	-	3.2	5.3	0.3	13.1	-	-	2.8	20.0	-	10.5	0.0	-	12.0	31.0	-	5.4	-	-	22.2	5.0
Single-Unit Trucks	0	10	0	0	-	10	2	13	4	0	-	19	1	0	0	0	-	1	1	0	0	0	-	1	31
% Single-Unit Trucks	0.0	2.3	0.0	-	-	1.9	10.5	3.6	4.8	-	-	4.1	20.0	-	0.0	0.0	-	4.0	1.4	-	0.0	-	-	0.9	2.7
Articulated Trucks	0	2	0	0	-	2	0	2	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.5	0.0	-	-	0.4	0.0	0.6	0.0	-	-	0.4	0.0	-	5.3	0.0	-	4.0	0.0	-	0.0	-	-	0.0	0.4
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.2	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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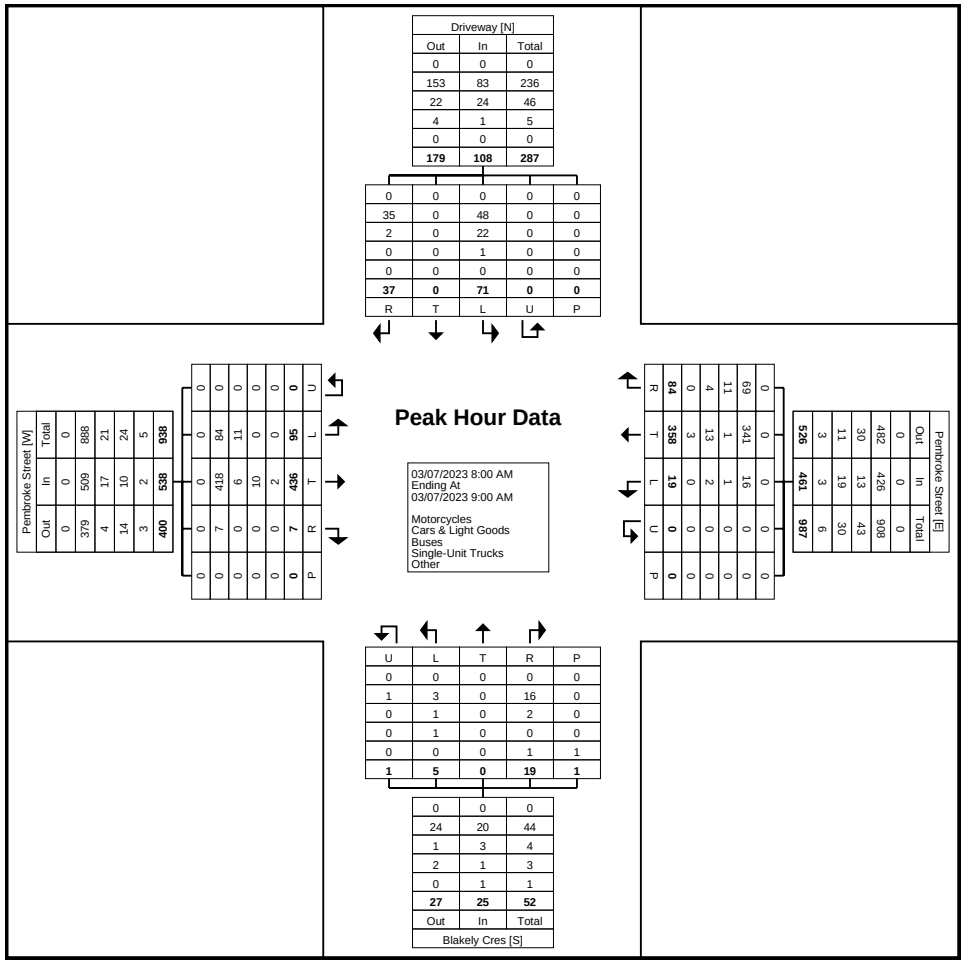
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (8:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Blakely Cres - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	3	111	2	0	1	116	5	132	6	0	0	143	7	0	7	0	0	14	2	0	4	0	5	6	279
12:15 PM	2	111	2	0	0	115	5	114	4	0	3	123	1	0	2	0	0	3	3	0	1	0	0	4	245
12:30 PM	0	124	1	0	0	125	2	126	3	0	0	131	2	0	9	0	1	11	4	0	1	0	0	5	272
12:45 PM	2	122	0	0	0	124	7	96	2	0	0	105	3	0	4	0	0	7	1	0	2	0	0	3	239
Total	7	468	5	0	1	480	19	468	15	0	3	502	13	0	22	0	1	35	10	0	8	0	5	18	1035
Approach %	1.5	97.5	1.0	0.0	-	-	3.8	93.2	3.0	0.0	-	-	37.1	0.0	62.9	0.0	-	-	55.6	0.0	44.4	0.0	-	-	-
Total %	0.7	45.2	0.5	0.0	-	46.4	1.8	45.2	1.4	0.0	-	48.5	1.3	0.0	2.1	0.0	-	3.4	1.0	0.0	0.8	0.0	-	1.7	-
PHF	0.583	0.944	0.625	0.000	-	0.960	0.679	0.886	0.625	0.000	-	0.878	0.464	0.000	0.611	0.000	-	0.625	0.625	0.000	0.500	0.000	-	0.750	0.927
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
Cars & Light Goods	7	459	5	0	-	471	19	461	15	0	-	495	13	0	22	0	-	35	10	0	8	0	-	18	1019
% Cars & Light Goods	100.0	98.1	100.0	-	-	98.1	100.0	98.5	100.0	-	-	98.6	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	98.5
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	8	0	0	-	8	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	13
% Single-Unit Trucks	0.0	1.7	0.0	-	-	1.7	0.0	1.1	0.0	-	-	1.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.3
Articulated Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.2	0.0	-	-	0.2	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.2
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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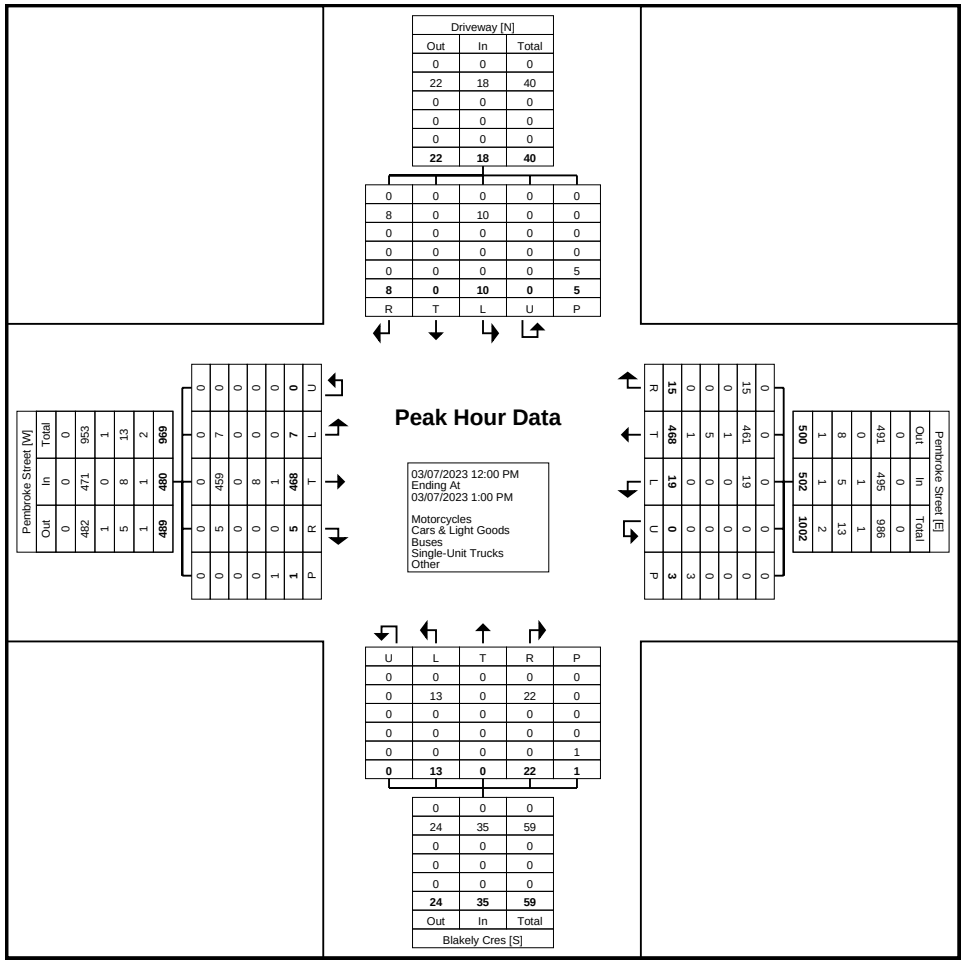
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0 8 0
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1 468 7
R T L
P 0 0
U 0 0
0 0 0
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0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Blakely Cres - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	27	145	2	0	0	174	3	161	27	0	0	191	5	0	5	0	0	10	7	0	15	0	0	22	397
4:30 PM	14	118	0	0	0	132	8	149	12	0	0	169	8	0	13	0	0	21	45	0	51	0	0	96	418
4:45 PM	4	129	1	0	0	134	4	144	4	0	0	152	2	0	2	0	0	4	10	0	10	0	0	20	310
5:00 PM	4	150	2	0	0	156	3	136	4	0	0	143	4	0	7	0	0	11	9	0	11	0	0	20	330
Total	49	542	5	0	0	596	18	590	47	0	0	655	19	0	27	0	0	46	71	0	87	0	0	158	1455
Approach %	8.2	90.9	0.8	0.0	-	-	2.7	90.1	7.2	0.0	-	-	41.3	0.0	58.7	0.0	-	-	44.9	0.0	55.1	0.0	-	-	-
Total %	3.4	37.3	0.3	0.0	-	41.0	1.2	40.5	3.2	0.0	-	45.0	1.3	0.0	1.9	0.0	-	3.2	4.9	0.0	6.0	0.0	-	10.9	-
PHF	0.454	0.903	0.625	0.000	-	0.856	0.563	0.916	0.435	0.000	-	0.857	0.594	0.000	0.519	0.000	-	0.548	0.394	0.000	0.426	0.000	-	0.411	0.870
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
Cars & Light Goods	49	541	5	0	-	595	17	587	47	0	-	651	19	0	26	0	-	45	71	0	87	0	-	158	1449
% Cars & Light Goods	100.0	99.8	100.0	-	-	99.8	94.4	99.5	100.0	-	-	99.4	100.0	-	96.3	-	-	97.8	100.0	-	100.0	-	-	100.0	99.6
Buses	0	0	0	0	-	0	0	2	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	3
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.0	-	3.7	-	-	2.2	0.0	-	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	1	0	0	-	1	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.2	0.0	-	-	0.2	5.6	0.2	0.0	-	-	0.3	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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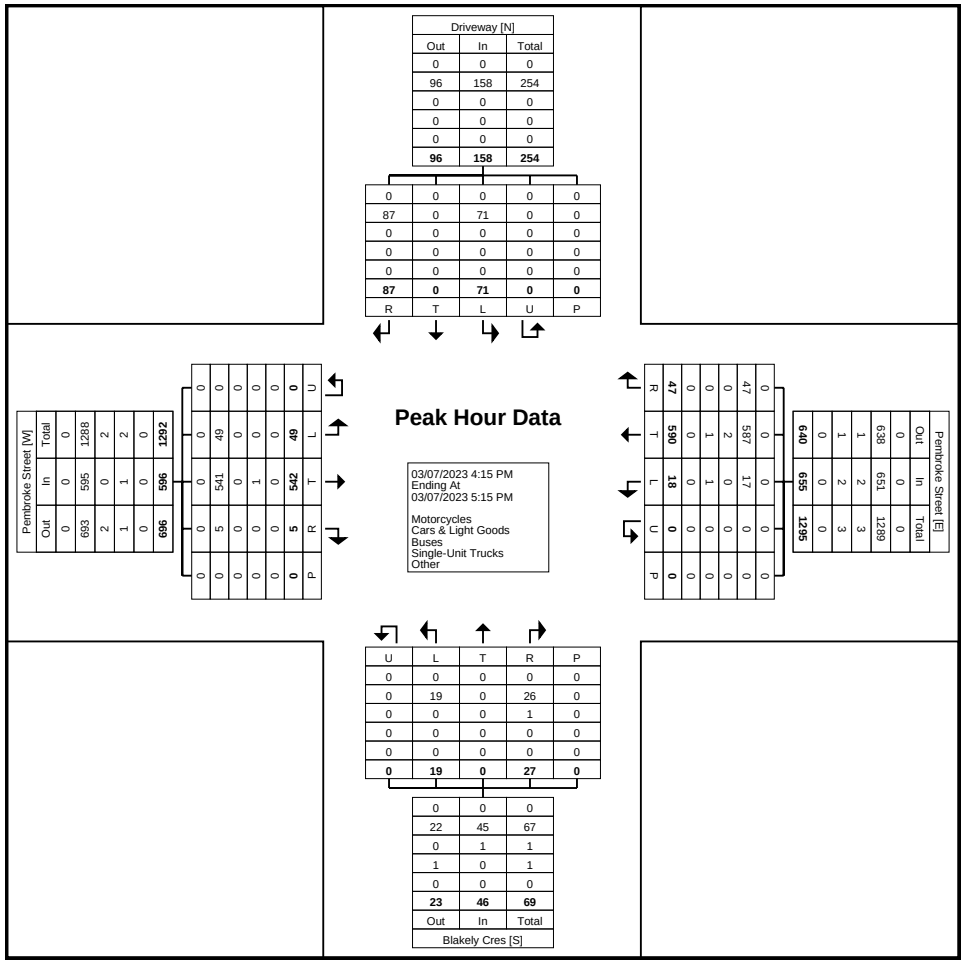
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (4:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Pembroke Street & Christie Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie 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
12:00 PM	4	78	8	0	0	90	4	78	0	0	1	82	9	6	7	0	3	22	0	8	26	0	0	34	228
12:15 PM	1	87	5	0	1	93	6	84	1	0	0	91	5	4	8	0	0	17	1	4	14	0	1	19	220
12:30 PM	1	92	12	0	0	105	8	93	1	0	0	102	12	8	14	0	2	34	0	7	21	0	0	28	269
12:45 PM	2	78	9	0	0	89	8	82	1	0	0	91	9	8	12	0	0	29	1	2	21	0	0	24	233
Hourly Total	8	335	34	0	1	377	26	337	3	0	1	366	35	26	41	0	5	102	2	21	82	0	1	105	950
1:00 PM	4	93	7	0	1	104	5	100	0	0	0	105	8	7	8	0	0	23	0	3	23	0	1	26	258
1:15 PM	5	87	11	0	0	103	7	95	1	0	0	103	7	5	14	0	2	26	1	3	12	0	0	16	248
1:30 PM	3	83	8	0	0	94	4	92	2	0	0	98	6	9	8	0	1	23	0	6	11	0	0	17	232
1:45 PM	4	87	11	0	0	102	8	92	0	0	0	100	5	8	15	0	0	28	1	4	21	0	1	26	256
Hourly Total	16	350	37	0	1	403	24	379	3	0	0	406	26	29	45	0	3	100	2	16	67	0	2	85	994
2:00 PM	3	77	6	0	0	86	6	84	0	0	2	90	14	6	12	0	2	32	0	4	15	0	0	19	227
2:15 PM	2	82	8	0	0	92	4	98	0	0	0	102	10	8	4	0	1	22	0	2	16	0	1	18	234
2:30 PM	3	94	6	0	0	103	5	111	0	0	3	116	15	2	6	0	3	23	0	5	19	0	0	24	266
2:45 PM	0	88	15	0	0	103	6	94	0	0	0	100	13	4	7	0	2	24	0	12	33	0	0	45	272
Hourly Total	8	341	35	0	0	384	21	387	0	0	5	408	52	20	29	0	8	101	0	23	83	0	1	106	999
3:00 PM	0	86	7	0	0	93	4	108	1	0	0	113	13	5	8	0	1	26	0	3	30	0	0	33	265
3:15 PM	3	82	10	0	0	95	4	95	0	0	1	99	9	6	6	0	1	21	0	10	20	0	0	30	245
3:30 PM	2	95	8	0	0	105	5	105	1	0	0	111	7	5	10	0	2	22	0	1	22	0	0	23	261
3:45 PM	0	92	6	0	0	98	1	97	2	0	0	100	7	9	9	0	3	25	0	7	20	0	0	27	250
Hourly Total	5	355	31	0	0	391	14	405	4	0	1	423	36	25	33	0	7	94	0	21	92	0	0	113	1021
Grand Total	37	1381	137	0	2	1555	85	1508	10	0	7	1603	149	100	148	0	23	397	4	81	324	0	4	409	3964
Approach %	2.4	88.8	8.8	0.0	-	-	5.3	94.1	0.6	0.0	-	-	37.5	25.2	37.3	0.0	-	-	1.0	19.8	79.2	0.0	-	-	-
Total %	0.9	34.8	3.5	0.0	-	39.2	2.1	38.0	0.3	0.0	-	40.4	3.8	2.5	3.7	0.0	-	10.0	0.1	2.0	8.2	0.0	-	10.3	-
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	36	1372	134	0	-	1542	85	1502	10	0	-	1597	145	100	148	0	-	393	4	80	323	0	-	407	3939
% Cars & Light Goods	97.3	99.3	97.8	-	-	99.2	100.0	99.6	100.0	-	-	99.6	97.3	100.0	100.0	-	-	99.0	100.0	98.8	99.7	-	-	99.5	99.4
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	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	-	-	0.0	0.0
Single-Unit Trucks	1	6	3	0	-	10	0	5	0	0	-	5	3	0	0	0	-	3	0	1	1	0	-	2	20
% Single-Unit Trucks	2.7	0.4	2.2	-	-	0.6	0.0	0.3	0.0	-	-	0.3	2.0	0.0	0.0	-	-	0.8	0.0	1.2	0.3	-	-	0.5	0.5
Articulated Trucks	0	3	0	0	-	3	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.7	0.0	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1

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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	23	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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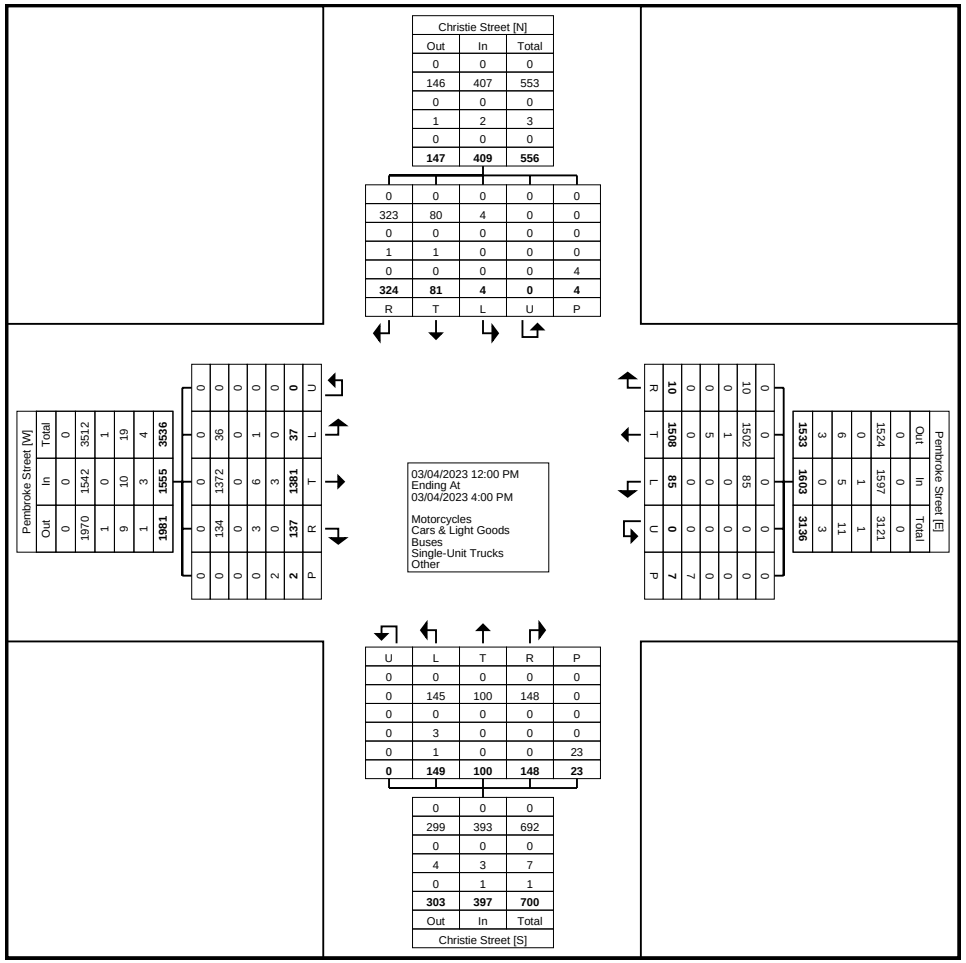
Start Date: 03/04/2023
Page No: 3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0 1542 3512
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9 10 19
1 3 4
1981 1555 3536
0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0
0 36 1372 134 0 0 0 0 0 0 0 0
0 0 0 0 0 1 6 3 0 3 0 0
0 0 0 0 0 0 3 0 2 0 2 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

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Site Code: 220694
Start Date: 03/04/2023

Turning Movement Peak Hour Data (2:30 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie 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
2:30 PM	3	94	6	0	0	103	5	111	0	0	3	116	15	2	6	0	3	23	0	5	19	0	0	24	266
2:45 PM	0	88	15	0	0	103	6	94	0	0	0	100	13	4	7	0	2	24	0	12	33	0	0	45	272
3:00 PM	0	86	7	0	0	93	4	108	1	0	0	113	13	5	8	0	1	26	0	3	30	0	0	33	265
3:15 PM	3	82	10	0	0	95	4	95	0	0	1	99	9	6	6	0	1	21	0	10	20	0	0	30	245
Total	6	350	38	0	0	394	19	408	1	0	4	428	50	17	27	0	7	94	0	30	102	0	0	132	1048
Approach %	1.5	88.8	9.6	0.0	-	-	4.4	95.3	0.2	0.0	-	-	53.2	18.1	28.7	0.0	-	-	0.0	22.7	77.3	0.0	-	-	-
Total %	0.6	33.4	3.6	0.0	-	37.6	1.8	38.9	0.1	0.0	-	40.8	4.8	1.6	2.6	0.0	-	9.0	0.0	2.9	9.7	0.0	-	12.6	-
PHF	0.500	0.931	0.633	0.000	-	0.956	0.792	0.919	0.250	0.000	-	0.922	0.833	0.708	0.844	0.000	-	0.904	0.000	0.625	0.773	0.000	-	0.733	0.963
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
Cars & Light Goods	5	348	38	0	-	391	19	406	1	0	-	426	49	17	27	0	-	93	0	30	102	0	-	132	1042
% Cars & Light Goods	83.3	99.4	100.0	-	-	99.2	100.0	99.5	100.0	-	-	99.5	98.0	100.0	100.0	-	-	98.9	-	100.0	100.0	-	-	100.0	99.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	1	0	0	-	2	0	2	0	0	-	2	1	0	0	0	-	1	0	0	0	0	-	0	5
% Single-Unit Trucks	16.7	0.3	0.0	-	-	0.5	0.0	0.5	0.0	-	-	0.5	2.0	0.0	0.0	-	-	1.1	-	0.0	0.0	-	-	0.0	0.5
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.1
Bicycles on 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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	7	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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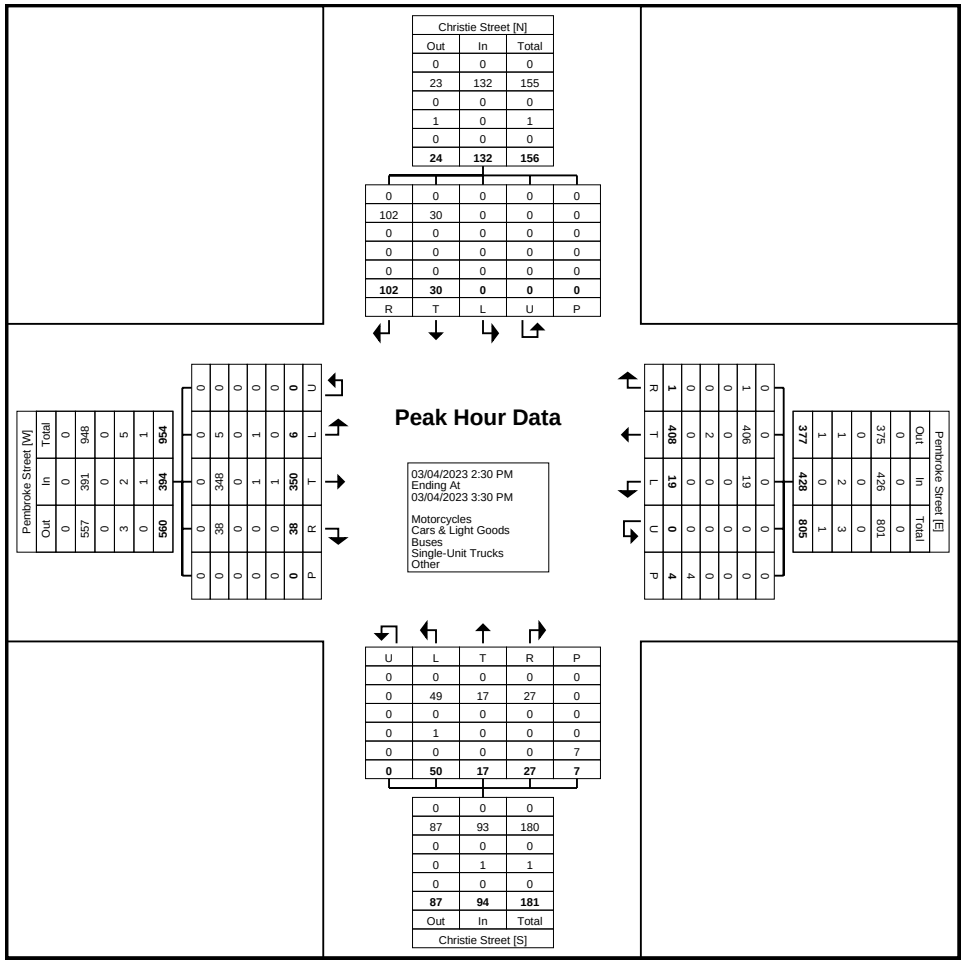
Pembroke Street [W]
Out In Total
0 0 0
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0 0 0
3 2 5
0 1 1
560 394 954
0 0 0
38 348 5
0 0 0
0 1 1
0 1 0
0 350 6
38 0 0
0 0 0
0 0 0
0

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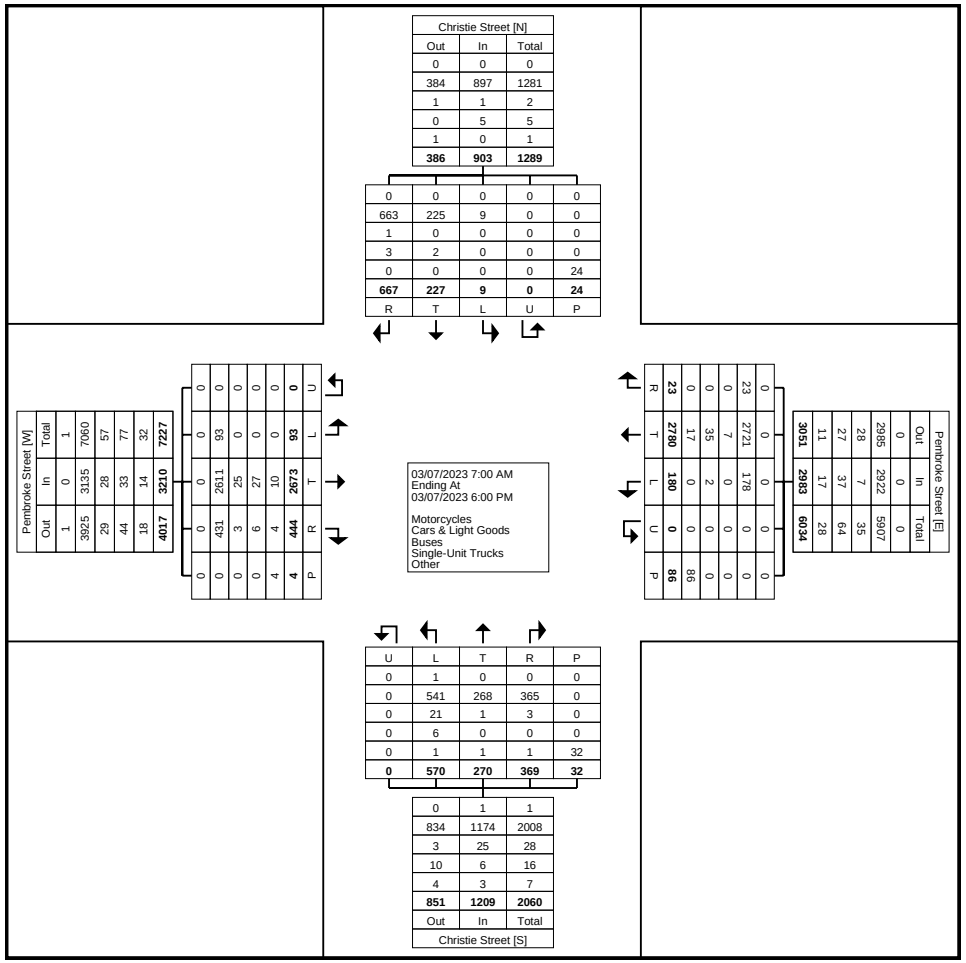
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	2	35	6	0	0	43	2	37	0	0	0	39	6	2	5	0	0	13	0	0	9	0	0	9	104
7:15 AM	0	42	10	0	0	52	2	54	0	0	2	56	11	6	9	0	1	26	0	2	9	0	0	11	145
7:30 AM	1	52	11	0	0	64	3	66	1	0	3	70	15	12	8	0	1	35	0	1	6	0	0	7	176
7:45 AM	2	63	15	0	0	80	5	51	1	0	5	57	29	17	14	0	2	60	1	2	17	0	0	20	217
Hourly Total	5	192	42	0	0	239	12	208	2	0	10	222	61	37	36	0	4	134	1	5	41	0	0	47	642
8:00 AM	3	67	12	0	0	82	5	70	1	0	3	76	18	9	12	0	0	39	0	4	15	0	3	19	216
8:15 AM	3	77	24	0	1	104	2	77	0	0	6	79	30	7	12	0	1	49	0	8	12	0	1	20	252
8:30 AM	1	70	20	0	0	91	5	52	0	0	5	57	22	9	12	0	1	43	0	3	8	0	2	11	202
8:45 AM	3	78	25	0	0	106	2	69	0	0	0	71	23	12	13	0	0	48	0	3	15	0	1	18	243
Hourly Total	10	292	81	0	1	383	14	268	1	0	14	283	93	37	49	0	2	179	0	18	50	0	7	68	913
9:00 AM	3	73	9	0	0	85	2	71	0	0	0	73	13	5	7	0	0	25	0	6	10	0	0	16	199
9:15 AM	0	99	10	0	0	109	1	66	0	0	7	67	8	8	8	0	3	24	0	6	22	0	0	28	228
9:30 AM	2	79	12	0	0	93	4	87	1	0	1	92	10	10	10	0	2	30	0	2	17	0	0	19	234
9:45 AM	2	92	9	0	1	103	5	67	2	0	0	74	17	11	12	0	0	40	0	1	18	0	1	19	236
Hourly Total	7	343	40	0	1	390	12	291	3	0	8	306	48	34	37	0	5	119	0	15	67	0	1	82	897
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	4	75	16	0	0	95	8	102	2	0	1	112	11	13	17	0	0	41	1	7	25	0	0	33	281
11:15 AM	2	110	10	0	2	122	6	99	2	0	0	107	11	10	10	0	0	31	1	10	23	0	2	34	294
11:30 AM	7	114	13	0	0	134	11	118	1	0	0	130	7	16	16	0	2	39	0	13	25	0	1	38	341
11:45 AM	4	71	13	0	0	88	4	105	0	0	0	109	10	7	8	0	3	25	0	13	24	0	0	37	259
Hourly Total	17	370	52	0	2	439	29	424	5	0	1	458	39	46	51	0	5	136	2	43	97	0	3	142	1175
12:00 PM	2	85	15	0	0	102	4	120	2	0	0	126	25	9	10	0	0	44	0	16	31	0	2	47	319
12:15 PM	2	95	16	0	0	113	6	98	1	0	0	105	13	11	17	0	2	41	0	13	20	0	0	33	292
12:30 PM	3	99	12	0	0	114	4	112	1	0	15	117	18	7	12	0	0	37	1	14	23	0	1	38	306
12:45 PM	4	102	12	0	0	118	13	61	1	0	8	75	21	9	19	0	0	49	0	11	17	0	2	28	270
Hourly Total	11	381	55	0	0	447	27	391	5	0	23	423	77	36	58	0	2	171	1	54	91	0	5	146	1187
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	8	97	22	0	0	127	8	101	1	0	6	110	25	8	9	0	1	42	2	7	26	0	1	35	314
3:15 PM	3	95	11	0	0	109	2	105	0	0	8	107	37	10	15	0	1	62	0	11	29	0	0	40	318
3:30 PM	4	88	14	0	0	106	8	99	0	0	6	107	16	4	11	0	0	31	1	6	27	0	1	34	278
3:45 PM	3	102	13	0	0	118	9	104	0	0	1	113	21	2	12	0	0	35	1	5	25	0	0	31	297
Hourly Total	18	382	60	0	0	460	27	409	1	0	21	437	99	24	47	0	2	170	4	29	107	0	2	140	1207
4:00 PM	1	80	21	0	0	102	9	133	0	0	2	142	26	8	13	0	2	47	0	9	44	0	0	53	344
4:15 PM	2	107	20	0	0	129	11	101	0	0	2	112	21	5	20	0	2	46	0	13	33	0	1	46	333
4:30 PM	6	89	16	0	0	111	4	115	0	0	1	119	22	5	8	0	0	35	0	11	22	0	0	33	298

4:45 PM	5	114	13	0	0	132	4	81	0	0	1	85	26	14	9	0	3	49	0	8	31	0	0	39	305
Hourly Total	14	390	70	0	0	474	28	430	0	0	6	458	95	32	50	0	7	177	0	41	130	0	1	171	1280
5:00 PM	1	86	13	0	0	100	8	116	1	0	0	125	20	11	12	0	0	43	0	12	34	0	2	46	314
5:15 PM	3	81	14	0	0	98	7	98	0	0	2	105	19	4	7	0	2	30	0	4	20	0	1	24	257
5:30 PM	3	75	6	0	0	84	8	74	2	0	1	84	9	3	8	0	3	20	1	2	18	0	2	21	209
5:45 PM	4	81	11	0	0	96	8	71	3	0	0	82	10	6	14	0	0	30	0	4	12	0	0	16	224
Hourly Total	11	323	44	0	0	378	31	359	6	0	3	396	58	24	41	0	5	123	1	22	84	0	5	107	1004
Grand Total	93	2673	444	0	4	3210	180	2780	23	0	86	2983	570	270	369	0	32	1209	9	227	667	0	24	903	8305
Approach %	2.9	83.3	13.8	0.0	-	-	6.0	93.2	0.8	0.0	-	-	47.1	22.3	30.5	0.0	-	-	1.0	25.1	73.9	0.0	-	-	-
Total %	1.1	32.2	5.3	0.0	-	38.7	2.2	33.5	0.3	0.0	-	35.9	6.9	3.3	4.4	0.0	-	14.6	0.1	2.7	8.0	0.0	-	10.9	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	93	2611	431	0	-	3135	178	2721	23	0	-	2922	541	268	365	0	-	1174	9	225	663	0	-	897	8128
% Cars & Light Goods	100.0	97.7	97.1	-	-	97.7	98.9	97.9	100.0	-	-	98.0	94.9	99.3	98.9	-	-	97.1	100.0	99.1	99.4	-	-	99.3	97.9
Buses	0	25	3	0	-	28	0	7	0	0	-	7	21	1	3	0	-	25	0	0	1	0	-	1	61
% Buses	0.0	0.9	0.7	-	-	0.9	0.0	0.3	0.0	-	-	0.2	3.7	0.4	0.8	-	-	2.1	0.0	0.0	0.1	-	-	0.1	0.7
Single-Unit Trucks	0	27	6	0	-	33	2	35	0	0	-	37	6	0	0	0	-	6	0	2	3	0	-	5	81
% Single-Unit Trucks	0.0	1.0	1.4	-	-	1.0	1.1	1.3	0.0	-	-	1.2	1.1	0.0	0.0	-	-	0.5	0.0	0.9	0.4	-	-	0.6	1.0
Articulated Trucks	0	10	1	0	-	11	0	16	0	0	-	16	0	1	0	0	-	1	0	0	0	0	-	0	28
% Articulated Trucks	0.0	0.4	0.2	-	-	0.3	0.0	0.6	0.0	-	-	0.5	0.0	0.4	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	3	0	-	3	0	1	0	0	-	1	1	0	1	0	-	2	0	0	0	0	-	0	6
% Bicycles on Road	0.0	0.0	0.7	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.2	0.0	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	4.2	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	86	-	-	-	-	-	32	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	95.8	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Christie Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023
Page No: 3


Pembroke Street [W]
Out In Total
1 0 1
3925 3135 7060
29 28 57
44 33 77
18 14 32
4017 3210 7227
0 0 0

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5A-150 Pinebush Rd

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Count Name: Pembroke Street & Christie Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

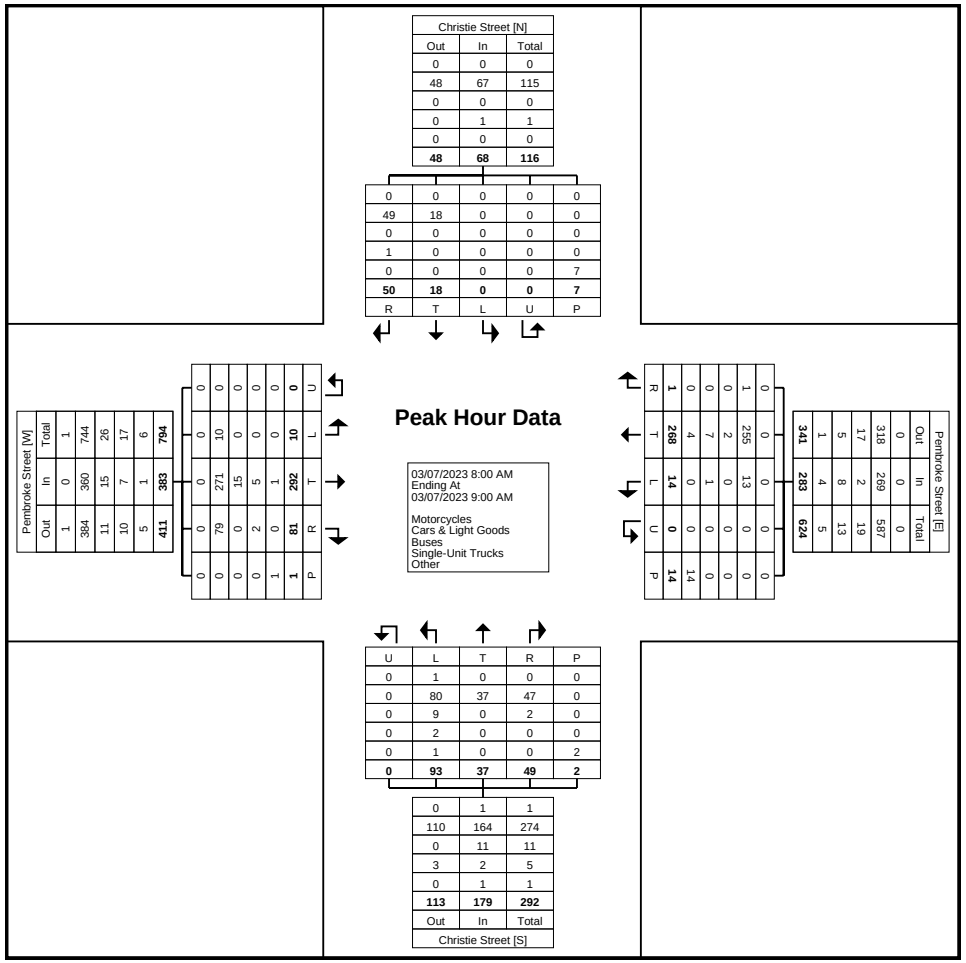
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie 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
8:00 AM	3	67	12	0	0	82	5	70	1	0	3	76	18	9	12	0	0	39	0	4	15	0	3	19	216
8:15 AM	3	77	24	0	1	104	2	77	0	0	6	79	30	7	12	0	1	49	0	8	12	0	1	20	252
8:30 AM	1	70	20	0	0	91	5	52	0	0	5	57	22	9	12	0	1	43	0	3	8	0	2	11	202
8:45 AM	3	78	25	0	0	106	2	69	0	0	0	71	23	12	13	0	0	48	0	3	15	0	1	18	243
Total	10	292	81	0	1	383	14	268	1	0	14	283	93	37	49	0	2	179	0	18	50	0	7	68	913
Approach %	2.6	76.2	21.1	0.0	-	-	4.9	94.7	0.4	0.0	-	-	52.0	20.7	27.4	0.0	-	-	0.0	26.5	73.5	0.0	-	-	-
Total %	1.1	32.0	8.9	0.0	-	41.9	1.5	29.4	0.1	0.0	-	31.0	10.2	4.1	5.4	0.0	-	19.6	0.0	2.0	5.5	0.0	-	7.4	-
PHF	0.833	0.936	0.810	0.000	-	0.903	0.700	0.870	0.250	0.000	-	0.896	0.775	0.771	0.942	0.000	-	0.913	0.000	0.563	0.833	0.000	-	0.850	0.906
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.1	0.0	0.0	-	-	0.6	-	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	10	271	79	0	-	360	13	255	1	0	-	269	80	37	47	0	-	164	0	18	49	0	-	67	860
% Cars & Light Goods	100.0	92.8	97.5	-	-	94.0	92.9	95.1	100.0	-	-	95.1	86.0	100.0	95.9	-	-	91.6	-	100.0	98.0	-	-	98.5	94.2
Buses	0	15	0	0	-	15	0	2	0	0	-	2	9	0	2	0	-	11	0	0	0	0	-	0	28
% Buses	0.0	5.1	0.0	-	-	3.9	0.0	0.7	0.0	-	-	0.7	9.7	0.0	4.1	-	-	6.1	-	0.0	0.0	-	-	0.0	3.1
Single-Unit Trucks	0	5	2	0	-	7	1	7	0	0	-	8	2	0	0	0	-	2	0	0	1	0	-	1	18
% Single-Unit Trucks	0.0	1.7	2.5	-	-	1.8	7.1	2.6	0.0	-	-	2.8	2.2	0.0	0.0	-	-	1.1	-	0.0	2.0	-	-	1.5	2.0
Articulated Trucks	0	1	0	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	0.0	1.1	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.4
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	1.1	0.0	0.0	-	-	0.6	-	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	14.3	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	14	-	-	-	-	-	2	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	85.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Christie Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (8:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Christie Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (11:15 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie 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
11:15 AM	2	110	10	0	2	122	6	99	2	0	0	107	11	10	10	0	0	31	1	10	23	0	2	34	294
11:30 AM	7	114	13	0	0	134	11	118	1	0	0	130	7	16	16	0	2	39	0	13	25	0	1	38	341
11:45 AM	4	71	13	0	0	88	4	105	0	0	0	109	10	7	8	0	3	25	0	13	24	0	0	37	259
12:00 PM	2	85	15	0	0	102	4	120	2	0	0	126	25	9	10	0	0	44	0	16	31	0	2	47	319
Total	15	380	51	0	2	446	25	442	5	0	0	472	53	42	44	0	5	139	1	52	103	0	5	156	1213
Approach %	3.4	85.2	11.4	0.0	-	-	5.3	93.6	1.1	0.0	-	-	38.1	30.2	31.7	0.0	-	-	0.6	33.3	66.0	0.0	-	-	-
Total %	1.2	31.3	4.2	0.0	-	36.8	2.1	36.4	0.4	0.0	-	38.9	4.4	3.5	3.6	0.0	-	11.5	0.1	4.3	8.5	0.0	-	12.9	-
PHF	0.536	0.833	0.850	0.000	-	0.832	0.568	0.921	0.625	0.000	-	0.908	0.530	0.656	0.688	0.000	-	0.790	0.250	0.813	0.831	0.000	-	0.830	0.889
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	15	372	50	0	-	437	25	436	5	0	-	466	52	42	44	0	-	138	1	52	103	0	-	156	1197
% Cars & Light Goods	100.0	97.9	98.0	-	-	98.0	100.0	98.6	100.0	-	-	98.7	98.1	100.0	100.0	-	-	99.3	100.0	100.0	100.0	-	-	100.0	98.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	7	0	0	-	7	0	3	0	0	-	3	1	0	0	0	-	1	0	0	0	0	-	0	11
% Single-Unit Trucks	0.0	1.8	0.0	-	-	1.6	0.0	0.7	0.0	-	-	0.6	1.9	0.0	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.9
Articulated Trucks	0	1	0	0	-	1	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.7	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	2.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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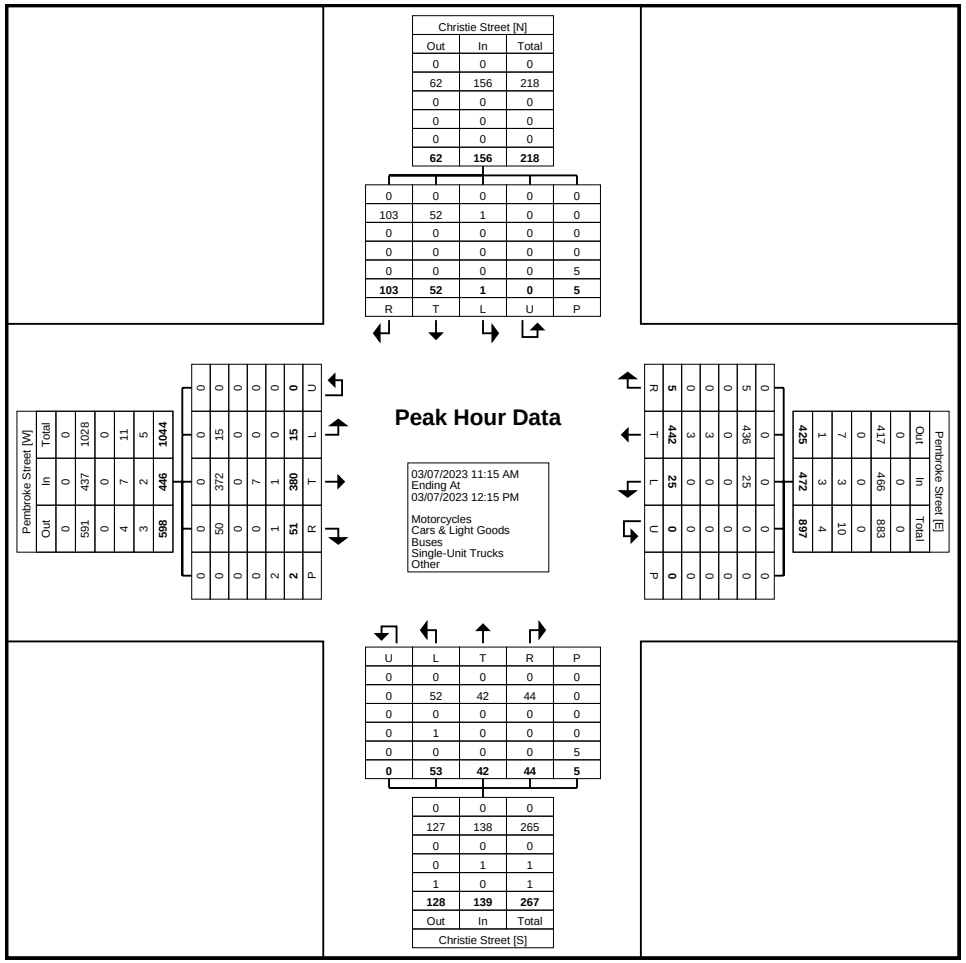

Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Pembroke Street & Christie Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

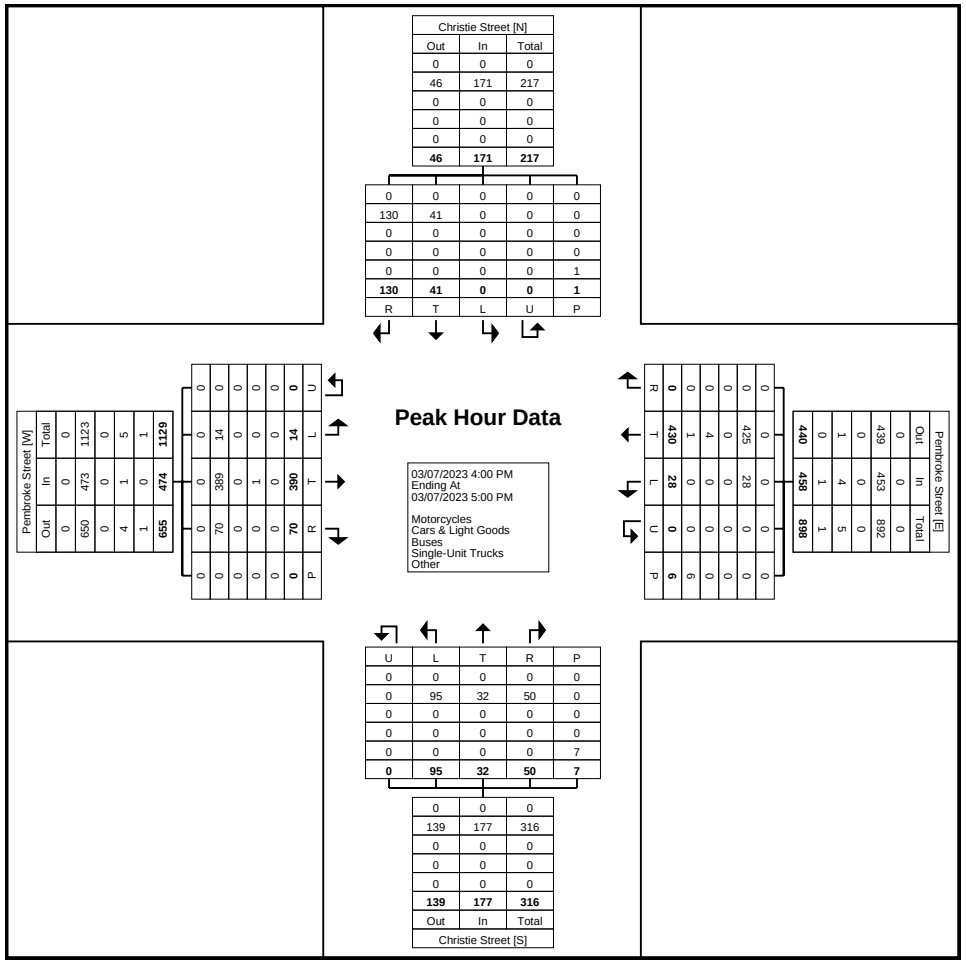
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie 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	1	80	21	0	0	102	9	133	0	0	2	142	26	8	13	0	2	47	0	9	44	0	0	53	344
4:15 PM	2	107	20	0	0	129	11	101	0	0	2	112	21	5	20	0	2	46	0	13	33	0	1	46	333
4:30 PM	6	89	16	0	0	111	4	115	0	0	1	119	22	5	8	0	0	35	0	11	22	0	0	33	298
4:45 PM	5	114	13	0	0	132	4	81	0	0	1	85	26	14	9	0	3	49	0	8	31	0	0	39	305
Total	14	390	70	0	0	474	28	430	0	0	6	458	95	32	50	0	7	177	0	41	130	0	1	171	1280
Approach %	3.0	82.3	14.8	0.0	-	-	6.1	93.9	0.0	0.0	-	-	53.7	18.1	28.2	0.0	-	-	0.0	24.0	76.0	0.0	-	-	-
Total %	1.1	30.5	5.5	0.0	-	37.0	2.2	33.6	0.0	0.0	-	35.8	7.4	2.5	3.9	0.0	-	13.8	0.0	3.2	10.2	0.0	-	13.4	-
PHF	0.583	0.855	0.833	0.000	-	0.898	0.636	0.808	0.000	0.000	-	0.806	0.913	0.571	0.625	0.000	-	0.903	0.000	0.788	0.739	0.000	-	0.807	0.930
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
Cars & Light Goods	14	389	70	0	-	473	28	425	0	0	-	453	95	32	50	0	-	177	0	41	130	0	-	171	1274
% Cars & Light Goods	100.0	99.7	100.0	-	-	99.8	100.0	98.8	-	-	-	98.9	100.0	100.0	100.0	-	-	100.0	-	100.0	100.0	-	-	100.0	99.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	0	-	1	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	5
% Single-Unit Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.9	-	-	-	0.9	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.4
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.2	-	-	-	0.2	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.1
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	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	7	-	-	-	-	-	1	-	-
% 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: Pembroke Street & Christie Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Pembroke Street & Elizabeth Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

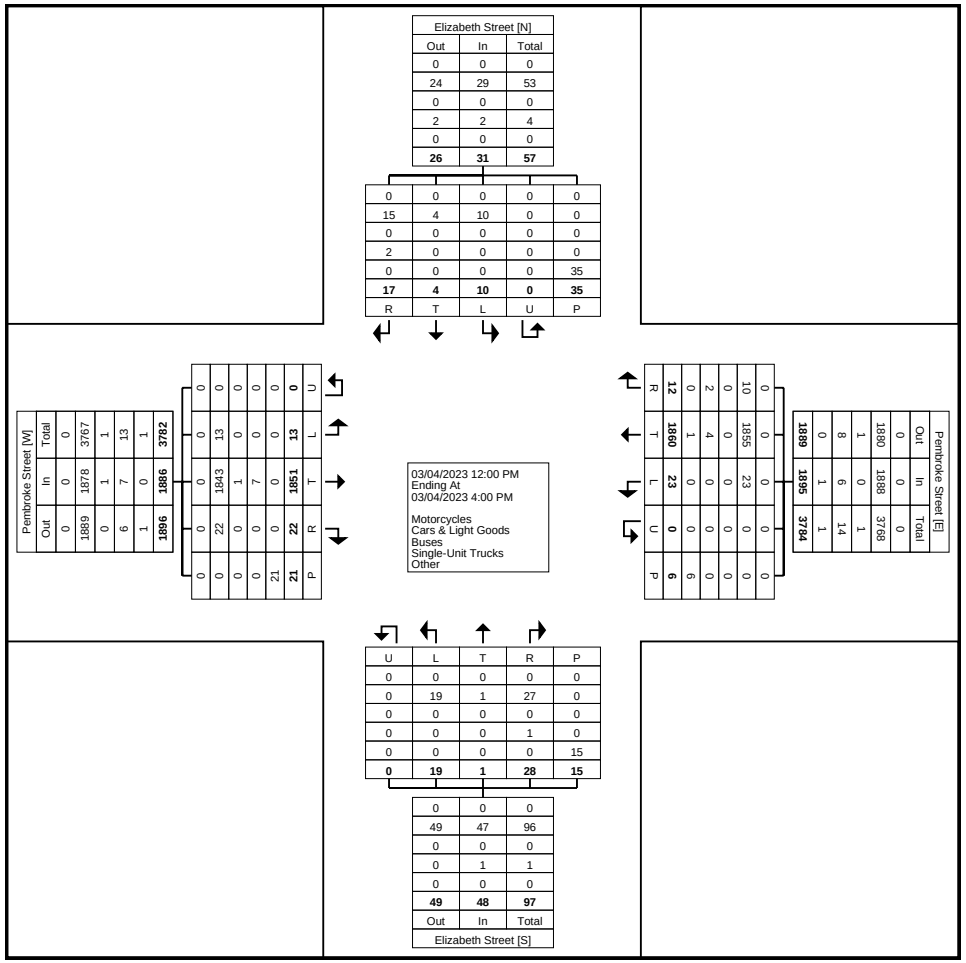
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	1	115	2	0	3	118	2	115	2	0	0	119	1	0	2	0	1	3	0	0	4	0	2	4	244
12:15 PM	2	111	1	0	0	114	3	111	1	0	1	115	2	0	1	0	0	3	0	0	3	0	1	3	235
12:30 PM	0	127	1	0	0	128	1	117	0	0	1	118	1	0	5	0	2	6	1	0	0	0	1	1	253
12:45 PM	1	120	0	0	2	121	1	93	0	0	1	94	0	0	2	0	3	2	2	1	1	0	4	4	221
Hourly Total	4	473	4	0	5	481	7	436	3	0	3	446	4	0	10	0	6	14	3	1	8	0	8	12	953
1:00 PM	0	115	0	0	2	115	0	110	3	0	0	113	1	0	0	0	0	1	1	0	1	0	3	2	231
1:15 PM	0	111	0	0	1	111	0	110	0	0	0	110	1	0	0	0	1	1	2	0	0	0	0	2	224
1:30 PM	1	111	2	0	3	114	2	120	0	0	1	122	0	0	0	0	0	0	0	0	1	0	4	1	237
1:45 PM	1	114	2	0	3	117	0	109	1	0	0	110	1	0	2	0	3	3	0	1	0	0	4	1	231
Hourly Total	2	451	4	0	9	457	2	449	4	0	1	455	3	0	2	0	4	5	3	1	2	0	11	6	923
2:00 PM	1	114	0	0	4	115	1	107	1	0	1	109	0	0	1	0	0	1	0	0	0	0	4	0	225
2:15 PM	1	110	2	0	0	113	2	118	1	0	0	121	1	1	5	0	1	7	0	0	1	0	0	1	242
2:30 PM	0	122	1	0	1	123	1	127	1	0	0	129	0	0	0	0	0	0	0	1	1	0	2	2	254
2:45 PM	2	115	1	0	0	118	1	128	0	0	1	129	1	0	4	0	2	5	0	1	0	0	0	1	253
Hourly Total	4	461	4	0	5	469	5	480	3	0	2	488	2	1	10	0	3	13	0	2	2	0	6	4	974
3:00 PM	0	121	2	0	0	123	1	123	0	0	0	124	2	0	1	0	0	3	2	0	1	0	3	3	253
3:15 PM	1	119	0	0	0	120	2	118	1	0	0	121	2	0	0	0	0	2	1	0	0	0	0	1	244
3:30 PM	2	105	3	0	2	110	4	130	1	0	0	135	4	0	2	0	2	6	1	0	1	0	4	2	253
3:45 PM	0	121	5	0	0	126	2	124	0	0	0	126	2	0	3	0	0	5	0	0	3	0	3	3	260
Hourly Total	3	466	10	0	2	479	9	495	2	0	0	506	10	0	6	0	2	16	4	0	5	0	10	9	1010
Grand Total	13	1851	22	0	21	1886	23	1860	12	0	6	1895	19	1	28	0	15	48	10	4	17	0	35	31	3860
Approach %	0.7	98.1	1.2	0.0	-	-	1.2	98.2	0.6	0.0	-	-	39.6	2.1	58.3	0.0	-	-	32.3	12.9	54.8	0.0	-	-	-
Total %	0.3	48.0	0.6	0.0	-	48.9	0.6	48.2	0.3	0.0	-	49.1	0.5	0.0	0.7	0.0	-	1.2	0.3	0.1	0.4	0.0	-	0.8	-
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	13	1843	22	0	-	1878	23	1855	10	0	-	1888	19	1	27	0	-	47	10	4	15	0	-	29	3842
% Cars & Light Goods	100.0	99.6	100.0	-	-	99.6	100.0	99.7	83.3	-	-	99.6	100.0	100.0	96.4	-	-	97.9	100.0	100.0	88.2	-	-	93.5	99.5
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	7	0	0	-	7	0	4	2	0	-	6	0	0	1	0	-	1	0	0	2	0	-	2	16
% Single-Unit Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.2	16.7	-	-	0.3	0.0	0.0	3.6	-	-	2.1	0.0	0.0	11.8	-	-	6.5	0.4
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	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	-	-	0.0	0.0

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	21	-	-	-	-	-	6	-	-	-	-	-	15	-	-	-	-	-	35	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Elizabeth Street - Saturday
Site Code: 220694
Start Date: 03/04/2023
Page No: 3



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: Pembroke Street & Elizabeth Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Peak Hour Data (3:00 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth 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
3:00 PM	0	121	2	0	0	123	1	123	0	0	0	124	2	0	1	0	0	3	2	0	1	0	3	3	253
3:15 PM	1	119	0	0	0	120	2	118	1	0	0	121	2	0	0	0	0	2	1	0	0	0	0	1	244
3:30 PM	2	105	3	0	2	110	4	130	1	0	0	135	4	0	2	0	2	6	1	0	1	0	4	2	253
3:45 PM	0	121	5	0	0	126	2	124	0	0	0	126	2	0	3	0	0	5	0	0	3	0	3	3	260
Total	3	466	10	0	2	479	9	495	2	0	0	506	10	0	6	0	2	16	4	0	5	0	10	9	1010
Approach %	0.6	97.3	2.1	0.0	-	-	1.8	97.8	0.4	0.0	-	-	62.5	0.0	37.5	0.0	-	-	44.4	0.0	55.6	0.0	-	-	-
Total %	0.3	46.1	1.0	0.0	-	47.4	0.9	49.0	0.2	0.0	-	50.1	1.0	0.0	0.6	0.0	-	1.6	0.4	0.0	0.5	0.0	-	0.9	-
PHF	0.375	0.963	0.500	0.000	-	0.950	0.563	0.952	0.500	0.000	-	0.937	0.625	0.000	0.500	0.000	-	0.667	0.500	0.000	0.417	0.000	-	0.750	0.971
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
Cars & Light Goods	3	464	10	0	-	477	9	493	2	0	-	504	10	0	6	0	-	16	4	0	5	0	-	9	1006
% Cars & Light Goods	100.0	99.6	100.0	-	-	99.6	100.0	99.6	100.0	-	-	99.6	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	99.6
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	1	0	0	-	1	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.4	0.0	-	-	0.4	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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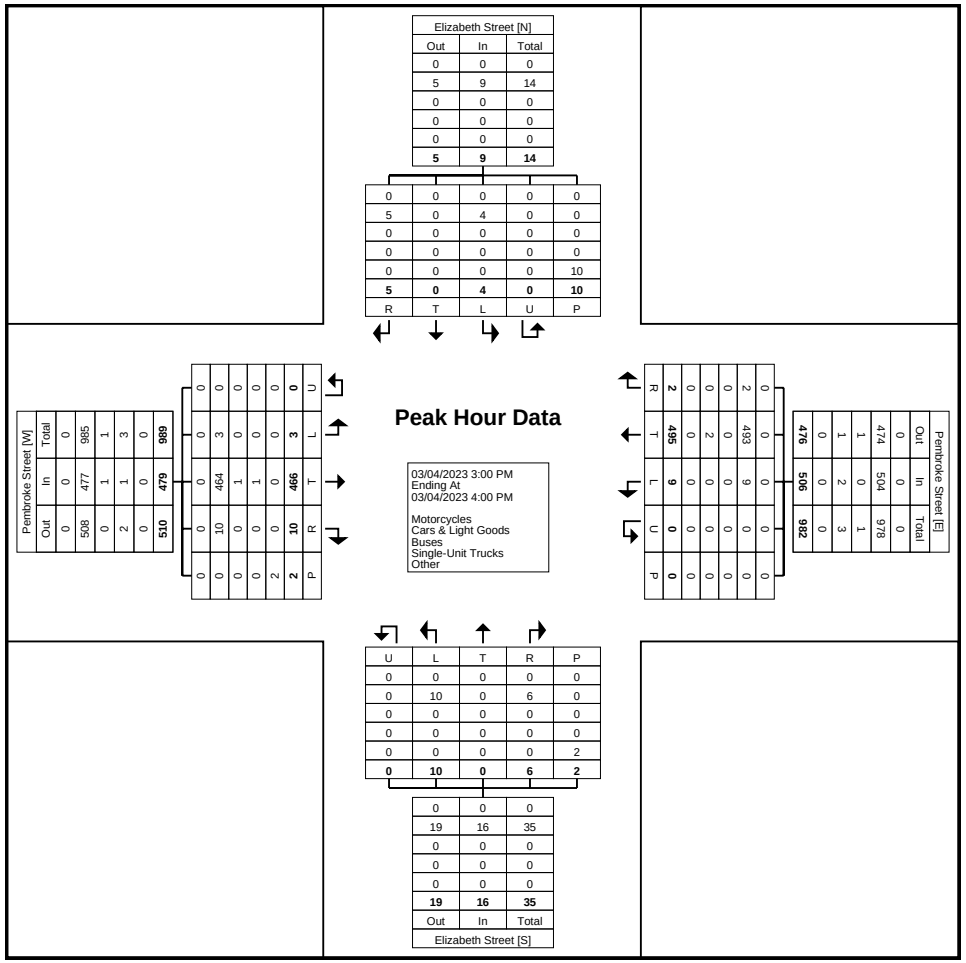
Count Name: Pembroke Street & Elizabeth Street - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (3:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

