



# Agenda

## Operations Committee

Chair: Councillor Plummer  
Tuesday, January 21, 2025  
Council Chambers  
6:00 p.m.

(This meeting is live streamed on the [City's YouTube page](#) or it can be viewed on YourTV Community Channel 12)

1. **Land Acknowledgement**
2. **Call to Order**
3. **Disclosure of Pecuniary Interest & General Nature Thereof**
4. **Approval/Amendment of Meeting Agenda**
5. **Approval of Minutes**
  - Operations Committee – December 17, 2024
6. **Business Arising from Minutes**
7. **New Business**
  - a. On-Demand, Turn-Key Transit Services (RFP 24-08) – RFP Award – Treasurer/Deputy Clerk Lochtie
  - b. Engineering Services - Albert Street Reconstruction Design Award – Director Lewis
  - c. Transportation Master Plan – Director Lewis
  - d. Integrity Commissioner Appointment – Clerk Charbonneau
8. **Adjournment**

# Draft Operations Committee Meeting

Council Chambers  
Pembroke, Ontario  
December 17, 2024  
6:00 p.m.

## 1. Land Acknowledgement

## 2. Call to Order

### Present:

Councillor Plummer, Chair  
Mayor Gervais  
Councillor Jacyno (virtual)  
Councillor Kuehl  
Councillor Lafreniere  
Councillor Purcell

### Regrets:

Deputy Mayor Abdallah

### Also Present:

David Unrau, Chief Administrative Officer/Deputy Clerk  
Victoria Charbonneau, Municipal Clerk

## 3. Disclosure of Pecuniary Interest and General Nature Thereof

There were no disclosures of pecuniary interests declared.

## 4. Approval/Amendment of Meeting Agenda

### Motion:

Moved by Councillor Lafreniere  
Seconded by Councillor Kuehl

That the agenda of the Operations Committee meeting of December 17, 2024, be approved as circulated.

### Carried

## 5. Approval of Minutes

a. Operations Committee – November 19, 2024

### Motion:

Moved by Councillor Lafreniere  
Seconded by Councillor Kuehl

That the minutes of the Operations Committee meeting of November 19, 2024, be approved as circulated.

### Carried

## 6. Business Arising from Minutes

There was no business arising from the minutes.

## 7. Presentations/Delegations

There were no presentations or delegations.

## **8. New Business**

### **a. 2025 Council and Committee Meeting Schedule**

Clerk Charbonneau presented the report.

#### **Motion:**

Moved by Councillor Lafreniere

Seconded by Mayor Gervais

That the Operations Committee approve the 2025 Council and Committee meeting Schedule, as presented.

#### **Carried**

### **b. Agreement with Pembroke and Area Fiddling Association**

CAO Unrau presented the report. The following points from the report were highlighted:

- Questions regarding how the amount was settled on in the beginning of the agreement
- It was responded that originally, every field at Riverside Park as utilized for the festival and the dollar amount was set high to cover any major restoration required.

DIRECTION: CAO to confirm if the Fiddling Association uses the soccer field for parking during the festival.

#### **Motion:**

Moved by Councillor Purcell

Seconded by Councillor Lafreniere

That the Operations Committee approve the reduction of the Pembroke and Are Fiddling Association damage deposit from \$20,000 to and interest-bearing \$5,000 deposit and present an amended agreement to Council for passing at an upcoming meeting, as presented.

#### **Carried**

### **c. Festival Hall Management Agreement**

CAO Unrau presented the report. The following points from the report were highlighted:

- Concerns regarding some of the significant rate increases and the potential to adversely affect some legacy users of the facility (and their events they have consistently run at the hall for decades) was noted.
- It was discussed that, the new fee structure could negatively effect the collaborative partnership between the City and the community user groups who invest the dollars they make from their events at Festival Hall back into the City's community.
- It was stated that the Manager of Kitchissippi Productions met with the Kiwanis club and have come to an agreement on acceptable fees.
- It was stated that points taken into consideration for the updated fee structure are the many costs and expenses associated with the many moving parts of event coordination and maintaining the facility in a sustainable way.

#### **Motion:**

Moved by Councillor Purcell

Seconded by Mayor Gervais

That the Operations Committee table the recommendation to authorize the Mayor and Chief Administrative Officer to execute the agreement between the Consortium of the Municipal Councils

of the City of Pembroke, the Township of Laurentian Valley, and the Town of Petawawa and Kitchissippi Productions Inc. for management services of Festival Hall @ L'Equinoxe and pass the corresponding by-law to formalize the agreement, as presented.

**Defeated**

**Motion:**

Moved by Councillor Lafreniere

Seconded by Councillor Kuehl

That the Operations Committee recommend Council authorize the Mayor and Chief Administrative Officer to execute the agreement between the Consortium of the Municipal Councils of the City of Pembroke, the Township of Laurentian Valley, and the Town of Petawawa and Kitchissippi Productions Inc. for management services of Festival Hall @ L'Equinoxe and pass the corresponding by-law to formalize the agreement, as presented.

**Carried**

Councillor Kuehl called for a recorded vote.

Yea: Councillors Jacyno, Kuehl, Lafreniere, Plummer

Nea: Councillor Purcell, Mayor Gervais

**Carried 4:2**

d. Municipal Accommodation Tax By-law

CAO Unrau presented the report. The following points from the report were highlighted:

**Motion:**

Moved by Councillor Lafreniere

Seconded by Councillor Kuehl

That the Operations Committee recommend to Council the approval of by-law 2024-72 being a by-law to repeal and replace By-law 29 (the establishment of a Municipal Accommodations Tax in the City of Pembroke).

**Carried**

**9. Adjournment**

**Motion:**

Moved by Councillor Kuehl

Seconded by Councillor Lafreniere

That the Operations Committee meeting of December 17, 2024, adjourn at 6:37 p.m.

**Carried**





# Committee Report

**To:** Councillor Andrew Plummer  
Operations Committee

**From:** Angela Lochtie, Treasurer/Deputy Clerk  
Treasury Department

**Date:** 2025-01-21

**Subject:** **On-Demand, Turn-Key Transit Services (RFP 24-08) – RFP Award**

## **Recommendation:**

The Treasury Department recommends the following:

- That the Operations Committee endorse and recommend that staff commence negotiations to enter into an agreement between the Corporation of the City of Pembroke, and **Mobility Transportation Specialists (MTS)** to provide turn-key transit services for an initial three (3) year term with an option to extend for an additional four (4) years.

## **CAO Review:**

I concur with the recommendations of the report.

David Unrau, CAO

## **Financial Implications/Comment:**

- As part of the 2025 Draft Budget, a budget of \$362,500 was identified for contracted transit services as compared to an estimated six-month 2025 costs of \$324,427.
- As actual service demand is unknown, it is recommended to keep the 2025 budget as-is representing a contingency of \$38,073.
- The initial transit service will support total annual service hours of 6,250 per year as provided by two transit vehicles plus one backup vehicle. Incremental vehicle and service hour costs have been provided as part of the RFP should actual service demand differ from this initial estimate. It is expected that actual service hours will require adjustment based on demand, particularly during the first year of service.
- The operating cost of the service will be partially offset by fares charged to riders and advertisement sold. Budgeted revenues for these two items are estimates as fees have not yet been formally established. Additionally, through this increased



investment in public transportation, the City of Pembroke is expected to receive additional funding for public transportation in 2026 from the provincial gas tax.

- Following this award, the City's project management firm (Left Turn, Right Turn or LTRT) will prepare the City's fare and cancellation policies in consultation with the Transit Committee for approval by Council.
- Over the next three budget cycles, a total levy increase over this period is estimated at 2.03% based on an initial service of 6,250 hours annually as provided by two transit vehicles and one backup.
  - A higher demand scenario of 7,500 service hours and one additional vehicle is estimated at a 2.25% levy increase split over the three years
  - A lower demand scenario of 5,000 service hours and one vehicle plus one backup is estimated at a 1.57% levy increase split over the three years
  - See Annex A for more information. Revenues are estimates. Additional grant funding may be available. Operating expenses does not include additional snow removal in the city or new City staffing. It is uncertain whether these additional costs will be required at this time.
  - While the transit operator would be responsible to determine and schedule the number of vehicles in service based on demand, 6,250 hours of service per year would likely equate to roughly one vehicle running throughout the day supplemented by an additional vehicle in service during peak morning and afternoon periods during the week.
  - LTRT estimates initial ridership of 1,200 – 1,700 riders per month during the first year of service.
- The City has been successful in obtaining grant funding for the installation of two DC fast-chargers under the Zero Emission Vehicle Infrastructure Program (ZEVIP). This project has already been included in the City's draft 2025 capital budget.
- A decision on the City's FCM Green Municipal Fund is expected in late January/February. At this time, any switch from diesel to electric vehicles is estimated to be cost-neutral from an operating cost point-of-view. Actual costs would be known following formal procurement of leased electric vehicles.
- Additional grant applications may be possible for the Rural Transit Fund (Capital) Stream and the Ontario Transit Investment Fund.

### **Background:**

- A Transit Feasibility Study was completed by Paradigm Solutions and presented to City Council in March 2022.
- The Feasibility Study conducted a thorough public consultation which indicated overwhelming support for transit.
- Following a February 2024 meeting of the Finance and Administration Committee, Council resolved the following:



- THAT the City of Pembroke issue a Request for Proposal (RFP) for an integrated on-demand transit service (excluding Handi-bus service) commencing April 1, 2025 for an initial three-year term with an option to extend for an additional four years. The RFP would be modelled similar to (the municipality of) North Grenville but include both gas or electric bus options for discussion. The hours of service would be: Monday to Wednesday 7 a.m. to 8 p.m. Thursday and Friday 7 a.m. to 10 p.m. Saturday and Sunday 8 a.m. to 6 p.m.
- In the summer of 202, the City has contracted Left Turn Right Turn (LTRT), a transit consulting firm, to provide project management services throughout the development, launch and post-implementation of the service.
- The City established a Transit Committee comprised of members of the public, Council representatives, and community stakeholders and held a workshop in October 2024 as they were developing the needs and specifications for the transit service.
- The contract was publicly advertised and tendered with three (3) bids received.
- Tenders were opened after 2:00:59pm on Thursday December 5, 2024 and were evaluated by the City’s Treasurer, Chief Administrative Officer and LTRT.
- As part of their contract, LTRT reviewed and analyzed the bids and checked references.
- Following a review of the technical evaluation, the City scheduled with interviews with the two proponents who had passed the benchmark scoring requirement of 75%.
- The interviews were conducted on January 6, 2025.
- Pricing submissions were opened following the completion of the technical evaluation and interviews.
- Bids were received as summarized below:

<b>Contractor</b>	<b>Does the Technical Score achieve the benchmark score of 75%</b>	<b>Ranking</b>
Mobility Transportation Specialists	Yes	1
Via Transportation, Inc.	No	3
Transdev (Voyago)	Yes	2



## Discussion:

- Mobility Transportation Specialists (MTS), the recommended service provider for the City of Pembroke, also provides transit services to the Municipality of North Grenville, the Town of Coburg and York Region Transit.
- The service launch date is anticipated between July 7, 2025, and August 5, 2025.
- As advertised in the RFP, the contract would be set for an initial three-year term (starting on the service launch date) with an option to extend for an additional four years.
- The contract includes:
  - On-demand public transportation services primarily within the City of Pembroke, three AODA-compliant vehicles, storage for the vehicles, operators
  - User-friendly, accessible and customizable public interface that allows riders to pre-book trips and performance monitoring tools.
  - Both classroom and behind-the-wheel training for operators
  - Customer service and a dedicated phone line during operating hours for riders attempting to get more information about the service or to book a ride.
  - Partnership with Blaise Transit for their Blaise Transit App for passengers, Blaise Drive software for drivers, the Blaise Engine for the administrative dashboard and the Blaise Routing Algorithm.
  - The vendor preferred transit vehicle is a Dodge Ram ProMaster P5 Side Entry. This size of vehicle will facilitate larger pickups of passengers at the college as well as assist with driver recruitment as it does not require a special class of drivers license to operate.
  - Initial service hours as follows:
    - At the start of service, the Contractor is expected to deliver service during the following hours:
      - Monday – Wednesday: 7 a.m. to 8 p.m.
      - Thursday – Friday: 7 a.m. to 10 p.m.
      - Saturday: 8 a.m. to 6 p.m.
      - These times are subject to change based on operational constraints and passenger demand.
    - No service on ten (10) provincial and federal statutory holidays
      - New Year's Day
      - Family Day
      - Good Friday
      - Victoria Day
      - Canada Day
      - Civic Day
      - Labour Day
      - Thanksgiving Day
      - Christmas Day
      - Boxing Day



- Note: Based on the recommendations of LTRT, Sunday service was not recommended to start as this is typically the lowest revenue-generating /most expensive day of the week to operate.
  - It is possible that service hours and/or days of operation may need to change during the course of the contract as demand for the service is better understood.
- The benefits to the city of adopting this new service include:
    - **Economic:** Transit connects employees with employers, stores with customers, making Pembroke more attractive for business development. The service will foster economic growth by providing residents with access to essential services and job sites. Studies have shown that investments in transit generate economic returns in the community including:
      - Direct ROI & Multiplier Effects: One study estimated that for every \$1 invested in public transit, there are about \$4 in economic returns. (\$1.70 benefits from spending, and \$2.00 impact from long-term cost savings). A study completed for the TTC demonstrated \$1.08 in economic development for every \$1 invested
      - More local spending: as spending shifts from auto expenses to other household purchases.
    - **Environmental:** This transit project aims to reduce private vehicle usage through the use of public transit, decreasing traffic congestion and community greenhouse gas emissions.
    - **Community equity, accessibility and inclusivity:** Access to public transit promotes inclusion and full access to the community for all by supporting individuals with limited access to automobiles, aging individuals, and lower-income residents. Transit facilitates both economic and social inclusion/belonging in the community.
    - **Quality of Life:** Transportation is often cited as a major barrier to accessing critical services including grocery stores, healthcare and educational institutions which can negatively impact life outcomes.

### Alternatives Considered:

- The 2022 Transit Feasibility Study assessed all reasonable options for public transportation in the City of Pembroke before concluding that a point-to-point on-demand service was preferred. These other options included:
  - Fixed-route service
  - A hybrid between on-demand and fixed-route service (referred to as a deviated-fixed route)
  - Door-to-door on-demand service
  - Taxi/rideshare voucher model
  - Vanpool models
- The Study also examined the operator model options before concluding that a private contractor would be the most suitable. These other options included:



- In-house operations
- Inter-government collaboration
- Non-operational management

**Strategic Plan Impact:**

- Through its Strategic Plan, the City of Pembroke recognizes the importance of transit to improving equity, sustainability and community vibrancy.
- Transportation was identified as one of the five priorities in the City's previous Strategic Plan. The actionable items from that priority included researching the feasibility of transit opportunities and developing a local public transit model.

**Attachments:**

Annex A: Three-Year Budget Estimate

Letters of Support: Algonquin College, County of Renfrew, PBIA

Respectfully submitted,

Angela Lochtie, Treasurer/Deputy Clerk  
Treasury Department



**Annex A: Forecasted Transit Costing**

Expected Effort = 6,250 hours of service per year using two transit vehicles plus one backup

High Effort = 7,500 hours of service per year using three transit vehicles plus one backup

Low Effort = 5,000 hours of service using one transit vehicle plus one backup

This estimate assumes that additional City staffing will not be required to support transit. There is no provision for extra snow removal costs and/or bus shelter equipment at this time. Should the City be successful in receiving the FCM Green Municipal Fund grant, the costs to switch to electric buses has been assumed to be cost-neutral in this analysis. Actual demand and net costs will be better understood at the conclusion of the initial three-year term.

Item	Expected Effort 2025	Expected Effort 2026	Expected Effort 2027	High Effort 2025	High Effort 2026	High Effort 2027	Low Effort 2025	Low Effort 2026	Low Effort 2027
Provincial Gas Tax	0	(25,273)	(41,831)	0	(25,273)	(41,831)	0	(25,273)	(41,831)
Federal Grant or Reserve	(253,108)	(246,892)	0	(237,816)	(262,184)	0	(186,578)	(262,562)	(50,860)
Provincial Grant*	0	0	0	0	0	0	0	0	0
Farebox Revenue	(27,000)	(89,200)	(147,640)	(54,000)	(203,400)	(245,280)	(13,500)	(44,600)	(73,820)
Advertising or Sponsorships	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)
<b>Total Revenues</b>	<b>(290,108)</b>	<b>(371,365)</b>	<b>(199,471)</b>	<b>(301,186)</b>	<b>(500,857)</b>	<b>(297,111)</b>	<b>(210,078)</b>	<b>(342,435)</b>	<b>(176,511)</b>
Start-Up Costs	108,517	25,000	15,000	108,517	25,000	15,000	108,517	25,000	15,000
Contract and Overhead Costs	359,627	700,045	732,029	431,115	847,503	888,757	288,138	554,725	581,865
<b>Total Costs</b>	<b>468,143</b>	<b>725,045</b>	<b>747,029</b>	<b>539,632</b>	<b>872,503</b>	<b>903,757</b>	<b>396,655</b>	<b>579,725</b>	<b>596,865</b>
<b>Net Cost</b>	<b>178,035</b>	<b>353,680</b>	<b>547,558</b>	<b>237,816</b>	<b>371,646</b>	<b>606,646</b>	<b>186,578</b>	<b>237,289</b>	<b>420,354</b>
Incremental Cost	178,035	175,645	193,878	237,816	133,830	235,000	186,578	50,712	183,064
Annual Levy Increase	0.7%	0.6%	0.7%	1.0%	0.5%	0.8%	0.7%	0.2%	0.6%

Total 3-year Levy Increase	Expected = 2.03%	High = 2.25%	Low = 1.57%
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\*City could make application to the Ontario Transit Investment Fund (OTIF) for possible funding



Pembroke Business Improvement Area  
1 Pembroke St. E.  
Pembroke, ON  
K8A 3J5  
613-629-5555

August 1, 2024

On behalf of the Pembroke Business Improvement Area (PBIA), board of directors and stakeholders, we strongly support the City of Pembroke's application for funding through the Green Municipal Fund Transportation Stream and feel it will have positive economic impact on the businesses in Downtown Pembroke.

The PBIA more colloquially know as Downtown Pembroke is comprised of commercial and residential buildings it is home to 150 business, including retail, eateries, personal / professional services and 5 of the 6 banks that are located in the city. The implementation of an on-demand transit pilot project to the city will allow for more residents and tourist an affordable and convenient way to get to the city's core.

Implementing an on-demand transit service will provide many economic benefits to the downtown as it will increase access to the area in an affordable way for not only residents in the community but also for tourist in the area. Currently there are no hotels in Downtown Pembroke and an on-demand transit system will be a great option for those visiting the city to come and enjoy Downtown Pembroke.

Employee attraction and retention remains a challenge since COVID-19 for many downtown businesses, an on-demand transit service will help to remove transportation barriers, creating a stronger more dependable workforce, which will in turn create economic growth in the area.

I hope that this letter of support will help endorse the City of Pembroke's application and assist them in executing their proposed-on demand transit project.

Sincerely,

Betha Summers  
Pembroke Business Improvement Area | Executive Director



Department of  
Development & Property



9 INTERNATIONAL DRIVE  
PEMBROKE, ON, CANADA  
K8A 6W5  
613-735-7288  
FAX: 613-735-2081  
[www.countyofrenfrew.on.ca](http://www.countyofrenfrew.on.ca)

July 29, 2024

Federation of Canadian Municipalities  
24 Clarence Street  
Ottawa, Ontario K1N 5P3

RE: Green Municipal Fund

On behalf of County of Renfrew, please accept this letter as our strong support for the City of Pembroke's application for funding through the Green Municipal Fund's Transportation Stream to implement an on-demand transit pilot project. This innovative project, slated to commence on April 1, 2025, will employ two passenger vans and leverage a hailing service app similar to Uber, alongside a phone-in option for those without access to a cell phone.

The need for this type of transit service in the City of Pembroke is evident when considering our demographic landscape. Pembroke has a population of approximately 14,000 residents, with a significant portion being seniors and low-income families. According to the latest census data, nearly 20% of Pembroke's population is aged 65 and over, a demographic that often faces mobility challenges. Furthermore, over 15% of City residents live below the poverty line, making affordable and accessible transportation essential for accessing employment, healthcare, and other vital services.

Implementing an on-demand transit service will yield numerous socio-economic benefits for our community. First, it will enhance mobility for seniors and low-income residents, enabling them to participate more fully in community life and access essential services. This, in turn, can improve quality of life and overall well-being. Second, the project will reduce transportation-related barriers to employment, supporting our local economy by making it easier for residents to commute to work, especially for those employed in sectors with irregular hours.

Moreover, the proposed fare of \$5 per ride is designed to be affordable while ensuring the sustainability of the service. This cost is lower than typical taxi fares, making it a more viable option for many residents. The availability of a phone-in option also ensures inclusivity, allowing all residents, regardless of their technological proficiency, to benefit from the service.

This project dovetails very well with ongoing County of Renfrew initiatives pertaining to the expansion of community services, particularly around our MESA initiative, a collaborative approach to compassionate care in dealing with homelessness, substance use, addictions and mental health. This in effort to create a more compassionate and inclusive community.

August 1, 2024

Mayor Ron Gervais  
City of Pembroke  
1 Pembroke St E  
Pembroke, ON K8A 3J5

Dear Mayor Gervais,

Algonquin College's Pembroke Waterfront Campus is pleased to provide this letter in support of the City of Pembroke's efforts to establish an on demand public transit system within the city limits.

As a post-secondary institution, we value our excellent working relationship with the City of Pembroke and appreciate the effort the city has been making to find solutions to an issue that impacts our students. In recent years, our student population has diversified as we have seen more international students join our learning community. Very few of these students are eligible to drive in Canada or do not have access to a vehicle. Therefore, most walk to the campus to attend classes which limits where they can live in our community.

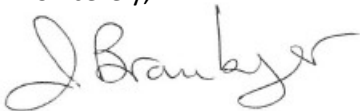
Additionally, we have many out of town domestic students or local students who live within the city and do not have a vehicle. These students are also challenged to get to and from school, as well as to employer placement experiences and part time jobs. We have heard our students and their families raise concerns about the absence of public transit in our community for many years.

The current pressure on our local housing and rental market has made it more difficult for students to find housing within walking distance of the campus. Having an on demand public transit system would expand the housing market for students and the general public.

For these reasons, we steadfastly endorse any funding application the city makes to move this project forward. The return of public transit to the city of Pembroke will support some of the most vulnerable people in our community, including college students.

On behalf of our college community, I wish you the best of luck with your application.

Sincerely,



**Jamie Bramburger**

**Interim Dean**

T 613.735.4700 x2756

**Algonquin College** | 1 College Way | Pembroke | ON | K8A 0C8 | Canada

The development of a public transportation system in the City of Pembroke will also facilitate and support newcomer and workforce attraction, and tourism development. Local employers note the lack of public transportation as one of biggest barriers with newcomer and workforce attraction as well as employment retention. The project will similarly enhance the attractiveness of the Pembroke campus of Algonquin College, a key asset in attracting newcomers to our region, and a key element in building a more sustainable community and economy.

Environmental benefits are also anticipated. By providing an efficient and flexible transit option, the project can reduce the number of single-occupancy vehicle trips within the city, thereby lowering greenhouse gas emissions and contributing to our community's environmental goals.

In summary, the City of Pembroke's on-demand transit pilot project promises to address critical transportation needs in our community, offering significant socio-economic and environmental benefits. This pilot may provide a template for how other communities within our County can successfully address similar issues in the near future. The County of Renfrew strongly supports this initiative and urges the Green Municipal Fund to provide the necessary funding to bring this project to fruition.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Wybou', with a long horizontal stroke extending to the right.

David Wybou  
Business Development Officer  
Economic Development Division

[dwybou@countyofrenfrew.on.ca](mailto:dwybou@countyofrenfrew.on.ca)  
613-735-7288, x432



# Committee Report

**To:** Councillor Andrew Plummer  
Operations Committee

**From:** Brian Lewis, Director  
Operations Department

**Date:** 2025-01-21

**Subject :** **Engineering Services for Albert Street Reconstruction**

## **Recommendation:**

That the City of Pembroke Operations Committee recommend that Council award the Engineering Design and Contract Administration Services for Albert Street Reconstruction Request for Proposal P-24-11 to Jp2g Consultants Inc. in the amount of \$174,405.00 plus applicable HST and that the shortfall come from surplus funds from the completed capital projects as noted below.

## **CAO Review :**

The report has been reviewed and I concur with the information and recommendation.

David Unrau, P.Eng., PMP

## **Financial Comment:**

As part of the 2024 Capital Budget, \$130,000 was identified for the Albert Street design.

When the net HST is added to the design costs, the total value is \$177,474.53, representing a budget shortfall of \$47,474.53. The remaining costs as awarded can be funded from the surplus funds in the Victoria Street ESA and the Dominion to Draper Sanitary Sewer projects.

The above includes the future award of Contract Administrative services to Jp2g Consultants Inc, based on the quoted values submitted in the proposal and will only be awarded when construction contracts are awarded.

Angela Lochtie  
Treasurer/Deputy Clerk



## **Background:**

The Albert Street Reconstruction between Pembroke Street West and First Responders Way will be the fourth street to be reconstructed in the Downtown Core Renewal program. The scope of works include replacing the aging buried underground infrastructure for water, storm and sanitary as well as the burial of the existing overhead utilities including electrical, telephone and cable services.

The project also includes streetscape enhancements incorporating hard and soft landscaping elements, pedestrian lighting, and furniture to match the previous downtown completed projects on Victoria, Alexander and Agnes streets.

## **Discussion:**

Proposals were reviewed and evaluated in accordance with the following pre-determined criteria:

- Overall Impression – 5%
- Qualifications/Experience – 20%
- Past Projects/Performance – 20%
- Proposed Approach/Methodology – 20%
- Project Schedule – 10%
- Project Costs/Fees – 25%

The recommendation was derived by using the highest score based on the average of the evaluators. Based on the review, the evaluation committee determined that the proposal from Jp2g Consultants Inc. offers the best value for the project.

## **Alternatives Considered:**

A total of six (6) proposals were received for this project. The proposals were reviewed and evaluated by a panel of three (3). All scoring was done individually by the panel members and the review and the compiling of scoring to recommend a proponent was monitored by the Purchasing Manager/Deputy Treasurer.

## **Strategic Plan Impact:**

The City's vision of maintaining infrastructure in good condition with no major failures and the need to ensure capacity, requires this infrastructure renewal project.

## **Attachments:**

None

Respectfully submitted,



Brian Lewis, Director  
Operations Department



# Committee Report

**To:** Councillor Andrew Plummer  
Operations Committee

**From:** Brian Lewis, Director  
Operations Department

**Date:** 2025-01-21

**Subject :** **Transportation Master Plan**

## **Recommendation:**

That the City of Pembroke Operations Committee endorse and recommend to Council that they adopt the Transportation Master Plan East West Traffic 2024 completed by Paradigm Consulting as a guiding document for the Operations Department by defining key projects, subject to development, staffing capabilities and annual budget approvals.

## **CAO Review :**

The CAO is in concurrence with the Departments recommendation.

David Unrau, P.Eng., PMP

## **Financial Comment:**

There are no financial implications at this time.

Angela Lochtie  
Treasurer/Deputy Clerk

## **Background:**

The City of Pembroke in partnership with the Township of Laurentian Valley, retained Paradigm Transportation Solutions Limited to complete a Transportation Master Plan (TMP) for East-West traffic to provide important information and recommendations to guide Official Plan policies and development approval decisions, as well as future decisions on transportation infrastructure needs.

At the September 17<sup>th</sup>, 2024 meeting, a presentation was provided by the consulting firm on the recommendations in the draft report and to answer any questions.



## **Discussion:**

The TMP assessed the existing transportation network to identify potential improvements to meet current and future needs taking into account existing and future growth patterns and development.

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

Road network upgrades 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.

The TMP identified and evaluated ten (10) alternative road network improvements, a combination of new roadways in future development areas and existing roadway improvements. 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 considered in the City's capital projects.

To plan for the City's future, the TMP also reviewed the existing road network and provided twenty-eight (28) recommendations to be considered for implementation over the next 20 years as part of the City's capital projects. These recommendations primarily include localized intersection improvements as well as planned works implemented through development or projects undertaken by others.

Recommendations include new road connections to provide new capacity to support growth, existing road upgrades, new roads in growth areas (constructed as part of the development process) and 13 intersection upgrades to optimize performance of the existing road system.

Once adopted by Council, the Operations Department will categorize as well as prioritize the recommendations into the Multi Year Capital Construction Forecast (MYCCF) over the next 1-20 years. This forecast will be dependant on development progression, staffing capabilities and annual budget allocations.

The key themes and principles introduced in the TMP should be incorporated into the City's Official Plans, which represent a guiding land use and policy document for the City.

## **Alternatives Considered:**

N/A





**Strategic Plan Impact:**

Aligns with the City's commitment to infrastructure and facility renewal as well as long-term financial planning to support a sustainable transportation practice and livable community as we grow over time. Supports the City's underlying principle of developing and maintaining critical partnerships.

**Attachments:**

Transportation Master Plan

Respectfully submitted,

Brian Lewis, Director  
Operations Department



Township of Laurentian Valley  
City of Pembroke

# Transportation Master Plan for East-West Traffic

## Appendices – Volume 1

December 2024



# Appendix A

## Public Engagement Materials





# Transportation Master Plan for East-West Traffic

Draft Engagement Plan  
Last Update – April 25, 2023



## Contents

<b>Introduction</b> .....	<b>1</b>
<b>Engagement Objectives</b> .....	<b>1</b>
<b>Target Audiences</b> .....	<b>2</b>
<b>Engagement and Communication Tools</b> .....	<b>3</b>
<b>Ongoing Engagement</b> .....	<b>3</b>
<b>Specific Events and Activities</b> .....	<b>6</b>
<b>Performance Measures</b> .....	<b>9</b>
<b>Appendix A Study Contact List</b> .....	<b>10</b>



# Transportation Master Plan for East-West Traffic

## 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;

# Transportation Master Plan for East-West Traffic

- **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

<b>Approach</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• Explain the TMP and its context;</li> <li>• Provide links to pertinent study reports and references;</li> <li>• Identify and provide responses to Frequently Asked Questions (FAQs);</li> <li>• Include a link to the online survey; and</li> <li>• Include information on upcoming meetings and other outreach events (e.g. location, date and time).</li> </ul> <p>The recommended address for the project web page is <a href="http://www.lvtownship.ca/east-west-tmp">www.lvtownship.ca/east-west-tmp</a></p> <p>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.</p>
<b>Target Audience</b>	General public
<b>Tasks</b>	<p>Paradigm to prepare content.</p> <p>Township to create main web page (City to create link to Township page). Township to establish formatting and review and upload content (ongoing).</p>
<b>Timeline</b>	Initial project web page content in early May 2023, with launch before Engagement Round #1. Ongoing maintenance thereafter.



# Transportation Master Plan for East-West Traffic

## Contact List and Notices

<b>Approach</b>	<p>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.</p> <p>E-mails and/or mailouts will be sent to individuals and organizations on the contact list notifying of (see specifics below):</p> <ul style="list-style-type: none"><li>• Study commencement and completion;</li><li>• Upcoming meetings and other outreach events (location, date and time); and</li><li>• The online survey, including a link.</li></ul>
<b>Target Audience</b>	Residents, businesses, agencies and other stakeholders (including community groups)
<b>Tasks</b>	<p>Paradigm to populate and maintain contact list, provide content for notices and send e-mails.</p> <p>Township and City to forward available contacts lists and mailouts with notices.</p>
<b>Timeline</b>	Initial contact list in May 2023. Ongoing notices and contact list maintenance thereafter.

# Transportation Master Plan for East-West Traffic

## Social Media Posts

<b>Approach</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• One post for the Notice of Study Commencement with a link to the project web page and online survey;</li> <li>• Two posts per scheduled engagement event (i.e. public information centres/open houses), with:             <ul style="list-style-type: none"> <li>• One post to announce the date, time and location;</li> <li>• A second post to remind interested parties of the upcoming event a few days in advance; and</li> </ul> </li> <li>• Continued, ad-hoc posts reminding individuals and organizations about the study.</li> </ul>
<b>Target Audience</b>	General public
<b>Tasks</b>	<p>Paradigm to prepare content, as/if required. Township and City to issue posts, as/if required.</p>
<b>Timeline</b>	Ongoing throughout the study.

# Transportation Master Plan for East-West Traffic

## Specific Events and Activities

### Notice of Study Commencement

<b>Approach</b>	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.
<b>Target Audience</b>	General public plus residents, businesses, agencies and other stakeholders (including community groups) on the contact list
<b>Tasks</b>	Paradigm to prepare notice. Township and City to provide comments on draft notice and publish, post and send final notice.
<b>Timeline</b>	<b>Engagement Round #1.</b> Notice in early May 2023, once the project web page is launched.

### Online Survey

<b>Approach</b>	<p>An online survey will be launched to:</p> <ul style="list-style-type: none"> <li>Identify current transportation conditions, concerns, needs and expectations within the Township and City; and</li> <li>Identify specific motivators and barriers to existing transportation choices.</li> </ul> <p>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.</p>
<b>Target Audience</b>	General public
<b>Tasks</b>	<p>Paradigm to prepare survey questionnaire and mapping template, upload to the online platforms (Survey Monkey) and summarize and analyze results.</p> <p>Township and City to include link to the survey on the project web page.</p>
<b>Timeline</b>	<b>Engagement Round #1.</b> Survey questionnaire in early May 2023 Survey will remain active for one month.