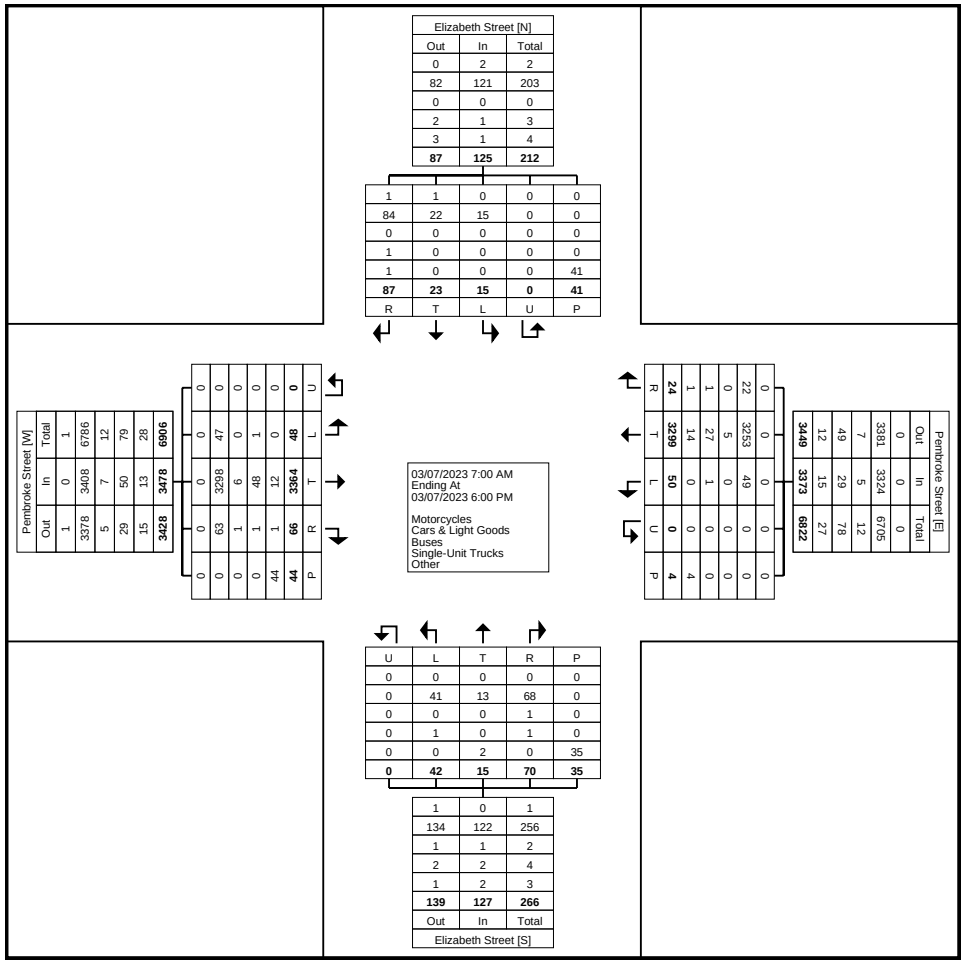
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	41	2	0	0	43	1	45	0	0	0	46	2	0	1	0	0	3	0	0	0	0	1	0	92
7:15 AM	1	42	1	0	0	44	1	54	0	0	0	55	1	0	0	0	2	1	0	0	1	0	0	1	101
7:30 AM	0	60	0	0	0	60	0	78	0	0	0	78	1	1	2	0	1	4	0	0	1	0	1	1	143
7:45 AM	3	78	2	0	0	83	0	91	0	0	0	91	0	0	2	0	1	2	0	1	1	0	1	2	178
Hourly Total	4	221	5	0	0	230	2	268	0	0	0	270	4	1	5	0	4	10	0	1	3	0	3	4	514
8:00 AM	1	59	0	0	0	60	0	84	0	0	0	84	0	1	0	0	0	1	0	0	0	0	0	0	145
8:15 AM	0	67	1	0	1	68	1	73	2	0	0	76	2	0	1	0	0	3	0	0	0	0	2	0	147
8:30 AM	1	73	1	0	1	75	2	83	0	0	1	85	1	0	0	0	3	1	0	1	3	0	0	4	165
8:45 AM	1	91	2	0	6	94	0	92	0	0	0	92	0	1	2	0	0	3	1	0	1	0	1	2	191
Hourly Total	3	290	4	0	8	297	3	332	2	0	1	337	3	2	3	0	3	8	1	1	4	0	3	6	648
9:00 AM	2	71	3	0	3	76	1	86	0	0	0	87	1	0	2	0	0	3	0	2	1	0	0	3	169
9:15 AM	3	111	3	0	1	117	0	99	0	0	0	99	1	0	2	0	0	3	1	0	1	0	1	2	221
9:30 AM	1	99	2	0	0	102	1	112	1	0	0	114	0	1	0	0	1	1	0	1	2	0	0	3	220
9:45 AM	1	106	2	0	0	109	0	103	1	0	0	104	2	1	2	0	0	5	0	0	2	0	1	2	220
Hourly Total	7	387	10	0	4	404	2	400	2	0	0	404	4	2	6	0	1	12	1	3	6	0	2	10	830
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	117	3	0	0	120	2	118	1	0	0	121	3	1	5	0	1	9	0	1	5	0	1	6	256
11:15 AM	1	123	0	0	1	124	6	107	2	0	0	115	0	0	3	0	2	3	1	1	3	0	1	5	247
11:30 AM	4	127	4	0	0	135	0	115	2	0	0	117	0	0	3	0	0	3	1	1	1	0	1	3	258
11:45 AM	0	126	2	0	0	128	3	128	0	0	0	131	2	0	4	0	1	6	1	0	2	0	0	3	268
Hourly Total	5	493	9	0	1	507	11	468	5	0	0	484	5	1	15	0	4	21	3	3	11	0	3	17	1029
12:00 PM	1	114	4	0	2	119	2	126	0	0	1	128	4	0	7	0	0	11	2	0	2	0	4	4	262
12:15 PM	1	124	3	0	4	128	4	125	0	0	0	129	1	0	4	0	0	5	0	1	5	0	2	6	268
12:30 PM	3	127	0	0	0	130	3	125	2	0	0	130	2	0	0	0	1	2	1	1	4	0	1	6	268
12:45 PM	1	122	1	0	1	124	3	114	2	0	0	119	1	0	2	0	5	3	0	0	7	0	1	7	253
Hourly Total	6	487	8	0	7	501	12	490	4	0	1	506	8	0	13	0	6	21	3	2	18	0	8	23	1051
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	2	119	4	0	1	125	3	100	0	0	0	103	0	0	2	0	0	2	1	1	2	0	1	4	234
3:15 PM	1	127	1	0	2	129	1	117	1	0	1	119	3	0	3	0	1	6	1	2	1	0	3	4	258
3:30 PM	1	130	1	0	5	132	0	105	2	0	0	107	0	1	7	0	1	8	0	1	4	0	2	5	252
3:45 PM	3	136	2	0	10	141	4	105	0	0	1	109	1	2	2	0	3	5	1	1	3	0	1	5	260
Hourly Total	7	512	8	0	18	527	8	427	3	0	2	438	4	3	14	0	5	21	3	5	10	0	7	18	1004
4:00 PM	2	141	2	0	2	145	1	143	1	0	0	145	2	1	1	0	2	4	0	2	3	0	1	5	299
4:15 PM	1	131	1	0	1	133	0	110	2	0	0	112	1	0	4	0	0	5	2	0	4	0	2	6	256
4:30 PM	3	124	2	0	1	129	3	121	1	0	0	125	1	0	1	0	4	2	1	1	5	0	2	7	263

4:45 PM	1	122	3	0	1	126	0	130	2	0	0	132	2	1	1	0	2	4	0	1	4	0	5	5	267
Hourly Total	7	518	8	0	5	533	4	504	6	0	0	514	6	2	7	0	8	15	3	4	16	0	10	23	1085
5:00 PM	1	132	4	0	0	137	3	123	0	0	0	126	2	1	5	0	0	8	0	1	7	0	1	8	279
5:15 PM	0	126	2	0	0	128	4	105	0	0	0	109	2	1	0	0	3	3	0	1	4	0	3	5	245
5:30 PM	6	110	5	0	0	121	0	85	2	0	0	87	2	0	1	0	0	3	0	1	2	0	0	3	214
5:45 PM	2	88	3	0	1	93	1	97	0	0	0	98	2	2	1	0	1	5	1	1	6	0	1	8	204
Hourly Total	9	456	14	0	1	479	8	410	2	0	0	420	8	4	7	0	4	19	1	4	19	0	5	24	942
Grand Total	48	3364	66	0	44	3478	50	3299	24	0	4	3373	42	15	70	0	35	127	15	23	87	0	41	125	7103
Approach %	1.4	96.7	1.9	0.0	-	-	1.5	97.8	0.7	0.0	-	-	33.1	11.8	55.1	0.0	-	-	12.0	18.4	69.6	0.0	-	-	-
Total %	0.7	47.4	0.9	0.0	-	49.0	0.7	46.4	0.3	0.0	-	47.5	0.6	0.2	1.0	0.0	-	1.8	0.2	0.3	1.2	0.0	-	1.8	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	1	0	-	2	2
% 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	4.3	1.1	-	-	1.6	0.0
Cars & Light Goods	47	3298	63	0	-	3408	49	3253	22	0	-	3324	41	13	68	0	-	122	15	22	84	0	-	121	6975
% Cars & Light Goods	97.9	98.0	95.5	-	-	98.0	98.0	98.6	91.7	-	-	98.5	97.6	86.7	97.1	-	-	96.1	100.0	95.7	96.6	-	-	96.8	98.2
Buses	0	6	1	0	-	7	0	5	0	0	-	5	0	0	1	0	-	1	0	0	0	0	-	0	13
% Buses	0.0	0.2	1.5	-	-	0.2	0.0	0.2	0.0	-	-	0.1	0.0	0.0	1.4	-	-	0.8	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	1	48	1	0	-	50	1	27	1	0	-	29	1	0	1	0	-	2	0	0	1	0	-	1	82
% Single-Unit Trucks	2.1	1.4	1.5	-	-	1.4	2.0	0.8	4.2	-	-	0.9	2.4	0.0	1.4	-	-	1.6	0.0	0.0	1.1	-	-	0.8	1.2
Articulated Trucks	0	10	0	0	-	10	0	14	1	0	-	15	0	1	0	0	-	1	0	0	0	0	-	0	26
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	0.0	0.4	4.2	-	-	0.4	0.0	6.7	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	0.4
Bicycles on Road	0	2	1	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	0	-	1	5
% Bicycles on Road	0.0	0.1	1.5	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	6.7	0.0	-	-	0.8	0.0	0.0	1.1	-	-	0.8	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	4.9	-	-
Pedestrians	-	-	-	-	44	-	-	-	-	-	4	-	-	-	-	-	35	-	-	-	-	-	39	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	95.1	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023
Page No: 3



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: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

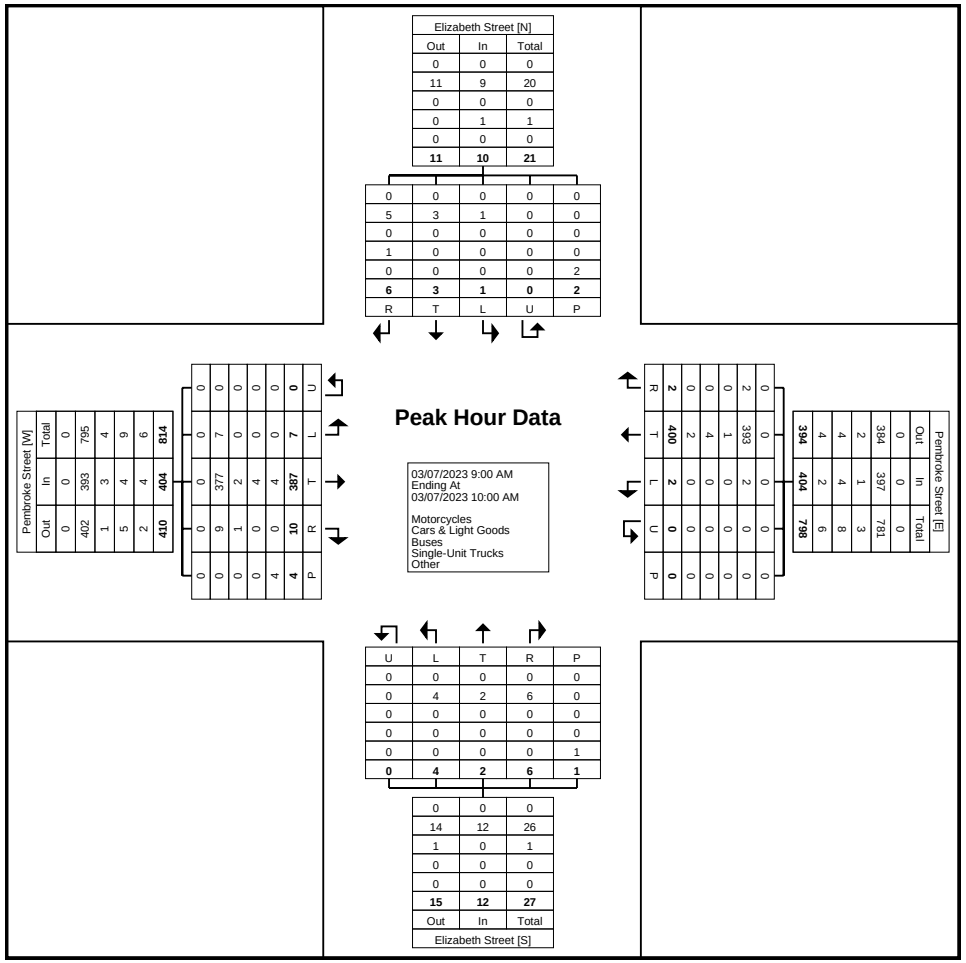
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth 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
9:00 AM	2	71	3	0	3	76	1	86	0	0	0	87	1	0	2	0	0	3	0	2	1	0	0	3	169
9:15 AM	3	111	3	0	1	117	0	99	0	0	0	99	1	0	2	0	0	3	1	0	1	0	1	2	221
9:30 AM	1	99	2	0	0	102	1	112	1	0	0	114	0	1	0	0	1	1	0	1	2	0	0	3	220
9:45 AM	1	106	2	0	0	109	0	103	1	0	0	104	2	1	2	0	0	5	0	0	2	0	1	2	220
Total	7	387	10	0	4	404	2	400	2	0	0	404	4	2	6	0	1	12	1	3	6	0	2	10	830
Approach %	1.7	95.8	2.5	0.0	-	-	0.5	99.0	0.5	0.0	-	-	33.3	16.7	50.0	0.0	-	-	10.0	30.0	60.0	0.0	-	-	-
Total %	0.8	46.6	1.2	0.0	-	48.7	0.2	48.2	0.2	0.0	-	48.7	0.5	0.2	0.7	0.0	-	1.4	0.1	0.4	0.7	0.0	-	1.2	-
PHF	0.583	0.872	0.833	0.000	-	0.863	0.500	0.893	0.500	0.000	-	0.886	0.500	0.500	0.750	0.000	-	0.600	0.250	0.375	0.750	0.000	-	0.833	0.939
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	7	377	9	0	-	393	2	393	2	0	-	397	4	2	6	0	-	12	1	3	5	0	-	9	811
% Cars & Light Goods	100.0	97.4	90.0	-	-	97.3	100.0	98.3	100.0	-	-	98.3	100.0	100.0	100.0	-	-	100.0	100.0	100.0	83.3	-	-	90.0	97.7
Buses	0	2	1	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	4
% Buses	0.0	0.5	10.0	-	-	0.7	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.5
Single-Unit Trucks	0	4	0	0	-	4	0	4	0	0	-	4	0	0	0	0	-	0	0	0	1	0	-	1	9
% Single-Unit Trucks	0.0	1.0	0.0	-	-	1.0	0.0	1.0	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	16.7	-	-	10.0	1.1
Articulated Trucks	0	4	0	0	-	4	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	0.0	1.0	0.0	-	-	1.0	0.0	0.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
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	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth 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
11:45 AM	0	126	2	0	0	128	3	128	0	0	0	131	2	0	4	0	1	6	1	0	2	0	0	3	268
12:00 PM	1	114	4	0	2	119	2	126	0	0	1	128	4	0	7	0	0	11	2	0	2	0	4	4	262
12:15 PM	1	124	3	0	4	128	4	125	0	0	0	129	1	0	4	0	0	5	0	1	5	0	2	6	268
12:30 PM	3	127	0	0	0	130	3	125	2	0	0	130	2	0	0	0	1	2	1	1	4	0	1	6	268
Total	5	491	9	0	6	505	12	504	2	0	1	518	9	0	15	0	2	24	4	2	13	0	7	19	1066
Approach %	1.0	97.2	1.8	0.0	-	-	2.3	97.3	0.4	0.0	-	-	37.5	0.0	62.5	0.0	-	-	21.1	10.5	68.4	0.0	-	-	-
Total %	0.5	46.1	0.8	0.0	-	47.4	1.1	47.3	0.2	0.0	-	48.6	0.8	0.0	1.4	0.0	-	2.3	0.4	0.2	1.2	0.0	-	1.8	-
PHF	0.417	0.967	0.563	0.000	-	0.971	0.750	0.984	0.250	0.000	-	0.989	0.563	0.000	0.536	0.000	-	0.545	0.500	0.500	0.650	0.000	-	0.792	0.994
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
Cars & Light Goods	5	478	9	0	-	492	12	492	1	0	-	505	8	0	14	0	-	22	4	2	13	0	-	19	1038
% Cars & Light Goods	100.0	97.4	100.0	-	-	97.4	100.0	97.6	50.0	-	-	97.5	88.9	-	93.3	-	-	91.7	100.0	100.0	100.0	-	-	100.0	97.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	11	0	0	-	11	0	8	0	0	-	8	1	0	1	0	-	2	0	0	0	0	-	0	21
% Single-Unit Trucks	0.0	2.2	0.0	-	-	2.2	0.0	1.6	0.0	-	-	1.5	11.1	-	6.7	-	-	8.3	0.0	0.0	0.0	-	-	0.0	2.0
Articulated Trucks	0	2	0	0	-	2	0	4	1	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	7
% Articulated Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.8	50.0	-	-	1.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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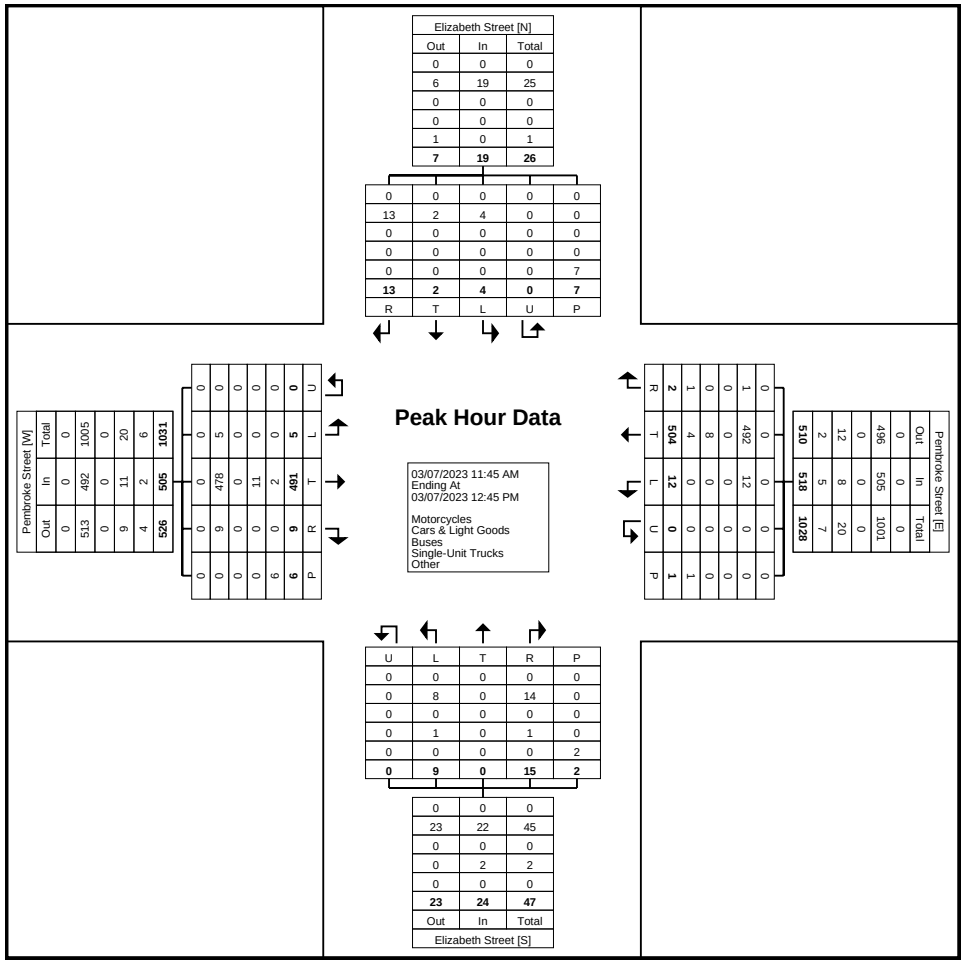

Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

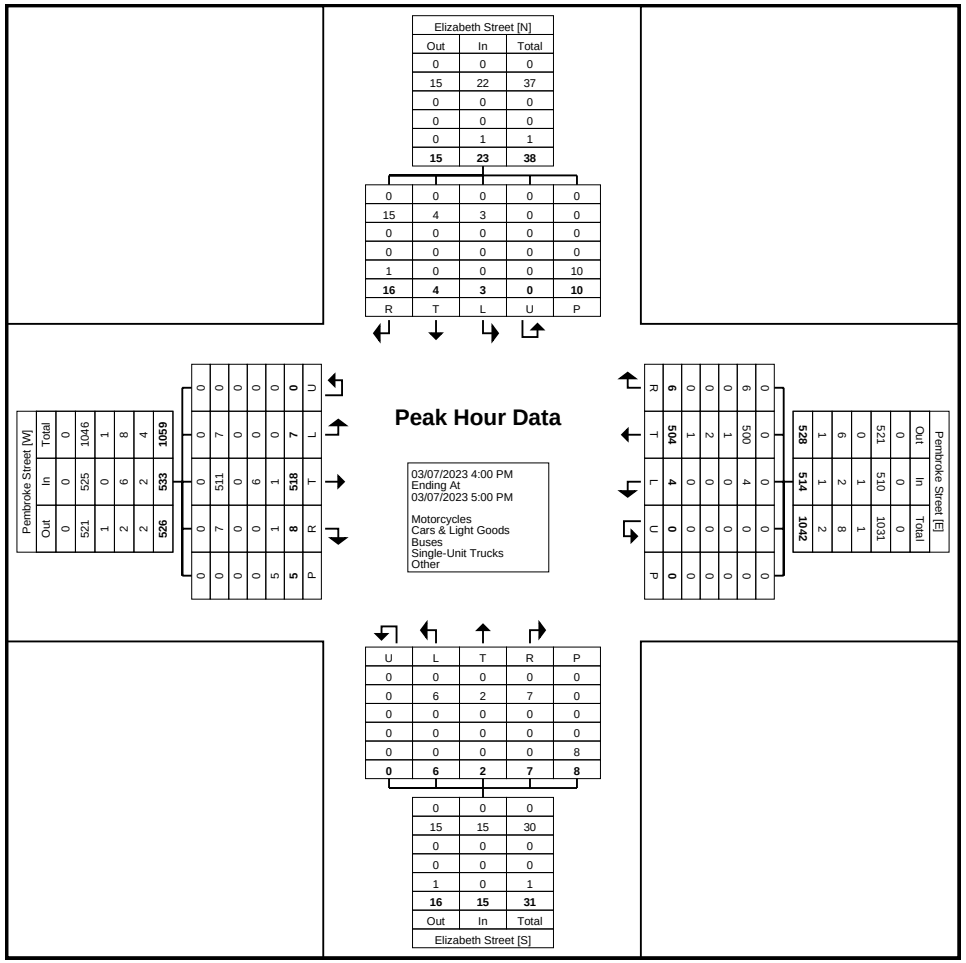
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth 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	2	141	2	0	2	145	1	143	1	0	0	145	2	1	1	0	2	4	0	2	3	0	1	5	299
4:15 PM	1	131	1	0	1	133	0	110	2	0	0	112	1	0	4	0	0	5	2	0	4	0	2	6	256
4:30 PM	3	124	2	0	1	129	3	121	1	0	0	125	1	0	1	0	4	2	1	1	5	0	2	7	263
4:45 PM	1	122	3	0	1	126	0	130	2	0	0	132	2	1	1	0	2	4	0	1	4	0	5	5	267
Total	7	518	8	0	5	533	4	504	6	0	0	514	6	2	7	0	8	15	3	4	16	0	10	23	1085
Approach %	1.3	97.2	1.5	0.0	-	-	0.8	98.1	1.2	0.0	-	-	40.0	13.3	46.7	0.0	-	-	13.0	17.4	69.6	0.0	-	-	-
Total %	0.6	47.7	0.7	0.0	-	49.1	0.4	46.5	0.6	0.0	-	47.4	0.6	0.2	0.6	0.0	-	1.4	0.3	0.4	1.5	0.0	-	2.1	-
PHF	0.583	0.918	0.667	0.000	-	0.919	0.333	0.881	0.750	0.000	-	0.886	0.750	0.500	0.438	0.000	-	0.750	0.375	0.500	0.800	0.000	-	0.821	0.907
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	7	511	7	0	-	525	4	500	6	0	-	510	6	2	7	0	-	15	3	4	15	0	-	22	1072
% Cars & Light Goods	100.0	98.6	87.5	-	-	98.5	100.0	99.2	100.0	-	-	99.2	100.0	100.0	100.0	-	-	100.0	100.0	100.0	93.8	-	-	95.7	98.8
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	0	6	0	0	-	6	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	8
% Single-Unit Trucks	0.0	1.2	0.0	-	-	1.1	0.0	0.4	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.7
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	3
% Bicycles on Road	0.0	0.2	12.5	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	6.3	-	-	4.3	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	10	-	-
% 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: Pembroke Street & Elizabeth Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Pembroke Street & Trafalgar Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

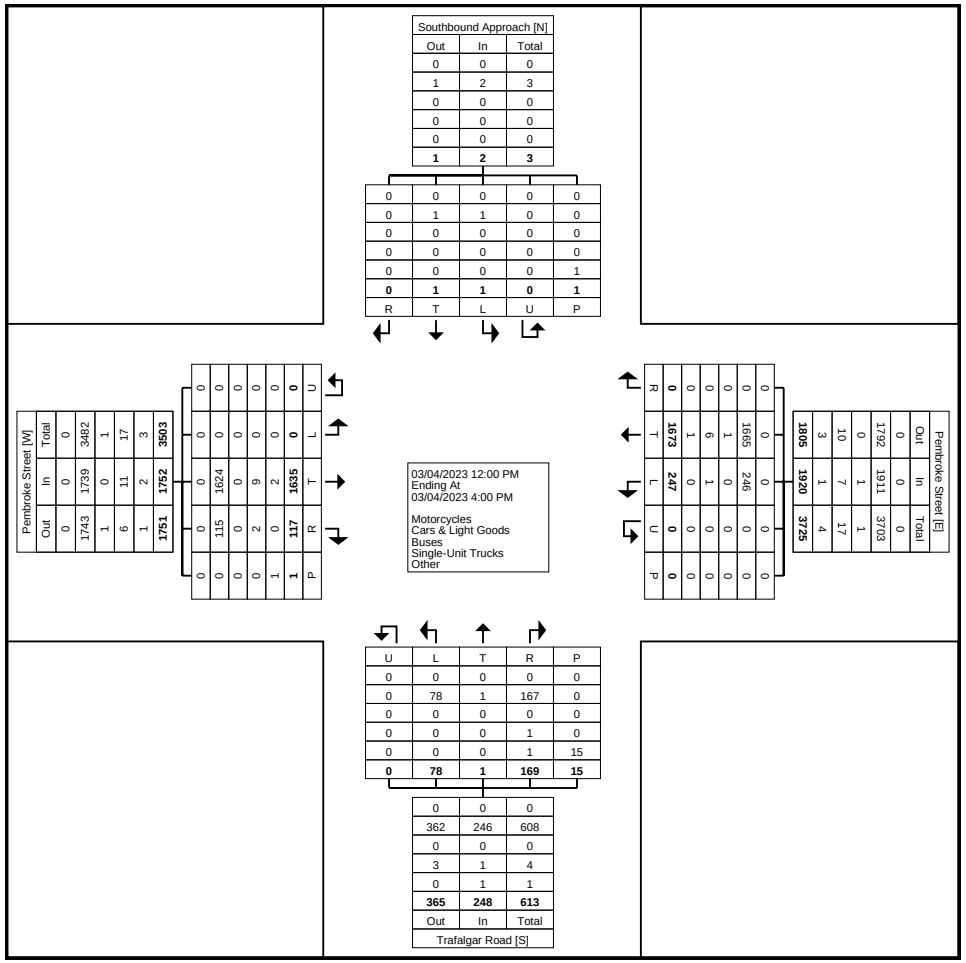
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Southbound Approach Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	0	80	7	0	0	87	15	100	0	0	0	115	7	0	12	0	0	19	0	0	0	0	0	0	221
12:15 PM	0	109	2	0	0	111	15	84	0	0	0	99	4	0	12	0	0	16	0	0	0	0	0	0	226
12:30 PM	0	102	7	0	0	109	18	102	0	0	0	120	4	1	7	0	2	12	1	0	0	0	0	1	242
12:45 PM	0	93	11	0	0	104	13	100	0	0	0	113	9	0	16	0	0	25	0	0	0	0	0	0	242
Hourly Total	0	384	27	0	0	411	61	386	0	0	0	447	24	1	47	0	2	72	1	0	0	0	0	1	931
1:00 PM	0	110	10	0	0	120	18	94	0	0	0	112	3	0	20	0	0	23	0	0	0	0	0	0	255
1:15 PM	0	122	7	0	0	129	15	99	0	0	0	114	6	0	11	0	0	17	0	0	0	0	0	0	260
1:30 PM	0	88	4	0	0	92	14	96	0	0	0	110	4	0	18	0	1	22	0	0	0	0	0	0	224
1:45 PM	0	108	5	0	0	113	15	92	0	0	0	107	4	0	12	0	2	16	0	0	0	0	0	0	236
Hourly Total	0	428	26	0	0	454	62	381	0	0	0	443	17	0	61	0	3	78	0	0	0	0	0	0	975
2:00 PM	0	91	8	0	0	99	12	107	0	0	0	119	2	0	14	0	2	16	0	0	0	0	0	0	234
2:15 PM	0	100	4	0	0	104	14	106	0	0	0	120	8	0	7	0	0	15	0	0	0	0	0	0	239
2:30 PM	0	101	8	0	0	109	11	126	0	0	0	137	2	0	5	0	0	7	0	0	0	0	0	0	253
2:45 PM	0	118	9	0	0	127	13	123	0	0	0	136	5	0	7	0	2	12	0	0	0	0	0	0	275
Hourly Total	0	410	29	0	0	439	50	462	0	0	0	512	17	0	33	0	4	50	0	0	0	0	0	0	1001
3:00 PM	0	112	9	0	0	121	19	124	0	0	0	143	6	0	7	0	1	13	0	0	0	0	0	0	277
3:15 PM	0	96	6	0	0	102	18	103	0	0	0	121	5	0	7	0	2	12	0	0	0	0	0	0	235
3:30 PM	0	104	10	0	1	114	14	117	0	0	0	131	7	0	10	0	3	17	0	1	0	0	1	1	263
3:45 PM	0	101	10	0	0	111	23	100	0	0	0	123	2	0	4	0	0	6	0	0	0	0	0	0	240
Hourly Total	0	413	35	0	1	448	74	444	0	0	0	518	20	0	28	0	6	48	0	1	0	0	1	1	1015
Grand Total	0	1635	117	0	1	1752	247	1673	0	0	0	1920	78	1	169	0	15	248	1	1	0	0	1	2	3922
Approach %	0.0	93.3	6.7	0.0	-	-	12.9	87.1	0.0	0.0	-	-	31.5	0.4	68.1	0.0	-	-	50.0	50.0	0.0	0.0	-	-	-
Total %	0.0	41.7	3.0	0.0	-	44.7	6.3	42.7	0.0	0.0	-	49.0	2.0	0.0	4.3	0.0	-	6.3	0.0	0.0	0.0	0.0	-	0.1	-
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
Cars & Light Goods	0	1624	115	0	-	1739	246	1665	0	0	-	1911	78	1	167	0	-	246	1	1	0	0	-	2	3898
% Cars & Light Goods	-	99.3	98.3	-	-	99.3	99.6	99.5	-	-	-	99.5	100.0	100.0	98.8	-	-	99.2	100.0	100.0	-	-	-	100.0	99.4
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	0.0	-	-	0.0	0.0	0.1	-	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Single-Unit Trucks	0	9	2	0	-	11	1	6	0	0	-	7	0	0	1	0	-	1	0	0	0	0	-	0	19
% Single-Unit Trucks	-	0.6	1.7	-	-	0.6	0.4	0.4	-	-	-	0.4	0.0	0.0	0.6	-	-	0.4	0.0	0.0	-	-	-	0.0	0.5
Articulated Trucks	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	-	0.1	0.0	-	-	0.1	0.0	0.1	-	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.1

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.6	-	-	0.4	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	80.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Trafalgar Road - Saturday
Site Code: 220694
Start Date: 03/04/2023
Page No: 3


Pembroke Street [W]
Out In Total
0 0 0
1743 1739 3482
1 0 1
6 11 17
1 2 3
1751 1752 3503
0 0 0
115 1624 1635
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Trafalgar Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

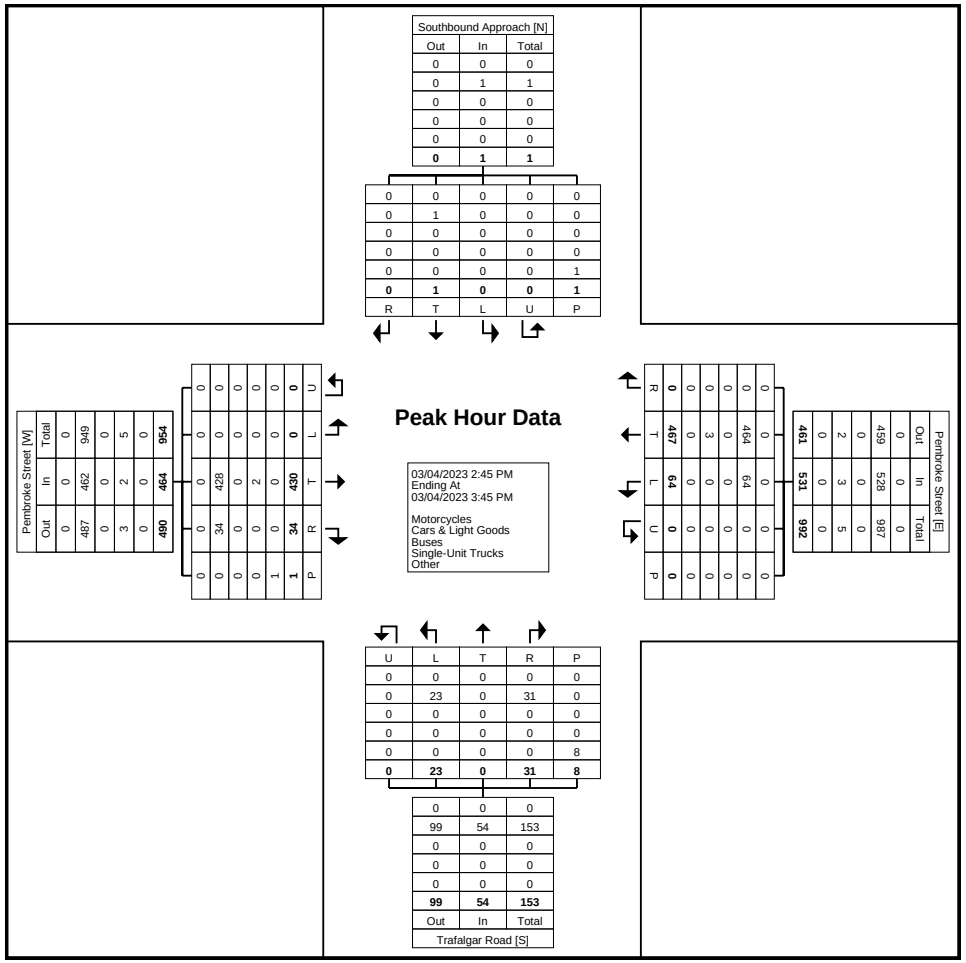
Turning Movement Peak Hour Data (2:45 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Southbound Approach 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
2:45 PM	0	118	9	0	0	127	13	123	0	0	0	136	5	0	7	0	2	12	0	0	0	0	0	0	275
3:00 PM	0	112	9	0	0	121	19	124	0	0	0	143	6	0	7	0	1	13	0	0	0	0	0	0	277
3:15 PM	0	96	6	0	0	102	18	103	0	0	0	121	5	0	7	0	2	12	0	0	0	0	0	0	235
3:30 PM	0	104	10	0	1	114	14	117	0	0	0	131	7	0	10	0	3	17	0	1	0	0	1	1	263
Total	0	430	34	0	1	464	64	467	0	0	0	531	23	0	31	0	8	54	0	1	0	0	1	1	1050
Approach %	0.0	92.7	7.3	0.0	-	-	12.1	87.9	0.0	0.0	-	-	42.6	0.0	57.4	0.0	-	-	0.0	100.0	0.0	0.0	-	-	-
Total %	0.0	41.0	3.2	0.0	-	44.2	6.1	44.5	0.0	0.0	-	50.6	2.2	0.0	3.0	0.0	-	5.1	0.0	0.1	0.0	0.0	-	0.1	-
PHF	0.000	0.911	0.850	0.000	-	0.913	0.842	0.942	0.000	0.000	-	0.928	0.821	0.000	0.775	0.000	-	0.794	0.000	0.250	0.000	0.000	-	0.250	0.948
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
Cars & Light Goods	0	428	34	0	-	462	64	464	0	0	-	528	23	0	31	0	-	54	0	1	0	0	-	1	1045
% Cars & Light Goods	-	99.5	100.0	-	-	99.6	100.0	99.4	-	-	-	99.4	100.0	-	100.0	-	-	100.0	-	100.0	-	-	-	100.0	99.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	-	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	0	-	2	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	5
% Single-Unit Trucks	-	0.5	0.0	-	-	0.4	0.0	0.6	-	-	-	0.6	0.0	-	0.0	-	-	0.0	-	0.0	-	-	-	0.0	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	-	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	1	-	-
% 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: Pembroke Street & Trafalgar Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (2:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

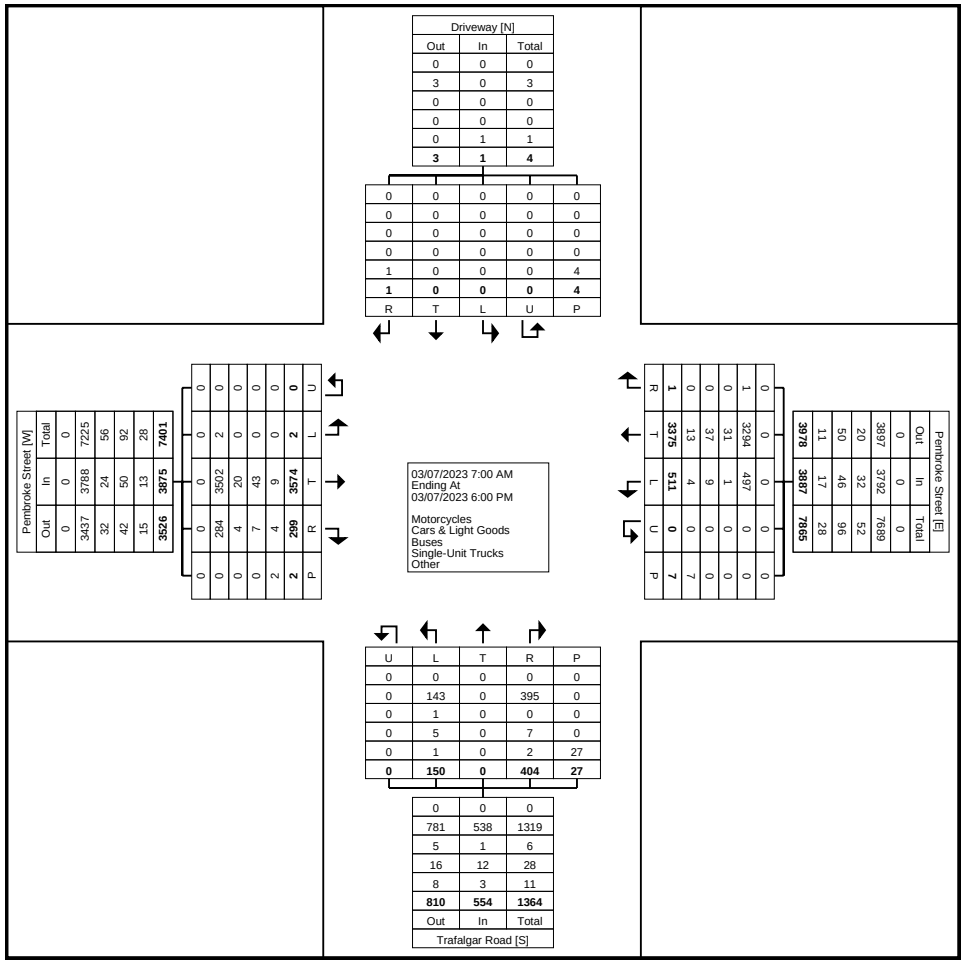
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	48	6	0	0	54	4	48	0	0	0	52	2	0	7	0	0	9	0	0	0	0	0	0	115
7:15 AM	0	63	8	0	0	71	4	69	0	0	0	73	5	0	13	0	3	18	0	0	0	0	0	0	162
7:30 AM	1	92	3	0	0	96	8	78	1	0	0	87	6	0	15	0	1	21	0	0	0	0	0	0	204
7:45 AM	0	102	9	0	0	111	12	83	0	0	0	95	8	0	15	0	0	23	0	0	0	0	0	0	229
Hourly Total	1	305	26	0	0	332	28	278	1	0	0	307	21	0	50	0	4	71	0	0	0	0	0	0	710
8:00 AM	0	84	2	0	0	86	10	86	0	0	0	96	1	0	12	0	0	13	0	0	0	0	0	0	195
8:15 AM	0	120	6	0	0	126	14	103	0	0	0	117	4	0	9	0	0	13	0	0	0	0	0	0	256
8:30 AM	0	114	10	0	0	124	4	74	0	0	0	78	7	0	14	0	0	21	0	0	0	0	0	0	223
8:45 AM	0	117	9	0	0	126	12	82	0	0	0	94	6	0	17	0	0	23	0	0	1	0	0	1	244
Hourly Total	0	435	27	0	0	462	40	345	0	0	0	385	18	0	52	0	0	70	0	0	1	0	0	1	918
9:00 AM	1	102	5	0	0	108	16	82	0	0	0	98	4	0	13	0	0	17	0	0	0	0	0	0	223
9:15 AM	0	120	11	0	0	131	18	75	0	0	1	93	10	0	24	0	1	34	0	0	0	0	0	0	258
9:30 AM	0	100	12	0	0	112	16	97	0	0	1	113	2	0	18	0	1	20	0	0	0	0	0	0	245
9:45 AM	0	111	6	0	0	117	15	82	0	0	0	97	9	0	10	0	1	19	0	0	0	0	1	0	233
Hourly Total	1	433	34	0	0	468	65	336	0	0	2	401	25	0	65	0	3	90	0	0	0	0	1	0	959
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	127	11	0	0	138	18	115	0	0	0	133	4	0	12	0	2	16	0	0	0	0	0	0	287
11:15 AM	0	121	5	0	0	126	9	116	0	0	0	125	5	0	13	0	0	18	0	0	0	0	1	0	269
11:30 AM	0	142	10	0	0	152	23	130	0	0	0	153	0	0	10	0	0	10	0	0	0	0	1	0	315
11:45 AM	0	96	10	0	0	106	25	103	0	0	0	128	1	0	11	0	0	12	0	0	0	0	0	0	246
Hourly Total	0	486	36	0	0	522	75	464	0	0	0	539	10	0	46	0	2	56	0	0	0	0	2	0	1117
12:00 PM	0	111	3	0	0	114	28	139	0	0	2	167	3	0	15	0	2	18	0	0	0	0	0	0	299
12:15 PM	0	101	7	0	0	108	21	104	0	0	0	125	10	0	16	0	1	26	0	0	0	0	0	0	259
12:30 PM	0	121	6	0	0	127	20	131	0	0	0	151	9	0	18	0	1	27	0	0	0	0	0	0	305
12:45 PM	0	127	13	0	0	140	10	68	0	0	0	78	12	0	14	0	1	26	0	0	0	0	0	0	244
Hourly Total	0	460	29	0	0	489	79	442	0	0	2	521	34	0	63	0	5	97	0	0	0	0	0	0	1107
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	134	27	0	0	161	18	128	0	0	0	146	6	0	16	0	0	22	0	0	0	0	0	0	329
3:15 PM	0	130	12	0	0	142	14	150	0	0	0	164	3	0	12	0	3	15	0	0	0	0	0	0	321
3:30 PM	0	125	11	0	0	136	17	127	0	0	0	144	5	0	4	0	0	9	0	0	0	0	0	0	289
3:45 PM	0	129	12	0	0	141	23	124	0	0	0	147	1	0	14	0	0	15	0	0	0	0	1	0	303
Hourly Total	0	518	62	0	0	580	72	529	0	0	0	601	15	0	46	0	3	61	0	0	0	0	1	0	1242
4:00 PM	0	108	10	0	0	118	17	173	0	0	0	190	5	0	15	0	3	20	0	0	0	0	0	0	328
4:15 PM	0	143	8	0	0	151	17	136	0	0	0	153	2	0	9	0	1	11	0	0	0	0	0	0	315
4:30 PM	0	127	14	0	2	141	21	140	0	0	3	161	7	0	7	0	3	14	0	0	0	0	0	0	316

4:45 PM	0	134	9	0	0	143	21	118	0	0	0	139	2	0	17	0	0	19	0	0	0	0	0	0	301
Hourly Total	0	512	41	0	2	553	76	567	0	0	3	643	16	0	48	0	7	64	0	0	0	0	0	0	1260
5:00 PM	0	117	19	0	0	136	33	134	0	0	0	167	2	0	8	0	1	10	0	0	0	0	0	0	313
5:15 PM	0	111	13	0	0	124	16	116	0	0	0	132	3	0	9	0	1	12	0	0	0	0	0	0	268
5:30 PM	0	89	6	0	0	95	12	86	0	0	0	98	0	0	9	0	1	9	0	0	0	0	0	0	202
5:45 PM	0	108	6	0	0	114	15	78	0	0	0	93	6	0	8	0	0	14	0	0	0	0	0	0	221
Hourly Total	0	425	44	0	0	469	76	414	0	0	0	490	11	0	34	0	3	45	0	0	0	0	0	0	1004
Grand Total	2	3574	299	0	2	3875	511	3375	1	0	7	3887	150	0	404	0	27	554	0	0	1	0	4	1	8317
Approach %	0.1	92.2	7.7	0.0	-	-	13.1	86.8	0.0	0.0	-	-	27.1	0.0	72.9	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.0	43.0	3.6	0.0	-	46.6	6.1	40.6	0.0	0.0	-	46.7	1.8	0.0	4.9	0.0	-	6.7	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
% 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
Cars & Light Goods	2	3502	284	0	-	3788	497	3294	1	0	-	3792	143	0	395	0	-	538	0	0	0	0	-	0	8118
% Cars & Light Goods	100.0	98.0	95.0	-	-	97.8	97.3	97.6	100.0	-	-	97.6	95.3	-	97.8	-	-	97.1	-	-	0.0	-	-	0.0	97.6
Buses	0	20	4	0	-	24	1	31	0	0	-	32	1	0	0	0	-	1	0	0	0	0	-	0	57
% Buses	0.0	0.6	1.3	-	-	0.6	0.2	0.9	0.0	-	-	0.8	0.7	-	0.0	-	-	0.2	-	-	0.0	-	-	0.0	0.7
Single-Unit Trucks	0	43	7	0	-	50	9	37	0	0	-	46	5	0	7	0	-	12	0	0	0	0	-	0	108
% Single-Unit Trucks	0.0	1.2	2.3	-	-	1.3	1.8	1.1	0.0	-	-	1.2	3.3	-	1.7	-	-	2.2	-	-	0.0	-	-	0.0	1.3
Articulated Trucks	0	9	3	0	-	12	4	12	0	0	-	16	1	0	1	0	-	2	0	0	0	0	-	0	30
% Articulated Trucks	0.0	0.3	1.0	-	-	0.3	0.8	0.4	0.0	-	-	0.4	0.7	-	0.2	-	-	0.4	-	-	0.0	-	-	0.0	0.4
Bicycles on Road	0	0	1	0	-	1	0	1	0	0	-	1	0	0	1	0	-	1	0	0	1	0	-	1	4
% Bicycles on Road	0.0	0.0	0.3	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.2	-	-	0.2	-	-	100.0	-	-	100.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	7.4	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	25	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	92.6	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023
Page No: 3


Pembroke Street [W]
Out In Total
0 0 0
0 3788 7225
3437 24 56
32 50 92
42 13 28
3526 3875 7401
0 0 0

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

Count Name: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

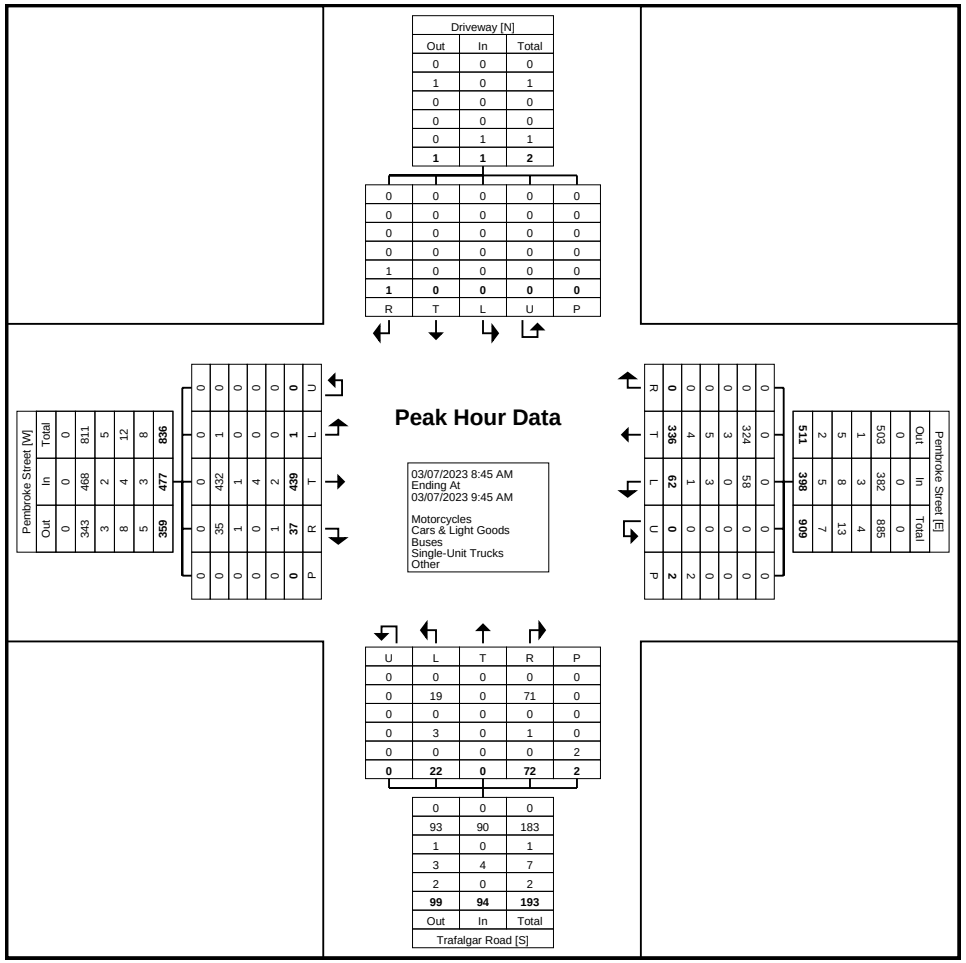
Turning Movement Peak Hour Data (8:45 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:45 AM	0	117	9	0	0	126	12	82	0	0	0	94	6	0	17	0	0	23	0	0	1	0	0	1	244
9:00 AM	1	102	5	0	0	108	16	82	0	0	0	98	4	0	13	0	0	17	0	0	0	0	0	0	223
9:15 AM	0	120	11	0	0	131	18	75	0	0	1	93	10	0	24	0	1	34	0	0	0	0	0	0	258
9:30 AM	0	100	12	0	0	112	16	97	0	0	1	113	2	0	18	0	1	20	0	0	0	0	0	0	245
Total	1	439	37	0	0	477	62	336	0	0	2	398	22	0	72	0	2	94	0	0	1	0	0	1	970
Approach %	0.2	92.0	7.8	0.0	-	-	15.6	84.4	0.0	0.0	-	-	23.4	0.0	76.6	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.1	45.3	3.8	0.0	-	49.2	6.4	34.6	0.0	0.0	-	41.0	2.3	0.0	7.4	0.0	-	9.7	0.0	0.0	0.1	0.0	-	0.1	-
PHF	0.250	0.915	0.771	0.000	-	0.910	0.861	0.866	0.000	0.000	-	0.881	0.550	0.000	0.750	0.000	-	0.691	0.000	0.000	0.250	0.000	-	0.250	0.940
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
Cars & Light Goods	1	432	35	0	-	468	58	324	0	0	-	382	19	0	71	0	-	90	0	0	0	0	-	0	940
% Cars & Light Goods	100.0	98.4	94.6	-	-	98.1	93.5	96.4	-	-	-	96.0	86.4	-	98.6	-	-	95.7	-	-	0.0	-	-	0.0	96.9
Buses	0	1	1	0	-	2	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	0.0	0.2	2.7	-	-	0.4	0.0	0.9	-	-	-	0.8	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.5
Single-Unit Trucks	0	4	0	0	-	4	3	5	0	0	-	8	3	0	1	0	-	4	0	0	0	0	-	0	16
% Single-Unit Trucks	0.0	0.9	0.0	-	-	0.8	4.8	1.5	-	-	-	2.0	13.6	-	1.4	-	-	4.3	-	-	0.0	-	-	0.0	1.6
Articulated Trucks	0	2	1	0	-	3	1	3	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	7
% Articulated Trucks	0.0	0.5	2.7	-	-	0.6	1.6	0.9	-	-	-	1.0	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.7
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.3	-	-	-	0.3	0.0	-	0.0	-	-	0.0	-	-	100.0	-	-	100.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-
% 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: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023


Pembroke Street [W]
Out In Total
0 0 0
343 468 811
3 2 5
8 4 12
5 3 8
359 477 836
0 0 0
35 432 467
1 1 2
0 0 0
1 4 5
37 439 476
0 1 1
0 0 0
0 0 0
0 0 0

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Count Name: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

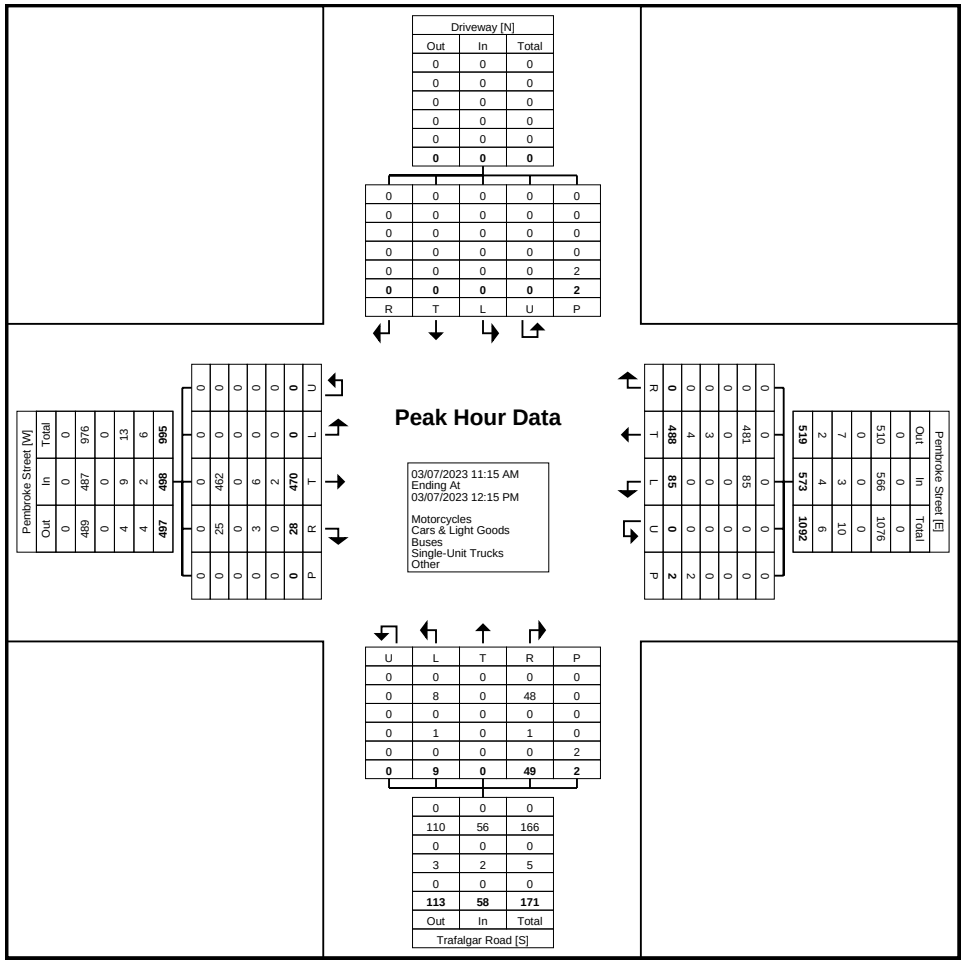
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:15 AM	0	121	5	0	0	126	9	116	0	0	0	125	5	0	13	0	0	18	0	0	0	0	1	0	269
11:30 AM	0	142	10	0	0	152	23	130	0	0	0	153	0	0	10	0	0	10	0	0	0	0	1	0	315
11:45 AM	0	96	10	0	0	106	25	103	0	0	0	128	1	0	11	0	0	12	0	0	0	0	0	0	246
12:00 PM	0	111	3	0	0	114	28	139	0	0	2	167	3	0	15	0	2	18	0	0	0	0	0	0	299
Total	0	470	28	0	0	498	85	488	0	0	2	573	9	0	49	0	2	58	0	0	0	0	2	0	1129
Approach %	0.0	94.4	5.6	0.0	-	-	14.8	85.2	0.0	0.0	-	-	15.5	0.0	84.5	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	41.6	2.5	0.0	-	44.1	7.5	43.2	0.0	0.0	-	50.8	0.8	0.0	4.3	0.0	-	5.1	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.827	0.700	0.000	-	0.819	0.759	0.878	0.000	0.000	-	0.858	0.450	0.000	0.817	0.000	-	0.806	0.000	0.000	0.000	0.000	-	0.000	0.896
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0
Cars & Light Goods	0	462	25	0	-	487	85	481	0	0	-	566	8	0	48	0	-	56	0	0	0	0	-	0	1109
% Cars & Light Goods	-	98.3	89.3	-	-	97.8	100.0	98.6	-	-	-	98.8	88.9	-	98.0	-	-	96.6	-	-	-	-	-	-	98.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0
Single-Unit Trucks	0	6	3	0	-	9	0	3	0	0	-	3	1	0	1	0	-	2	0	0	0	0	-	0	14
% Single-Unit Trucks	-	1.3	10.7	-	-	1.8	0.0	0.6	-	-	-	0.5	11.1	-	2.0	-	-	3.4	-	-	-	-	-	-	1.2
Articulated Trucks	0	2	0	0	-	2	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	-	0.4	0.0	-	-	0.4	0.0	0.8	-	-	-	0.7	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.5
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	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	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: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023


Pembroke Street [W]
Out In Total
0 0 0
489 487 976
0 0 0
4 9 13
4 2 9
497 498 995
U L T R P
0 0 0 0 0
0 0 0 0 0
0 25 462 0 0
0 0 0 0 0
0 3 9 0 0
0 0 2 0 0
0 0 470 28 0
0 0 0 0 0
Peak Hour Data
03/07/2023 11:15 AM
Ending At
03/07/2023 12:15 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
R T L U P
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0
0 0 0 0 2
0 0 0 0 2
Pembroke Street [E]
Out In Total
0 0 0
510 566 1076
0 0 0
7 3 10
2 4 6
519 573 1092
U L T R P
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 0 481 0 0
0 0 85 0 0
0 0 3 0 0
0 0 4 0 0
0 0 0 0 2
0 0 488 0 2
Trafalgar Road [S]
Out In Total
0 0 0
110 56 166
0 0 0
3 2 5
0 0 0
113 58 171
Driveway [N]
Out In Total
0 0 0
0 0 0
0 0 0

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Count Name: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

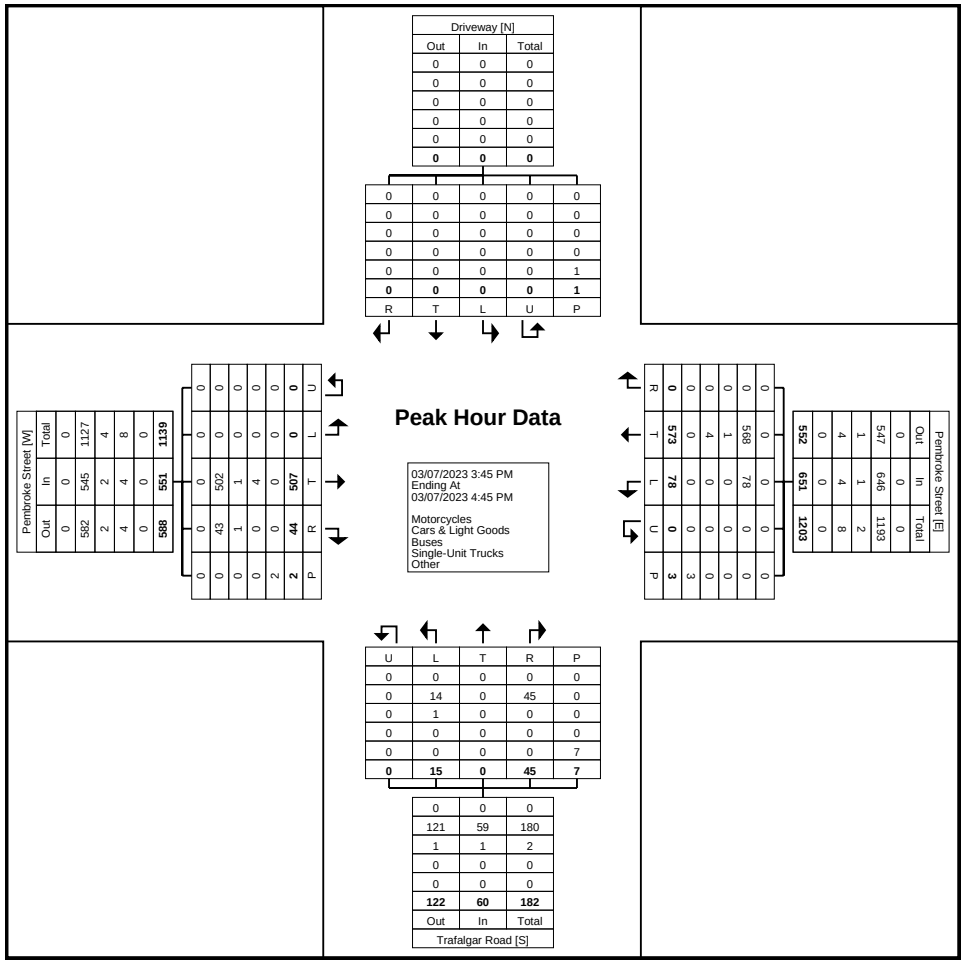
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
3:45 PM	0	129	12	0	0	141	23	124	0	0	0	147	1	0	14	0	0	15	0	0	0	0	1	0	303
4:00 PM	0	108	10	0	0	118	17	173	0	0	0	190	5	0	15	0	3	20	0	0	0	0	0	0	328
4:15 PM	0	143	8	0	0	151	17	136	0	0	0	153	2	0	9	0	1	11	0	0	0	0	0	0	315
4:30 PM	0	127	14	0	2	141	21	140	0	0	3	161	7	0	7	0	3	14	0	0	0	0	0	0	316
Total	0	507	44	0	2	551	78	573	0	0	3	651	15	0	45	0	7	60	0	0	0	0	1	0	1262
Approach %	0.0	92.0	8.0	0.0	-	-	12.0	88.0	0.0	0.0	-	-	25.0	0.0	75.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	40.2	3.5	0.0	-	43.7	6.2	45.4	0.0	0.0	-	51.6	1.2	0.0	3.6	0.0	-	4.8	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.886	0.786	0.000	-	0.912	0.848	0.828	0.000	0.000	-	0.857	0.536	0.000	0.750	0.000	-	0.750	0.000	0.000	0.000	0.000	-	0.000	0.962
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0
Cars & Light Goods	0	502	43	0	-	545	78	568	0	0	-	646	14	0	45	0	-	59	0	0	0	0	-	0	1250
% Cars & Light Goods	-	99.0	97.7	-	-	98.9	100.0	99.1	-	-	-	99.2	93.3	-	100.0	-	-	98.3	-	-	-	-	-	-	99.0
Buses	0	1	1	0	-	2	0	1	0	0	-	1	1	0	0	0	-	1	0	0	0	0	-	0	4
% Buses	-	0.2	2.3	-	-	0.4	0.0	0.2	-	-	-	0.2	6.7	-	0.0	-	-	1.7	-	-	-	-	-	-	0.3
Single-Unit Trucks	0	4	0	0	-	4	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	8
% Single-Unit Trucks	-	0.8	0.0	-	-	0.7	0.0	0.7	-	-	-	0.6	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	7	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Trafalgar Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023


Peak Hour Data
03/07/2023 3:45 PM
Ending At
03/07/2023 4:45 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
Pembroke Street [W]
Out In Total
0 0 0
0 545 1127
582 2 4
2 4 8
4 0 0
588 551 1139
U L T R P
0 0 0 0 0
0 0 0 0 0
0 502 1 4 0
43 1 0 0 0
0 0 0 2 2
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