# Transportation Master Plan for East-West Traffic

## Stakeholder and First Nations Meetings

<b>Approach</b>	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.
<b>Target Audience</b>	Identified stakeholders and First Nations
<b>Tasks</b>	<p>Paradigm to prepare meeting invitations, prepare materials, deliver presentation, facilitate sessions and document the proceedings.</p> <p>Township and City to send invites to individuals on the contact list, attend session and assist in responding to attendee questions.</p>
<b>Timeline</b>	<b>Engagement Rounds #1 and 2. May/June 2023.</b>

## Public Information Centre/Open House

<b>Approach</b>	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.
<b>Target Audience</b>	General public
<b>Tasks</b>	<p>Paradigm to prepare meeting notice, invitation and materials, set-up displays, deliver presentation, respond to attendee questions and document proceedings.</p> <p>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.</p>
<b>Timeline</b>	<b>Engagement Round #2. Mid June 2023.</b>

# Transportation Master Plan for East-West Traffic

## Township and City Council Presentation

<b>Approach</b>	A presentation will be delivered to Township and City Council.
<b>Target Audience</b>	Township and City Council
<b>Tasks</b>	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.
<b>Timeline</b>	<b>Engagement Round #2.</b> Late summer 2023.

## Notice of Completion

<b>Approach</b>	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.
<b>Target Audience</b>	General public plus residents, businesses, agencies and other stakeholders (including community groups) on the contact list
<b>Tasks</b>	Paradigm to prepare notice. Township and City to provide comments on draft notice and publish, post and send final notice.
<b>Timeline</b>	<b>Engagement Round #2.</b> 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/](http://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](mailto: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](mailto:lvpembrokeTMP@ptsl.com)

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

Kevin Jones  
Consultant Team Project  
Manager  
Paradigm Transportation  
Solutions Limited  
(416) 479-9684 x513  
[lvpembrokeTMP@ptsl.com](mailto: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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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/](http://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](mailto:lvpembrokeTMP@ptsl.com) or one of the Project Managers:

Lauree Armstrong  
Township Planner/CEMC  
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Consultant Team Project Manager  
Paradigm Transportation Solutions Limited  
(416) 479-9684 x513  
[lvpembrokeTMP@ptsl.com](mailto:lvpembrokeTMP@ptsl.com)

This notice was first issued on November 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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**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.

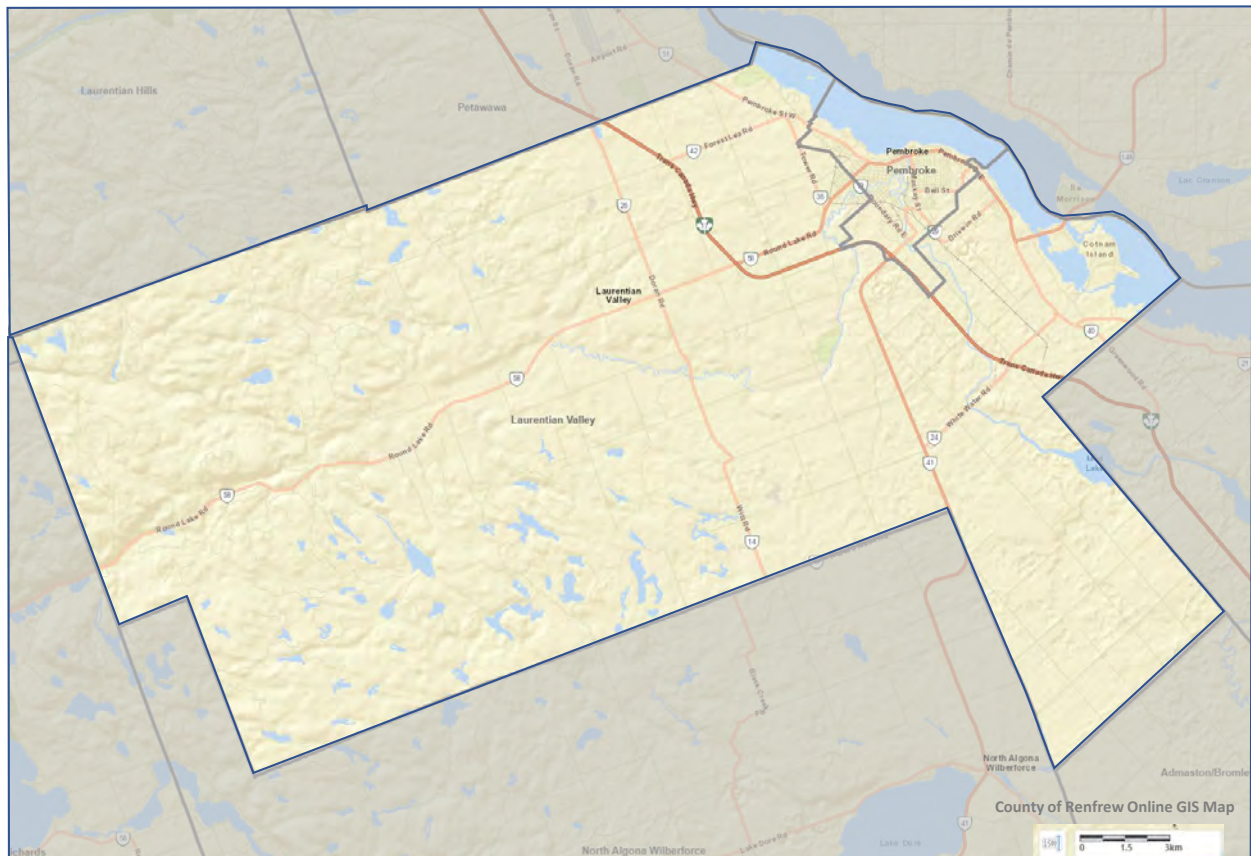
### **Timing of the Proposed Activity**

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](http://www.lvtownship.ca/transportation-master-plan-east-west-traffic) and [www.pembroke.ca/transportation-master-plan-east-west-traffic](http://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](mailto:lvpembrokeTMP@ptsl.com)

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Brian Lewis  
Director of Operations  
City of Pembroke  
460 River Road  
Pembroke, ON K8A 1A1  
(613) 735-6821 ext. 1400  
[lvpembrokeTMP@ptsl.com](mailto: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.

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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!**

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**

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.

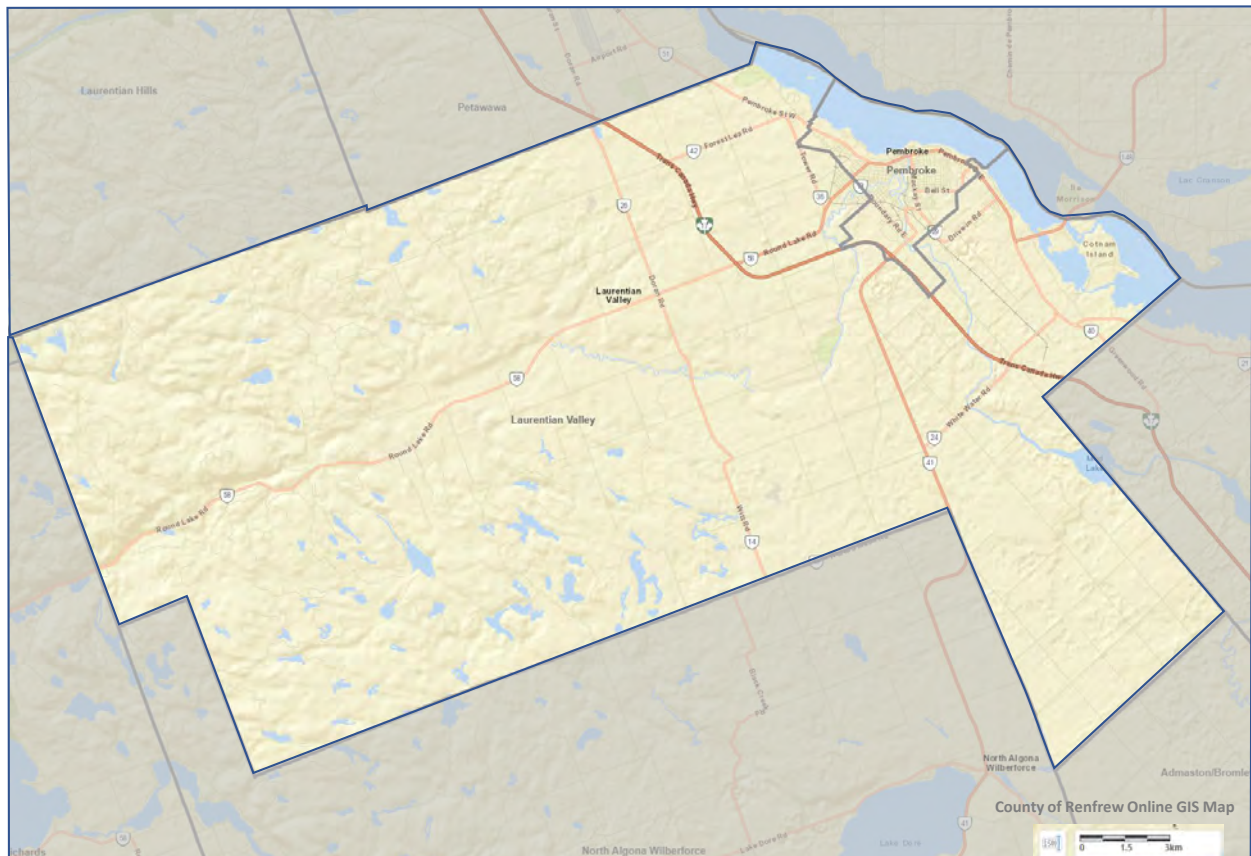
### **Timing of the Proposed Activity**

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](http://www.lvtownship.ca/transportation-master-plan-east-west-traffic) and [www.pembroke.ca/transportation-master-plan-east-west-traffic](http://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](mailto:lvpembrokeTMP@ptsl.com)

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Brian Lewis  
Director of Operations  
City of Pembroke  
460 River Road  
Pembroke, ON K8A 1A1  
(613) 735-6821 ext. 1400  
[lvpembrokeTMP@ptsl.com](mailto: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



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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!**

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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Lauree Armstrong  
Township Planner/CEMC  
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[lvpembrokeTMP@pts1.com](mailto:lvpembrokeTMP@pts1.com)

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Kevin Jones  
Consultant Team Project  
Manager  
Paradigm Transportation  
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(416) 479-9684 x513  
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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**

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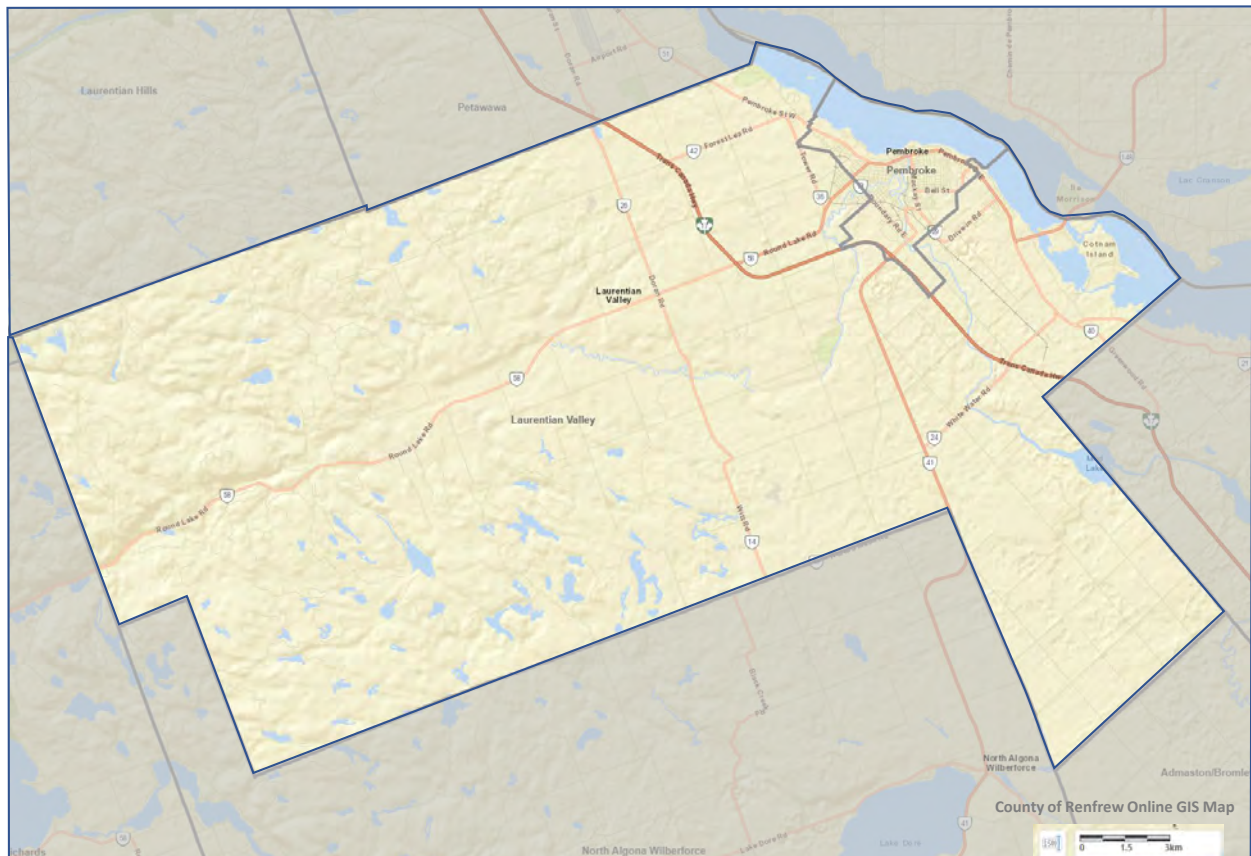
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Sincerely,

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



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Township Planner/CEMC  
Township of Laurentian  
Valley  
(613) 735-6291 x203  
[lvpembrokeTMP@pts1.com](mailto:lvpembrokeTMP@pts1.com)

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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*.



**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 9<sup>th</sup> 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 an external email. Please take care when opening links and attachments

Good morning Amanda,

Thank you for contacting the Algonquins of Ontario on June 9<sup>th</sup> 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](mailto: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](mailto:algonquins@tanakiwin.com) or visit our website at [www.tanakiwin.com](http://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](mailto:algonquins@tanakiwin.com)

Website: [www.tanakiwin.com](http://www.tanakiwin.com)

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---

**From:** Amanda O'Brien <[aobrien@pembroke.ca](mailto:aobrien@pembroke.ca)>

**Sent:** Friday, June 9, 2023 11:49 AM

**To:** Algonquins of Ontario Consultation Office <[algonquins@tanakiwin.com](mailto:algonquins@tanakiwin.com)>

**Cc:** David Unrau <[dunrau@pembroke.ca](mailto: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](mailto: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](http://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

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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.

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 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/](http://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@ptsI.com](mailto:lvpembrokeTMP@ptsI.com) or one of the Project Managers:

Lauree Armstrong  
Township Planner/CEMC, Township of Laurentian Valley  
(613) 735-6291 x203  
[lvpembrokeTMP@ptsI.com](mailto:lvpembrokeTMP@ptsI.com)

Brian Lewis  
Director of Operations, City of Pembroke  
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Kevin Jones  
Consultant Team Project Manager, Paradigm Transportation Solutions Limited  
(416) 479-9684 x513  
[lvpembrokeTMP@ptsI.com](mailto:lvpembrokeTMP@ptsI.com)

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This notice was first issued on November 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*.

**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@ptsI.com](mailto:lvpembrokeTMP@ptsI.com).

**Information from Public Open House, December 13, 2023**





Where urban amenities meet outdoor rural fun.

LV is home to easy comfortable living.

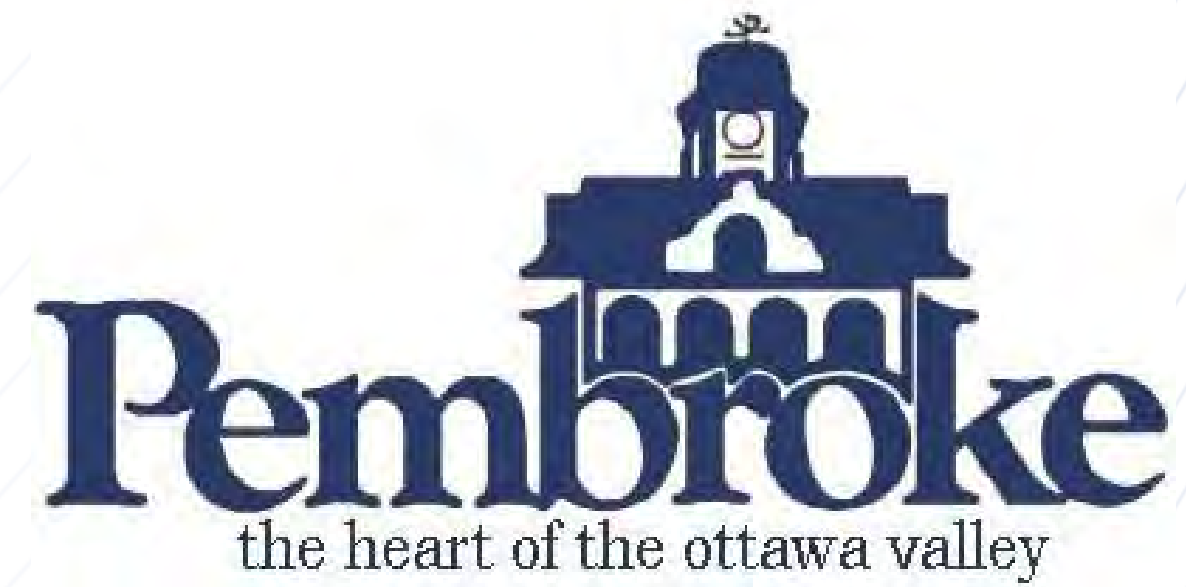
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# Welcome

Township of Laurentian Valley /  
City of Pembroke



# Transportation Master Plan for East-West Traffic

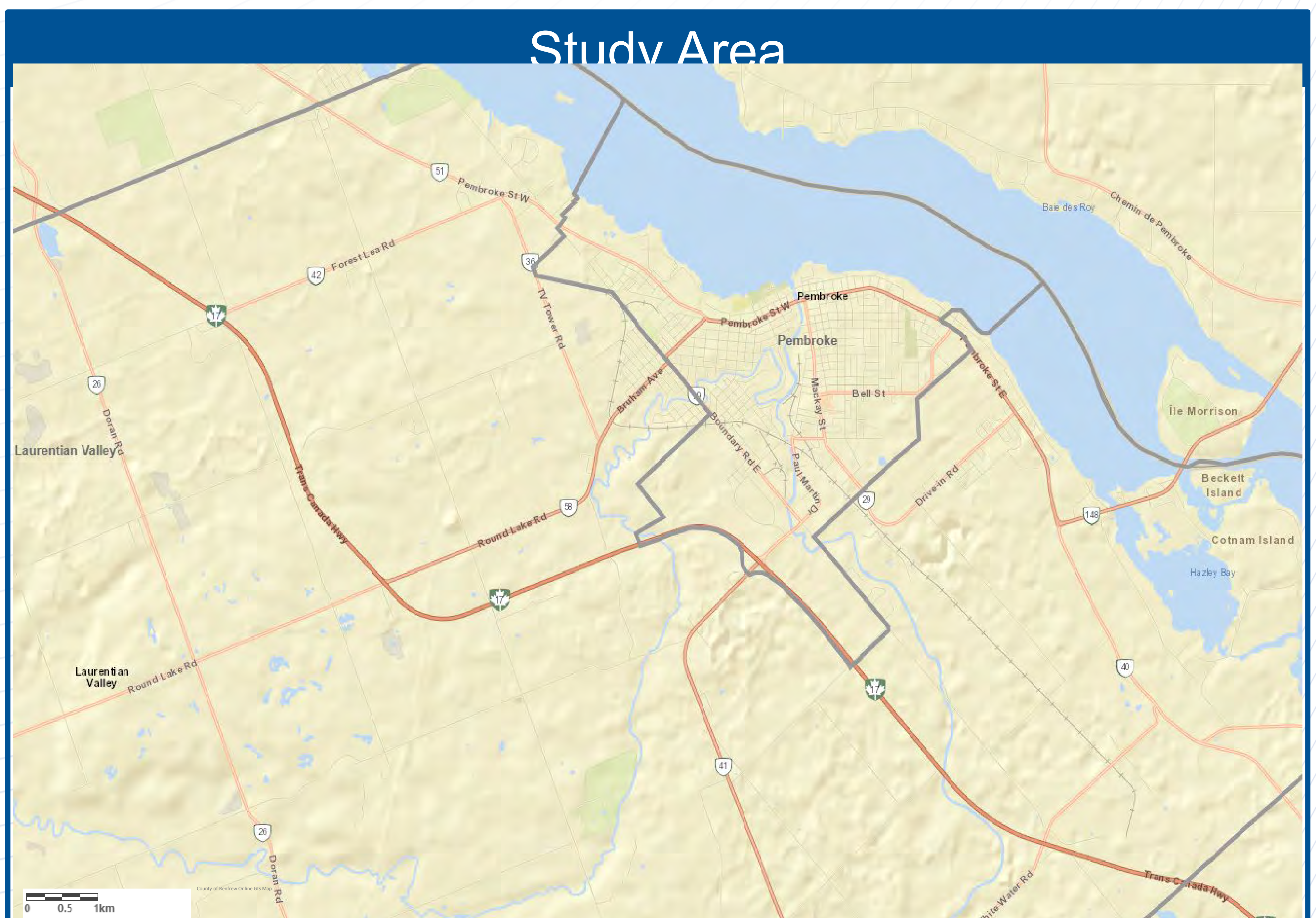
The *Transportation Master Plan for East-West Traffic* is being undertaken in accordance with the requirements of the Municipal Class Environmental Assessment (EA) (an approved process under Ontario's *Environmental Assessment Act*).

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

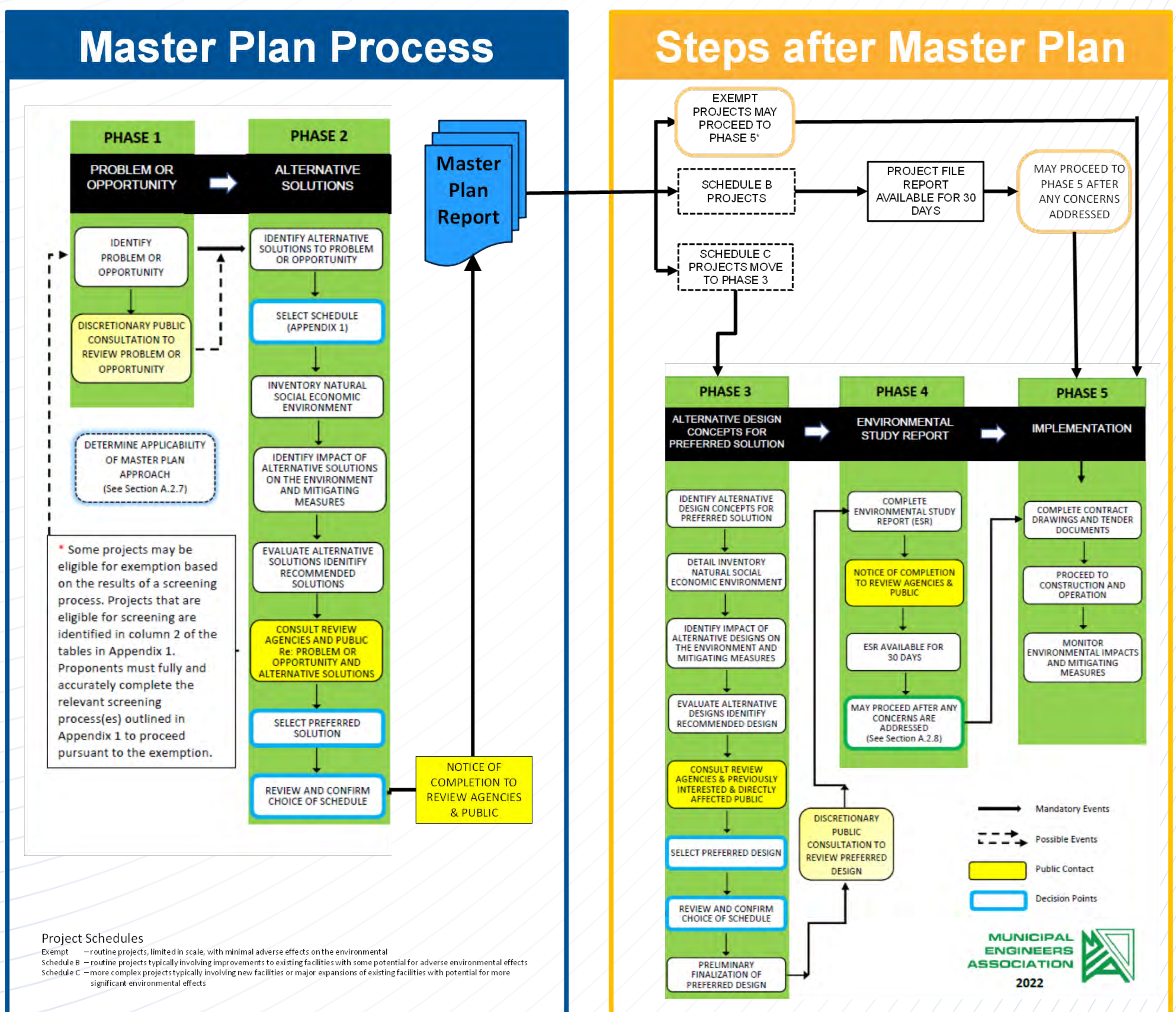
- ▶ **Pembroke and Laurentian Valley are experiencing rapid growth**
  - Ongoing and expected development within and around City boundaries
- ▶ **East-west roads are particularly affected**
  - by local growth *and* by traffic passing through
- ▶ **The East-West Transportation Master Plan will:**
  - 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





# 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
<ul style="list-style-type: none"> <li>▶ Provincial Policy Statement</li> <li>▶ Accessibility for Ontarians with Disabilities Act</li> <li>▶ Ministry of Transportation Transit Supportive Guidelines</li> <li>▶ #CycleON: Ontario's Cycling Strategy</li> <li>▶ Ontario Trails Strategy</li> </ul>	<ul style="list-style-type: none"> <li>▶ Official Plan</li> <li>▶ Strategic Plan</li> <li>▶ Transportation Master Plan</li> <li>▶ Trails Strategy</li> <li>▶ Ottawa Valley Recreational Trail Management Plan</li> </ul>	<ul style="list-style-type: none"> <li>▶ Official Plan</li> <li>▶ Strategic Plan</li> <li>▶ Development Charges By-law</li> <li>▶ Parks and Recreation Master Plan</li> </ul>	<ul style="list-style-type: none"> <li>▶ Official Plan</li> <li>▶ Strategic Plan</li> <li>▶ Transit Feasibility Study</li> </ul>

▶ **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**

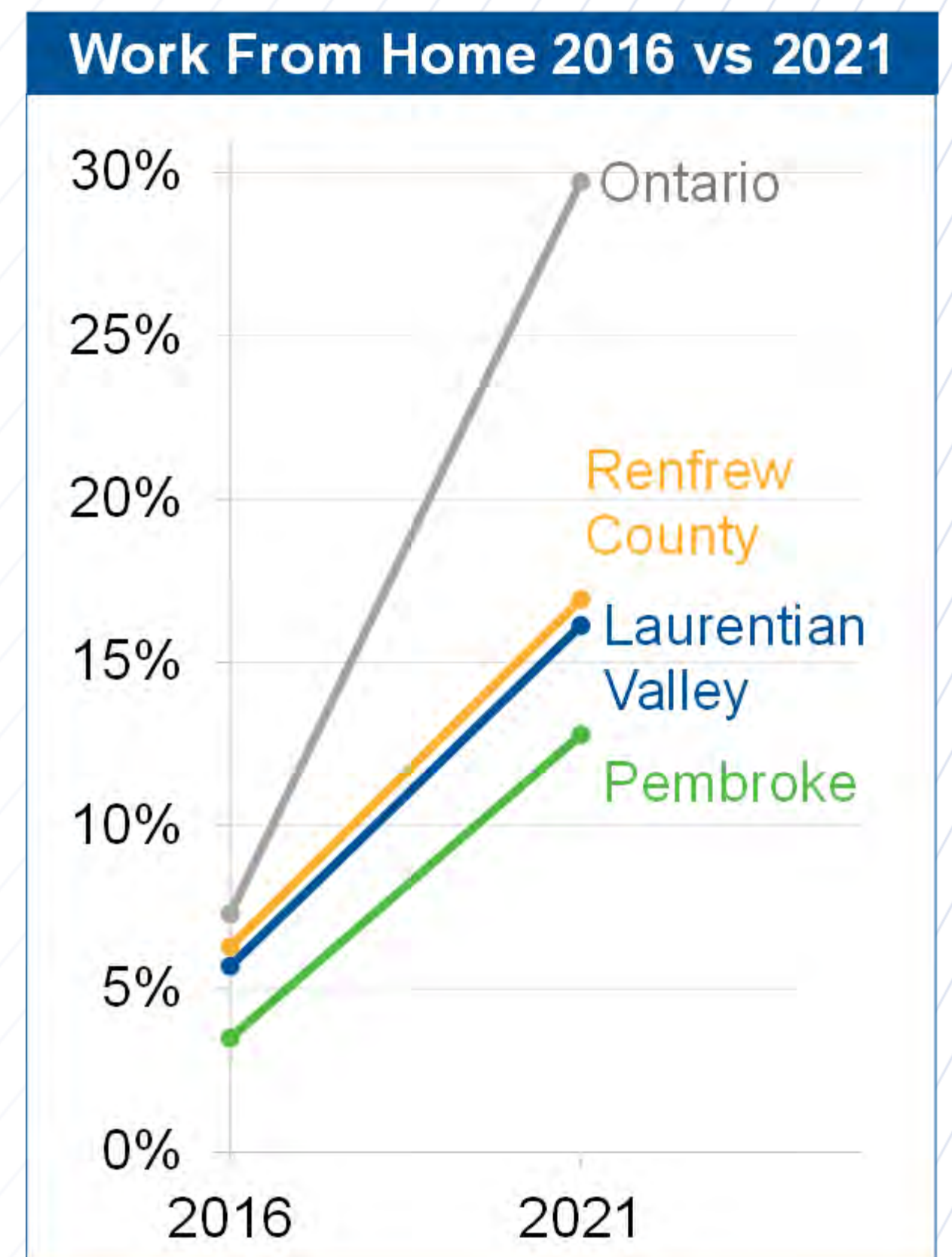
- Supported by Provincial policy direction, local policy objectives
- Longer-term expansion to rural areas / connecting communities



# EXISTING CONDITIONS: Working and Commuting

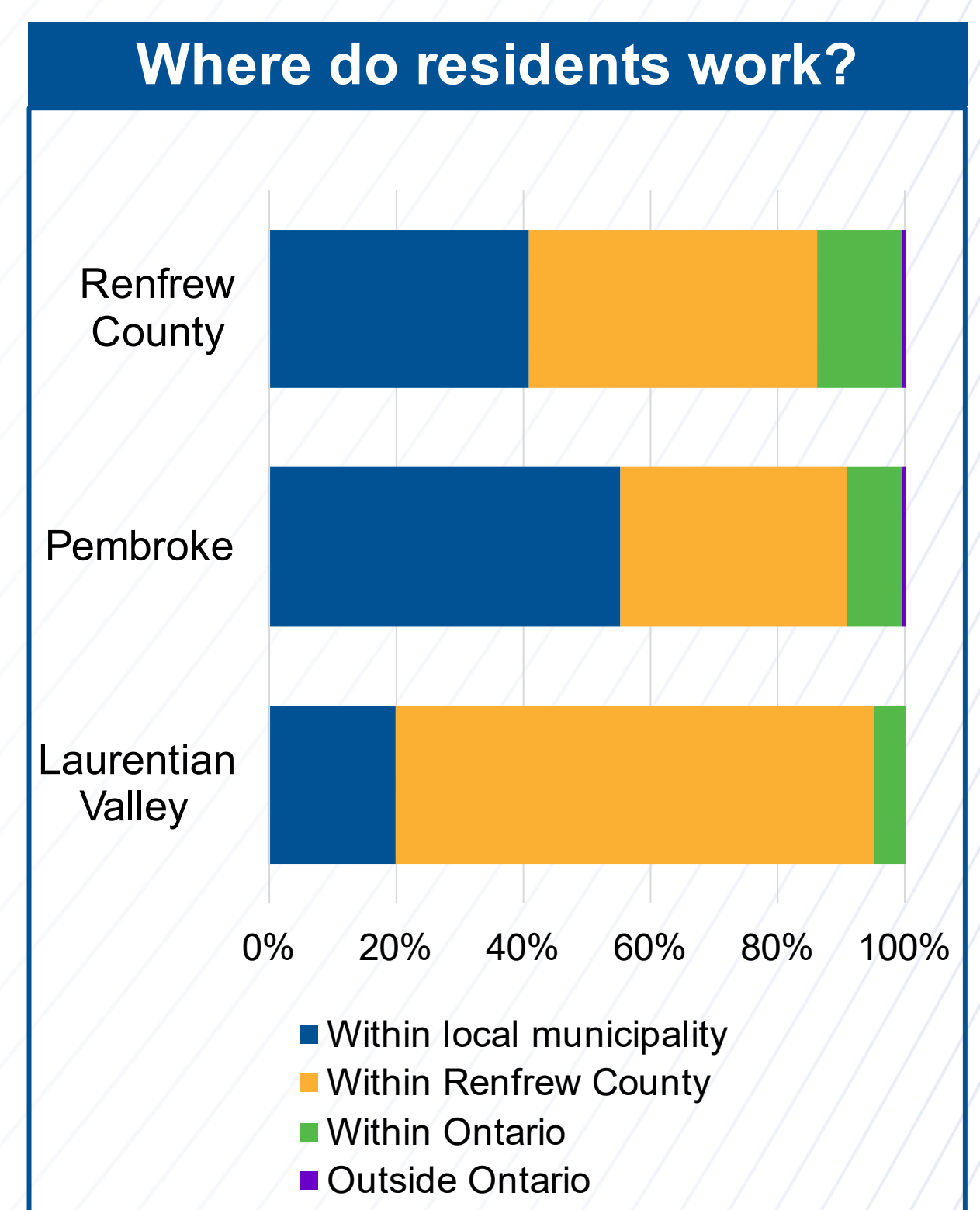
## ▶ Working from home has increased, but less than elsewhere in Ontario