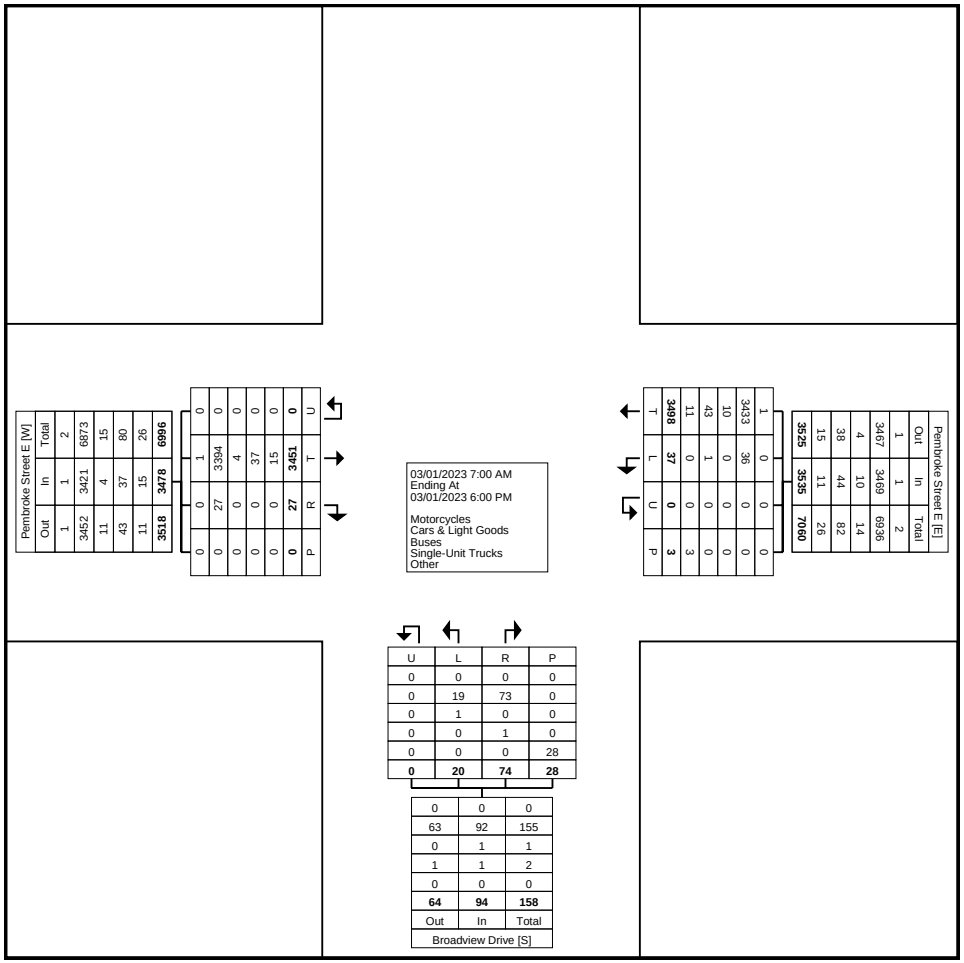
Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	38	0	0	0	38	0	59	0	0	59	0	0	0	1	0	97
7:15 AM	45	0	0	0	45	0	65	0	0	65	0	1	0	1	1	111
7:30 AM	55	0	0	0	55	0	82	0	0	82	0	2	0	2	2	139
7:45 AM	76	0	0	0	76	0	88	0	0	88	0	0	0	0	0	164
Hourly Total	214	0	0	0	214	0	294	0	0	294	0	3	0	4	3	511
8:00 AM	56	0	0	0	56	1	106	0	0	107	1	2	0	2	3	166
8:15 AM	64	0	0	0	64	0	89	0	1	89	0	3	0	1	3	156
8:30 AM	69	0	0	0	69	1	95	0	0	96	0	2	0	0	2	167
8:45 AM	104	0	0	0	104	2	83	0	0	85	1	2	0	0	3	192
Hourly Total	293	0	0	0	293	4	373	0	1	377	2	9	0	3	11	681
9:00 AM	83	1	0	0	84	1	93	0	0	94	0	1	0	0	1	179
9:15 AM	95	1	0	0	96	1	93	0	0	94	2	1	0	0	3	193
9:30 AM	108	0	0	0	108	0	100	0	0	100	0	3	0	1	3	211
9:45 AM	115	1	0	0	116	0	101	0	0	101	1	0	0	2	1	218
Hourly Total	401	3	0	0	404	2	387	0	0	389	3	5	0	3	8	801
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	111	0	0	0	111	0	108	0	0	108	0	2	0	0	2	221
11:15 AM	113	2	0	0	115	1	118	0	0	119	2	0	0	0	2	236
11:30 AM	128	2	0	0	130	2	118	0	0	120	2	3	0	3	5	255
11:45 AM	156	0	0	0	156	2	122	0	0	124	0	1	0	0	1	281
Hourly Total	508	4	0	0	512	5	466	0	0	471	4	6	0	3	10	993
12:00 PM	145	1	0	0	146	3	136	0	0	139	0	6	0	0	6	291
12:15 PM	125	0	0	0	125	4	110	0	0	114	0	1	0	2	1	240
12:30 PM	130	0	0	0	130	2	118	0	1	120	0	1	0	0	1	251
12:45 PM	131	2	0	0	133	2	135	0	0	137	0	3	0	1	3	273
Hourly Total	531	3	0	0	534	11	499	0	1	510	0	11	0	3	11	1055
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	118	1	0	0	119	1	126	0	0	127	1	4	0	0	5	251
3:15 PM	138	0	0	0	138	3	119	0	0	122	0	1	0	1	1	261
3:30 PM	168	1	0	0	169	2	123	0	0	125	0	5	0	1	5	299
3:45 PM	139	1	0	0	140	1	109	0	0	110	2	8	0	0	10	260
Hourly Total	563	3	0	0	566	7	477	0	0	484	3	18	0	2	21	1071
4:00 PM	125	2	0	0	127	1	140	0	0	141	3	5	0	0	8	276
4:15 PM	122	1	0	0	123	0	143	0	0	143	1	2	0	0	3	269
4:30 PM	121	1	0	0	122	0	124	0	0	124	0	8	0	2	8	254
4:45 PM	121	4	0	0	125	3	132	0	0	135	1	2	0	4	3	263

Hourly Total	489	8	0	0	497	4	539	0	0	543	5	17	0	6	22	1062
5:00 PM	123	1	0	0	124	2	145	0	0	147	1	0	0	1	1	272
5:15 PM	119	3	0	0	122	0	104	0	1	104	0	3	0	0	3	229
5:30 PM	97	1	0	0	98	2	106	0	0	108	1	1	0	0	2	208
5:45 PM	113	1	0	0	114	0	108	0	0	108	1	1	0	3	2	224
Hourly Total	452	6	0	0	458	4	463	0	1	467	3	5	0	4	8	933
Grand Total	3451	27	0	0	3478	37	3498	0	3	3535	20	74	0	28	94	7107
Approach %	99.2	0.8	0.0	-	-	1.0	99.0	0.0	-	-	21.3	78.7	0.0	-	-	-
Total %	48.6	0.4	0.0	-	48.9	0.5	49.2	0.0	-	49.7	0.3	1.0	0.0	-	1.3	-
Motorcycles	1	0	0	-	1	0	1	0	-	1	0	0	0	-	0	2
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	3394	27	0	-	3421	36	3433	0	-	3469	19	73	0	-	92	6982
% Cars & Light Goods	98.3	100.0	-	-	98.4	97.3	98.1	-	-	98.1	95.0	98.6	-	-	97.9	98.2
Buses	4	0	0	-	4	0	10	0	-	10	1	0	0	-	1	15
% Buses	0.1	0.0	-	-	0.1	0.0	0.3	-	-	0.3	5.0	0.0	-	-	1.1	0.2
Single-Unit Trucks	37	0	0	-	37	1	43	0	-	44	0	1	0	-	1	82
% Single-Unit Trucks	1.1	0.0	-	-	1.1	2.7	1.2	-	-	1.2	0.0	1.4	-	-	1.1	1.2
Articulated Trucks	12	0	0	-	12	0	8	0	-	8	0	0	0	-	0	20
% Articulated Trucks	0.3	0.0	-	-	0.3	0.0	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	3	0	0	-	3	0	3	0	-	3	0	0	0	-	0	6
% Bicycles on Road	0.1	0.0	-	-	0.1	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	3	-	-	-	-	28	-	-
% 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: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

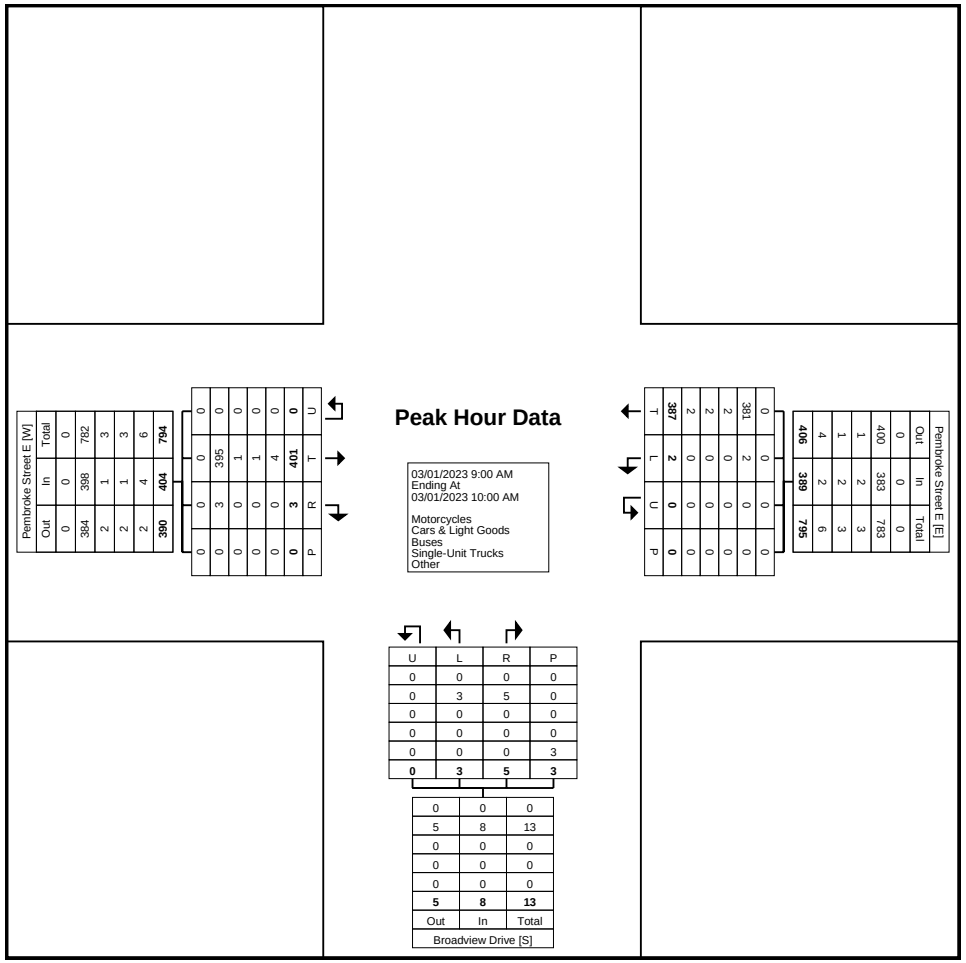
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	83	1	0	0	84	1	93	0	0	94	0	1	0	0	1	179
9:15 AM	95	1	0	0	96	1	93	0	0	94	2	1	0	0	3	193
9:30 AM	108	0	0	0	108	0	100	0	0	100	0	3	0	1	3	211
9:45 AM	115	1	0	0	116	0	101	0	0	101	1	0	0	2	1	218
Total	401	3	0	0	404	2	387	0	0	389	3	5	0	3	8	801
Approach %	99.3	0.7	0.0	-	-	0.5	99.5	0.0	-	-	37.5	62.5	0.0	-	-	-
Total %	50.1	0.4	0.0	-	50.4	0.2	48.3	0.0	-	48.6	0.4	0.6	0.0	-	1.0	-
PHF	0.872	0.750	0.000	-	0.871	0.500	0.958	0.000	-	0.963	0.375	0.417	0.000	-	0.667	0.919
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	395	3	0	-	398	2	381	0	-	383	3	5	0	-	8	789
% Cars & Light Goods	98.5	100.0	-	-	98.5	100.0	98.4	-	-	98.5	100.0	100.0	-	-	100.0	98.5
Buses	1	0	0	-	1	0	2	0	-	2	0	0	0	-	0	3
% Buses	0.2	0.0	-	-	0.2	0.0	0.5	-	-	0.5	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	1	0	0	-	1	0	2	0	-	2	0	0	0	-	0	3
% Single-Unit Trucks	0.2	0.0	-	-	0.2	0.0	0.5	-	-	0.5	0.0	0.0	-	-	0.0	0.4
Articulated Trucks	4	0	0	-	4	0	1	0	-	1	0	0	0	-	0	5
% Articulated Trucks	1.0	0.0	-	-	1.0	0.0	0.3	-	-	0.3	0.0	0.0	-	-	0.0	0.6
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.3	-	-	0.3	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

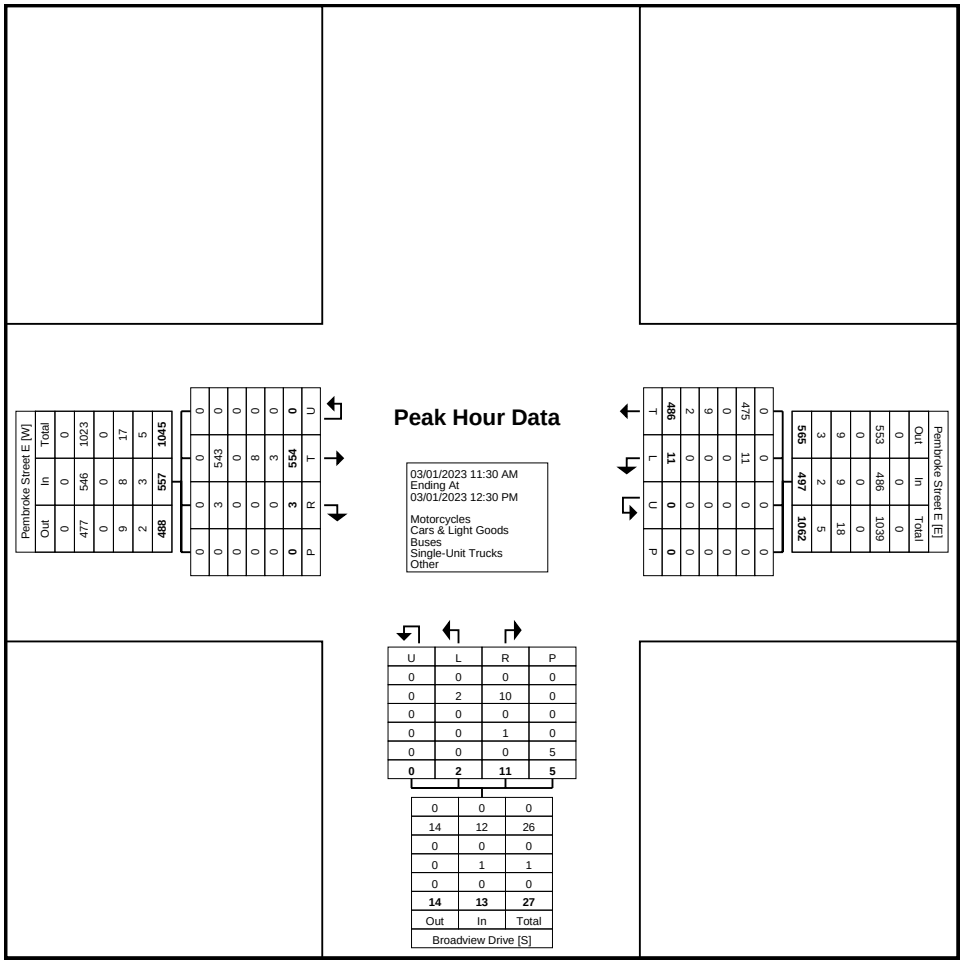
Turning Movement Peak Hour Data (11:30 AM)

Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:30 AM	128	2	0	0	130	2	118	0	0	120	2	3	0	3	5	255
11:45 AM	156	0	0	0	156	2	122	0	0	124	0	1	0	0	1	281
12:00 PM	145	1	0	0	146	3	136	0	0	139	0	6	0	0	6	291
12:15 PM	125	0	0	0	125	4	110	0	0	114	0	1	0	2	1	240
Total	554	3	0	0	557	11	486	0	0	497	2	11	0	5	13	1067
Approach %	99.5	0.5	0.0	-	-	2.2	97.8	0.0	-	-	15.4	84.6	0.0	-	-	-
Total %	51.9	0.3	0.0	-	52.2	1.0	45.5	0.0	-	46.6	0.2	1.0	0.0	-	1.2	-
PHF	0.888	0.375	0.000	-	0.893	0.688	0.893	0.000	-	0.894	0.250	0.458	0.000	-	0.542	0.917
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	543	3	0	-	546	11	475	0	-	486	2	10	0	-	12	1044
% Cars & Light Goods	98.0	100.0	-	-	98.0	100.0	97.7	-	-	97.8	100.0	90.9	-	-	92.3	97.8
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	8	0	0	-	8	0	9	0	-	9	0	1	0	-	1	18
% Single-Unit Trucks	1.4	0.0	-	-	1.4	0.0	1.9	-	-	1.8	0.0	9.1	-	-	7.7	1.7
Articulated Trucks	2	0	0	-	2	0	2	0	-	2	0	0	0	-	0	4
% Articulated Trucks	0.4	0.0	-	-	0.4	0.0	0.4	-	-	0.4	0.0	0.0	-	-	0.0	0.4
Bicycles on Road	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.2	0.0	-	-	0.2	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023

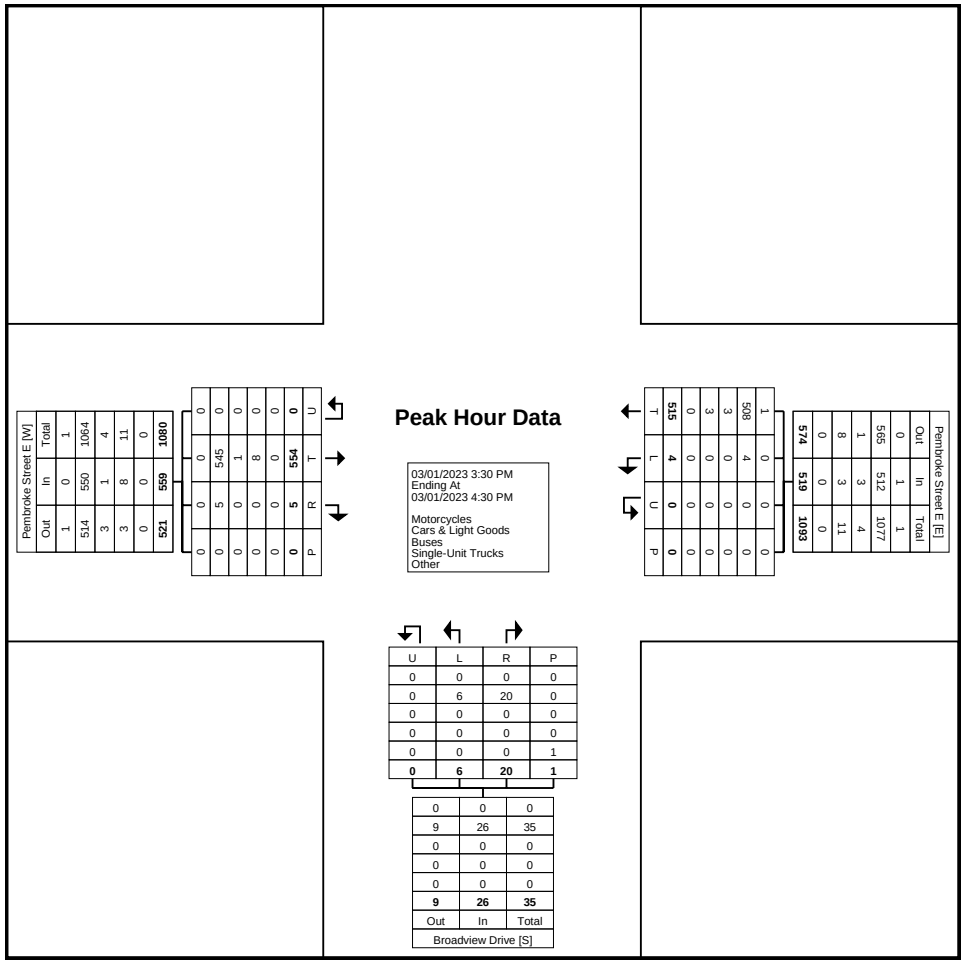
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:30 PM	168	1	0	0	169	2	123	0	0	125	0	5	0	1	5	299
3:45 PM	139	1	0	0	140	1	109	0	0	110	2	8	0	0	10	260
4:00 PM	125	2	0	0	127	1	140	0	0	141	3	5	0	0	8	276
4:15 PM	122	1	0	0	123	0	143	0	0	143	1	2	0	0	3	269
Total	554	5	0	0	559	4	515	0	0	519	6	20	0	1	26	1104
Approach %	99.1	0.9	0.0	-	-	0.8	99.2	0.0	-	-	23.1	76.9	0.0	-	-	-
Total %	50.2	0.5	0.0	-	50.6	0.4	46.6	0.0	-	47.0	0.5	1.8	0.0	-	2.4	-
PHF	0.824	0.625	0.000	-	0.827	0.500	0.900	0.000	-	0.907	0.500	0.625	0.000	-	0.650	0.923
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	545	5	0	-	550	4	508	0	-	512	6	20	0	-	26	1088
% Cars & Light Goods	98.4	100.0	-	-	98.4	100.0	98.6	-	-	98.7	100.0	100.0	-	-	100.0	98.6
Buses	1	0	0	-	1	0	3	0	-	3	0	0	0	-	0	4
% Buses	0.2	0.0	-	-	0.2	0.0	0.6	-	-	0.6	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	8	0	0	-	8	0	3	0	-	3	0	0	0	-	0	11
% Single-Unit Trucks	1.4	0.0	-	-	1.4	0.0	0.6	-	-	0.6	0.0	0.0	-	-	0.0	1.0
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	-	-	-	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: Pembroke Street E & Broadview Drive
Site Code: 220694
Start Date: 03/01/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Mackay Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

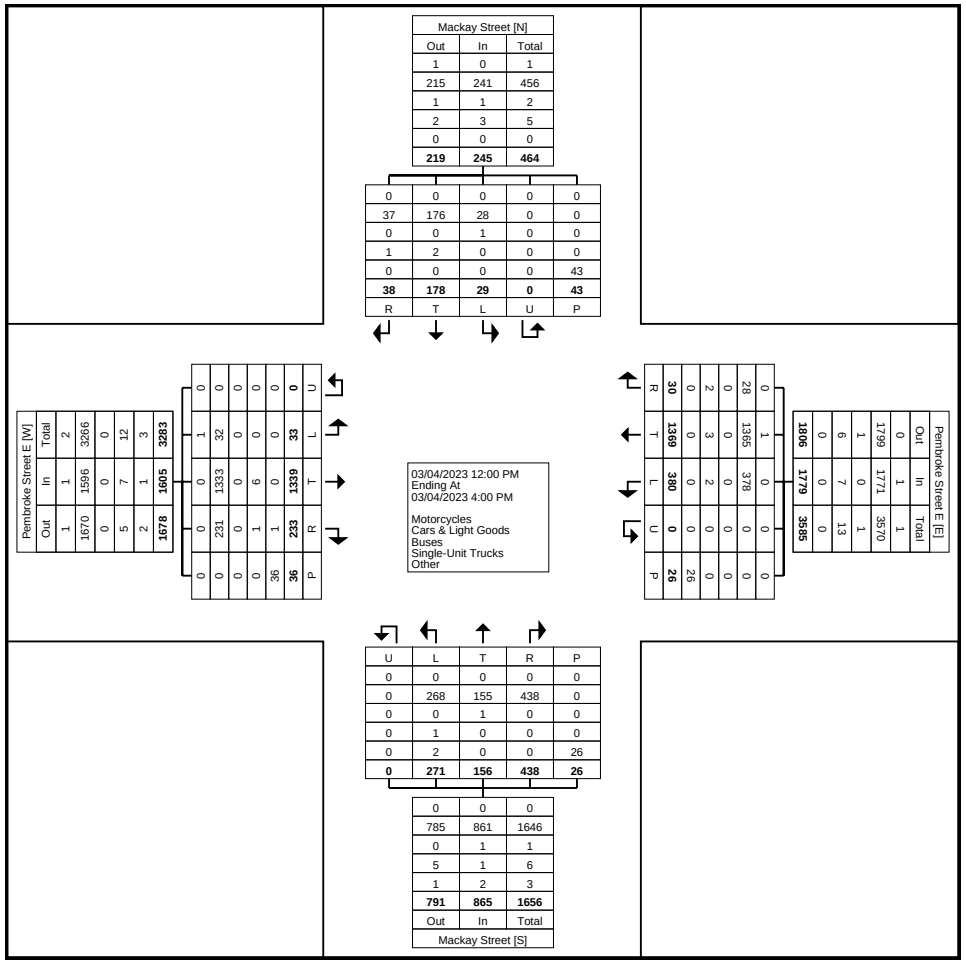
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Mackay Street Northbound						Mackay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	3	92	15	0	2	110	30	68	4	0	0	102	15	11	32	0	1	58	3	8	5	0	3	16	286
12:15 PM	3	76	17	0	2	96	26	76	2	0	1	104	17	8	23	0	4	48	5	4	2	0	1	11	259
12:30 PM	1	84	23	0	3	108	27	86	7	0	1	120	22	11	32	0	3	65	3	10	0	0	3	13	306
12:45 PM	2	96	16	0	3	114	16	65	3	0	3	84	20	4	28	0	0	52	1	8	2	0	6	11	261
Hourly Total	9	348	71	0	10	428	99	295	16	0	5	410	74	34	115	0	8	223	12	30	9	0	13	51	1112
1:00 PM	1	87	11	0	1	99	23	83	1	0	1	107	20	12	23	0	1	55	0	10	3	0	3	13	274
1:15 PM	2	83	14	0	2	99	18	97	0	0	3	115	13	8	24	0	1	45	2	10	5	0	5	17	276
1:30 PM	7	78	14	0	5	99	27	86	1	0	3	114	17	15	31	0	0	63	1	8	2	0	0	11	287
1:45 PM	2	77	9	0	2	88	15	88	2	0	0	105	20	14	27	0	0	61	0	15	1	0	1	16	270
Hourly Total	12	325	48	0	10	385	83	354	4	0	7	441	70	49	105	0	2	224	3	43	11	0	9	57	1107
2:00 PM	3	86	20	0	2	109	21	73	1	0	0	95	14	9	33	0	2	56	0	12	5	0	3	17	277
2:15 PM	1	75	13	0	3	89	26	91	1	0	1	118	18	9	25	0	2	52	2	12	1	0	2	15	274
2:30 PM	1	87	9	0	0	97	31	98	1	0	3	130	13	6	26	0	4	45	4	20	2	0	1	26	298
2:45 PM	1	83	14	0	2	98	18	95	2	0	0	115	21	9	31	0	1	61	2	15	3	0	6	20	294
Hourly Total	6	331	56	0	7	393	96	357	5	0	4	458	66	33	115	0	9	214	8	59	11	0	12	78	1143
3:00 PM	3	84	9	0	4	96	31	84	1	0	0	116	16	14	28	0	1	58	1	11	4	0	2	16	286
3:15 PM	0	91	17	0	1	108	18	103	2	0	4	123	15	10	26	0	4	51	3	12	1	0	1	16	298
3:30 PM	3	74	16	0	3	93	29	84	1	0	4	114	14	11	20	0	1	45	1	10	1	0	4	12	264
3:45 PM	0	86	16	0	1	102	24	92	1	0	2	117	16	5	29	0	1	50	1	13	1	0	2	15	284
Hourly Total	6	335	58	0	9	399	102	363	5	0	10	470	61	40	103	0	7	204	6	46	7	0	9	59	1132
Grand Total	33	1339	233	0	36	1605	380	1369	30	0	26	1779	271	156	438	0	26	865	29	178	38	0	43	245	4494
Approach %	2.1	83.4	14.5	0.0	-	-	21.4	77.0	1.7	0.0	-	-	31.3	18.0	50.6	0.0	-	-	11.8	72.7	15.5	0.0	-	-	-
Total %	0.7	29.8	5.2	0.0	-	35.7	8.5	30.5	0.7	0.0	-	39.6	6.0	3.5	9.7	0.0	-	19.2	0.6	4.0	0.8	0.0	-	5.5	-
Motorcycles	1	0	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Motorcycles	3.0	0.0	0.0	-	-	0.1	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	32	1333	231	0	-	1596	378	1365	28	0	-	1771	268	155	438	0	-	861	28	176	37	0	-	241	4469
% Cars & Light Goods	97.0	99.6	99.1	-	-	99.4	99.5	99.7	93.3	-	-	99.6	98.9	99.4	100.0	-	-	99.5	96.6	98.9	97.4	-	-	98.4	99.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1	0	0	0	-	1	2
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.0	-	-	0.1	3.4	0.0	0.0	-	-	0.4	0.0
Single-Unit Trucks	0	6	1	0	-	7	2	3	2	0	-	7	1	0	0	0	-	1	0	2	1	0	-	3	18
% Single-Unit Trucks	0.0	0.4	0.4	-	-	0.4	0.5	0.2	6.7	-	-	0.4	0.4	0.0	0.0	-	-	0.1	0.0	1.1	2.6	-	-	1.2	0.4
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.4	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.4	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	2.3	-	-
Pedestrians	-	-	-	-	36	-	-	-	-	-	26	-	-	-	-	-	26	-	-	-	-	-	42	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	97.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Mackay Street - Saturday
Site Code: 220694
Start Date: 03/04/2023



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: Pembroke Street E & Mackay Street - Saturday
Site Code: 220694
Start Date: 03/04/2023

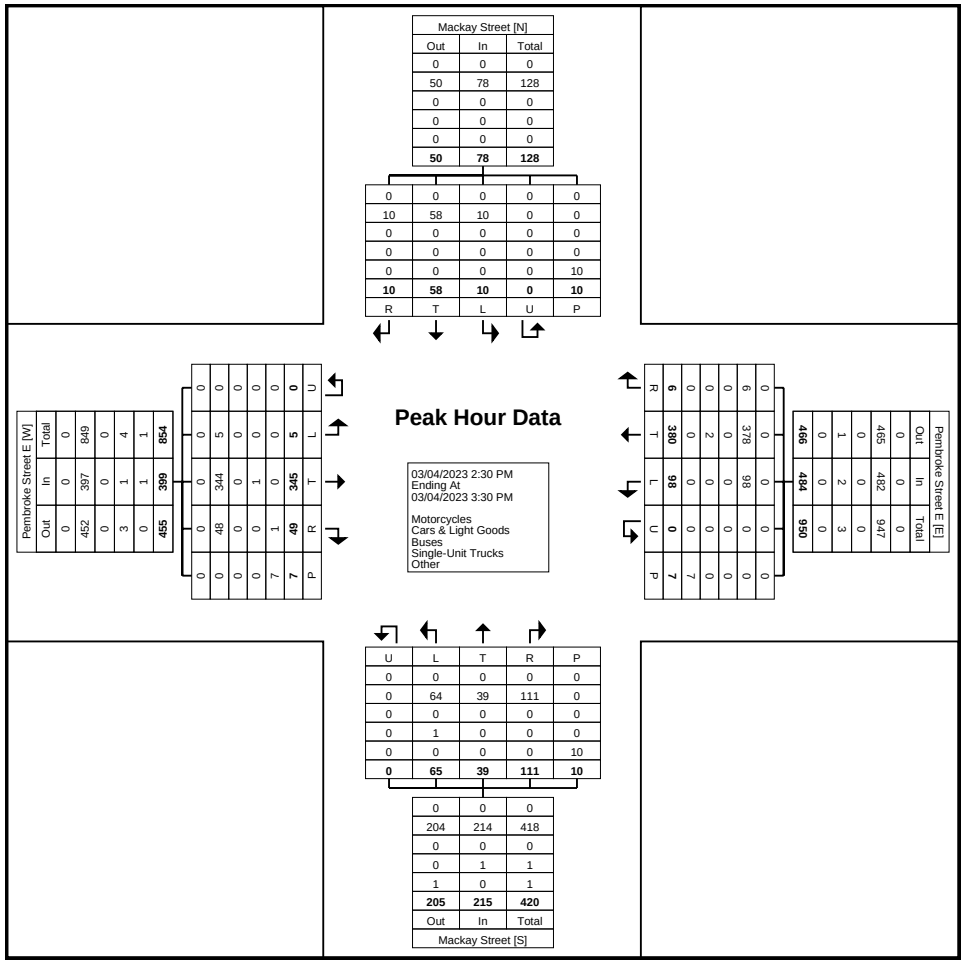
Turning Movement Peak Hour Data (2:30 PM)

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Mackay Street Northbound						Mackay 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
2:30 PM	1	87	9	0	0	97	31	98	1	0	3	130	13	6	26	0	4	45	4	20	2	0	1	26	298
2:45 PM	1	83	14	0	2	98	18	95	2	0	0	115	21	9	31	0	1	61	2	15	3	0	6	20	294
3:00 PM	3	84	9	0	4	96	31	84	1	0	0	116	16	14	28	0	1	58	1	11	4	0	2	16	286
3:15 PM	0	91	17	0	1	108	18	103	2	0	4	123	15	10	26	0	4	51	3	12	1	0	1	16	298
Total	5	345	49	0	7	399	98	380	6	0	7	484	65	39	111	0	10	215	10	58	10	0	10	78	1176
Approach %	1.3	86.5	12.3	0.0	-	-	20.2	78.5	1.2	0.0	-	-	30.2	18.1	51.6	0.0	-	-	12.8	74.4	12.8	0.0	-	-	-
Total %	0.4	29.3	4.2	0.0	-	33.9	8.3	32.3	0.5	0.0	-	41.2	5.5	3.3	9.4	0.0	-	18.3	0.9	4.9	0.9	0.0	-	6.6	-
PHF	0.417	0.948	0.721	0.000	-	0.924	0.790	0.922	0.750	0.000	-	0.931	0.774	0.696	0.895	0.000	-	0.881	0.625	0.725	0.625	0.000	-	0.750	0.987
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	5	344	48	0	-	397	98	378	6	0	-	482	64	39	111	0	-	214	10	58	10	0	-	78	1171
% Cars & Light Goods	100.0	99.7	98.0	-	-	99.5	100.0	99.5	100.0	-	-	99.6	98.5	100.0	100.0	-	-	99.5	100.0	100.0	100.0	-	-	100.0	99.6
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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	0	-	1	0	2	0	0	-	2	1	0	0	0	-	1	0	0	0	0	-	0	4
% Single-Unit Trucks	0.0	0.3	0.0	-	-	0.3	0.0	0.5	0.0	-	-	0.4	1.5	0.0	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.3
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	2.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
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	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	7	-	-	-	-	-	10	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street E & Mackay Street - Saturday
Site Code: 220694
Start Date: 03/04/2023


Pembroke Street E [W]
Out In Total
0 0 0
452 397 849
0 0 0
3 1 4
0 1 1
455 399 854
0 0 0
48 344 5
0 0 0
0 1 0
7 0 0
7 49 345 5 0
P R T L U
0 0 0
0 0 0
0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

Turning Movement Data

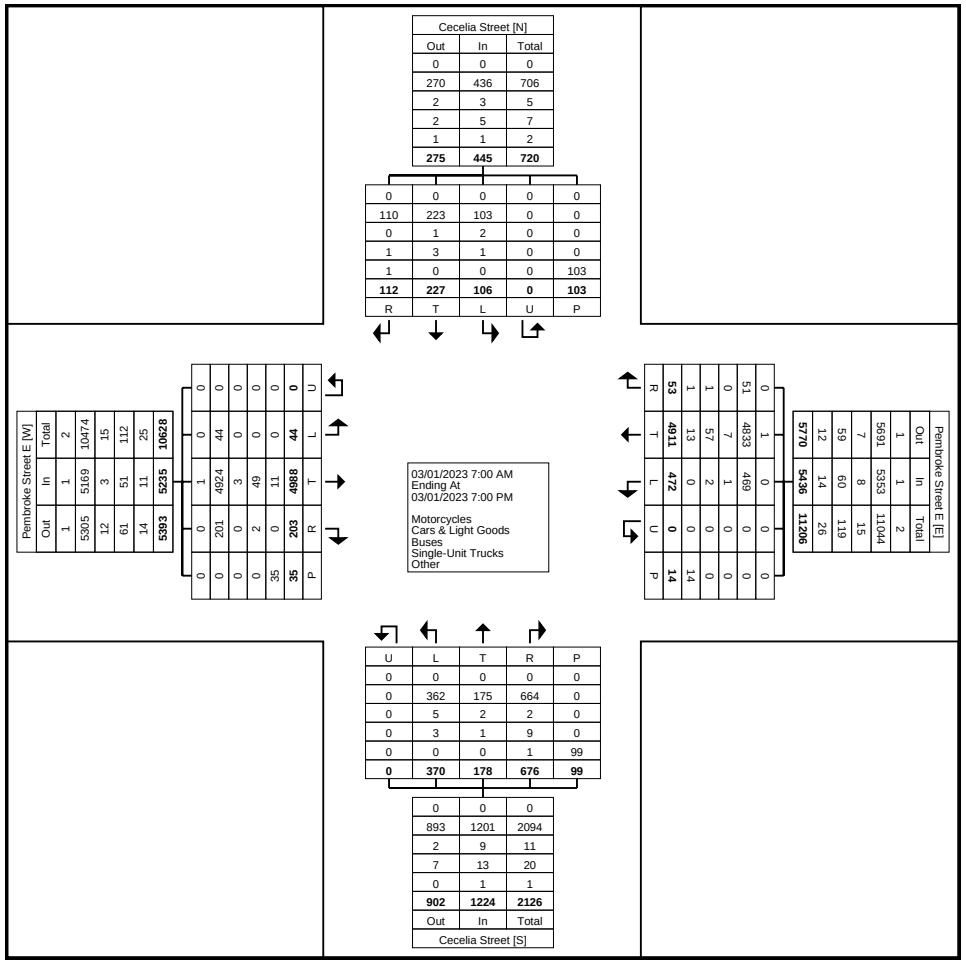
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Cecelia Street Northbound						Cecelia Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	36	4	0	1	40	4	52	0	0	0	56	3	0	7	0	1	10	0	1	0	0	0	1	107
7:15 AM	1	41	1	0	0	43	4	67	0	0	0	71	6	3	9	0	1	18	1	1	2	0	0	4	136
7:30 AM	0	57	2	0	1	59	3	73	1	0	0	77	3	4	4	0	0	11	0	2	3	0	1	5	152
7:45 AM	1	69	3	0	2	73	10	74	1	0	0	85	10	2	11	0	1	23	0	1	3	0	3	4	185
Hourly Total	2	203	10	0	4	215	21	266	2	0	0	289	22	9	31	0	3	62	1	5	8	0	4	14	580
8:00 AM	0	53	4	0	0	57	6	88	0	0	0	94	12	4	7	0	1	23	0	2	1	0	2	3	177
8:15 AM	1	59	3	0	0	63	14	86	0	0	0	100	8	2	15	0	1	25	0	2	1	0	2	3	191
8:30 AM	0	62	7	0	0	69	10	86	2	0	0	98	4	3	8	0	3	15	3	2	0	0	2	5	187
8:45 AM	1	100	5	0	2	106	5	83	0	0	0	88	7	3	11	0	2	21	4	6	1	0	1	11	226
Hourly Total	2	274	19	0	2	295	35	343	2	0	0	380	31	12	41	0	7	84	7	12	3	0	7	22	781
9:00 AM	1	89	6	0	1	96	11	72	0	0	0	83	9	0	16	0	4	25	2	6	2	0	2	10	214
9:15 AM	0	91	1	0	1	92	9	79	0	0	0	88	10	8	26	0	1	44	1	4	2	0	3	7	231
9:30 AM	1	94	2	0	0	97	10	96	0	0	0	106	6	7	16	0	0	29	0	5	2	0	2	7	239
9:45 AM	2	113	5	0	0	120	10	88	1	0	0	99	11	5	8	0	2	24	2	3	3	0	3	8	251
Hourly Total	4	387	14	0	2	405	40	335	1	0	0	376	36	20	66	0	7	122	5	18	9	0	10	32	935
10:00 AM	0	72	4	0	0	76	4	106	2	0	0	112	7	3	21	0	3	31	0	2	5	0	8	7	226
10:15 AM	0	118	3	0	0	121	7	95	1	0	0	103	7	4	17	0	1	28	1	3	4	0	0	8	260
10:30 AM	0	106	3	0	0	109	7	106	1	0	0	114	8	2	4	0	3	14	3	2	4	0	2	9	246
10:45 AM	1	95	2	0	0	98	6	102	1	0	0	109	11	2	14	0	0	27	6	5	1	0	1	12	246
Hourly Total	1	391	12	0	0	404	24	409	5	0	0	438	33	11	56	0	7	100	10	12	14	0	11	36	978
11:00 AM	0	111	3	0	2	114	9	102	4	0	0	115	7	4	13	0	0	24	1	7	3	0	1	11	264
11:15 AM	2	119	5	0	0	126	10	108	4	0	0	122	5	5	13	0	1	23	0	8	2	0	3	10	281
11:30 AM	1	118	3	0	0	122	14	106	2	0	1	122	10	1	17	0	3	28	3	5	3	0	2	11	283
11:45 AM	1	145	6	0	2	152	5	114	0	0	0	119	7	2	15	0	0	24	3	7	3	0	3	13	308
Hourly Total	4	493	17	0	4	514	38	430	10	0	1	478	29	12	58	0	4	99	7	27	11	0	9	45	1136
12:00 PM	1	136	5	0	0	142	12	110	2	0	0	124	6	6	20	0	0	32	3	9	2	0	4	14	312
12:15 PM	0	119	5	0	0	124	10	116	2	0	0	128	8	7	15	0	1	30	4	7	2	0	2	13	295
12:30 PM	2	135	4	0	0	141	3	118	0	0	0	121	12	6	17	0	3	35	1	2	1	0	1	4	301
12:45 PM	0	123	6	0	1	129	14	123	1	0	0	138	14	7	14	0	3	35	1	4	4	0	2	9	311
Hourly Total	3	513	20	0	1	536	39	467	5	0	0	511	40	26	66	0	7	132	9	22	9	0	9	40	1219
1:00 PM	1	98	4	0	0	103	6	129	1	0	1	136	6	5	12	0	3	23	4	6	4	0	4	14	276
1:15 PM	2	106	2	0	0	110	10	108	1	0	0	119	7	4	8	0	2	19	5	7	3	0	3	15	263
1:30 PM	0	123	4	0	1	127	7	115	1	0	1	123	11	2	13	0	1	26	3	6	3	0	5	12	288
1:45 PM	1	106	8	0	2	115	11	115	0	0	0	126	10	7	14	0	6	31	5	3	3	0	1	11	283
Hourly Total	4	433	18	0	3	455	34	467	3	0	2	504	34	18	47	0	12	99	17	22	13	0	13	52	1110

2:00 PM	1	122	1	0	3	124	14	127	1	0	0	142	13	2	17	0	7	32	2	8	2	0	5	12	310
2:15 PM	0	125	5	0	1	130	10	126	0	0	3	136	10	7	14	0	2	31	4	7	3	0	3	14	311
2:30 PM	1	130	6	0	1	137	7	124	2	0	0	133	14	6	16	0	1	36	6	10	4	0	3	20	326
2:45 PM	5	110	4	0	0	119	19	115	0	0	0	134	10	6	14	0	5	30	5	3	4	0	1	12	295
Hourly Total	7	487	16	0	5	510	50	492	3	0	3	545	47	21	61	0	15	129	17	28	13	0	12	58	1242
3:00 PM	1	129	4	0	1	134	16	111	0	0	0	127	11	4	18	0	1	33	2	7	6	0	4	15	309
3:15 PM	1	123	4	0	2	128	7	129	3	0	0	139	6	0	23	0	4	29	4	8	1	0	3	13	309
3:30 PM	1	145	6	0	0	152	14	98	3	0	0	115	9	5	21	0	4	35	8	7	2	0	2	17	319
3:45 PM	4	129	4	0	10	137	9	93	0	0	1	102	11	5	27	0	2	43	4	10	1	0	2	15	297
Hourly Total	7	526	18	0	13	551	46	431	6	0	1	483	37	14	89	0	11	140	18	32	10	0	11	60	1234
4:00 PM	2	109	5	0	0	116	18	129	3	0	0	150	8	3	26	0	2	37	2	6	2	0	6	10	313
4:15 PM	0	116	4	0	0	120	20	129	3	0	0	152	10	2	16	0	0	28	4	6	3	0	0	13	313
4:30 PM	2	116	7	0	0	125	10	119	1	0	0	130	4	3	7	0	4	14	0	4	5	0	0	9	278
4:45 PM	0	132	9	0	0	141	13	120	1	0	0	134	8	4	16	0	4	28	1	4	1	0	3	6	309
Hourly Total	4	473	25	0	0	502	61	497	8	0	0	566	30	12	65	0	10	107	7	20	11	0	9	38	1213
5:00 PM	0	117	4	0	0	121	18	125	1	0	0	144	3	6	16	0	2	25	4	11	1	0	0	16	306
5:15 PM	2	129	10	0	0	141	15	107	0	0	3	122	3	3	16	0	3	22	1	4	2	0	0	7	292
5:30 PM	1	105	4	0	0	110	11	101	0	0	2	112	3	4	15	0	1	22	0	5	1	0	4	6	250
5:45 PM	1	103	0	0	0	104	10	114	0	0	1	124	5	0	8	0	4	13	1	1	0	0	0	2	243
Hourly Total	4	454	18	0	0	476	54	447	1	0	6	502	14	13	55	0	10	82	6	21	4	0	4	31	1091
6:00 PM	1	82	2	0	0	85	4	87	2	0	0	93	6	4	10	0	2	20	0	2	1	0	2	3	201
6:15 PM	0	96	5	0	0	101	9	82	1	0	0	92	6	2	13	0	0	21	2	1	1	0	0	4	218
6:30 PM	1	95	6	0	1	102	12	89	3	0	1	104	2	1	11	0	2	14	0	2	2	0	2	4	224
6:45 PM	0	81	3	0	0	84	5	69	1	0	0	75	3	3	7	0	2	13	0	3	3	0	0	6	178
Hourly Total	2	354	16	0	1	372	30	327	7	0	1	364	17	10	41	0	6	68	2	8	7	0	4	17	821
Grand Total	44	4988	203	0	35	5235	472	4911	53	0	14	5436	370	178	676	0	99	1224	106	227	112	0	103	445	12340
Approach %	0.8	95.3	3.9	0.0	-	-	8.7	90.3	1.0	0.0	-	-	30.2	14.5	55.2	0.0	-	-	23.8	51.0	25.2	0.0	-	-	-
Total %	0.4	40.4	1.6	0.0	-	42.4	3.8	39.8	0.4	0.0	-	44.1	3.0	1.4	5.5	0.0	-	9.9	0.9	1.8	0.9	0.0	-	3.6	-
Motorcycles	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% 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	44	4924	201	0	-	5169	469	4833	51	0	-	5353	362	175	664	0	-	1201	103	223	110	0	-	436	12159
% Cars & Light Goods	100.0	98.7	99.0	-	-	98.7	99.4	98.4	96.2	-	-	98.5	97.8	98.3	98.2	-	-	98.1	97.2	98.2	98.2	-	-	98.0	98.5
Buses	0	3	0	0	-	3	1	7	0	0	-	8	5	2	2	0	-	9	2	1	0	0	-	3	23
% Buses	0.0	0.1	0.0	-	-	0.1	0.2	0.1	0.0	-	-	0.1	1.4	1.1	0.3	-	-	0.7	1.9	0.4	0.0	-	-	0.7	0.2
Single-Unit Trucks	0	49	2	0	-	51	2	57	1	0	-	60	3	1	9	0	-	13	1	3	1	0	-	5	129
% Single-Unit Trucks	0.0	1.0	1.0	-	-	1.0	0.4	1.2	1.9	-	-	1.1	0.8	0.6	1.3	-	-	1.1	0.9	1.3	0.9	-	-	1.1	1.0
Articulated Trucks	0	9	0	0	-	9	0	11	1	0	-	12	0	0	1	0	-	1	0	0	0	0	-	0	22
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.2	1.9	-	-	0.2	0.0	0.0	0.1	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	2	0	0	-	2	0	2	0	0	-	2	0	0	0	0	-	0	0	0	1	0	-	1	5
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.9	-	-	0.2	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	2.9	-	-
Pedestrians	-	-	-	-	35	-	-	-	-	-	14	-	-	-	-	-	99	-	-	-	-	-	100	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	97.1	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023



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: Pembroke Street East & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

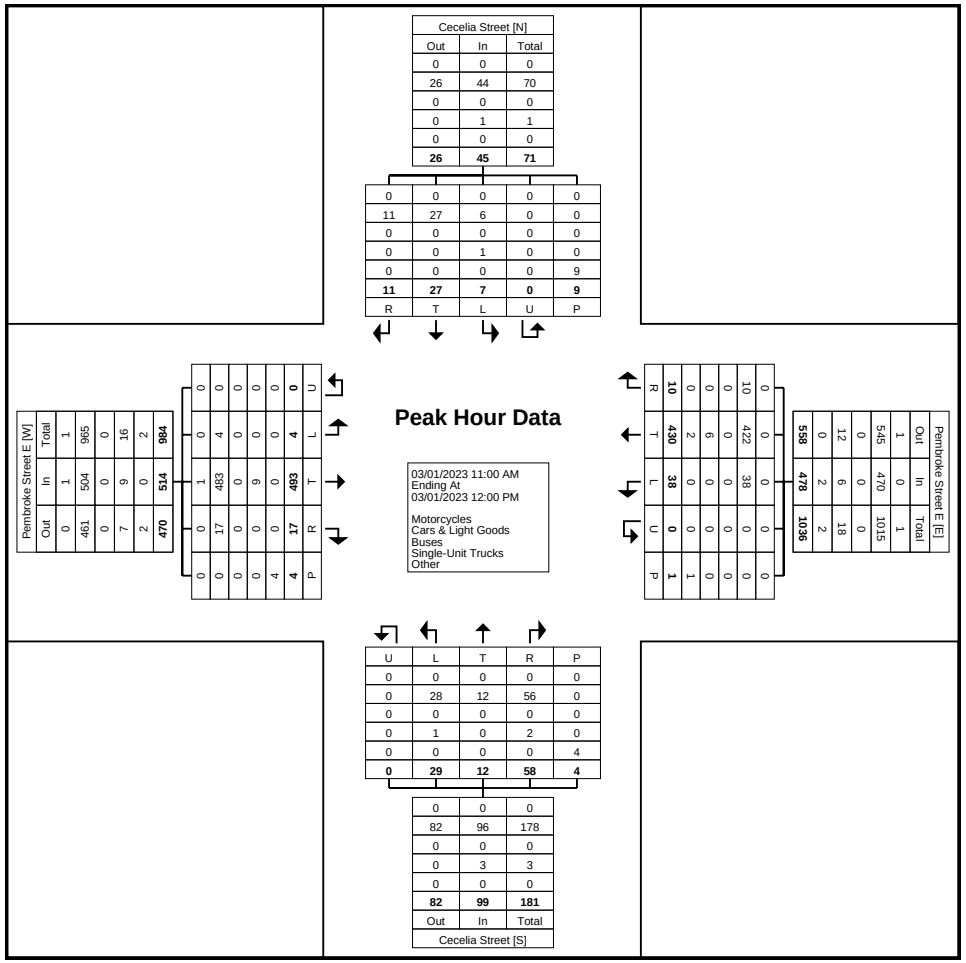
Turning Movement Peak Hour Data (11:00 AM)

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Cecelia Street Northbound						Cecelia 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
11:00 AM	0	111	3	0	2	114	9	102	4	0	0	115	7	4	13	0	0	24	1	7	3	0	1	11	264
11:15 AM	2	119	5	0	0	126	10	108	4	0	0	122	5	5	13	0	1	23	0	8	2	0	3	10	281
11:30 AM	1	118	3	0	0	122	14	106	2	0	1	122	10	1	17	0	3	28	3	5	3	0	2	11	283
11:45 AM	1	145	6	0	2	152	5	114	0	0	0	119	7	2	15	0	0	24	3	7	3	0	3	13	308
Total	4	493	17	0	4	514	38	430	10	0	1	478	29	12	58	0	4	99	7	27	11	0	9	45	1136
Approach %	0.8	95.9	3.3	0.0	-	-	7.9	90.0	2.1	0.0	-	-	29.3	12.1	58.6	0.0	-	-	15.6	60.0	24.4	0.0	-	-	-
Total %	0.4	43.4	1.5	0.0	-	45.2	3.3	37.9	0.9	0.0	-	42.1	2.6	1.1	5.1	0.0	-	8.7	0.6	2.4	1.0	0.0	-	4.0	-
PHF	0.500	0.850	0.708	0.000	-	0.845	0.679	0.943	0.625	0.000	-	0.980	0.725	0.600	0.853	0.000	-	0.884	0.583	0.844	0.917	0.000	-	0.865	0.922
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	4	483	17	0	-	504	38	422	10	0	-	470	28	12	56	0	-	96	6	27	11	0	-	44	1114
% Cars & Light Goods	100.0	98.0	100.0	-	-	98.1	100.0	98.1	100.0	-	-	98.3	96.6	100.0	96.6	-	-	97.0	85.7	100.0	100.0	-	-	97.8	98.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	9	0	0	-	9	0	6	0	0	-	6	1	0	2	0	-	3	1	0	0	0	-	1	19
% Single-Unit Trucks	0.0	1.8	0.0	-	-	1.8	0.0	1.4	0.0	-	-	1.3	3.4	0.0	3.4	-	-	3.0	14.3	0.0	0.0	-	-	2.2	1.7
Articulated Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (11:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023

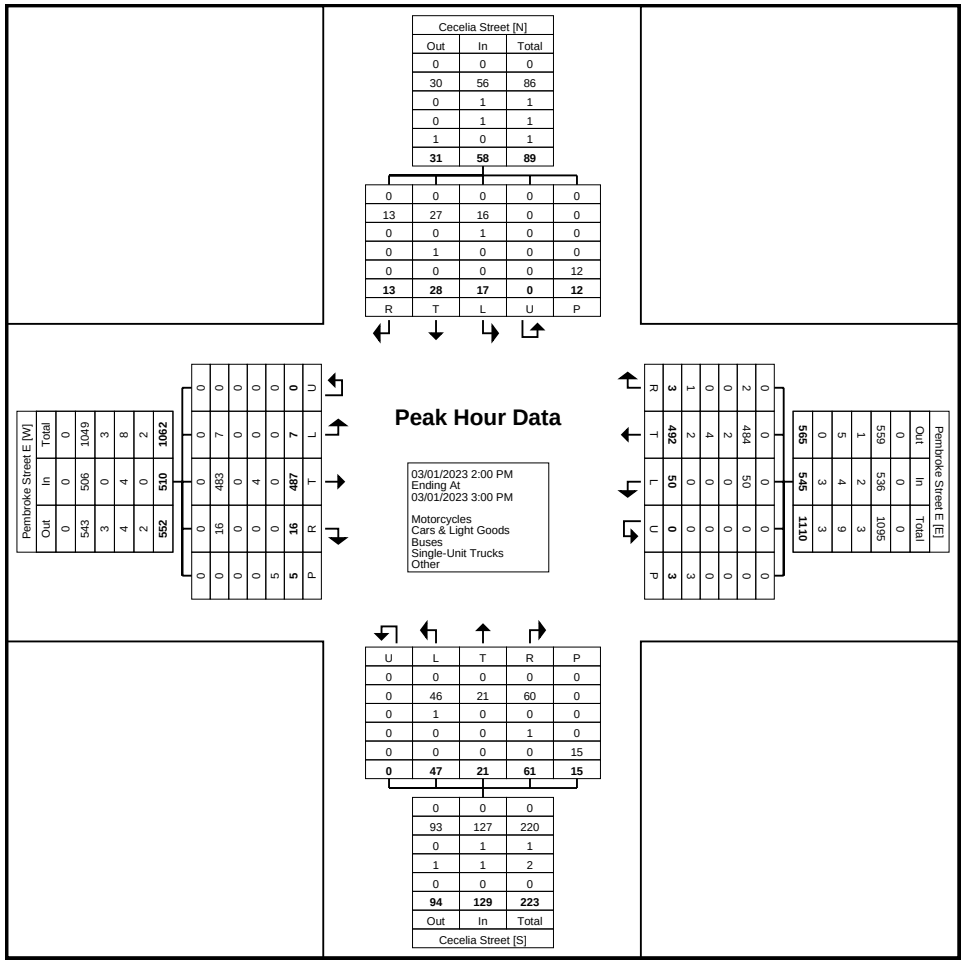
Turning Movement Peak Hour Data (2:00 PM)

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Cecelia Street Northbound						Cecelia 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
2:00 PM	1	122	1	0	3	124	14	127	1	0	0	142	13	2	17	0	7	32	2	8	2	0	5	12	310
2:15 PM	0	125	5	0	1	130	10	126	0	0	3	136	10	7	14	0	2	31	4	7	3	0	3	14	311
2:30 PM	1	130	6	0	1	137	7	124	2	0	0	133	14	6	16	0	1	36	6	10	4	0	3	20	326
2:45 PM	5	110	4	0	0	119	19	115	0	0	0	134	10	6	14	0	5	30	5	3	4	0	1	12	295
Total	7	487	16	0	5	510	50	492	3	0	3	545	47	21	61	0	15	129	17	28	13	0	12	58	1242
Approach %	1.4	95.5	3.1	0.0	-	-	9.2	90.3	0.6	0.0	-	-	36.4	16.3	47.3	0.0	-	-	29.3	48.3	22.4	0.0	-	-	-
Total %	0.6	39.2	1.3	0.0	-	41.1	4.0	39.6	0.2	0.0	-	43.9	3.8	1.7	4.9	0.0	-	10.4	1.4	2.3	1.0	0.0	-	4.7	-
PHF	0.350	0.937	0.667	0.000	-	0.931	0.658	0.969	0.375	0.000	-	0.960	0.839	0.750	0.897	0.000	-	0.896	0.708	0.700	0.813	0.000	-	0.725	0.952
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	7	483	16	0	-	506	50	484	2	0	-	536	46	21	60	0	-	127	16	27	13	0	-	56	1225
% Cars & Light Goods	100.0	99.2	100.0	-	-	99.2	100.0	98.4	66.7	-	-	98.3	97.9	100.0	98.4	-	-	98.4	94.1	96.4	100.0	-	-	96.6	98.6
Buses	0	0	0	0	-	0	0	2	0	0	-	2	1	0	0	0	-	1	1	0	0	0	-	1	4
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	2.1	0.0	0.0	-	-	0.8	5.9	0.0	0.0	-	-	1.7	0.3
Single-Unit Trucks	0	4	0	0	-	4	0	4	0	0	-	4	0	0	1	0	-	1	0	1	0	0	-	1	10
% Single-Unit Trucks	0.0	0.8	0.0	-	-	0.8	0.0	0.8	0.0	-	-	0.7	0.0	0.0	1.6	-	-	0.8	0.0	3.6	0.0	-	-	1.7	0.8
Articulated Trucks	0	0	0	0	-	0	0	2	1	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.4	33.3	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	15	-	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & Cecelia Street
Site Code: 220694
Start Date: 03/01/2023



Turning Movement Peak Hour Data Plot (2:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & MacKay Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

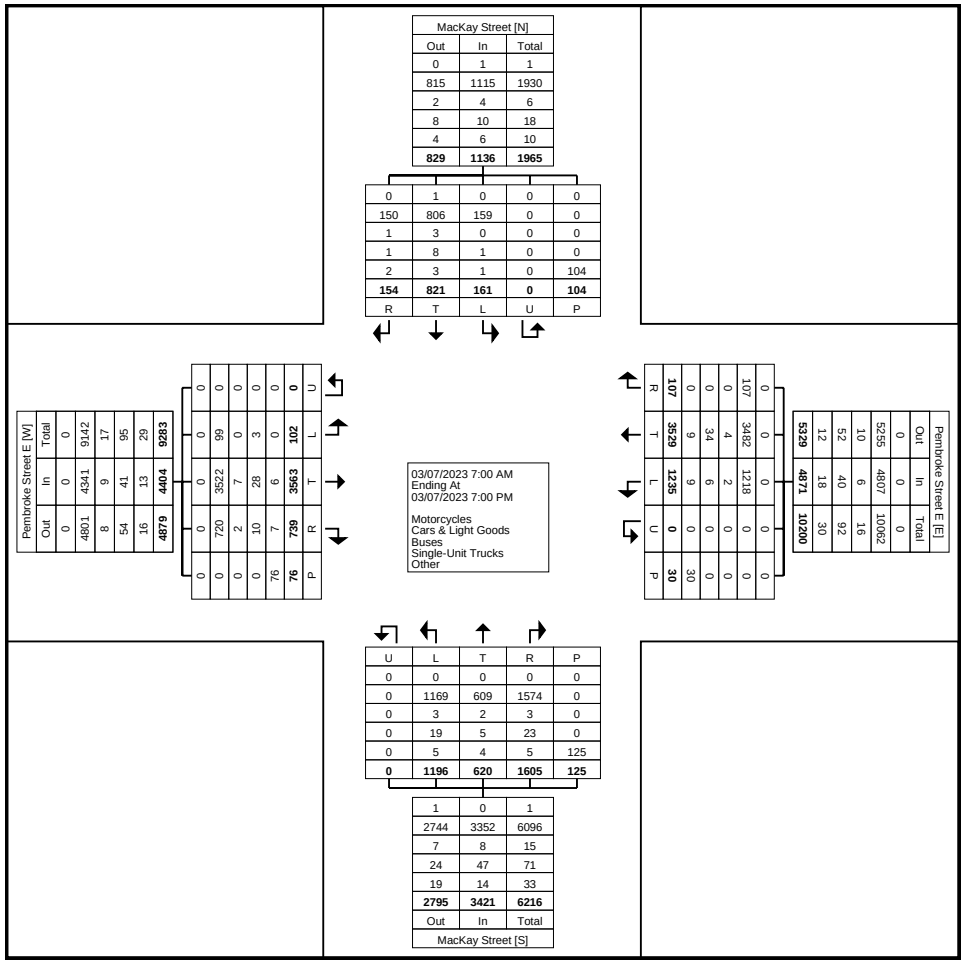
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						MacKay Street Northbound						MacKay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	28	12	0	2	40	10	41	1	0	0	52	10	3	23	0	0	36	1	4	2	0	0	7	135
7:15 AM	1	25	8	0	0	34	12	40	2	0	0	54	12	7	17	0	3	36	0	5	1	0	0	6	130
7:30 AM	1	33	10	0	2	44	11	62	3	0	0	76	13	5	27	0	2	45	0	10	0	0	0	10	175
7:45 AM	1	43	10	0	2	54	27	54	1	0	0	82	23	23	30	0	1	76	0	14	2	0	1	16	228
Hourly Total	3	129	40	0	6	172	60	197	7	0	0	264	58	38	97	0	6	193	1	33	5	0	1	39	668
8:00 AM	0	38	19	0	0	57	26	70	2	0	0	98	21	15	29	0	0	65	3	9	5	0	2	17	237
8:15 AM	3	53	16	0	3	72	15	51	1	0	0	67	28	19	28	0	1	75	2	13	2	0	1	17	231
8:30 AM	3	58	13	0	0	74	16	48	4	0	0	68	23	15	25	0	2	63	3	11	1	0	1	15	220
8:45 AM	1	65	12	0	2	78	26	65	0	0	1	91	15	11	42	0	7	68	1	10	1	0	2	12	249
Hourly Total	7	214	60	0	5	281	83	234	7	0	1	324	87	60	124	0	10	271	9	43	9	0	6	61	937
9:00 AM	0	57	15	0	1	72	20	56	0	0	0	76	22	11	27	0	1	60	2	10	3	0	2	15	223
9:15 AM	1	73	14	0	0	88	29	69	2	0	1	100	28	17	44	0	4	89	3	7	5	0	1	15	292
9:30 AM	1	82	17	0	2	100	20	72	2	0	1	94	29	19	29	0	3	77	2	13	3	0	2	18	289
9:45 AM	0	75	11	0	2	86	28	57	3	0	1	88	41	20	31	0	3	92	1	17	2	0	6	20	286
Hourly Total	2	287	57	0	5	346	97	254	7	0	3	358	120	67	131	0	11	318	8	47	13	0	11	68	1090
10:00 AM	1	77	19	0	0	97	23	77	2	0	0	102	32	10	46	0	2	88	2	19	5	0	1	26	313
10:15 AM	2	79	12	0	1	93	26	77	1	0	1	104	25	12	31	0	0	68	5	15	5	0	2	25	290
10:30 AM	5	91	15	0	3	111	19	66	3	0	1	88	29	15	29	0	2	73	5	17	3	0	3	25	297
10:45 AM	0	82	11	0	1	93	26	81	2	0	0	109	31	15	42	0	2	88	8	8	4	0	1	20	310
Hourly Total	8	329	57	0	5	394	94	301	8	0	2	403	117	52	148	0	6	317	20	59	17	0	7	96	1210
11:00 AM	2	86	16	0	1	104	22	93	3	0	1	118	30	27	26	0	1	83	4	20	4	0	0	28	333
11:15 AM	2	104	18	0	5	124	26	84	1	0	1	111	31	19	24	0	3	74	5	23	3	0	2	31	340
11:30 AM	3	96	11	0	2	110	22	82	5	0	1	109	38	10	33	0	0	81	7	23	8	0	1	38	338
11:45 AM	1	86	18	0	0	105	20	93	6	0	0	119	27	13	40	0	4	80	3	18	1	0	2	22	326
Hourly Total	8	372	63	0	8	443	90	352	15	0	3	457	126	69	123	0	8	318	19	84	16	0	5	119	1337
12:00 PM	1	80	16	0	3	97	34	97	2	0	1	133	23	18	35	0	3	76	10	28	2	0	3	40	346
12:15 PM	3	76	16	0	1	95	27	80	3	0	1	110	19	10	33	0	7	62	5	20	1	0	1	26	293
12:30 PM	4	84	21	0	3	109	37	95	4	0	0	136	22	20	36	0	2	78	7	22	5	0	2	34	357
12:45 PM	5	89	21	0	0	115	28	77	5	0	0	110	29	21	32	0	4	82	4	21	2	0	3	27	334
Hourly Total	13	329	74	0	7	416	126	349	14	0	2	489	93	69	136	0	16	298	26	91	10	0	9	127	1330
1:00 PM	3	75	20	0	2	98	23	81	5	0	1	109	28	17	41	0	6	86	5	18	6	0	4	29	322
1:15 PM	4	82	21	0	2	107	19	79	6	0	3	104	20	15	37	0	7	72	3	16	0	0	5	19	302
1:30 PM	2	87	16	0	0	105	33	84	4	0	0	121	33	18	38	0	1	89	6	26	3	0	1	35	350
1:45 PM	2	88	14	0	0	104	20	86	2	0	2	108	30	11	36	0	6	77	3	17	7	0	1	27	316
Hourly Total	11	332	71	0	4	414	95	330	17	0	6	442	111	61	152	0	20	324	17	77	16	0	11	110	1290

2:00 PM	4	70	23	0	0	97	28	74	2	0	1	104	18	12	38	0	3	68	2	19	6	0	2	27	296
2:15 PM	5	76	18	0	3	99	29	82	3	0	0	114	30	15	30	0	1	75	5	20	4	0	7	29	317
2:30 PM	5	82	11	0	1	98	33	91	4	0	0	128	33	9	34	0	3	76	2	17	4	0	3	23	325
2:45 PM	7	74	16	0	1	97	39	70	0	0	1	109	29	12	39	0	6	80	1	17	5	0	6	23	309
Hourly Total	21	302	68	0	5	391	129	317	9	0	2	455	110	48	141	0	13	299	10	73	19	0	18	102	1247
3:00 PM	4	80	23	0	2	107	23	75	3	0	1	101	31	11	34	0	6	76	4	29	3	0	3	36	320
3:15 PM	4	74	18	0	4	96	27	68	1	0	3	96	21	12	35	0	4	68	8	15	2	0	6	25	285
3:30 PM	1	96	20	0	2	117	30	73	2	0	0	105	27	18	37	0	1	82	5	21	3	0	2	29	333
3:45 PM	2	90	17	0	1	109	30	62	2	0	2	94	37	12	42	0	5	91	3	28	4	0	1	35	329
Hourly Total	11	340	78	0	9	429	110	278	8	0	6	396	116	53	148	0	16	317	20	93	12	0	12	125	1267
4:00 PM	2	102	14	0	2	118	32	117	2	0	0	151	39	12	33	0	2	84	7	25	5	0	3	37	390
4:15 PM	1	100	12	0	1	113	29	77	0	0	0	106	20	7	36	0	3	63	5	25	3	0	7	33	315
4:30 PM	1	90	21	0	0	112	38	89	1	0	0	128	26	8	43	0	2	77	3	23	3	0	1	29	346
4:45 PM	3	87	15	0	2	105	38	73	2	0	0	113	27	11	39	0	1	77	2	12	2	0	0	16	311
Hourly Total	7	379	62	0	5	448	137	356	5	0	0	498	112	38	151	0	8	301	17	85	13	0	11	115	1362
5:00 PM	2	98	14	0	1	114	27	85	6	0	1	118	27	12	48	0	3	87	3	32	5	0	3	40	359
5:15 PM	1	82	19	0	2	102	41	82	0	0	1	123	12	8	31	0	4	51	5	21	7	0	2	33	309
5:30 PM	2	72	13	0	3	87	23	70	1	0	2	94	18	7	30	0	1	55	1	13	2	0	4	16	252
5:45 PM	2	66	15	0	1	83	27	62	0	0	0	89	27	10	29	0	1	66	0	12	3	0	1	15	253
Hourly Total	7	318	61	0	7	386	118	299	7	0	4	424	84	37	138	0	9	259	9	78	17	0	10	104	1173
6:00 PM	2	71	20	0	3	93	25	64	0	0	1	89	19	11	41	0	1	71	1	19	1	0	1	21	274
6:15 PM	0	62	8	0	3	70	28	66	2	0	0	96	15	6	27	0	0	48	2	7	2	0	0	11	225
6:30 PM	2	46	11	0	2	59	19	70	1	0	0	90	16	4	28	0	1	48	1	13	2	0	1	16	213
6:45 PM	0	53	9	0	2	62	24	62	0	0	0	86	12	7	20	0	0	39	1	19	2	0	1	22	209
Hourly Total	4	232	48	0	10	284	96	262	3	0	1	361	62	28	116	0	2	206	5	58	7	0	3	70	921
Grand Total	102	3563	739	0	76	4404	1235	3529	107	0	30	4871	1196	620	1605	0	125	3421	161	821	154	0	104	1136	13832
Approach %	2.3	80.9	16.8	0.0	-	-	25.4	72.4	2.2	0.0	-	-	35.0	18.1	46.9	0.0	-	-	14.2	72.3	13.6	0.0	-	-	-
Total %	0.7	25.8	5.3	0.0	-	31.8	8.9	25.5	0.8	0.0	-	35.2	8.6	4.5	11.6	0.0	-	24.7	1.2	5.9	1.1	0.0	-	8.2	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% 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	0.1	0.0	-	-	0.1	0.0
Cars & Light Goods	99	3522	720	0	-	4341	1218	3482	107	0	-	4807	1169	609	1574	0	-	3352	159	806	150	0	-	1115	13615
% Cars & Light Goods	97.1	98.8	97.4	-	-	98.6	98.6	98.7	100.0	-	-	98.7	97.7	98.2	98.1	-	-	98.0	98.8	98.2	97.4	-	-	98.2	98.4
Buses	0	7	2	0	-	9	2	4	0	0	-	6	3	2	3	0	-	8	0	3	1	0	-	4	27
% Buses	0.0	0.2	0.3	-	-	0.2	0.2	0.1	0.0	-	-	0.1	0.3	0.3	0.2	-	-	0.2	0.0	0.4	0.6	-	-	0.4	0.2
Single-Unit Trucks	3	28	10	0	-	41	6	34	0	0	-	40	19	5	23	0	-	47	1	8	1	0	-	10	138
% Single-Unit Trucks	2.9	0.8	1.4	-	-	0.9	0.5	1.0	0.0	-	-	0.8	1.6	0.8	1.4	-	-	1.4	0.6	1.0	0.6	-	-	0.9	1.0
Articulated Trucks	0	5	6	0	-	11	9	9	0	0	-	18	4	3	4	0	-	11	1	2	1	0	-	4	44
% Articulated Trucks	0.0	0.1	0.8	-	-	0.2	0.7	0.3	0.0	-	-	0.4	0.3	0.5	0.2	-	-	0.3	0.6	0.2	0.6	-	-	0.4	0.3
Bicycles on Road	0	1	1	0	-	2	0	0	0	0	-	0	1	1	1	0	-	3	0	1	1	0	-	2	7
% Bicycles on Road	0.0	0.0	0.1	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1	0.2	0.1	-	-	0.1	0.0	0.1	0.6	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	2.6	-	-	-	-	-	0.0	-	-	-	-	-	2.4	-	-	-	-	-	3.8	-	-
Pedestrians	-	-	-	-	74	-	-	-	-	-	30	-	-	-	-	-	122	-	-	-	-	-	100	-	-
% Pedestrians	-	-	-	-	97.4	-	-	-	-	-	100.0	-	-	-	-	-	97.6	-	-	-	-	-	96.2	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & MacKay Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Pembroke Street East & MacKay Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023

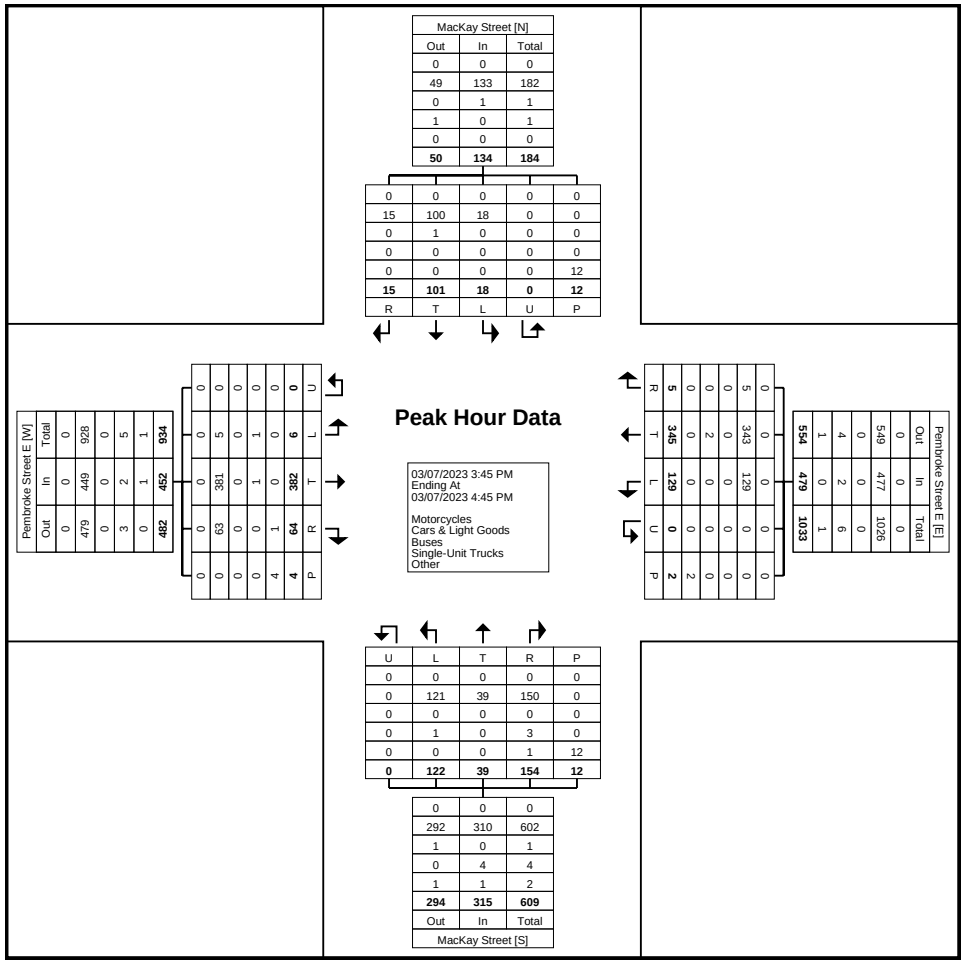
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						MacKay Street Northbound						MacKay 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
3:45 PM	2	90	17	0	1	109	30	62	2	0	2	94	37	12	42	0	5	91	3	28	4	0	1	35	329
4:00 PM	2	102	14	0	2	118	32	117	2	0	0	151	39	12	33	0	2	84	7	25	5	0	3	37	390
4:15 PM	1	100	12	0	1	113	29	77	0	0	0	106	20	7	36	0	3	63	5	25	3	0	7	33	315
4:30 PM	1	90	21	0	0	112	38	89	1	0	0	128	26	8	43	0	2	77	3	23	3	0	1	29	346
Total	6	382	64	0	4	452	129	345	5	0	2	479	122	39	154	0	12	315	18	101	15	0	12	134	1380
Approach %	1.3	84.5	14.2	0.0	-	-	26.9	72.0	1.0	0.0	-	-	38.7	12.4	48.9	0.0	-	-	13.4	75.4	11.2	0.0	-	-	-
Total %	0.4	27.7	4.6	0.0	-	32.8	9.3	25.0	0.4	0.0	-	34.7	8.8	2.8	11.2	0.0	-	22.8	1.3	7.3	1.1	0.0	-	9.7	-
PHF	0.750	0.936	0.762	0.000	-	0.958	0.849	0.737	0.625	0.000	-	0.793	0.782	0.813	0.895	0.000	-	0.865	0.643	0.902	0.750	0.000	-	0.905	0.885
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	5	381	63	0	-	449	129	343	5	0	-	477	121	39	150	0	-	310	18	100	15	0	-	133	1369
% Cars & Light Goods	83.3	99.7	98.4	-	-	99.3	100.0	99.4	100.0	-	-	99.6	99.2	100.0	97.4	-	-	98.4	100.0	99.0	100.0	-	-	99.3	99.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.0	0.0	-	-	0.7	0.1
Single-Unit Trucks	1	1	0	0	-	2	0	2	0	0	-	2	1	0	3	0	-	4	0	0	0	0	-	0	8
% Single-Unit Trucks	16.7	0.3	0.0	-	-	0.4	0.0	0.6	0.0	-	-	0.4	0.8	0.0	1.9	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.6
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	1.6	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.6	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
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	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	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	25.0	-	-	-	-	-	0.0	-	-	-	-	-	8.3	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	11	-	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	75.0	-	-	-	-	-	100.0	-	-	-	-	-	91.7	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street East & MacKay Street - Tuesday
Site Code: 220694
Start Date: 03/07/2023


Pembroke Street E [W]
Out In Total
0 0 0
479 449 928
0 0 0
3 2 5
0 1 1
482 452 934
0 0 0
0 0 0
0 0 0
0 0 0
4 1 0
4 64 6 382 0
P R T L U
0 0 0
0 63 381 5
0 0 0
0 0 1
0 0 0
0 0 0
0 0 0
MacKay Street [N]
Out In Total
0 0 0
49 133 182
0 1 1
1 0 1
0 0 0
50 134 184
0 0 0 0 0
15 100 18 0 0
0 1 0 0 0
0 0 0 0 0
0 0 0 0 12
15 101 18 0 12
R T L U P
Peak Hour Data
03/07/2023 3:45 PM
Ending At
03/07/2023 4:45 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
0 0 0 0 0
0 0 0 0 0
0 121 39 150 0
0 0 0 0 0
0 1 0 3 0
0 0 0 1 12
0 122 39 154 12
U L T R P
0 0 0
292 310 602
1 0 1
0 4 4
1 1 2
294 315 609
Out In Total
MacKay Street [S]
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: River Road & Bell Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

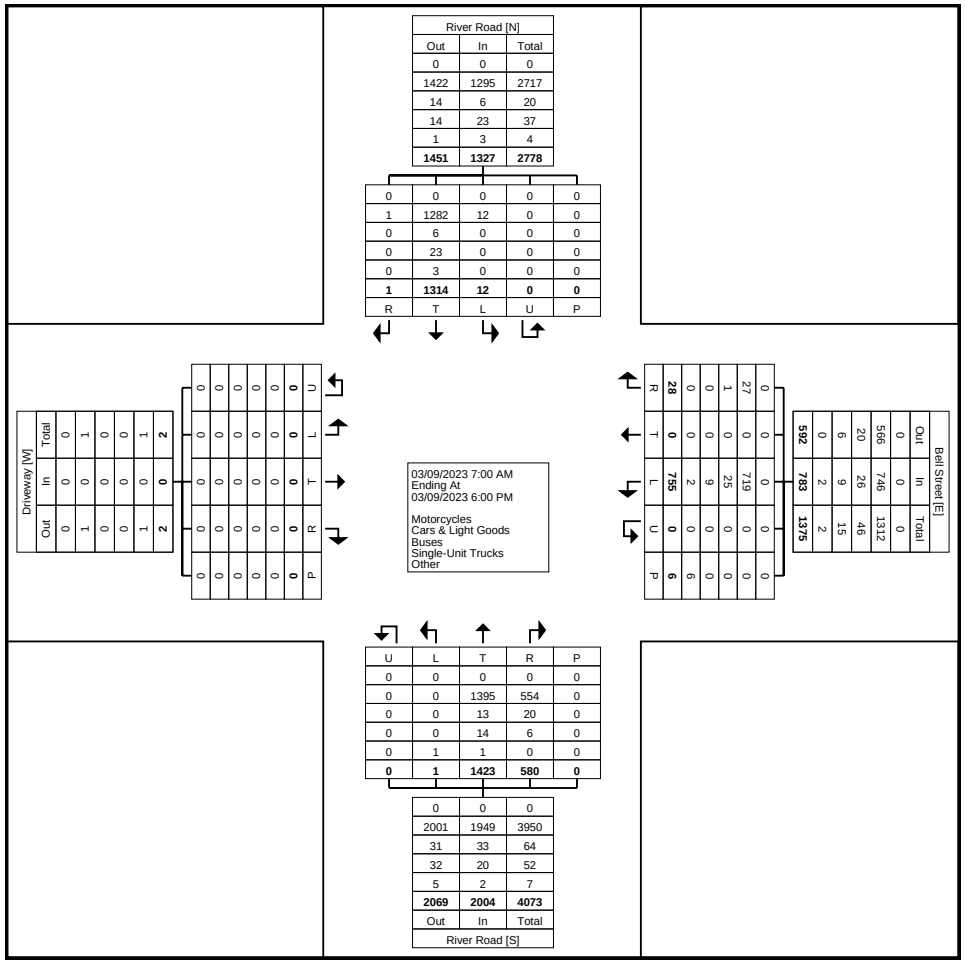
Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	14	0	0	0	0	14	0	27	8	0	0	35	0	30	0	0	0	30	79
7:15 AM	0	0	0	0	0	0	11	0	0	0	0	11	0	30	4	0	0	34	0	28	0	0	0	28	73
7:30 AM	0	0	0	0	0	0	15	0	1	0	0	16	0	44	20	0	0	64	0	38	0	0	0	38	118
7:45 AM	0	0	0	0	0	0	20	0	1	0	0	21	0	43	34	0	0	77	0	44	0	0	0	44	142
Hourly Total	0	0	0	0	0	0	60	0	2	0	0	62	0	144	66	0	0	210	0	140	0	0	0	140	412
8:00 AM	0	0	0	0	0	0	18	0	0	0	0	18	0	37	24	0	0	61	0	45	0	0	0	45	124
8:15 AM	0	0	0	0	0	0	18	0	0	0	0	18	0	50	20	0	0	70	0	25	0	0	0	25	113
8:30 AM	0	0	0	0	0	0	12	0	0	0	0	12	0	45	12	0	0	57	0	36	0	0	0	36	105
8:45 AM	0	0	0	0	0	0	11	0	2	0	0	13	0	40	16	0	0	56	0	24	0	0	0	24	93
Hourly Total	0	0	0	0	0	0	59	0	2	0	0	61	0	172	72	0	0	244	0	130	0	0	0	130	435
9:00 AM	0	0	0	0	0	0	16	0	0	0	0	16	0	48	21	0	0	69	0	47	0	0	0	47	132
9:15 AM	0	0	0	0	0	0	27	0	2	0	1	29	1	43	25	0	0	69	0	30	0	0	0	30	128
9:30 AM	0	0	0	0	0	0	10	0	0	0	0	10	0	41	10	0	0	51	0	27	0	0	0	27	88
9:45 AM	0	0	0	0	0	0	17	0	1	0	0	18	0	51	15	0	0	66	0	28	0	0	0	28	112
Hourly Total	0	0	0	0	0	0	70	0	3	0	1	73	1	183	71	0	0	255	0	132	0	0	0	132	460
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	0	0	0	0	0	23	0	2	0	0	25	0	57	18	0	0	75	0	39	0	0	0	39	139
11:15 AM	0	0	0	0	0	0	31	0	2	0	0	33	0	39	11	0	0	50	0	40	0	0	0	40	123
11:30 AM	0	0	0	0	0	0	28	0	2	0	0	30	0	39	19	0	0	58	0	30	0	0	0	30	118
11:45 AM	0	0	0	0	0	0	30	0	0	0	1	30	0	53	23	0	0	76	0	38	0	0	0	38	144
Hourly Total	0	0	0	0	0	0	112	0	6	0	1	118	0	188	71	0	0	259	0	147	0	0	0	147	524
12:00 PM	0	0	0	0	0	0	33	0	0	0	0	33	0	51	24	0	0	75	1	34	0	0	0	35	143
12:15 PM	0	0	0	0	0	0	17	0	1	0	0	18	0	39	20	0	0	59	1	35	1	0	0	37	114
12:30 PM	0	0	0	0	0	0	18	0	2	0	0	20	0	39	15	0	0	54	2	40	0	0	0	42	116
12:45 PM	0	0	0	0	0	0	24	0	0	0	1	24	0	44	18	0	0	62	2	49	0	0	0	51	137
Hourly Total	0	0	0	0	0	0	92	0	3	0	1	95	0	173	77	0	0	250	6	158	1	0	0	165	510
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	0	0	0	0	0	30	0	2	0	2	32	0	41	20	0	0	61	0	39	0	0	0	39	132
3:15 PM	0	0	0	0	0	0	33	0	2	0	0	35	0	42	15	0	0	57	0	42	0	0	0	42	134
3:30 PM	0	0	0	0	0	0	35	0	1	0	1	36	0	64	24	0	0	88	3	58	0	0	0	61	185
3:45 PM	0	0	0	0	0	0	44	0	0	0	0	44	0	48	16	0	0	64	0	62	0	0	0	62	170
Hourly Total	0	0	0	0	0	0	142	0	5	0	3	147	0	195	75	0	0	270	3	201	0	0	0	204	621
4:00 PM	0	0	0	0	0	0	50	0	0	0	0	50	0	47	18	0	0	65	0	70	0	0	0	70	185
4:15 PM	0	0	0	0	0	0	28	0	1	0	0	29	0	56	22	0	0	78	0	58	0	0	0	58	165
4:30 PM	0	0	0	0	0	0	28	0	0	0	0	28	0	62	20	0	0	82	0	53	0	0	0	53	163

4:45 PM	0	0	0	0	0	0	31	0	0	0	0	31	0	45	24	0	0	69	0	52	0	0	0	52	152
Hourly Total	0	0	0	0	0	0	137	0	1	0	0	138	0	210	84	0	0	294	0	233	0	0	0	233	665
5:00 PM	0	0	0	0	0	0	26	0	1	0	0	27	0	40	19	0	0	59	2	50	0	0	0	52	138
5:15 PM	0	0	0	0	0	0	23	0	2	0	0	25	0	38	21	0	0	59	1	41	0	0	0	42	126
5:30 PM	0	0	0	0	0	0	20	0	1	0	0	21	0	43	13	0	0	56	0	33	0	0	0	33	110
5:45 PM	0	0	0	0	0	0	14	0	2	0	0	16	0	37	11	0	0	48	0	49	0	0	0	49	113
Hourly Total	0	0	0	0	0	0	83	0	6	0	0	89	0	158	64	0	0	222	3	173	0	0	0	176	487
Grand Total	0	0	0	0	0	0	755	0	28	0	6	783	1	1423	580	0	0	2004	12	1314	1	0	0	1327	4114
Approach %	0.0	0.0	0.0	0.0	-	-	96.4	0.0	3.6	0.0	-	-	0.0	71.0	28.9	0.0	-	-	0.9	99.0	0.1	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	18.4	0.0	0.7	0.0	-	19.0	0.0	34.6	14.1	0.0	-	48.7	0.3	31.9	0.0	0.0	-	32.3	-
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
Cars & Light Goods	0	0	0	0	-	0	719	0	27	0	-	746	0	1395	554	0	-	1949	12	1282	1	0	-	1295	3990
% Cars & Light Goods	-	-	-	-	-	-	95.2	-	96.4	-	-	95.3	0.0	98.0	95.5	-	-	97.3	100.0	97.6	100.0	-	-	97.6	97.0
Buses	0	0	0	0	-	0	25	0	1	0	-	26	0	13	20	0	-	33	0	6	0	0	-	6	65
% Buses	-	-	-	-	-	-	3.3	-	3.6	-	-	3.3	0.0	0.9	3.4	-	-	1.6	0.0	0.5	0.0	-	-	0.5	1.6
Single-Unit Trucks	0	0	0	0	-	0	9	0	0	0	-	9	0	14	6	0	-	20	0	23	0	0	-	23	52
% Single-Unit Trucks	-	-	-	-	-	-	1.2	-	0.0	-	-	1.1	0.0	1.0	1.0	-	-	1.0	0.0	1.8	0.0	-	-	1.7	1.3
Articulated Trucks	0	0	0	0	-	0	2	0	0	0	-	2	1	1	0	0	-	2	0	3	0	0	-	3	7
% Articulated Trucks	-	-	-	-	-	-	0.3	-	0.0	-	-	0.3	100.0	0.1	0.0	-	-	0.1	0.0	0.2	0.0	-	-	0.2	0.2
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	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: River Road & Bell Street
Site Code: 220694
Start Date: 03/09/2023



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: River Road & Bell Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road 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
7:30 AM	0	0	0	0	0	0	15	0	1	0	0	16	0	44	20	0	0	64	0	38	0	0	0	38	118
7:45 AM	0	0	0	0	0	0	20	0	1	0	0	21	0	43	34	0	0	77	0	44	0	0	0	44	142
8:00 AM	0	0	0	0	0	0	18	0	0	0	0	18	0	37	24	0	0	61	0	45	0	0	0	45	124
8:15 AM	0	0	0	0	0	0	18	0	0	0	0	18	0	50	20	0	0	70	0	25	0	0	0	25	113
Total	0	0	0	0	0	0	71	0	2	0	0	73	0	174	98	0	0	272	0	152	0	0	0	152	497
Approach %	0.0	0.0	0.0	0.0	-	-	97.3	0.0	2.7	0.0	-	-	0.0	64.0	36.0	0.0	-	-	0.0	100.0	0.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	14.3	0.0	0.4	0.0	-	14.7	0.0	35.0	19.7	0.0	-	54.7	0.0	30.6	0.0	0.0	-	30.6	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.888	0.000	0.500	0.000	-	0.869	0.000	0.870	0.721	0.000	-	0.883	0.000	0.844	0.000	0.000	-	0.844	0.875
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
Cars & Light Goods	0	0	0	0	-	0	55	0	1	0	-	56	0	173	83	0	-	256	0	146	0	0	-	146	458
% Cars & Light Goods	-	-	-	-	-	-	77.5	-	50.0	-	-	76.7	-	99.4	84.7	-	-	94.1	-	96.1	-	-	-	96.1	92.2
Buses	0	0	0	0	-	0	15	0	1	0	-	16	0	1	13	0	-	14	0	0	0	0	-	0	30
% Buses	-	-	-	-	-	-	21.1	-	50.0	-	-	21.9	-	0.6	13.3	-	-	5.1	-	0.0	-	-	-	0.0	6.0
Single-Unit Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	0	2	0	-	2	0	5	0	0	-	5	8
% Single-Unit Trucks	-	-	-	-	-	-	1.4	-	0.0	-	-	1.4	-	0.0	2.0	-	-	0.7	-	3.3	-	-	-	3.3	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	-	0.7	-	-	-	0.7	0.2
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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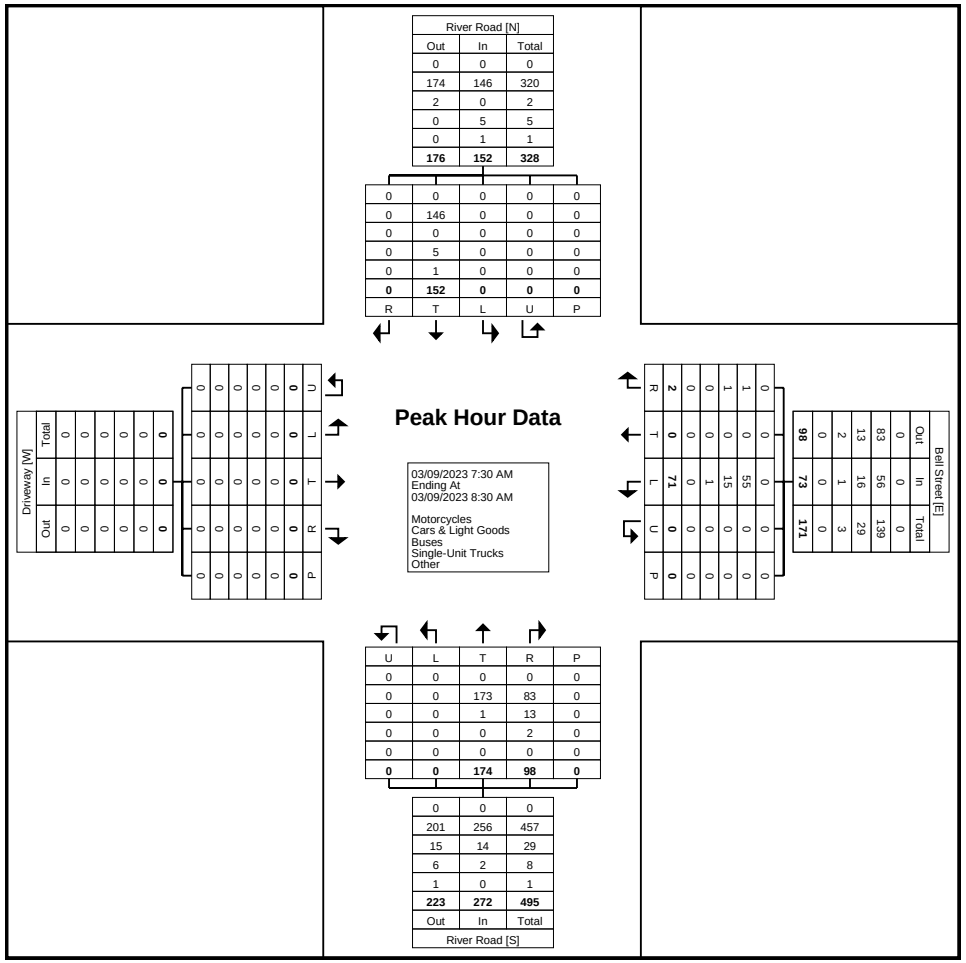
Site Code: 220694
Start Date: 03/09/2023



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: River Road & Bell Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (11:15 AM)

Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road 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
11:15 AM	0	0	0	0	0	0	31	0	2	0	0	33	0	39	11	0	0	50	0	40	0	0	0	40	123
11:30 AM	0	0	0	0	0	0	28	0	2	0	0	30	0	39	19	0	0	58	0	30	0	0	0	30	118
11:45 AM	0	0	0	0	0	0	30	0	0	0	1	30	0	53	23	0	0	76	0	38	0	0	0	38	144
12:00 PM	0	0	0	0	0	0	33	0	0	0	0	33	0	51	24	0	0	75	1	34	0	0	0	35	143
Total	0	0	0	0	0	0	122	0	4	0	1	126	0	182	77	0	0	259	1	142	0	0	0	143	528
Approach %	0.0	0.0	0.0	0.0	-	-	96.8	0.0	3.2	0.0	-	-	0.0	70.3	29.7	0.0	-	-	0.7	99.3	0.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	23.1	0.0	0.8	0.0	-	23.9	0.0	34.5	14.6	0.0	-	49.1	0.2	26.9	0.0	0.0	-	27.1	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.924	0.000	0.500	0.000	-	0.955	0.000	0.858	0.802	0.000	-	0.852	0.250	0.888	0.000	0.000	-	0.894	0.917
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Cars & Light Goods	0	0	0	0	-	0	119	0	4	0	-	123	0	179	76	0	-	255	1	136	0	0	-	137	515
% Cars & Light Goods	-	-	-	-	-	-	97.5	-	100.0	-	-	97.6	-	98.4	98.7	-	-	98.5	100.0	95.8	-	-	-	95.8	97.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Buses	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.5	0.0	-	-	0.4	0.0	0.7	-	-	-	0.7	0.4
Single-Unit Trucks	0	0	0	0	-	0	2	0	0	0	-	2	0	2	1	0	-	3	0	4	0	0	-	4	9
% Single-Unit Trucks	-	-	-	-	-	-	1.6	-	0.0	-	-	1.6	-	1.1	1.3	-	-	1.2	0.0	2.8	-	-	-	2.8	1.7
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	2
% Articulated Trucks	-	-	-	-	-	-	0.8	-	0.0	-	-	0.8	-	0.0	0.0	-	-	0.0	0.0	0.7	-	-	-	0.7	0.4
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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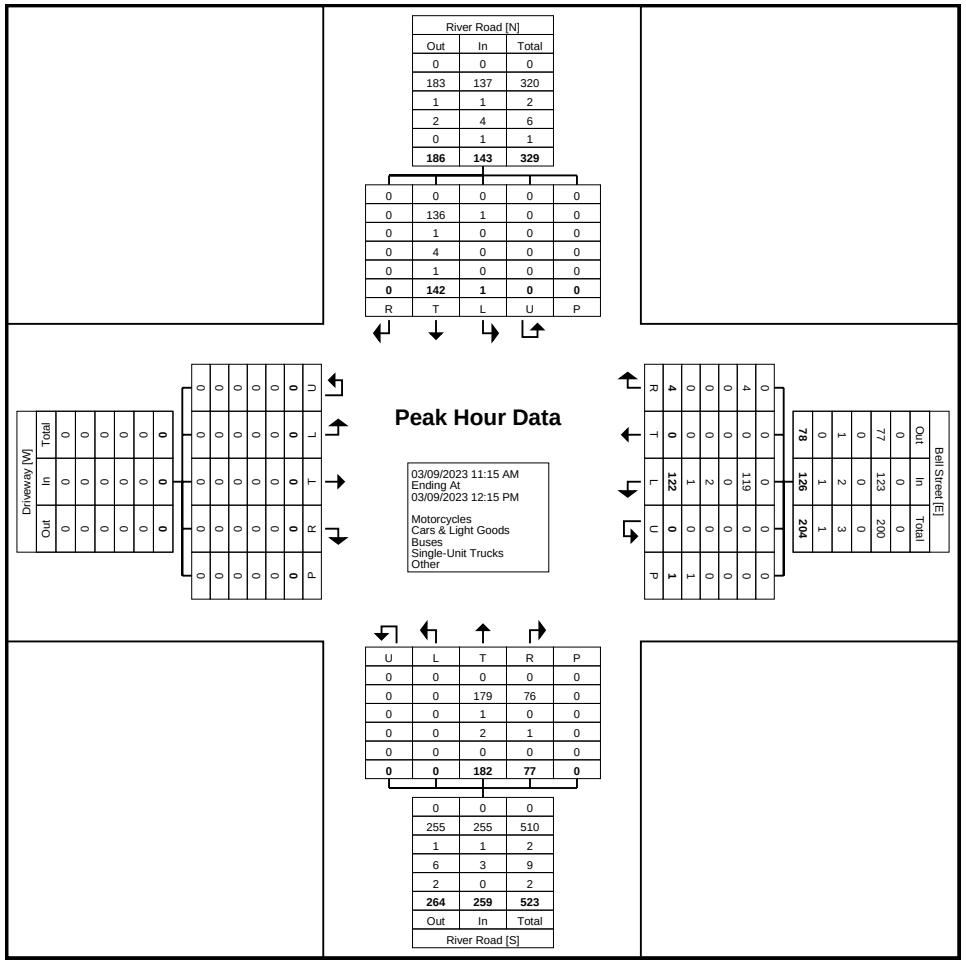


Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: River Road & Bell Street
Site Code: 220694
Start Date: 03/09/2023

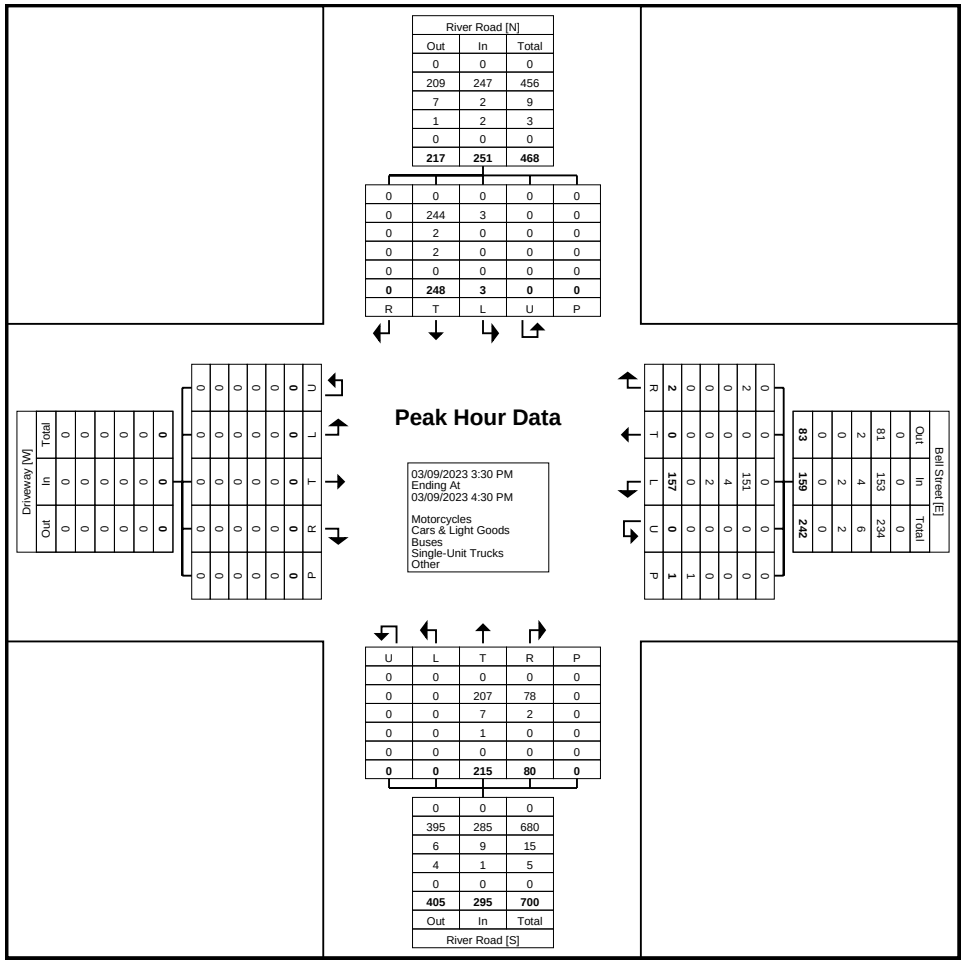
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road 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
3:30 PM	0	0	0	0	0	0	35	0	1	0	1	36	0	64	24	0	0	88	3	58	0	0	0	61	185
3:45 PM	0	0	0	0	0	0	44	0	0	0	0	44	0	48	16	0	0	64	0	62	0	0	0	62	170
4:00 PM	0	0	0	0	0	0	50	0	0	0	0	50	0	47	18	0	0	65	0	70	0	0	0	70	185
4:15 PM	0	0	0	0	0	0	28	0	1	0	0	29	0	56	22	0	0	78	0	58	0	0	0	58	165
Total	0	0	0	0	0	0	157	0	2	0	1	159	0	215	80	0	0	295	3	248	0	0	0	251	705
Approach %	0.0	0.0	0.0	0.0	-	-	98.7	0.0	1.3	0.0	-	-	0.0	72.9	27.1	0.0	-	-	1.2	98.8	0.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	22.3	0.0	0.3	0.0	-	22.6	0.0	30.5	11.3	0.0	-	41.8	0.4	35.2	0.0	0.0	-	35.6	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.785	0.000	0.500	0.000	-	0.795	0.000	0.840	0.833	0.000	-	0.838	0.250	0.886	0.000	0.000	-	0.896	0.953
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Cars & Light Goods	0	0	0	0	-	0	151	0	2	0	-	153	0	207	78	0	-	285	3	244	0	0	-	247	685
% Cars & Light Goods	-	-	-	-	-	-	96.2	-	100.0	-	-	96.2	-	96.3	97.5	-	-	96.6	100.0	98.4	-	-	-	98.4	97.2
Buses	0	0	0	0	-	0	4	0	0	0	-	4	0	7	2	0	-	9	0	2	0	0	-	2	15
% Buses	-	-	-	-	-	-	2.5	-	0.0	-	-	2.5	-	3.3	2.5	-	-	3.1	0.0	0.8	-	-	-	0.8	2.1
Single-Unit Trucks	0	0	0	0	-	0	2	0	0	0	-	2	0	1	0	0	-	1	0	2	0	0	-	2	5
% Single-Unit Trucks	-	-	-	-	-	-	1.3	-	0.0	-	-	1.3	-	0.5	0.0	-	-	0.3	0.0	0.8	-	-	-	0.8	0.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	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: River Road & Bell Street
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

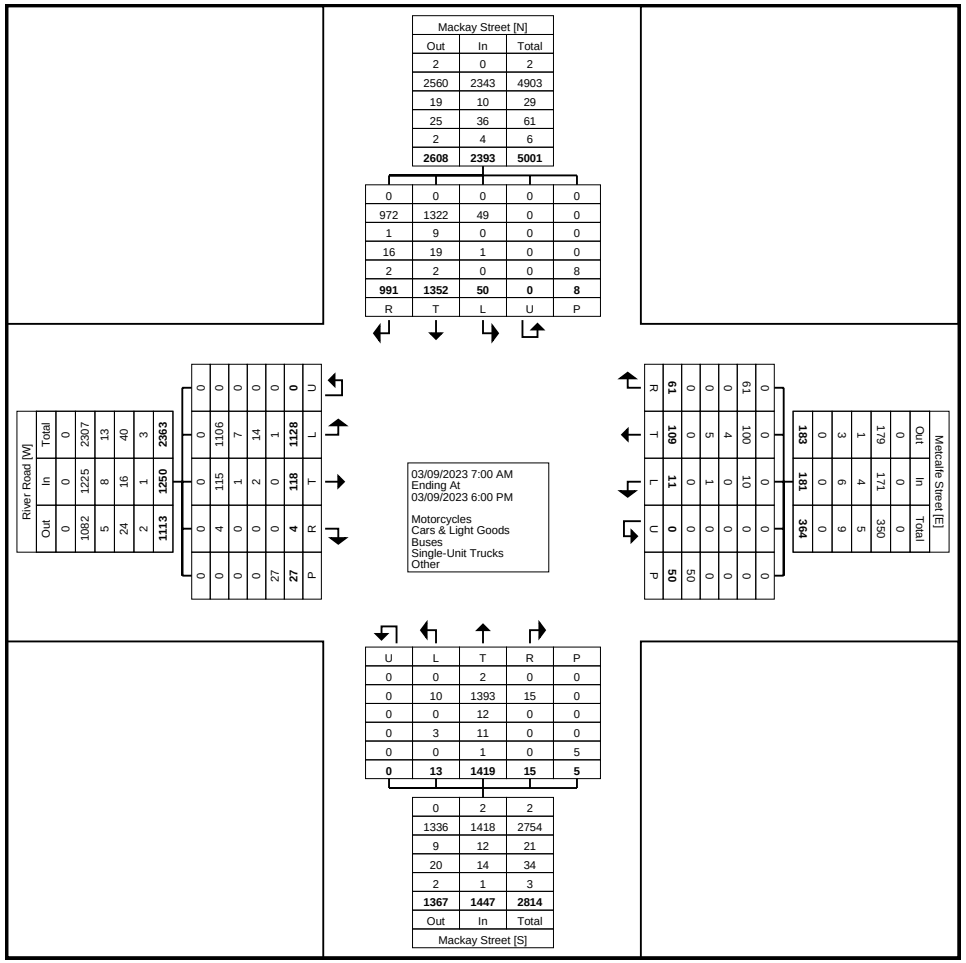
Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	16	1	0	0	0	17	0	3	4	0	0	7	1	24	0	0	0	25	0	18	22	0	0	40	89
7:15 AM	17	2	0	0	0	19	1	2	0	0	1	3	0	24	0	0	0	24	1	21	17	0	0	39	85
7:30 AM	32	2	0	0	0	34	0	7	0	0	3	7	0	26	0	0	0	26	1	31	22	0	0	54	121
7:45 AM	46	2	0	0	4	48	1	3	0	0	1	4	0	48	0	0	0	48	0	44	25	0	1	69	169
Hourly Total	111	7	0	0	4	118	2	15	4	0	5	21	1	122	0	0	0	123	2	114	86	0	1	202	464
8:00 AM	35	2	0	0	0	37	0	5	5	0	1	10	0	46	0	0	0	46	1	55	29	0	0	85	178
8:15 AM	45	7	0	0	1	52	0	2	2	0	1	4	0	37	1	0	0	38	1	29	17	0	1	47	141
8:30 AM	38	1	0	0	0	39	0	2	1	0	1	3	0	44	0	0	0	44	1	40	27	0	0	68	154
8:45 AM	38	5	0	0	0	43	0	1	2	0	1	3	1	41	1	0	0	43	0	51	13	0	0	64	153
Hourly Total	156	15	0	0	1	171	0	10	10	0	4	20	1	168	2	0	0	171	3	175	86	0	1	264	626
9:00 AM	31	2	0	0	0	33	0	4	1	0	2	5	1	38	1	0	0	40	1	45	35	0	2	81	159
9:15 AM	35	4	0	0	0	39	0	3	4	0	3	7	0	62	2	0	0	64	3	45	23	0	0	71	181
9:30 AM	33	5	2	0	0	40	1	5	1	0	0	7	1	46	0	0	0	47	1	45	19	0	0	65	159
9:45 AM	45	1	1	0	1	47	0	2	1	0	1	3	0	37	0	0	0	37	0	45	25	0	0	70	157
Hourly Total	144	12	3	0	1	159	1	14	7	0	6	22	2	183	3	0	0	188	5	180	102	0	2	287	656
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	48	1	0	0	0	49	0	3	3	0	2	6	0	45	0	0	0	45	2	31	29	0	1	62	162
11:15 AM	40	3	0	0	0	43	0	5	2	0	5	7	0	41	0	0	0	41	1	38	32	0	1	71	162
11:30 AM	36	5	0	0	1	41	0	5	3	0	3	8	2	44	0	0	0	46	1	40	27	0	0	68	163
11:45 AM	44	5	0	0	0	49	1	5	1	0	1	7	0	54	0	0	0	54	3	38	32	0	0	73	183
Hourly Total	168	14	0	0	1	182	1	18	9	0	11	28	2	184	0	0	0	186	7	147	120	0	2	274	670
12:00 PM	37	3	0	0	0	40	0	2	4	0	0	6	1	69	0	0	0	70	5	51	31	0	0	87	203
12:15 PM	31	2	0	0	0	33	1	4	0	0	0	5	0	50	1	0	0	51	2	51	25	0	0	78	167
12:30 PM	35	8	0	0	3	43	2	5	3	0	2	10	0	43	0	0	2	43	1	65	34	0	1	100	196
12:45 PM	36	2	0	0	2	38	0	2	3	0	1	5	0	42	0	0	0	42	3	43	38	0	0	84	169
Hourly Total	139	15	0	0	5	154	3	13	10	0	3	26	1	204	1	0	2	206	11	210	128	0	1	349	735
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	36	2	0	0	2	38	0	1	1	0	1	2	1	63	1	0	0	65	1	47	35	0	0	83	188
3:15 PM	24	3	0	0	1	27	0	7	1	0	2	8	0	55	2	0	0	57	0	46	29	0	1	75	167
3:30 PM	50	7	0	0	0	57	0	1	4	0	2	5	0	61	1	0	0	62	3	54	40	0	0	97	221
3:45 PM	33	6	0	0	1	39	2	5	3	0	1	10	1	50	0	0	0	51	1	52	45	0	0	98	198
Hourly Total	143	18	0	0	4	161	2	14	9	0	6	25	2	229	4	0	0	235	5	199	149	0	1	353	774
4:00 PM	30	7	0	0	3	37	0	2	2	0	2	4	0	65	1	0	2	66	2	50	51	0	0	103	210
4:15 PM	39	6	1	0	4	46	1	6	0	0	4	7	0	46	0	0	1	46	2	54	49	0	0	105	204
4:30 PM	40	5	0	0	0	45	0	6	2	0	5	8	0	38	1	0	0	39	2	45	41	0	0	88	180

4:45 PM	38	6	0	0	2	44	0	3	2	0	0	5	3	51	1	0	0	55	1	43	35	0	0	79	183
Hourly Total	147	24	1	0	9	172	1	17	6	0	11	24	3	200	3	0	3	206	7	192	176	0	0	375	777
5:00 PM	32	2	0	0	0	34	0	3	0	0	0	3	0	43	0	0	0	43	4	35	41	0	0	80	160
5:15 PM	35	5	0	0	0	40	1	3	1	0	1	5	1	29	0	0	0	30	0	42	32	0	0	74	149
5:30 PM	32	2	0	0	2	34	0	1	4	0	2	5	0	29	2	0	0	31	3	30	33	0	0	66	136
5:45 PM	21	4	0	0	0	25	0	1	1	0	1	2	0	28	0	0	0	28	3	28	38	0	0	69	124
Hourly Total	120	13	0	0	2	133	1	8	6	0	4	15	1	129	2	0	0	132	10	135	144	0	0	289	569
Grand Total	1128	118	4	0	27	1250	11	109	61	0	50	181	13	1419	15	0	5	1447	50	1352	991	0	8	2393	5271
Approach %	90.2	9.4	0.3	0.0	-	-	6.1	60.2	33.7	0.0	-	-	0.9	98.1	1.0	0.0	-	-	2.1	56.5	41.4	0.0	-	-	-
Total %	21.4	2.2	0.1	0.0	-	23.7	0.2	2.1	1.2	0.0	-	3.4	0.2	26.9	0.3	0.0	-	27.5	0.9	25.6	18.8	0.0	-	45.4	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	2
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1106	115	4	0	-	1225	10	100	61	0	-	171	10	1393	15	0	-	1418	49	1322	972	0	-	2343	5157
% Cars & Light Goods	98.0	97.5	100.0	-	-	98.0	90.9	91.7	100.0	-	-	94.5	76.9	98.2	100.0	-	-	98.0	98.0	97.8	98.1	-	-	97.9	97.8
Buses	7	1	0	0	-	8	0	4	0	0	-	4	0	12	0	0	-	12	0	9	1	0	-	10	34
% Buses	0.6	0.8	0.0	-	-	0.6	0.0	3.7	0.0	-	-	2.2	0.0	0.8	0.0	-	-	0.8	0.0	0.7	0.1	-	-	0.4	0.6
Single-Unit Trucks	14	2	0	0	-	16	1	5	0	0	-	6	3	11	0	0	-	14	1	19	16	0	-	36	72
% Single-Unit Trucks	1.2	1.7	0.0	-	-	1.3	9.1	4.6	0.0	-	-	3.3	23.1	0.8	0.0	-	-	1.0	2.0	1.4	1.6	-	-	1.5	1.4
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	0	1	2	0	-	3	5
% Articulated Trucks	0.1	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.1	0.2	-	-	0.1	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	3.7	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	26	-	-	-	-	-	50	-	-	-	-	-	5	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	96.3	-	-	-	-	-	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: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023



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: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (9:00 AM)

Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay 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
9:00 AM	31	2	0	0	0	33	0	4	1	0	2	5	1	38	1	0	0	40	1	45	35	0	2	81	159
9:15 AM	35	4	0	0	0	39	0	3	4	0	3	7	0	62	2	0	0	64	3	45	23	0	0	71	181
9:30 AM	33	5	2	0	0	40	1	5	1	0	0	7	1	46	0	0	0	47	1	45	19	0	0	65	159
9:45 AM	45	1	1	0	1	47	0	2	1	0	1	3	0	37	0	0	0	37	0	45	25	0	0	70	157
Total	144	12	3	0	1	159	1	14	7	0	6	22	2	183	3	0	0	188	5	180	102	0	2	287	656
Approach %	90.6	7.5	1.9	0.0	-	-	4.5	63.6	31.8	0.0	-	-	1.1	97.3	1.6	0.0	-	-	1.7	62.7	35.5	0.0	-	-	-
Total %	22.0	1.8	0.5	0.0	-	24.2	0.2	2.1	1.1	0.0	-	3.4	0.3	27.9	0.5	0.0	-	28.7	0.8	27.4	15.5	0.0	-	43.8	-
PHF	0.800	0.600	0.375	0.000	-	0.846	0.250	0.700	0.438	0.000	-	0.786	0.500	0.738	0.375	0.000	-	0.734	0.417	1.000	0.729	0.000	-	0.886	0.906
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	141	12	3	0	-	156	1	12	7	0	-	20	1	180	3	0	-	184	4	176	98	0	-	278	638
% Cars & Light Goods	97.9	100.0	100.0	-	-	98.1	100.0	85.7	100.0	-	-	90.9	50.0	98.4	100.0	-	-	97.9	80.0	97.8	96.1	-	-	96.9	97.3
Buses	1	0	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	4
% Buses	0.7	0.0	0.0	-	-	0.6	0.0	7.1	0.0	-	-	4.5	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	0.7	0.6
Single-Unit Trucks	2	0	0	0	-	2	0	1	0	0	-	1	1	2	0	0	-	3	1	2	4	0	-	7	13
% Single-Unit Trucks	1.4	0.0	0.0	-	-	1.3	0.0	7.1	0.0	-	-	4.5	50.0	1.1	0.0	-	-	1.6	20.0	1.1	3.9	-	-	2.4	2.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.2
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	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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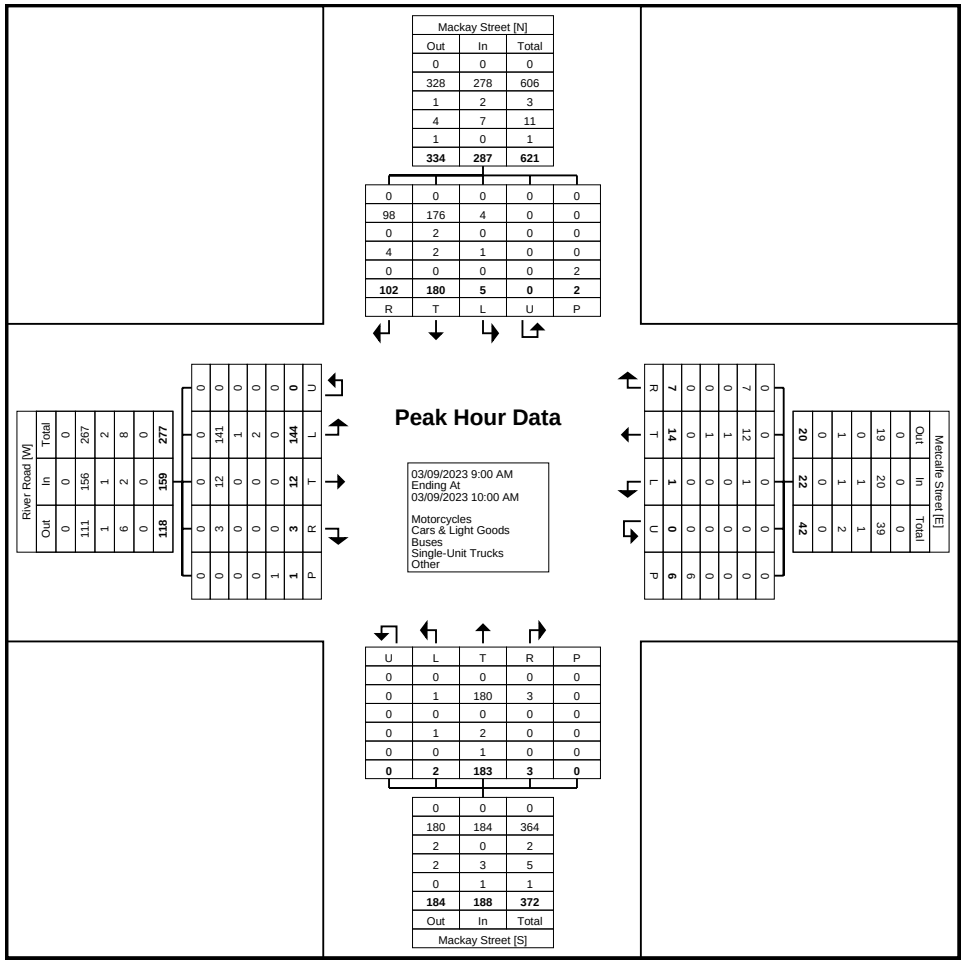


Turning Movement Peak Hour Data Plot (9:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023

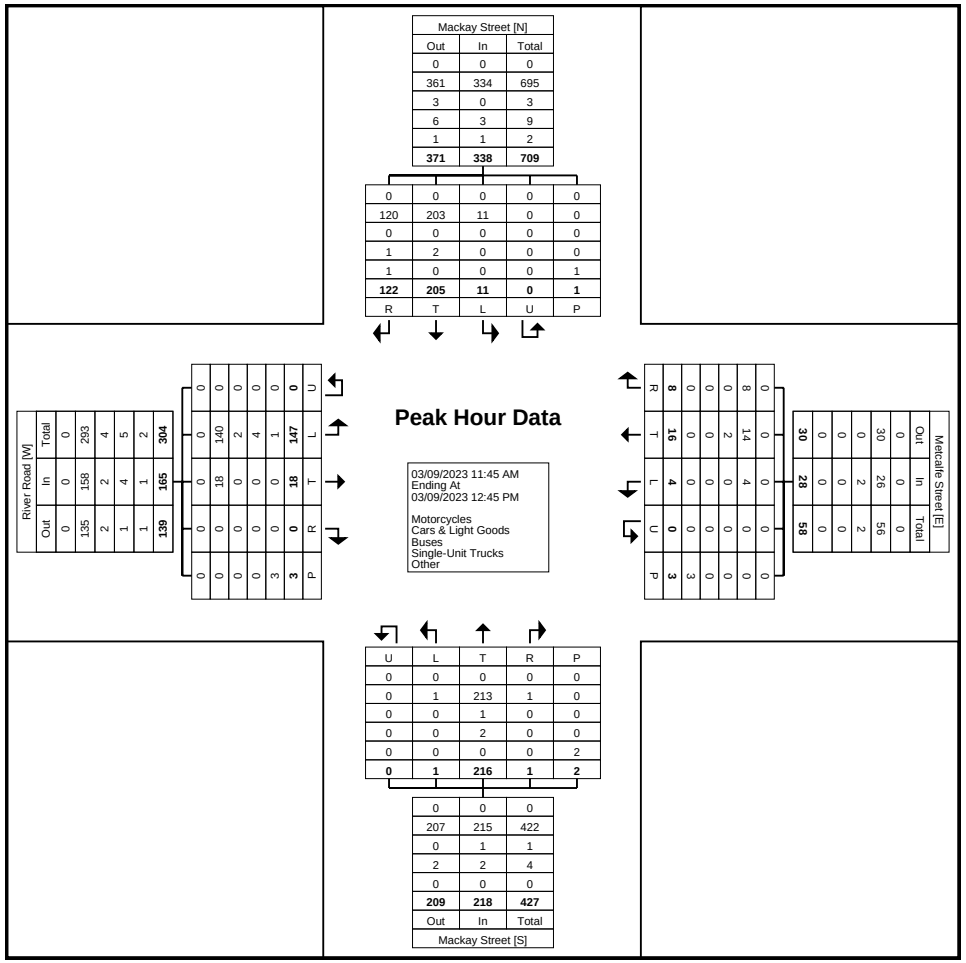
Turning Movement Peak Hour Data (11:45 AM)

Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay 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
11:45 AM	44	5	0	0	0	49	1	5	1	0	1	7	0	54	0	0	0	54	3	38	32	0	0	73	183
12:00 PM	37	3	0	0	0	40	0	2	4	0	0	6	1	69	0	0	0	70	5	51	31	0	0	87	203
12:15 PM	31	2	0	0	0	33	1	4	0	0	0	5	0	50	1	0	0	51	2	51	25	0	0	78	167
12:30 PM	35	8	0	0	3	43	2	5	3	0	2	10	0	43	0	0	2	43	1	65	34	0	1	100	196
Total	147	18	0	0	3	165	4	16	8	0	3	28	1	216	1	0	2	218	11	205	122	0	1	338	749
Approach %	89.1	10.9	0.0	0.0	-	-	14.3	57.1	28.6	0.0	-	-	0.5	99.1	0.5	0.0	-	-	3.3	60.7	36.1	0.0	-	-	-
Total %	19.6	2.4	0.0	0.0	-	22.0	0.5	2.1	1.1	0.0	-	3.7	0.1	28.8	0.1	0.0	-	29.1	1.5	27.4	16.3	0.0	-	45.1	-
PHF	0.835	0.563	0.000	0.000	-	0.842	0.500	0.800	0.500	0.000	-	0.700	0.250	0.783	0.250	0.000	-	0.779	0.550	0.788	0.897	0.000	-	0.845	0.922
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
Cars & Light Goods	140	18	0	0	-	158	4	14	8	0	-	26	1	213	1	0	-	215	11	203	120	0	-	334	733
% Cars & Light Goods	95.2	100.0	-	-	-	95.8	100.0	87.5	100.0	-	-	92.9	100.0	98.6	100.0	-	-	98.6	100.0	99.0	98.4	-	-	98.8	97.9
Buses	2	0	0	0	-	2	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	5
% Buses	1.4	0.0	-	-	-	1.2	0.0	12.5	0.0	-	-	7.1	0.0	0.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.7
Single-Unit Trucks	4	0	0	0	-	4	0	0	0	0	-	0	0	2	0	0	-	2	0	2	1	0	-	3	9
% Single-Unit Trucks	2.7	0.0	-	-	-	2.4	0.0	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.9	0.0	1.0	0.8	-	-	0.9	1.2
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	2
% Articulated Trucks	0.7	0.0	-	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.8	-	-	0.3	0.3
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (11:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023

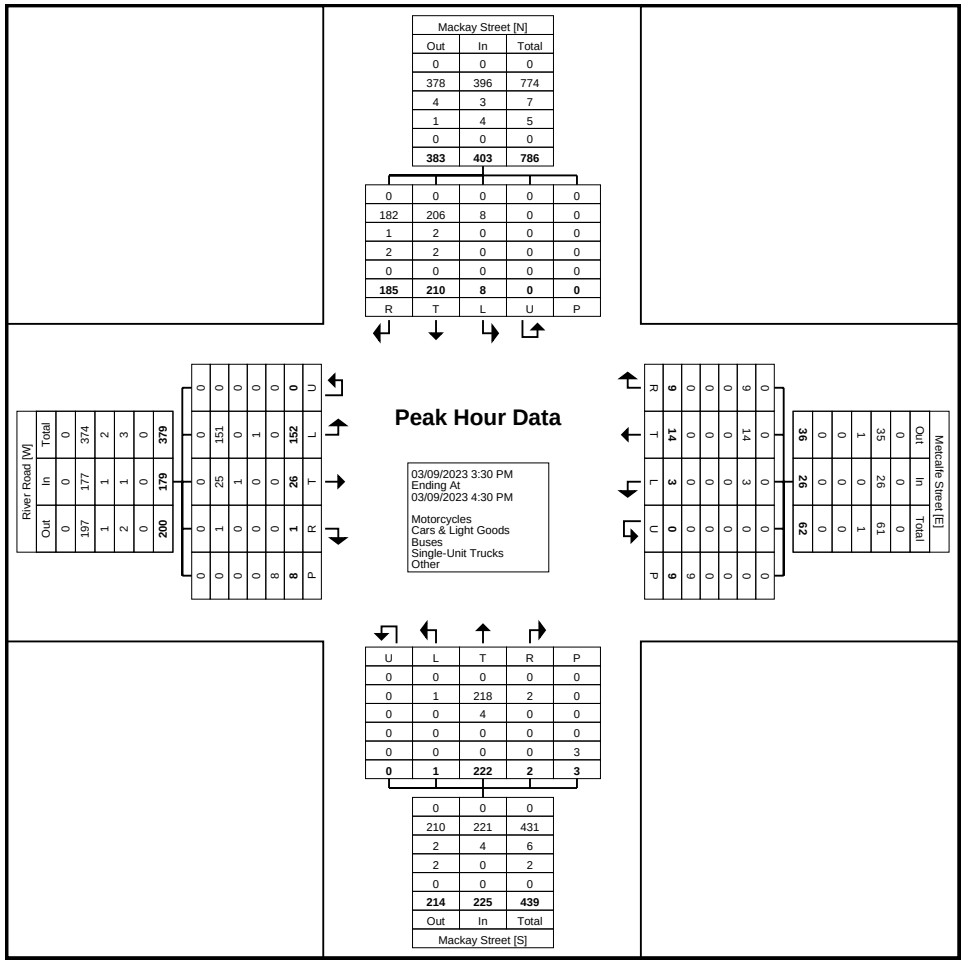
Turning Movement Peak Hour Data (3:30 PM)

Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay 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
3:30 PM	50	7	0	0	0	57	0	1	4	0	2	5	0	61	1	0	0	62	3	54	40	0	0	97	221
3:45 PM	33	6	0	0	1	39	2	5	3	0	1	10	1	50	0	0	0	51	1	52	45	0	0	98	198
4:00 PM	30	7	0	0	3	37	0	2	2	0	2	4	0	65	1	0	2	66	2	50	51	0	0	103	210
4:15 PM	39	6	1	0	4	46	1	6	0	0	4	7	0	46	0	0	1	46	2	54	49	0	0	105	204
Total	152	26	1	0	8	179	3	14	9	0	9	26	1	222	2	0	3	225	8	210	185	0	0	403	833
Approach %	84.9	14.5	0.6	0.0	-	-	11.5	53.8	34.6	0.0	-	-	0.4	98.7	0.9	0.0	-	-	2.0	52.1	45.9	0.0	-	-	-
Total %	18.2	3.1	0.1	0.0	-	21.5	0.4	1.7	1.1	0.0	-	3.1	0.1	26.7	0.2	0.0	-	27.0	1.0	25.2	22.2	0.0	-	48.4	-
PHF	0.760	0.929	0.250	0.000	-	0.785	0.375	0.583	0.563	0.000	-	0.650	0.250	0.854	0.500	0.000	-	0.852	0.667	0.972	0.907	0.000	-	0.960	0.942
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	151	25	1	0	-	177	3	14	9	0	-	26	1	218	2	0	-	221	8	206	182	0	-	396	820
% Cars & Light Goods	99.3	96.2	100.0	-	-	98.9	100.0	100.0	100.0	-	-	100.0	100.0	98.2	100.0	-	-	98.2	100.0	98.1	98.4	-	-	98.3	98.4
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	4	0	0	-	4	0	2	1	0	-	3	8
% Buses	0.0	3.8	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	1.8	0.0	-	-	1.8	0.0	1.0	0.5	-	-	0.7	1.0
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	2	2	0	-	4	5
% Single-Unit Trucks	0.7	0.0	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.0	1.1	-	-	1.0	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	9	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% 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: River Road Metcalfe Street & Mackay Street
Site Code: 220694
Start Date: 03/09/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

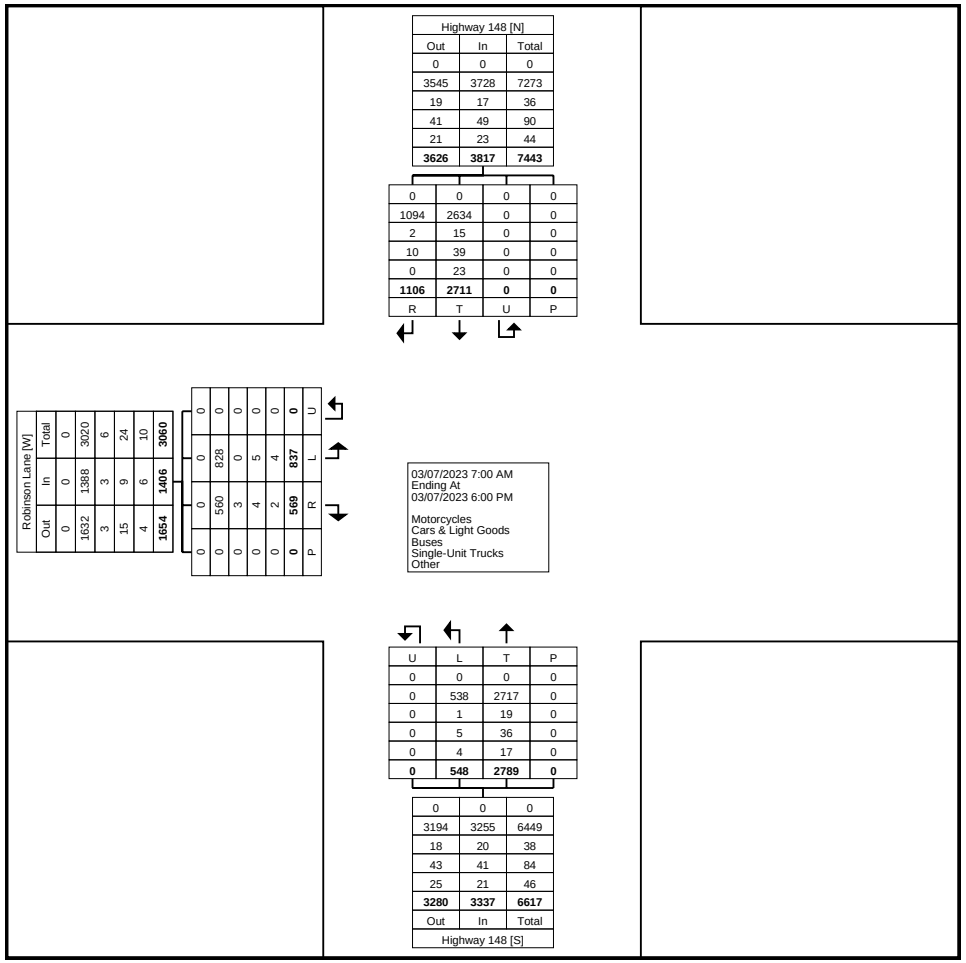
Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	14	13	0	0	27	31	47	0	0	78	29	15	0	0	44	149
7:15 AM	24	20	0	0	44	23	63	0	0	86	31	15	0	0	46	176
7:30 AM	16	11	0	0	27	27	108	0	0	135	30	14	0	0	44	206
7:45 AM	25	20	0	0	45	29	149	0	0	178	37	21	0	0	58	281
Hourly Total	79	64	0	0	143	110	367	0	0	477	127	65	0	0	192	812
8:00 AM	28	18	0	0	46	26	116	0	0	142	33	16	0	0	49	237
8:15 AM	24	12	0	0	36	24	101	0	0	125	43	40	0	0	83	244
8:30 AM	32	9	0	0	41	23	88	0	0	111	45	27	0	0	72	224
8:45 AM	20	25	0	0	45	22	95	0	0	117	42	26	0	0	68	230
Hourly Total	104	64	0	0	168	95	400	0	0	495	163	109	0	0	272	935
9:00 AM	20	20	0	0	40	20	98	0	0	118	45	18	0	0	63	221
9:15 AM	22	12	0	0	34	24	107	0	0	131	53	33	0	0	86	251
9:30 AM	27	16	0	0	43	23	94	0	0	117	54	39	0	0	93	253
9:45 AM	19	20	0	0	39	17	128	0	0	145	63	37	0	0	100	284
Hourly Total	88	68	0	0	156	84	427	0	0	511	215	127	0	0	342	1009
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	36	12	0	0	48	21	84	0	0	105	62	45	0	0	107	260
11:15 AM	43	19	0	0	62	13	86	0	0	99	77	45	0	0	122	283
11:30 AM	33	20	0	0	53	14	85	0	0	99	101	45	0	0	146	298
11:45 AM	32	23	0	0	55	22	96	0	0	118	104	46	0	0	150	323
Hourly Total	144	74	0	0	218	70	351	0	0	421	344	181	0	0	525	1164
12:00 PM	30	26	0	0	56	24	76	0	0	100	83	52	0	0	135	291
12:15 PM	33	18	0	0	51	14	85	0	0	99	87	38	0	0	125	275
12:30 PM	32	21	0	0	53	13	81	0	0	94	81	43	0	0	124	271
12:45 PM	30	10	0	0	40	19	109	0	0	128	86	49	0	0	135	303
Hourly Total	125	75	0	0	200	70	351	0	0	421	337	182	0	0	519	1140
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	29	24	0	0	53	13	58	0	0	71	84	52	0	0	136	260
3:15 PM	24	16	0	0	40	12	77	0	0	89	132	36	0	0	168	297
3:30 PM	25	19	0	0	44	9	80	0	0	89	133	38	0	0	171	304
3:45 PM	33	22	0	0	55	8	91	0	0	99	119	50	0	0	169	323
Hourly Total	111	81	0	0	192	42	306	0	0	348	468	176	0	0	644	1184
4:00 PM	32	24	0	0	56	11	77	0	0	88	149	41	0	0	190	334
4:15 PM	33	20	0	0	53	13	86	0	0	99	156	35	0	0	191	343
4:30 PM	20	24	0	0	44	8	87	0	0	95	128	40	0	0	168	307
4:45 PM	21	21	0	0	42	12	65	0	0	77	139	32	0	0	171	290