- Manufacturing, education, healthcare jobs are in-person
- Figures include people who attend workplace some days



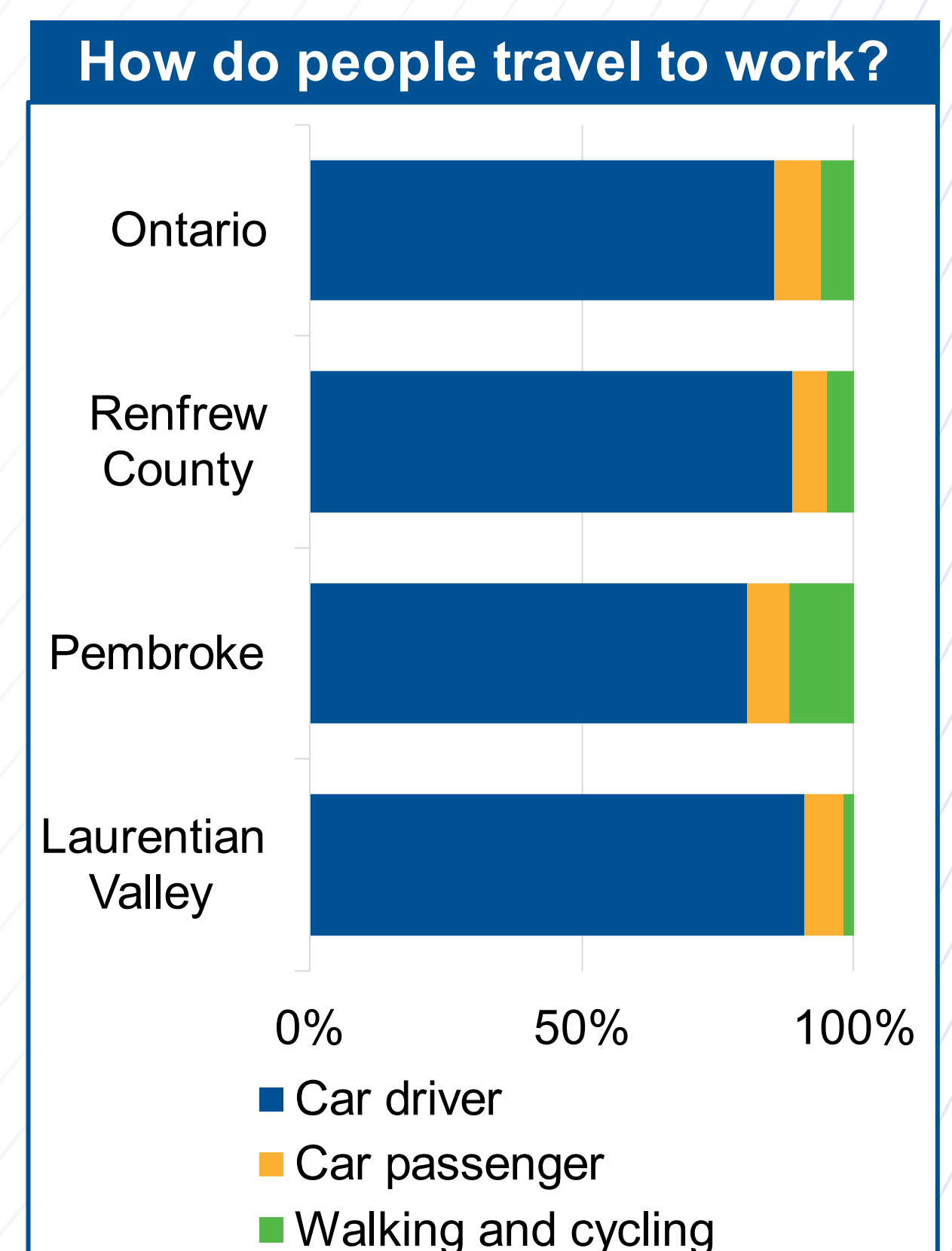
## ▶ High proportion of people work outside the local municipality they live in

- 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

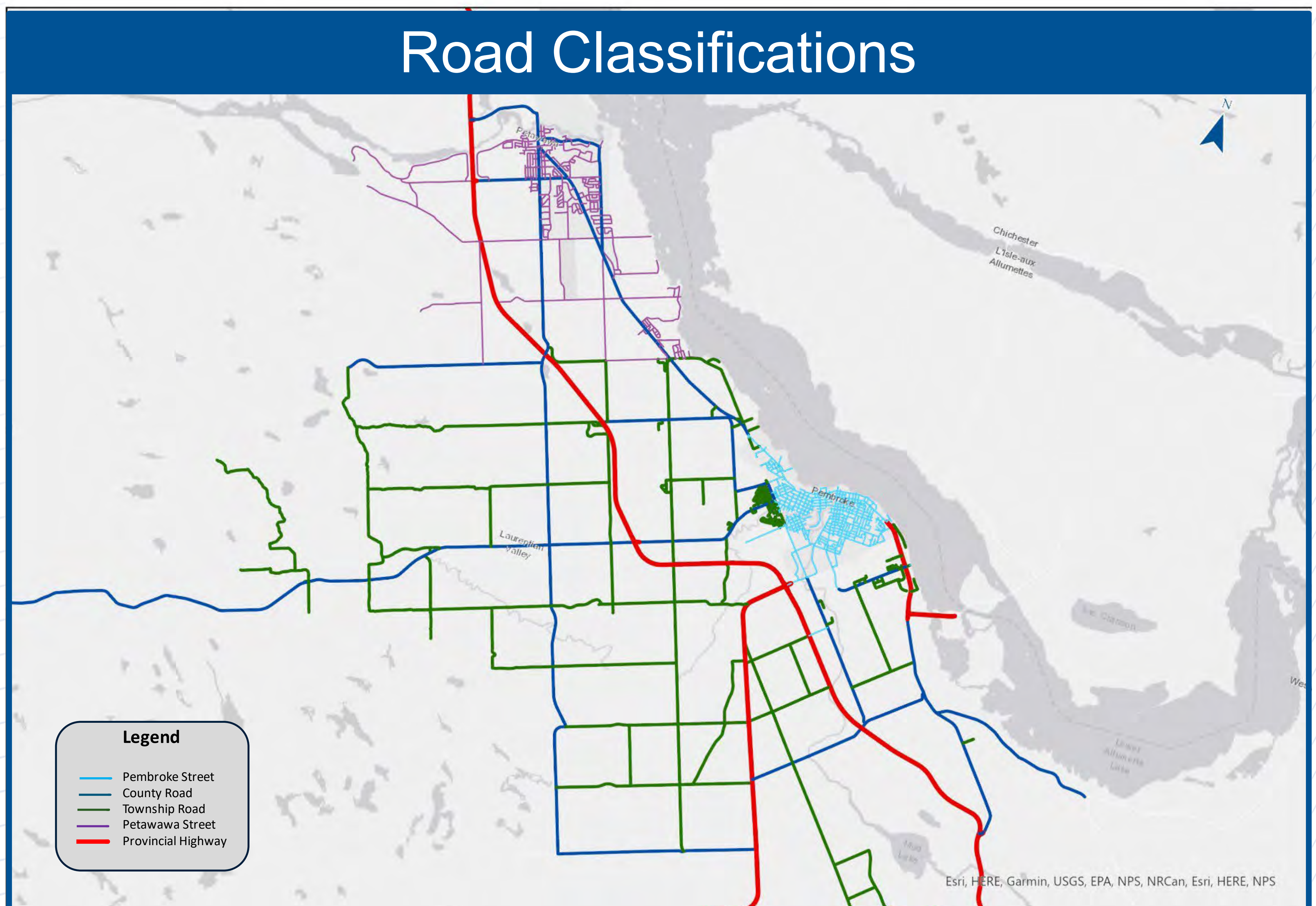


Data source for charts: 2021 Census.



# 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)





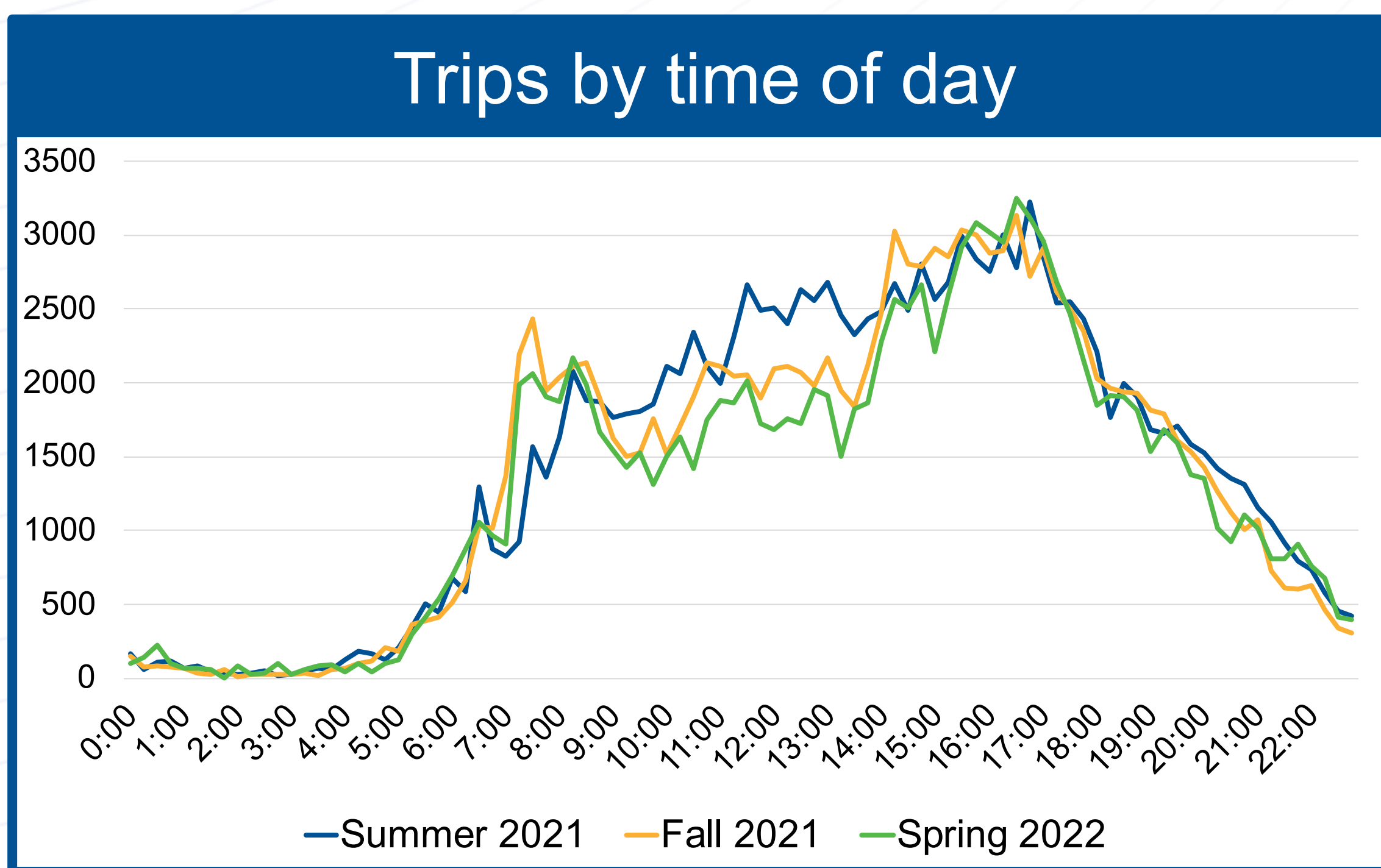
# EXISTING CONDITIONS: Traffic Volumes

## ► 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

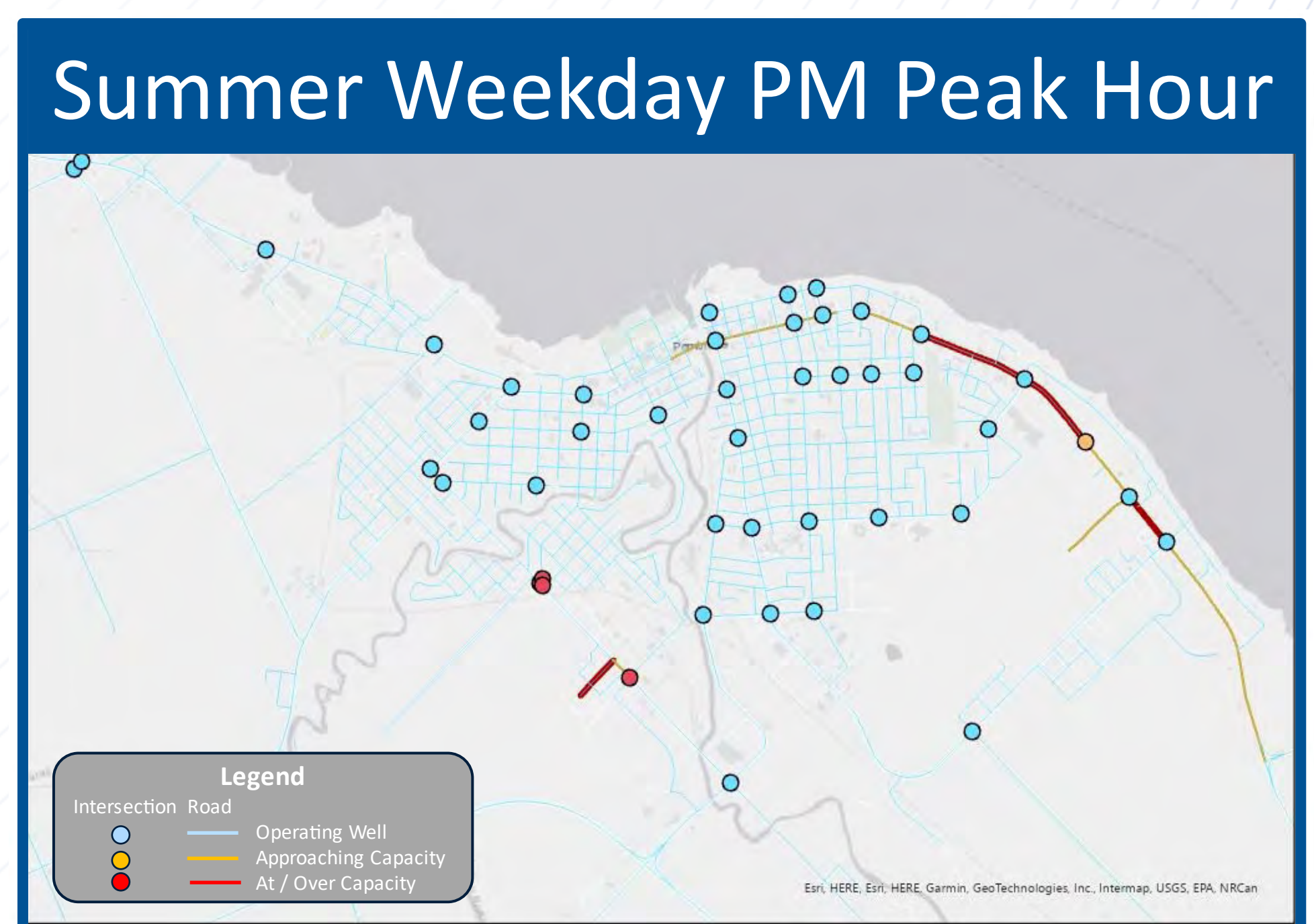
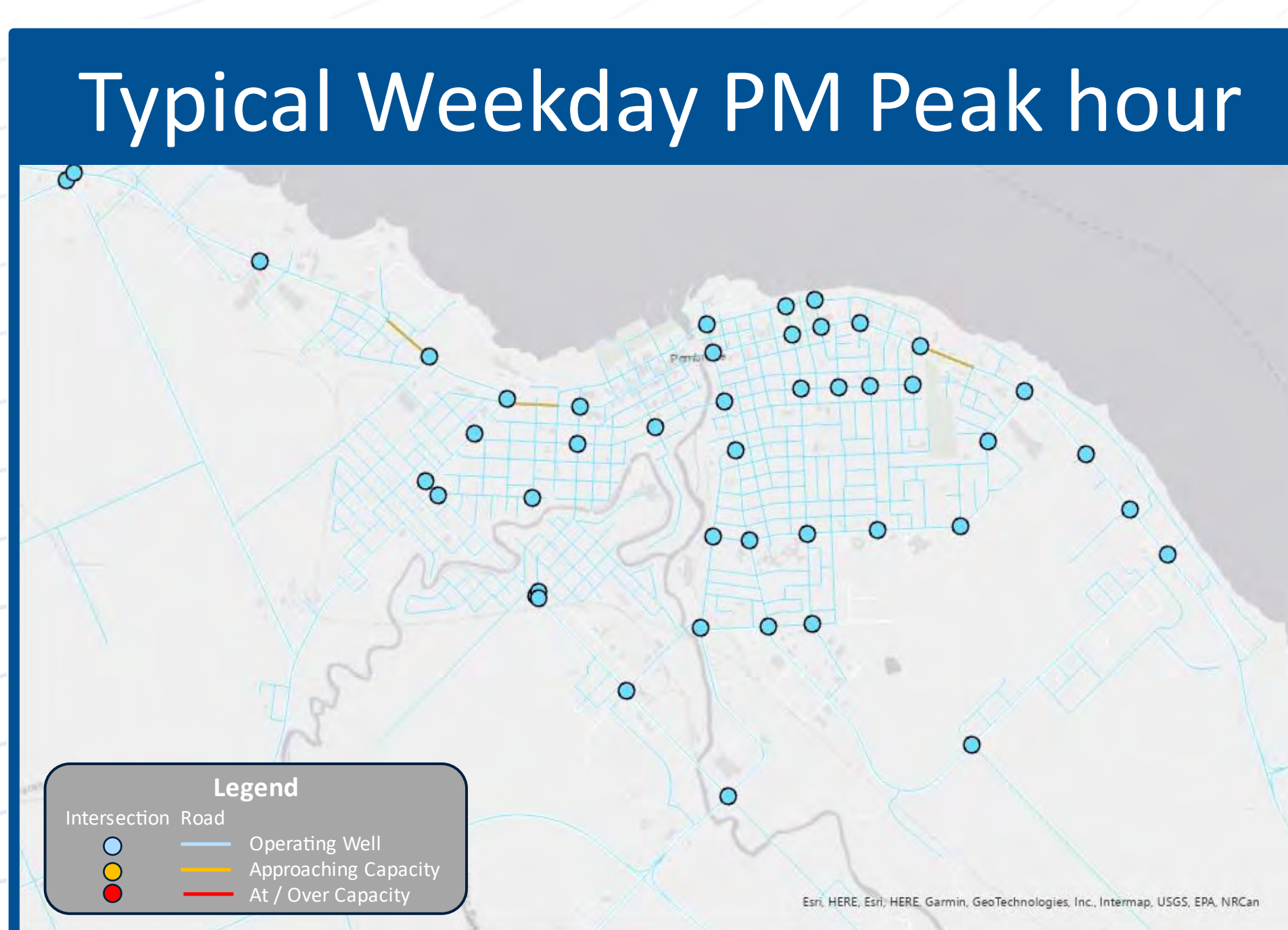


## Travel During a Typical Day

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?





# EXISTING CONDITIONS: Cycling Activity



Data source for map: Strava Metro

## ► Highest activity on quiet rural roads and off-road facilities

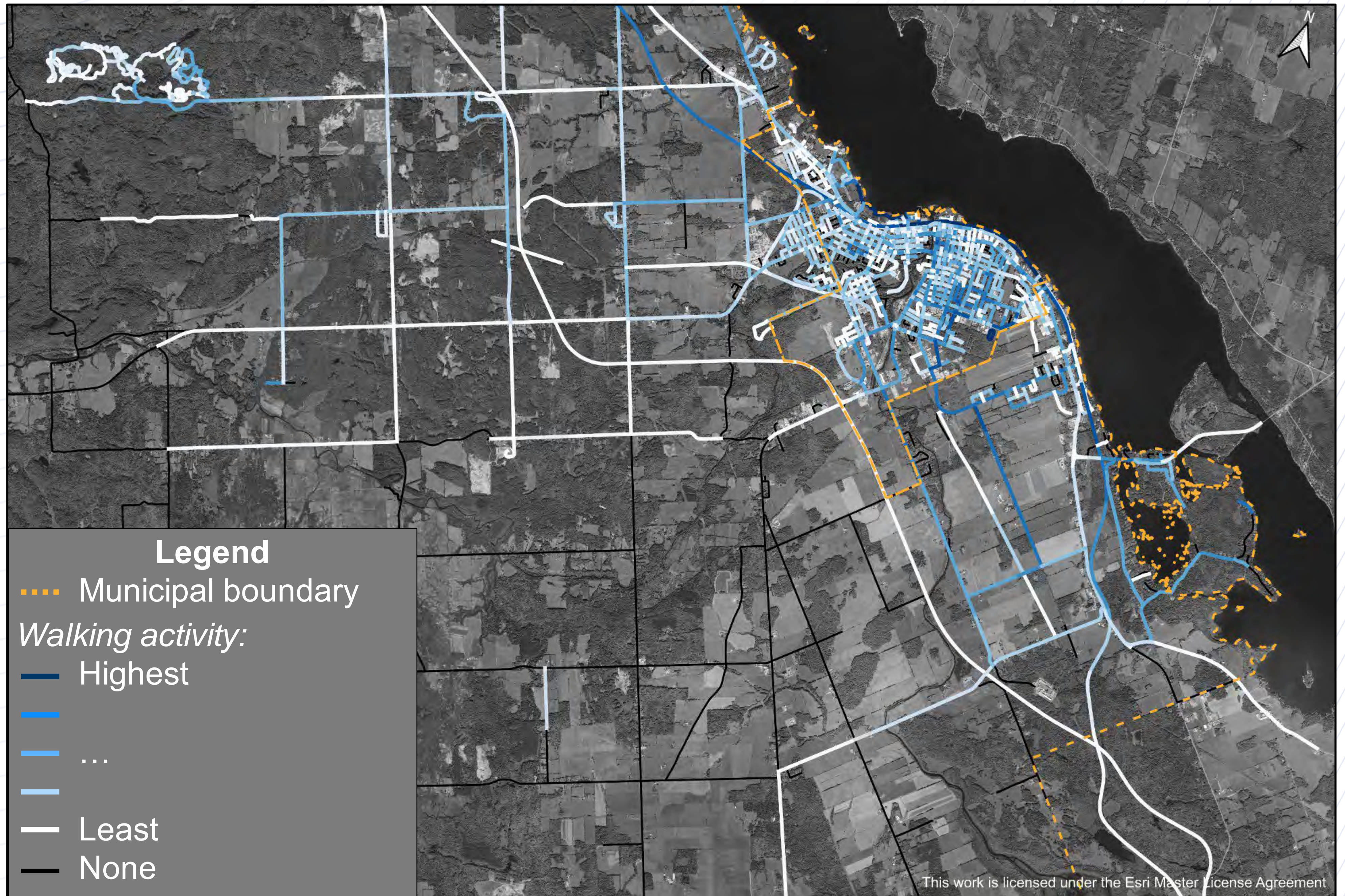
- Higher usage on Forest Lea Trails than nearby roads implies people aren't cycling to/from there.