Hourly Total	106	89	0	0	195	44	315	0	0	359	572	148	0	0	720	1274
5:00 PM	17	11	0	0	28	13	75	0	0	88	152	39	0	0	191	307
5:15 PM	27	15	0	0	42	7	65	0	0	72	130	29	0	0	159	273
5:30 PM	21	15	0	0	36	6	71	0	0	77	116	29	0	0	145	258
5:45 PM	15	13	0	0	28	7	61	0	0	68	87	21	0	0	108	204
Hourly Total	80	54	0	0	134	33	272	0	0	305	485	118	0	0	603	1042
Grand Total	837	569	0	0	1406	548	2789	0	0	3337	2711	1106	0	0	3817	8560
Approach %	59.5	40.5	0.0	-	-	16.4	83.6	0.0	-	-	71.0	29.0	0.0	-	-	-
Total %	9.8	6.6	0.0	-	16.4	6.4	32.6	0.0	-	39.0	31.7	12.9	0.0	-	44.6	-
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	828	560	0	-	1388	538	2717	0	-	3255	2634	1094	0	-	3728	8371
% Cars & Light Goods	98.9	98.4	-	-	98.7	98.2	97.4	-	-	97.5	97.2	98.9	-	-	97.7	97.8
Buses	0	3	0	-	3	1	19	0	-	20	15	2	0	-	17	40
% Buses	0.0	0.5	-	-	0.2	0.2	0.7	-	-	0.6	0.6	0.2	-	-	0.4	0.5
Single-Unit Trucks	5	4	0	-	9	5	36	0	-	41	39	10	0	-	49	99
% Single-Unit Trucks	0.6	0.7	-	-	0.6	0.9	1.3	-	-	1.2	1.4	0.9	-	-	1.3	1.2
Articulated Trucks	4	0	0	-	4	4	17	0	-	21	23	0	0	-	23	48
% Articulated Trucks	0.5	0.0	-	-	0.3	0.7	0.6	-	-	0.6	0.8	0.0	-	-	0.6	0.6
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.4	-	-	0.1	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: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

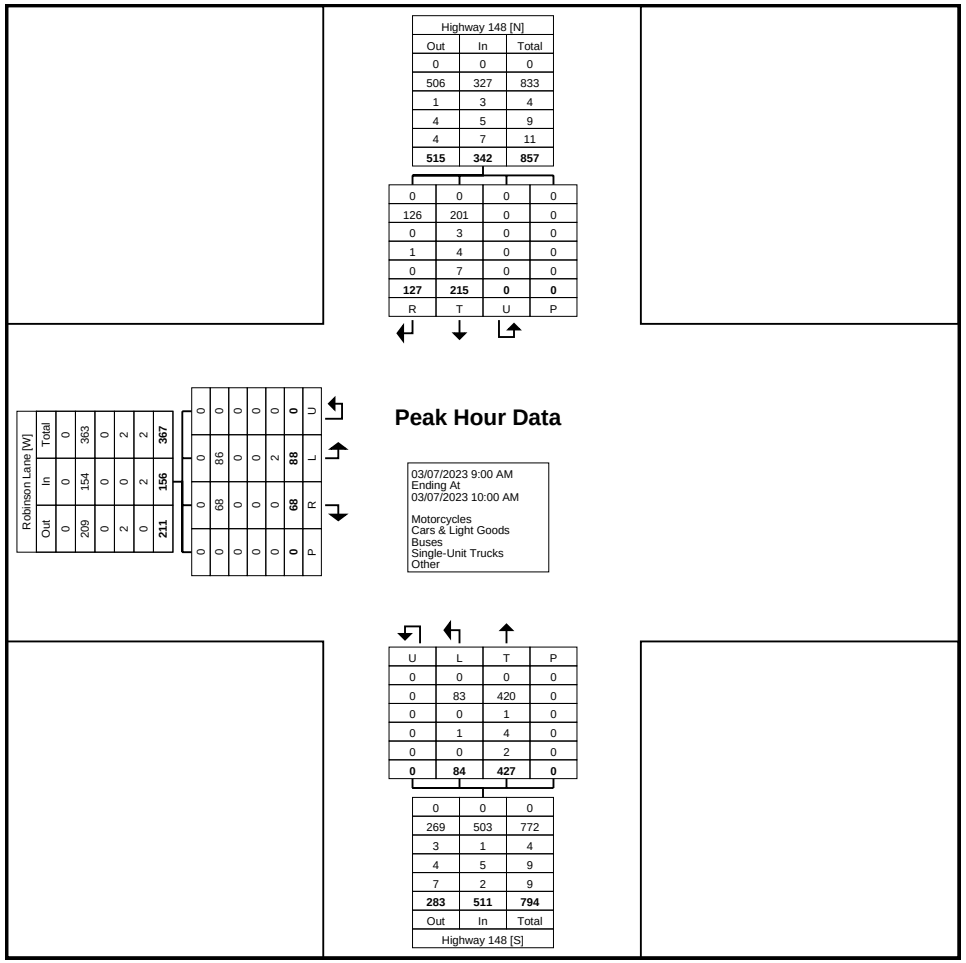
Turning Movement Peak Hour Data (9:00 AM)

Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	20	20	0	0	40	20	98	0	0	118	45	18	0	0	63	221
9:15 AM	22	12	0	0	34	24	107	0	0	131	53	33	0	0	86	251
9:30 AM	27	16	0	0	43	23	94	0	0	117	54	39	0	0	93	253
9:45 AM	19	20	0	0	39	17	128	0	0	145	63	37	0	0	100	284
Total	88	68	0	0	156	84	427	0	0	511	215	127	0	0	342	1009
Approach %	56.4	43.6	0.0	-	-	16.4	83.6	0.0	-	-	62.9	37.1	0.0	-	-	-
Total %	8.7	6.7	0.0	-	15.5	8.3	42.3	0.0	-	50.6	21.3	12.6	0.0	-	33.9	-
PHF	0.815	0.850	0.000	-	0.907	0.875	0.834	0.000	-	0.881	0.853	0.814	0.000	-	0.855	0.888
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	86	68	0	-	154	83	420	0	-	503	201	126	0	-	327	984
% Cars & Light Goods	97.7	100.0	-	-	98.7	98.8	98.4	-	-	98.4	93.5	99.2	-	-	95.6	97.5
Buses	0	0	0	-	0	0	1	0	-	1	3	0	0	-	3	4
% Buses	0.0	0.0	-	-	0.0	0.0	0.2	-	-	0.2	1.4	0.0	-	-	0.9	0.4
Single-Unit Trucks	0	0	0	-	0	1	4	0	-	5	4	1	0	-	5	10
% Single-Unit Trucks	0.0	0.0	-	-	0.0	1.2	0.9	-	-	1.0	1.9	0.8	-	-	1.5	1.0
Articulated Trucks	2	0	0	-	2	0	2	0	-	2	7	0	0	-	7	11
% Articulated Trucks	2.3	0.0	-	-	1.3	0.0	0.5	-	-	0.4	3.3	0.0	-	-	2.0	1.1
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

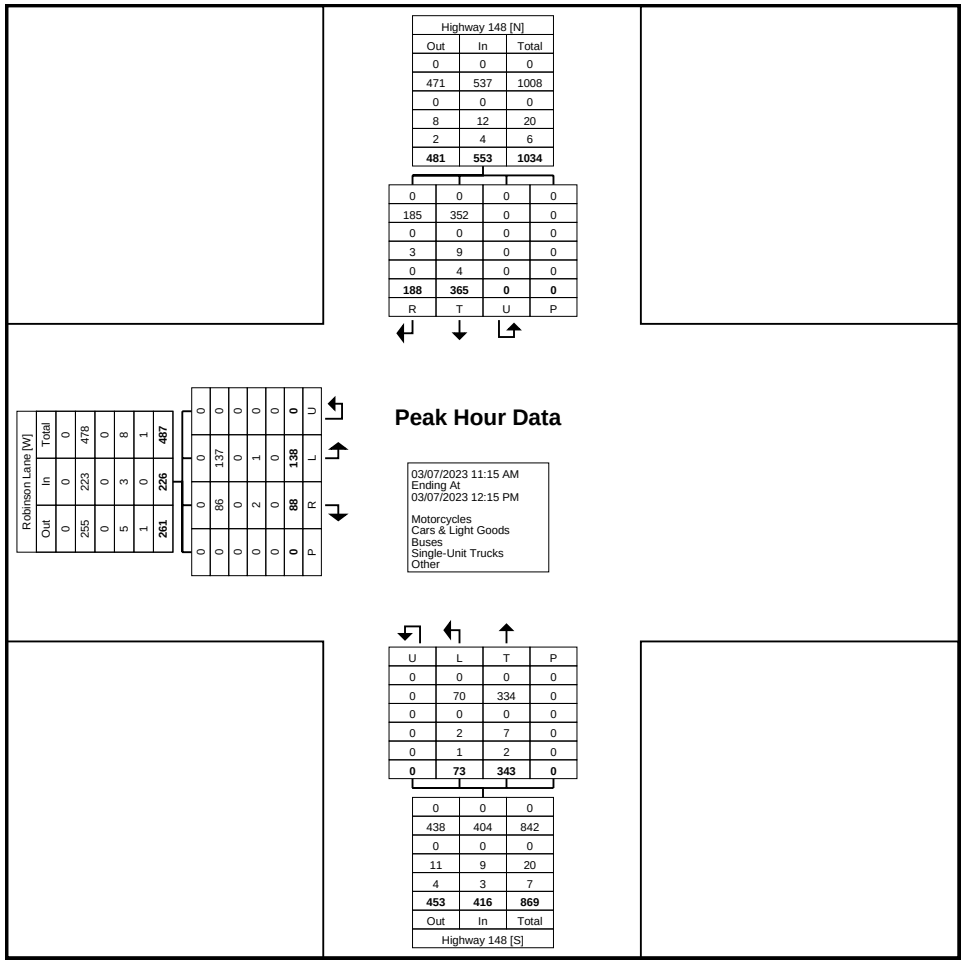
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:15 AM	43	19	0	0	62	13	86	0	0	99	77	45	0	0	122	283
11:30 AM	33	20	0	0	53	14	85	0	0	99	101	45	0	0	146	298
11:45 AM	32	23	0	0	55	22	96	0	0	118	104	46	0	0	150	323
12:00 PM	30	26	0	0	56	24	76	0	0	100	83	52	0	0	135	291
Total	138	88	0	0	226	73	343	0	0	416	365	188	0	0	553	1195
Approach %	61.1	38.9	0.0	-	-	17.5	82.5	0.0	-	-	66.0	34.0	0.0	-	-	-
Total %	11.5	7.4	0.0	-	18.9	6.1	28.7	0.0	-	34.8	30.5	15.7	0.0	-	46.3	-
PHF	0.802	0.846	0.000	-	0.911	0.760	0.893	0.000	-	0.881	0.877	0.904	0.000	-	0.922	0.925
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	137	86	0	-	223	70	334	0	-	404	352	185	0	-	537	1164
% Cars & Light Goods	99.3	97.7	-	-	98.7	95.9	97.4	-	-	97.1	96.4	98.4	-	-	97.1	97.4
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	1	2	0	-	3	2	7	0	-	9	9	3	0	-	12	24
% Single-Unit Trucks	0.7	2.3	-	-	1.3	2.7	2.0	-	-	2.2	2.5	1.6	-	-	2.2	2.0
Articulated Trucks	0	0	0	-	0	1	2	0	-	3	4	0	0	-	4	7
% Articulated Trucks	0.0	0.0	-	-	0.0	1.4	0.6	-	-	0.7	1.1	0.0	-	-	0.7	0.6
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

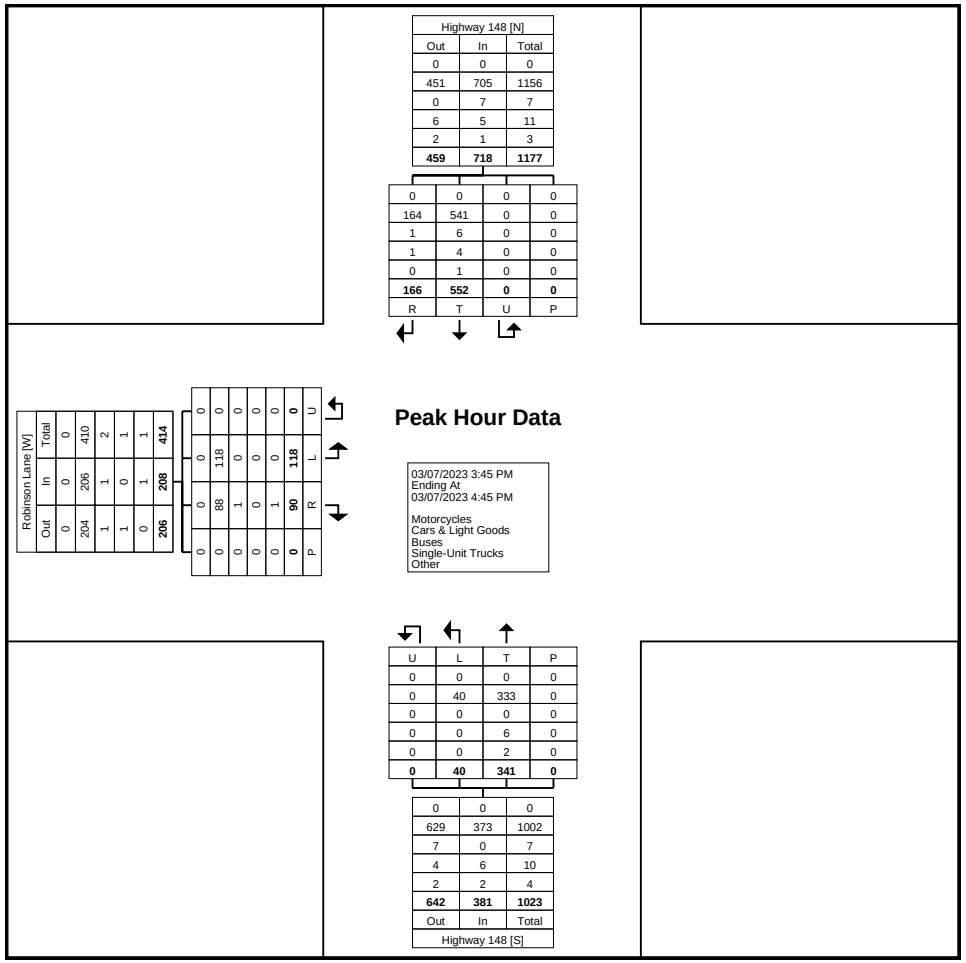
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
3:45 PM	33	22	0	0	55	8	91	0	0	99	119	50	0	0	169	323
4:00 PM	32	24	0	0	56	11	77	0	0	88	149	41	0	0	190	334
4:15 PM	33	20	0	0	53	13	86	0	0	99	156	35	0	0	191	343
4:30 PM	20	24	0	0	44	8	87	0	0	95	128	40	0	0	168	307
Total	118	90	0	0	208	40	341	0	0	381	552	166	0	0	718	1307
Approach %	56.7	43.3	0.0	-	-	10.5	89.5	0.0	-	-	76.9	23.1	0.0	-	-	-
Total %	9.0	6.9	0.0	-	15.9	3.1	26.1	0.0	-	29.2	42.2	12.7	0.0	-	54.9	-
PHF	0.894	0.938	0.000	-	0.929	0.769	0.937	0.000	-	0.962	0.885	0.830	0.000	-	0.940	0.953
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	118	88	0	-	206	40	333	0	-	373	541	164	0	-	705	1284
% Cars & Light Goods	100.0	97.8	-	-	99.0	100.0	97.7	-	-	97.9	98.0	98.8	-	-	98.2	98.2
Buses	0	1	0	-	1	0	0	0	-	0	6	1	0	-	7	8
% Buses	0.0	1.1	-	-	0.5	0.0	0.0	-	-	0.0	1.1	0.6	-	-	1.0	0.6
Single-Unit Trucks	0	0	0	-	0	0	6	0	-	6	4	1	0	-	5	11
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	1.8	-	-	1.6	0.7	0.6	-	-	0.7	0.8
Articulated Trucks	0	0	0	-	0	0	2	0	-	2	1	0	0	-	1	3
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.6	-	-	0.5	0.2	0.0	-	-	0.1	0.2
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	1.1	-	-	0.5	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
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: Robinson Lane & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

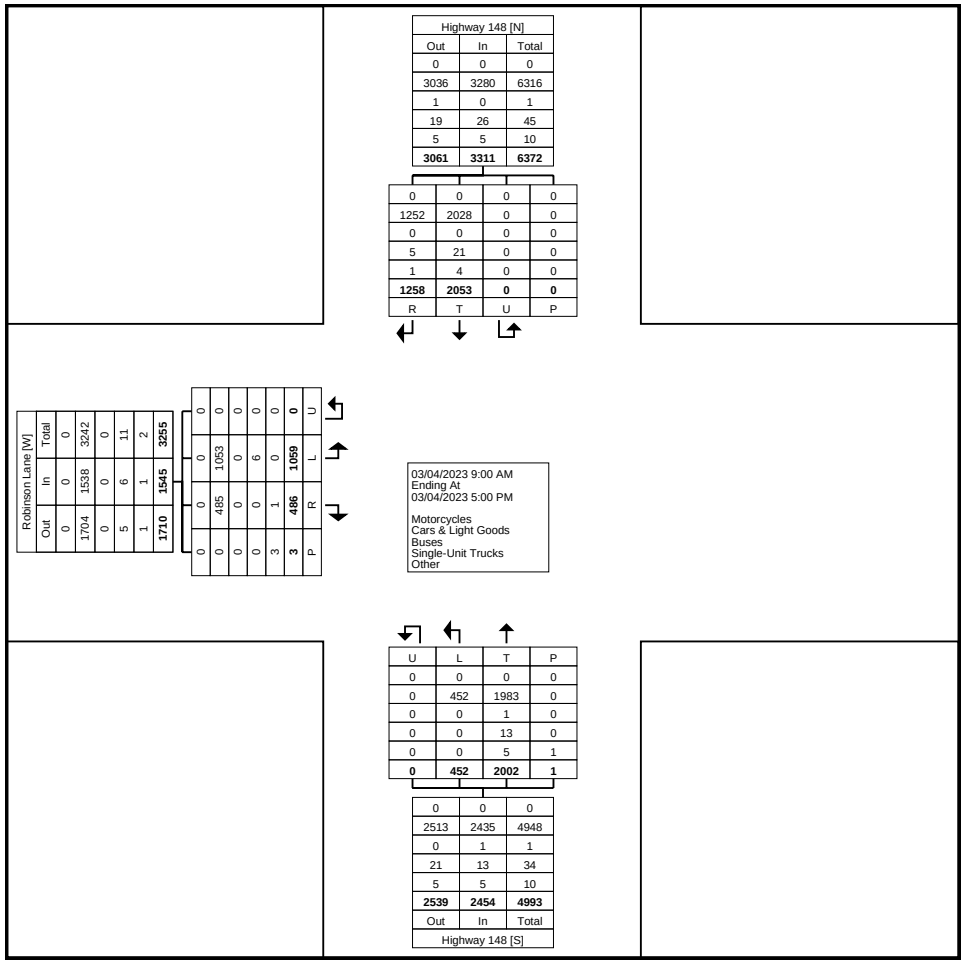
Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	13	8	0	0	21	15	31	0	0	46	21	19	0	0	40	107
9:15 AM	18	11	0	0	29	15	36	0	0	51	30	25	0	0	55	135
9:30 AM	16	9	0	0	25	13	46	0	0	59	29	20	0	0	49	133
9:45 AM	22	8	0	0	30	19	41	0	0	60	28	31	0	0	59	149
Hourly Total	69	36	0	0	105	62	154	0	0	216	108	95	0	0	203	524
10:00 AM	19	18	0	0	37	11	47	0	0	58	45	23	0	0	68	163
10:15 AM	18	16	0	0	34	11	50	0	0	61	41	34	0	0	75	170
10:30 AM	36	12	0	0	48	13	57	0	0	70	48	32	0	0	80	198
10:45 AM	28	11	0	0	39	18	53	0	0	71	39	48	0	0	87	197
Hourly Total	101	57	0	0	158	53	207	0	0	260	173	137	0	0	310	728
11:00 AM	33	9	0	0	42	7	62	0	0	69	49	38	0	0	87	198
11:15 AM	29	16	0	0	45	17	57	0	0	74	58	38	0	0	96	215
11:30 AM	33	17	0	0	50	16	61	0	0	77	62	44	0	0	106	233
11:45 AM	29	24	0	0	53	14	69	0	0	83	70	31	0	0	101	237
Hourly Total	124	66	0	0	190	54	249	0	0	303	239	151	0	0	390	883
12:00 PM	26	16	0	0	42	11	76	0	0	87	65	45	0	0	110	239
12:15 PM	36	12	0	0	48	13	60	0	0	73	61	47	0	0	108	229
12:30 PM	34	11	0	0	45	18	77	0	0	95	56	46	0	0	102	242
12:45 PM	43	21	0	0	64	18	67	0	0	85	64	47	0	0	111	260
Hourly Total	139	60	0	0	199	60	280	0	0	340	246	185	0	0	431	970
1:00 PM	46	13	0	0	59	20	63	0	0	83	73	29	0	0	102	244
1:15 PM	32	12	0	0	44	11	68	0	0	79	70	43	0	0	113	236
1:30 PM	35	16	0	0	51	12	77	0	0	89	78	45	0	0	123	263
1:45 PM	25	11	0	0	36	11	74	0	0	85	79	49	0	0	128	249
Hourly Total	138	52	0	0	190	54	282	0	0	336	300	166	0	0	466	992
2:00 PM	43	17	0	0	60	19	66	0	0	85	80	60	0	0	140	285
2:15 PM	41	22	0	1	63	10	63	0	1	73	72	53	0	0	125	261
2:30 PM	46	13	0	0	59	26	68	0	0	94	77	50	0	0	127	280
2:45 PM	38	19	0	0	57	17	68	0	0	85	72	54	0	0	126	268
Hourly Total	168	71	0	1	239	72	265	0	1	337	301	217	0	0	518	1094
3:00 PM	52	22	0	0	74	16	69	0	0	85	88	65	0	0	153	312
3:15 PM	57	25	0	0	82	13	90	0	0	103	85	39	0	0	124	309
3:30 PM	38	23	0	0	61	16	73	0	0	89	88	45	0	0	133	283
3:45 PM	53	12	0	0	65	6	67	0	0	73	85	34	0	0	119	257
Hourly Total	200	82	0	0	282	51	299	0	0	350	346	183	0	0	529	1161
4:00 PM	36	16	0	0	52	16	63	0	0	79	88	35	0	0	123	254

4:15 PM	38	14	0	1	52	8	71	0	0	79	100	38	0	0	138	269
4:30 PM	26	22	0	0	48	12	69	0	0	81	69	26	0	0	95	224
4:45 PM	20	10	0	1	30	10	63	0	0	73	83	25	0	0	108	211
Hourly Total	120	62	0	2	182	46	266	0	0	312	340	124	0	0	464	958
Grand Total	1059	486	0	3	1545	452	2002	0	1	2454	2053	1258	0	0	3311	7310
Approach %	68.5	31.5	0.0	-	-	18.4	81.6	0.0	-	-	62.0	38.0	0.0	-	-	-
Total %	14.5	6.6	0.0	-	21.1	6.2	27.4	0.0	-	33.6	28.1	17.2	0.0	-	45.3	-
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	1053	485	0	-	1538	452	1983	0	-	2435	2028	1252	0	-	3280	7253
% Cars & Light Goods	99.4	99.8	-	-	99.5	100.0	99.1	-	-	99.2	98.8	99.5	-	-	99.1	99.2
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	6	0	0	-	6	0	13	0	-	13	21	5	0	-	26	45
% Single-Unit Trucks	0.6	0.0	-	-	0.4	0.0	0.6	-	-	0.5	1.0	0.4	-	-	0.8	0.6
Articulated Trucks	0	1	0	-	1	0	5	0	-	5	4	1	0	-	5	11
% Articulated Trucks	0.0	0.2	-	-	0.1	0.0	0.2	-	-	0.2	0.2	0.1	-	-	0.2	0.2
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	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	3	-	-	-	-	1	-	-	-	-	0	-	-
% 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: Robinson Lane & Highway 148
Site Code: 220694
Start Date: 03/04/2023



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: Robinson Lane & Highway 148
Site Code: 220694
Start Date: 03/04/2023

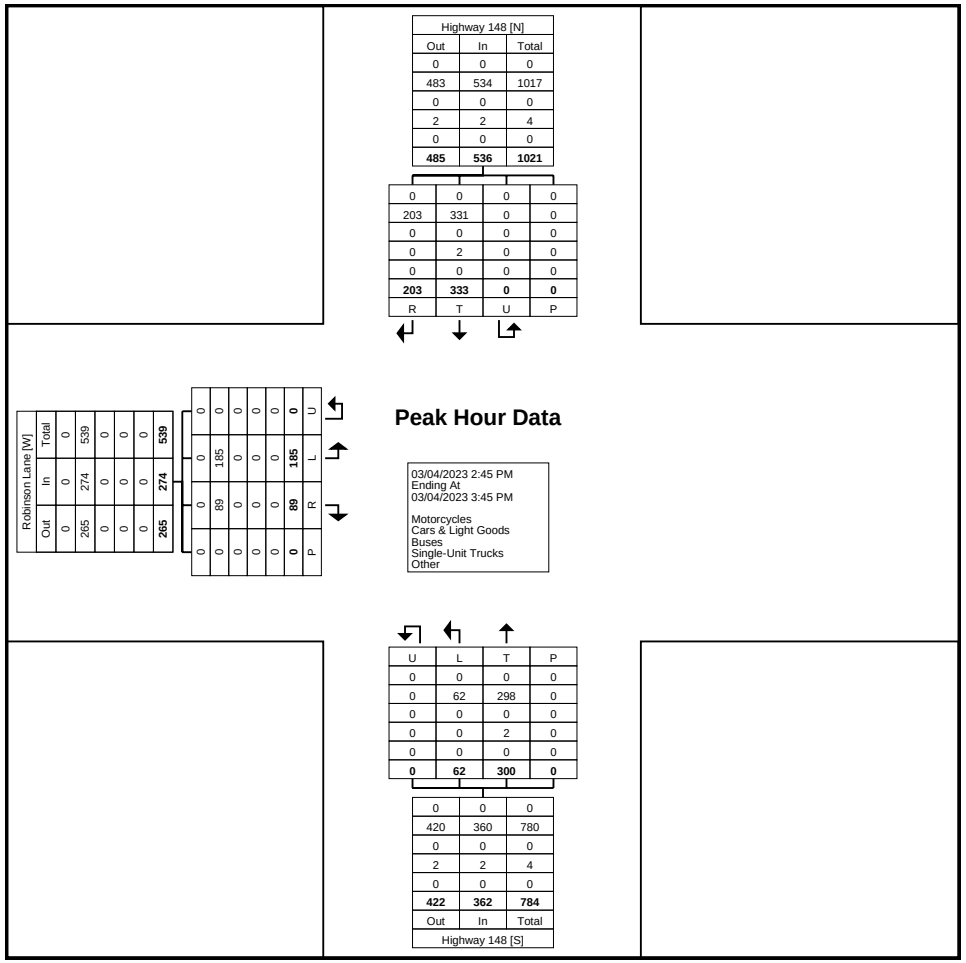
Turning Movement Peak Hour Data (2:45 PM)

Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
2:45 PM	38	19	0	0	57	17	68	0	0	85	72	54	0	0	126	268
3:00 PM	52	22	0	0	74	16	69	0	0	85	88	65	0	0	153	312
3:15 PM	57	25	0	0	82	13	90	0	0	103	85	39	0	0	124	309
3:30 PM	38	23	0	0	61	16	73	0	0	89	88	45	0	0	133	283
Total	185	89	0	0	274	62	300	0	0	362	333	203	0	0	536	1172
Approach %	67.5	32.5	0.0	-	-	17.1	82.9	0.0	-	-	62.1	37.9	0.0	-	-	-
Total %	15.8	7.6	0.0	-	23.4	5.3	25.6	0.0	-	30.9	28.4	17.3	0.0	-	45.7	-
PHF	0.811	0.890	0.000	-	0.835	0.912	0.833	0.000	-	0.879	0.946	0.781	0.000	-	0.876	0.939
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	185	89	0	-	274	62	298	0	-	360	331	203	0	-	534	1168
% Cars & Light Goods	100.0	100.0	-	-	100.0	100.0	99.3	-	-	99.4	99.4	100.0	-	-	99.6	99.7
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	2	0	-	2	2	0	0	-	2	4
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.7	-	-	0.6	0.6	0.0	-	-	0.4	0.3
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Robinson Lane & Highway 148
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (2:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Town Line Road/ Bennett Street & River Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

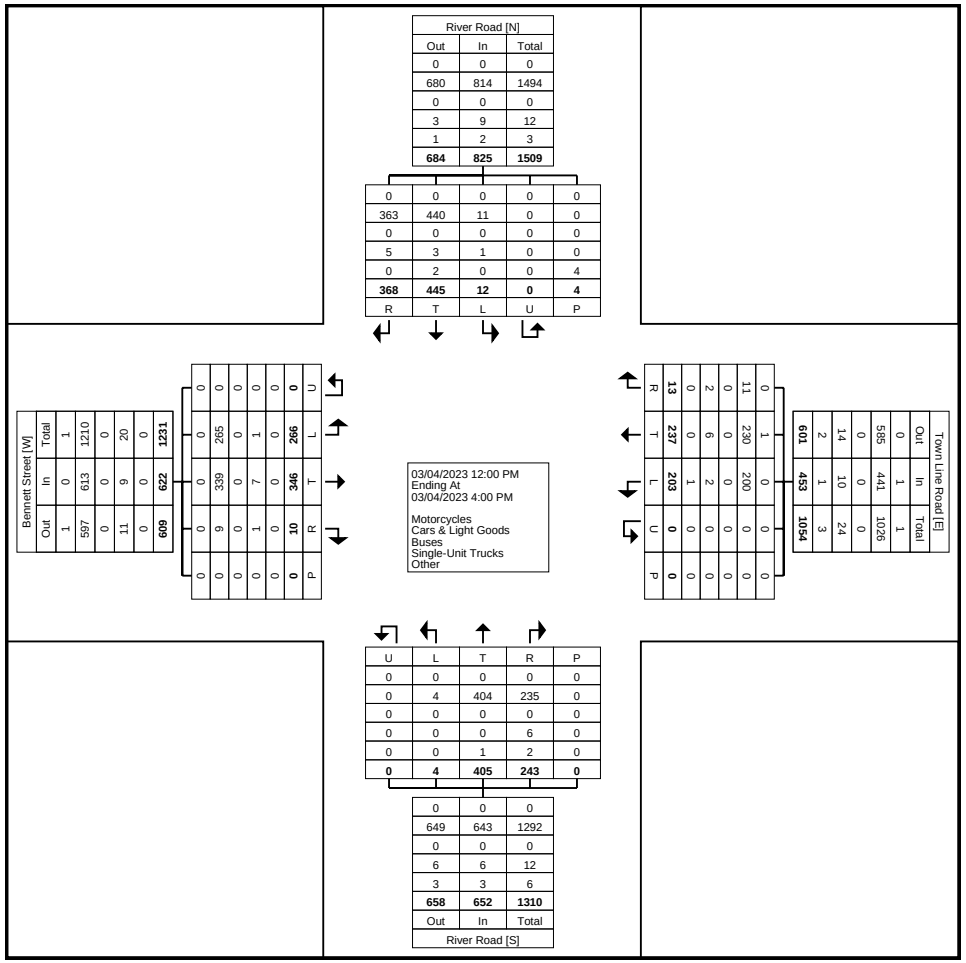
Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	13	28	0	0	0	41	10	8	2	0	0	20	0	29	16	0	0	45	2	23	16	0	0	41	147
12:15 PM	17	21	0	0	0	38	6	14	1	0	0	21	0	25	20	0	0	45	2	27	12	0	0	41	145
12:30 PM	20	29	1	0	0	50	13	13	1	0	0	27	0	20	16	0	0	36	0	33	26	0	0	59	172
12:45 PM	20	19	2	0	0	41	13	15	0	0	0	28	0	26	20	0	0	46	1	29	21	0	0	51	166
Hourly Total	70	97	3	0	0	170	42	50	4	0	0	96	0	100	72	0	0	172	5	112	75	0	0	192	630
1:00 PM	17	30	0	0	0	47	11	15	1	0	0	27	1	20	18	0	0	39	2	23	25	0	0	50	163
1:15 PM	14	16	0	0	0	30	13	15	3	0	0	31	0	21	11	0	0	32	0	24	25	0	0	49	142
1:30 PM	23	22	2	0	0	47	13	18	1	0	0	32	0	32	13	0	0	45	2	28	29	0	0	59	183
1:45 PM	21	22	0	0	0	43	9	12	1	0	0	22	2	23	25	0	0	50	2	30	26	0	0	58	173
Hourly Total	75	90	2	0	0	167	46	60	6	0	0	112	3	96	67	0	0	166	6	105	105	0	0	216	661
2:00 PM	14	19	1	0	0	34	15	10	1	0	0	26	0	21	15	0	0	36	1	30	35	0	1	66	162
2:15 PM	14	19	1	0	0	34	12	7	2	0	0	21	0	22	11	0	0	33	0	28	27	0	0	55	143
2:30 PM	16	17	0	0	0	33	15	17	0	0	0	32	1	34	16	0	0	51	0	32	15	0	0	47	163
2:45 PM	18	21	0	0	0	39	8	25	0	0	0	33	0	23	10	0	0	33	0	27	30	0	0	57	162
Hourly Total	62	76	2	0	0	140	50	59	3	0	0	112	1	100	52	0	0	153	1	117	107	0	1	225	630
3:00 PM	17	24	0	0	0	41	22	16	0	0	0	38	0	32	13	0	0	45	0	37	30	0	0	67	191
3:15 PM	11	20	0	0	0	31	17	16	0	0	0	33	0	21	14	0	0	35	0	26	19	0	1	45	144
3:30 PM	12	16	0	0	0	28	16	17	0	0	0	33	0	33	12	0	0	45	0	25	16	0	1	41	147
3:45 PM	19	23	3	0	0	45	10	19	0	0	0	29	0	23	13	0	0	36	0	23	16	0	1	39	149
Hourly Total	59	83	3	0	0	145	65	68	0	0	0	133	0	109	52	0	0	161	0	111	81	0	3	192	631
Grand Total	266	346	10	0	0	622	203	237	13	0	0	453	4	405	243	0	0	652	12	445	368	0	4	825	2552
Approach %	42.8	55.6	1.6	0.0	-	-	44.8	52.3	2.9	0.0	-	-	0.6	62.1	37.3	0.0	-	-	1.5	53.9	44.6	0.0	-	-	-
Total %	10.4	13.6	0.4	0.0	-	24.4	8.0	9.3	0.5	0.0	-	17.8	0.2	15.9	9.5	0.0	-	25.5	0.5	17.4	14.4	0.0	-	32.3	-
Motorcycles	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	265	339	9	0	-	613	200	230	11	0	-	441	4	404	235	0	-	643	11	440	363	0	-	814	2511
% Cars & Light Goods	99.6	98.0	90.0	-	-	98.6	98.5	97.0	84.6	-	-	97.4	100.0	99.8	96.7	-	-	98.6	91.7	98.9	98.6	-	-	98.7	98.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	7	1	0	-	9	2	6	2	0	-	10	0	0	6	0	-	6	1	3	5	0	-	9	34
% Single-Unit Trucks	0.4	2.0	10.0	-	-	1.4	1.0	2.5	15.4	-	-	2.2	0.0	0.0	2.5	-	-	0.9	8.3	0.7	1.4	-	-	1.1	1.3
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	1	1	0	-	2	0	2	0	0	-	2	5
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.5	0.0	0.0	-	-	0.2	0.0	0.2	0.4	-	-	0.3	0.0	0.4	0.0	-	-	0.2	0.2

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.4	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Town Line Road/ Bennett Street & River Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



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: Town Line Road/ Bennett Street & River Road - Saturday
Site Code: 220694
Start Date: 03/04/2023

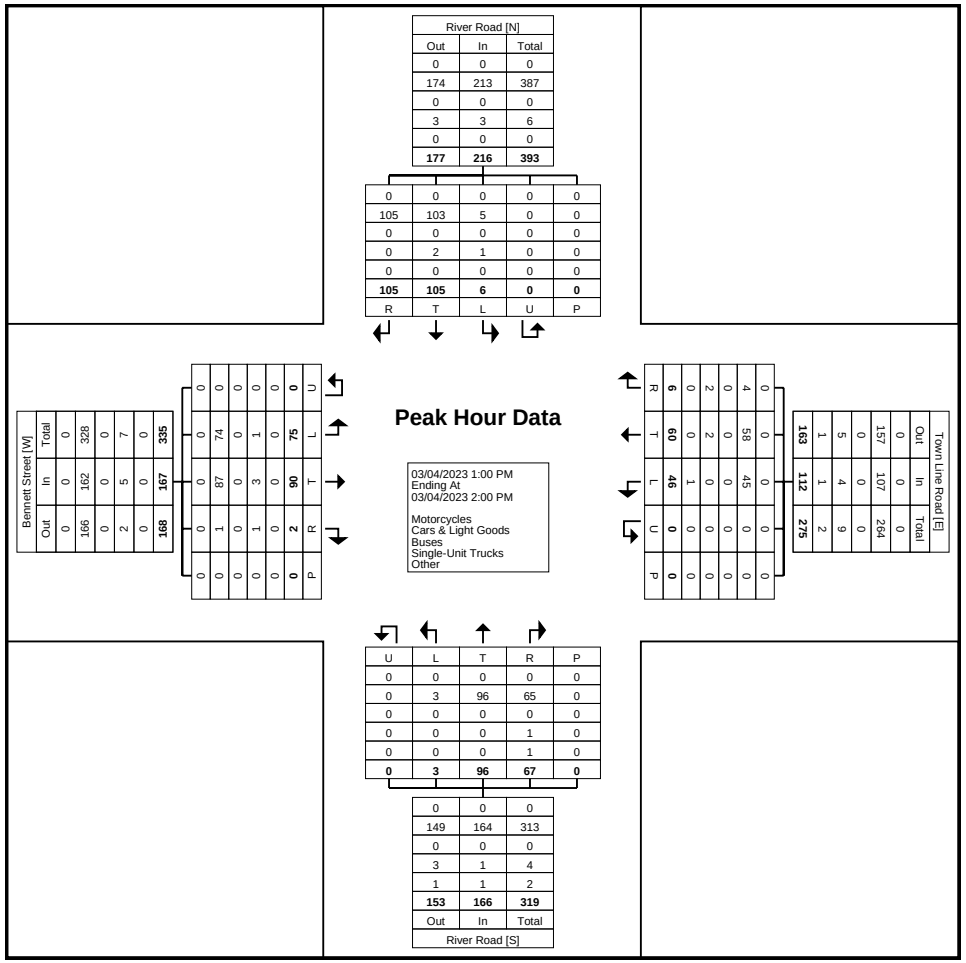
Turning Movement Peak Hour Data (1:00 PM)

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
1:00 PM	17	30	0	0	0	47	11	15	1	0	0	27	1	20	18	0	0	39	2	23	25	0	0	50	163
1:15 PM	14	16	0	0	0	30	13	15	3	0	0	31	0	21	11	0	0	32	0	24	25	0	0	49	142
1:30 PM	23	22	2	0	0	47	13	18	1	0	0	32	0	32	13	0	0	45	2	28	29	0	0	59	183
1:45 PM	21	22	0	0	0	43	9	12	1	0	0	22	2	23	25	0	0	50	2	30	26	0	0	58	173
Total	75	90	2	0	0	167	46	60	6	0	0	112	3	96	67	0	0	166	6	105	105	0	0	216	661
Approach %	44.9	53.9	1.2	0.0	-	-	41.1	53.6	5.4	0.0	-	-	1.8	57.8	40.4	0.0	-	-	2.8	48.6	48.6	0.0	-	-	-
Total %	11.3	13.6	0.3	0.0	-	25.3	7.0	9.1	0.9	0.0	-	16.9	0.5	14.5	10.1	0.0	-	25.1	0.9	15.9	15.9	0.0	-	32.7	-
PHF	0.815	0.750	0.250	0.000	-	0.888	0.885	0.833	0.500	0.000	-	0.875	0.375	0.750	0.670	0.000	-	0.830	0.750	0.875	0.905	0.000	-	0.915	0.903
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	74	87	1	0	-	162	45	58	4	0	-	107	3	96	65	0	-	164	5	103	105	0	-	213	646
% Cars & Light Goods	98.7	96.7	50.0	-	-	97.0	97.8	96.7	66.7	-	-	95.5	100.0	100.0	97.0	-	-	98.8	83.3	98.1	100.0	-	-	98.6	97.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	1	3	1	0	-	5	0	2	2	0	-	4	0	0	1	0	-	1	1	2	0	0	-	3	13
% Single-Unit Trucks	1.3	3.3	50.0	-	-	3.0	0.0	3.3	33.3	-	-	3.6	0.0	0.0	1.5	-	-	0.6	16.7	1.9	0.0	-	-	1.4	2.0
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	2.2	0.0	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.5	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.2
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: Town Line Road/ Bennett Street & River Road - Saturday
Site Code: 220694
Start Date: 03/04/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road 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
7:00 AM	13	14	0	0	0	27	26	14	1	0	0	41	0	30	18	0	0	48	0	42	11	0	0	53	169
7:15 AM	16	27	3	0	0	46	20	19	0	0	0	39	1	26	16	0	0	43	0	34	25	0	0	59	187
7:30 AM	19	22	1	0	0	42	26	28	1	0	0	55	1	54	25	0	0	80	2	27	14	0	0	43	220
7:45 AM	36	29	7	0	0	72	23	28	1	0	0	52	0	82	36	0	0	118	3	42	38	0	0	83	325
Hourly Total	84	92	11	0	0	187	95	89	3	0	0	187	2	192	95	0	0	289	5	145	88	0	0	238	901
8:00 AM	33	22	4	0	0	59	16	38	0	0	0	54	2	47	31	0	0	80	4	34	23	0	0	61	254
8:15 AM	19	28	3	0	0	50	17	27	1	0	0	45	2	41	18	0	0	61	1	26	24	0	0	51	207
8:30 AM	24	27	1	0	0	52	21	22	2	0	0	45	1	37	25	0	0	63	1	27	10	0	0	38	198
8:45 AM	31	26	2	0	0	59	19	19	0	0	0	38	1	56	32	0	0	89	0	26	23	0	0	49	235
Hourly Total	107	103	10	0	0	220	73	106	3	0	0	182	6	181	106	0	0	293	6	113	80	0	0	199	894
9:00 AM	36	27	2	0	0	65	14	16	2	0	0	32	1	47	18	0	0	66	1	27	19	0	0	47	210
9:15 AM	19	25	0	0	0	44	19	16	1	0	0	36	0	45	26	0	0	71	0	41	31	0	0	72	223
9:30 AM	21	19	0	0	0	40	22	15	1	0	0	38	2	39	22	0	0	63	0	31	30	0	1	61	202
9:45 AM	26	29	0	0	0	55	20	20	1	0	0	41	2	38	15	0	0	55	0	24	28	0	0	52	203
Hourly Total	102	100	2	0	0	204	75	67	5	0	0	147	5	169	81	0	0	255	1	123	108	0	1	232	838
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	28	27	4	0	0	59	16	13	0	0	0	29	4	42	23	0	0	69	0	32	22	0	0	54	211
11:15 AM	25	27	4	0	0	56	19	23	1	0	0	43	4	39	25	0	0	68	0	39	33	0	0	72	239
11:30 AM	28	18	0	0	0	46	18	18	0	0	0	36	1	36	16	0	0	53	0	31	31	0	0	62	197
11:45 AM	23	23	2	0	0	48	15	16	2	0	0	33	3	41	28	0	0	72	2	43	36	0	0	81	234
Hourly Total	104	95	10	0	0	209	68	70	3	0	0	141	12	158	92	0	0	262	2	145	122	0	0	269	881
12:00 PM	15	24	1	0	0	40	22	23	0	0	0	45	6	47	16	0	0	69	2	44	26	0	0	72	226
12:15 PM	28	19	3	0	0	50	11	13	2	0	0	26	1	45	22	0	0	68	0	33	33	0	0	66	210
12:30 PM	24	17	3	0	0	44	18	16	1	0	0	35	2	36	22	0	0	60	5	40	27	0	0	72	211
12:45 PM	19	23	4	0	0	46	20	19	1	0	0	40	1	57	25	0	0	83	2	40	33	0	0	75	244
Hourly Total	86	83	11	0	0	180	71	71	4	0	0	146	10	185	85	0	0	280	9	157	119	0	0	285	891
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	22	30	2	0	0	54	21	22	2	0	0	45	1	31	23	0	0	55	1	55	39	0	2	95	249
3:15 PM	20	29	0	0	0	49	16	20	0	0	0	36	3	44	26	0	0	73	0	37	38	0	0	75	233
3:30 PM	25	48	3	0	0	76	23	28	3	0	0	54	2	56	38	0	0	96	3	51	44	0	0	98	324
3:45 PM	25	22	1	0	0	48	18	24	1	0	0	43	1	40	30	0	0	71	0	66	48	0	0	114	276
Hourly Total	92	129	6	0	0	227	78	94	6	0	0	178	7	171	117	0	0	295	4	209	169	0	2	382	1082
4:00 PM	38	37	1	0	0	76	39	30	3	0	0	72	0	39	37	0	0	76	4	84	55	0	0	143	367
4:15 PM	17	40	1	0	0	58	13	20	2	0	0	35	1	56	49	0	0	106	3	48	36	0	0	87	286
4:30 PM	29	33	1	0	0	63	28	37	1	0	0	66	3	55	35	0	0	93	0	48	37	0	0	85	307

4:45 PM	16	37	1	0	0	54	18	33	2	0	0	53	3	37	34	0	0	74	3	52	39	0	0	94	275
Hourly Total	100	147	4	0	0	251	98	120	8	0	0	226	7	187	155	0	0	349	10	232	167	0	0	409	1235
5:00 PM	23	26	1	0	0	50	14	22	0	0	0	36	3	52	41	0	0	96	2	62	39	0	0	103	285
5:15 PM	19	24	0	0	0	43	24	22	1	0	0	47	1	33	16	0	0	50	2	31	19	0	0	52	192
5:30 PM	11	19	0	0	0	30	13	20	1	0	1	34	1	24	18	0	0	43	1	33	27	0	1	61	168
5:45 PM	12	21	1	0	0	34	13	24	1	0	0	38	3	42	24	0	0	69	0	28	22	0	0	50	191
Hourly Total	65	90	2	0	0	157	64	88	3	0	1	155	8	151	99	0	0	258	5	154	107	0	1	266	836
Grand Total	740	839	56	0	0	1635	622	705	35	0	1	1362	57	1394	830	0	0	2281	42	1278	960	0	4	2280	7558
Approach %	45.3	51.3	3.4	0.0	-	-	45.7	51.8	2.6	0.0	-	-	2.5	61.1	36.4	0.0	-	-	1.8	56.1	42.1	0.0	-	-	-
Total %	9.8	11.1	0.7	0.0	-	21.6	8.2	9.3	0.5	0.0	-	18.0	0.8	18.4	11.0	0.0	-	30.2	0.6	16.9	12.7	0.0	-	30.2	-
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	712	796	51	0	-	1559	581	679	29	0	-	1289	54	1354	768	0	-	2176	35	1224	931	0	-	2190	7214
% Cars & Light Goods	96.2	94.9	91.1	-	-	95.4	93.4	96.3	82.9	-	-	94.6	94.7	97.1	92.5	-	-	95.4	83.3	95.8	97.0	-	-	96.1	95.4
Buses	17	21	4	0	-	42	17	10	1	0	-	28	3	14	18	0	-	35	0	15	12	0	-	27	132
% Buses	2.3	2.5	7.1	-	-	2.6	2.7	1.4	2.9	-	-	2.1	5.3	1.0	2.2	-	-	1.5	0.0	1.2	1.3	-	-	1.2	1.7
Single-Unit Trucks	9	22	1	0	-	32	9	15	5	0	-	29	0	21	24	0	-	45	7	30	16	0	-	53	159
% Single-Unit Trucks	1.2	2.6	1.8	-	-	2.0	1.4	2.1	14.3	-	-	2.1	0.0	1.5	2.9	-	-	2.0	16.7	2.3	1.7	-	-	2.3	2.1
Articulated Trucks	2	0	0	0	-	2	15	1	0	0	-	16	0	5	20	0	-	25	0	9	1	0	-	10	53
% Articulated Trucks	0.3	0.0	0.0	-	-	0.1	2.4	0.1	0.0	-	-	1.2	0.0	0.4	2.4	-	-	1.1	0.0	0.7	0.1	-	-	0.4	0.7
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	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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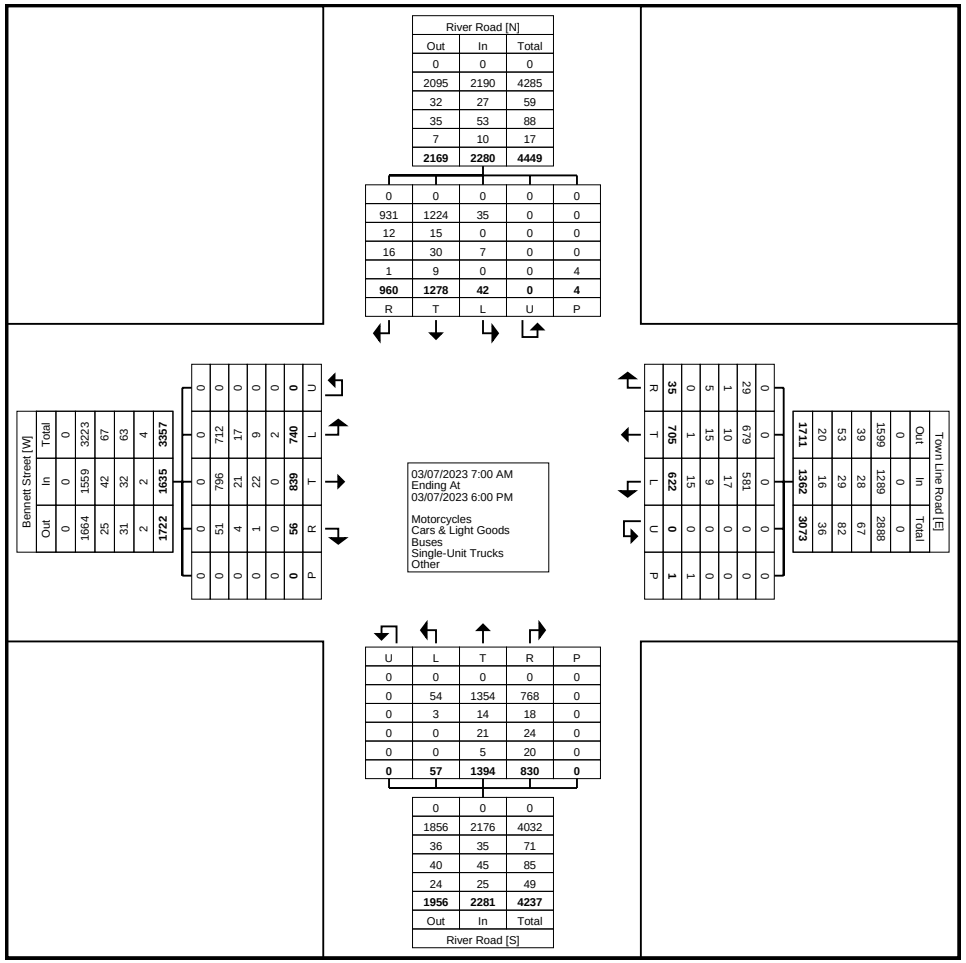
Start Date: 03/07/2023
Page No: 3



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: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

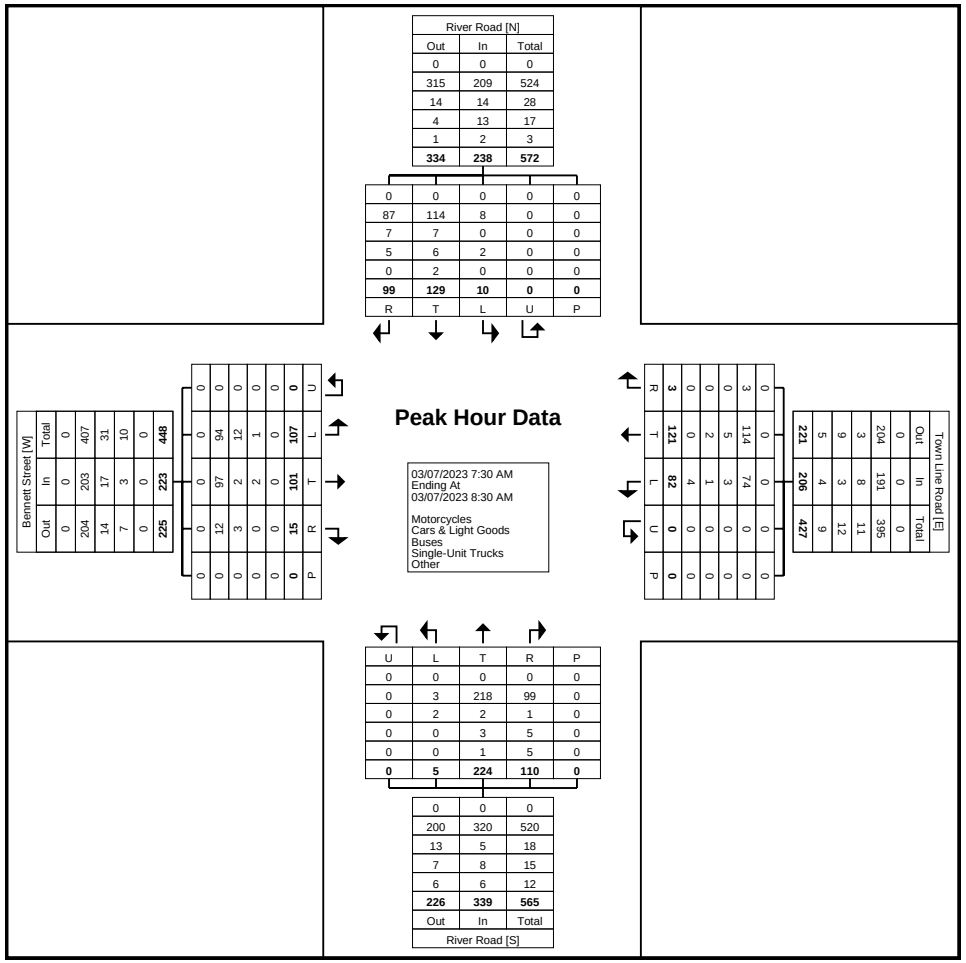
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road 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
7:30 AM	19	22	1	0	0	42	26	28	1	0	0	55	1	54	25	0	0	80	2	27	14	0	0	43	220
7:45 AM	36	29	7	0	0	72	23	28	1	0	0	52	0	82	36	0	0	118	3	42	38	0	0	83	325
8:00 AM	33	22	4	0	0	59	16	38	0	0	0	54	2	47	31	0	0	80	4	34	23	0	0	61	254
8:15 AM	19	28	3	0	0	50	17	27	1	0	0	45	2	41	18	0	0	61	1	26	24	0	0	51	207
Total	107	101	15	0	0	223	82	121	3	0	0	206	5	224	110	0	0	339	10	129	99	0	0	238	1006
Approach %	48.0	45.3	6.7	0.0	-	-	39.8	58.7	1.5	0.0	-	-	1.5	66.1	32.4	0.0	-	-	4.2	54.2	41.6	0.0	-	-	-
Total %	10.6	10.0	1.5	0.0	-	22.2	8.2	12.0	0.3	0.0	-	20.5	0.5	22.3	10.9	0.0	-	33.7	1.0	12.8	9.8	0.0	-	23.7	-
PHF	0.743	0.871	0.536	0.000	-	0.774	0.788	0.796	0.750	0.000	-	0.936	0.625	0.683	0.764	0.000	-	0.718	0.625	0.768	0.651	0.000	-	0.717	0.774
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	94	97	12	0	-	203	74	114	3	0	-	191	3	218	99	0	-	320	8	114	87	0	-	209	923
% Cars & Light Goods	87.9	96.0	80.0	-	-	91.0	90.2	94.2	100.0	-	-	92.7	60.0	97.3	90.0	-	-	94.4	80.0	88.4	87.9	-	-	87.8	91.7
Buses	12	2	3	0	-	17	3	5	0	0	-	8	2	2	1	0	-	5	0	7	7	0	-	14	44
% Buses	11.2	2.0	20.0	-	-	7.6	3.7	4.1	0.0	-	-	3.9	40.0	0.9	0.9	-	-	1.5	0.0	5.4	7.1	-	-	5.9	4.4
Single-Unit Trucks	1	2	0	0	-	3	1	2	0	0	-	3	0	3	5	0	-	8	2	6	5	0	-	13	27
% Single-Unit Trucks	0.9	2.0	0.0	-	-	1.3	1.2	1.7	0.0	-	-	1.5	0.0	1.3	4.5	-	-	2.4	20.0	4.7	5.1	-	-	5.5	2.7
Articulated Trucks	0	0	0	0	-	0	4	0	0	0	-	4	0	1	5	0	-	6	0	2	0	0	-	2	12
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	4.9	0.0	0.0	-	-	1.9	0.0	0.4	4.5	-	-	1.8	0.0	1.6	0.0	-	-	0.8	1.2
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 cbowness@ptsl.com

Count Name: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

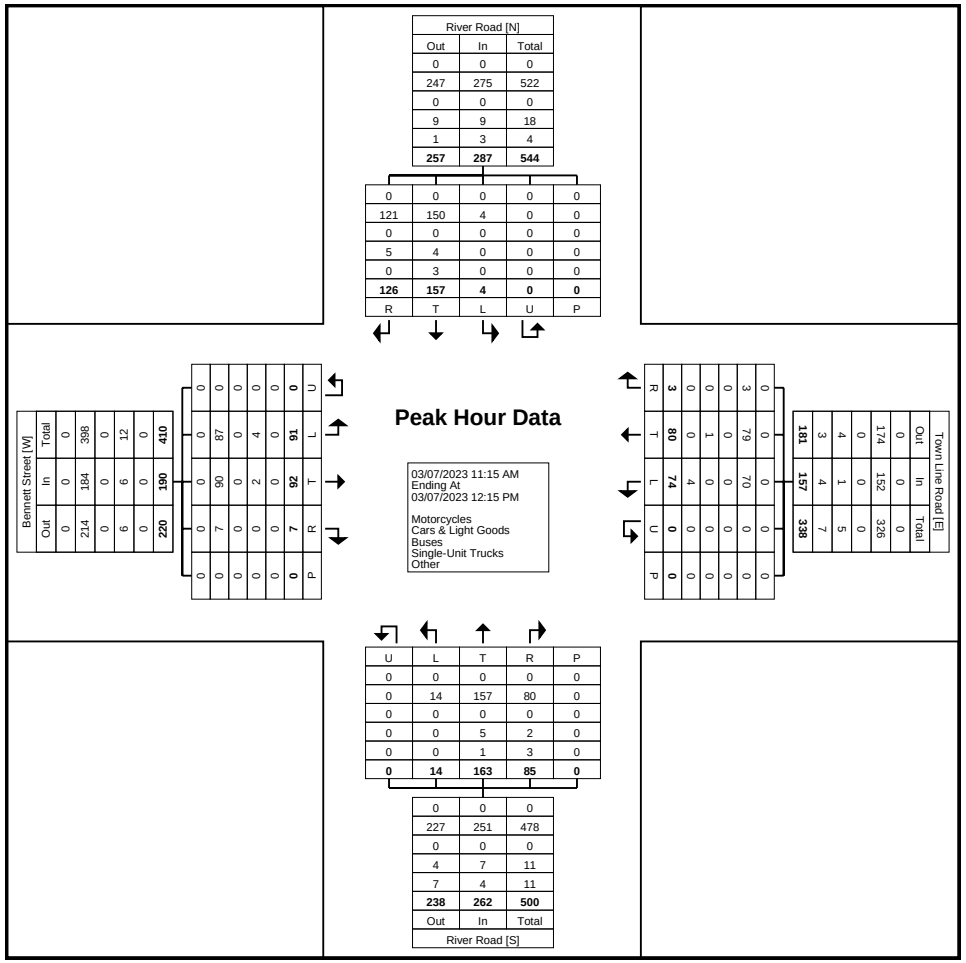
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road 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
11:15 AM	25	27	4	0	0	56	19	23	1	0	0	43	4	39	25	0	0	68	0	39	33	0	0	72	239
11:30 AM	28	18	0	0	0	46	18	18	0	0	0	36	1	36	16	0	0	53	0	31	31	0	0	62	197
11:45 AM	23	23	2	0	0	48	15	16	2	0	0	33	3	41	28	0	0	72	2	43	36	0	0	81	234
12:00 PM	15	24	1	0	0	40	22	23	0	0	0	45	6	47	16	0	0	69	2	44	26	0	0	72	226
Total	91	92	7	0	0	190	74	80	3	0	0	157	14	163	85	0	0	262	4	157	126	0	0	287	896
Approach %	47.9	48.4	3.7	0.0	-	-	47.1	51.0	1.9	0.0	-	-	5.3	62.2	32.4	0.0	-	-	1.4	54.7	43.9	0.0	-	-	-
Total %	10.2	10.3	0.8	0.0	-	21.2	8.3	8.9	0.3	0.0	-	17.5	1.6	18.2	9.5	0.0	-	29.2	0.4	17.5	14.1	0.0	-	32.0	-
PHF	0.813	0.852	0.438	0.000	-	0.848	0.841	0.870	0.375	0.000	-	0.872	0.583	0.867	0.759	0.000	-	0.910	0.500	0.892	0.875	0.000	-	0.886	0.937
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	87	90	7	0	-	184	70	79	3	0	-	152	14	157	80	0	-	251	4	150	121	0	-	275	862
% Cars & Light Goods	95.6	97.8	100.0	-	-	96.8	94.6	98.8	100.0	-	-	96.8	100.0	96.3	94.1	-	-	95.8	100.0	95.5	96.0	-	-	95.8	96.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	4	2	0	0	-	6	0	1	0	0	-	1	0	5	2	0	-	7	0	4	5	0	-	9	23
% Single-Unit Trucks	4.4	2.2	0.0	-	-	3.2	0.0	1.3	0.0	-	-	0.6	0.0	3.1	2.4	-	-	2.7	0.0	2.5	4.0	-	-	3.1	2.6
Articulated Trucks	0	0	0	0	-	0	4	0	0	0	-	4	0	1	3	0	-	4	0	3	0	0	-	3	11
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	5.4	0.0	0.0	-	-	2.5	0.0	0.6	3.5	-	-	1.5	0.0	1.9	0.0	-	-	1.0	1.2
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 cbowness@ptsl.com

Count Name: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023


River Road [N]
Out In Total
0 0 0
247 275 522
0 0 0
9 9 18
1 3 4
257 287 544
0 0 0 0 0
121 150 4 0 0
0 0 0 0 0
5 4 0 0 0
0 3 0 0 0
126 157 4 0 0
R T L U P
Bennett Street [W]
Out In Total
0 0 0
214 184 398
0 0 0
9 9 12
0 0 0
220 190 410
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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023

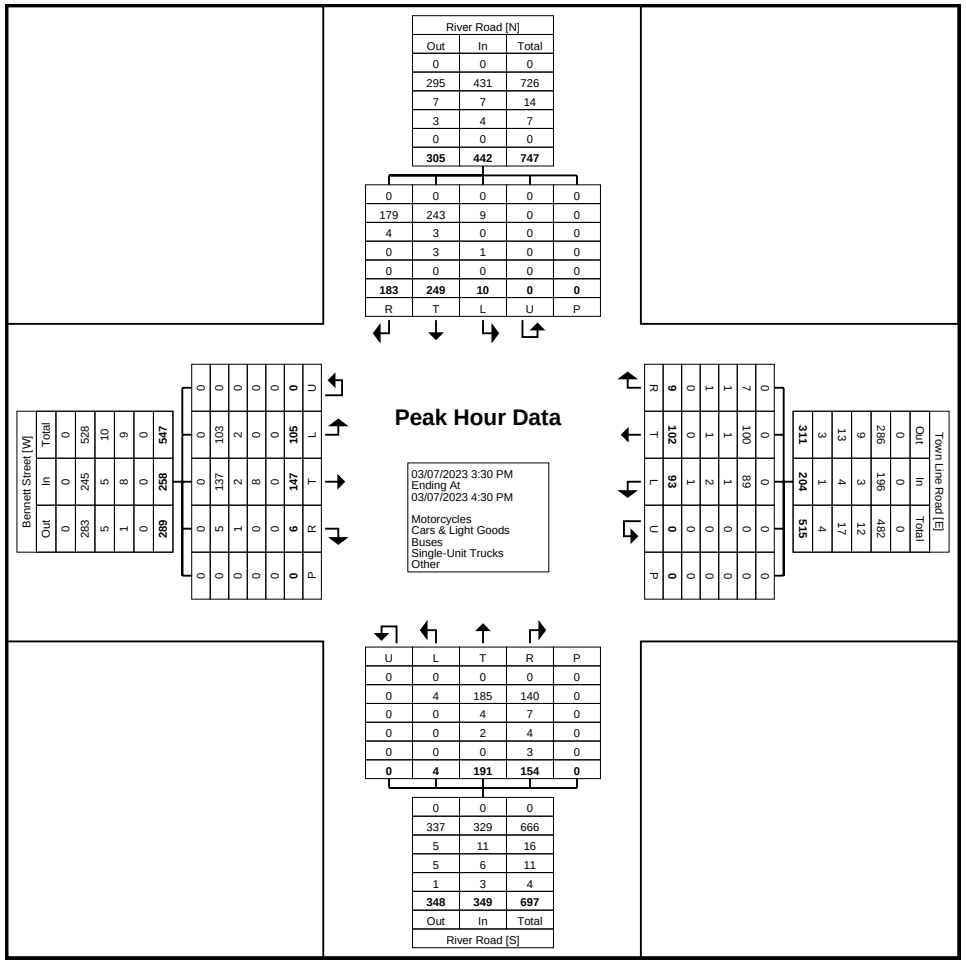
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road 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
3:30 PM	25	48	3	0	0	76	23	28	3	0	0	54	2	56	38	0	0	96	3	51	44	0	0	98	324
3:45 PM	25	22	1	0	0	48	18	24	1	0	0	43	1	40	30	0	0	71	0	66	48	0	0	114	276
4:00 PM	38	37	1	0	0	76	39	30	3	0	0	72	0	39	37	0	0	76	4	84	55	0	0	143	367
4:15 PM	17	40	1	0	0	58	13	20	2	0	0	35	1	56	49	0	0	106	3	48	36	0	0	87	286
Total	105	147	6	0	0	258	93	102	9	0	0	204	4	191	154	0	0	349	10	249	183	0	0	442	1253
Approach %	40.7	57.0	2.3	0.0	-	-	45.6	50.0	4.4	0.0	-	-	1.1	54.7	44.1	0.0	-	-	2.3	56.3	41.4	0.0	-	-	-
Total %	8.4	11.7	0.5	0.0	-	20.6	7.4	8.1	0.7	0.0	-	16.3	0.3	15.2	12.3	0.0	-	27.9	0.8	19.9	14.6	0.0	-	35.3	-
PHF	0.691	0.766	0.500	0.000	-	0.849	0.596	0.850	0.750	0.000	-	0.708	0.500	0.853	0.786	0.000	-	0.823	0.625	0.741	0.832	0.000	-	0.773	0.854
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	103	137	5	0	-	245	89	100	7	0	-	196	4	185	140	0	-	329	9	243	179	0	-	431	1201
% Cars & Light Goods	98.1	93.2	83.3	-	-	95.0	95.7	98.0	77.8	-	-	96.1	100.0	96.9	90.9	-	-	94.3	90.0	97.6	97.8	-	-	97.5	95.8
Buses	2	2	1	0	-	5	1	1	1	0	-	3	0	4	7	0	-	11	0	3	4	0	-	7	26
% Buses	1.9	1.4	16.7	-	-	1.9	1.1	1.0	11.1	-	-	1.5	0.0	2.1	4.5	-	-	3.2	0.0	1.2	2.2	-	-	1.6	2.1
Single-Unit Trucks	0	8	0	0	-	8	2	1	1	0	-	4	0	2	4	0	-	6	1	3	0	0	-	4	22
% Single-Unit Trucks	0.0	5.4	0.0	-	-	3.1	2.2	1.0	11.1	-	-	2.0	0.0	1.0	2.6	-	-	1.7	10.0	1.2	0.0	-	-	0.9	1.8
Articulated Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	0	3	0	-	3	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	1.1	0.0	0.0	-	-	0.5	0.0	0.0	1.9	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.3
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 cbowness@ptsl.com

Count Name: Town Line Road/ Bennett Street & River Road - Tuesday
Site Code: 220694
Start Date: 03/07/2023


River Road [N]
Out In Total
0 0 0
295 431 726
7 7 14
3 4 7
0 0 0
305 442 747
0 0 0 0 0
179 243 9 0 0
4 3 0 0 0
0 3 1 0 0
0 0 0 0 0
183 249 10 0 0
R T L U P
Peak Hour Data
03/07/2023 3:30 PM
Ending At
03/07/2023 4:30 PM
Motorcycles
Cars & Light Goods
Buses
Single-Unit Trucks
Other
Bennett Street [W]
Out In Total
0 0 0
283 245 528
5 5 10
1 8 9
0 0 0
289 258 547
0 0 0 0 0
0 103 2 0 0
0 137 2 8 0
0 5 1 0 0
0 0 0 0 0
0 0 0 0 0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Boundary Road East
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

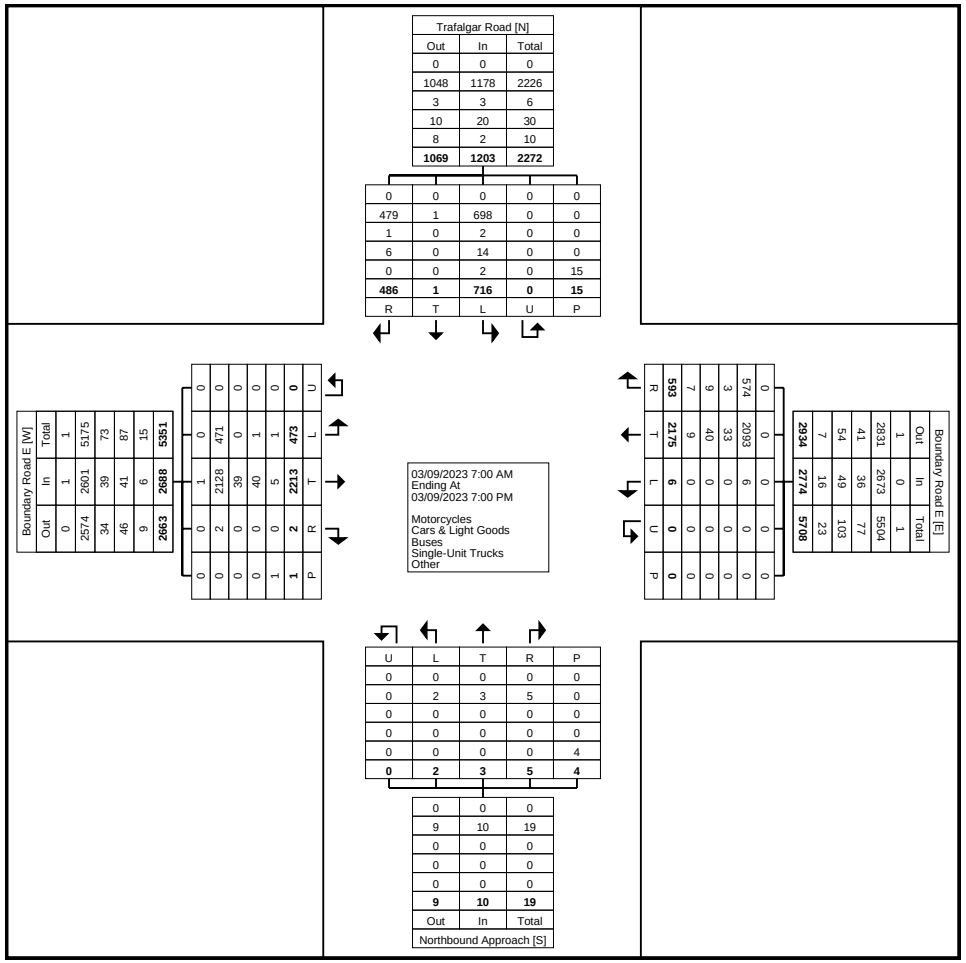
Start Time	Boundary Road E Eastbound						Boundary Road E Westbound						Northbound Approach Northbound						Trafalgar Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	4	23	0	0	0	27	0	33	7	0	0	40	0	0	0	0	0	0	16	0	7	0	0	23	90
7:15 AM	7	23	0	0	0	30	0	42	8	0	0	50	0	0	0	0	0	0	9	0	8	0	0	17	97
7:30 AM	10	32	0	0	0	42	0	52	14	0	0	66	0	0	0	0	1	0	6	0	9	0	0	15	123
7:45 AM	20	67	0	0	0	87	0	50	23	0	0	73	0	0	0	0	0	0	11	0	11	0	0	22	182
Hourly Total	41	145	0	0	0	186	0	177	52	0	0	229	0	0	0	0	1	0	42	0	35	0	0	77	492
8:00 AM	8	62	0	0	0	70	0	68	8	0	0	76	0	0	0	0	0	0	13	0	7	0	0	20	166
8:15 AM	15	41	0	0	0	56	0	66	20	0	0	86	0	0	0	0	0	0	10	0	8	0	0	18	160
8:30 AM	17	56	0	0	0	73	0	46	16	0	0	62	0	0	0	0	0	0	7	0	11	0	0	18	153
8:45 AM	18	45	0	0	0	63	0	37	8	0	0	45	0	0	0	0	0	0	18	0	8	0	0	26	134
Hourly Total	58	204	0	0	0	262	0	217	52	0	0	269	0	0	0	0	0	0	48	0	34	0	0	82	613
9:00 AM	19	30	0	0	0	49	0	39	15	0	0	54	0	0	0	0	0	0	13	0	9	0	0	22	125
9:15 AM	7	37	0	0	0	44	0	36	6	0	0	42	0	0	0	0	0	0	14	0	12	0	0	26	112
9:30 AM	9	37	0	0	0	46	0	40	7	0	0	47	0	1	0	0	0	1	20	0	10	0	0	30	124
9:45 AM	6	35	0	0	0	41	0	27	8	0	0	35	0	0	0	0	0	0	11	0	16	0	0	27	103
Hourly Total	41	139	0	0	0	180	0	142	36	0	0	178	0	1	0	0	0	1	58	0	47	0	0	105	464
10:00 AM	4	32	0	0	0	36	0	40	7	0	0	47	0	0	0	0	0	0	10	0	5	0	0	15	98
10:15 AM	6	39	0	0	0	45	0	40	14	0	0	54	0	0	0	0	0	0	13	0	5	0	0	18	117
10:30 AM	9	27	0	0	0	36	0	41	15	0	0	56	0	0	0	0	1	0	8	0	9	0	0	17	109
10:45 AM	12	38	0	0	0	50	0	36	7	0	0	43	0	0	0	0	0	0	14	0	8	0	1	22	115
Hourly Total	31	136	0	0	0	167	0	157	43	0	0	200	0	0	0	0	1	0	45	0	27	0	1	72	439
11:00 AM	6	24	0	0	0	30	1	43	14	0	0	58	0	0	0	0	0	0	18	0	9	0	0	27	115
11:15 AM	8	36	0	0	0	44	1	36	9	0	0	46	0	0	2	0	0	2	12	0	4	0	0	16	108
11:30 AM	7	39	0	0	0	46	1	40	6	0	0	47	0	0	0	0	0	0	12	0	1	0	0	13	106
11:45 AM	9	43	0	0	0	52	0	34	13	0	0	47	0	0	0	0	0	0	16	0	8	0	2	24	123
Hourly Total	30	142	0	0	0	172	3	153	42	0	0	198	0	0	2	0	0	2	58	0	22	0	2	80	452
12:00 PM	5	44	0	0	0	49	0	35	16	0	0	51	0	0	0	0	0	0	16	0	13	0	0	29	129
12:15 PM	7	48	0	0	0	55	1	42	9	0	0	52	0	0	0	0	0	0	20	0	14	0	0	34	141
12:30 PM	9	52	0	0	0	61	0	39	11	0	0	50	0	1	0	0	0	1	14	0	12	0	0	26	138
12:45 PM	13	54	0	0	0	67	0	54	17	0	0	71	0	0	0	0	0	0	18	0	10	0	0	28	166
Hourly Total	34	198	0	0	0	232	1	170	53	0	0	224	0	1	0	0	0	1	68	0	49	0	0	117	574
1:00 PM	9	44	0	0	0	53	0	54	17	0	0	71	0	0	0	0	0	0	16	0	4	0	0	20	144
1:15 PM	7	35	0	0	0	42	0	44	17	0	0	61	0	0	0	0	0	0	6	0	6	0	0	12	115
1:30 PM	14	38	0	0	0	52	1	35	12	0	0	48	1	0	0	0	0	1	13	0	7	0	0	20	121
1:45 PM	9	43	0	0	0	52	1	57	12	0	0	70	0	0	0	0	0	0	12	0	5	0	0	17	139
Hourly Total	39	160	0	0	0	199	2	190	58	0	0	250	1	0	0	0	0	1	47	0	22	0	0	69	519

2:00 PM	6	47	0	0	0	53	0	39	11	0	0	50	1	1	1	0	0	3	14	0	16	0	0	30	136
2:15 PM	9	52	0	0	0	61	0	30	10	0	0	40	0	0	1	0	0	1	13	0	11	0	0	24	126
2:30 PM	8	43	0	0	0	51	0	62	13	0	0	75	0	0	0	0	0	0	19	0	17	0	0	36	162
2:45 PM	7	46	0	0	0	53	0	47	11	0	0	58	0	0	0	0	0	0	14	0	10	0	1	24	135
Hourly Total	30	188	0	0	0	218	0	178	45	0	0	223	1	1	2	0	0	4	60	0	54	0	1	114	559
3:00 PM	10	42	1	0	0	53	0	60	12	0	0	72	0	0	0	0	0	0	24	0	12	0	2	36	161
3:15 PM	8	54	0	0	1	62	0	40	11	0	0	51	0	0	0	0	2	0	15	1	14	0	1	30	143
3:30 PM	6	59	0	0	0	65	0	76	22	0	0	98	0	0	0	0	0	0	24	0	17	0	1	41	204
3:45 PM	14	73	0	0	0	87	0	46	14	0	0	60	0	0	0	0	0	0	17	0	19	0	0	36	183
Hourly Total	38	228	1	0	1	267	0	222	59	0	0	281	0	0	0	0	2	0	80	1	62	0	4	143	691
4:00 PM	12	77	1	0	0	90	0	72	17	0	0	89	0	0	0	0	0	0	25	0	18	0	2	43	222
4:15 PM	18	86	0	0	0	104	0	64	18	0	0	82	0	0	1	0	0	1	22	0	15	0	0	37	224
4:30 PM	16	79	0	0	0	95	0	55	11	0	0	66	0	0	0	0	0	0	27	0	20	0	0	47	208
4:45 PM	14	79	0	0	0	93	0	49	9	0	0	58	0	0	0	0	0	0	26	0	10	0	3	36	187
Hourly Total	60	321	1	0	0	382	0	240	55	0	0	295	0	0	1	0	0	1	100	0	63	0	5	163	841
5:00 PM	24	83	0	0	0	107	0	51	15	0	0	66	0	0	0	0	0	0	22	0	16	0	2	38	211
5:15 PM	12	57	0	0	0	69	0	49	17	0	0	66	0	0	0	0	0	0	10	0	20	0	0	30	165
5:30 PM	9	40	0	0	0	49	0	51	14	0	0	65	0	0	0	0	0	0	19	0	5	0	0	24	138
5:45 PM	5	39	0	0	0	44	0	45	13	0	0	58	0	0	0	0	0	0	17	0	7	0	0	24	126
Hourly Total	50	219	0	0	0	269	0	196	59	0	0	255	0	0	0	0	0	0	68	0	48	0	2	116	640
6:00 PM	4	41	0	0	0	45	0	41	10	0	0	51	0	0	0	0	0	0	11	0	8	0	0	19	115
6:15 PM	6	32	0	0	0	38	0	29	9	0	0	38	0	0	0	0	0	0	12	0	8	0	0	20	96
6:30 PM	3	35	0	0	0	38	0	25	9	0	0	34	0	0	0	0	0	0	9	0	4	0	0	13	85
6:45 PM	8	25	0	0	0	33	0	38	11	0	0	49	0	0	0	0	0	0	10	0	3	0	0	13	95
Hourly Total	21	133	0	0	0	154	0	133	39	0	0	172	0	0	0	0	0	0	42	0	23	0	0	65	391
Grand Total	473	2213	2	0	1	2688	6	2175	593	0	0	2774	2	3	5	0	4	10	716	1	486	0	15	1203	6675
Approach %	17.6	82.3	0.1	0.0	-	-	0.2	78.4	21.4	0.0	-	-	20.0	30.0	50.0	0.0	-	-	59.5	0.1	40.4	0.0	-	-	-
Total %	7.1	33.2	0.0	0.0	-	40.3	0.1	32.6	8.9	0.0	-	41.6	0.0	0.0	0.1	0.0	-	0.1	10.7	0.0	7.3	0.0	-	18.0	-
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% 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	471	2128	2	0	-	2601	6	2093	574	0	-	2673	2	3	5	0	-	10	698	1	479	0	-	1178	6462
% Cars & Light Goods	99.6	96.2	100.0	-	-	96.8	100.0	96.2	96.8	-	-	96.4	100.0	100.0	100.0	-	-	100.0	97.5	100.0	98.6	-	-	97.9	96.8
Buses	0	39	0	0	-	39	0	33	3	0	-	36	0	0	0	0	-	0	2	0	1	0	-	3	78
% Buses	0.0	1.8	0.0	-	-	1.5	0.0	1.5	0.5	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.2	-	-	0.2	1.2
Single-Unit Trucks	1	40	0	0	-	41	0	40	9	0	-	49	0	0	0	0	-	0	14	0	6	0	-	20	110
% Single-Unit Trucks	0.2	1.8	0.0	-	-	1.5	0.0	1.8	1.5	-	-	1.8	0.0	0.0	0.0	-	-	0.0	2.0	0.0	1.2	-	-	1.7	1.6
Articulated Trucks	1	5	0	0	-	6	0	9	5	0	-	14	0	0	0	0	-	0	2	0	0	0	-	2	22
% Articulated Trucks	0.2	0.2	0.0	-	-	0.2	0.0	0.4	0.8	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	-	0.2	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.3	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	15	-	-
% 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: Trafalgar Road & Boundary Road East
Site Code: 220694
Start Date: 03/09/2023



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: Trafalgar Road & Boundary Road East
Site Code: 220694
Start Date: 03/09/2023

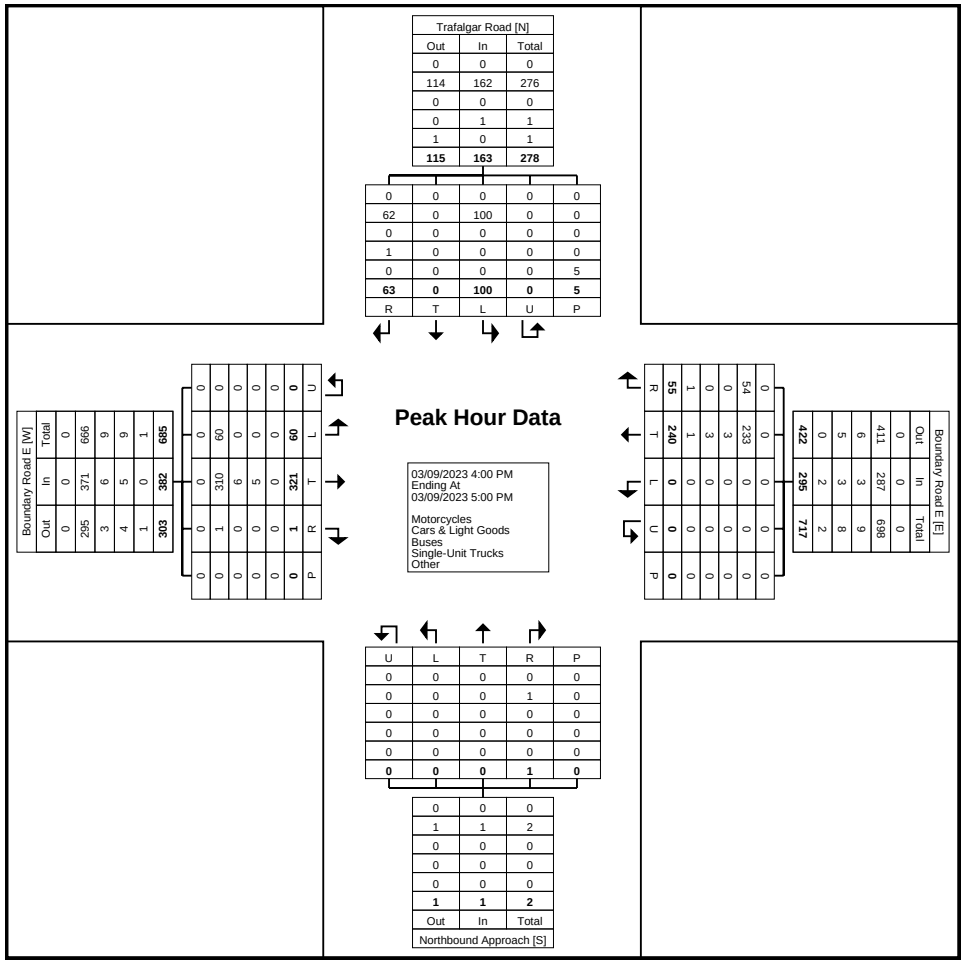
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Boundary Road E Eastbound						Boundary Road E Westbound						Northbound Approach Northbound						Trafalgar Road 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	12	77	1	0	0	90	0	72	17	0	0	89	0	0	0	0	0	0	25	0	18	0	2	43	222
4:15 PM	18	86	0	0	0	104	0	64	18	0	0	82	0	0	1	0	0	1	22	0	15	0	0	37	224
4:30 PM	16	79	0	0	0	95	0	55	11	0	0	66	0	0	0	0	0	0	27	0	20	0	0	47	208
4:45 PM	14	79	0	0	0	93	0	49	9	0	0	58	0	0	0	0	0	0	26	0	10	0	3	36	187
Total	60	321	1	0	0	382	0	240	55	0	0	295	0	0	1	0	0	1	100	0	63	0	5	163	841
Approach %	15.7	84.0	0.3	0.0	-	-	0.0	81.4	18.6	0.0	-	-	0.0	0.0	100.0	0.0	-	-	61.3	0.0	38.7	0.0	-	-	-
Total %	7.1	38.2	0.1	0.0	-	45.4	0.0	28.5	6.5	0.0	-	35.1	0.0	0.0	0.1	0.0	-	0.1	11.9	0.0	7.5	0.0	-	19.4	-
PHF	0.833	0.933	0.250	0.000	-	0.918	0.000	0.833	0.764	0.000	-	0.829	0.000	0.000	0.250	0.000	-	0.250	0.926	0.000	0.788	0.000	-	0.867	0.939
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
Cars & Light Goods	60	310	1	0	-	371	0	233	54	0	-	287	0	0	1	0	-	1	100	0	62	0	-	162	821
% Cars & Light Goods	100.0	96.6	100.0	-	-	97.1	-	97.1	98.2	-	-	97.3	-	-	100.0	-	-	100.0	100.0	-	98.4	-	-	99.4	97.6
Buses	0	6	0	0	-	6	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	9
% Buses	0.0	1.9	0.0	-	-	1.6	-	1.3	0.0	-	-	1.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.1
Single-Unit Trucks	0	5	0	0	-	5	0	3	0	0	-	3	0	0	0	0	-	0	0	0	1	0	-	1	9
% Single-Unit Trucks	0.0	1.6	0.0	-	-	1.3	-	1.3	0.0	-	-	1.0	-	-	0.0	-	-	0.0	0.0	-	1.6	-	-	0.6	1.1
Articulated Trucks	0	0	0	0	-	0	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	-	0.4	1.8	-	-	0.7	-	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.2
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Boundary Road East
Site Code: 220694
Start Date: 03/09/2023



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: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Data

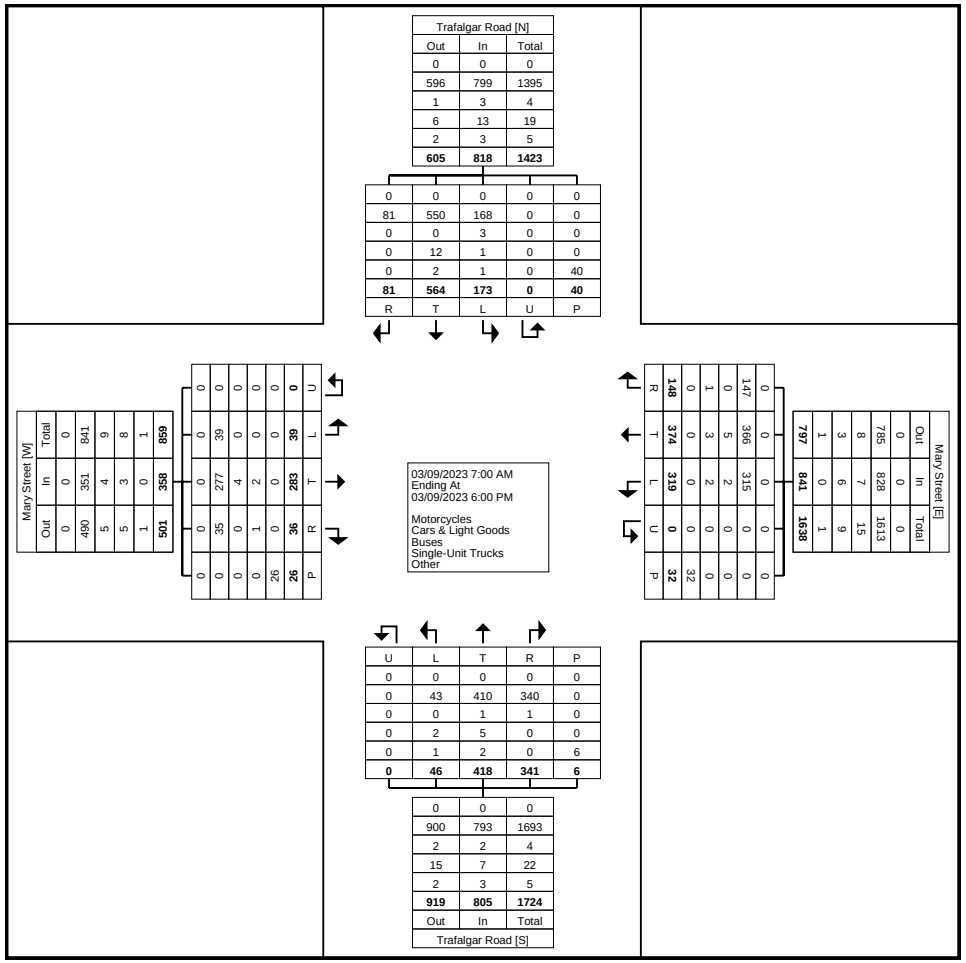
Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	2	1	0	0	4	7	5	2	0	1	14	1	10	2	0	0	13	0	8	1	0	1	9	40
7:15 AM	0	3	0	0	0	3	7	1	0	0	0	8	0	9	8	0	0	17	4	8	1	0	0	13	41
7:30 AM	1	5	0	0	0	6	4	4	1	0	2	9	0	19	10	0	0	29	6	6	1	0	0	13	57
7:45 AM	0	10	0	0	0	10	11	9	8	0	1	28	3	28	18	0	0	49	5	9	2	0	0	16	103
Hourly Total	2	20	1	0	0	23	29	19	11	0	4	59	4	66	38	0	0	108	15	31	5	0	1	51	241
8:00 AM	1	13	1	0	0	15	6	10	8	0	1	24	2	8	12	0	0	22	1	14	2	0	2	17	78
8:15 AM	0	11	1	0	0	12	8	20	3	0	0	31	3	13	16	0	0	32	4	6	0	0	0	10	85
8:30 AM	0	5	0	0	2	5	7	6	7	0	0	20	1	11	23	0	0	35	3	12	0	0	0	15	75
8:45 AM	1	7	2	0	0	10	6	10	3	0	0	19	0	11	15	0	0	26	5	12	1	0	0	18	73
Hourly Total	2	36	4	0	2	42	27	46	21	0	1	94	6	43	66	0	0	115	13	44	3	0	2	60	311
9:00 AM	1	6	1	0	0	8	14	13	5	0	1	32	2	18	19	0	0	39	7	12	2	0	2	21	100
9:15 AM	2	9	1	0	2	12	13	20	11	0	5	44	4	10	4	0	0	18	9	16	4	0	5	29	103
9:30 AM	2	7	1	0	0	10	6	12	3	0	0	21	0	10	11	0	1	21	2	23	1	0	0	26	78
9:45 AM	0	5	2	0	0	7	12	6	2	0	0	20	1	7	5	0	0	13	6	13	1	0	0	20	60
Hourly Total	5	27	5	0	2	37	45	51	21	0	6	117	7	45	39	0	1	91	24	64	8	0	7	96	341
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	8	1	0	0	9	9	8	6	0	2	23	0	15	10	0	0	25	3	17	3	0	0	23	80
11:15 AM	2	12	2	0	0	16	5	8	5	0	0	18	1	13	4	0	0	18	5	14	1	0	1	20	72
11:30 AM	0	3	0	0	1	3	5	6	6	0	2	17	3	9	3	0	2	15	9	8	1	0	0	18	53
11:45 AM	1	8	1	0	0	10	6	10	6	0	0	22	1	15	8	0	0	24	2	17	2	0	0	21	77
Hourly Total	3	31	4	0	1	38	25	32	23	0	4	80	5	52	25	0	2	82	19	56	7	0	1	82	282
12:00 PM	0	11	0	0	2	11	9	18	6	0	0	33	3	10	10	0	0	23	5	21	2	0	2	28	95
12:15 PM	2	6	1	0	1	9	13	11	2	0	0	26	0	7	5	0	0	12	7	19	4	0	1	30	77
12:30 PM	4	6	0	0	0	10	7	14	2	0	0	23	0	11	9	0	0	20	6	17	2	0	1	25	78
12:45 PM	5	11	2	0	0	18	14	10	7	0	1	31	0	21	14	0	1	35	5	17	2	0	0	24	108
Hourly Total	11	34	3	0	3	48	43	53	17	0	1	113	3	49	38	0	1	90	23	74	10	0	4	107	358
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	9	2	0	1	15	8	17	2	0	1	27	3	12	7	0	0	22	5	28	4	0	2	37	101
3:15 PM	1	17	1	0	3	19	14	13	3	0	0	30	2	12	14	0	1	28	8	13	4	0	0	25	102
3:30 PM	2	12	2	0	1	16	13	20	3	0	5	36	6	13	11	0	0	30	9	31	12	0	7	52	134
3:45 PM	0	10	3	0	4	13	17	23	6	0	2	46	1	14	14	0	1	29	8	15	8	0	2	31	119
Hourly Total	7	48	8	0	9	63	52	73	14	0	8	139	12	51	46	0	2	109	30	87	28	0	11	145	456
4:00 PM	1	12	4	0	1	17	14	19	6	0	0	39	0	20	7	0	0	27	7	31	5	0	0	43	126
4:15 PM	2	11	2	0	0	15	12	17	4	0	0	33	1	16	20	0	0	37	10	33	2	0	0	45	130
4:30 PM	1	14	2	0	2	17	17	12	7	0	3	36	1	18	11	0	0	30	6	36	6	0	3	48	131

4:45 PM	0	18	1	0	4	19	14	13	4	0	1	31	0	16	9	0	0	25	10	22	3	0	5	35	110
Hourly Total	4	55	9	0	7	68	57	61	21	0	4	139	2	70	47	0	0	119	33	122	16	0	8	171	497
5:00 PM	1	10	1	0	0	12	13	20	7	0	2	40	2	7	17	0	0	26	6	30	2	0	1	38	116
5:15 PM	1	10	0	0	1	11	15	8	4	0	2	27	1	10	9	0	0	20	4	17	0	0	3	21	79
5:30 PM	0	7	0	0	0	7	4	7	6	0	0	17	2	13	10	0	0	25	2	19	2	0	0	23	72
5:45 PM	3	5	1	0	1	9	9	4	3	0	0	16	2	12	6	0	0	20	4	20	0	0	2	24	69
Hourly Total	5	32	2	0	2	39	41	39	20	0	4	100	7	42	42	0	0	91	16	86	4	0	6	106	336
Grand Total	39	283	36	0	26	358	319	374	148	0	32	841	46	418	341	0	6	805	173	564	81	0	40	818	2822
Approach %	10.9	79.1	10.1	0.0	-	-	37.9	44.5	17.6	0.0	-	-	5.7	51.9	42.4	0.0	-	-	21.1	68.9	9.9	0.0	-	-	-
Total %	1.4	10.0	1.3	0.0	-	12.7	11.3	13.3	5.2	0.0	-	29.8	1.6	14.8	12.1	0.0	-	28.5	6.1	20.0	2.9	0.0	-	29.0	-
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	39	277	35	0	-	351	315	366	147	0	-	828	43	410	340	0	-	793	168	550	81	0	-	799	2771
% Cars & Light Goods	100.0	97.9	97.2	-	-	98.0	98.7	97.9	99.3	-	-	98.5	93.5	98.1	99.7	-	-	98.5	97.1	97.5	100.0	-	-	97.7	98.2
Buses	0	4	0	0	-	4	2	5	0	0	-	7	0	1	1	0	-	2	3	0	0	0	-	3	16
% Buses	0.0	1.4	0.0	-	-	1.1	0.6	1.3	0.0	-	-	0.8	0.0	0.2	0.3	-	-	0.2	1.7	0.0	0.0	-	-	0.4	0.6
Single-Unit Trucks	0	2	1	0	-	3	2	3	1	0	-	6	2	5	0	0	-	7	1	12	0	0	-	13	29
% Single-Unit Trucks	0.0	0.7	2.8	-	-	0.8	0.6	0.8	0.7	-	-	0.7	4.3	1.2	0.0	-	-	0.9	0.6	2.1	0.0	-	-	1.6	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	1	2	0	0	-	3	0	2	0	0	-	2	5
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.2	0.5	0.0	-	-	0.4	0.0	0.4	0.0	-	-	0.2	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6	0.0	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	26	-	-	-	-	-	32	-	-	-	-	-	6	-	-	-	-	-	40	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023



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: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023

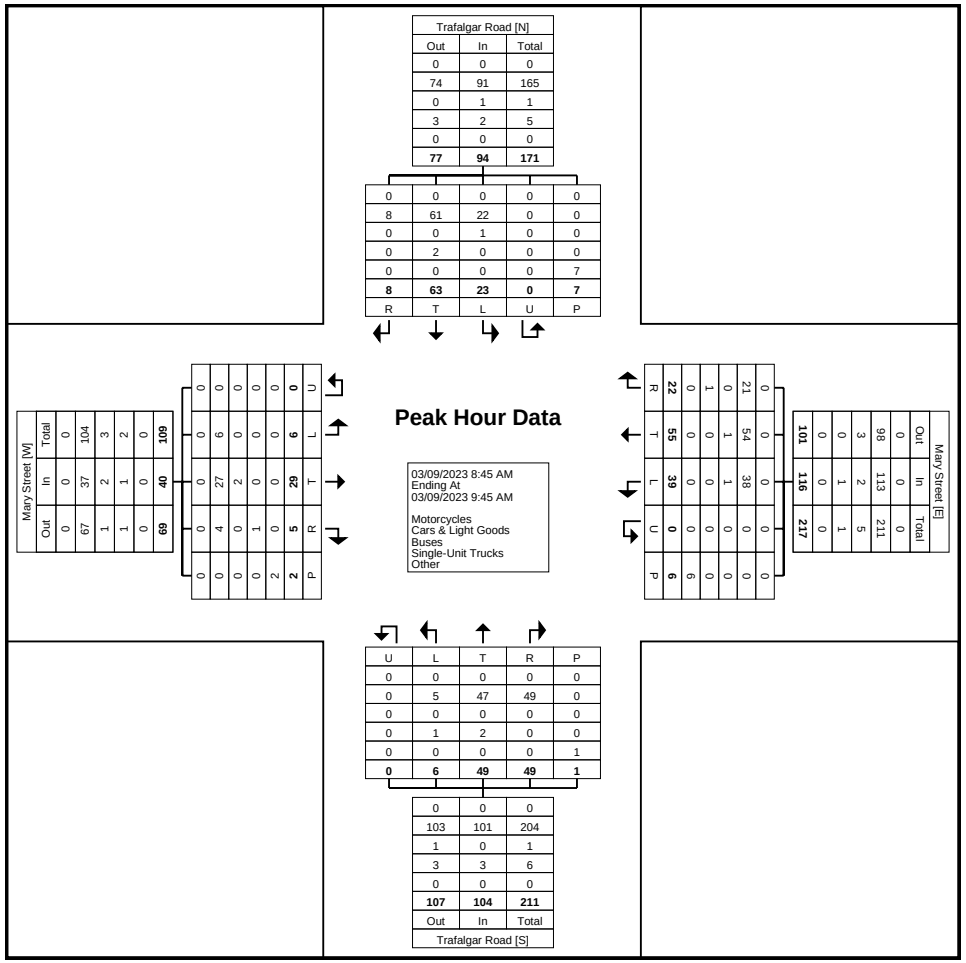
Turning Movement Peak Hour Data (8:45 AM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road 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
8:45 AM	1	7	2	0	0	10	6	10	3	0	0	19	0	11	15	0	0	26	5	12	1	0	0	18	73
9:00 AM	1	6	1	0	0	8	14	13	5	0	1	32	2	18	19	0	0	39	7	12	2	0	2	21	100
9:15 AM	2	9	1	0	2	12	13	20	11	0	5	44	4	10	4	0	0	18	9	16	4	0	5	29	103
9:30 AM	2	7	1	0	0	10	6	12	3	0	0	21	0	10	11	0	1	21	2	23	1	0	0	26	78
Total	6	29	5	0	2	40	39	55	22	0	6	116	6	49	49	0	1	104	23	63	8	0	7	94	354
Approach %	15.0	72.5	12.5	0.0	-	-	33.6	47.4	19.0	0.0	-	-	5.8	47.1	47.1	0.0	-	-	24.5	67.0	8.5	0.0	-	-	-
Total %	1.7	8.2	1.4	0.0	-	11.3	11.0	15.5	6.2	0.0	-	32.8	1.7	13.8	13.8	0.0	-	29.4	6.5	17.8	2.3	0.0	-	26.6	-
PHF	0.750	0.806	0.625	0.000	-	0.833	0.696	0.688	0.500	0.000	-	0.659	0.375	0.681	0.645	0.000	-	0.667	0.639	0.685	0.500	0.000	-	0.810	0.859
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	6	27	4	0	-	37	38	54	21	0	-	113	5	47	49	0	-	101	22	61	8	0	-	91	342
% Cars & Light Goods	100.0	93.1	80.0	-	-	92.5	97.4	98.2	95.5	-	-	97.4	83.3	95.9	100.0	-	-	97.1	95.7	96.8	100.0	-	-	96.8	96.6
Buses	0	2	0	0	-	2	1	1	0	0	-	2	0	0	0	0	-	0	1	0	0	0	-	1	5
% Buses	0.0	6.9	0.0	-	-	5.0	2.6	1.8	0.0	-	-	1.7	0.0	0.0	0.0	-	-	0.0	4.3	0.0	0.0	-	-	1.1	1.4
Single-Unit Trucks	0	0	1	0	-	1	0	0	1	0	-	1	1	2	0	0	-	3	0	2	0	0	-	2	7
% Single-Unit Trucks	0.0	0.0	20.0	-	-	2.5	0.0	0.0	4.5	-	-	0.9	16.7	4.1	0.0	-	-	2.9	0.0	3.2	0.0	-	-	2.1	2.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023



Turning Movement Peak Hour Data Plot (8:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023

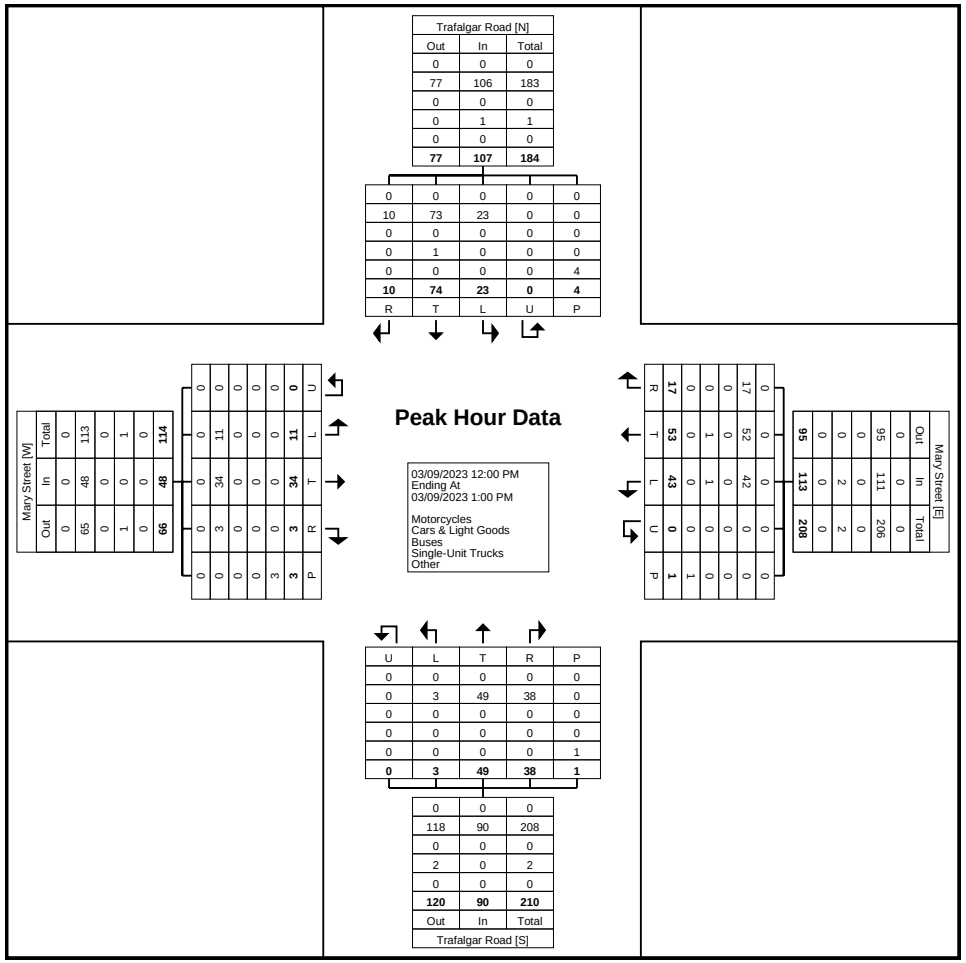
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road 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
12:00 PM	0	11	0	0	2	11	9	18	6	0	0	33	3	10	10	0	0	23	5	21	2	0	2	28	95
12:15 PM	2	6	1	0	1	9	13	11	2	0	0	26	0	7	5	0	0	12	7	19	4	0	1	30	77
12:30 PM	4	6	0	0	0	10	7	14	2	0	0	23	0	11	9	0	0	20	6	17	2	0	1	25	78
12:45 PM	5	11	2	0	0	18	14	10	7	0	1	31	0	21	14	0	1	35	5	17	2	0	0	24	108
Total	11	34	3	0	3	48	43	53	17	0	1	113	3	49	38	0	1	90	23	74	10	0	4	107	358
Approach %	22.9	70.8	6.3	0.0	-	-	38.1	46.9	15.0	0.0	-	-	3.3	54.4	42.2	0.0	-	-	21.5	69.2	9.3	0.0	-	-	-
Total %	3.1	9.5	0.8	0.0	-	13.4	12.0	14.8	4.7	0.0	-	31.6	0.8	13.7	10.6	0.0	-	25.1	6.4	20.7	2.8	0.0	-	29.9	-
PHF	0.550	0.773	0.375	0.000	-	0.667	0.768	0.736	0.607	0.000	-	0.856	0.250	0.583	0.679	0.000	-	0.643	0.821	0.881	0.625	0.000	-	0.892	0.829
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	11	34	3	0	-	48	42	52	17	0	-	111	3	49	38	0	-	90	23	73	10	0	-	106	355
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	97.7	98.1	100.0	-	-	98.2	100.0	100.0	100.0	-	-	100.0	100.0	98.6	100.0	-	-	99.1	99.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	1	1	0	0	-	2	0	0	0	0	-	0	0	1	0	0	-	1	3
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	2.3	1.9	0.0	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.0	1.4	0.0	-	-	0.9	0.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023



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: Trafalgar Road & Mary Street
Site Code: 220694
Start Date: 03/09/2023

Turning Movement Peak Hour Data (3:30 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road 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
3:30 PM	2	12	2	0	1	16	13	20	3	0	5	36	6	13	11	0	0	30	9	31	12	0	7	52	134
3:45 PM	0	10	3	0	4	13	17	23	6	0	2	46	1	14	14	0	1	29	8	15	8	0	2	31	119
4:00 PM	1	12	4	0	1	17	14	19	6	0	0	39	0	20	7	0	0	27	7	31	5	0	0	43	126
4:15 PM	2	11	2	0	0	15	12	17	4	0	0	33	1	16	20	0	0	37	10	33	2	0	0	45	130
Total	5	45	11	0	6	61	56	79	19	0	7	154	8	63	52	0	1	123	34	110	27	0	9	171	509
Approach %	8.2	73.8	18.0	0.0	-	-	36.4	51.3	12.3	0.0	-	-	6.5	51.2	42.3	0.0	-	-	19.9	64.3	15.8	0.0	-	-	-
Total %	1.0	8.8	2.2	0.0	-	12.0	11.0	15.5	3.7	0.0	-	30.3	1.6	12.4	10.2	0.0	-	24.2	6.7	21.6	5.3	0.0	-	33.6	-
PHF	0.625	0.938	0.688	0.000	-	0.897	0.824	0.859	0.792	0.000	-	0.837	0.333	0.788	0.650	0.000	-	0.831	0.850	0.833	0.563	0.000	-	0.822	0.950
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	5	45	11	0	-	61	55	77	19	0	-	151	8	62	52	0	-	122	33	108	27	0	-	168	502
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	98.2	97.5	100.0	-	-	98.1	100.0	98.4	100.0	-	-	99.2	97.1	98.2	100.0	-	-	98.2	98.6
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	1.3	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Single-Unit Trucks	0	0	0	0	-	0	1	1	0	0	-	2	0	0	0	0	-	0	0	1	0	0	-	1	3
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	1.8	1.3	0.0	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.6	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.6	0.0	-	-	0.8	0.0	0.9	0.0	-	-	0.6	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.9	0.0	0.0	-	-	0.6	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	7	-	-	-	-	-	1	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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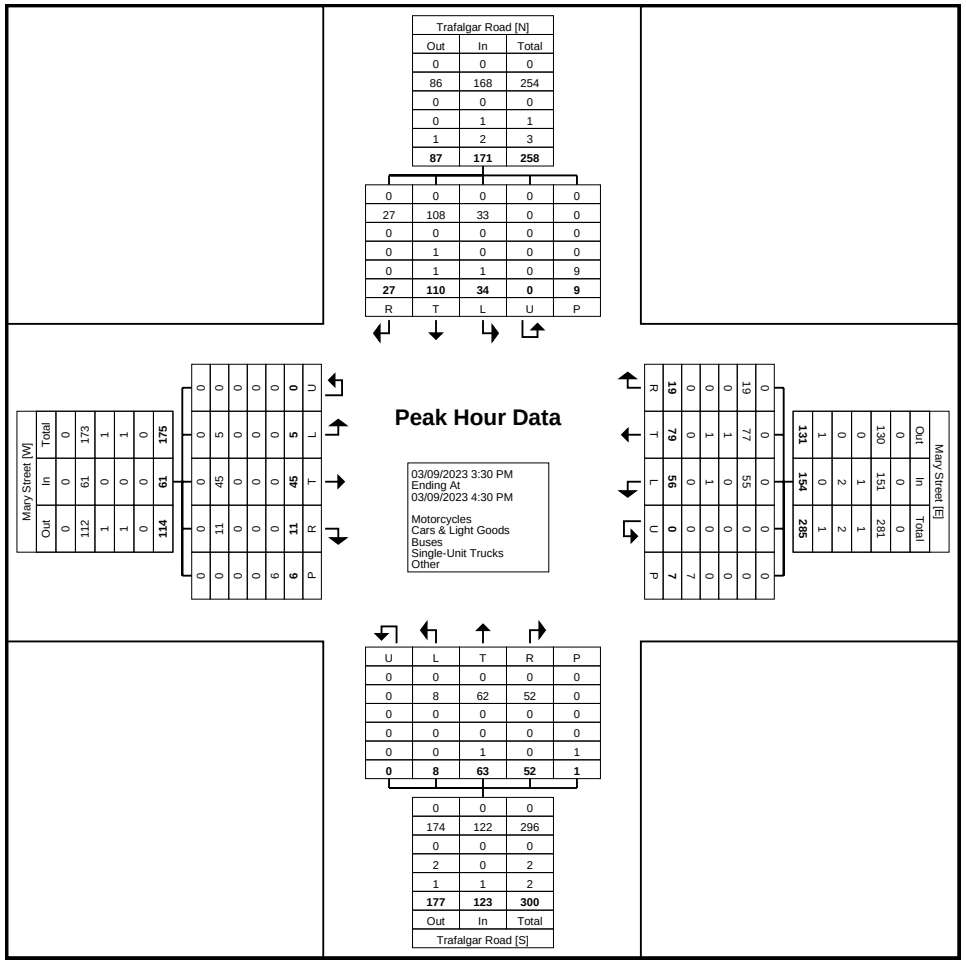


Turning Movement Peak Hour Data Plot (3:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148 - Saturday
Site Code: 220694
Start Date: 03/04/2023

Turning Movement Data

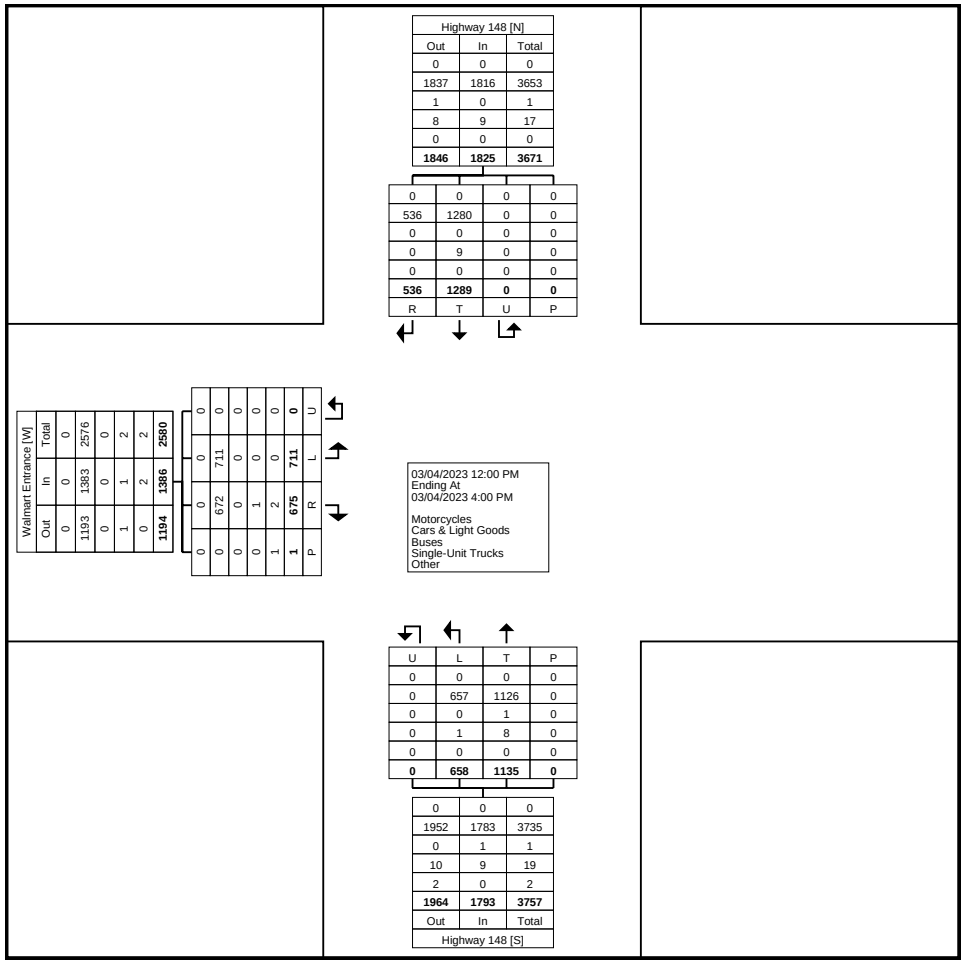
Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	38	34	0	0	72	40	63	0	0	103	79	29	0	0	108	283
12:15 PM	33	27	0	0	60	22	75	0	0	97	81	33	0	0	114	271
12:30 PM	40	30	0	0	70	38	72	0	0	110	70	34	0	0	104	284
12:45 PM	46	39	0	0	85	38	70	0	0	108	83	35	0	0	118	311
Hourly Total	157	130	0	0	287	138	280	0	0	418	313	131	0	0	444	1149
1:00 PM	47	37	0	0	84	44	72	0	0	116	66	27	0	0	93	293
1:15 PM	39	31	0	0	70	42	55	0	0	97	76	33	0	0	109	276
1:30 PM	50	43	0	0	93	47	67	0	0	114	84	42	0	0	126	333
1:45 PM	50	57	0	0	107	37	67	0	0	104	73	36	0	0	109	320
Hourly Total	186	168	0	0	354	170	261	0	0	431	299	138	0	0	437	1222
2:00 PM	34	47	0	0	81	49	62	0	0	111	93	37	0	0	130	322
2:15 PM	47	48	0	0	95	44	62	0	0	106	83	35	0	0	118	319
2:30 PM	48	41	0	1	89	44	71	0	0	115	84	34	0	0	118	322
2:45 PM	50	45	0	0	95	33	66	0	0	99	81	47	0	0	128	322
Hourly Total	179	181	0	1	360	170	261	0	0	431	341	153	0	0	494	1285
3:00 PM	50	50	0	0	100	47	81	0	0	128	106	35	0	0	141	369
3:15 PM	41	49	0	0	90	59	88	0	0	147	74	26	0	0	100	337
3:30 PM	50	52	0	0	102	31	77	0	0	108	86	26	0	0	112	322
3:45 PM	48	45	0	0	93	43	87	0	0	130	70	27	0	0	97	320
Hourly Total	189	196	0	0	385	180	333	0	0	513	336	114	0	0	450	1348
Grand Total	711	675	0	1	1386	658	1135	0	0	1793	1289	536	0	0	1825	5004
Approach %	51.3	48.7	0.0	-	-	36.7	63.3	0.0	-	-	70.6	29.4	0.0	-	-	-
Total %	14.2	13.5	0.0	-	27.7	13.1	22.7	0.0	-	35.8	25.8	10.7	0.0	-	36.5	-
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	711	672	0	-	1383	657	1126	0	-	1783	1280	536	0	-	1816	4982
% Cars & Light Goods	100.0	99.6	-	-	99.8	99.8	99.2	-	-	99.4	99.3	100.0	-	-	99.5	99.6
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	1	0	-	1	1	8	0	-	9	9	0	0	-	9	19
% Single-Unit Trucks	0.0	0.1	-	-	0.1	0.2	0.7	-	-	0.5	0.7	0.0	-	-	0.5	0.4
Articulated Trucks	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.3	-	-	0.1	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: Walmart Entrance & Highway 148 - Saturday
Site Code: 220694
Start Date: 03/04/2023



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: Walmart Entrance & Highway 148 - Saturday
Site Code: 220694
Start Date: 03/04/2023

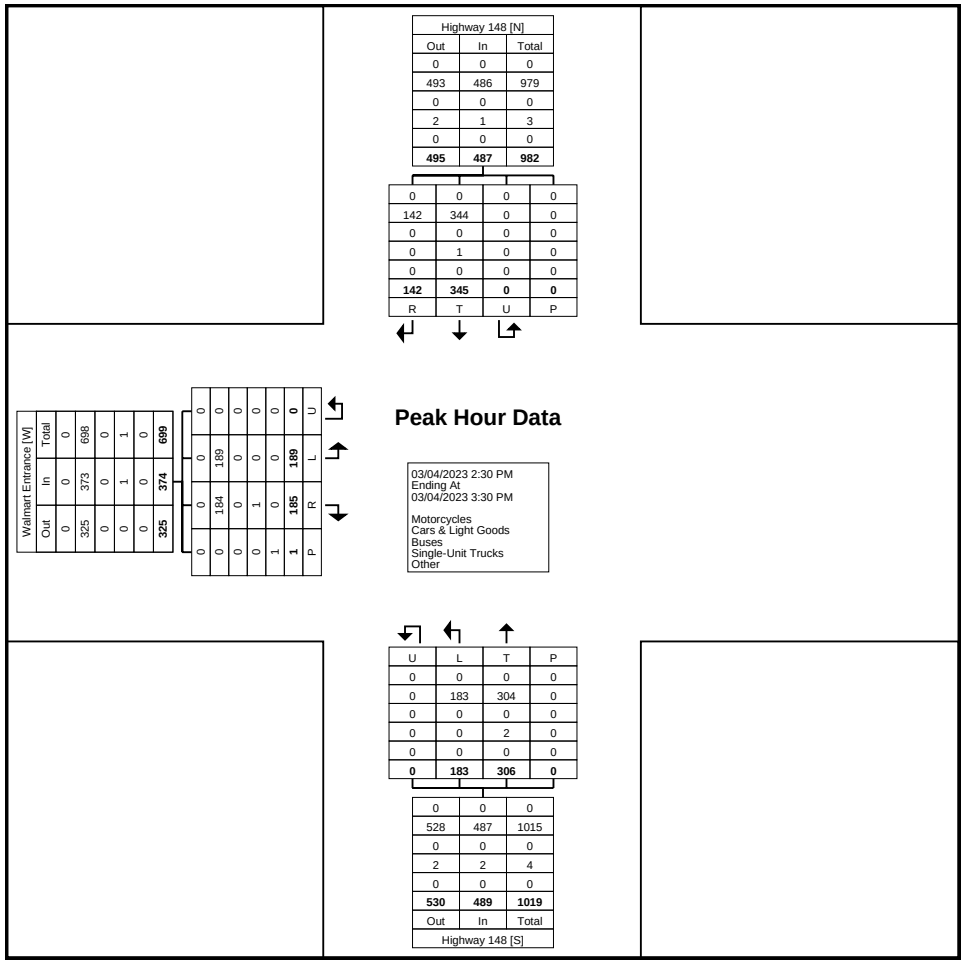
Turning Movement Peak Hour Data (2:30 PM)

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
2:30 PM	48	41	0	1	89	44	71	0	0	115	84	34	0	0	118	322
2:45 PM	50	45	0	0	95	33	66	0	0	99	81	47	0	0	128	322
3:00 PM	50	50	0	0	100	47	81	0	0	128	106	35	0	0	141	369
3:15 PM	41	49	0	0	90	59	88	0	0	147	74	26	0	0	100	337
Total	189	185	0	1	374	183	306	0	0	489	345	142	0	0	487	1350
Approach %	50.5	49.5	0.0	-	-	37.4	62.6	0.0	-	-	70.8	29.2	0.0	-	-	-
Total %	14.0	13.7	0.0	-	27.7	13.6	22.7	0.0	-	36.2	25.6	10.5	0.0	-	36.1	-
PHF	0.945	0.925	0.000	-	0.935	0.775	0.869	0.000	-	0.832	0.814	0.755	0.000	-	0.863	0.915
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	189	184	0	-	373	183	304	0	-	487	344	142	0	-	486	1346
% Cars & Light Goods	100.0	99.5	-	-	99.7	100.0	99.3	-	-	99.6	99.7	100.0	-	-	99.8	99.7
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	2	0	-	2	1	0	0	-	1	4
% Single-Unit Trucks	0.0	0.5	-	-	0.3	0.0	0.7	-	-	0.4	0.3	0.0	-	-	0.2	0.3
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: Walmart Entrance & Highway 148 - Saturday
Site Code: 220694
Start Date: 03/04/2023



Turning Movement Peak Hour Data Plot (2:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Data

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 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	4	10	0	0	14	10	52	0	0	62	36	7	0	0	43	119
7:15 AM	7	4	0	0	11	10	69	0	0	79	42	10	0	0	52	142
7:30 AM	13	9	0	0	22	16	108	0	0	124	36	14	0	0	50	196
7:45 AM	5	11	0	0	16	18	157	0	0	175	54	13	0	0	67	258
Hourly Total	29	34	0	0	63	54	386	0	0	440	168	44	0	0	212	715
8:00 AM	12	9	0	0	21	21	123	0	0	144	43	8	0	0	51	216
8:15 AM	4	15	0	0	19	14	103	0	0	117	69	14	0	0	83	219
8:30 AM	13	8	0	0	21	17	111	0	0	128	55	8	0	0	63	212
8:45 AM	22	6	0	0	28	21	91	0	0	112	62	19	0	0	81	221
Hourly Total	51	38	0	0	89	73	428	0	0	501	229	49	0	0	278	868
9:00 AM	11	12	0	0	23	29	90	0	0	119	57	20	0	1	77	219
9:15 AM	14	14	0	0	28	36	96	0	0	132	71	20	0	0	91	251
9:30 AM	25	27	0	0	52	31	88	0	0	119	71	32	0	0	103	274
9:45 AM	24	25	0	0	49	31	110	0	0	141	74	26	0	0	100	290
Hourly Total	74	78	0	0	152	127	384	0	0	511	273	98	0	1	371	1034
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	30	23	0	0	53	41	77	0	0	118	83	33	0	0	116	287
11:15 AM	26	35	0	0	61	35	104	0	0	139	91	39	0	0	130	330
11:30 AM	36	46	0	0	82	29	89	0	0	118	100	35	0	0	135	335
11:45 AM	30	38	0	0	68	31	98	0	0	129	103	41	0	0	144	341
Hourly Total	122	142	0	0	264	136	368	0	0	504	377	148	0	0	525	1293
12:00 PM	36	47	0	0	83	34	74	0	0	108	98	29	0	0	127	318
12:15 PM	45	29	0	0	74	28	89	0	0	117	95	32	0	0	127	318
12:30 PM	45	34	0	0	79	28	89	0	0	117	92	32	0	0	124	320
12:45 PM	38	47	0	0	85	35	101	0	0	136	103	27	0	0	130	351
Hourly Total	164	157	0	0	321	125	353	0	0	478	388	120	0	0	508	1307
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	32	49	0	0	81	23	67	0	0	90	106	32	0	0	138	309
3:15 PM	41	48	0	0	89	27	74	0	0	101	107	36	0	0	143	333
3:30 PM	21	60	0	0	81	25	75	0	0	100	110	22	0	0	132	313
3:45 PM	35	52	0	0	87	36	93	0	0	129	126	25	0	0	151	367
Hourly Total	129	209	0	0	338	111	309	0	0	420	449	115	0	0	564	1322
4:00 PM	33	58	0	0	91	23	96	0	0	119	143	26	0	0	169	379
4:15 PM	31	71	0	0	102	32	91	0	0	123	114	30	0	0	144	369
4:30 PM	35	47	0	0	82	23	94	0	0	117	120	26	0	0	146	345
4:45 PM	19	54	0	0	73	22	66	0	0	88	122	29	0	0	151	312

Hourly Total	118	230	0	0	348	100	347	0	0	447	499	111	0	0	610	1405
5:00 PM	29	37	0	0	66	16	68	0	0	84	146	30	0	0	176	326
5:15 PM	23	42	0	0	65	25	71	0	0	96	122	29	0	0	151	312
5:30 PM	29	48	0	0	77	21	76	0	0	97	92	31	0	0	123	297
5:45 PM	22	32	0	0	54	21	57	0	0	78	82	23	0	0	105	237
Hourly Total	103	159	0	0	262	83	272	0	0	355	442	113	0	0	555	1172
Grand Total	790	1047	0	0	1837	809	2847	0	0	3656	2825	798	0	1	3623	9116
Approach %	43.0	57.0	0.0	-	-	22.1	77.9	0.0	-	-	78.0	22.0	0.0	-	-	-
Total %	8.7	11.5	0.0	-	20.2	8.9	31.2	0.0	-	40.1	31.0	8.8	0.0	-	39.7	-
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	777	1032	0	-	1809	795	2780	0	-	3575	2754	792	0	-	3546	8930
% Cars & Light Goods	98.4	98.6	-	-	98.5	98.3	97.6	-	-	97.8	97.5	99.2	-	-	97.9	98.0
Buses	0	3	0	-	3	0	19	0	-	19	14	1	0	-	15	37
% Buses	0.0	0.3	-	-	0.2	0.0	0.7	-	-	0.5	0.5	0.1	-	-	0.4	0.4
Single-Unit Trucks	9	7	0	-	16	10	32	0	-	42	45	4	0	-	49	107
% Single-Unit Trucks	1.1	0.7	-	-	0.9	1.2	1.1	-	-	1.1	1.6	0.5	-	-	1.4	1.2
Articulated Trucks	4	5	0	-	9	4	16	0	-	20	11	1	0	-	12	41
% Articulated Trucks	0.5	0.5	-	-	0.5	0.5	0.6	-	-	0.5	0.4	0.1	-	-	0.3	0.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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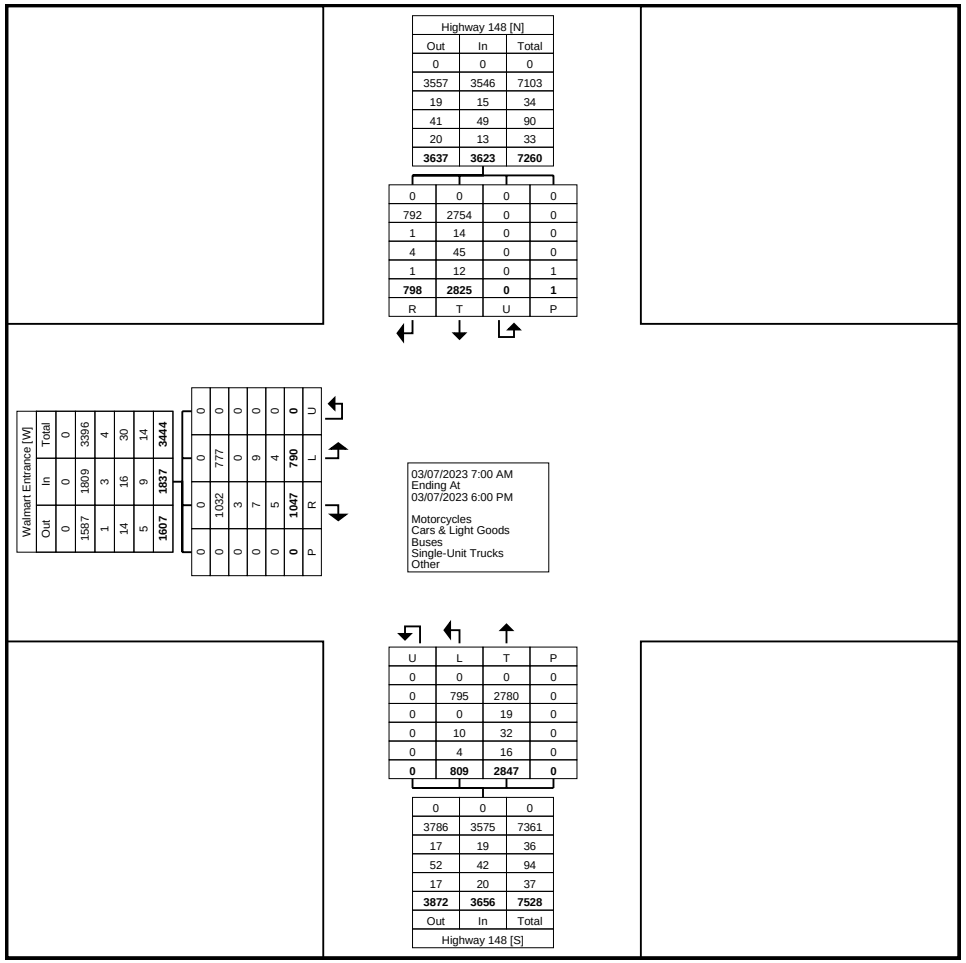
Count Name: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