## ► Low activity on streets in Pembroke

- Despite short distances between homes and destinations



# EXISTING CONDITIONS: Walking Activity



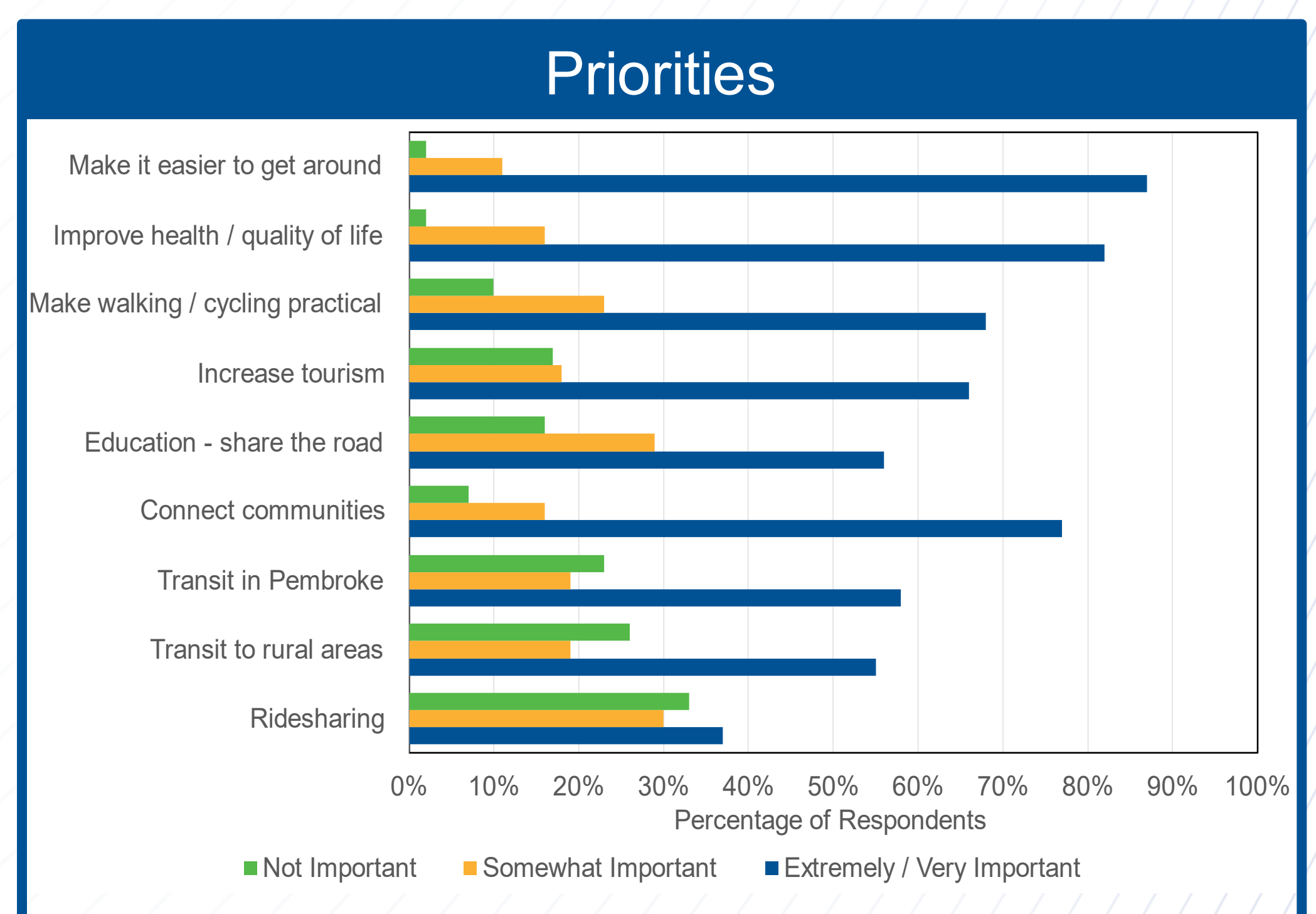
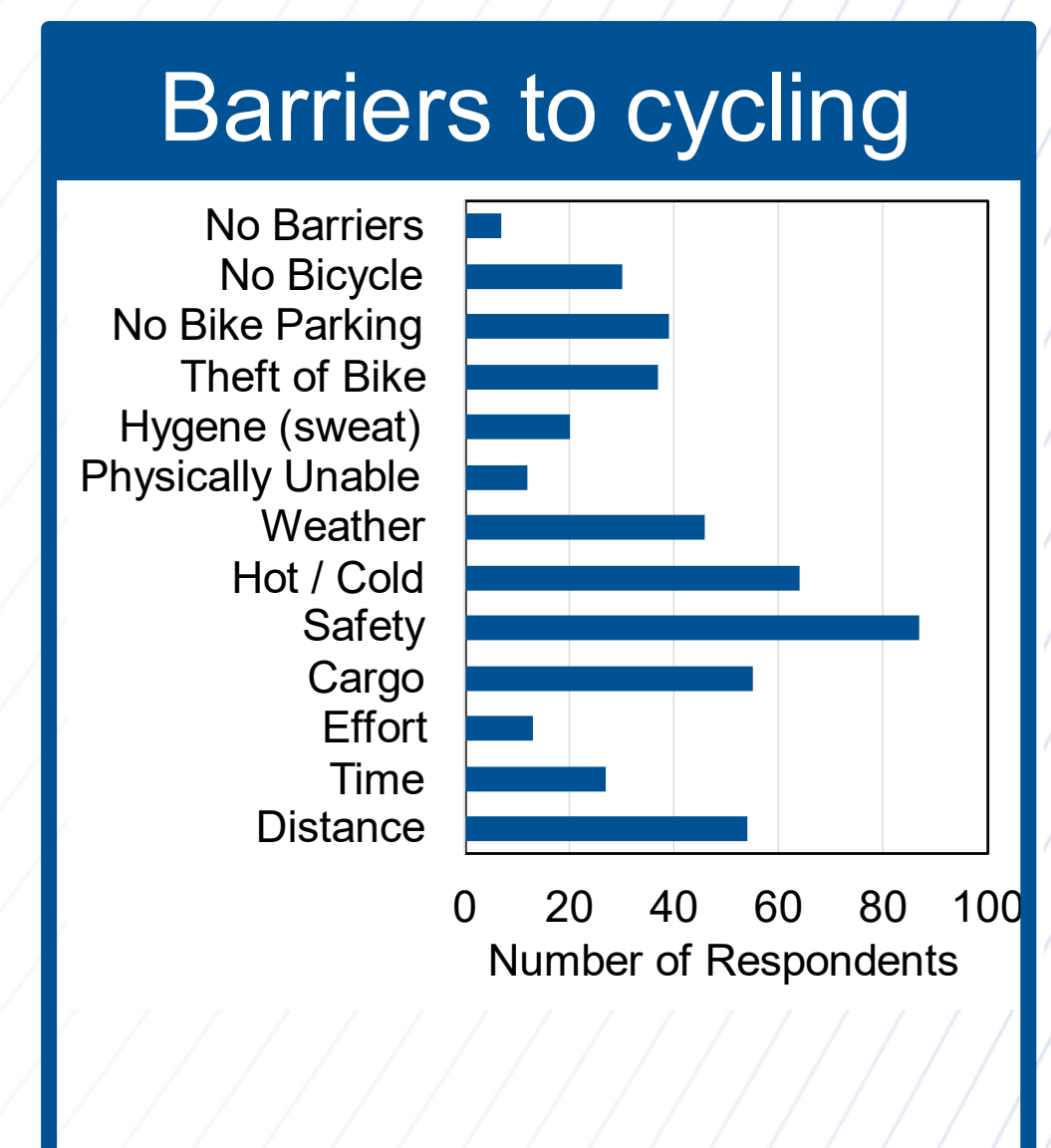
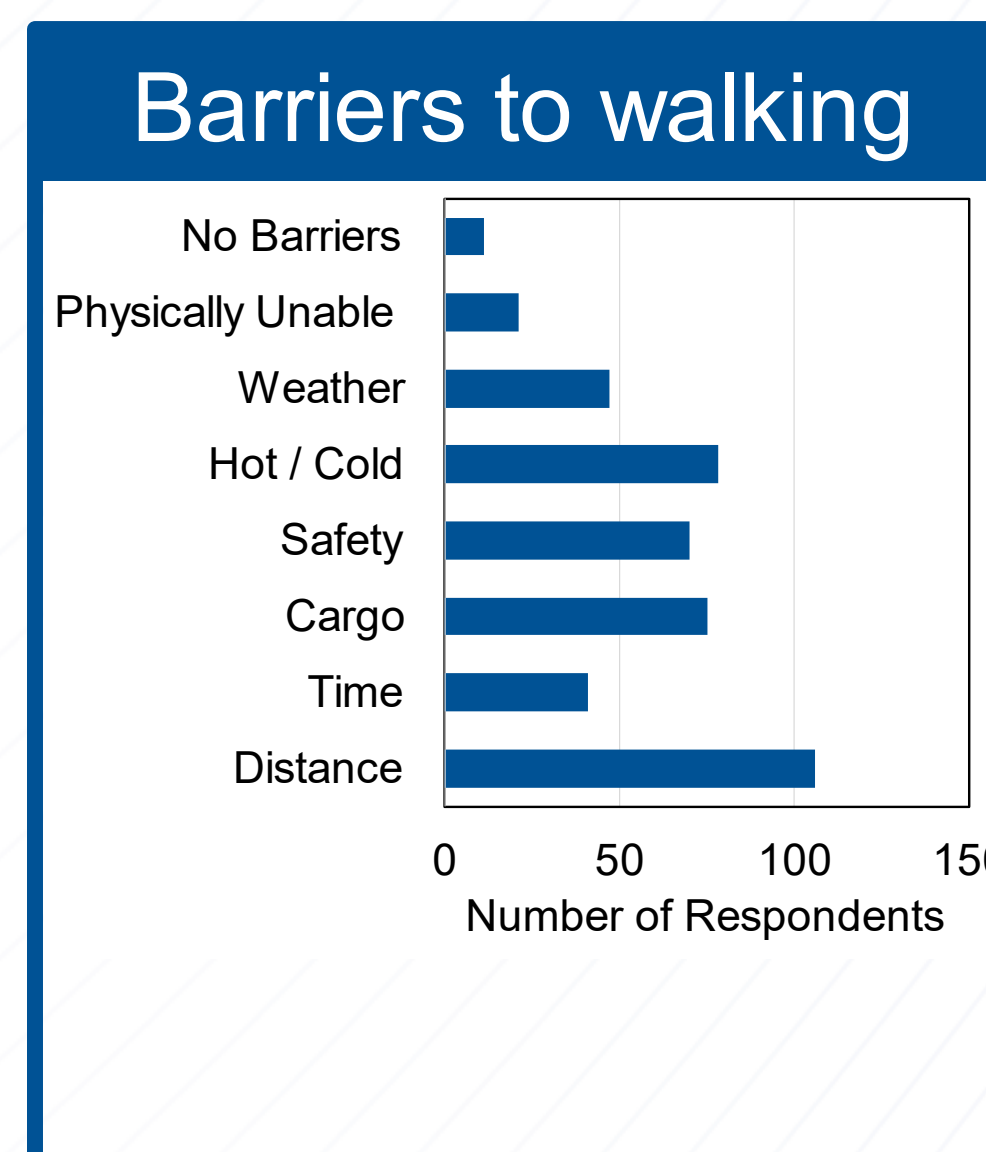
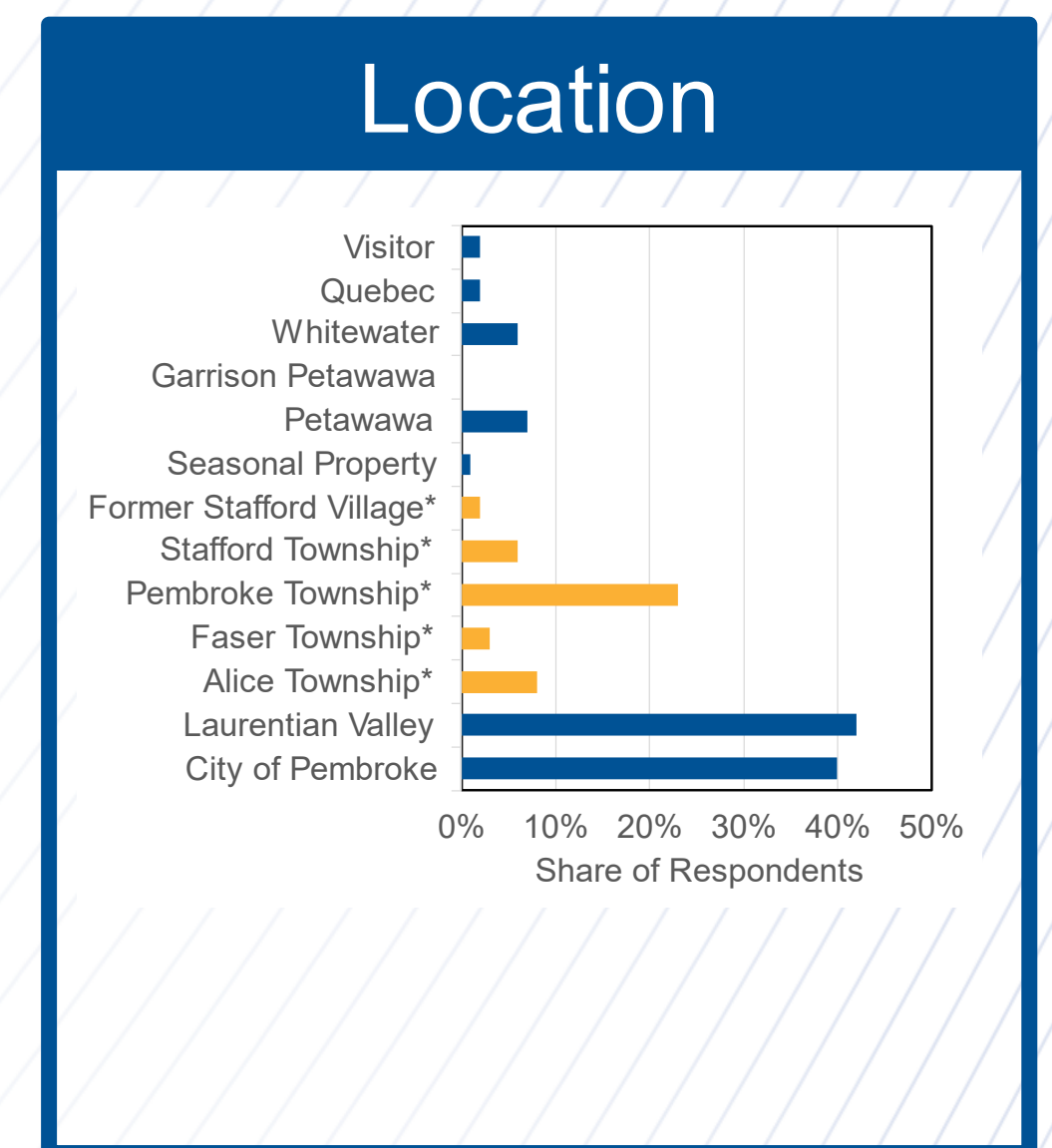
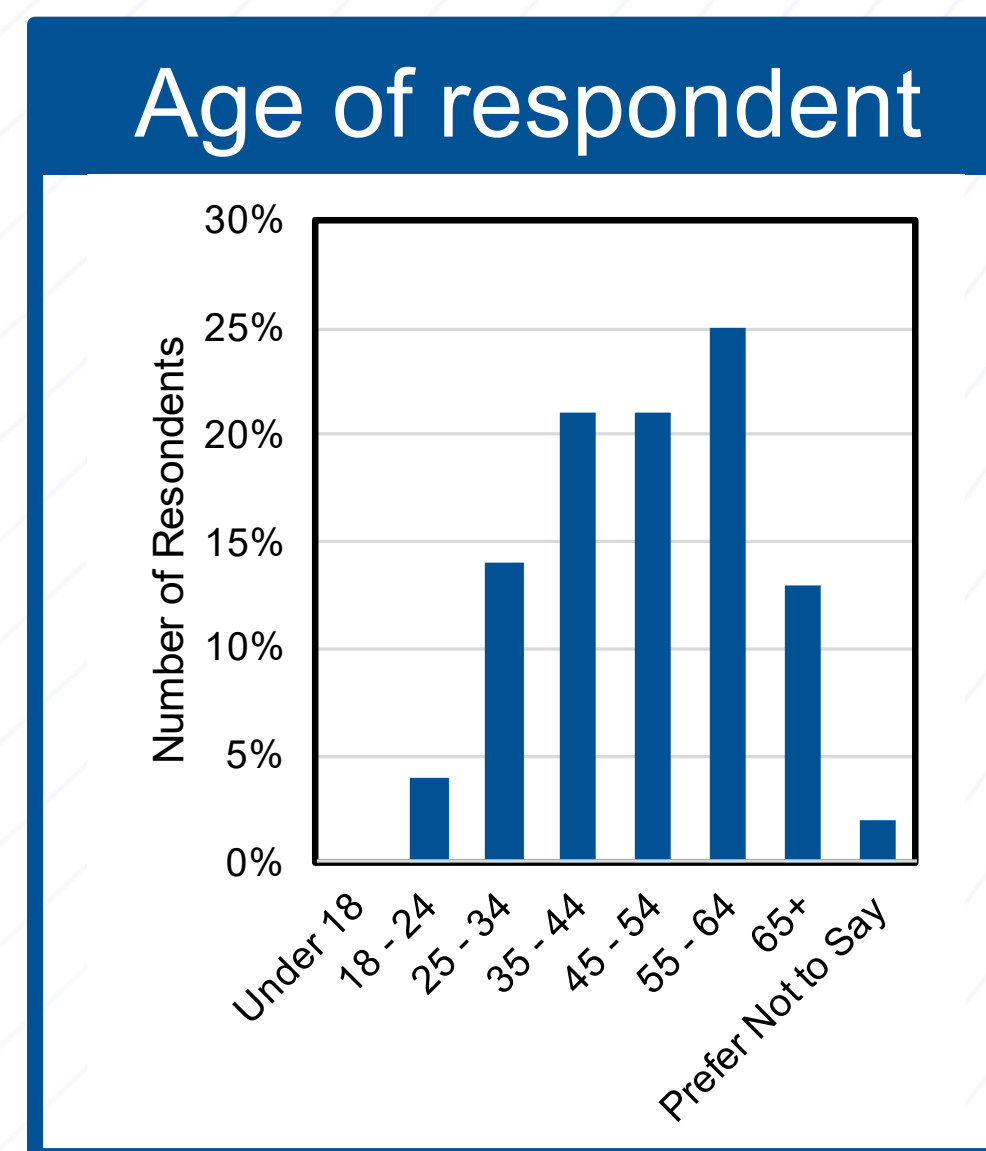
Data source for map: Strava Metro

- ▶ **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

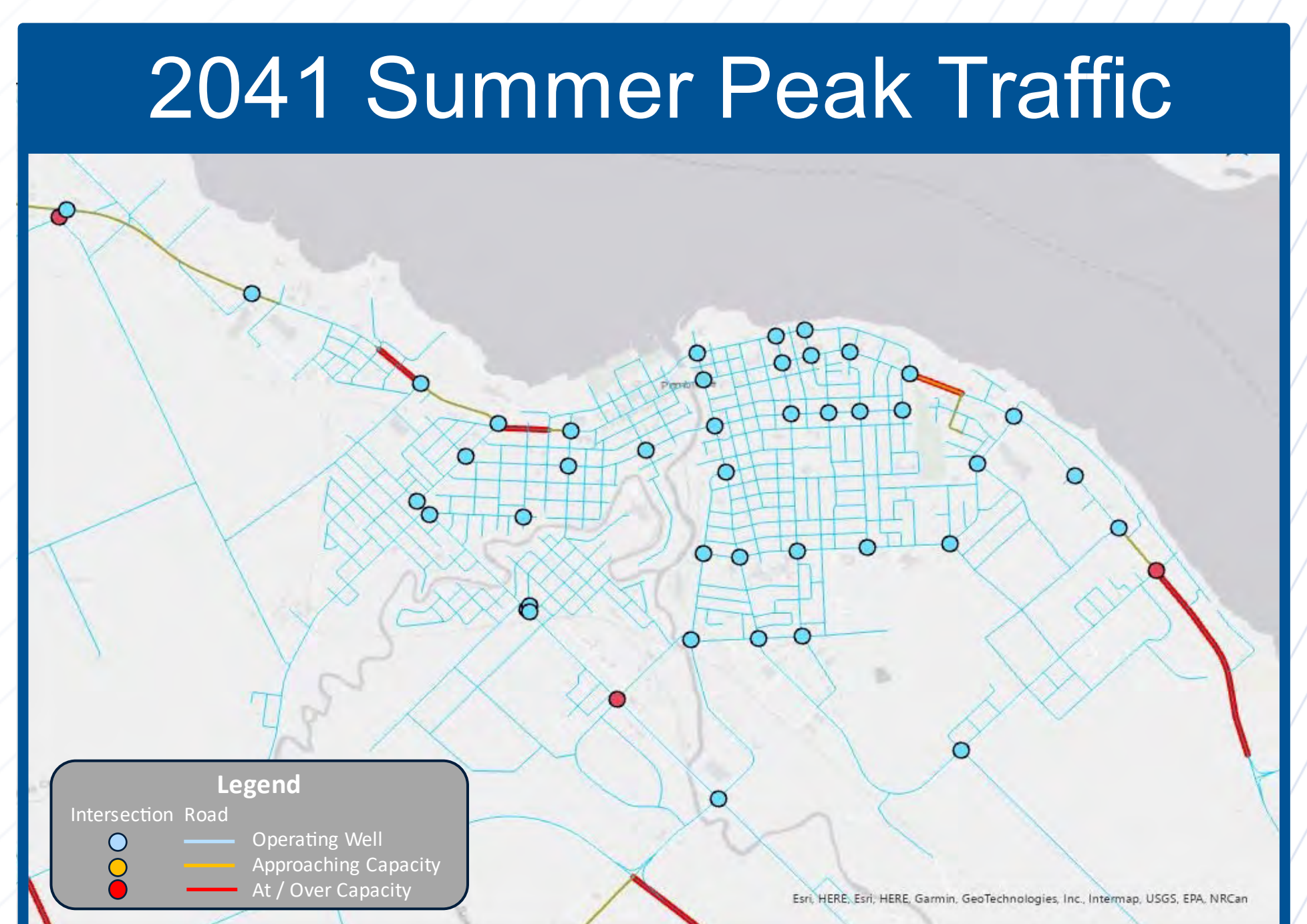
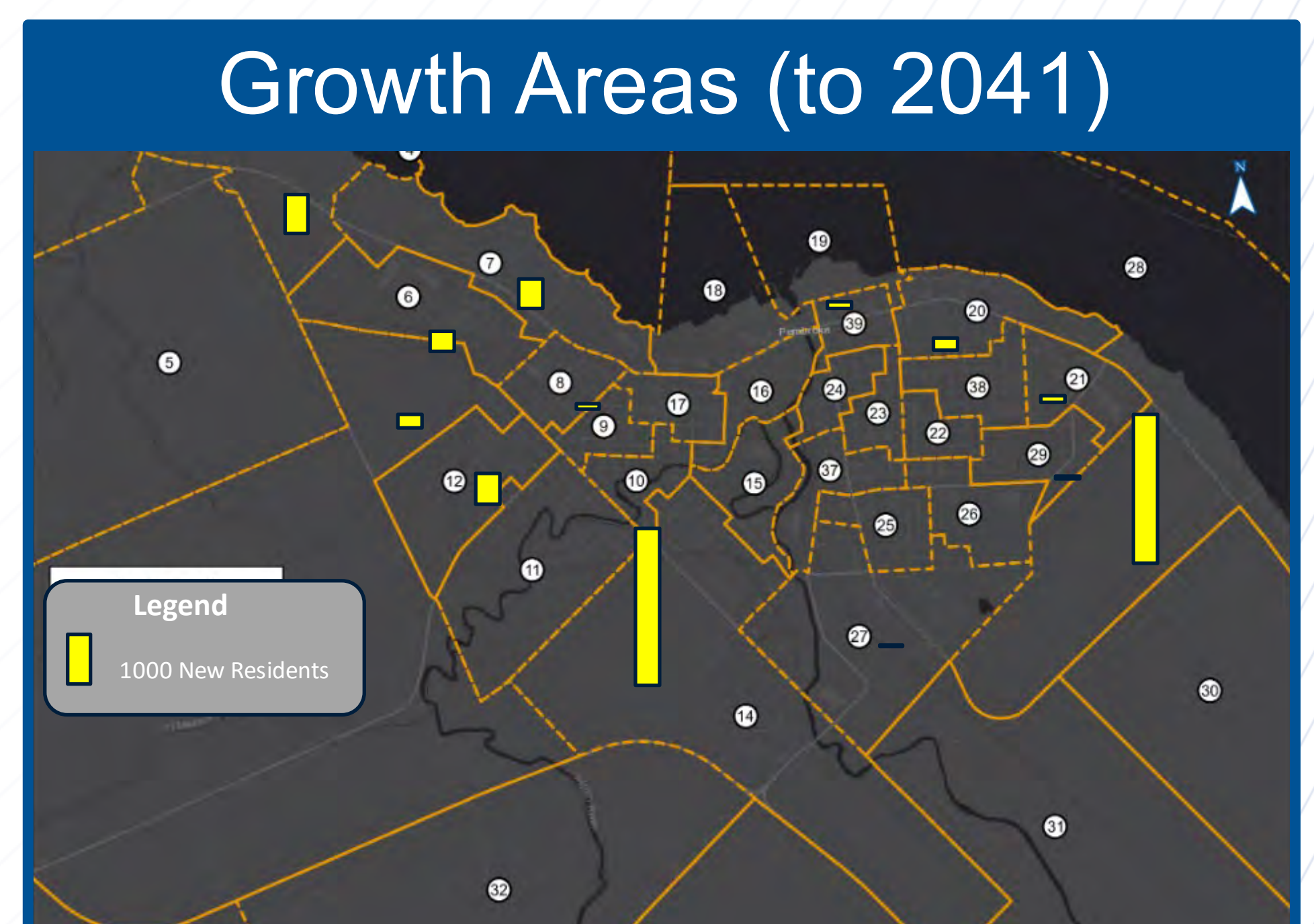
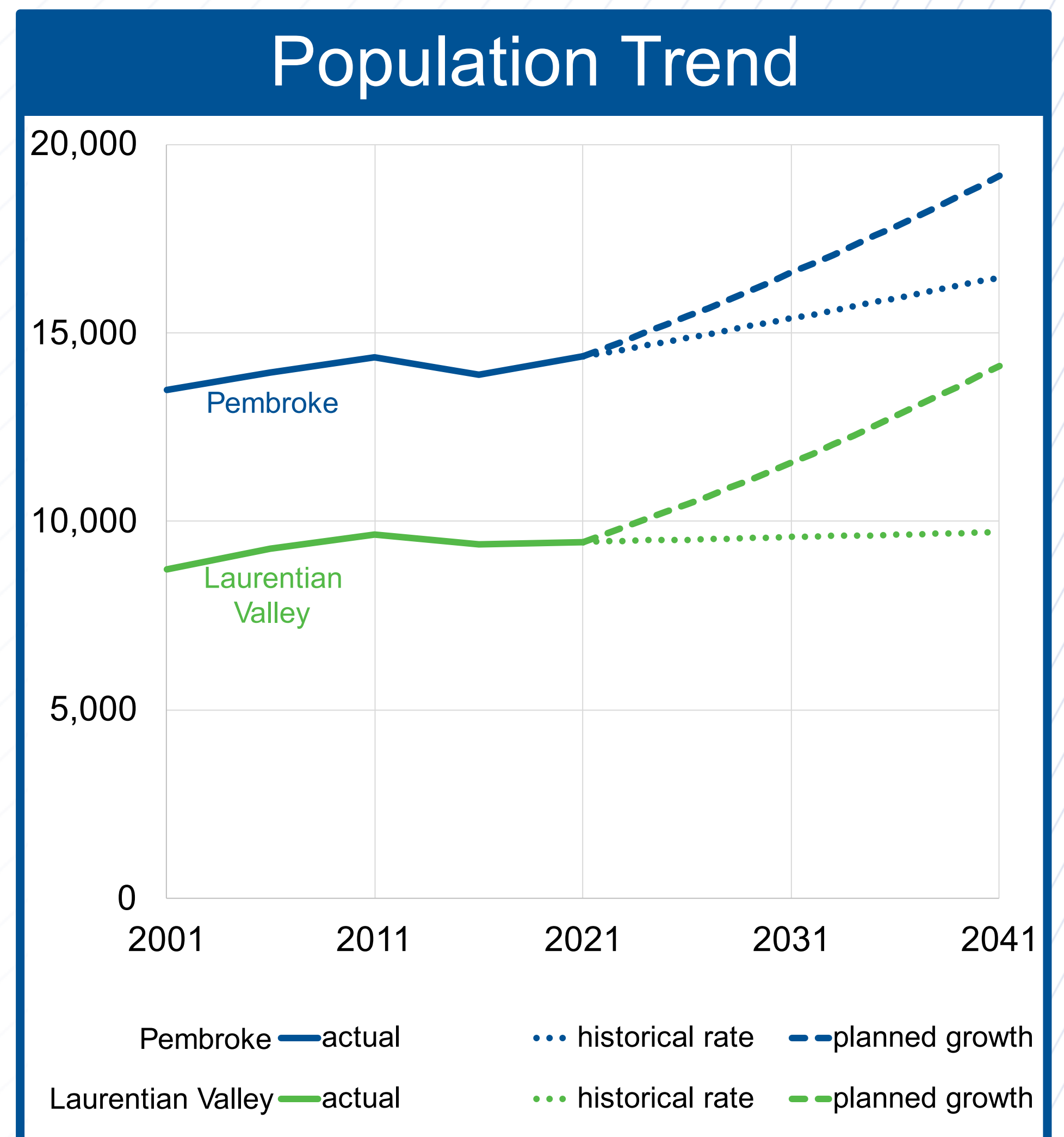
- Pembroke: 33% increase in population
- Laurentian Valley: 50% increase in population