Turning Movement Peak Hour Data (9:00 AM)

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
9:00 AM	11	12	0	0	23	29	90	0	0	119	57	20	0	1	77	219
9:15 AM	14	14	0	0	28	36	96	0	0	132	71	20	0	0	91	251
9:30 AM	25	27	0	0	52	31	88	0	0	119	71	32	0	0	103	274
9:45 AM	24	25	0	0	49	31	110	0	0	141	74	26	0	0	100	290
Total	74	78	0	0	152	127	384	0	0	511	273	98	0	1	371	1034
Approach %	48.7	51.3	0.0	-	-	24.9	75.1	0.0	-	-	73.6	26.4	0.0	-	-	-
Total %	7.2	7.5	0.0	-	14.7	12.3	37.1	0.0	-	49.4	26.4	9.5	0.0	-	35.9	-
PHF	0.740	0.722	0.000	-	0.731	0.882	0.873	0.000	-	0.906	0.922	0.766	0.000	-	0.900	0.891
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	71	74	0	-	145	127	376	0	-	503	264	95	0	-	359	1007
% Cars & Light Goods	95.9	94.9	-	-	95.4	100.0	97.9	-	-	98.4	96.7	96.9	-	-	96.8	97.4
Buses	0	2	0	-	2	0	2	0	-	2	1	1	0	-	2	6
% Buses	0.0	2.6	-	-	1.3	0.0	0.5	-	-	0.4	0.4	1.0	-	-	0.5	0.6
Single-Unit Trucks	1	0	0	-	1	0	3	0	-	3	4	1	0	-	5	9
% Single-Unit Trucks	1.4	0.0	-	-	0.7	0.0	0.8	-	-	0.6	1.5	1.0	-	-	1.3	0.9
Articulated Trucks	2	2	0	-	4	0	3	0	-	3	4	1	0	-	5	12
% Articulated Trucks	2.7	2.6	-	-	2.6	0.0	0.8	-	-	0.6	1.5	1.0	-	-	1.3	1.2
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	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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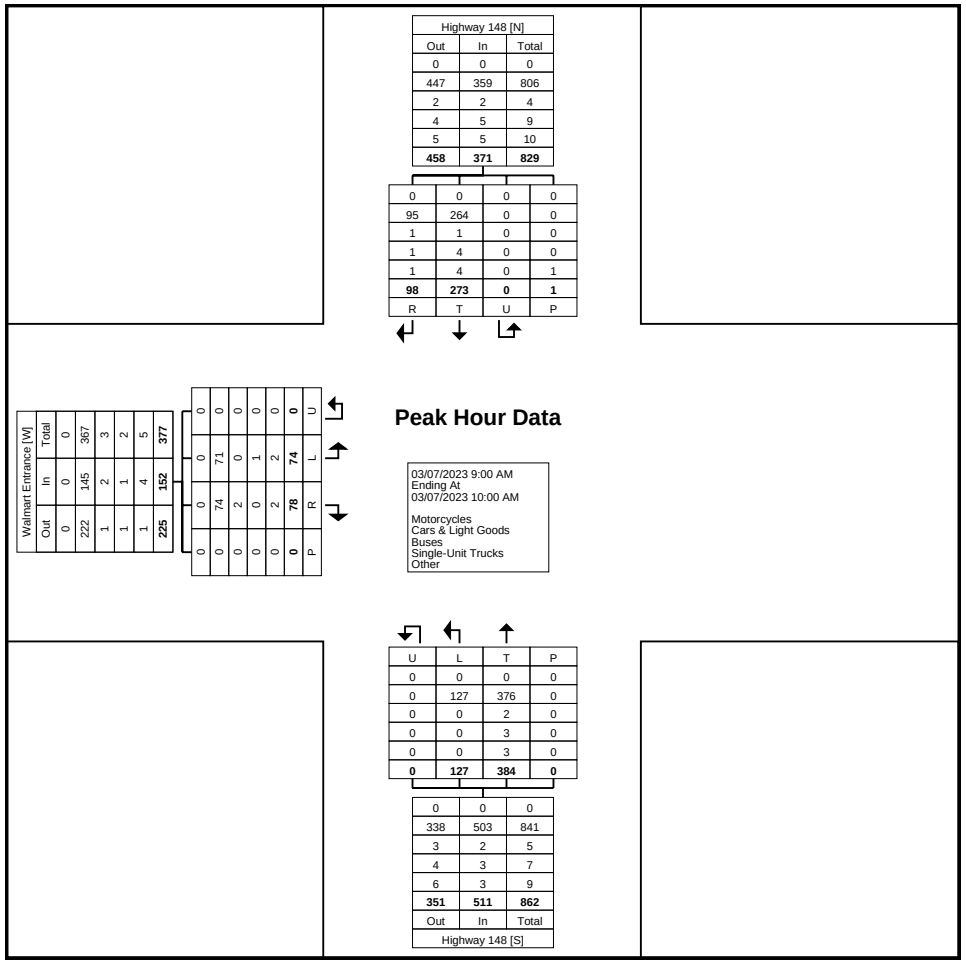
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

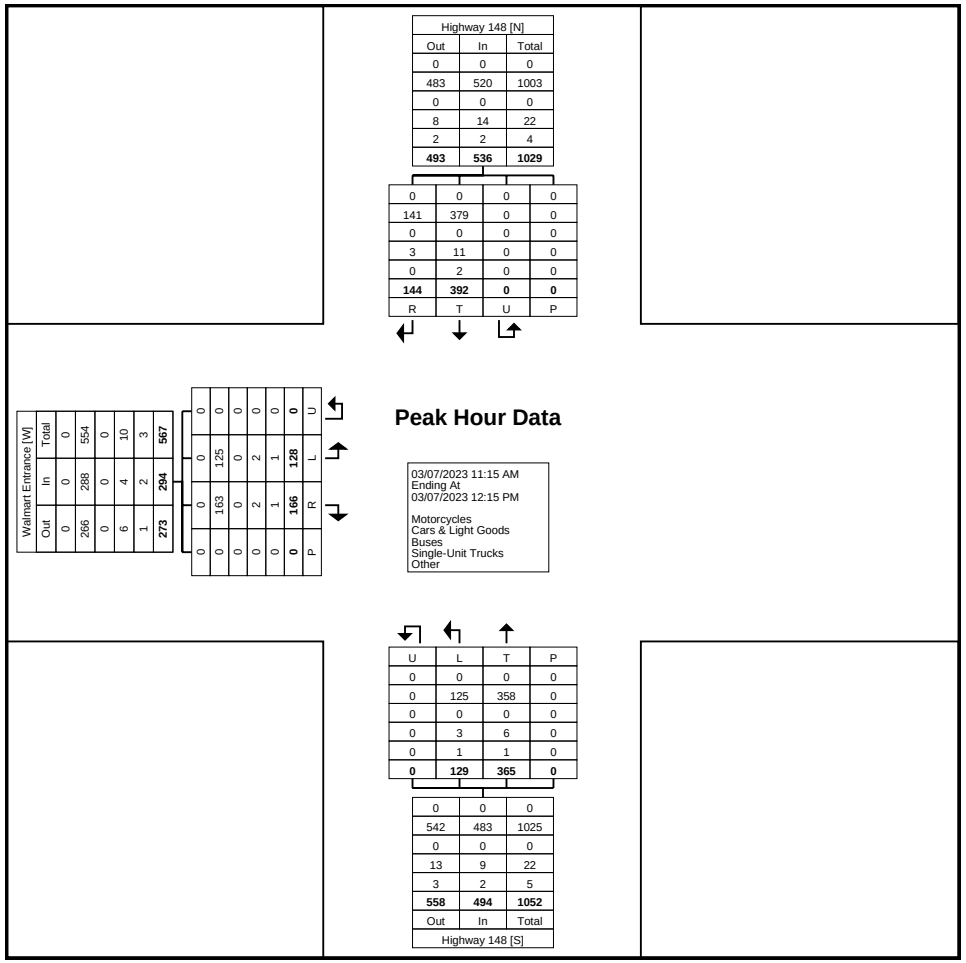
Turning Movement Peak Hour Data (11:15 AM)

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
11:15 AM	26	35	0	0	61	35	104	0	0	139	91	39	0	0	130	330
11:30 AM	36	46	0	0	82	29	89	0	0	118	100	35	0	0	135	335
11:45 AM	30	38	0	0	68	31	98	0	0	129	103	41	0	0	144	341
12:00 PM	36	47	0	0	83	34	74	0	0	108	98	29	0	0	127	318
Total	128	166	0	0	294	129	365	0	0	494	392	144	0	0	536	1324
Approach %	43.5	56.5	0.0	-	-	26.1	73.9	0.0	-	-	73.1	26.9	0.0	-	-	-
Total %	9.7	12.5	0.0	-	22.2	9.7	27.6	0.0	-	37.3	29.6	10.9	0.0	-	40.5	-
PHF	0.889	0.883	0.000	-	0.886	0.921	0.877	0.000	-	0.888	0.951	0.878	0.000	-	0.931	0.971
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	125	163	0	-	288	125	358	0	-	483	379	141	0	-	520	1291
% Cars & Light Goods	97.7	98.2	-	-	98.0	96.9	98.1	-	-	97.8	96.7	97.9	-	-	97.0	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	2	2	0	-	4	3	6	0	-	9	11	3	0	-	14	27
% Single-Unit Trucks	1.6	1.2	-	-	1.4	2.3	1.6	-	-	1.8	2.8	2.1	-	-	2.6	2.0
Articulated Trucks	1	1	0	-	2	1	1	0	-	2	2	0	0	-	2	6
% Articulated Trucks	0.8	0.6	-	-	0.7	0.8	0.3	-	-	0.4	0.5	0.0	-	-	0.4	0.5
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (11:15 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023

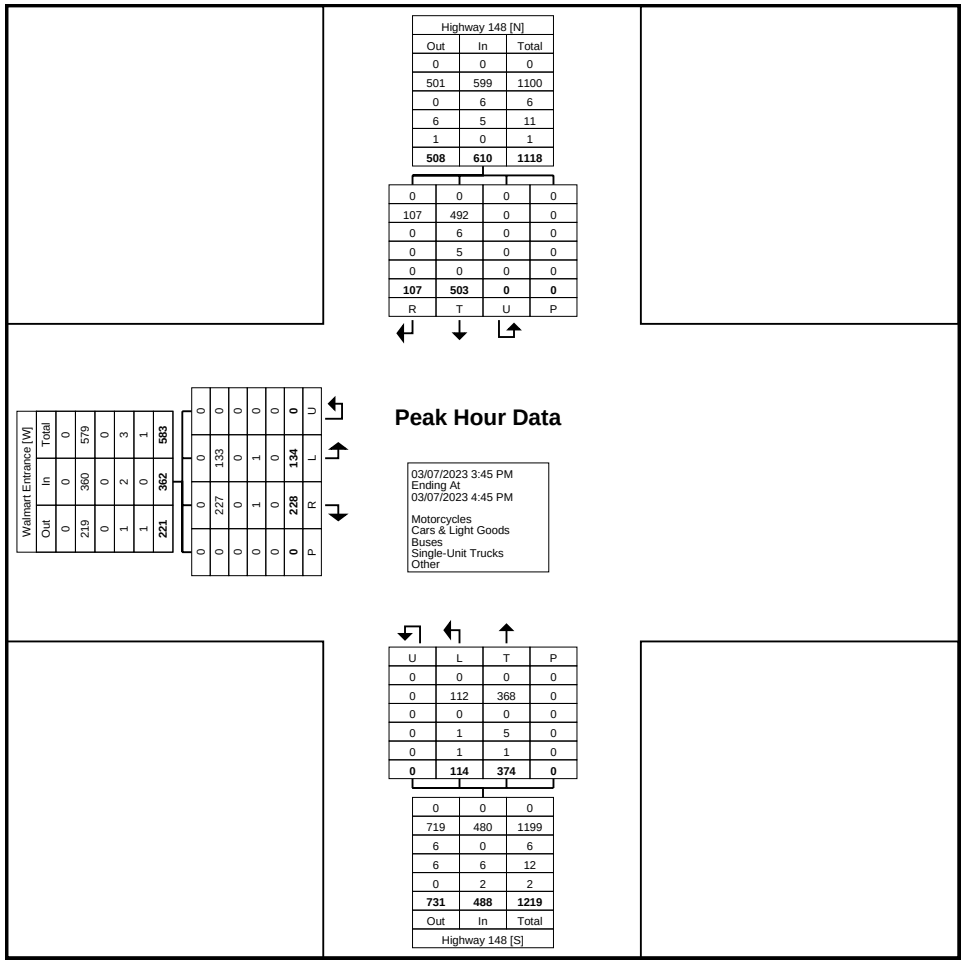
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
3:45 PM	35	52	0	0	87	36	93	0	0	129	126	25	0	0	151	367
4:00 PM	33	58	0	0	91	23	96	0	0	119	143	26	0	0	169	379
4:15 PM	31	71	0	0	102	32	91	0	0	123	114	30	0	0	144	369
4:30 PM	35	47	0	0	82	23	94	0	0	117	120	26	0	0	146	345
Total	134	228	0	0	362	114	374	0	0	488	503	107	0	0	610	1460
Approach %	37.0	63.0	0.0	-	-	23.4	76.6	0.0	-	-	82.5	17.5	0.0	-	-	-
Total %	9.2	15.6	0.0	-	24.8	7.8	25.6	0.0	-	33.4	34.5	7.3	0.0	-	41.8	-
PHF	0.957	0.803	0.000	-	0.887	0.792	0.974	0.000	-	0.946	0.879	0.892	0.000	-	0.902	0.963
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	133	227	0	-	360	112	368	0	-	480	492	107	0	-	599	1439
% Cars & Light Goods	99.3	99.6	-	-	99.4	98.2	98.4	-	-	98.4	97.8	100.0	-	-	98.2	98.6
Buses	0	0	0	-	0	0	0	0	-	0	6	0	0	-	6	6
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	1.2	0.0	-	-	1.0	0.4
Single-Unit Trucks	1	1	0	-	2	1	5	0	-	6	5	0	0	-	5	13
% Single-Unit Trucks	0.7	0.4	-	-	0.6	0.9	1.3	-	-	1.2	1.0	0.0	-	-	0.8	0.9
Articulated Trucks	0	0	0	-	0	1	1	0	-	2	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.9	0.3	-	-	0.4	0.0	0.0	-	-	0.0	0.1
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Walmart Entrance & Highway 148 - Tuesday
Site Code: 220694
Start Date: 03/07/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Forest Lea Road & TV Tower Road - Saturday
Site Code: 220694
Start Date: 04/15/2023

Turning Movement Data

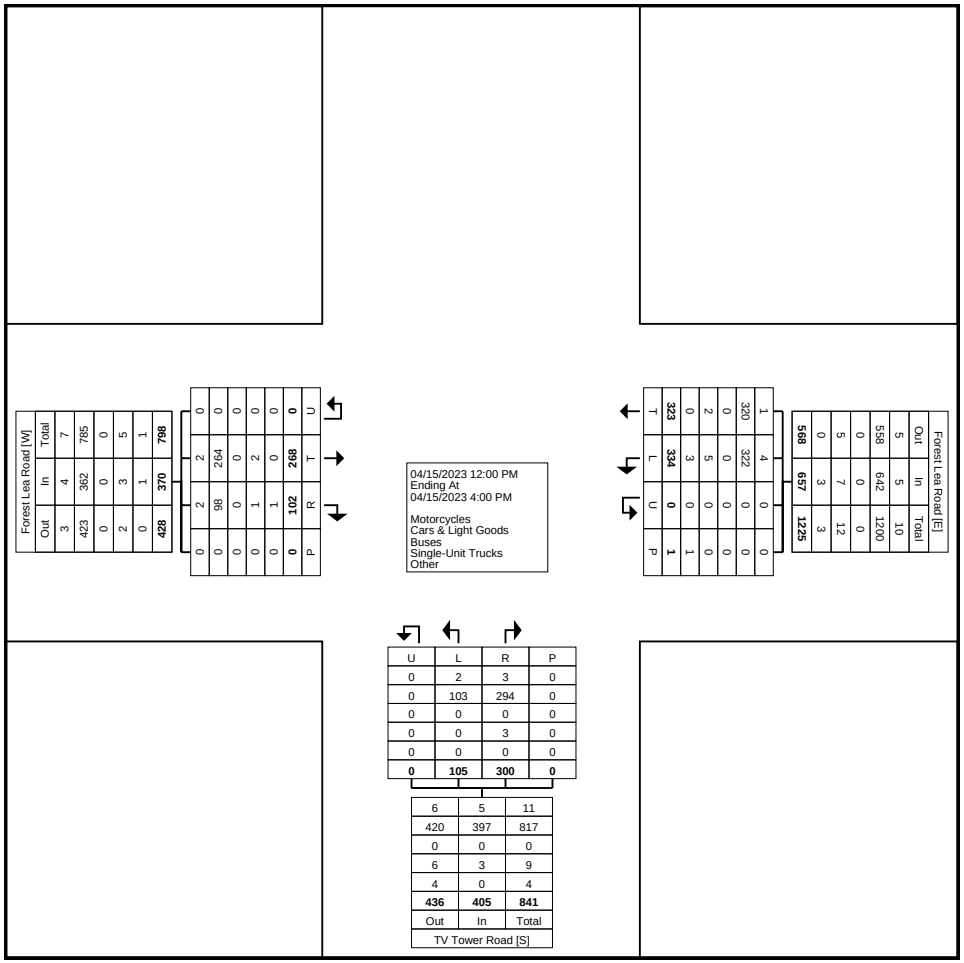
Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	21	5	0	0	26	17	26	0	1	43	6	18	0	0	24	93
12:15 PM	11	4	0	0	15	24	15	0	0	39	4	24	0	0	28	82
12:30 PM	18	7	0	0	25	26	12	0	0	38	6	19	0	0	25	88
12:45 PM	20	6	0	0	26	23	29	0	0	52	4	21	0	0	25	103
Hourly Total	70	22	0	0	92	90	82	0	1	172	20	82	0	0	102	366
1:00 PM	24	7	0	0	31	19	20	0	0	39	9	25	0	0	34	104
1:15 PM	20	3	0	0	23	12	28	0	0	40	5	11	0	0	16	79
1:30 PM	15	11	0	0	26	20	24	0	0	44	5	15	0	0	20	90
1:45 PM	16	4	0	0	20	17	21	0	0	38	4	14	0	0	18	76
Hourly Total	75	25	0	0	100	68	93	0	0	161	23	65	0	0	88	349
2:00 PM	22	8	0	0	30	19	24	0	0	43	12	20	0	0	32	105
2:15 PM	10	3	0	0	13	22	18	0	0	40	5	14	0	0	19	72
2:30 PM	10	7	0	0	17	25	20	0	0	45	9	25	0	0	34	96
2:45 PM	17	7	0	0	24	21	22	0	0	43	4	20	0	0	24	91
Hourly Total	59	25	0	0	84	87	84	0	0	171	30	79	0	0	109	364
3:00 PM	15	8	0	0	23	18	26	0	0	44	7	22	0	0	29	96
3:15 PM	18	6	0	0	24	22	8	0	0	30	14	17	0	0	31	85
3:30 PM	15	10	0	0	25	24	14	0	0	38	2	21	0	0	23	86
3:45 PM	16	6	0	0	22	25	16	0	0	41	9	14	0	0	23	86
Hourly Total	64	30	0	0	94	89	64	0	0	153	32	74	0	0	106	353
Grand Total	268	102	0	0	370	334	323	0	1	657	105	300	0	0	405	1432
Approach %	72.4	27.6	0.0	-	-	50.8	49.2	0.0	-	-	25.9	74.1	0.0	-	-	-
Total %	18.7	7.1	0.0	-	25.8	23.3	22.6	0.0	-	45.9	7.3	20.9	0.0	-	28.3	-
Motorcycles	2	2	0	-	4	4	1	0	-	5	2	3	0	-	5	14
% Motorcycles	0.7	2.0	-	-	1.1	1.2	0.3	-	-	0.8	1.9	1.0	-	-	1.2	1.0
Cars & Light Goods	264	98	0	-	362	322	320	0	-	642	103	294	0	-	397	1401
% Cars & Light Goods	98.5	96.1	-	-	97.8	96.4	99.1	-	-	97.7	98.1	98.0	-	-	98.0	97.8
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	2	1	0	-	3	5	2	0	-	7	0	3	0	-	3	13
% Single-Unit Trucks	0.7	1.0	-	-	0.8	1.5	0.6	-	-	1.1	0.0	1.0	-	-	0.7	0.9
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	1	0	-	1	3	0	0	-	3	0	0	0	-	0	4
% Bicycles on Road	0.0	1.0	-	-	0.3	0.9	0.0	-	-	0.5	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	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: Forest Lea Road & TV Tower Road - Saturday
Site Code: 220694
Start Date: 04/15/2023
Page No: 3



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: Forest Lea Road & TV Tower Road - Saturday
Site Code: 220694
Start Date: 04/15/2023

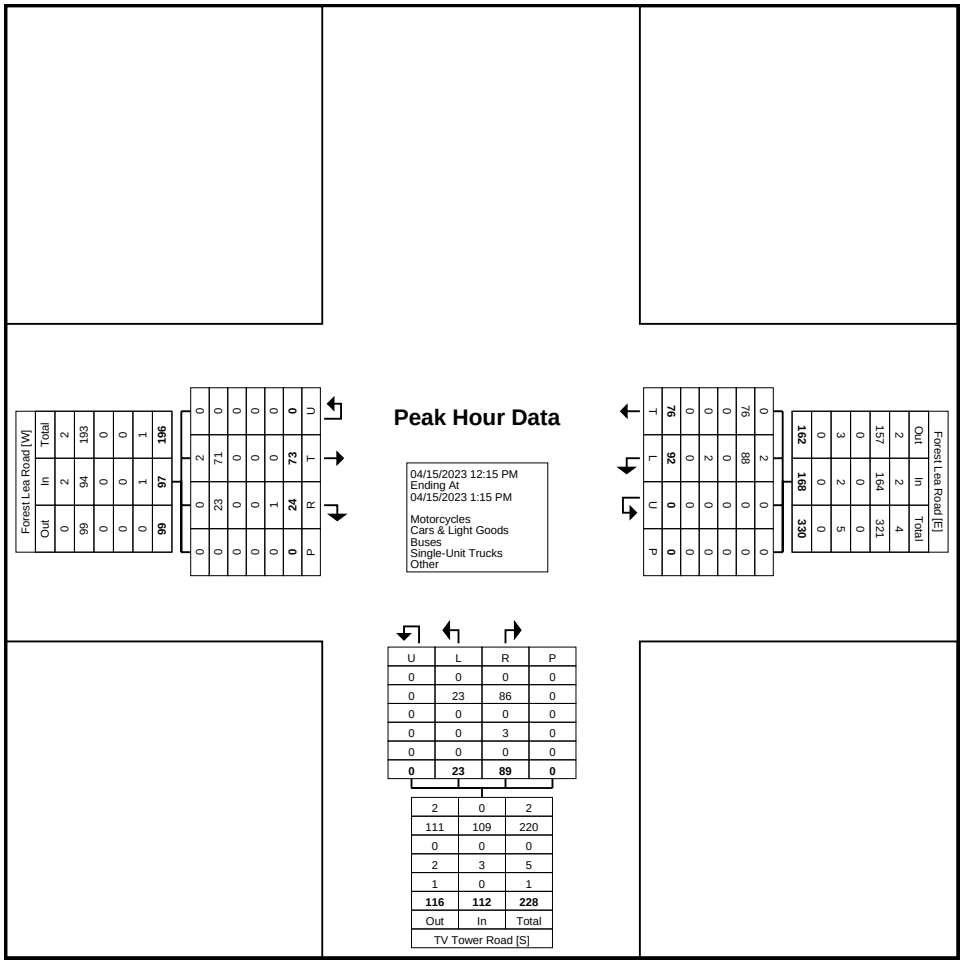
Turning Movement Peak Hour Data (12:15 PM)

Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
12:15 PM	11	4	0	0	15	24	15	0	0	39	4	24	0	0	28	82
12:30 PM	18	7	0	0	25	26	12	0	0	38	6	19	0	0	25	88
12:45 PM	20	6	0	0	26	23	29	0	0	52	4	21	0	0	25	103
1:00 PM	24	7	0	0	31	19	20	0	0	39	9	25	0	0	34	104
Total	73	24	0	0	97	92	76	0	0	168	23	89	0	0	112	377
Approach %	75.3	24.7	0.0	-	-	54.8	45.2	0.0	-	-	20.5	79.5	0.0	-	-	-
Total %	19.4	6.4	0.0	-	25.7	24.4	20.2	0.0	-	44.6	6.1	23.6	0.0	-	29.7	-
PHF	0.760	0.857	0.000	-	0.782	0.885	0.655	0.000	-	0.808	0.639	0.890	0.000	-	0.824	0.906
Motorcycles	2	0	0	-	2	2	0	0	-	2	0	0	0	-	0	4
% Motorcycles	2.7	0.0	-	-	2.1	2.2	0.0	-	-	1.2	0.0	0.0	-	-	0.0	1.1
Cars & Light Goods	71	23	0	-	94	88	76	0	-	164	23	86	0	-	109	367
% Cars & Light Goods	97.3	95.8	-	-	96.9	95.7	100.0	-	-	97.6	100.0	96.6	-	-	97.3	97.3
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	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	0	-	0	2	0	0	-	2	0	3	0	-	3	5
% Single-Unit Trucks	0.0	0.0	-	-	0.0	2.2	0.0	-	-	1.2	0.0	3.4	-	-	2.7	1.3
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	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	0.0	4.2	-	-	1.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.3
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: Forest Lea Road & TV Tower Road - Saturday
Site Code: 220694
Start Date: 04/15/2023
Page No: 5



Turning Movement Peak Hour Data Plot (12:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023

Turning Movement Data

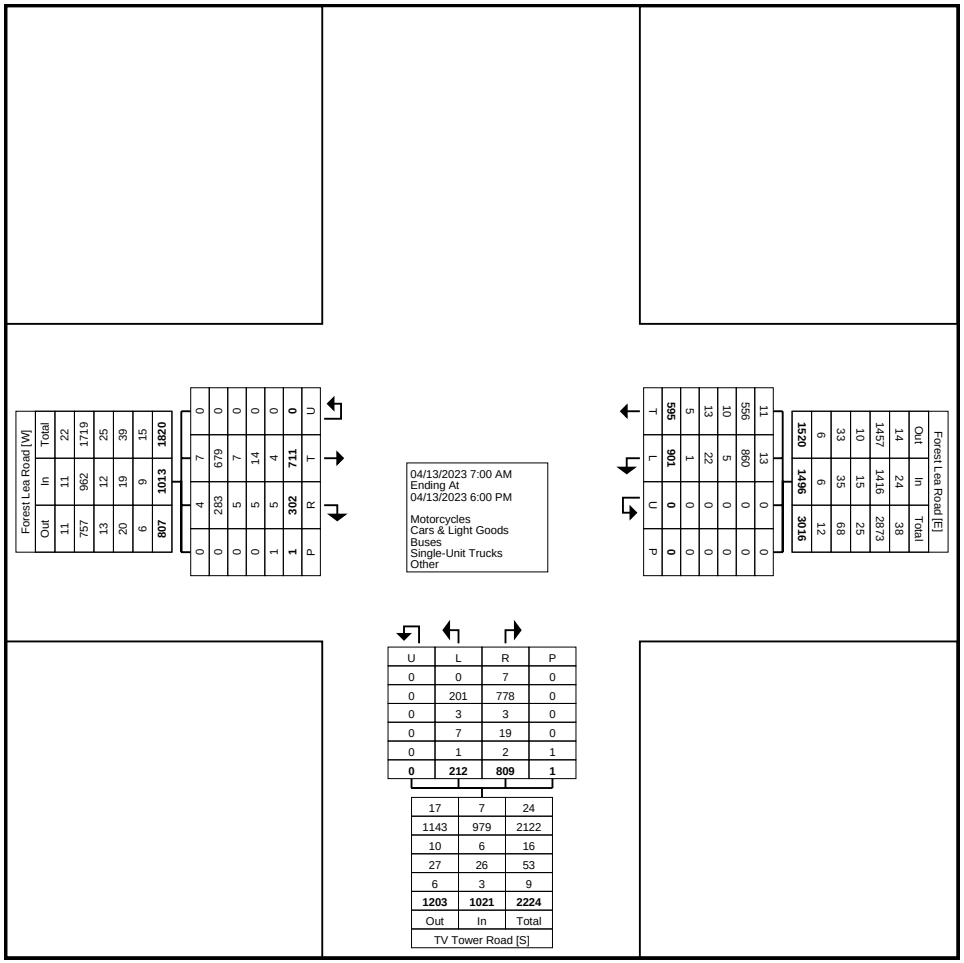
Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	12	4	0	0	16	15	15	0	0	30	12	21	0	0	33	79
7:15 AM	19	5	0	0	24	16	11	0	0	27	7	21	0	0	28	79
7:30 AM	20	11	0	0	31	22	14	0	0	36	7	35	0	0	42	109
7:45 AM	29	15	0	0	44	38	5	0	0	43	4	40	0	0	44	131
Hourly Total	80	35	0	0	115	91	45	0	0	136	30	117	0	0	147	398
8:00 AM	25	11	0	0	36	30	9	0	0	39	5	26	0	0	31	106
8:15 AM	23	6	0	0	29	22	10	0	0	32	4	43	0	0	47	108
8:30 AM	22	4	0	0	26	26	14	0	0	40	8	30	0	0	38	104
8:45 AM	19	10	0	0	29	25	16	0	0	41	7	23	0	0	30	100
Hourly Total	89	31	0	0	120	103	49	0	0	152	24	122	0	0	146	418
9:00 AM	20	13	0	0	33	18	11	0	0	29	5	19	0	0	24	86
9:15 AM	21	4	0	0	25	21	15	0	0	36	4	19	0	0	23	84
9:30 AM	25	10	0	0	35	25	17	0	0	42	2	18	0	0	20	97
9:45 AM	22	2	0	0	24	19	9	0	0	28	2	11	0	0	13	65
Hourly Total	88	29	0	0	117	83	52	0	0	135	13	67	0	0	80	332
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	18	6	0	0	24	18	5	0	0	23	8	8	0	0	16	63
11:15 AM	14	3	0	0	17	12	21	0	0	33	4	11	0	0	15	65
11:30 AM	15	6	0	0	21	17	22	0	0	39	7	14	0	0	21	81
11:45 AM	19	4	0	0	23	19	17	0	0	36	4	21	0	0	25	84
Hourly Total	66	19	0	0	85	66	65	0	0	131	23	54	0	0	77	293
12:00 PM	14	7	0	0	21	26	22	0	0	48	5	17	0	0	22	91
12:15 PM	18	11	0	0	29	17	21	0	0	38	3	18	0	0	21	88
12:30 PM	26	4	0	0	30	23	14	0	0	37	11	30	0	0	41	108
12:45 PM	29	6	0	0	35	16	19	0	0	35	6	30	0	0	36	106
Hourly Total	87	28	0	0	115	82	76	0	0	158	25	95	0	0	120	393
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	23	14	0	0	37	45	27	0	0	72	6	22	0	0	28	137
3:15 PM	19	15	0	0	34	38	23	0	0	61	9	27	0	0	36	131
3:30 PM	21	15	0	0	36	33	28	0	0	61	14	37	0	0	51	148
3:45 PM	29	16	0	0	45	44	18	0	0	62	8	26	0	0	34	141
Hourly Total	92	60	0	0	152	160	96	0	0	256	37	112	0	0	149	557
4:00 PM	26	15	0	0	41	59	33	0	0	92	12	33	0	0	45	178
4:15 PM	33	16	0	0	49	42	36	0	0	78	9	45	0	1	54	181
4:30 PM	35	10	0	0	45	41	24	0	0	65	3	23	0	0	26	136
4:45 PM	29	11	0	1	40	25	26	0	0	51	10	31	0	0	41	132

Hourly Total	123	52	0	1	175	167	119	0	0	286	34	132	0	1	166	627
5:00 PM	19	17	0	0	36	60	28	0	0	88	10	42	0	0	52	176
5:15 PM	21	11	0	0	32	31	24	0	0	55	9	22	0	0	31	118
5:30 PM	23	12	0	0	35	30	26	0	0	56	2	21	0	0	23	114
5:45 PM	23	8	0	0	31	28	15	0	0	43	5	25	0	0	30	104
Hourly Total	86	48	0	0	134	149	93	0	0	242	26	110	0	0	136	512
Grand Total	711	302	0	1	1013	901	595	0	0	1496	212	809	0	1	1021	3530
Approach %	70.2	29.8	0.0	-	-	60.2	39.8	0.0	-	-	20.8	79.2	0.0	-	-	-
Total %	20.1	8.6	0.0	-	28.7	25.5	16.9	0.0	-	42.4	6.0	22.9	0.0	-	28.9	-
Motorcycles	7	4	0	-	11	13	11	0	-	24	0	7	0	-	7	42
% Motorcycles	1.0	1.3	-	-	1.1	1.4	1.8	-	-	1.6	0.0	0.9	-	-	0.7	1.2
Cars & Light Goods	679	283	0	-	962	860	556	0	-	1416	201	778	0	-	979	3357
% Cars & Light Goods	95.5	93.7	-	-	95.0	95.4	93.4	-	-	94.7	94.8	96.2	-	-	95.9	95.1
Buses	7	5	0	-	12	5	10	0	-	15	3	3	0	-	6	33
% Buses	1.0	1.7	-	-	1.2	0.6	1.7	-	-	1.0	1.4	0.4	-	-	0.6	0.9
Single-Unit Trucks	14	5	0	-	19	22	13	0	-	35	7	19	0	-	26	80
% Single-Unit Trucks	2.0	1.7	-	-	1.9	2.4	2.2	-	-	2.3	3.3	2.3	-	-	2.5	2.3
Articulated Trucks	4	5	0	-	9	1	5	0	-	6	0	2	0	-	2	17
% Articulated Trucks	0.6	1.7	-	-	0.9	0.1	0.8	-	-	0.4	0.0	0.2	-	-	0.2	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.5	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-
% 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: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023


Forest Lea Road [W]
Out
In
Total
11
11
22
757
962
1719
13
12
25
20
19
39
9
9
18
807
1013
1820
0
0
0
0
0
0
4
283
679
7
5
5
0
0
0
0
5
5
4
1
1
302
711
0
0
7
0
0
0
0
0
0

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023

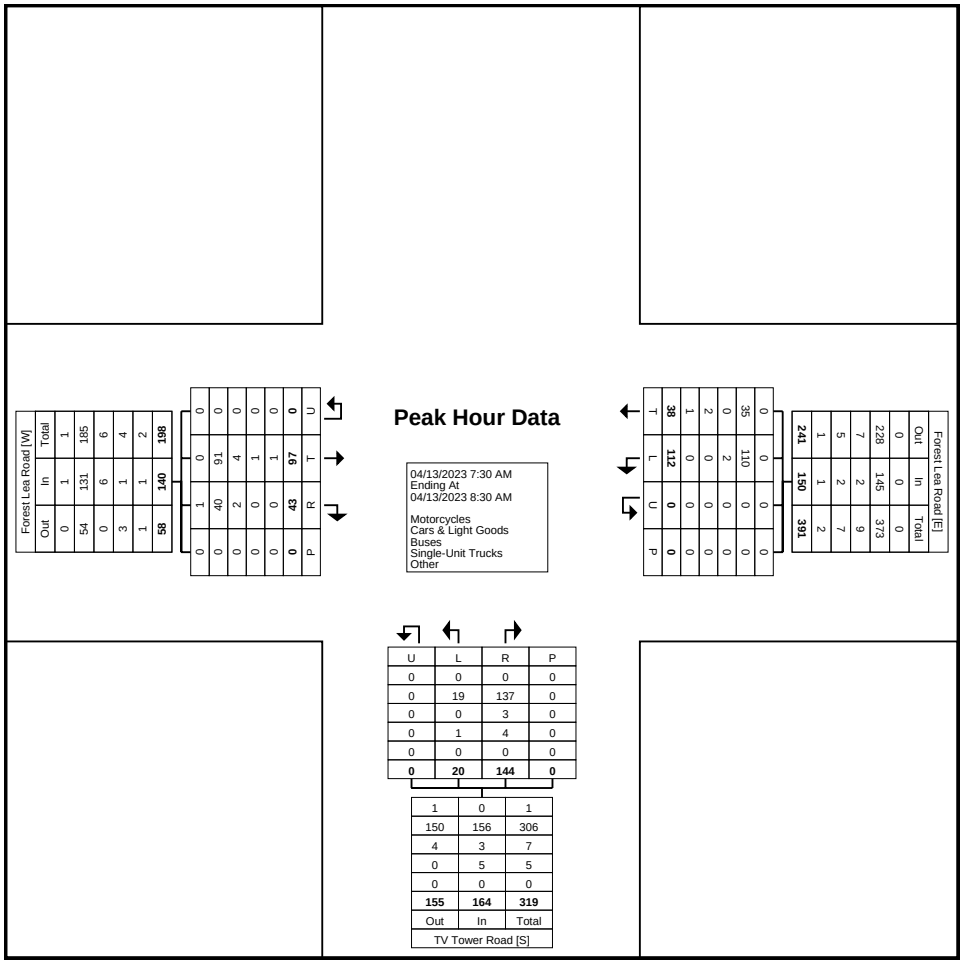
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	20	11	0	0	31	22	14	0	0	36	7	35	0	0	42	109
7:45 AM	29	15	0	0	44	38	5	0	0	43	4	40	0	0	44	131
8:00 AM	25	11	0	0	36	30	9	0	0	39	5	26	0	0	31	106
8:15 AM	23	6	0	0	29	22	10	0	0	32	4	43	0	0	47	108
Total	97	43	0	0	140	112	38	0	0	150	20	144	0	0	164	454
Approach %	69.3	30.7	0.0	-	-	74.7	25.3	0.0	-	-	12.2	87.8	0.0	-	-	-
Total %	21.4	9.5	0.0	-	30.8	24.7	8.4	0.0	-	33.0	4.4	31.7	0.0	-	36.1	-
PHF	0.836	0.717	0.000	-	0.795	0.737	0.679	0.000	-	0.872	0.714	0.837	0.000	-	0.872	0.866
Motorcycles	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Motorcycles	0.0	2.3	-	-	0.7	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	91	40	0	-	131	110	35	0	-	145	19	137	0	-	156	432
% Cars & Light Goods	93.8	93.0	-	-	93.6	98.2	92.1	-	-	96.7	95.0	95.1	-	-	95.1	95.2
Buses	4	2	0	-	6	2	0	0	-	2	0	3	0	-	3	11
% Buses	4.1	4.7	-	-	4.3	1.8	0.0	-	-	1.3	0.0	2.1	-	-	1.8	2.4
Single-Unit Trucks	1	0	0	-	1	0	2	0	-	2	1	4	0	-	5	8
% Single-Unit Trucks	1.0	0.0	-	-	0.7	0.0	5.3	-	-	1.3	5.0	2.8	-	-	3.0	1.8
Articulated Trucks	1	0	0	-	1	0	1	0	-	1	0	0	0	-	0	2
% Articulated Trucks	1.0	0.0	-	-	0.7	0.0	2.6	-	-	0.7	0.0	0.0	-	-	0.0	0.4
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023



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: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023

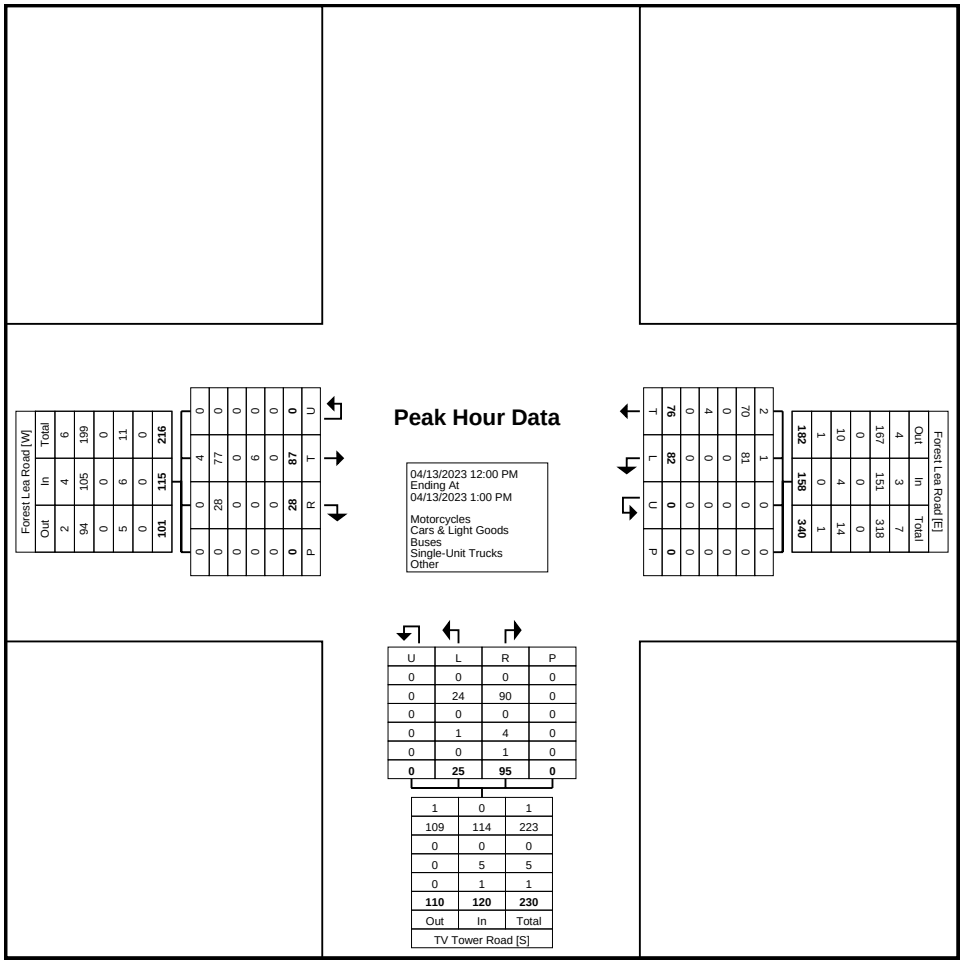
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	14	7	0	0	21	26	22	0	0	48	5	17	0	0	22	91
12:15 PM	18	11	0	0	29	17	21	0	0	38	3	18	0	0	21	88
12:30 PM	26	4	0	0	30	23	14	0	0	37	11	30	0	0	41	108
12:45 PM	29	6	0	0	35	16	19	0	0	35	6	30	0	0	36	106
Total	87	28	0	0	115	82	76	0	0	158	25	95	0	0	120	393
Approach %	75.7	24.3	0.0	-	-	51.9	48.1	0.0	-	-	20.8	79.2	0.0	-	-	-
Total %	22.1	7.1	0.0	-	29.3	20.9	19.3	0.0	-	40.2	6.4	24.2	0.0	-	30.5	-
PHF	0.750	0.636	0.000	-	0.821	0.788	0.864	0.000	-	0.823	0.568	0.792	0.000	-	0.732	0.910
Motorcycles	4	0	0	-	4	1	2	0	-	3	0	0	0	-	0	7
% Motorcycles	4.6	0.0	-	-	3.5	1.2	2.6	-	-	1.9	0.0	0.0	-	-	0.0	1.8
Cars & Light Goods	77	28	0	-	105	81	70	0	-	151	24	90	0	-	114	370
% Cars & Light Goods	88.5	100.0	-	-	91.3	98.8	92.1	-	-	95.6	96.0	94.7	-	-	95.0	94.1
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	6	0	0	-	6	0	4	0	-	4	1	4	0	-	5	15
% Single-Unit Trucks	6.9	0.0	-	-	5.2	0.0	5.3	-	-	2.5	4.0	4.2	-	-	4.2	3.8
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	1.1	-	-	0.8	0.3
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023



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: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023

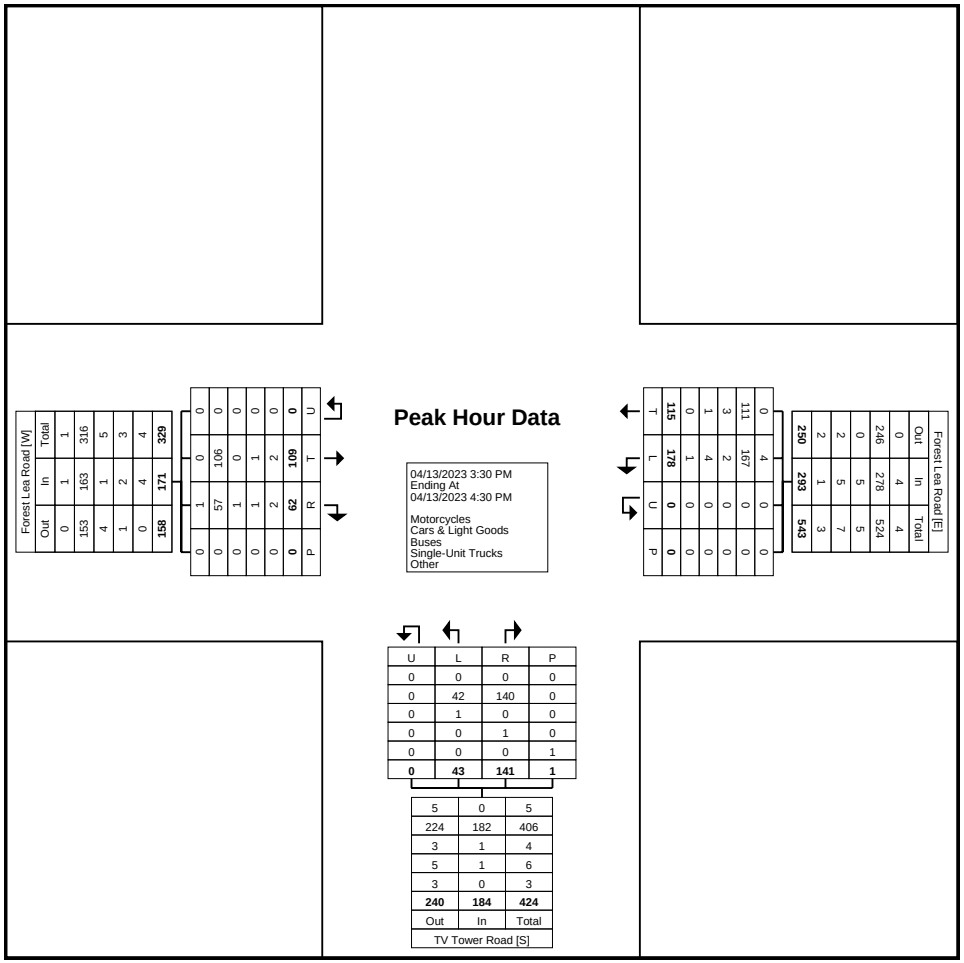
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:30 PM	21	15	0	0	36	33	28	0	0	61	14	37	0	0	51	148
3:45 PM	29	16	0	0	45	44	18	0	0	62	8	26	0	0	34	141
4:00 PM	26	15	0	0	41	59	33	0	0	92	12	33	0	0	45	178
4:15 PM	33	16	0	0	49	42	36	0	0	78	9	45	0	1	54	181
Total	109	62	0	0	171	178	115	0	0	293	43	141	0	1	184	648
Approach %	63.7	36.3	0.0	-	-	60.8	39.2	0.0	-	-	23.4	76.6	0.0	-	-	-
Total %	16.8	9.6	0.0	-	26.4	27.5	17.7	0.0	-	45.2	6.6	21.8	0.0	-	28.4	-
PHF	0.826	0.969	0.000	-	0.872	0.754	0.799	0.000	-	0.796	0.768	0.783	0.000	-	0.852	0.895
Motorcycles	0	1	0	-	1	4	0	0	-	4	0	0	0	-	0	5
% Motorcycles	0.0	1.6	-	-	0.6	2.2	0.0	-	-	1.4	0.0	0.0	-	-	0.0	0.8
Cars & Light Goods	106	57	0	-	163	167	111	0	-	278	42	140	0	-	182	623
% Cars & Light Goods	97.2	91.9	-	-	95.3	93.8	96.5	-	-	94.9	97.7	99.3	-	-	98.9	96.1
Buses	0	1	0	-	1	2	3	0	-	5	1	0	0	-	1	7
% Buses	0.0	1.6	-	-	0.6	1.1	2.6	-	-	1.7	2.3	0.0	-	-	0.5	1.1
Single-Unit Trucks	1	1	0	-	2	4	1	0	-	5	0	1	0	-	1	8
% Single-Unit Trucks	0.9	1.6	-	-	1.2	2.2	0.9	-	-	1.7	0.0	0.7	-	-	0.5	1.2
Articulated Trucks	2	2	0	-	4	1	0	0	-	1	0	0	0	-	0	5
% Articulated Trucks	1.8	3.2	-	-	2.3	0.6	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.8
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	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	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: Forest Lea Road & TV Tower Road
Site Code: 220694
Start Date: 04/13/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Paul Martin Drive & Boundary Road E - Saturday
Site Code: 220694
Start Date: 04/15/2023

Turning Movement Data

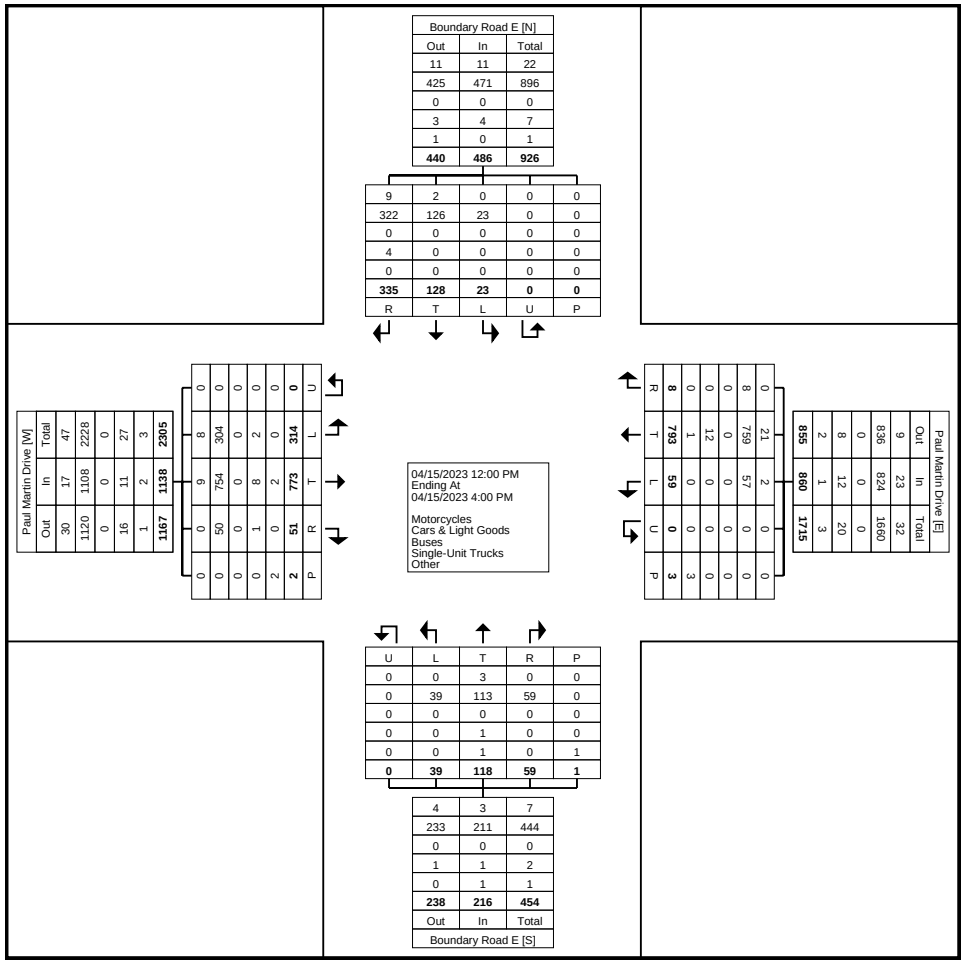
Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	12	59	2	0	2	73	6	42	0	0	0	48	2	8	3	0	1	13	3	19	28	0	0	50	184
12:15 PM	16	45	2	0	0	63	4	61	0	0	1	65	0	4	9	0	0	13	3	5	22	0	0	30	171
12:30 PM	24	58	5	0	0	87	6	53	0	0	0	59	1	7	6	0	0	14	0	11	20	0	0	31	191
12:45 PM	23	51	3	0	0	77	4	47	0	0	2	51	3	5	4	0	0	12	1	3	33	0	0	37	177
Hourly Total	75	213	12	0	2	300	20	203	0	0	3	223	6	24	22	0	1	52	7	38	103	0	0	148	723
1:00 PM	20	43	3	0	0	66	5	54	1	0	0	60	2	4	1	0	0	7	1	12	17	0	0	30	163
1:15 PM	14	52	8	0	0	74	0	46	0	0	0	46	2	8	1	0	0	11	1	7	21	0	0	29	160
1:30 PM	16	44	2	0	0	62	3	47	0	0	0	50	7	3	2	0	0	12	1	5	13	0	0	19	143
1:45 PM	19	45	1	0	0	65	4	42	1	0	0	47	4	9	3	0	0	16	1	12	22	0	0	35	163
Hourly Total	69	184	14	0	0	267	12	189	2	0	0	203	15	24	7	0	0	46	4	36	73	0	0	113	629
2:00 PM	20	44	3	0	0	67	2	54	2	0	0	58	1	5	2	0	0	8	1	4	20	0	0	25	158
2:15 PM	26	48	3	0	0	77	2	41	0	0	0	43	5	15	4	0	0	24	3	5	13	0	0	21	165
2:30 PM	20	64	4	0	0	88	7	51	0	0	0	58	4	8	2	0	0	14	1	6	17	0	0	24	184
2:45 PM	23	49	2	0	0	74	5	46	0	0	0	51	2	5	6	0	0	13	2	9	18	0	0	29	167
Hourly Total	89	205	12	0	0	306	16	192	2	0	0	210	12	33	14	0	0	59	7	24	68	0	0	99	674
3:00 PM	24	38	4	0	0	66	1	43	1	0	0	45	2	11	6	0	0	19	2	9	23	0	0	34	164
3:15 PM	13	45	1	0	0	59	8	53	2	0	0	63	1	10	3	0	0	14	2	4	27	0	0	33	169
3:30 PM	24	52	4	0	0	80	2	66	0	0	0	68	3	7	4	0	0	14	1	10	16	0	0	27	189
3:45 PM	20	36	4	0	0	60	0	47	1	0	0	48	0	9	3	0	0	12	0	7	25	0	0	32	152
Hourly Total	81	171	13	0	0	265	11	209	4	0	0	224	6	37	16	0	0	59	5	30	91	0	0	126	674
Grand Total	314	773	51	0	2	1138	59	793	8	0	3	860	39	118	59	0	1	216	23	128	335	0	0	486	2700
Approach %	27.6	67.9	4.5	0.0	-	-	6.9	92.2	0.9	0.0	-	-	18.1	54.6	27.3	0.0	-	-	4.7	26.3	68.9	0.0	-	-	-
Total %	11.6	28.6	1.9	0.0	-	42.1	2.2	29.4	0.3	0.0	-	31.9	1.4	4.4	2.2	0.0	-	8.0	0.9	4.7	12.4	0.0	-	18.0	-
Motorcycles	8	9	0	0	-	17	2	21	0	0	-	23	0	3	0	0	-	3	0	2	9	0	-	11	54
% Motorcycles	2.5	1.2	0.0	-	-	1.5	3.4	2.6	0.0	-	-	2.7	0.0	2.5	0.0	-	-	1.4	0.0	1.6	2.7	-	-	2.3	2.0
Cars & Light Goods	304	754	50	0	-	1108	57	759	8	0	-	824	39	113	59	0	-	211	23	126	322	0	-	471	2614
% Cars & Light Goods	96.8	97.5	98.0	-	-	97.4	96.6	95.7	100.0	-	-	95.8	100.0	95.8	100.0	-	-	97.7	100.0	98.4	96.1	-	-	96.9	96.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	2	8	1	0	-	11	0	12	0	0	-	12	0	1	0	0	-	1	0	0	4	0	-	4	28
% Single-Unit Trucks	0.6	1.0	2.0	-	-	1.0	0.0	1.5	0.0	-	-	1.4	0.0	0.8	0.0	-	-	0.5	0.0	0.0	1.2	-	-	0.8	1.0
Articulated Trucks	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	66.7	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	33.3	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Paul Martin Drive & Boundary Road E - Saturday
Site Code: 220694
Start Date: 04/15/2023
Page No: 3


Boundary Road E [N]
Out In Total
11 11 22
425 471 896
0 0 0
3 4 7
1 0 1
440 486 926
9 2 0 0 0
322 126 23 0 0
0 0 0 0 0
4 0 0 0 0
0 0 0 0 0
335 128 23 0 0
R T L U P
Paul Martin Drive [W]
Out In Total
30 17 47
1120 1108 2228
0 0 0
16 11 27
1 2 3
1167 1138 2305
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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Paul Martin Drive & Boundary Road E - Saturday
Site Code: 220694
Start Date: 04/15/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E 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
12:00 PM	12	59	2	0	2	73	6	42	0	0	0	48	2	8	3	0	1	13	3	19	28	0	0	50	184
12:15 PM	16	45	2	0	0	63	4	61	0	0	1	65	0	4	9	0	0	13	3	5	22	0	0	30	171
12:30 PM	24	58	5	0	0	87	6	53	0	0	0	59	1	7	6	0	0	14	0	11	20	0	0	31	191
12:45 PM	23	51	3	0	0	77	4	47	0	0	2	51	3	5	4	0	0	12	1	3	33	0	0	37	177
Total	75	213	12	0	2	300	20	203	0	0	3	223	6	24	22	0	1	52	7	38	103	0	0	148	723
Approach %	25.0	71.0	4.0	0.0	-	-	9.0	91.0	0.0	0.0	-	-	11.5	46.2	42.3	0.0	-	-	4.7	25.7	69.6	0.0	-	-	-
Total %	10.4	29.5	1.7	0.0	-	41.5	2.8	28.1	0.0	0.0	-	30.8	0.8	3.3	3.0	0.0	-	7.2	1.0	5.3	14.2	0.0	-	20.5	-
PHF	0.781	0.903	0.600	0.000	-	0.862	0.833	0.832	0.000	0.000	-	0.858	0.500	0.750	0.611	0.000	-	0.929	0.583	0.500	0.780	0.000	-	0.740	0.946
Motorcycles	0	1	0	0	-	1	1	2	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Motorcycles	0.0	0.5	0.0	-	-	0.3	5.0	1.0	-	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Cars & Light Goods	75	209	12	0	-	296	19	199	0	0	-	218	6	24	22	0	-	52	7	38	102	0	-	147	713
% Cars & Light Goods	100.0	98.1	100.0	-	-	98.7	95.0	98.0	-	-	-	97.8	100.0	100.0	100.0	-	-	100.0	100.0	100.0	99.0	-	-	99.3	98.6
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	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	2	0	0	-	2	0	2	0	0	-	2	0	0	0	0	-	0	0	0	1	0	-	1	5
% Single-Unit Trucks	0.0	0.9	0.0	-	-	0.7	0.0	1.0	-	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.0	-	-	0.7	0.7
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.5	0.0	-	-	0.3	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on 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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	66.7	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	33.3	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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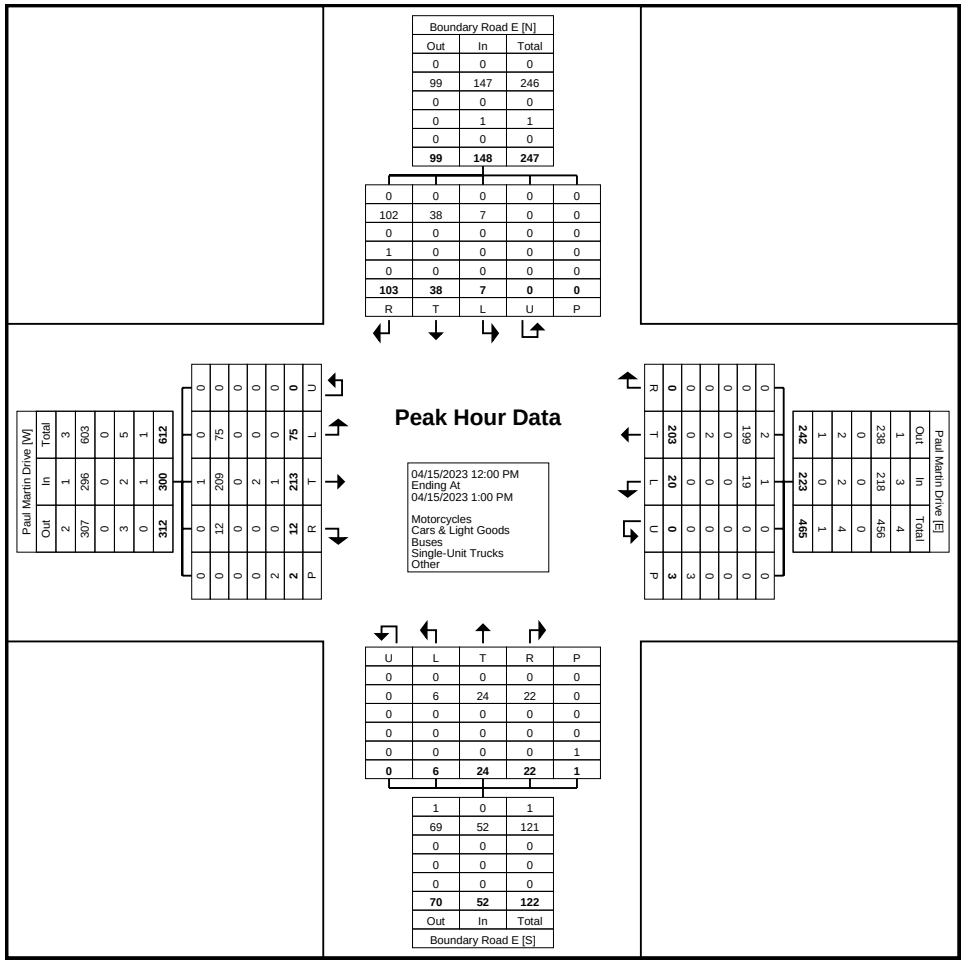
Count Name: Paul Martin Drive & Boundary Road E - Saturday
Site Code: 220694
Start Date: 04/15/2023
Page No: 5



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: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023

Turning Movement Data

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E 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
7:00 AM	13	31	1	0	0	45	1	54	0	0	0	55	0	13	7	0	0	20	0	2	14	0	0	16	136
7:15 AM	19	57	2	0	0	78	0	60	0	0	0	60	1	7	8	0	0	16	1	3	27	0	0	31	185
7:30 AM	33	82	0	0	0	115	1	45	2	0	0	48	3	16	9	0	0	28	1	5	16	0	0	22	213
7:45 AM	43	91	0	0	0	134	5	64	2	0	0	71	5	14	8	0	0	27	2	1	25	0	0	28	260
Hourly Total	108	261	3	0	0	372	7	223	4	0	0	234	9	50	32	0	0	91	4	11	82	0	0	97	794
8:00 AM	39	85	1	0	0	125	1	57	2	0	0	60	7	13	5	0	0	25	1	13	21	0	1	35	245
8:15 AM	28	71	1	0	0	100	1	45	0	0	0	46	4	11	5	0	0	20	2	6	18	0	0	26	192
8:30 AM	24	59	0	0	0	83	2	44	0	0	0	46	6	10	9	0	0	25	3	4	10	0	0	17	171
8:45 AM	29	68	2	0	0	99	1	55	3	0	0	59	4	9	6	0	0	19	4	5	19	0	0	28	205
Hourly Total	120	283	4	0	0	407	5	201	5	0	0	211	21	43	25	0	0	89	10	28	68	0	1	106	813
9:00 AM	19	68	2	0	0	89	0	52	0	0	0	52	1	8	10	0	0	19	2	5	13	0	0	20	180
9:15 AM	24	60	2	0	0	86	1	50	2	0	0	53	2	8	6	0	0	16	0	5	11	0	0	16	171
9:30 AM	30	74	0	0	1	104	2	36	1	0	0	39	2	4	3	0	0	9	1	4	14	0	0	19	171
9:45 AM	29	55	1	0	0	85	2	38	2	0	0	42	0	6	7	0	0	13	1	3	23	0	0	27	167
Hourly Total	102	257	5	0	1	364	5	176	5	0	0	186	5	26	26	0	0	57	4	17	61	0	0	82	689
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	22	72	0	0	0	94	6	61	7	0	0	74	1	0	8	0	0	9	1	7	20	0	1	28	205
11:15 AM	22	50	5	0	0	77	4	43	2	0	0	49	4	3	13	0	0	20	11	8	29	0	1	48	194
11:30 AM	20	55	2	0	0	77	6	35	5	0	0	46	2	2	3	0	0	7	1	9	9	0	0	19	149
11:45 AM	18	51	1	0	0	70	3	47	3	0	0	53	3	14	3	0	1	20	1	9	27	0	0	37	180
Hourly Total	82	228	8	0	0	318	19	186	17	0	0	222	10	19	27	0	1	56	14	33	85	0	2	132	728
12:00 PM	31	65	5	0	0	101	8	56	7	0	0	71	5	6	2	0	0	13	2	6	19	0	0	27	212
12:15 PM	21	62	0	0	0	83	6	58	1	0	0	65	2	6	4	0	0	12	3	4	18	0	0	25	185
12:30 PM	23	54	0	0	0	77	6	51	1	0	0	58	1	3	6	0	0	10	1	8	27	0	0	36	181
12:45 PM	22	77	3	0	0	102	5	55	0	0	0	60	3	11	6	0	0	20	5	9	18	0	0	32	214
Hourly Total	97	258	8	0	0	363	25	220	9	0	0	254	11	26	18	0	0	55	11	27	82	0	0	120	792
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	23	55	6	0	0	84	4	52	2	0	0	58	3	8	7	0	0	18	7	10	38	0	0	55	215
3:15 PM	23	75	8	0	0	106	9	59	2	0	0	70	1	13	7	0	0	21	6	14	30	0	0	50	247
3:30 PM	23	73	6	0	0	102	11	80	24	0	0	115	1	7	3	0	0	11	4	16	27	0	0	47	275
3:45 PM	38	78	4	0	0	120	6	79	5	0	0	90	2	12	10	0	0	24	1	5	23	0	4	29	263
Hourly Total	107	281	24	0	0	412	30	270	33	0	0	333	7	40	27	0	0	74	18	45	118	0	4	181	1000
4:00 PM	25	80	13	0	0	118	14	114	2	0	0	130	0	14	2	0	0	16	2	12	38	0	0	52	316
4:15 PM	25	94	6	0	0	125	8	85	1	0	0	94	3	2	8	0	0	13	2	12	36	0	0	50	282
4:30 PM	24	87	2	0	0	113	6	97	4	0	0	107	2	6	6	0	0	14	3	16	36	0	0	55	289