## ▶ 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





# 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

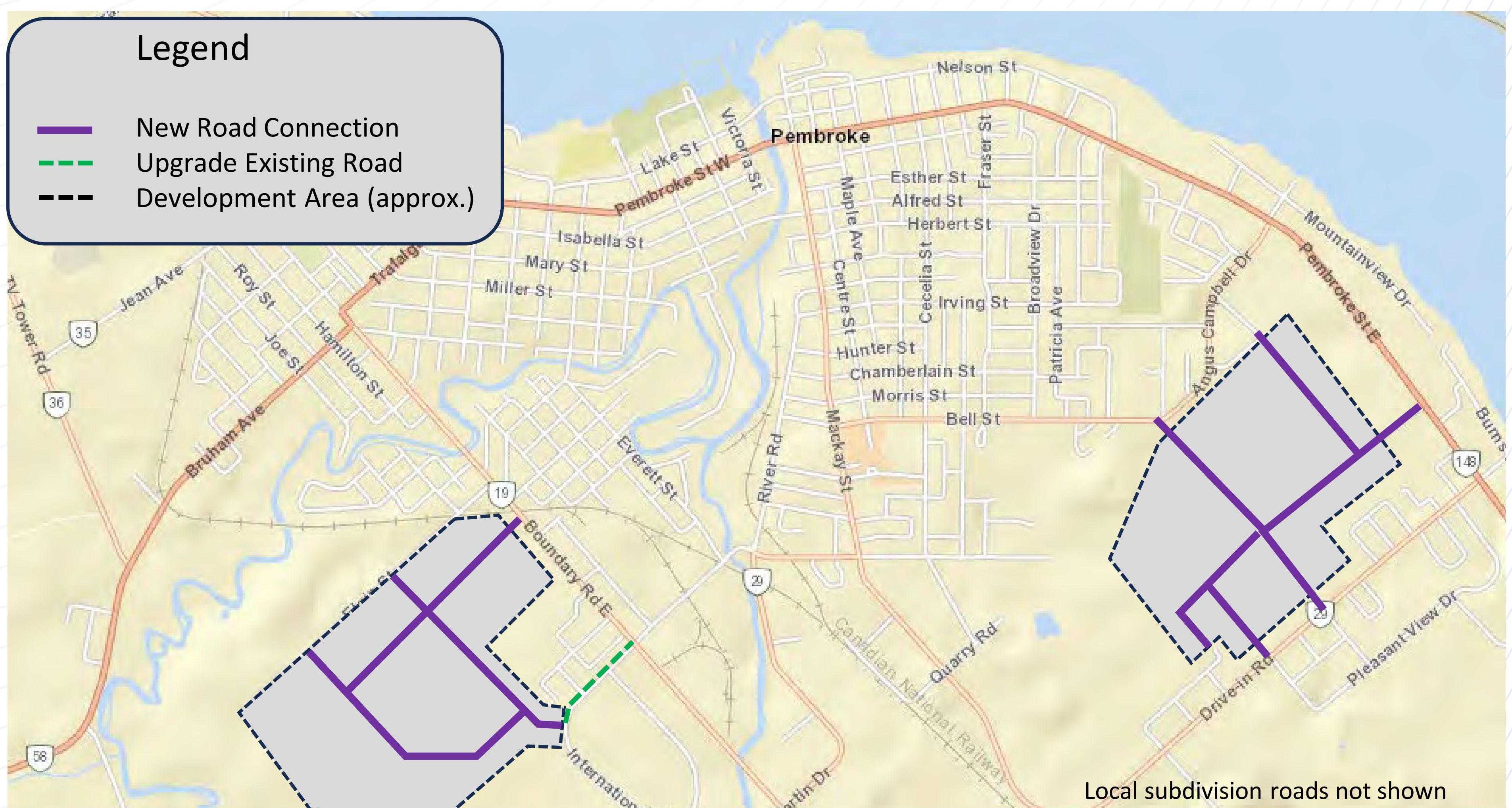


# FUTURE ROAD OPTIONS:

## 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	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>

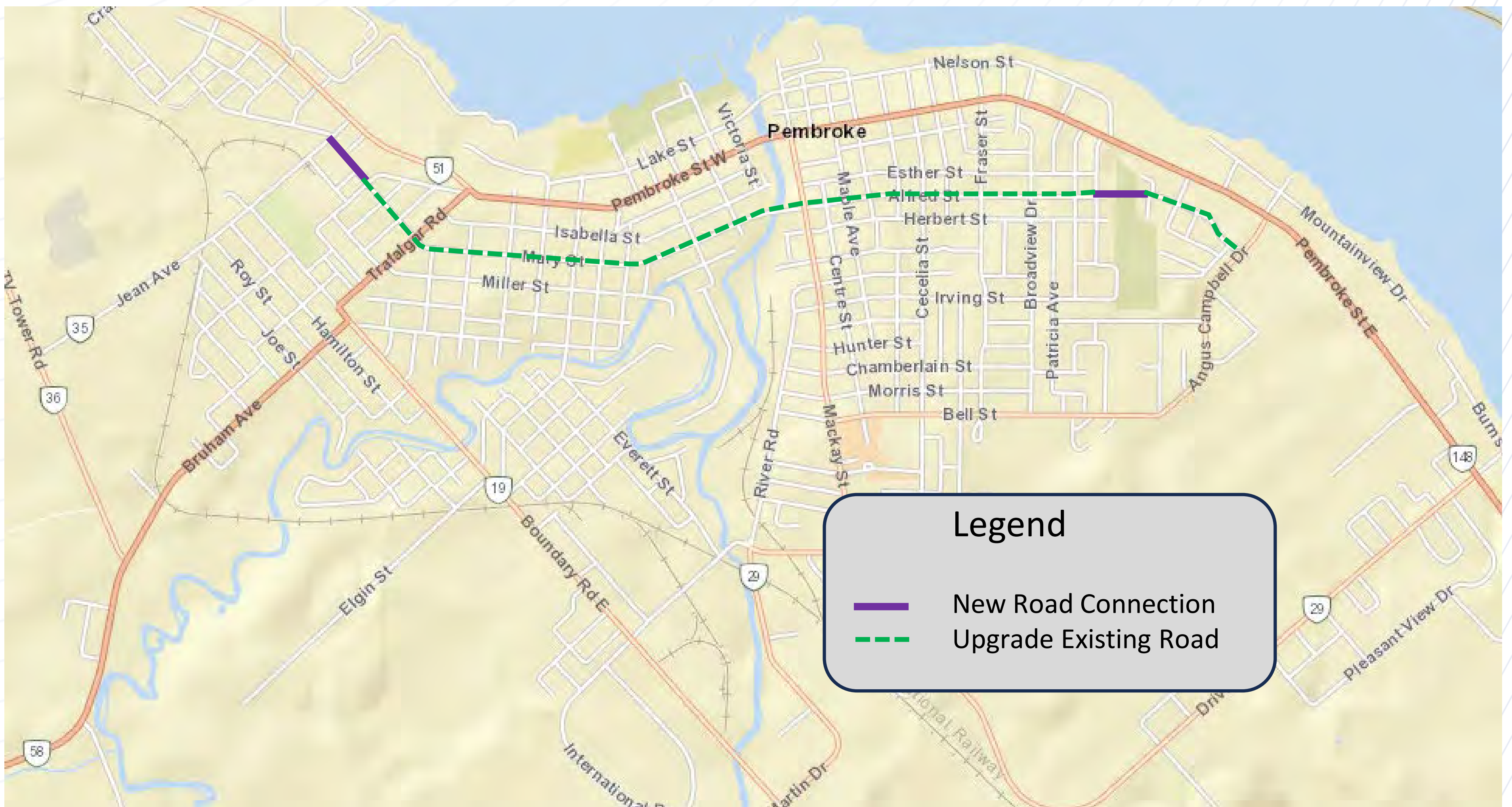


# FUTURE ROAD OPTIONS:

## 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	<b>NOT RECOMMENDED</b>

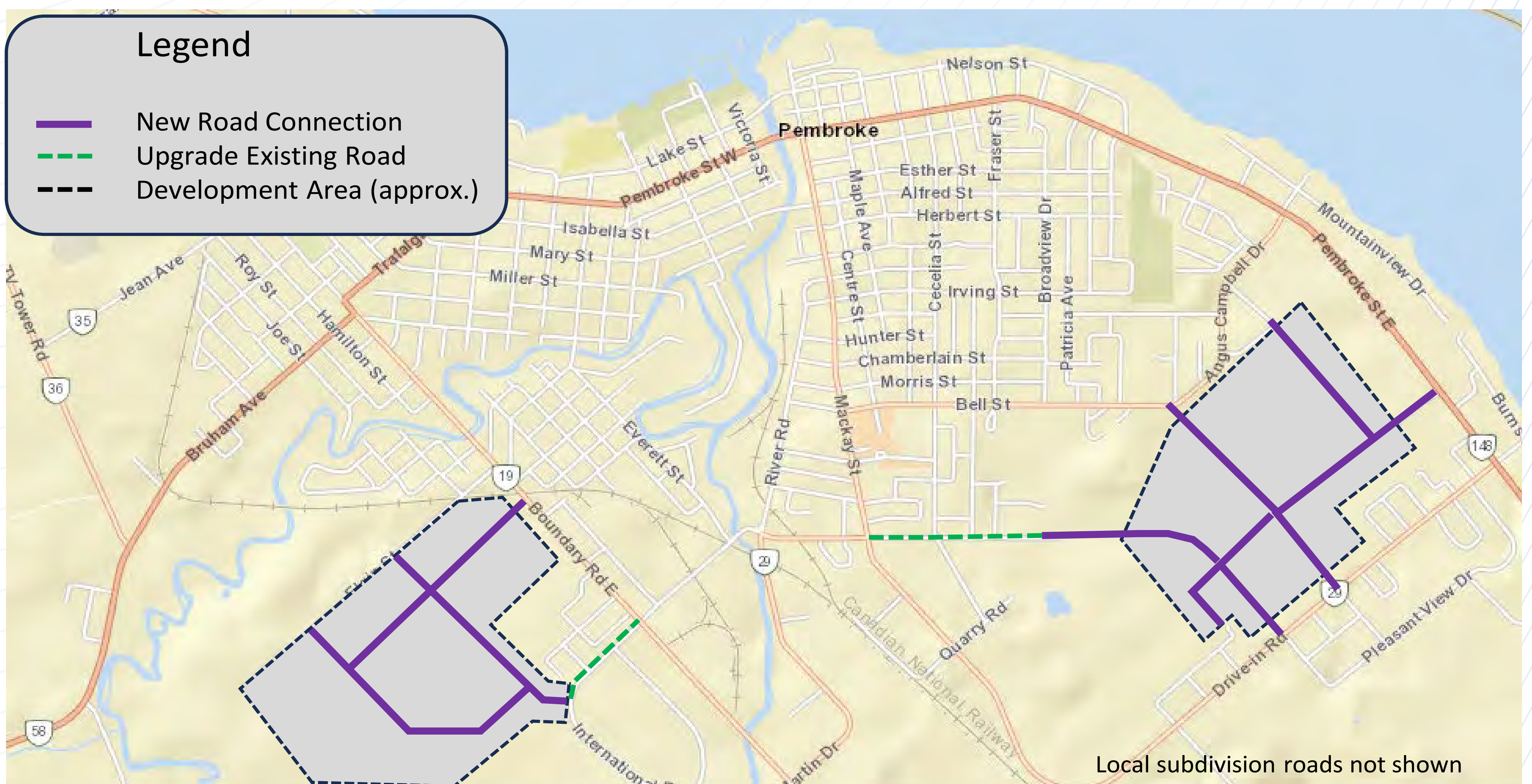


# FUTURE ROAD OPTIONS:

## 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	<b>RECOMMENDED - COMBINE WITH OTHER IMPROVEMENTS</b>

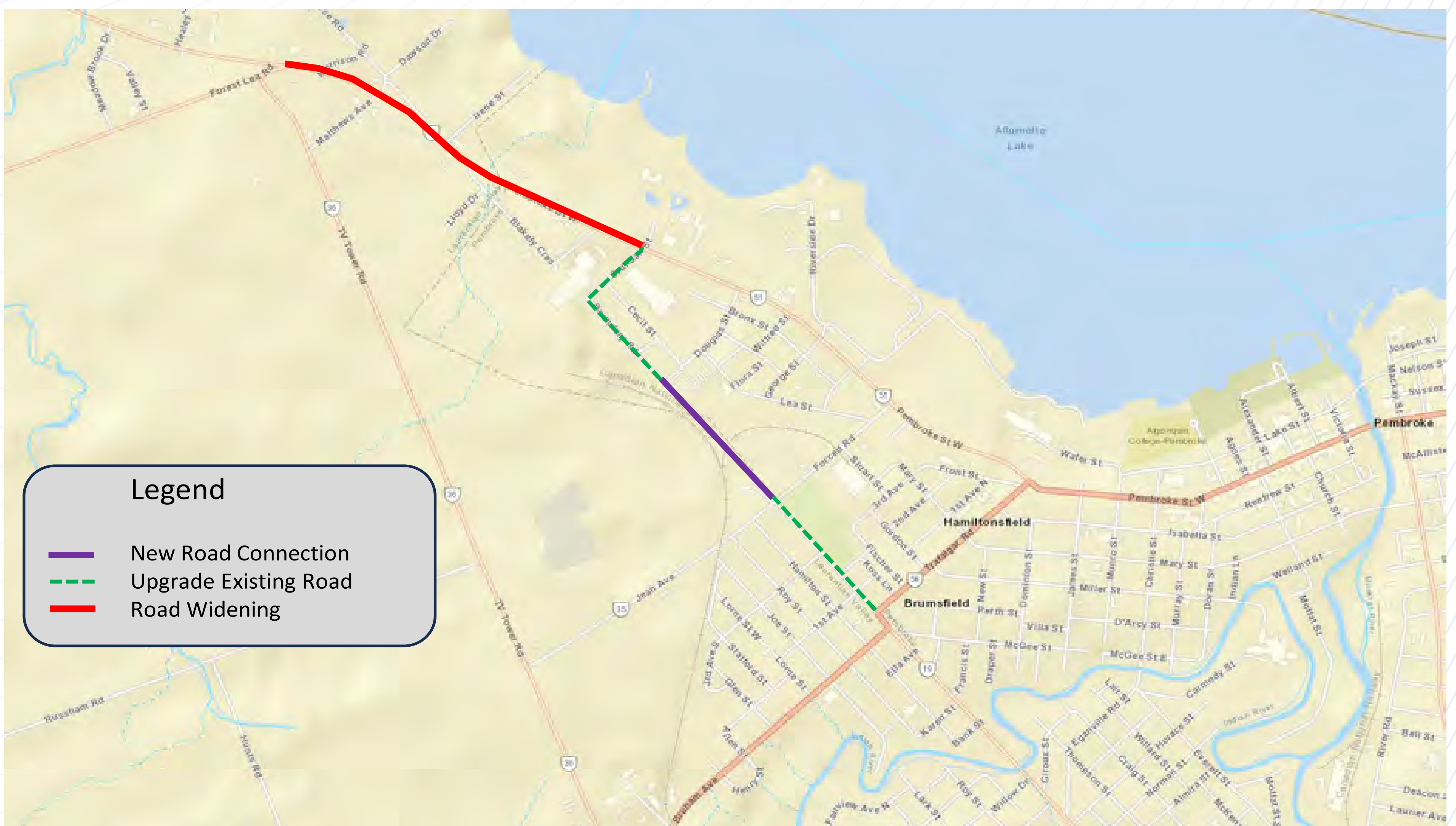


# FUTURE ROAD OPTIONS:

## 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	<b>NOT RECOMMENDED</b>

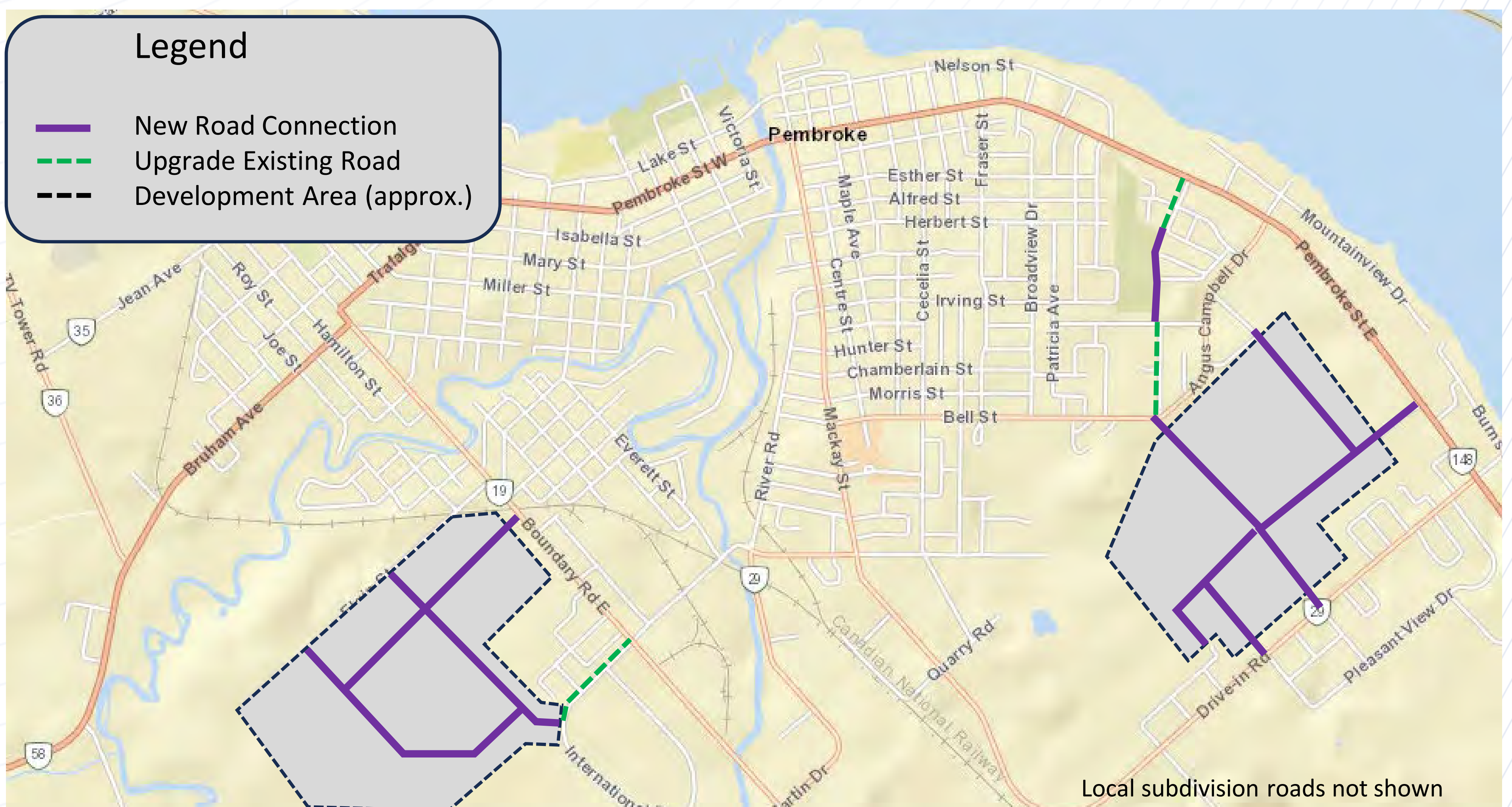


# FUTURE ROAD OPTIONS:

## 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	<b>NOT RECOMMENDED</b>

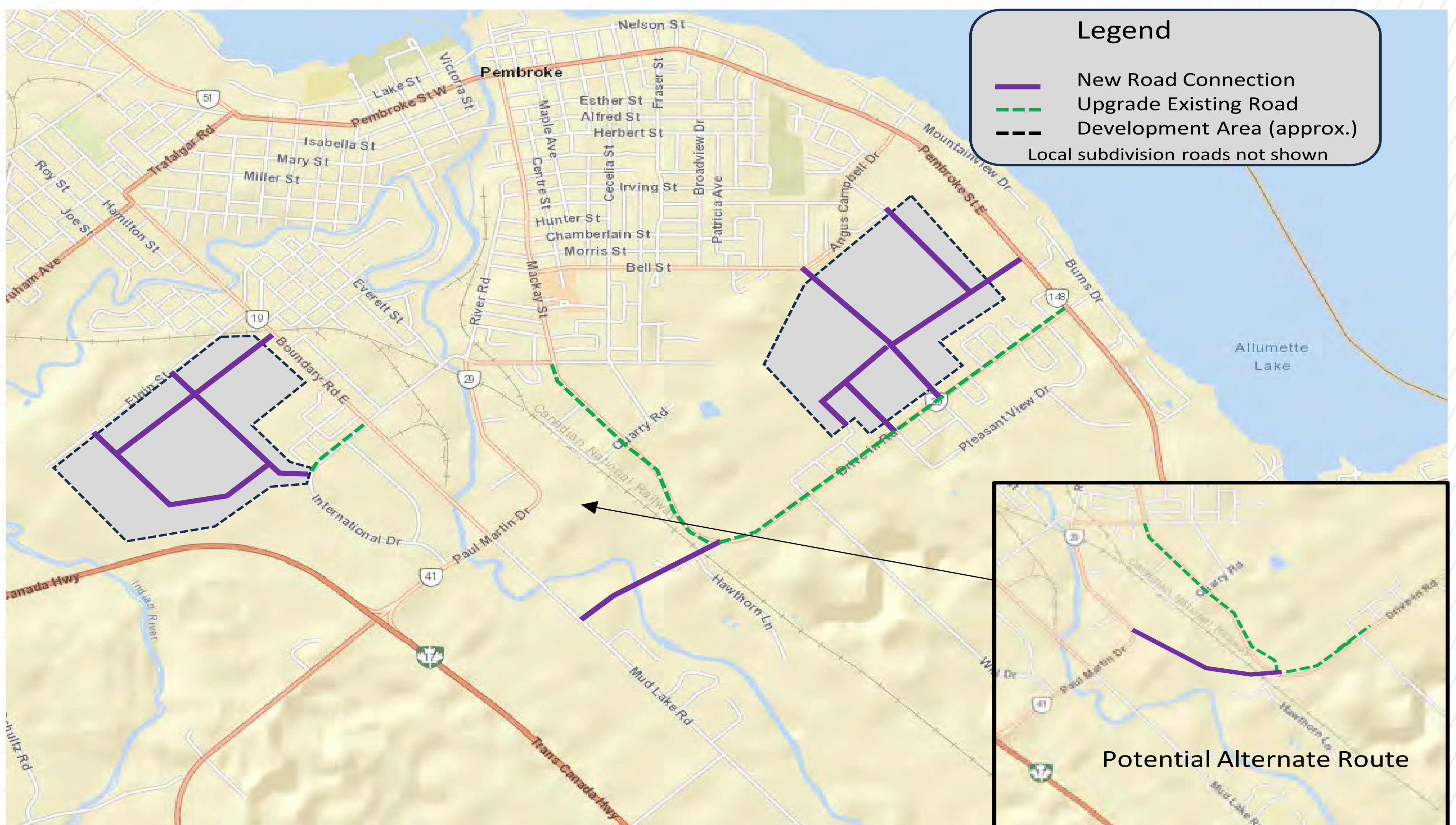


# FUTURE ROAD OPTIONS:

## 5) Local By-Pass Route

### ► Potential Improvements

- New County Road connection between Drive In Road and Mud Lake Road or Paul Martin Drive
- Upgrade MackKay 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
<b>Transportation</b>	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
<b>Social</b>	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on Angus Campbell Drive / Bell Street
<b>Environmental</b>	New connection crosses open space area Potential new river crossing (depending on route)
<b>Economic</b>	\$\$ - \$\$\$ Potential impact to existing industrial lands (depending on route)
<b>Overall</b>	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>

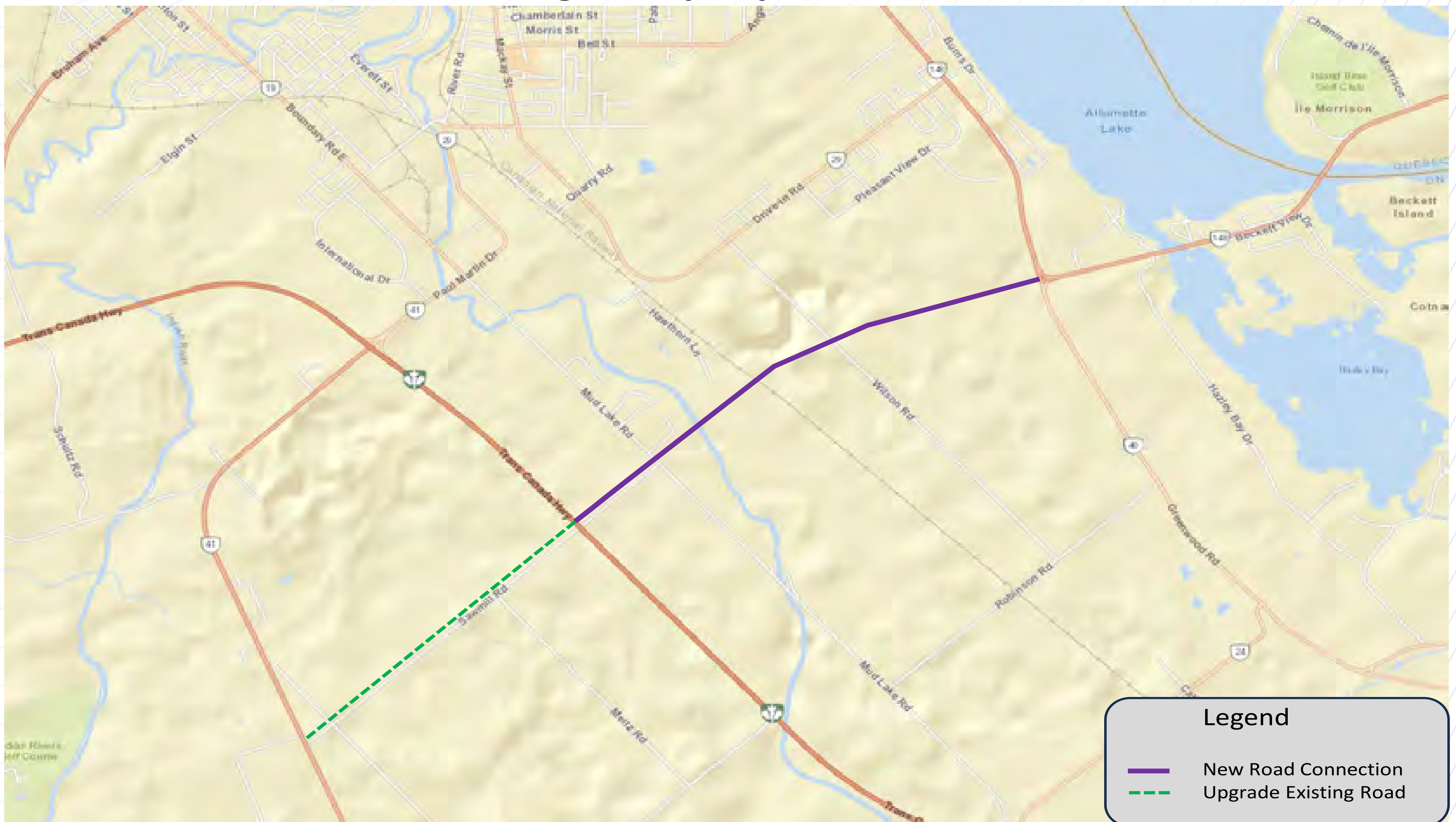


# FUTURE ROAD OPTIONS:

## 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
<b>Transportation</b>	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
<b>Social</b>	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on local streets
<b>Environmental</b>	New connection crosses open space area Requires new river crossing (potential future interchange)
<b>Economic</b>	\$\$\$\$\$ By-pass of downtown may impact local businesses
<b>Overall</b>	<b>NOT RECOMMENDED</b>



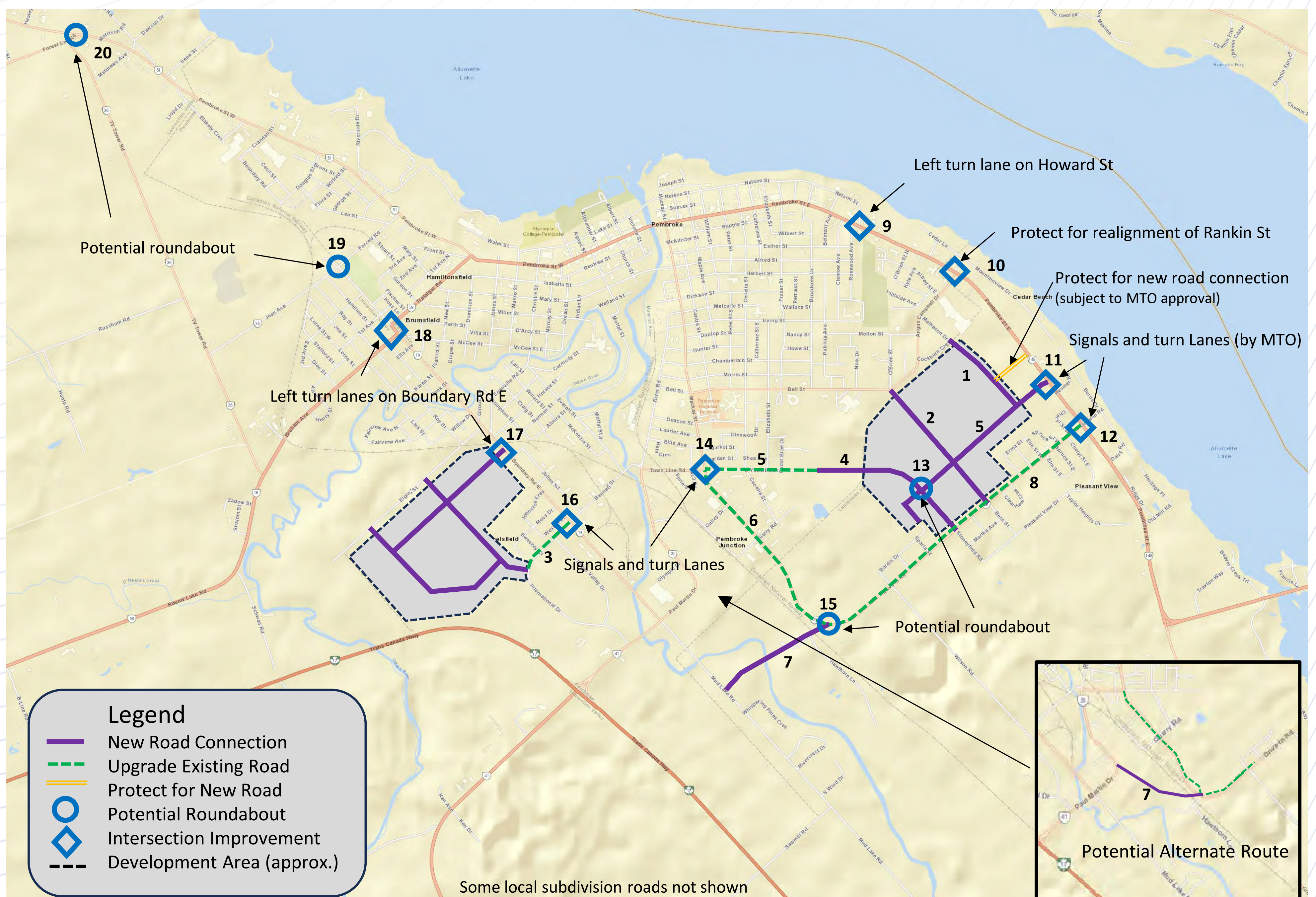
# FUTURE ROAD NETWORK: Recommended Improvements

## ► 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](mailto: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](mailto:lvpembrokeTMP@ptsl.com)

Brian Lewis  
Director of Operations  
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[lvpembrokeTMP@ptsl.com](mailto:lvpembrokeTMP@ptsl.com)

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Consultant Team Project Manager  
Paradigm Transportation Solutions Limited  
(416) 479-9684 x513  
[lvpembrokeTMP@ptsl.com](mailto:lvpembrokeTMP@ptsl.com)

- ▶ **Visit the project web site**

[www.lvtownship.ca/LVPembrokeTMP/](http://www.lvtownship.ca/LVPembrokeTMP/)

for additional information on the study and its progress

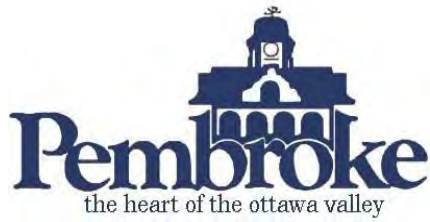


Project 220694 Township of Laurentian Valley-Pembroke TMP

#	Name	Address	Email	Date	Resident	Support Recommendations	Support Policy	Comments
1		81 Town Line Rd, Pembroke On		2023-12-13	Pembroke			<p>Good morning Lauree, Brian and Kevin and other support staff working on the Laurentian Valley / Pembroke East West Transportation Master Plan.</p> <p>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 heavy trucks and 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 Quarry Rd to benefit everyone.</p> <p>Safety Issues</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Heavy trucks routed along a developing residential street.</li> <li>- 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.</li> <li>- 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 direct route.</li> <li>- Sidewalk compromised, Pedestrians waiting to cross Town Line are put dangerously close to heavy trucks with limited visibility</li> <li>- Sidewalk being degraded by truck traffic overrunning the curb</li> <li>- 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 commercial route.</li> </ul> <p>See amendment 2023-43 attached with relevant section highlighted.</p> <ul style="list-style-type: none"> <li>- Residential proximity</li> </ul> <p>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 use of the road. 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)</p>
2		9407 Round Lake Rd, K8A OK4		2023-12-13	Laurentian Valley	Yes	Yes	<p>Efficiencies</p> <ul style="list-style-type: none"> <li>- 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 include Cassidy Moving and Storage, Township of Pembroke - Public works road maintenance, Saffco aka Efficiency First Insulation &amp; Contracting</li> <li>- KI, Sunbelt Rentals, Intelcom Express, Purolator, BDI Canada Inc., Valley Transportation (school busses), Pemco Steel, Ranger Septic Pumping</li> <li>- EIP Manufacturing, Westburne Electrical Supply, Fastenal Canada</li> <li>- 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 money.</li> <li>- Attract business to fill vacancies in the warehouses and buildings on MacKay street and on Hwy 41 (Paul Martin Dr).</li> <li>- Reduce traffic at the already busy intersection of Town line and Hwy 41.</li> </ul> <p>Impediments/Mitigations</p> <ul style="list-style-type: none"> <li>- A private entity owns part of the land that is required to make the connection to Hwy 41 from Quarry Rd</li> <li>- 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.</li> <li>- Neighbors on proposed route</li> <li>- 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 Storage</li> <li>- There appears to be an easement of unused land along the path of the proposed route.</li> <li>- Cost of road and ongoing maintenance</li> <li>- This shorter route will mean fewer turns and heavy breaking on current infrastructure which will be easier to maintain in the long run.</li> <li>- Prematurely repairing and replacing the roads on the current route would be much less frequent given the new route.</li> </ul> <p>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 Transportation Master Plan.</p> <p>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.</p> <p>Agree as long as there is no amalgamation with Pembroke</p>
3		11182 Round Lake Rd, K8A 6W8		2023-12-13	Laurentian Valley	Yes	Yes	<p>none</p>
4				2023-12-13	Pembroke		Yes	<p>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 encourage development there and walking and cycling to it. I also think a Boundary Rd extension should be on the table for future, without the expansion of Pembroke St w. Why wasn't Quarry Rd extension considered?</p>
5		770 Zion Line, Beachburg, K0J 1C0		2023-12-13	Other	Yes	Yes	<p>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 in a 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.</p> <p>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 industrial area.</p>

						Would like to see more as things develop.
6		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 drive 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
7						I didn't clearly see policy recommendations in the document-aside from 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 of
		2023-12-15	Pembroke	No	No	There's no money for improvements.
						There should be toll booths set up at the Quebec border so the Quebecois have to pay to use our infrastructure .
8		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 the 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
9						Some yes some no (policies). Have you received data from the cab companies? How many folks are taking them and the heavy routes?
10		2023-12-15	Pembroke	Yes	Yes	
		2023-12-15	Other	Yes	Yes	none
11		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	342 Sandy Beach Road, Pembroke ON K8A 6W8	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 Pembroke 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
						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 have to 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		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		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		2023-12-15	Laurentian Valley	Yes	Yes	none
16	214 Reynold Ave	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 another 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
						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 summer
17	360 Irving street Pembroke ontario K8A2T1	2023-12-16	Pembroke	Yes	Yes	none
18	1476 WILSON RD	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		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	47-575 Alfred St E, Pembroke K8A 7Z6	2023-12-16	Pembroke	Yes	Yes	Make main St and Lake St each one way streets between Walmart and Miramichi Lodge. If it 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		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 % of the city. 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
						Re survey. Re evaluate. Use your brain
22	2033 sandstone crescent	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			2023-12-17	Pembroke	Yes	No	none Plans for public transport..
24			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			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			2023-12-18	Laurentian Valley	Yes	Yes	none
27			2023-12-19	Pembroke	Yes	Yes	Roads to be repaired properly , not cheaply, same roads are constantly have to be redone. 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			2023-12-20	Pembroke	No	No	We cannot afford it
29			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. Make driving those Pembroke easy
30			2023-12-20	Pembroke	Yes	Yes	none
31			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 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	524 Esther St, Pembroke		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 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	3364 B Line road		2023-12-20	Laurentian Valley	Yes	Yes	none
34			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. With regards to pedestrians boundary Road, seriously requires a pedestrian crossing for safety of all.
35	579 Roy St Pembroke ON K8A 6R6		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			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			2023-12-20	Laurentian Valley	Yes	Yes	none
38			2023-12-21	Laurentian Valley	Yes	Yes	none
39	499 tv tower rd		2023-12-21	Laurentian Valley	Yes	Yes	Always bike lanes all the time. Keep the cyclists safe I think that cycling safety and bicycle infrastructure is majorly lacking let's get some bikes racks in town
40			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			2023-12-22	Pembroke	Yes	Yes	none



# Appendix B

## Public Opinion Survey Results





## Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Online Survey .....</b>	<b>1</b>
<b>3</b>	<b>Survey Findings .....</b>	<b>2</b>
3.1.1	Key Messages.....	34

## Figures

<b>Figure 3.1:</b>	<b>Daily Activities within Laurentian Valley .....</b>	<b>2</b>
<b>Figure 3.2:</b>	<b>Daily activities within Pembroke.....</b>	<b>3</b>
<b>Figure 3.3:</b>	<b>Distance travelled from home to typical destination..</b>	<b>4</b>
<b>Figure 3.4:</b>	<b>Mode of Travel within Laurentian Valley and Pembroke .....</b>	<b>5</b>
<b>Figure 3.5:</b>	<b>Mode of travel for work or school .....</b>	<b>6</b>
<b>Figure 3.6:</b>	<b>Barriers to walking or rolling .....</b>	<b>7</b>
<b>Figure 3.7:</b>	<b>Barriers to cycling .....</b>	<b>9</b>
<b>Figure 3.8:</b>	<b>Measures to Improve Traffic Safety .....</b>	<b>11</b>
<b>Figure 3.9:</b>	<b>Priorities for making travel more convenient.....</b>	<b>13</b>
<b>Figure 3.10:</b>	<b>Concerns for moving around Laurentian Valley and Pembroke .....</b>	<b>24</b>
<b>Figure 3.11:</b>	<b>Importance of improving transportation .....</b>	<b>25</b>
<b>Figure 3.12:</b>	<b>Location of Residence .....</b>	<b>31</b>
<b>Figure 3.13:</b>	<b>Age of respondents .....</b>	<b>33</b>

## Tables

<b>Table 3.1 – Survey Responses Question 1 .....</b>	<b>3</b>
<b>Table 3.2 – Survey Responses Question 2 .....</b>	<b>4</b>
<b>Table 3.3 – Survey Responses Question 3 .....</b>	<b>5</b>
<b>Table 3.4 – Survey Responses Question 4 .....</b>	<b>6</b>
<b>Table 3.5 – Survey Responses Question 5 .....</b>	<b>8</b>
<b>Table 3.6 – Survey Responses Question 6 .....</b>	<b>10</b>
<b>Table 3.7 – Survey Responses Question 7 .....</b>	<b>12</b>
<b>Table 3.8 – Survey Responses Question 8 .....</b>	<b>14</b>
<b>Table 3.9 – Survey Responses Question 11 .....</b>	<b>24</b>
<b>Table 3.10 – Survey Responses Question 12 .....</b>	<b>26</b>
<b>Table 3.11 – Survey Responses Question 14 .....</b>	<b>32</b>
<b>Table 3.12 – Survey Responses Question 15 .....</b>	<b>33</b>



# 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 form 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 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.

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.



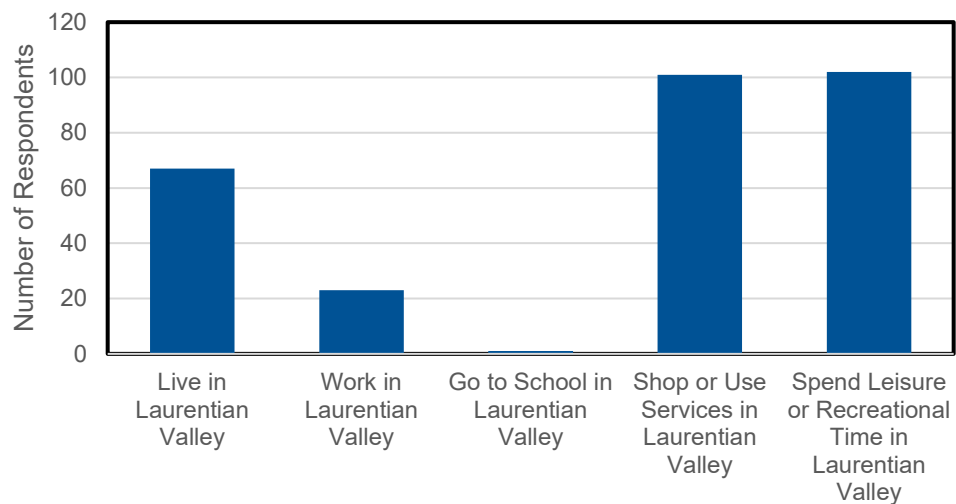
### 3 Survey Findings

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

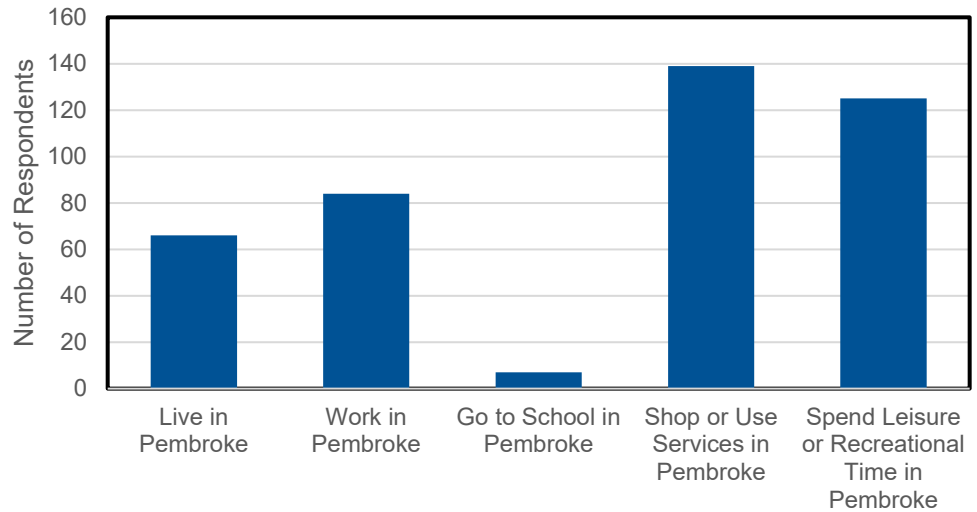
**Figure 3.1** shows that most respondents travelling to destinations within Township of Laurentian Valley make the trips to access shopping and leisure/recreation activities, with relatively few making trips to work or school. This suggests travel to location within the municipality is more discretionary 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**

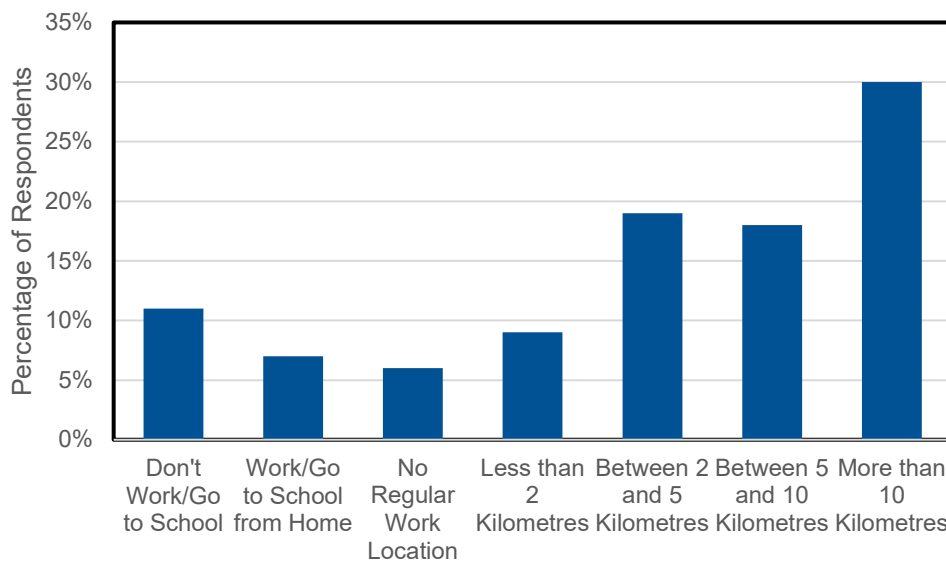
Answer	Responses	
	Percentage	Count
Live in the Township of Laurentian Valley	41.1%	67
Work in the Township of Laurentian Valley	14.11%	23
Go to school in the Township of Laurentian Valley	0.61%	1
Shop or use services in the Township of Laurentian Valley (doctors office, dry cleaning, food services, 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
<b>Total Responses = 163</b>		





## 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**

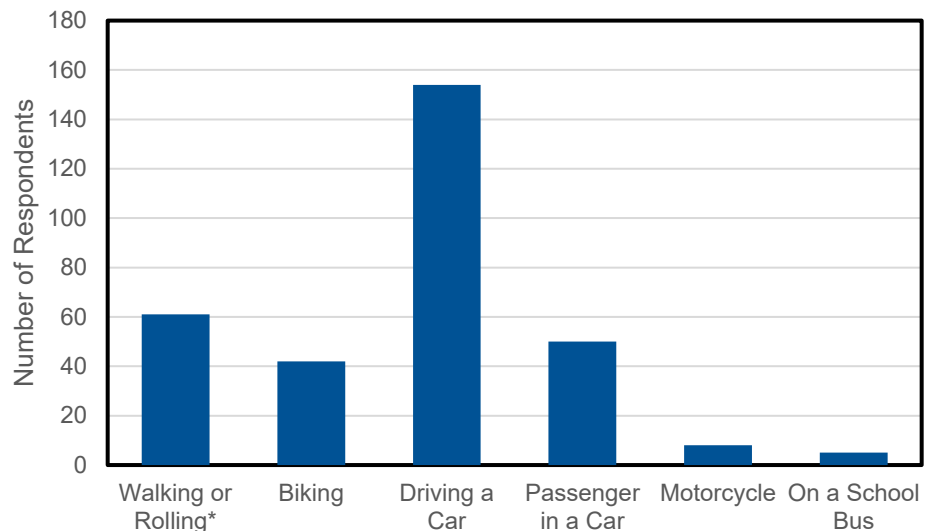
**TABLE 3.2 – SURVEY RESPONSES QUESTION 2**

Answer	Responses	
	Percentage	Count
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
<b>Total Responses = 160</b>		



### 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**

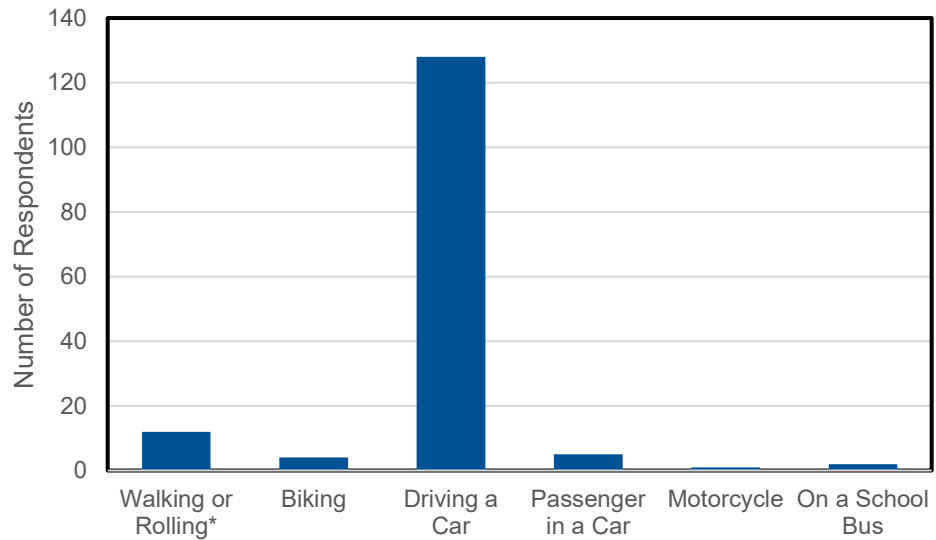
**TABLE 3.3 – SURVEY RESPONSES QUESTION 3**

Answer	Responses	
	Walking or rolling* (*Refers to the use of a wheelchair or other mobility device)	37.20%
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
<b>Total Responses = 164</b>		



### 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**

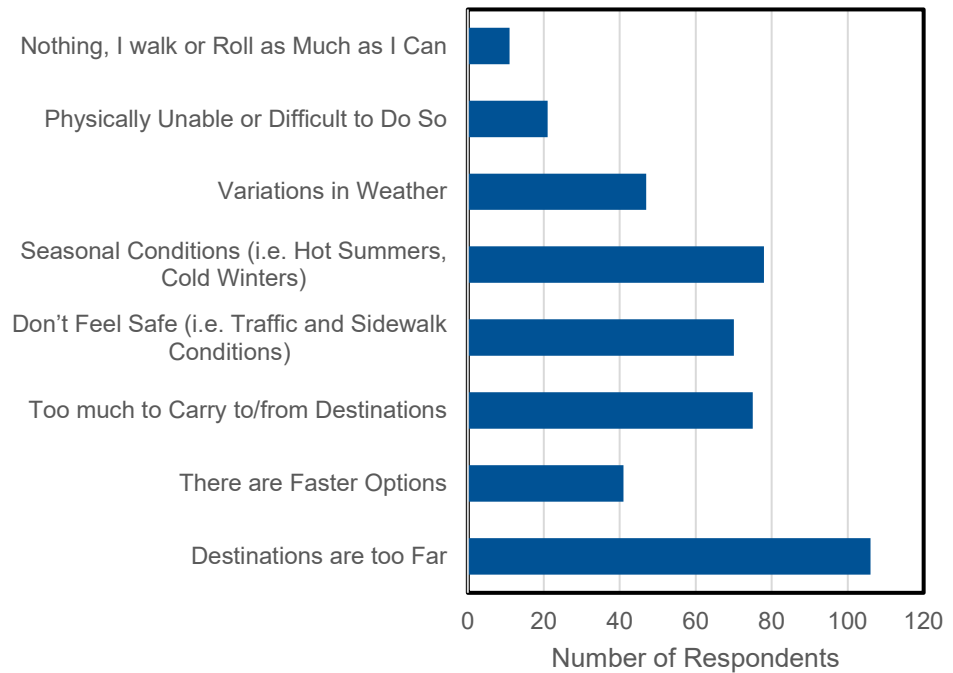
**TABLE 3.4 – SURVEY RESPONSES QUESTION 4**

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
<b>Total Responses = 152</b>		



### 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**



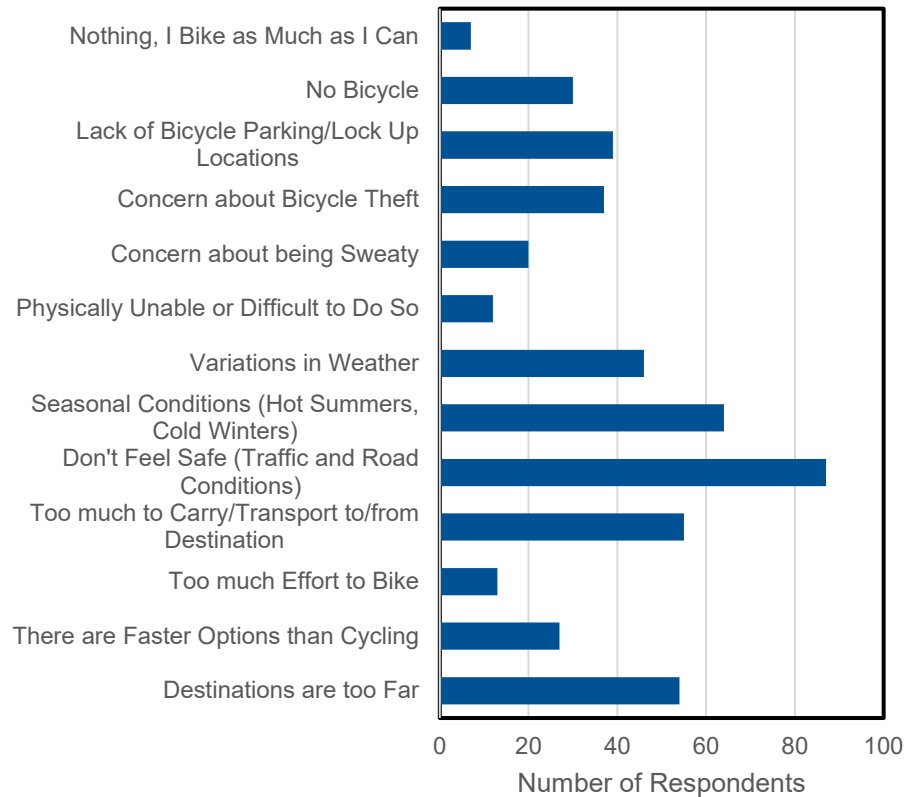
**TABLE 3.5 – SURVEY RESPONSES QUESTION 5**

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
<b>Total Responses = 160</b>		



### 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**



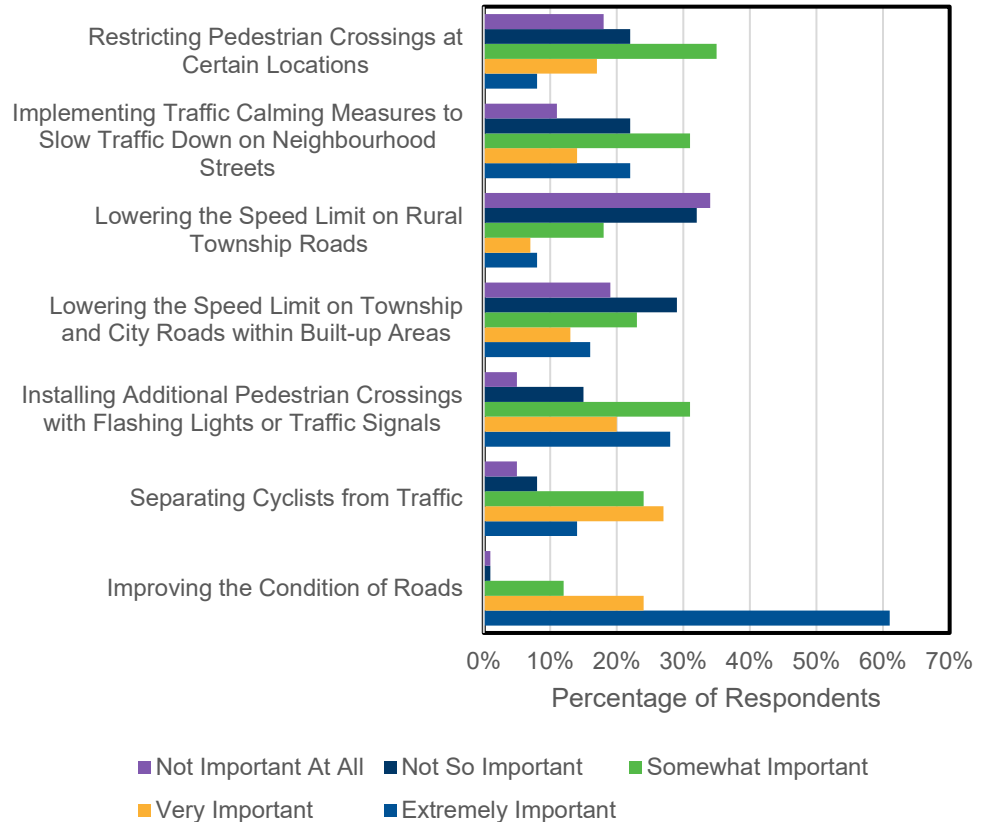
**TABLE 3.6 – SURVEY RESPONSES QUESTION 6**

Answer	Responses	
	Percentage	Count
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
<b>Total Responses = 162</b>		



### 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**





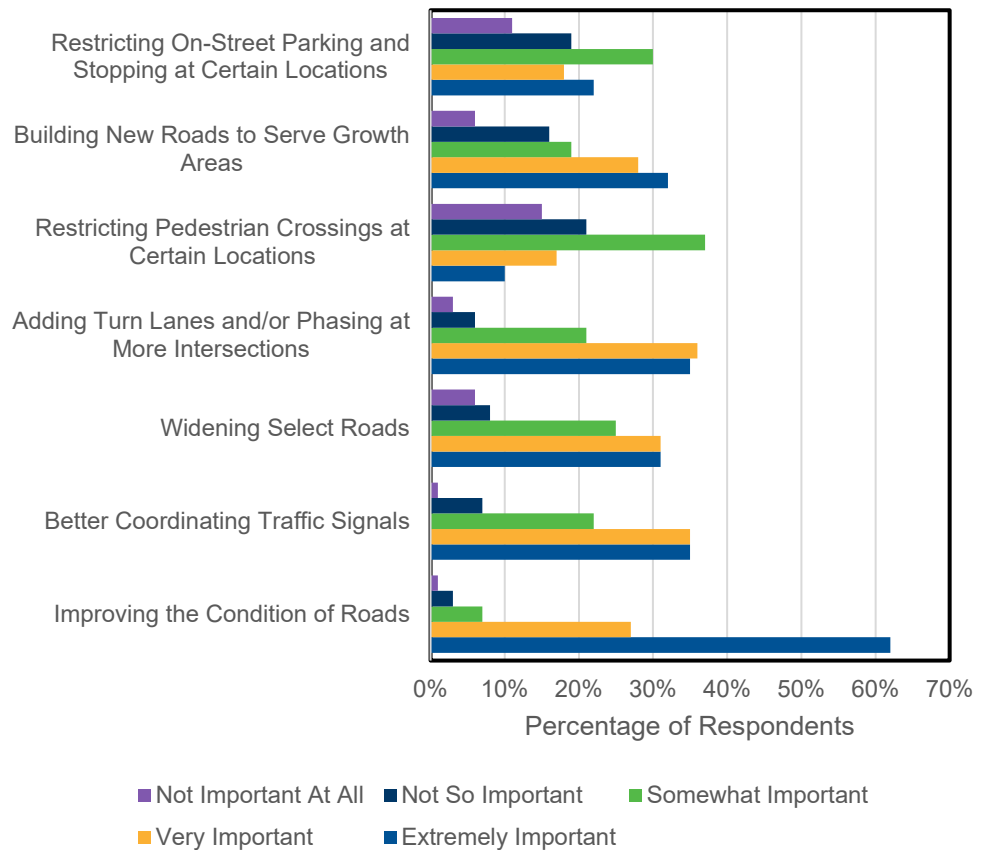
**TABLE 3.7 – SURVEY RESPONSES QUESTION 7**

<b>Answer</b>	<b>Extremely Important</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not So Important</b>	<b>Not At All Important</b>	<b>Total</b>
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**

<b>Answer</b>	<b>Extremely Important</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not So Important</b>	<b>Not At All Important</b>	<b>Total</b>
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 walking
- 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 Laurentian 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. That's 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 roundabouts.
- 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. I 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 pedestrian 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 than 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 like 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 through
- 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 trafilger 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 Campbell
- 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.

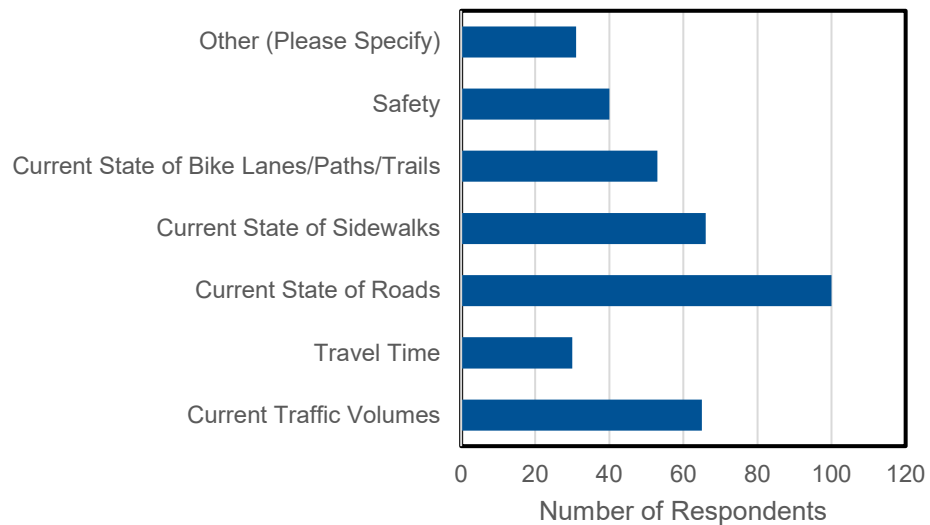


- Add 2-3 pedestrian crossings on Boundary Rd to make crossing from LV (Stafford) to Pembroke safer. Currently crossing very dangerous (especially with children) during peak travel times.
- Fixing pot holes and narrow crappy roads
- Better pedestrian consideration. Fix the roads!
- Timing the traffic 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**

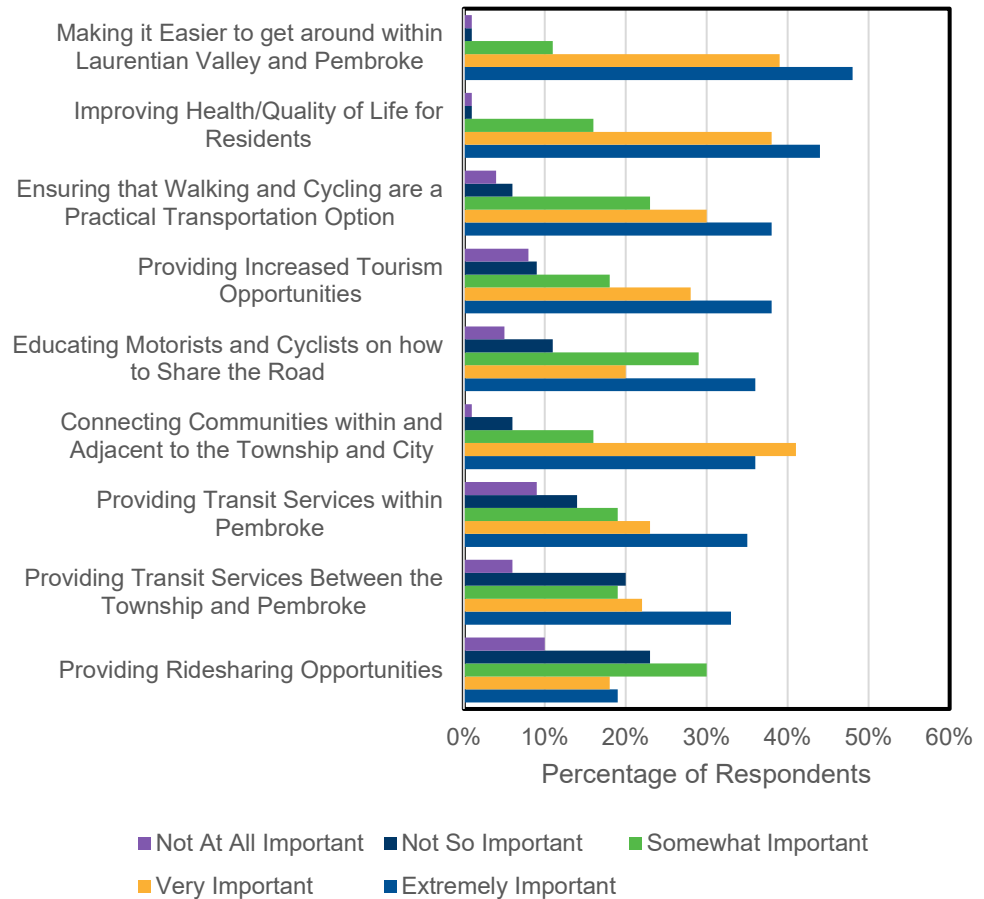
**TABLE 3.9 – SURVEY RESPONSES QUESTION 11**

Answer	Responses	
	Percentage	Count
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
<b>Total Responses = 140</b>		



### 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**

<b>Answer</b>	<b>Extremely Important</b>	<b>Very Important</b>	<b>Somewhat Important</b>	<b>Not So Important</b>	<b>Not At All Important</b>	<b>Total</b>
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 restrictive 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 expensive.
- 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.

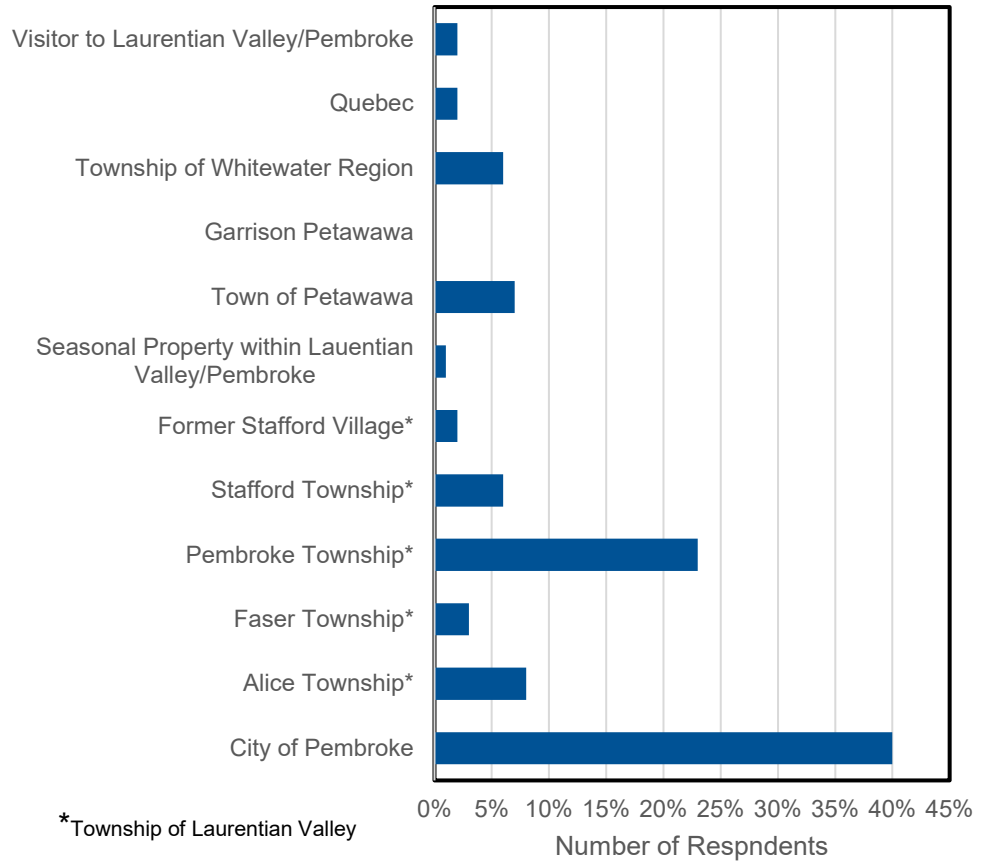


- Need to widen roads near malls and stop signs. Add signal lights at Drive In Road/Pembroke St. E.. Continue Matheson Dr. to Robinson Lane
- Bus system!!
- Pembroke seems to focus on things like building housing on Nelson St./River Road (blocking the view of the river), or inviting industry to the Mackay 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 they 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**



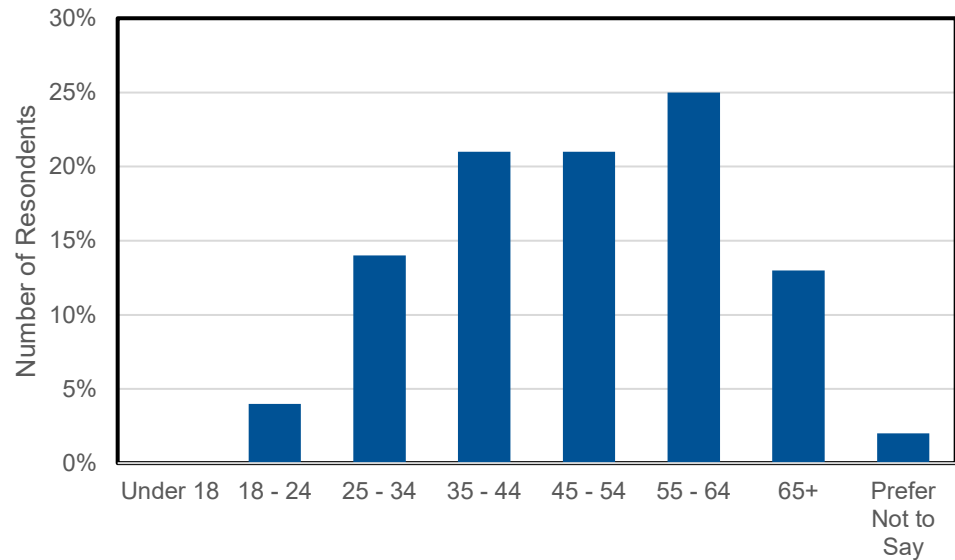
**TABLE 3.11 – SURVEY RESPONSES QUESTION 14**

Answer	Responses	
	City of Pembroke	40.00%
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
<b>Total Responses = 145</b>		



### 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	
	Percentage	Count
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
<b>Total Responses = 145</b>		



## 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 of 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)

## Transportation Master Plan for East-West Traffic

- 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)

# Transportation Master Plan for East-West Traffic

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.

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10. What would make moving around within Laurentian Valley and Pembroke better? Please keep your answer to under 200 words.

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# Transportation Master Plan for East-West Traffic

## 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?**

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**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:

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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@pts1.com](mailto:lvpembrokeTMP@pts1.com) and continue to visit the project webpages for updates!



# Appendix C

## Existing Conditions Intersection Analysis





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 Delay V/C Q	A 6 0.18 0	A 0 0.00 0	A 7 0.29 2	A 7 0.29 2	A 6 0.05 0	A 0 0.00 0	A 9 0.34 2	A 9 0.34 2	C 27 0.22 3	A 0 0.00 0	A 0 0.00 0	C 27 0.22 3	C 28 0.35 6	A 0 0.00 0	C 29 0.44 5	C 28 0.44 5	B 13	
River Road & Bennett Street/Town Line Road	TCS	LOS Delay V/C Q	C 25 0.33 4	A 0 0.00 0	C 31 0.57 9	C 28 0.57 9	C 25 0.33 4	A 0 0.00 0	C 30 0.53 8	C 28 0.53 8	A 8 0.20 1	A 0 0.00 0	A 0 0.00 0	A 8 0.20 1	A 7 0.01 0	A 8 0.22 1	A 0 0.00 0	A 8 0.22 1	B 18	
Mackay Street & River Road/Metcalfe Street	TCS	LOS Delay V/C Q	C 25 0.50 6	A 0 0.00 0	A 0 0.00 0	C 25 0.50 6	C 22 0.06 1	A 0 0.00 0	A 0 0.00 0	C 22 0.06 1	A 4 0.14 1	A 0 0.00 0	A 0 0.00 0	A 4 0.14 1	A 5 0.29 2	A 0 0.00 0	A 0 0.00 0	A 5 0.29 2	B 10	
Mackay Street & Pembroke Street West/Pembroke Street East	TCS	LOS Delay V/C Q	B 18 0.02 1	A 0 0.00 0	C 30 0.66 38	C 30 0.66 38	B 19 0.44 6	A 0 0.00 0	C 20 0.44 20	C 20 0.44 20	C 24 0.23 7	A 0 0.00 0	C 31 0.44 20	C 29 0.44 20	C 27 0.04 2	A 0 0.00 0	C 30 0.24 10	C 30 0.24 10	C 26	
Mackay Street & Lake Street/Nelson Street	TCS	LOS Delay V/C Q	A 2 0.00 0	A 0 0.00 0	A 3 0.25 2	A 3 0.25 2	A 3 0.07 0	A 0 0.00 0	A 2 0.17 1	A 2 0.17 1	C 22 0.28 2	A 0 0.00 0	A 0 0.00 0	C 22 0.28 2	C 21 0.06 0	A 0 0.00 0	A 0 0.00 0	C 21 0.06 0	A 5	
Mackay Street & Town Line Road/D' Youville Drive	AWSC	LOS Delay V/C Q	< < <	A 10 0.34 11	> > >	A 10 0.34 11	< < <	A 8 0.09 2	> > >	A 8 0.09 2	< < <	A 9 0.21 6	> > >	A 9 0.21 6	< < <	A 8 0.09 2	> > >	A 8 0.09 2	A 9	
Cecelia Street & D' Youville Drive	AWSC	LOS Delay V/C Q	< < <	A 8 0.18 4	> > >	A 8 0.18 4	< < <	A 8 0.02 1	> > >	A 8 0.02 1	< < <	A 8 0.06 2	> > >	A 8 0.06 2	< < <	A 7 0.07 2	> > >	A 7 0.07 2	A 8	
Wilson Road & Drive-in Road	TWSC	LOS Delay V/C Q	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 1 0.00 0	< < <	B 11 0.04 1	> > >	B 11 0.04 1	< < <	A 9 0.01 0	> > >	A 9 0.01 0	A 2	
Highway 148 & Drive-in Road	TWSC	LOS Delay V/C Q	< < <	D 32 0.52 21	> > >	D 32 0.52 21	< < <	C 21 0.04 1	> > >	C 21 0.04 1	A 10 0.07 2	A 0 0.00 0	A 0 0.00 0	A 1 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 4	
Highway 148 & Robinson Lane	TCS	LOS Delay V/C Q	C 34 0.41 7		C 34 0.39 6	C 34 0.39 6					A 5 0.08 0	A 4 0.23 1		A 4 0.23 1	A 10 0.49 4	A 6 0.15 1	A 9 0.15 1	A 9 0.15 1	B 11	
Highway 148 & Walmart Entrance	TCS	LOS Delay V/C Q	C 33 0.36 9	A 0 0.00 0	D 39 0.76 17	D 37 0.76 17	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 6 0.17 0	A 5 0.24 2	A 0 0.00 0	A 6 0.24 2	A 0 0.00 0	B 12 0.49 4	A 8 0.13 1	B 11 0.13 1	B 15	
Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS Delay V/C Q	E 72 0.80 36	A 0 0.00 0	D 42 0.24 13	E 61 0.24 13	D 43 0.15 2	A 0 0.00 0	A 0 0.00 0	D 43 0.15 2	B 11 0.14 1	A 0 0.00 0	A 10 0.31 7	A 10 0.31 7	B 17 0.54 32	A 0 0.00 0	B 12 0.13 4	B 16 0.13 4	C 22	
Driveway/Howard Street & Highway 148	TCS	LOS Delay V/C Q	B 13 0.01 0	A 0 0.00 0	B 11 0.51 4	B 11 0.51 4	B 13 0.00 0	B 11 0.48 4	A 8 0.14 1	B 10 0.14 1	B 19 0.04 1	A 0 0.00 0	A 0 0.00 0	B 19 0.04 1	C 26 0.68 14	A 0 0.00 0	A 0 0.00 0	C 26 0.68 14	B 14	
River Road & Driveway/Bell Street	TWSC	LOS Delay V/C Q	< < <	A 0 0.00 0	> > >	A 0 0.00 0	< < <	B 14 0.23 7	> > >	B 14 0.23 7	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 3	
Mackay Street & Bell Street	TCS	LOS Delay V/C Q	A 5 0.09 0	A 0 0.00 0	A 0 0.00 0	A 5 0.09 0	A 5 0.18 1	A 0 0.00 0	A 0 0.00 0	A 5 0.09 0	A 0 0.00 0	A 0 0.00 0	B 15 0.39 1	B 15 0.39 1	B 15 0.38 1	A 0 0.00 0	A 0 0.00 0	B 15 0.38 1	B 10	
Cecelia Street & Bell Street	AWSC	LOS Delay V/C Q	< < <	A 9 0.26 8	> > >	A 9 0.26 8	< < <	A 10 0.29 9	> > >	A 10 0.29 9	< < <	A 9 0.22 6	> > >	A 9 0.22 6	< < <	A 9 0.11 3	> > >	A 9 0.11 3	A 10	
Bell Street & O' Brien Street	AWSC	LOS Delay V/C Q	< < <	B 10 0.34 11		B 10 0.34 11		A 9 0.28 8	> > >	A 9 0.28 8					A 7 0.00 0	> > >	> > >	A 7 0.00 0	A 10	