4:45 PM	30	69	5	0	0	104	10	63	1	0	0	74	2	10	4	0	0	16	3	11	23	0	0	37	231
Hourly Total	104	330	26	0	0	460	38	359	8	0	0	405	7	32	20	0	0	59	10	51	133	0	0	194	1118
5:00 PM	41	62	11	0	0	114	7	85	4	0	0	96	1	6	3	0	0	10	1	13	31	0	0	45	265
5:15 PM	20	47	4	0	0	71	6	64	2	0	0	72	2	6	10	0	0	18	0	12	24	0	0	36	197
5:30 PM	29	62	2	0	0	93	3	56	2	0	0	61	2	7	9	0	0	18	1	9	22	0	0	32	204
5:45 PM	25	66	4	0	0	95	6	43	2	0	0	51	2	12	8	0	0	22	3	10	14	0	0	27	195
Hourly Total	115	237	21	0	0	373	22	248	10	0	0	280	7	31	30	0	0	68	5	44	91	0	0	140	861
Grand Total	835	2135	99	0	1	3069	151	1883	91	0	0	2125	77	267	205	0	1	549	76	256	720	0	7	1052	6795
Approach %	27.2	69.6	3.2	0.0	-	-	7.1	88.6	4.3	0.0	-	-	14.0	48.6	37.3	0.0	-	-	7.2	24.3	68.4	0.0	-	-	-
Total %	12.3	31.4	1.5	0.0	-	45.2	2.2	27.7	1.3	0.0	-	31.3	1.1	3.9	3.0	0.0	-	8.1	1.1	3.8	10.6	0.0	-	15.5	-
Motorcycles	7	14	0	0	-	21	0	12	0	0	-	12	1	2	2	0	-	5	0	3	2	0	-	5	43
% Motorcycles	0.8	0.7	0.0	-	-	0.7	0.0	0.6	0.0	-	-	0.6	1.3	0.7	1.0	-	-	0.9	0.0	1.2	0.3	-	-	0.5	0.6
Cars & Light Goods	760	2023	96	0	-	2879	145	1764	86	0	-	1995	73	253	193	0	-	519	76	243	668	0	-	987	6380
% Cars & Light Goods	91.0	94.8	97.0	-	-	93.8	96.0	93.7	94.5	-	-	93.9	94.8	94.8	94.1	-	-	94.5	100.0	94.9	92.8	-	-	93.8	93.9
Buses	20	30	0	0	-	50	4	32	0	0	-	36	0	2	6	0	-	8	0	1	19	0	-	20	114
% Buses	2.4	1.4	0.0	-	-	1.6	2.6	1.7	0.0	-	-	1.7	0.0	0.7	2.9	-	-	1.5	0.0	0.4	2.6	-	-	1.9	1.7
Single-Unit Trucks	29	41	1	0	-	71	1	49	5	0	-	55	2	8	2	0	-	12	0	9	20	0	-	29	167
% Single-Unit Trucks	3.5	1.9	1.0	-	-	2.3	0.7	2.6	5.5	-	-	2.6	2.6	3.0	1.0	-	-	2.2	0.0	3.5	2.8	-	-	2.8	2.5
Articulated Trucks	19	26	2	0	-	47	0	25	0	0	-	25	1	2	0	0	-	3	0	0	11	0	-	11	86
% Articulated Trucks	2.3	1.2	2.0	-	-	1.5	0.0	1.3	0.0	-	-	1.2	1.3	0.7	0.0	-	-	0.5	0.0	0.0	1.5	-	-	1.0	1.3
Bicycles on Road	0	1	0	0	-	1	1	1	0	0	-	2	0	0	2	0	-	2	0	0	0	0	-	0	5
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.7	0.1	0.0	-	-	0.1	0.0	0.0	1.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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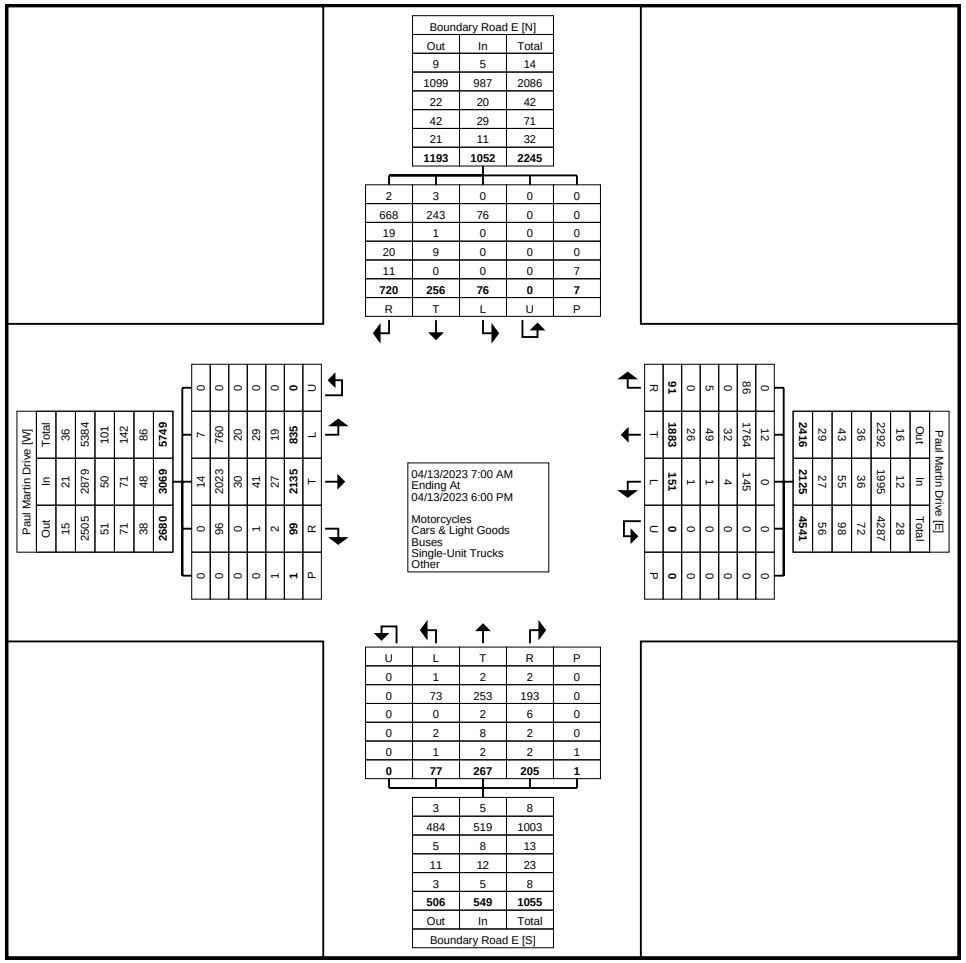
Count Name: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023



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: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023

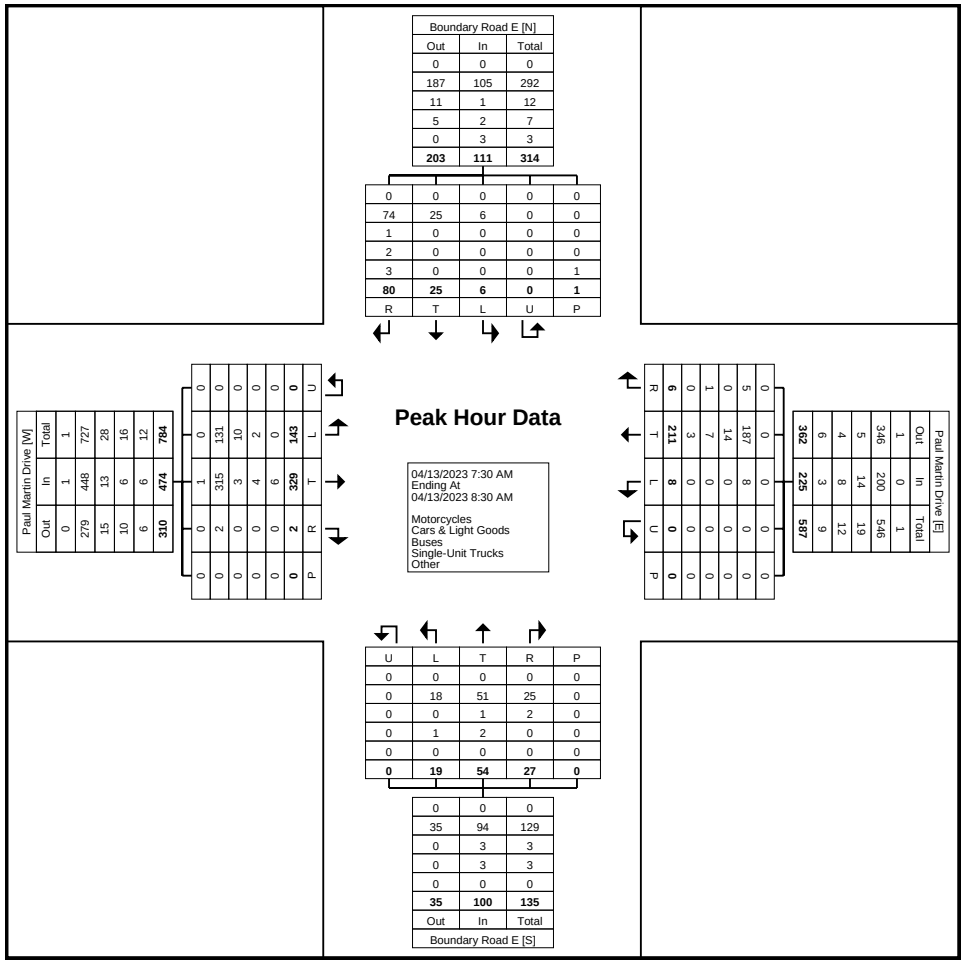
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E 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
7:30 AM	33	82	0	0	0	115	1	45	2	0	0	48	3	16	9	0	0	28	1	5	16	0	0	22	213
7:45 AM	43	91	0	0	0	134	5	64	2	0	0	71	5	14	8	0	0	27	2	1	25	0	0	28	260
8:00 AM	39	85	1	0	0	125	1	57	2	0	0	60	7	13	5	0	0	25	1	13	21	0	1	35	245
8:15 AM	28	71	1	0	0	100	1	45	0	0	0	46	4	11	5	0	0	20	2	6	18	0	0	26	192
Total	143	329	2	0	0	474	8	211	6	0	0	225	19	54	27	0	0	100	6	25	80	0	1	111	910
Approach %	30.2	69.4	0.4	0.0	-	-	3.6	93.8	2.7	0.0	-	-	19.0	54.0	27.0	0.0	-	-	5.4	22.5	72.1	0.0	-	-	-
Total %	15.7	36.2	0.2	0.0	-	52.1	0.9	23.2	0.7	0.0	-	24.7	2.1	5.9	3.0	0.0	-	11.0	0.7	2.7	8.8	0.0	-	12.2	-
PHF	0.831	0.904	0.500	0.000	-	0.884	0.400	0.824	0.750	0.000	-	0.792	0.679	0.844	0.750	0.000	-	0.893	0.750	0.481	0.800	0.000	-	0.793	0.875
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	0.3	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	131	315	2	0	-	448	8	187	5	0	-	200	18	51	25	0	-	94	6	25	74	0	-	105	847
% Cars & Light Goods	91.6	95.7	100.0	-	-	94.5	100.0	88.6	83.3	-	-	88.9	94.7	94.4	92.6	-	-	94.0	100.0	100.0	92.5	-	-	94.6	93.1
Buses	10	3	0	0	-	13	0	14	0	0	-	14	0	1	2	0	-	3	0	0	1	0	-	1	31
% Buses	7.0	0.9	0.0	-	-	2.7	0.0	6.6	0.0	-	-	6.2	0.0	1.9	7.4	-	-	3.0	0.0	0.0	1.3	-	-	0.9	3.4
Single-Unit Trucks	2	4	0	0	-	6	0	7	1	0	-	8	1	2	0	0	-	3	0	0	2	0	-	2	19
% Single-Unit Trucks	1.4	1.2	0.0	-	-	1.3	0.0	3.3	16.7	-	-	3.6	5.3	3.7	0.0	-	-	3.0	0.0	0.0	2.5	-	-	1.8	2.1
Articulated Trucks	0	6	0	0	-	6	0	3	0	0	-	3	0	0	0	0	-	0	0	0	3	0	-	3	12
% Articulated Trucks	0.0	1.8	0.0	-	-	1.3	0.0	1.4	0.0	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	3.8	-	-	2.7	1.3
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023



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: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023

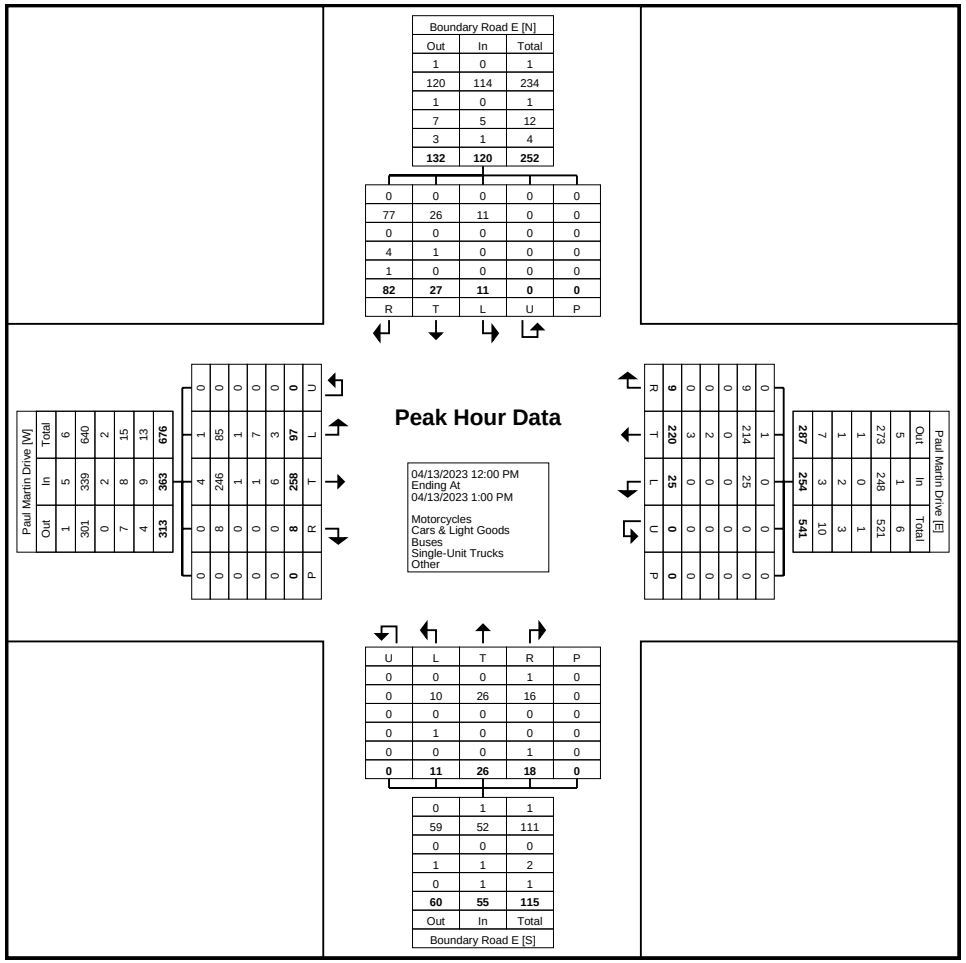
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E 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
12:00 PM	31	65	5	0	0	101	8	56	7	0	0	71	5	6	2	0	0	13	2	6	19	0	0	27	212
12:15 PM	21	62	0	0	0	83	6	58	1	0	0	65	2	6	4	0	0	12	3	4	18	0	0	25	185
12:30 PM	23	54	0	0	0	77	6	51	1	0	0	58	1	3	6	0	0	10	1	8	27	0	0	36	181
12:45 PM	22	77	3	0	0	102	5	55	0	0	0	60	3	11	6	0	0	20	5	9	18	0	0	32	214
Total	97	258	8	0	0	363	25	220	9	0	0	254	11	26	18	0	0	55	11	27	82	0	0	120	792
Approach %	26.7	71.1	2.2	0.0	-	-	9.8	86.6	3.5	0.0	-	-	20.0	47.3	32.7	0.0	-	-	9.2	22.5	68.3	0.0	-	-	-
Total %	12.2	32.6	1.0	0.0	-	45.8	3.2	27.8	1.1	0.0	-	32.1	1.4	3.3	2.3	0.0	-	6.9	1.4	3.4	10.4	0.0	-	15.2	-
PHF	0.782	0.838	0.400	0.000	-	0.890	0.781	0.948	0.321	0.000	-	0.894	0.550	0.591	0.750	0.000	-	0.688	0.550	0.750	0.759	0.000	-	0.833	0.925
Motorcycles	1	4	0	0	-	5	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	7
% Motorcycles	1.0	1.6	0.0	-	-	1.4	0.0	0.5	0.0	-	-	0.4	0.0	0.0	5.6	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.9
Cars & Light Goods	85	246	8	0	-	339	25	214	9	0	-	248	10	26	16	0	-	52	11	26	77	0	-	114	753
% Cars & Light Goods	87.6	95.3	100.0	-	-	93.4	100.0	97.3	100.0	-	-	97.6	90.9	100.0	88.9	-	-	94.5	100.0	96.3	93.9	-	-	95.0	95.1
Buses	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	1.0	0.4	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Single-Unit Trucks	7	1	0	0	-	8	0	2	0	0	-	2	1	0	0	0	-	1	0	1	4	0	-	5	16
% Single-Unit Trucks	7.2	0.4	0.0	-	-	2.2	0.0	0.9	0.0	-	-	0.8	9.1	0.0	0.0	-	-	1.8	0.0	3.7	4.9	-	-	4.2	2.0
Articulated Trucks	3	5	0	0	-	8	0	3	0	0	-	3	0	0	0	0	-	0	0	0	1	0	-	1	12
% Articulated Trucks	3.1	1.9	0.0	-	-	2.2	0.0	1.4	0.0	-	-	1.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	1.2	-	-	0.8	1.5
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	5.6	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.3
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: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023



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: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023

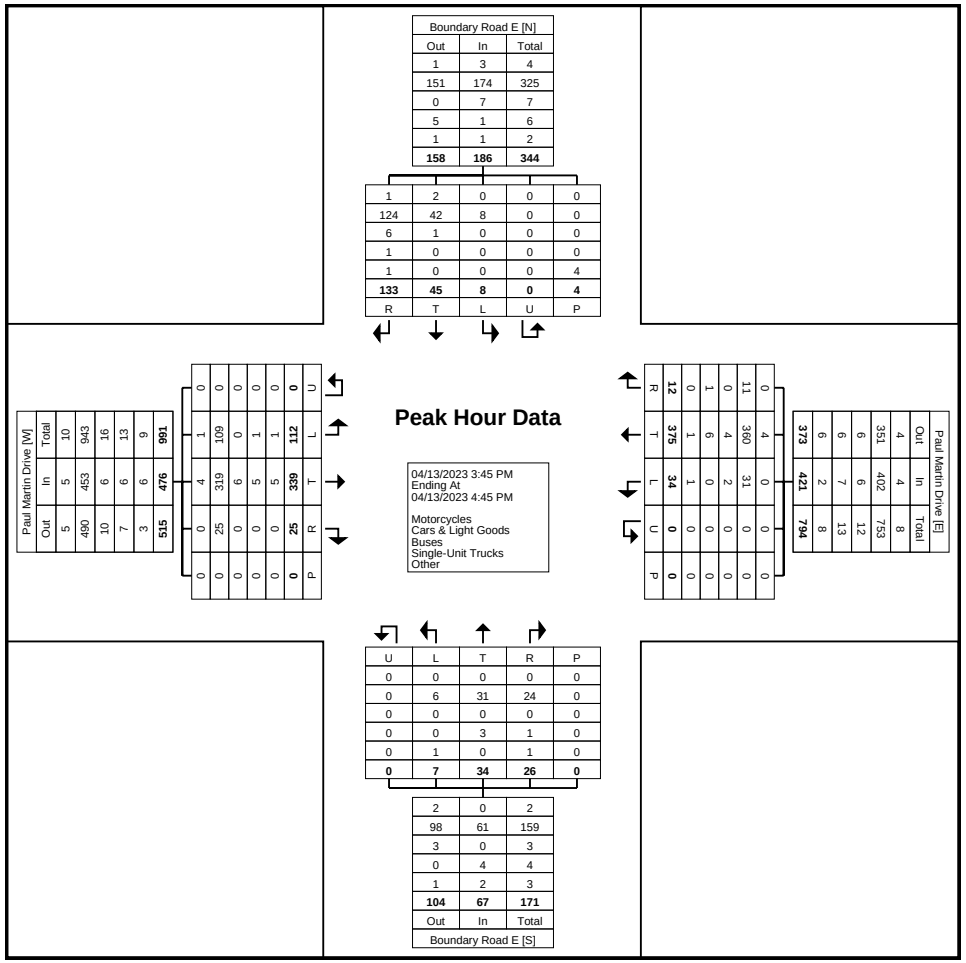
Turning Movement Peak Hour Data (3:45 PM)

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E 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
3:45 PM	38	78	4	0	0	120	6	79	5	0	0	90	2	12	10	0	0	24	1	5	23	0	4	29	263
4:00 PM	25	80	13	0	0	118	14	114	2	0	0	130	0	14	2	0	0	16	2	12	38	0	0	52	316
4:15 PM	25	94	6	0	0	125	8	85	1	0	0	94	3	2	8	0	0	13	2	12	36	0	0	50	282
4:30 PM	24	87	2	0	0	113	6	97	4	0	0	107	2	6	6	0	0	14	3	16	36	0	0	55	289
Total	112	339	25	0	0	476	34	375	12	0	0	421	7	34	26	0	0	67	8	45	133	0	4	186	1150
Approach %	23.5	71.2	5.3	0.0	-	-	8.1	89.1	2.9	0.0	-	-	10.4	50.7	38.8	0.0	-	-	4.3	24.2	71.5	0.0	-	-	-
Total %	9.7	29.5	2.2	0.0	-	41.4	3.0	32.6	1.0	0.0	-	36.6	0.6	3.0	2.3	0.0	-	5.8	0.7	3.9	11.6	0.0	-	16.2	-
PHF	0.737	0.902	0.481	0.000	-	0.952	0.607	0.822	0.600	0.000	-	0.810	0.583	0.607	0.650	0.000	-	0.698	0.667	0.703	0.875	0.000	-	0.845	0.910
Motorcycles	1	4	0	0	-	5	0	4	0	0	-	4	0	0	0	0	-	0	0	2	1	0	-	3	12
% Motorcycles	0.9	1.2	0.0	-	-	1.1	0.0	1.1	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	4.4	0.8	-	-	1.6	1.0
Cars & Light Goods	109	319	25	0	-	453	31	360	11	0	-	402	6	31	24	0	-	61	8	42	124	0	-	174	1090
% Cars & Light Goods	97.3	94.1	100.0	-	-	95.2	91.2	96.0	91.7	-	-	95.5	85.7	91.2	92.3	-	-	91.0	100.0	93.3	93.2	-	-	93.5	94.8
Buses	0	6	0	0	-	6	2	4	0	0	-	6	0	0	0	0	-	0	0	1	6	0	-	7	19
% Buses	0.0	1.8	0.0	-	-	1.3	5.9	1.1	0.0	-	-	1.4	0.0	0.0	0.0	-	-	0.0	0.0	2.2	4.5	-	-	3.8	1.7
Single-Unit Trucks	1	5	0	0	-	6	0	6	1	0	-	7	0	3	1	0	-	4	0	0	1	0	-	1	18
% Single-Unit Trucks	0.9	1.5	0.0	-	-	1.3	0.0	1.6	8.3	-	-	1.7	0.0	8.8	3.8	-	-	6.0	0.0	0.0	0.8	-	-	0.5	1.6
Articulated Trucks	1	5	0	0	-	6	0	1	0	0	-	1	1	0	0	0	-	1	0	0	1	0	-	1	9
% Articulated Trucks	0.9	1.5	0.0	-	-	1.3	0.0	0.3	0.0	-	-	0.2	14.3	0.0	0.0	-	-	1.5	0.0	0.0	0.8	-	-	0.5	0.8
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	2.9	0.0	0.0	-	-	0.2	0.0	0.0	3.8	-	-	1.5	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Paul Martin Drive & Boundary Road E
Site Code: 220694
Start Date: 04/13/2023



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

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road - Saturday
Site Code: 220694
Start Date: 04/15/2023

Turning Movement Data

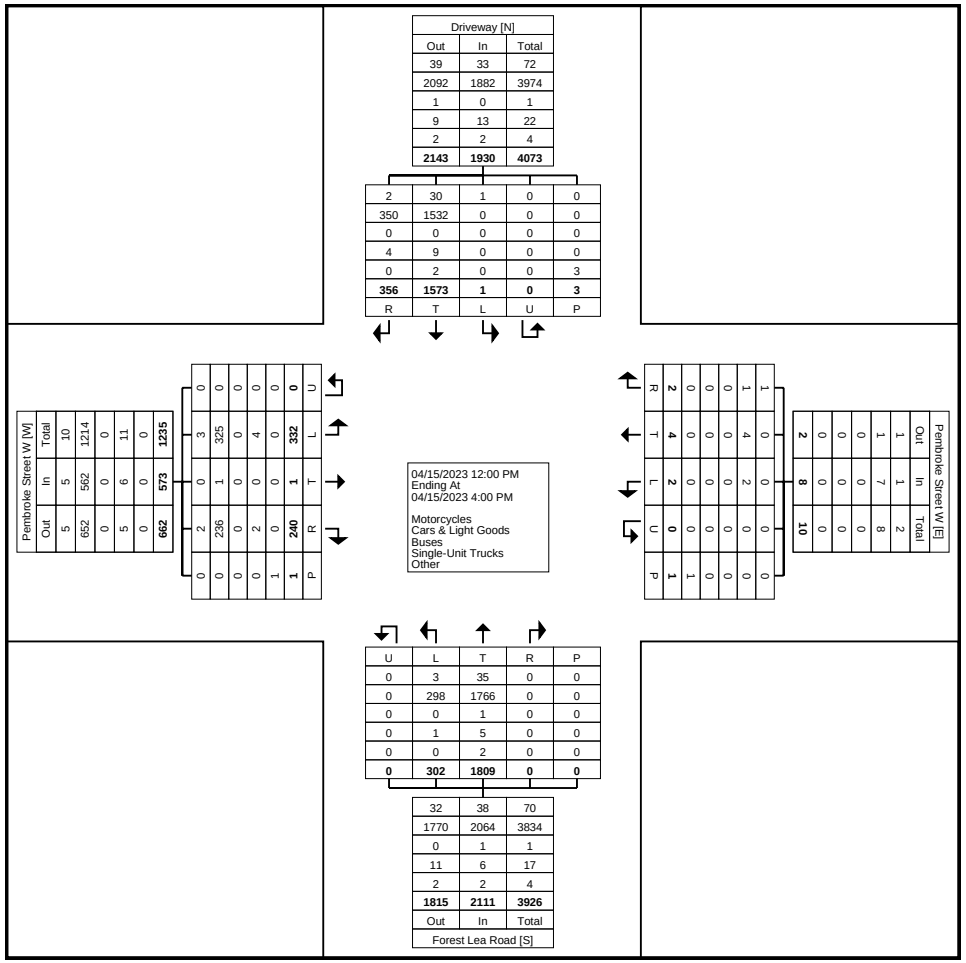
Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	19	0	21	0	0	40	0	0	0	0	1	0	24	118	0	0	0	142	0	131	19	0	0	150	332
12:15 PM	19	1	14	0	0	34	0	0	0	0	0	0	13	118	0	0	0	131	0	106	27	0	0	133	298
12:30 PM	21	0	17	0	1	38	0	0	0	0	0	0	14	113	0	0	0	127	1	108	25	0	0	134	299
12:45 PM	22	0	16	0	0	38	0	0	1	0	0	1	26	121	0	0	0	147	0	103	26	0	0	129	315
Hourly Total	81	1	68	0	1	150	0	0	1	0	1	1	77	470	0	0	0	547	1	448	97	0	0	546	1244
1:00 PM	28	0	24	0	0	52	0	0	0	0	0	0	19	124	0	0	0	143	0	115	19	0	0	134	329
1:15 PM	15	0	17	0	0	32	0	0	0	0	0	0	25	102	0	0	0	127	0	92	15	0	0	107	266
1:30 PM	14	0	15	0	0	29	0	0	0	0	0	0	22	110	0	0	0	132	0	84	23	0	0	107	268
1:45 PM	16	0	15	0	0	31	0	0	0	0	0	0	20	120	0	0	0	140	0	91	18	0	0	109	280
Hourly Total	73	0	71	0	0	144	0	0	0	0	0	0	86	456	0	0	0	542	0	382	75	0	0	457	1143
2:00 PM	27	0	16	0	0	43	0	0	0	0	0	0	19	111	0	0	0	130	0	105	26	0	0	131	304
2:15 PM	16	0	10	0	0	26	0	0	0	0	0	0	22	126	0	0	0	148	0	89	19	0	0	108	282
2:30 PM	25	0	10	0	0	35	0	1	0	0	0	1	21	101	0	0	0	122	0	125	26	0	0	151	309
2:45 PM	18	0	16	0	0	34	2	3	1	0	0	6	22	120	0	0	0	142	0	80	18	0	0	98	280
Hourly Total	86	0	52	0	0	138	2	4	1	0	0	7	84	458	0	0	0	542	0	399	89	0	0	488	1175
3:00 PM	28	0	11	0	0	39	0	0	0	0	0	0	23	123	0	0	0	146	0	89	22	0	0	111	296
3:15 PM	25	0	13	0	0	38	0	0	0	0	0	0	9	111	0	0	0	120	0	89	21	0	0	110	268
3:30 PM	25	0	11	0	0	36	0	0	0	0	0	0	15	104	0	0	0	119	0	65	22	0	3	87	242
3:45 PM	14	0	14	0	0	28	0	0	0	0	0	0	8	87	0	0	0	95	0	101	30	0	0	131	254
Hourly Total	92	0	49	0	0	141	0	0	0	0	0	0	55	425	0	0	0	480	0	344	95	0	3	439	1060
Grand Total	332	1	240	0	1	573	2	4	2	0	1	8	302	1809	0	0	0	2111	1	1573	356	0	3	1930	4622
Approach %	57.9	0.2	41.9	0.0	-	-	25.0	50.0	25.0	0.0	-	-	14.3	85.7	0.0	0.0	-	-	0.1	81.5	18.4	0.0	-	-	-
Total %	7.2	0.0	5.2	0.0	-	12.4	0.0	0.1	0.0	0.0	-	0.2	6.5	39.1	0.0	0.0	-	45.7	0.0	34.0	7.7	0.0	-	41.8	-
Motorcycles	3	0	2	0	-	5	0	0	1	0	-	1	3	35	0	0	-	38	1	30	2	0	-	33	77
% Motorcycles	0.9	0.0	0.8	-	-	0.9	0.0	0.0	50.0	-	-	12.5	1.0	1.9	-	-	-	1.8	100.0	1.9	0.6	-	-	1.7	1.7
Cars & Light Goods	325	1	236	0	-	562	2	4	1	0	-	7	298	1766	0	0	-	2064	0	1532	350	0	-	1882	4515
% Cars & Light Goods	97.9	100.0	98.3	-	-	98.1	100.0	100.0	50.0	-	-	87.5	98.7	97.6	-	-	-	97.8	0.0	97.4	98.3	-	-	97.5	97.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Single-Unit Trucks	4	0	2	0	-	6	0	0	0	0	-	0	1	5	0	0	-	6	0	9	4	0	-	13	25
% Single-Unit Trucks	1.2	0.0	0.8	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.3	0.3	-	-	-	0.3	0.0	0.6	1.1	-	-	0.7	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0

Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	1	0	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	-	-	-	0.1	0.0	0.1	0.0	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road - Saturday
Site Code: 220694
Start Date: 04/15/2023
Page No: 3



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: Pembroke Street W & Forest Lea Road - Saturday
Site Code: 220694
Start Date: 04/15/2023

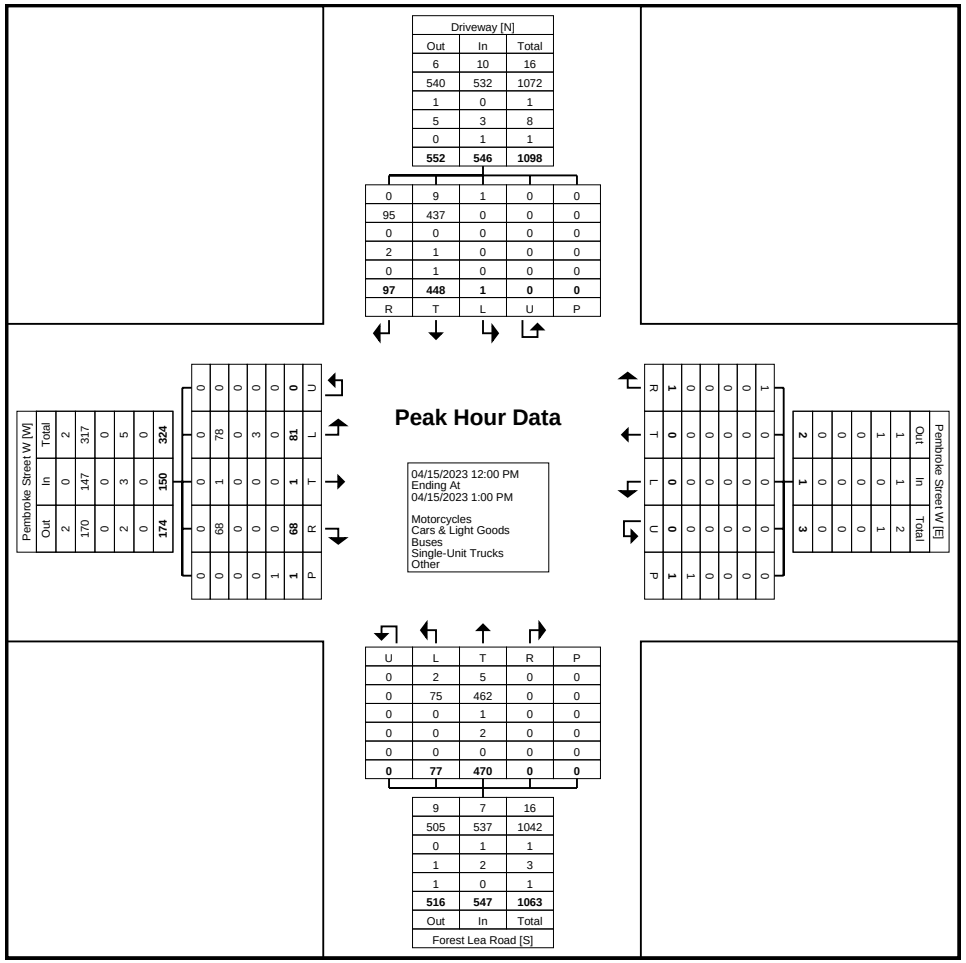
Turning Movement Peak Hour Data (12:00 PM)

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	19	0	21	0	0	40	0	0	0	0	1	0	24	118	0	0	0	142	0	131	19	0	0	150	332
12:15 PM	19	1	14	0	0	34	0	0	0	0	0	0	13	118	0	0	0	131	0	106	27	0	0	133	298
12:30 PM	21	0	17	0	1	38	0	0	0	0	0	0	14	113	0	0	0	127	1	108	25	0	0	134	299
12:45 PM	22	0	16	0	0	38	0	0	1	0	0	1	26	121	0	0	0	147	0	103	26	0	0	129	315
Total	81	1	68	0	1	150	0	0	1	0	1	1	77	470	0	0	0	547	1	448	97	0	0	546	1244
Approach %	54.0	0.7	45.3	0.0	-	-	0.0	0.0	100.0	0.0	-	-	14.1	85.9	0.0	0.0	-	-	0.2	82.1	17.8	0.0	-	-	-
Total %	6.5	0.1	5.5	0.0	-	12.1	0.0	0.0	0.1	0.0	-	0.1	6.2	37.8	0.0	0.0	-	44.0	0.1	36.0	7.8	0.0	-	43.9	-
PHF	0.920	0.250	0.810	0.000	-	0.938	0.000	0.000	0.250	0.000	-	0.250	0.740	0.971	0.000	0.000	-	0.930	0.250	0.855	0.898	0.000	-	0.910	0.937
Motorcycles	0	0	0	0	-	0	0	0	1	0	-	1	2	5	0	0	-	7	1	9	0	0	-	10	18
% Motorcycles	0.0	0.0	0.0	-	-	0.0	-	-	100.0	-	-	100.0	2.6	1.1	-	-	-	1.3	100.0	2.0	0.0	-	-	1.8	1.4
Cars & Light Goods	78	1	68	0	-	147	0	0	0	0	-	0	75	462	0	0	-	537	0	437	95	0	-	532	1216
% Cars & Light Goods	96.3	100.0	100.0	-	-	98.0	-	-	0.0	-	-	0.0	97.4	98.3	-	-	-	98.2	0.0	97.5	97.9	-	-	97.4	97.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.2	-	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.1
Single-Unit Trucks	3	0	0	0	-	3	0	0	0	0	-	0	0	2	0	0	-	2	0	1	2	0	-	3	8
% Single-Unit Trucks	3.7	0.0	0.0	-	-	2.0	-	-	0.0	-	-	0.0	0.0	0.4	-	-	-	0.4	0.0	0.2	2.1	-	-	0.5	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.1
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	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road - Saturday
Site Code: 220694
Start Date: 04/15/2023



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: Pembroke Street W & Forest Lea Road
Site Code: 220694
Start Date: 04/13/2023

Turning Movement Data

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	25	0	9	0	0	34	0	0	0	0	0	0	14	65	0	0	0	79	1	39	17	0	0	57	170
7:15 AM	24	0	17	0	0	41	0	0	0	0	0	0	9	50	0	0	0	59	0	48	17	0	0	65	165
7:30 AM	34	0	20	0	0	54	0	0	0	0	0	0	13	71	0	0	0	84	0	109	23	0	0	132	270
7:45 AM	41	0	28	0	0	69	0	0	0	0	0	0	5	72	0	0	0	77	0	94	38	0	0	132	278
Hourly Total	124	0	74	0	0	198	0	0	0	0	0	0	41	258	0	0	0	299	1	290	95	0	0	386	883
8:00 AM	23	0	25	0	0	48	0	0	1	0	0	1	8	64	0	0	0	72	2	107	31	0	0	140	261
8:15 AM	46	0	21	0	0	67	0	0	0	0	0	0	10	89	1	0	0	100	0	132	22	0	0	154	321
8:30 AM	29	0	23	0	0	52	0	0	0	0	0	0	15	99	0	0	0	114	0	130	25	0	0	155	321
8:45 AM	27	0	16	0	0	43	0	0	0	0	0	0	15	85	0	0	0	100	0	102	26	0	0	128	271
Hourly Total	125	0	85	0	0	210	0	0	1	0	0	1	48	337	1	0	0	386	2	471	104	0	0	577	1174
9:00 AM	20	1	20	0	0	41	0	1	0	0	0	1	9	80	1	0	0	90	0	107	19	0	0	126	258
9:15 AM	20	0	19	0	0	39	0	0	1	0	3	1	11	70	1	0	0	82	1	91	26	0	0	118	240
9:30 AM	18	0	25	0	1	43	0	0	1	0	0	1	14	71	0	0	0	85	0	116	28	0	0	144	273
9:45 AM	19	0	15	0	0	34	0	0	0	0	0	0	8	75	0	0	0	83	0	100	22	0	0	122	239
Hourly Total	77	1	79	0	1	157	0	1	2	0	3	3	42	296	2	0	0	340	1	414	95	0	0	510	1010
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	13	0	14	0	0	27	1	0	0	0	0	1	3	105	0	0	0	108	0	86	21	0	0	107	243
11:15 AM	11	0	13	0	0	24	0	0	0	0	0	0	21	103	1	0	0	125	1	94	13	0	0	108	257
11:30 AM	18	0	12	0	0	30	0	1	0	0	0	1	18	95	0	0	0	113	1	103	19	0	0	123	267
11:45 AM	19	0	20	0	0	39	0	0	0	0	0	0	14	97	0	0	0	111	0	107	22	0	0	129	279
Hourly Total	61	0	59	0	0	120	1	1	0	0	0	2	56	400	1	0	0	457	2	390	75	0	0	467	1046
12:00 PM	22	0	8	0	0	30	0	0	0	0	0	0	19	99	0	0	0	118	1	101	29	0	0	131	279
12:15 PM	19	0	16	0	0	35	0	0	1	0	0	1	19	86	0	0	0	105	0	99	20	0	0	119	260
12:30 PM	34	0	24	0	0	58	0	0	1	0	0	1	12	106	0	0	0	118	1	103	24	0	0	128	305
12:45 PM	33	0	23	0	0	56	0	0	0	0	0	0	20	97	0	0	0	117	1	111	15	0	0	127	300
Hourly Total	108	0	71	0	0	179	0	0	2	0	0	2	70	388	0	0	0	458	3	414	88	0	0	505	1144
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	24	0	22	0	0	46	0	3	0	0	0	3	24	111	0	0	0	135	0	129	45	0	0	174	358
3:15 PM	25	0	20	0	0	45	0	0	0	0	0	0	24	123	0	0	0	147	0	117	38	0	0	155	347
3:30 PM	35	0	21	0	0	56	0	1	4	0	0	5	26	131	0	0	0	157	0	116	34	0	0	150	368
3:45 PM	29	0	25	0	0	54	0	0	1	0	0	1	18	124	0	0	0	142	0	96	44	0	0	140	337
Hourly Total	113	0	88	0	0	201	0	4	5	0	0	9	92	489	0	0	0	581	0	458	161	0	0	619	1410
4:00 PM	34	1	23	0	0	58	0	0	0	0	0	0	31	128	0	0	0	159	0	134	62	0	0	196	413
4:15 PM	43	0	33	0	0	76	0	0	1	0	0	1	37	157	0	0	1	194	0	125	40	0	0	165	436
4:30 PM	26	0	32	0	0	58	0	0	5	0	0	5	24	143	0	0	0	167	0	115	41	0	0	156	386

4:45 PM	31	0	28	0	0	59	0	0	3	0	0	3	22	123	0	0	0	145	0	113	31	0	0	144	351
Hourly Total	134	1	116	0	0	251	0	0	9	0	0	9	114	551	0	0	1	665	0	487	174	0	0	661	1586
5:00 PM	38	0	20	0	0	58	0	0	0	0	0	0	29	120	0	0	0	149	0	137	58	0	0	195	402
5:15 PM	22	0	25	0	0	47	0	0	0	0	0	0	26	113	0	0	0	139	1	100	29	0	0	130	316
5:30 PM	16	0	23	0	0	39	0	0	0	0	0	0	25	80	0	0	0	105	0	110	31	0	0	141	285
5:45 PM	27	0	24	0	0	51	0	0	0	0	1	0	19	87	0	0	0	106	0	94	24	0	0	118	275
Hourly Total	103	0	92	0	0	195	0	0	0	0	1	0	99	400	0	0	0	499	1	441	142	0	0	584	1278
Grand Total	845	2	664	0	1	1511	1	6	19	0	4	26	562	3119	4	0	1	3685	10	3365	934	0	0	4309	9531
Approach %	55.9	0.1	43.9	0.0	-	-	3.8	23.1	73.1	0.0	-	-	15.3	84.6	0.1	0.0	-	-	0.2	78.1	21.7	0.0	-	-	-
Total %	8.9	0.0	7.0	0.0	-	15.9	0.0	0.1	0.2	0.0	-	0.3	5.9	32.7	0.0	0.0	-	38.7	0.1	35.3	9.8	0.0	-	45.2	-
Motorcycles	8	0	6	0	-	14	0	0	0	0	-	0	13	45	0	0	-	58	0	33	9	0	-	42	114
% Motorcycles	0.9	0.0	0.9	-	-	0.9	0.0	0.0	0.0	-	-	0.0	2.3	1.4	0.0	-	-	1.6	0.0	1.0	1.0	-	-	1.0	1.2
Cars & Light Goods	809	2	637	0	-	1448	1	6	16	0	-	23	529	3003	4	0	-	3536	6	3274	893	0	-	4173	9180
% Cars & Light Goods	95.7	100.0	95.9	-	-	95.8	100.0	100.0	84.2	-	-	88.5	94.1	96.3	100.0	-	-	96.0	60.0	97.3	95.6	-	-	96.8	96.3
Buses	3	0	7	0	-	10	0	0	0	0	-	0	10	11	0	0	-	21	0	15	6	0	-	21	52
% Buses	0.4	0.0	1.1	-	-	0.7	0.0	0.0	0.0	-	-	0.0	1.8	0.4	0.0	-	-	0.6	0.0	0.4	0.6	-	-	0.5	0.5
Single-Unit Trucks	20	0	13	0	-	33	0	0	3	0	-	3	6	52	0	0	-	58	4	36	23	0	-	63	157
% Single-Unit Trucks	2.4	0.0	2.0	-	-	2.2	0.0	0.0	15.8	-	-	11.5	1.1	1.7	0.0	-	-	1.6	40.0	1.1	2.5	-	-	1.5	1.6
Articulated Trucks	5	0	1	0	-	6	0	0	0	0	-	0	4	6	0	0	-	10	0	6	3	0	-	9	25
% Articulated Trucks	0.6	0.0	0.2	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.7	0.2	0.0	-	-	0.3	0.0	0.2	0.3	-	-	0.2	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	1	0	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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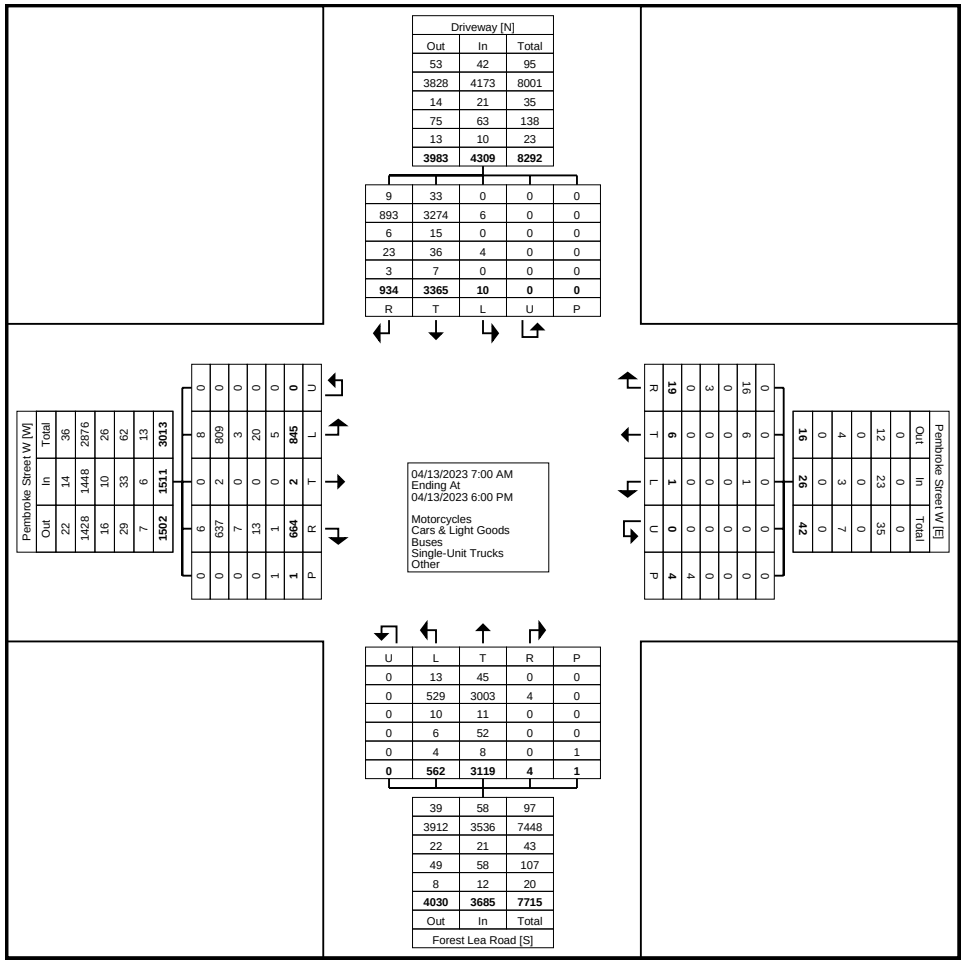
Count Name: Pembroke Street W & Forest Lea Road
Site Code: 220694
Start Date: 04/13/2023



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: Pembroke Street W & Forest Lea Road
Site Code: 220694
Start Date: 04/13/2023

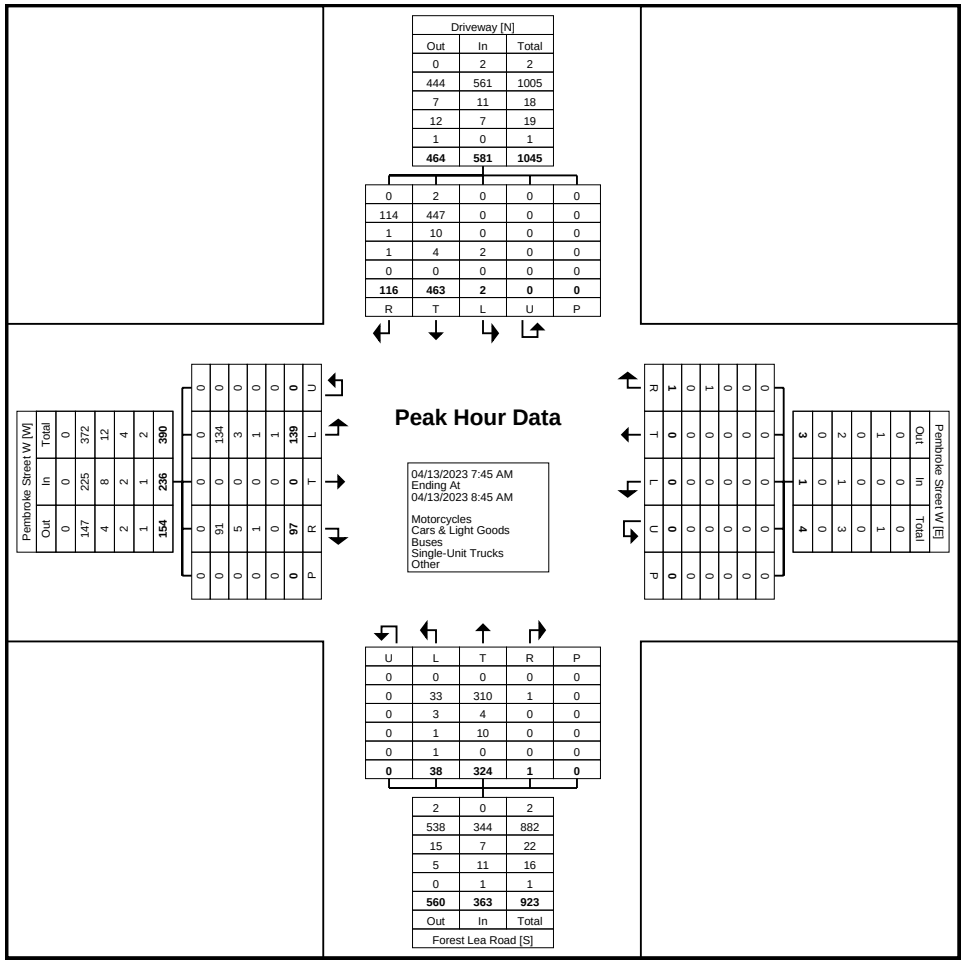
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:45 AM	41	0	28	0	0	69	0	0	0	0	0	0	5	72	0	0	0	77	0	94	38	0	0	132	278
8:00 AM	23	0	25	0	0	48	0	0	1	0	0	1	8	64	0	0	0	72	2	107	31	0	0	140	261
8:15 AM	46	0	21	0	0	67	0	0	0	0	0	0	10	89	1	0	0	100	0	132	22	0	0	154	321
8:30 AM	29	0	23	0	0	52	0	0	0	0	0	0	15	99	0	0	0	114	0	130	25	0	0	155	321
Total	139	0	97	0	0	236	0	0	1	0	0	1	38	324	1	0	0	363	2	463	116	0	0	581	1181
Approach %	58.9	0.0	41.1	0.0	-	-	0.0	0.0	100.0	0.0	-	-	10.5	89.3	0.3	0.0	-	-	0.3	79.7	20.0	0.0	-	-	-
Total %	11.8	0.0	8.2	0.0	-	20.0	0.0	0.0	0.1	0.0	-	0.1	3.2	27.4	0.1	0.0	-	30.7	0.2	39.2	9.8	0.0	-	49.2	-
PHF	0.755	0.000	0.866	0.000	-	0.855	0.000	0.000	0.250	0.000	-	0.250	0.633	0.818	0.250	0.000	-	0.796	0.250	0.877	0.763	0.000	-	0.937	0.920
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2
% Motorcycles	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.3	0.2
Cars & Light Goods	134	0	91	0	-	225	0	0	0	0	-	0	33	310	1	0	-	344	0	447	114	0	-	561	1130
% Cars & Light Goods	96.4	-	93.8	-	-	95.3	-	-	0.0	-	-	0.0	86.8	95.7	100.0	-	-	94.8	0.0	96.5	98.3	-	-	96.6	95.7
Buses	3	0	5	0	-	8	0	0	0	0	-	0	3	4	0	0	-	7	0	10	1	0	-	11	26
% Buses	2.2	-	5.2	-	-	3.4	-	-	0.0	-	-	0.0	7.9	1.2	0.0	-	-	1.9	0.0	2.2	0.9	-	-	1.9	2.2
Single-Unit Trucks	1	0	1	0	-	2	0	0	1	0	-	1	1	10	0	0	-	11	2	4	1	0	-	7	21
% Single-Unit Trucks	0.7	-	1.0	-	-	0.8	-	-	100.0	-	-	100.0	2.6	3.1	0.0	-	-	3.0	100.0	0.9	0.9	-	-	1.2	1.8
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	0.7	-	0.0	-	-	0.4	-	-	0.0	-	-	0.0	2.6	0.0	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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: Pembroke Street W & Forest Lea Road
Site Code: 220694
Start Date: 04/13/2023



Turning Movement Peak Hour Data Plot (7:45 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road
Site Code: 220694
Start Date: 04/13/2023

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
12:00 PM	22	0	8	0	0	30	0	0	0	0	0	0	19	99	0	0	0	118	1	101	29	0	0	131	279
12:15 PM	19	0	16	0	0	35	0	0	1	0	0	1	19	86	0	0	0	105	0	99	20	0	0	119	260
12:30 PM	34	0	24	0	0	58	0	0	1	0	0	1	12	106	0	0	0	118	1	103	24	0	0	128	305
12:45 PM	33	0	23	0	0	56	0	0	0	0	0	0	20	97	0	0	0	117	1	111	15	0	0	127	300
Total	108	0	71	0	0	179	0	0	2	0	0	2	70	388	0	0	0	458	3	414	88	0	0	505	1144
Approach %	60.3	0.0	39.7	0.0	-	-	0.0	0.0	100.0	0.0	-	-	15.3	84.7	0.0	0.0	-	-	0.6	82.0	17.4	0.0	-	-	-
Total %	9.4	0.0	6.2	0.0	-	15.6	0.0	0.0	0.2	0.0	-	0.2	6.1	33.9	0.0	0.0	-	40.0	0.3	36.2	7.7	0.0	-	44.1	-
PHF	0.794	0.000	0.740	0.000	-	0.772	0.000	0.000	0.500	0.000	-	0.500	0.875	0.915	0.000	0.000	-	0.970	0.750	0.932	0.759	0.000	-	0.964	0.938
Motorcycles	0	0	4	0	-	4	0	0	0	0	-	0	3	7	0	0	-	10	0	0	0	0	-	0	14
% Motorcycles	0.0	-	5.6	-	-	2.2	-	-	0.0	-	-	0.0	4.3	1.8	-	-	-	2.2	0.0	0.0	0.0	-	-	0.0	1.2
Cars & Light Goods	103	0	63	0	-	166	0	0	0	0	-	0	65	369	0	0	-	434	1	409	86	0	-	496	1096
% Cars & Light Goods	95.4	-	88.7	-	-	92.7	-	-	0.0	-	-	0.0	92.9	95.1	-	-	-	94.8	33.3	98.8	97.7	-	-	98.2	95.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	0	-	1	2
% Buses	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.3	-	-	-	0.2	0.0	0.0	1.1	-	-	0.2	0.2
Single-Unit Trucks	4	0	4	0	-	8	0	0	2	0	-	2	2	7	0	0	-	9	2	3	1	0	-	6	25
% Single-Unit Trucks	3.7	-	5.6	-	-	4.5	-	-	100.0	-	-	100.0	2.9	1.8	-	-	-	2.0	66.7	0.7	1.1	-	-	1.2	2.2
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	4	0	0	-	4	0	2	0	0	-	2	7
% Articulated Trucks	0.9	-	0.0	-	-	0.6	-	-	0.0	-	-	0.0	0.0	1.0	-	-	-	0.9	0.0	0.5	0.0	-	-	0.4	0.6
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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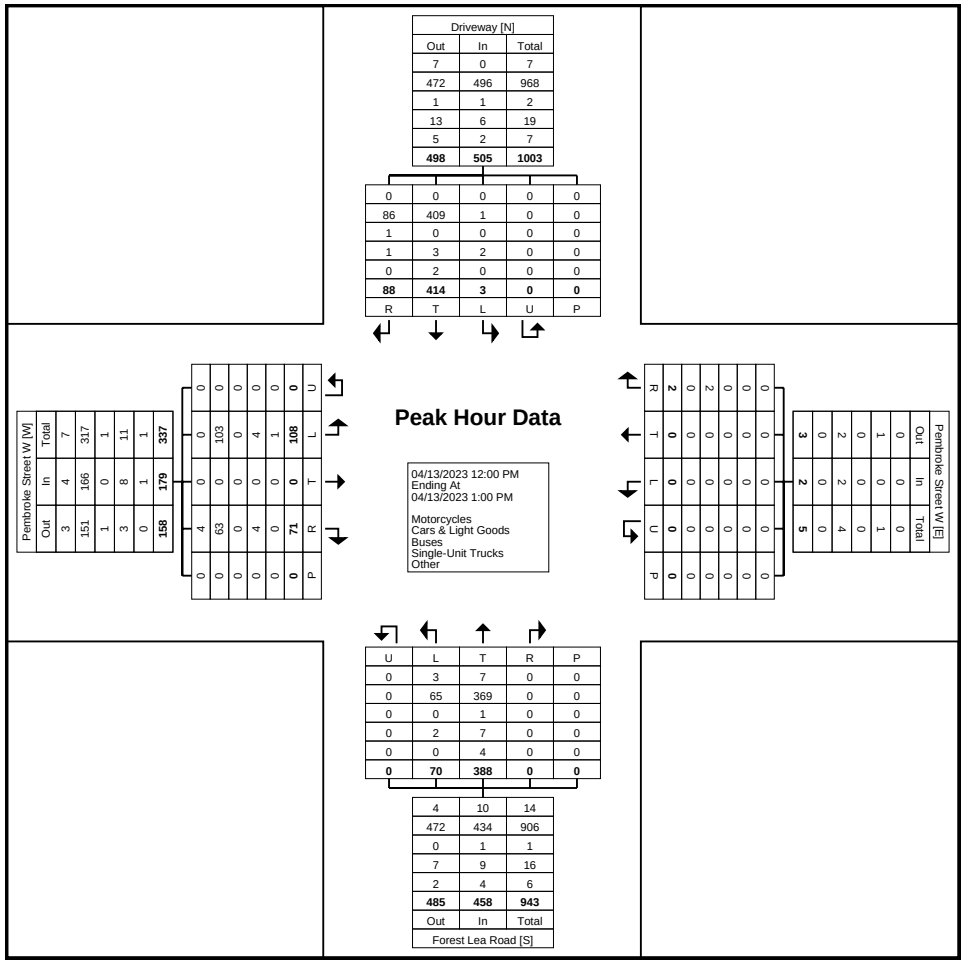

Turning Movement Peak Hour Data Plot (12:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road
Site Code: 220694
Start Date: 04/13/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	34	1	23	0	0	58	0	0	0	0	0	0	31	128	0	0	0	159	0	134	62	0	0	196	413
4:15 PM	43	0	33	0	0	76	0	0	1	0	0	1	37	157	0	0	1	194	0	125	40	0	0	165	436
4:30 PM	26	0	32	0	0	58	0	0	5	0	0	5	24	143	0	0	0	167	0	115	41	0	0	156	386
4:45 PM	31	0	28	0	0	59	0	0	3	0	0	3	22	123	0	0	0	145	0	113	31	0	0	144	351
Total	134	1	116	0	0	251	0	0	9	0	0	9	114	551	0	0	1	665	0	487	174	0	0	661	1586
Approach %	53.4	0.4	46.2	0.0	-	-	0.0	0.0	100.0	0.0	-	-	17.1	82.9	0.0	0.0	-	-	0.0	73.7	26.3	0.0	-	-	-
Total %	8.4	0.1	7.3	0.0	-	15.8	0.0	0.0	0.6	0.0	-	0.6	7.2	34.7	0.0	0.0	-	41.9	0.0	30.7	11.0	0.0	-	41.7	-
PHF	0.779	0.250	0.879	0.000	-	0.826	0.000	0.000	0.450	0.000	-	0.450	0.770	0.877	0.000	0.000	-	0.857	0.000	0.909	0.702	0.000	-	0.843	0.909
Motorcycles	0	0	1	0	-	1	0	0	0	0	-	0	0	10	0	0	-	10	0	8	5	0	-	13	24
% Motorcycles	0.0	0.0	0.9	-	-	0.4	-	-	0.0	-	-	0.0	0.0	1.8	-	-	-	1.5	-	1.6	2.9	-	-	2.0	1.5
Cars & Light Goods	133	1	113	0	-	247	0	0	9	0	-	9	111	538	0	0	-	649	0	470	162	0	-	632	1537
% Cars & Light Goods	99.3	100.0	97.4	-	-	98.4	-	-	100.0	-	-	100.0	97.4	97.6	-	-	-	97.6	-	96.5	93.1	-	-	95.6	96.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	2	1	0	0	-	3	0	1	2	0	-	3	6
% Buses	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	1.8	0.2	-	-	-	0.5	-	0.2	1.1	-	-	0.5	0.4
Single-Unit Trucks	1	0	1	0	-	2	0	0	0	0	-	0	0	1	0	0	-	1	0	7	4	0	-	11	14
% Single-Unit Trucks	0.7	0.0	0.9	-	-	0.8	-	-	0.0	-	-	0.0	0.0	0.2	-	-	-	0.2	-	1.4	2.3	-	-	1.7	0.9
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	0	1	1	0	-	2	4
% Articulated Trucks	0.0	0.0	0.9	-	-	0.4	-	-	0.0	-	-	0.0	0.9	0.0	-	-	-	0.2	-	0.2	0.6	-	-	0.3	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	0.2	-	-	-	0.2	-	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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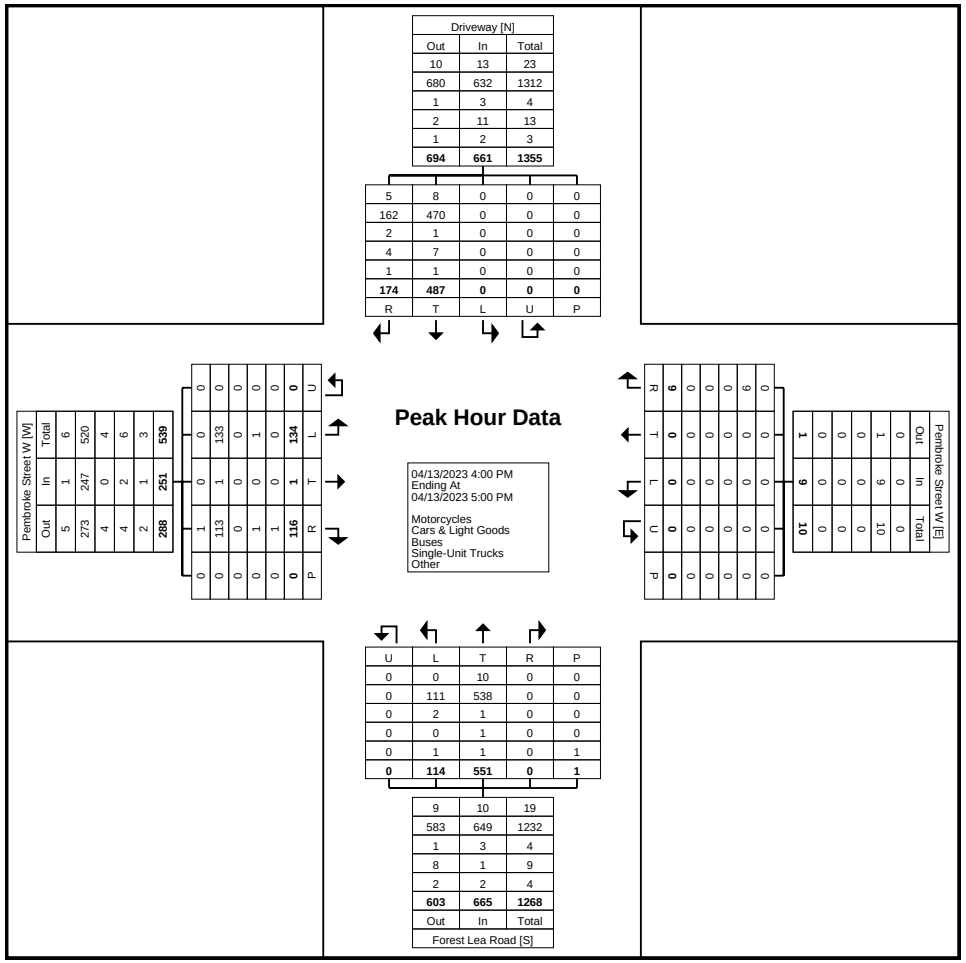

Turning Movement Peak Hour Data Plot (4:00 PM)