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	
PM Peak Hour	Cecelia Street & Alfred Street	AWSC	LOS Delay V/C Q	< < < <	A 8 0.15 4	> > > >	A 8 0.06 2	< < < <	A 8 0.12 3	> > > >	A 8 0.14 4	< < < <	A 8 0.14 4	> > > >	A 8 0.14 4	> > > >	A 8 0.14 4	A 8		
	Matheson Drive & Angus Campbell Drive	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0 0.01 0	A 8 0.01 0	B 10 0.01 0										A 0	
	Mackay Street & Mary Street/Alfred Street	TCS	LOS Delay V/C Q	C 25 0.30 4	A 0 0.00 0	C 27 0.65 10	C 24 0.33 5	A 0 0.00 0	A 0 0.00 0	C 24 0.13 0	A 8 0.00 0	A 0 0.23 2	A 8 0.02 0	A 0 0.00 0	B 12 0.39 2	B 12 0.39 2	B 12 0.39 2	B 12 0.39 2	B 16	
	Broadview Drive & Alfred Street	TWSC	LOS Delay V/C Q	< < < <	A 9 0.08 2	> > > >	A 10 0.02 1	< < < <	A 7 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 7	
	Rosewood Avenue & Alfred Street	TWSC	LOS Delay V/C Q	< < < <	A 9 0.03 1	> > > >	A 0 0.00 0	< < < <	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 3	
	Bell Street & Broadview Drive	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0		A 0 0.00 0	A 0 0.00 0	A 0 0.00 0						B 12 0.03 1				B 12	A 0
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS Delay V/C Q	A 7 0.06 0	A 10 0.52 4	A 6 0.00 0	A 6 0.04 0	A 0 0.00 0	B 11 0.59 5	C 30 0.07 1	A 0 0.00 0	C 27 0.13 2	C 28 0.27 4	C 29 0.00 0	C 28 0.39 4	C 29 0.39 4	C 29 0.39 4	C 29 0.39 4	C 29	B 13
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.05 2	A 0 0.00 0	A 0 0.00 0	A 2 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	C 16 0.02 1	> > > >	C 16 0.02 1	< < < <	B 14 0.23 7	> > > >	B 14 0.23 7	B 14	A 3
	Driveway/McGee Street & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.05 2	A 0 0.00 0	A 0 0.00 0	A 1 0.00 0	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	< < < <	C 18 0.06 2	> > > >	C 18 0.06 2	< < < <	B 11 0.09 2	> > > >	B 11 0.09 2	B 11	A 2
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.05 2	A 0 0.00 0	A 0 0.00 0	A 1 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	A 0 0.00 0	> > > >	A 0 0.00 0	< < < <	C 18 0.36 12	> > > >	C 18 0.36 12	C 18	A 4
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS Delay V/C Q	< < < <	B 13 0.51 21	> > > >		< < < <	A 10 0.23 7	> > > >	A 10 0.08 2	< < < <	A 9 0.06 2	> > > >	A 10 0.06 2	B 10 0.28 8	B 10 0.28 8	B 10 0.28 8	A 10	B 11
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS Delay V/C Q	< < < <		> > > >		< < < <		> > > >		< < < <		> > > >		< < < <		> > > >		
	Broadview Drive & Pembroke Street East	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0 0.01 0	A 8 0.00 0		A 0 0.04 1	B 13 0.00 0									A 0
	Cecelia Street & Nelson Street	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0 0.01 0	A 8 0.00 0		A 1 0.04 1	B 12 0.00 0									A 1
	Cecelia Street & Pembroke Street East	TCS	LOS Delay V/C Q	A 6 0.01 0	A 0 0.00 0	A 10 0.48 4	A 10 0.10 0	A 6 0.00 0	A 7 0.40 2	A 7 0.33 6	C 30 0.00 0	A 0 0.00 0	C 30 0.13 2	C 28 0.00 0	C 28 0.00 0	C 28 0.00 0	C 28 0.00 0	C 28 0.00 0	C 28	B 11
	Christie Street & Pembroke Street West	TCS	LOS Delay V/C Q	A 7 0.03 0	A 0 0.00 0	A 7 0.42 3	A 7 0.04 0	A 8 0.00 0	A 6 0.40 2	A 7 0.38 1	B 19 0.00 0	B 15 0.11 0	B 18 0.00 0	A 0 0.00 0	A 0 0.00 0	B 17 0.43 1	B 17 0.43 1	B 17 0.43 1	B 17	A 9
Elizabeth Street/Driveway & Nelson Street	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	B 11 0.03 1	> > > >	B 11 0.03 1	< < < <	B 10 0.01 0	> > > >	B 10 0.01 0	B 10	A 1	

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	
Elizabeth Street & Pembroke Street East	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 9 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	C 21 0.08 2	> > > >	C 21 0.07 2	< < < <	B 15 0.07 2	> > > >	B 15 0.07 2	A 1 0.07 2	
Forced Road & Pembroke Street West	TCS	LOS Delay V/C Q		A 0 0.00 0	A 9 0.53 4	A 9 0.53 4	A 9 0.53 4	A 5 0.05 0	A 4 0.36 2	A 4 0.36 2	C 34 0.44 7		C 32 0.12 2	C 34 0.12 2						A 9 0.12 2
Fraser Street & Alfred Street	TWSC	LOS Delay V/C Q	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	A 9 0.02 1	> > > >	A 9 0.02 1	< < < <	A 10 0.03 1	> > > >	A 10 0.03 1	A 2 0.03 1	
Christie Street & Mary Street	AWSC	LOS Delay V/C Q	< < < <	B 10 0.28 9	> > > >	B 10 0.28 9	< < < <	B 12 0.35 12	A 8 0.06 2	B 11 0.06 2	< < < <	B 10 0.27 8	> > > >	B 10 0.27 8	< < < <	B 10 0.25 8	> > > >	B 10 0.25 8	B 11 0.25 8	
Trafalgar Road & Mary Street	AWSC	LOS Delay V/C Q	< < < <	A 8 0.08 2	> > > >	A 8 0.08 2	< < < <	A 9 0.18 4	A 7 0.03 1	A 9 0.03 1	< < < <	A 8 0.13 3	> > > >	A 8 0.13 3	< < < <	A 9 0.19 5	> > > >	A 9 0.19 5	A 8 0.19 5	
Moffat Street & Mary Street	AWSC	LOS Delay V/C Q	< < < <	A 10 0.35 12	> > > >	A 10 0.35 12	< < < <	A 9 0.31 10	> > > >	A 9 0.31 10	< < < <	A 8 0.03 1	> > > >	A 8 0.03 1	< < < <	A 9 0.08 2	> > > >	A 9 0.08 2	A 9 0.08 2	
James Street & McGee Street	TWSC	LOS Delay V/C Q	< < < <	A 9 0.06 2	> > > >	A 9 0.06 2	< < < <	A 9 0.00 0	> > > >	A 9 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 4 0.00 0
Trafalgar Road/Driveway & Pembroke Street West	TWSC	LOS Delay V/C Q	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 9 0.09 2	A 0 0.00 0	A 0 0.00 0	A 1 0.00 0	< < < <	C 20 0.19 5	> > > >	C 20 0.19 5	< < < <	A 0 0.00 0	> > > >	A 0 0.00 0	A 2 0.00 0	
Forest Lea Road/Driveway & Pembroke Street West	TCS	LOS Delay V/C Q	A 6 0.00 0	A 10 0.45 3	A 7 0.18 1	A 9 0.18 1	A 6 0.21 0	A 5 0.39 2	A 0 0.00 0	A 5 0.39 2	D 36 0.50 10	A 0 0.00 0	A 0 0.00 0	D 36 0.50 10	A 0 0.00 0	A 0 0.00 0	C 31 0.05 1	C 31 0.05 1	C 31 0.05 1	A 10 0.05 1
TV Tower Road & Forest Lea Road	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.12 3	A 0 0.00 0	A 5 0.00 0	B 12 0.23 7		> > > >	B 12 0.23 7					A 5 0.23 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																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 Delay V/C Q	A 6 0.12 0	A 0 0.00 0	A 8 0.23 2	A 8	A 6 0.08 0	A 0 0.00 0	A 10 0.38 2	A 9	C 25 0.06 1	A 0 0.00 0	A 0 0.00 0	C 25	C 29 0.58 12	A 0 0.00 0	C 31 0.69 10	C 30	B 16
	River Road & Bennett Street/Town Line Road	TCS	LOS Delay V/C Q	F 190 1.32 163	A 0 0.00 0	D 48 0.92 56	F 122	C 26 0.37 4	A 0 0.00 0	C 30 0.55 18	C 29	B 15 0.19 4	A 0 0.00 0	A 0 0.0 0.0	B 15	B 13 0.01 0	B 17 0.38 10	A 0 0.0 0.0	B 17	E 79
	MacKay Street & River Road/Metcalfe Street	TCS	LOS Delay V/C Q	C 26 0.53 8	A 0 0.00 0	A 0 0.00 0	C 26	A 0 0.00 0	A 0 0.00 0	C 21 0.07 1	C 21	A 5 0.21 1	A 0 0.00 0	A 0 0.00 0	A 5	A 6 0.31 2	A 0 0.00 0	A 0 0.00 0	A 6	B 11
	MacKay Street & Pembroke Street West/Pembroke Street East	TCS	LOS Delay V/C Q	B 19 0.02 1	A 0 0.00 0	D 44 0.88 73	D 44	C 25 0.55 6	A 0 0.00 0	C 23 0.50 26	C 23	C 24 0.35 10	A 0 0.00 0	C 27 0.30 14	C 26	C 27 0.04 2	A 0 0.00 0	C 32 0.32 15	C 32	C 32
	MacKay Street & Lake Street/Nelson Street	TCS	LOS Delay V/C Q	A 2 0.00 0	A 0 0.00 0	A 3 0.40 2	A 3	A 4 0.09 1	A 0 0.00 0	A 2 0.12 1	A 3	C 22 0.26 1	A 0 0.00 0	A 0 0.00 0	C 22	C 21 0.06 0	A 0 0.00 0	A 0 0.00 0	C 21	A 5
	MacKay Street & Town Line Road/D' Youville Drive	AWSC	LOS Delay V/C Q	< < < <	D 27 0.85 76	> > > >	D 27	< < < <	A 10 0.16 4	> > > >	A 10	< < < <	B 11 0.26 8	> > > >	B 11	< < < <	A 10 0.15 4	> > > >	A 10	C 21
	Cecelia Street & D' Youville Drive	AWSC	LOS Delay V/C Q	< < < <	A 8 0.06 2	> > > >	A 8	< < < <	A 8 0.03 1	> > > >	A 8	< < < <	A 8 0.06 2	> > > >	A 8	< < < <	A 8 0.20 5	> > > >	A 8	A 8
	Wilson Road & Drive-in Road	TWSC	LOS Delay V/C Q	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	B 10 0.01 0	A 0 0.00 0	A 0 0.00 0	A 2	< < < <	C 25 0.13 3	> > > >	C 25	< < < <	B 10 0.01 0	> > > >	B 10	A 1
	Highway 148 & Drive-in Road	TWSC	LOS Delay V/C Q	< < < <	F 1075 3.25 339	> > > >	F 1075	< < < <	D 33 0.07 2	> > > >	D 33	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	F 247
	Highway 148 & Robinson Lane	TCS	LOS Delay V/C Q	C 34 0.40 7		D 38 0.64 11	D 36					B 12 0.59 2	A 6 0.45 3		A 8		B 14 0.67 8	A 8 0.16 1	B 13	B 13
	Highway 148 & Walmart Entrance	TCS	LOS Delay V/C Q	C 32 0.41 14	A 0 0.00 0	D 44 0.85 35	D 39	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	F 194 1.35 138	A 9 0.34 2	A 0 0.00 0	F 114	A 0 0.00 0	C 23 0.70 28	C 22 0.64 21	C 23	E 58
	Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS Delay V/C Q	E 72 0.80 36	A 0 0.00 0	F 108 1.04 106	F 97	D 43 0.15 2	A 0 0.00 0	A 0 0.00 0	D 43	C 26 0.40 5	A 0 0.00 0	B 11 0.41 10	B 13	C 31 0.86 84	A 0 0.00 0	B 12 0.13 4	C 28	D 41
	Driveway/Howard Street & Highway 148	TCS	LOS Delay V/C Q	C 22 0.02 0	A 0 0.00 0	C 24 0.80 23	C 24	C 29 0.00 0	B 18 0.60 12	B 12 0.18 2	B 17	B 17 0.03 1	A 0 0.00 0	A 0 0.00 0	B 17	D 36 0.84 36	A 0 0.00 0	A 0 0.00 0	D 36	C 25
	River Road & Driveway/Bell Street	TWSC	LOS Delay V/C Q	< < < <	A 0 0.00 0	> > > >	A 0	< < < <	C 20 0.46 18	> > > >	C 20	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 5
	Mackay Street & Bell Street	TCS	LOS Delay V/C Q	A 7 0.15 1	A 0 0.00 0	A 0 0.00 0	A 7	A 9 0.46 3	A 0 0.00 0	A 0 0.00 0	A 9	A 0 0.00 0	A 0 0.00 0	B 16 0.67 2	B 16	B 14 0.37 1	A 0 0.00 0	A 0 0.00 0	B 14	B 12
	Cecelia Street & Bell Street	AWSC	LOS Delay V/C Q	< < < <	D 30 0.84 71	> > > >	D 30	< < < <	B 12 0.38 14	> > > >	B 12	< < < <	B 13 0.39 14	> > > >	B 13	< < < <	B 10 0.07 2	> > > >	B 10	C 22
	Bell Street & O' Brien Street	AWSC	LOS Delay V/C Q	< < < <	D 29 0.84 76		D 29		B 11 0.39 14	> > > >	B 11					A 8 0.01 0		> > > >	A 8	C 23



Existing Intersection Performance - Summer 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	
PM Peak Hour	Cecelia Street & Alfred Street	AWSC	LOS Delay V/C Q	< 8 >	A 0.12 3	>	A 8	< 8 >	A 0.06 2	>	A 8	< 8 >	A 0.06 2	>	A 8	< 8 >	A 0.10 2	>	A 8	A 8
	Matheson Drive & Angus Campbell Drive	TWSC	LOS Delay V/C Q		A 0.00 0	A 0.00 0	A 0	A 0.01 0	A 0.00 0	A 0	C 15 0.03 1				C 15					A 0
	Mackay Street & Mary Street/Alfred Street	TCS	LOS Delay V/C Q	C 26 0.40 6	A 0 0.00 0	C 25 0.36 4	C 25 0.37 6	A 0 0.00 0	A 0 0.00 0	C 25	A 7 0.16 0	A 0 0.00 0	A 6 0.27 2	A 6	A 0 0.00 0	A 0 0.00 0	B 12 0.44 3	B 12	B 14	
	Broadview Drive & Alfred Street	TWSC	LOS Delay V/C Q	< 9 >	A 0.04 1	>	A 9	< 9 >	A 0.02 1	>	A 9	A 7 0.00 0	A 0 0.00 0	A 1	A 7 0.00 0	A 0 0.00 0	A 1	A 7		
	Rosewood Avenue & Alfred Street	TWSC	LOS Delay V/C Q	< 9 >	A 0.03 1	>	A 9	< 0 >	A 0.00 0	>	A 0	A 8 0.00 0	A 0 0.00 0	A 1	A 0 0.00 0	A 0 0.00 0	A 0	A 4		
	Bell Street & Broadview Drive	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0		A 0	A 0 0.00 0	A 0 0.00 0	A 0					C 19 0.05 2				C 19	A 0
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS Delay V/C Q	A 6 0.05 0	A 9 0.43 3	A 6 0.00 0	A 6 0.04 0	A 0 0.00 0	B 10 0.54 4	B 10	C 30 0.07 1	A 0 0.00 0	C 27 0.13 2	C 28	C 29 0.27 4	A 0 0.00 0	C 28 0.39 4	C 29	B 12	
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 9 0.31 10	A 0 0.00 0	A 0 0.00 0	A 5	A 0 0.00 0	A 0 0.00 0	A 0	< 42 >	E 0.07 2	>	E 42	< 108 >	F 0.60 20	>	F 108	A 8	
	Driveway/McGee Street & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.05 2	A 0 0.00 0	A 0 0.00 0	A 1	A 8 0.01 0	A 0 0.00 0	A 0	< 17 >	C 0.06 2	>	C 17	< 12 >	B 0.09 2	>	B 12	A 2	
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.08 2	A 0 0.00 0	A 0 0.00 0	A 2	A 0 0.00 0	A 0 0.00 0	A 0	< 0 >	A 0.00 0	>	A 0	< 16 >	C 0.34 11	>	C 16	A 4	
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS Delay V/C Q	< 396 >	F 1.78 551	>	F 396	< 12 >	B 0.19 4	>	B 12	< 13 >	B 0.12 2	>	B 13	< 13 >	B 0.12 2	C 19 0.68 23	C 18	F 283
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS Delay V/C Q	< >	< >	>		< >	< >	>	< >	< >	>		< >	< >	>			
	Broadview Drive & Pembroke Street East	TWSC	LOS Delay V/C Q		A 0.00 0	A 0.00 0	A 0	A 9 0.01 0	A 0 0.00 0	A 0	C 16 0.05 1				C 16					A 0
	Cecelia Street & Nelson Street	TWSC	LOS Delay V/C Q		A 0.00 0	A 0.00 0	A 0	A 8 0.01 0	A 0 0.00 0	A 1	B 12 0.04 1				B 12					A 1
	Cecelia Street & Pembroke Street East	TCS	LOS Delay V/C Q	A 5 0.01 0	A 9 0.54 4	A 0 0.00 0	A 9	A 6 0.06 0	A 0 0.37 2	A 6	C 29 0.13 2	A 0 0.00 0	A 0 0.00 0	C 29	C 29 0.14 2	A 0 0.00 0	A 0 0.00 0	C 29	A 9	
	Christie Street & Pembroke Street West	TCS	LOS Delay V/C Q	A 8 0.03 0	A 0 0.00 0	A 5 0.21 1	A 5	A 6 0.06 0	A 0 0.44 3	A 7	B 18 0.49 1	A 0 0.00 0	B 17 0.43 1	B 17	A 0 0.00 0	A 0 0.00 0	B 17 0.42 1	B 17	B 11	
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.00 0	A 0 0.00 0	A 0	< 12 >	B 0.03 1	>	B 12	< 10 >	B 0.01 0	>	B 10	A 1	

Existing Intersection Performance - Summer 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	
Elizabeth Street & Pembroke Street East	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 9 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	C 24 0.09 2	> > > >	C 24 0.09 2	< < < <	C 15 0.07 2	> > > >	C 15 0.07 2	A 1	
Forced Road & Pembroke Street West	TCS	LOS Delay V/C Q		A 0 0.00 0	A 6 0.36 2	A 6 0.36 2	A 4 0.03 0	A 3 0.33 2		A 3 0.33 2	C 34 0.31 4		C 32 0.06 1							A 6
Fraser Street & Alfred Street	TWSC	LOS Delay V/C Q	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	< < < <	A 9 0.03 1	> > > >	A 9 0.03 1	< < < <	A 10 0.04 1	> > > >	A 10 0.04 1	A 4	
Christie Street & Mary Street	AWSC	LOS Delay V/C Q	< < < <	B 10 0.19 5	> > > >	B 10 0.19 5	< < < <	B 12 0.29 9	A 9 0.07 2	B 11 0.07 2	< < < <	B 14 0.50 21	> > > >	B 14 0.50 21	< < < <	B 11 0.32 10	> > > >	B 11 0.32 10	B 12	
Trafalgar Road & Mary Street	AWSC	LOS Delay V/C Q	< < < <	A 8 0.07 2	> > > >	A 8 0.07 2	< < < <	B 11 0.34 11	A 7 0.02 1	B 11 0.34 11	< < < <	A 8 0.13 3	> > > >	A 8 0.13 3	< < < <	A 9 0.16 4	> > > >	A 9 0.16 4	A 10	
Moffat Street & Mary Street	AWSC	LOS Delay V/C Q	< < < <	A 8 0.21 6	> > > >	A 8 0.21 6	< < < <	A 9 0.33 10	> > > >	A 9 0.33 10	< < < <	A 8 0.03 1	> > > >	A 8 0.03 1	< < < <	A 8 0.05 2	> > > >	A 8 0.05 2	A 9	
James Street & McGee Street	TWSC	LOS Delay V/C Q	< < < <	A 9 0.06 2	> > > >	A 9 0.06 2	< < < <	A 10 0.00 0	> > > >	A 10 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 4
Trafalgar Road/Driveway & Pembroke Street West	TWSC	LOS Delay V/C Q	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.04 1	A 0 0.00 0	A 0 0.00 0	A 1 0.00 0	< < < <	B 12 0.10 2	> > > >	B 12 0.10 2	< < < <	A 0 0.00 0	> > > >	A 0 0.00 0	A 1	
Forest Lea Road/Driveway & Pembroke Street West	TCS	LOS Delay V/C Q	A 8 0.00 0	B 10 0.34 2	A 9 0.13 1	A 10 0.13 1	A 6 0.20 0	A 6 0.37 2	A 0 0.00 0	A 6 0.37 2	D 36 0.60 16	A 0 0.00 0	A 0 0.00 0	D 36 0.60 16	A 0 0.00 0	A 0 0.00 0	C 29 0.03 1	C 29 0.03 1	B 12	
TV Tower Road & Forest Lea Road	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.10 2	A 0 0.00 0		A 4 0.10 2	B 13 0.34 11		> > > >	B 13 0.34 11					A 5	

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



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<sup>1</sup> (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:

<sup>1</sup> <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 <sup>1</sup>
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
<b>City of Pembroke Total</b>		<b>14,364</b>	<b>6,888</b>	<b>6,085</b>
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
<b>Laurentian Valley Total</b>		<b>9,450</b>	<b>3,877</b>	<b>1,840</b>
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
<b>Town of Petawawa Total</b>		<b>18,160</b>	<b>7,174</b>	<b>6,160</b>
<b>Total</b>		<b>41,974</b>	<b>17,939</b>	<b>14,085</b>

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	Employment by Category			
		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
<b>Totals</b>	<b>14,085</b>	<b>2,640</b>	<b>3,824</b>	<b>3,904</b>	<b>3,717</b>





## 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
<b>Statistics Canada Data</b>						
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
<b>Hemson DC Study</b>						
City of Pembroke	13,882	6,348	14,220 <sup>1</sup>	2.24	0.47%	14,891 <sup>2</sup>
<b>Difference in Data (Stat Can - Hemson)</b>						
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 <sup>4</sup>	2021	2021 Activity Rate	Growth Rate	2031 Estimate
<b>Stat Can Data</b>						
City of Pembroke	7,960 <sup>3</sup>	57.3%	6,785 <sup>3</sup>	47.2%	-3.14%	4,932
Town of Petawawa	8,340 <sup>3</sup>	48.5%	7,250 <sup>3</sup>	39.9%	-2.76%	5,480
Laurentian Valley	2,700 <sup>3</sup>	28.8%	2,340 <sup>3</sup>	24.8%	-2.82%	1,758
<b>Hemson DC Study</b>						
City of Pembroke	7,930	57.1%	8,123 <sup>1</sup>	57.1%	0.48%	8,521 <sup>2</sup>
<b>Difference in Data (Stat Can - Hemson)</b>						
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		Total
	City of Pembroke	Laurentian Valley	
<b>5 Year (2026)</b>			
New Dwellings	536	240	<b>776</b>
New Population	1,179	610	<b>1,789</b>
<b>10 Year (2031)</b>			
New Dwellings	719	426	<b>1,145</b>
New Population	1,582	1,082	<b>2,664</b>
<b>20 Year (2041)</b>			
New Dwellings	921	575	<b>1,496</b>
New Population	2,026	1,461	<b>3,487</b>
<b>Total New Dwellings</b>	<b>2,176</b>	<b>1,241</b>	<b>3,417</b>
<b>Total New Population</b>	<b>4,787</b>	<b>3,152</b>	<b>7,939</b>



**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
<b>Total 0-5 Years</b>			<b>776</b>	<b>1789</b>
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
<b>Total 6-10 Years</b>			<b>1145</b>	<b>2664</b>
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
<b>Total 11-20 Years</b>			<b>1496</b>	<b>3487</b>

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
<b>City of Pembroke Total</b>		<b>14,364</b>	<b>15,543</b>	<b>17,125</b>	<b>19,151</b>
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
<b>Laurentian Valley Total</b>		<b>9,450</b>	<b>10,104</b>	<b>11,231</b>	<b>12,780</b>
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
<b>Town of Petawawa Total</b>		<b>18,160</b>	<b>19,188</b>	<b>20,216</b>	<b>22,272</b>
<b>Total</b>		<b>41,974</b>	<b>44,835</b>	<b>48,572</b>	<b>54,204</b>



## 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	2041	Population
	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	2026	2031	2041
	Employment	Employment	Employment	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
<b>City of Pembroke Total</b>		<b>6085</b>	<b>6,585</b>	<b>7,255</b>	<b>8,113</b>
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
<b>Laurentian Valley Total</b>		<b>1840</b>	<b>1,984</b>	<b>2,139</b>	<b>2,486</b>
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
<b>Town of Petawawa Total</b>		<b>6,160</b>	<b>6,509</b>	<b>6,857</b>	<b>7,555</b>
<b>Total</b>		<b>14,085</b>	<b>15,077</b>	<b>16,251</b>	<b>18,154</b>



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*

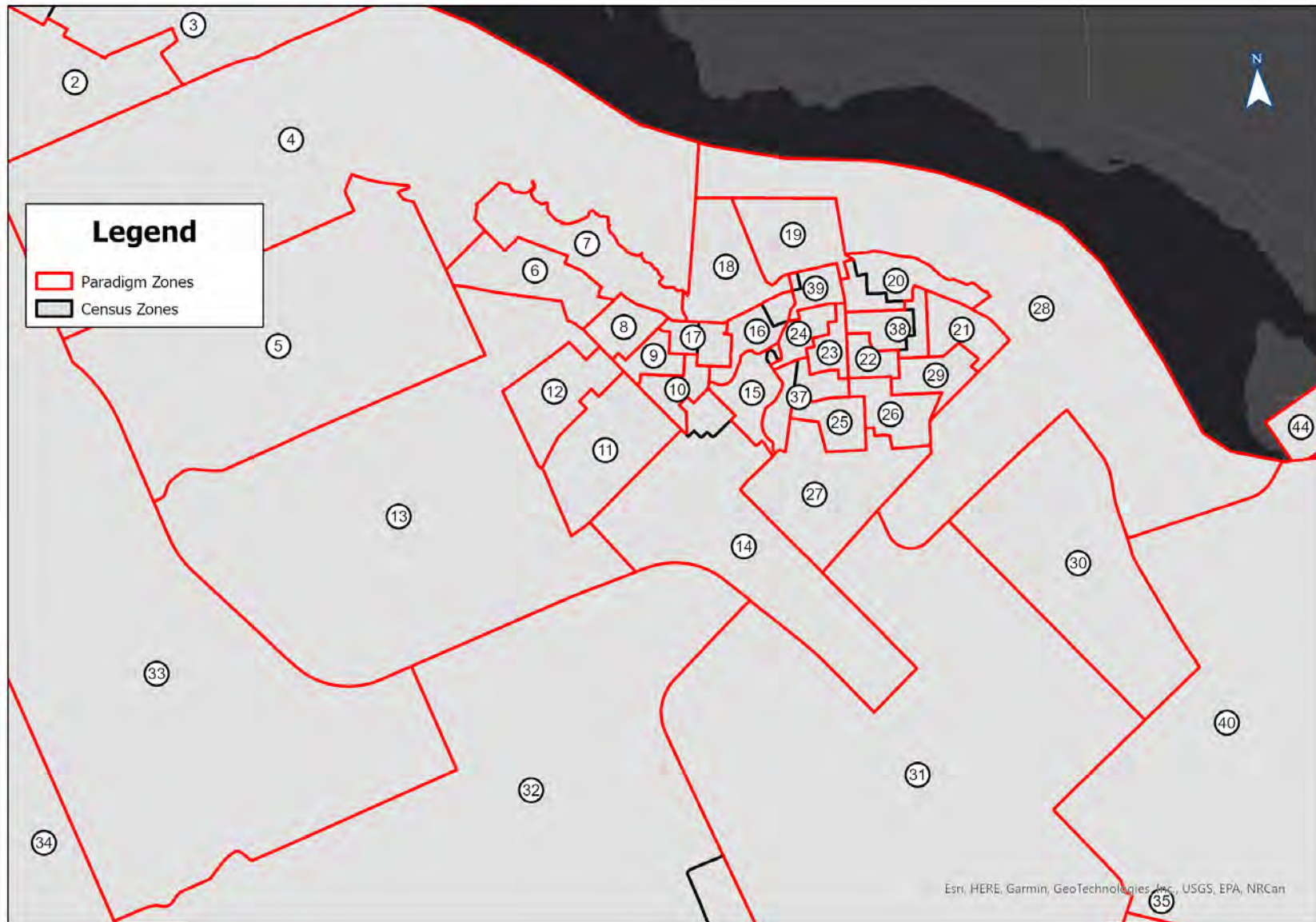




**Figure 1 – Census Zones**

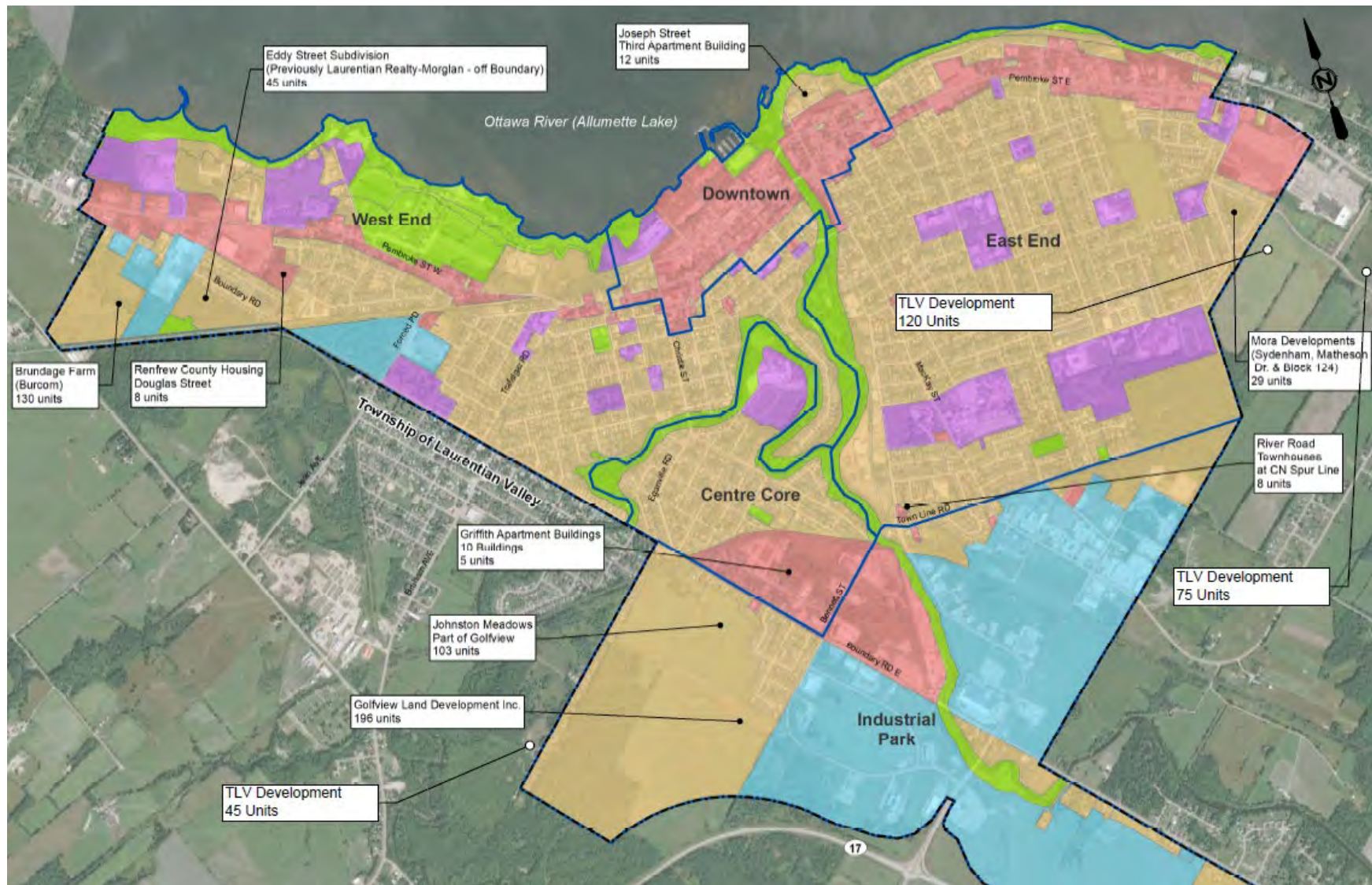






**Figure 2 – Traffic Zone Boundaries**

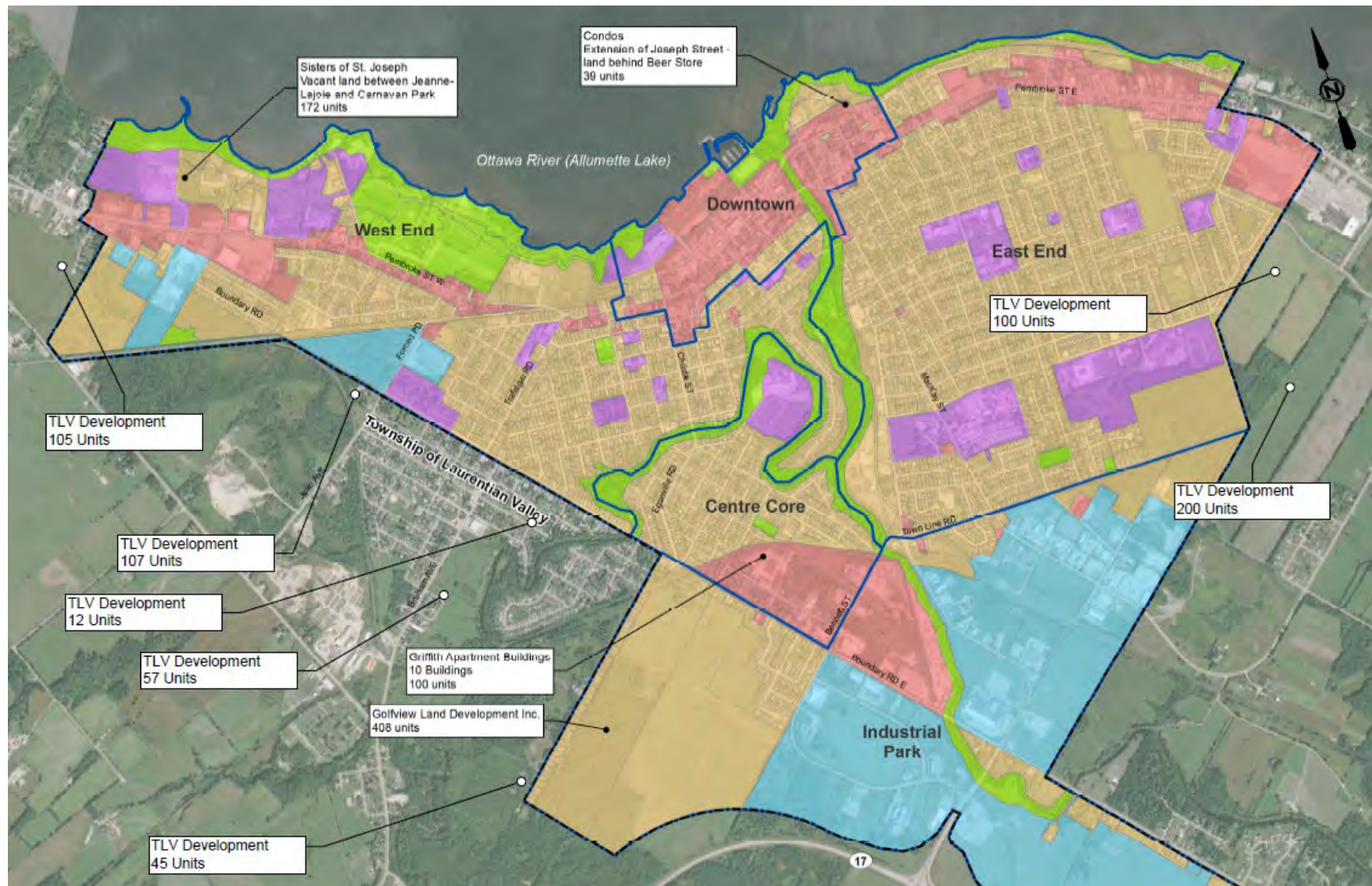




**Figure 3 – Planned Residential Development  
 5 Year Horizon**



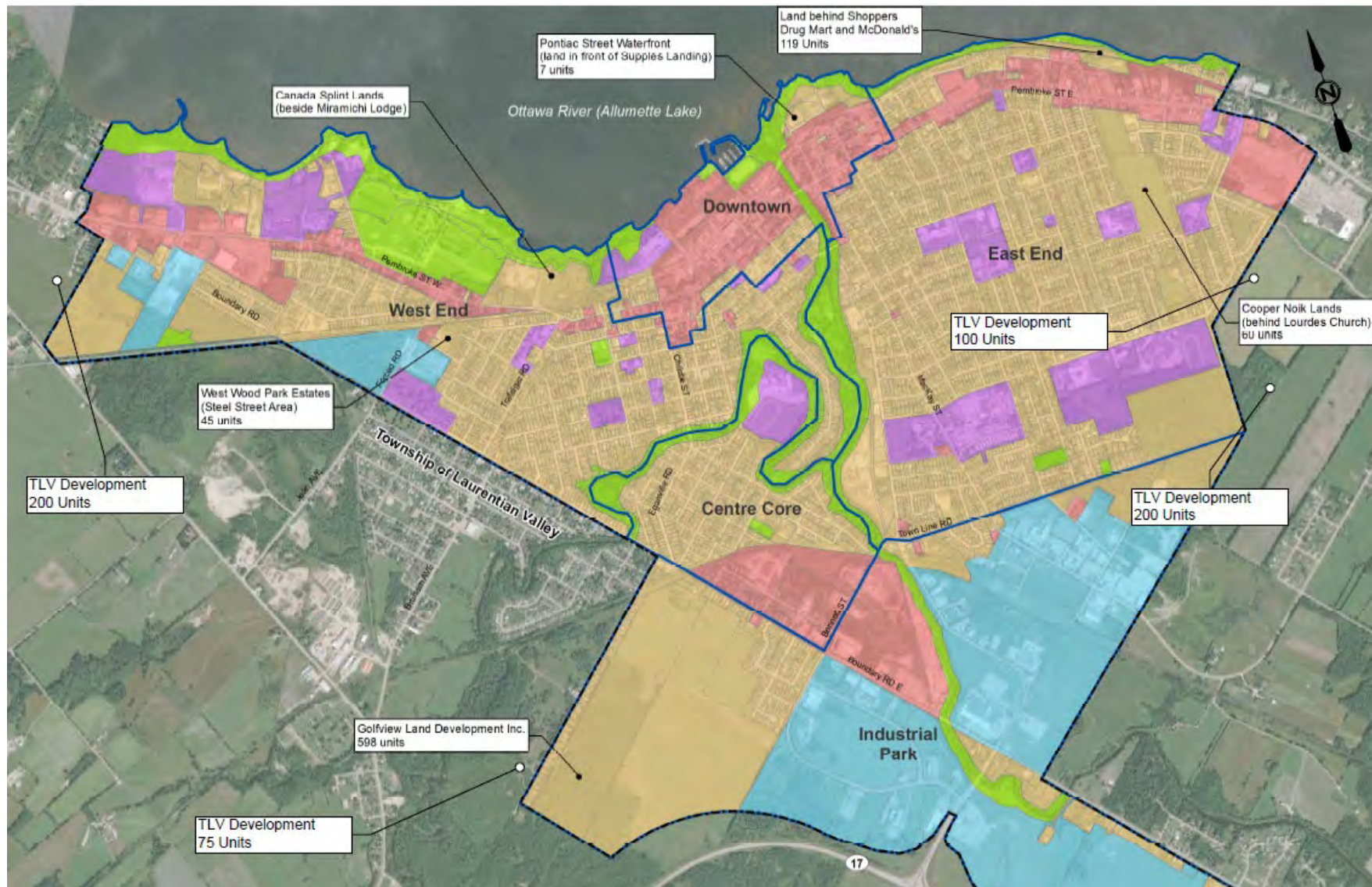




**Figure 4 – Planned Residential Development  
 10 Year Horizon**







**Figure 5 – Planned Residential Development  
20 Year Horizon**





# Appendix E

## Future Base Conditions Intersection Analysis



2041 Base Forecast Fall - PM 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 Delay V/C Q	A 5 0.11 0	A 0 0.00 0	A 6 0.24 2	A 6 0.02 0	A 0 0.00 0	A 8 0.29 2	A 8 0.14 2	C 26 0.00 0	A 0 0.00 0	A 0 0.00 0	C 26 0.00 0	A 0 0.00 0	A 0 0.00 0	C 27 0.33 4	C 27 0.33 4	B 11		
River Road & Bennett Street/Town Line Road	TCS	LOS Delay V/C Q	A 0 0.00 0	A 0 0.00 0	C 32 0.73 12	C 23 0.26 2	A 0 0.00 0	C 23 0.54 10	C 23 0.14 1	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 7 0.00 0	A 7 0.00 0	C 22		
MacKay Street & River Road/Metcalfe Street	TCS	LOS Delay V/C Q	C 26 0.51 7	A 0 0.00 0	A 0 0.00 0	C 26 0.00 0	A 0 0.00 0	C 21 0.07 1	C 21 0.18 1	A 5 0.00 0	A 0 0.00 0	A 0 0.00 0	A 5 0.44 3	A 7 0.00 0	A 0 0.00 0	A 7 0.00 0	A 7 0.00 0	B 10		
MacKay Street & Pembroke Street West/Pembroke Street East	TCS	LOS Delay V/C Q	B 18 0.03 0	A 0 0.00 0	F 172 1.29 260	F 170 0.66 4	C 27 0.00 0	C 22 0.56 25	C 23 0.48 5	C 30 0.00 0	A 0 0.00 0	D 39 0.73 41	D 38 0.07 1	C 26 0.00 0	A 0 0.00 0	F 632 2.31 693	F 624 2.31 693	F 297		
MacKay Street & Lake Street/Nelson Street	TCS	LOS Delay V/C Q	A 2 0.00 0	A 0 0.00 0	A 2 0.21 1	A 2 0.06 0	A 0 0.00 0	A 2 0.18 1	A 2 0.28 2	C 22 0.00 0	A 0 0.00 0	A 0 0.00 0	C 22 0.06 0	C 21 0.00 0	A 0 0.00 0	C 21 0.00 0	C 21 0.00 0	A 5		
MacKay Street & Town Line Road/D' Youville Drive	AWSC	LOS Delay V/C Q	< 2 0.52 23	B 12 0.52 23	> >	B 12 < 5	< 9 0.20 5	> >	A 9 < 3	< 9 0.11 3	> >	A 9 < 2	< 9 0.09 2	> >	A 9 < 2	> >	A 9 < 2	B 11		
Cecelia Street & D' Youville Drive	AWSC	LOS Delay V/C Q	< 2 0.08 2	A 8 0.08 2	> >	A 8 < 5	< 8 0.18 5	> >	A 8 < 2	< 8 0.06 2	> >	A 8 < 1	< 7 0.03 1	> >	A 7 < 1	> >	A 7 < 1	A 8		
Wilson Road & Drive-in Road	TWSC	LOS Delay V/C Q	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.01 0	A 0 0.00 0	A 0 0.00 0	A 1 < 1	< 11 0.04 1	> >	B 11 < 0	< 9 0.01 0	> >	A 9 < 0	> >	A 9 < 0	A 2		
Highway 148 & Drive-in Road	TWSC	LOS Delay V/C Q	< 696 2.49 625	F 696 2.49 625	> >	F 696 < 0	< 0 0.00 0	> >	A 2 < 4	A 10 0.15 4	A 0 0.00 0	A 0 0.00 0	A 2 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	F 306		
Highway 148 & Robinson Lane	TCS	LOS Delay V/C Q	C 34 0.41 8	A 0 0.00 0	C 35 0.42 7	C 34 0.41 8	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 5 0.09 0	A 5 0.29 2	A 0 0.00 0	A 5 0.45 3	A 9 0.15 1	A 7 0.15 1	A 9 0.15 1	A 9 0.15 1	B 11		
Highway 148 & Walmart Entrance	TCS	LOS Delay V/C Q	C 33 0.26 5	A 0 0.00 0	D 39 0.73 14	D 37 0.26 5	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.18 0	A 5 0.30 2	A 0 0.00 0	A 5 0.44 3	A 10 0.11 1	A 7 0.11 1	A 10 0.11 1	A 10 0.11 1	B 12		
Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS Delay V/C Q	E 72 0.80 36	A 0 0.00 0	D 39 0.04 2	E 69 0.80 36	D 43 0.15 2	A 0 0.00 0	A 0 0.00 0	D 43 0.08 1	B 11 0.00 0	A 10 0.34 8	A 10 0.55 31	B 17 0.00 0	A 11 0.13 4	B 16 0.13 4	B 16 0.13 4	C 21		
Driveway/Howard Street & Highway 148	TCS	LOS Delay V/C Q	B 16 0.02 0	A 0 0.00 0	B 13 0.61 6	B 13 0.02 0	B 13 0.57 5	A 8 0.17 1	B 12 0.04 1	B 19 0.00 0	A 0 0.00 0	A 0 0.00 0	B 19 0.69 15	C 26 0.00 0	A 0 0.00 0	C 26 0.00 0	C 26 0.00 0	B 15		
River Road & Driveway/Bell Street	TWSC	LOS Delay V/C Q	< 0 0.00 0	A 0 0.00 0	> >	A 0 < 5	< 13 0.18 5	> >	B 13 < 0	< 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 3		
Mackay Street & Bell Street	TCS	LOS Delay V/C Q	B 11 0.05 0	A 0 0.00 0	A 0 0.00 0	B 11 0.05 0	B 15 0.42 3	A 0 0.00 0	B 15 0.00 0	A 0 0.00 0	A 0 0.00 0	A 10 0.11 0	A 10 0.71 3	B 18 0.00 0	A 0 0.00 0	B 18 0.00 0	B 18 0.00 0	B 16		
Cecelia Street & Bell Street	AWSC	LOS Delay V/C Q	< 11 0.45 17	B 11 0.45 17	> >	B 11 < 8	< 9 0.26 8	> >	A 9 < 3	< 9 0.12 3	> >	A 9 < 2	< 9 0.06 2	> >	A 9 < 2	> >	A 9 < 2	B 10		
Bell Street & O' Brien Street	AWSC	LOS Delay V/C Q	< 8 0.11 3	A 8 0.11 3	> >	A 8 < 4	< 8 0.18 4	> >	A 8 < 4	< 8 0.18 4	> >	A 8 < 0	< 8 0.00 0	> >	A 7 < 0	> >	A 7 < 0	A 8		
Cecelia Street & Alfred Street	AWSC	LOS Delay V/C	< 8 0.13	A 8 0.13	> >	A 8 < 0.11	< 8 0.11	> >	A 8 < 0.04	< 8 0.04	> >	A 8 < 0.07	< 8 0.07	> >	A 8 < 0.07	> >	A 8 < 0.07	A 8		



2041 Base Forecast Fall - PM 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		
PM Peak Hour			Q	<	3	>		<	3	>		<	1	>		<	2	>			
	Matheson Drive & Angus Campbell Drive	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0	A 7 0.01 0	A 0 0.00 0		A 0	A 9 0.01 0		> > > >	A 9					A 1	
	Mackay Street & Mary Street/Alfred Street	TCS	LOS Delay V/C Q	F 184 1.31 188	A 0 0.00 0	C 22 0.38 8	F 147	C 21 0.22 5	A 0 0.00 0	A 0	C 21	B 20 0.37 1	A 0 0.00 0	B 14 0.35 4	B 15	B 13 0.01 0	A 0 0.00 0	F 158 1.28 249	F 157	F 124	
	Broadview Drive & Alfred Street	TWSC	LOS Delay V/C Q	<	B 11 0.08 2	>	B 11	<	B 12 0.05 1	>	B 12	A 8 0.08 2	A 0 0.00 0	A 0 0.00 0	A 7	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 7	
	Rosewood Avenue & Alfred Street	TWSC	LOS Delay V/C Q	<	A 9 0.04 1	>	A 9	<	A 0 0.00 0	>	A 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 3	
	Bell Street & Broadview Drive	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0		A 0	A 0 0.00 0	A 0 0.00 0		A 0					B 14 0.03 1		> > > >	B 14	A 0	
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS Delay V/C Q	A 7 0.06 0	B 12 0.64 7	A 6 0.00 0	B 12	A 7 0.05 0	A 0 0.00 0	B 12 0.65 7	B 12	C 30 0.07 1	A 0 0.00 0	C 27 0.13 2	C 28	C 29 0.27 4	A 0 0.00 0	C 28 0.39 4	C 29	B 14	
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 0 0.00 0	A 0 0.00 0		A 0	< < < <	B 14 0.02 1	> > > >	B 14	< < < <	C 17 0.13 4	> > > >	C 17	A 1	
	Driveway/McGee Street & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.05 2	A 0 0.00 0	A 0 0.00 0	A 1	A 9 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0	< < < <	C 22 0.08 2	> > > >	C 22	< < < <	D 27 0.03 1	> > > >	D 27	A 1	
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.09 2	A 0 0.00 0	A 0 0.00 0	A 2	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	< < < <	A 0 0.00 0	> > > >	A 0	< < < <	B 12 0.25 8	> > > >	B 12	A 3	
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS Delay V/C Q	<	C 20 0.68 40	>	C 20	<	B 10 0.19 5	>	B 10	<	B 10 0.09 2	>	B 10	<	A 10 0.04 1	C 17 0.61 32	C 16	C 17	
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS Delay V/C Q	<		>		<		>		<		>		<		>			
	Broadview Drive & Pembroke Street East	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0	A 9 0.01 0	A 0 0.00 0		A 0	B 14 0.04 1		> > > >	B 14						A 0
	Cecelia Street & Nelson Street	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.01 0	A 0 0.00 0		A 1	B 11 0.04 1		> > > >	B 11						A 1
	Cecelia Street & Pembroke Street East	TCS	LOS Delay V/C Q	A 5 0.01 0	A 0 0.00 0	A 8 0.46 3	A 8	A 5 0.01 0	A 0 0.00 0	A 7 0.38 2	A 7	C 29 0.13 2	A 0 0.00 0	B 0 0.00 0	C 29	C 29 0.14 2	A 0 0.00 0	A 0 0.00 0	C 29	A 9	
	Christie Street & Pembroke Street West	TCS	LOS Delay V/C Q	A 8 0.02 0	A 0 0.00 0	A 6 0.43 3	A 6	A 7 0.03 0	A 0 0.00 0	A 7 0.48 4	A 7	B 17 0.37 1	A 0 0.00 0	B 15 0.03 0	B 17	A 0 0.00 0	A 0 0.00 0	B 19 0.61 2	B 19	A 9	
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	< < < <	B 12 0.03 1	> > > >	B 12	< < < <	B 11 0.01 0	> > > >	B 11	A 1	
	Elizabeth Street & Pembroke Street East	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0	A 9 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0	< < < <	C 24 0.09 2	> > > >	C 24	< < < <	C 15 0.07 2	> > > >	C 15	A 1	
	Forced Road &	TCS	LOS Delay		A 0	A 8	A 8	A 5	A 4		A 4	C 34		C 32	C 34						A 8

2041 Base Forecast Fall - PM 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	
Pembroke Street West	TCS	V/C		0.00	0.55			0.01	0.42			0.37		0.07						
Fraser Street & Alfred Street	TWSC	LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
		Delay	7	0	0	0	7	0	0	0	<	10	>	10	<	10	>	10	>	10
		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	>	<	0.22	>	
		Q	<	32	>		<	10	2	>	<	8	>	<	6	>	<	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	>	<	0.16	>	
		Q	<	10	>		<	17	0	>	<	6	>	<	4	>	<	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	>	<	0.22	>		
		Q	<	15	>		<	10	>	<	1	>	<	6	>	<	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	0	
		V/C	<	0.06	>		<	0.00	>	<	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		Q	<	2	>		<	0	>	<	0	0	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	0.0		0.00	0.00	0.02			
		Q	0	32	8		2	5	0		38	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



2041 Base Forecast Summer - PM 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 Delay V/C Q	A 6 0 0	A 0 0	A 7 0 1	A 7	A 6 0 0	A 0 0 0	A 9 0 31	A 9	C 26 0 0	A 0 0	A 0 0	C 26	A 0 0	A 0 0	C 30	B 16	
	River Road & Bennett Street/Town Line Road	TCS	LOS Delay V/C Q	A 0 0 0	A 0 0	C 26 0 6	C 26	C 21 0 3	A 0 0 38	D 36 0 38	C 34	B 10 1 0	A 0 0	A 0 0	B 10	A 9 0 0	A 0 0	A 0 0	A 9	C 29
	Mackay Street & River Road/Metcalf Street	TCS	LOS Delay V/C Q	C 26 0 7	A 0 0	A 0 0	C 26	A 0 0	A 0 0 1	C 21	A 6 2 0	A 0 0	A 0 0	A 0 0	A 6	A 7 2 0	A 0 0	A 0 0	A 7	A 10
	Mackay Street & Pembroke Street West/Pembroke Street East	TCS	LOS Delay V/C Q	B 19 0 0	A 0 0	F 310 1.61 448	F 308	C 27 0 5	A 0 0 34	C 26	C 30 7 0	A 0 0	D 44 0 51	D 42	C 27 1 0	A 0 0	F 321 1.61 355	F 316	F 205	
	Mackay Street & Lake Street/Nelson Street	TCS	LOS Delay V/C Q	A 2 0 0	A 0 0	A 2 0 1	A 2	A 3 0 0	A 0 0 1	A 2	C 22 2 0	A 0 0	A 0 0	C 22	C 21 0 0	A 0 0	A 0 0	C 21	A 5	
	Mackay Street & Town Line Road/D' Youville Drive	AWSC	LOS Delay V/C Q	< 13 0.45 17	B 13	> 11 0.29 9	B 11	< 16 0.55 26	> 16 0.55 26	C 16	< 10 0.14 4	> 10 0.14 4	> 10 0.14 4	A 10	> 10 0.14 4	> 10 0.14 4	A 10	B 13		
	Cecelia Street & D' Youville Drive	AWSC	LOS Delay V/C Q	< 8 0.08 2	A 8	> 8 0.13 4	A 8	< 8 0.06 2	> 8 0.06 2	A 8	< 7 0.07 2	> 7 0.07 2	> 7 0.07 2	A 7	> 7 0.07 2	> 7 0.07 2	A 7	A 8		
	Wilson Road & Drive-in Road	TWSC	LOS Delay V/C Q	A 7 0 0	A 0 0	A 0 0	A 4	A 7 0 0	A 0 0 0	A 1	< 9 0.03 1	> 9 0.03 1	> 9 0.03 1	A 9	< 9 0.01 0	> 9 0.01 0	A 9	A 5		
	Highway 148 & Drive-in Road	TWSC	LOS Delay V/C Q	< 160 1.24 145	F 160	> 3051 3.09 17	F 3051	< 10 0.16 4	> 10 0.16 4	F 2	A 9 0 0	A 0 0	A 0 0	A 2	A 9 0 0	A 0 0	A 0 0	A 0	E 48	
	Highway 148 & Robinson Lane	TCS	LOS Delay V/C Q	C 34 0.40 7	A 0 0	D 36 0.51 8	D 35	A 0 0 0	A 0 0 0	A 0	A 8 0 0	A 8 0 0	A 0 0	A 8	A 0 0	B 13 0 0	A 10 0 0	A 12	B 16	
	Highway 148 & Walmart Entrance	TCS	LOS Delay V/C Q	C 31 0.25 7	A 0 0	D 40 0.82 23	D 37	A 0 0 0	A 0 0 0	A 0	A 8 0 0	A 8 0 0	A 0 0	A 8	A 0 0	B 13 0 0	A 10 0 0	A 12	B 16	
	Highway 148 & Angus Campbell Drive/Rankin Street	TCS	LOS Delay V/C Q	E 72 0.80 36	A 0 0	D 40 0.08 4	E 66	D 43 0.15 2	A 0 0 0	D 43	B 10 0 1	A 0 0	B 12 0 13	B 12	B 16 0.50 28	A 0 0 4	B 11 0.13 4	B 16	C 20	
	Driveway/Howard Street & Highway 148	TCS	LOS Delay V/C Q	B 17 0.02 0	A 0 0	B 11 0.51 4	B 11	B 13 0 0	B 13 0 7	A 8 0 1	B 12	B 19 0 1	A 0 0	B 19	C 26 0.67 14	A 0 0 0	A 0 0 0	C 26	B 14	
	River Road & Driveway/Bell Street	TWSC	LOS Delay V/C Q	< 0 0 0	A 0 0	> 0 0 0	A 0	< 13 0.20 5	> 13 0.20 5	B 13	A 0 0 0	A 0 0 0	A 0 0 0	A 0	A 8 0 0	A 0 0 0	A 0 0 0	A 0	A 3	
	Mackay Street & Bell Street	TCS	LOS Delay V/C Q	A 8 0 0	A 0 0	A 0 0	A 8	B 14 0.64 7	A 0 0 0	B 14	A 0 0 0	A 0 0 0	B 12 0 0	B 12	B 16 0.56 1	A 0 0 0	A 0 0 0	B 16	B 14	
	Cecelia Street & Bell Street	AWSC	LOS Delay V/C Q	< 10 0.33 10	A 10	> 10 0.36 12	B 10	< 10 0.36 12	> 10 0.36 12	B 10	< 9 0.18 5	> 9 0.18 5	> 9 0.18 5	A 9	< 9 0.06 2	> 9 0.06 2	> 9 0.06 2	A 9	A 10	
	Bell Street & O' Brien Street	AWSC	LOS Delay V/C Q	< 8 0.11 3	A 8	> 8 0.16 4	A 8	< 8 0.16 4	> 8 0.16 4	A 8	< 7 0.00 0	> 7 0.00 0	> 7 0.00 0	A 7	< 7 0.00 0	> 7 0.00 0	> 7 0.00 0	A 7	A 8	
	Cecelia Street & Alfred Street	AWSC	LOS Delay V/C Q	< 8 0.10 2	A 8	> 8 0.09 2	A 8	< 8 0.09 2	> 8 0.09 2	A 8	< 8 0.04 1	> 8 0.04 1	> 8 0.04 1	A 8	< 8 0.08 2	> 8 0.08 2	> 8 0.08 2	A 8	A 8	
			LOS	< A	> A	A	A	< A	> A	A	< A	> A	> A	A	< A	> A	> A	A	A	

2041 Base Forecast Summer - PM 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	
PM Peak Hour	Matheson Drive & Angus Campbell Drive	TWSC	Delay V/C Q		0 0.00	0 0.00	0	7 0.01	0 0.00		0	9 0.01		> >	9				0	
	Mackay Street & Mary Street/Alfred Street	TCS	LOS Delay V/C Q	C 24 0.27 4	A 0 0.00	C 25 0.35 4	C 24 0.25 4	A 0 0.00	A 0 0.00	C 24	B 17 0.41 1	A 0 0.00	A 9 0.39 2	B 10	A 8 0.00 0	A 0 0.00	E 67 1.07 102	E 67	D 44	
	Broadview Drive & Alfred Street	TWSC	LOS Delay V/C Q	< < <	B 11 0.04 1	> > >	B 11	< < <	B 11 0.04 1	> > >	B 11	A 7 0.07 2	A 0 0.00 0	A 0 0.00 0	A 7 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 7	
	Rosewood Avenue & Alfred Street	TWSC	LOS Delay V/C Q	< < <	A 9 0.02 1	> > >	A 9	< < <	A 0 0.00 0	> > >	A 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 2	
	Bell Street & Broadview Drive	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0		A 0	A 0 0.00 0	A 0 0.00 0	A 0						B 14 0.03 1		> > >	B 14	A 0
	Blakely Crescent/Driveway & Pembroke Street West	TCS	LOS Delay V/C Q	A 7 0.06 0	A 8 0.42 3	A 6 0.00 0	A 8	A 6 0.04 0	A 0 0.00 0	B 12	C 30 0.07 1	A 0 0.00 0	C 27 0.13 2	C 28	C 29 0.27 4	A 0 0.00 0	C 28 0.39 4	C 29	B 13	
	Driveway/Eganville Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 0 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 0 0.00 0	A 0 0.00 0	A 0	< < <	B 15 0.02 1	> > >	B 15	< < <	C 18 0.14 4	> > >	C 18	A 1	
	Driveway/McGee Street & Boundary Road East	TWSC	LOS Delay V/C Q	A 9 0.07 2	A 0 0.00 0	A 0 0.00 0	A 1	A 8 0.01 0	A 0 0.00 0	A 0	< < <	C 24 0.09 2	> > >	C 24	< < <	D 31 0.03 1	> > >	D 31	A 1	
	Driveway/Trafalgar Road & Boundary Road East	TWSC	LOS Delay V/C Q	A 8 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0	A 0 0.00 0	A 0 0.00 0	A 0	< < <	A 0 0.00 0	> > >	A 0	< < <	C 17 0.26 8	> > >	C 17	A 2	
	International Drive/Bennett Street & Boundary Road East	AWSC	LOS Delay V/C Q	< < <	E 47 1.00 81	> > >	E 47	< < <	B 13 0.24 6	> > >	B 13	< < <	B 12 0.11 2	> > >	B 12	< < <	A 10 0.04 1	F 164 1.27 232	F 160	F 103
	Jean Avenue/Forced Road & Driveway/Boundary Road East	N/A	LOS Delay V/C Q	< < <		> > >		< < <		> > >		< < <		> > >		< < <		> > >		
	Broadview Drive & Pembroke Street East	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.01 0	A 0 0.00 0	A 0	B 13 0.04 1		> > >	B 13						A 0
	Cecelia Street & Nelson Street	TWSC	LOS Delay V/C Q		A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.01 0	A 0 0.00 0	A 1	B 11 0.03 1		> > >	B 11						A 1
	Cecelia Street & Pembroke Street East	TCS	LOS Delay V/C Q	A 5 0.01 0	A 7 0.37 2	A 0 0.00 0	A 7	A 5 0.02 0	A 0 0.00 0	A 7	C 29 0.13 2	A 0 0.00 0	A 0 0.00 0	C 29	C 29 0.14 2	A 0 0.00 0	A 0 0.00 0	C 29	A 8	
	Christie Street & Pembroke Street West	TCS	LOS Delay V/C Q	A 6 0.00 0	A 0 0.00 0	A 4 0.26 2	A 4	A 4 0.04 0	A 0 0.00 0	A 6	B 17 0.15 0	A 0 0.00 0	B 16 0.04 0	B 17	A 0 0.00 0	A 0 0.00 0	B 19 0.55 1	B 19	A 7	
	Elizabeth Street/Driveway & Nelson Street	TWSC	LOS Delay V/C Q	A 8 0.00 0	A 0 0.00 0	A 0 0.00 0	A 0	A 8 0.00 0	A 0 0.00 0	A 0	< < <	B 12 0.03 1	> > >	B 12	< < <	B 10 0.01 0	> > >	B 10	A 1	
	Elizabeth Street & Pembroke Street East	TWSC	LOS Delay V/C Q	A 9 0.01 0	A 0 0.00 0	A 0 0.00 0	A 0	A 9 0.01 0	A 0 0.00 0	A 0	< < <	C 23 0.09 2	> > >	C 23	< < <	C 16 0.08 2	> > >	C 16	A 1	
	Forced Road & Pembroke Street West	TCS	LOS Delay V/C Q		A 0 0.00 0	A 5 0.32 2	A 5	A 3 0.01 0	A 4 0.42 3	A 4	C 34 0.28 3		C 33 0.06 1	C 34						A 6
Fraser Street & Alfred	TWSC	LOS Delay	A 7	A 0	A 0	A 1	A 7	A 0	A 0	< <	A 10	> >	A 10	< <	A 10	> >	A 10	A 3		



2041 Base Forecast Summer - PM 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	
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



# ROAD NETWORK ALTERNATIVES

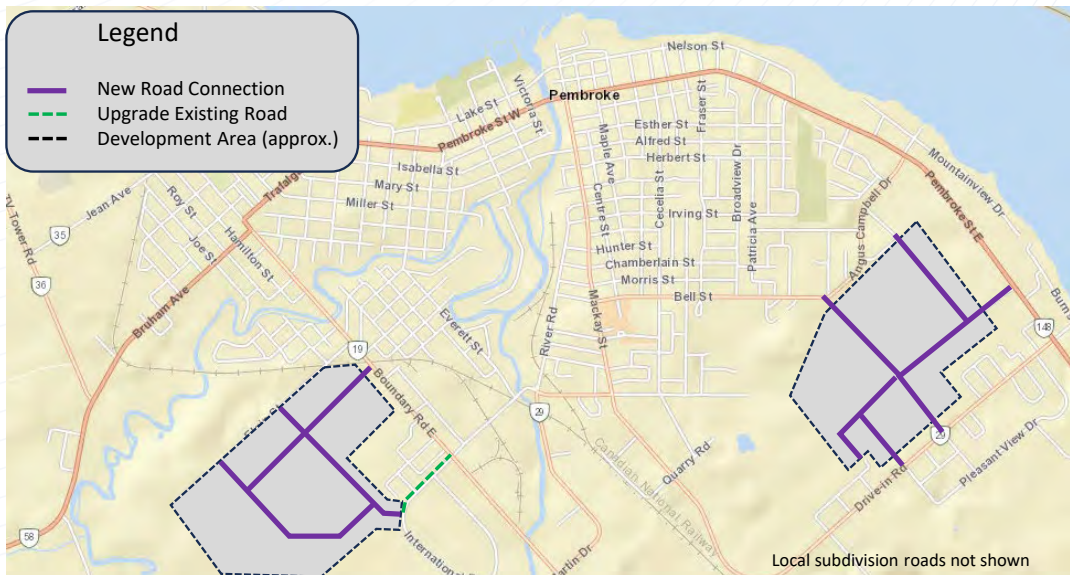
- ▶ **Base: New Roads in Growth Areas**
  - Local roads in growth areas to serve development
  - Assumed to be included in all options
- ▶ **Option 1: Enhance Mary Street / Alfred Street**
  - Alternative to Pembroke St through downtown
- ▶ **Option 2: D'Youville Drive connection to Drive In Road and 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

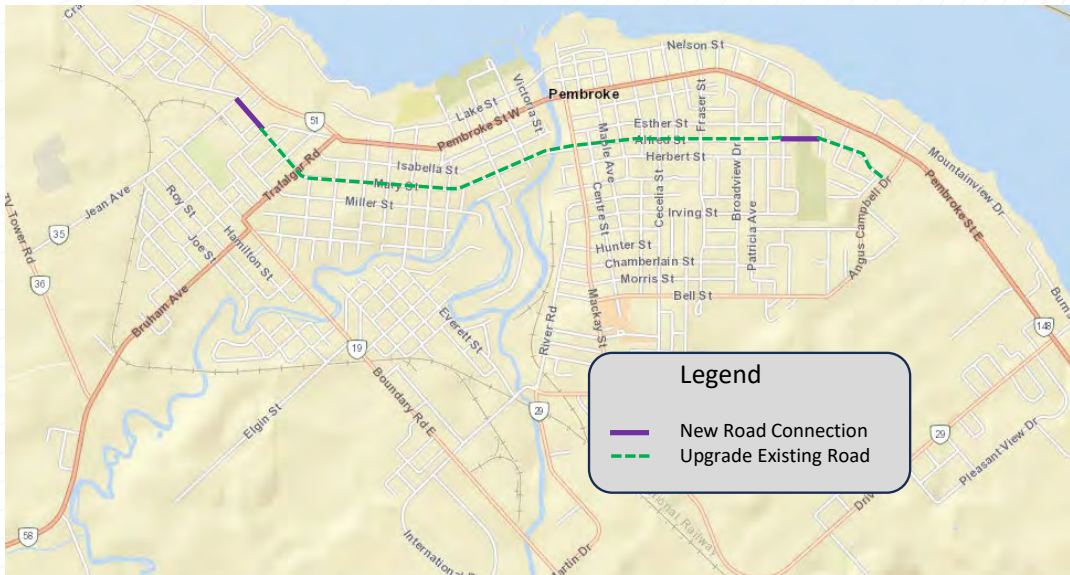
Criteria	Evaluation
Transportation	Congestion remains on Pembroke Street East and Hwy 48 Moderate Increase in traffic on Bell St / Angus Campbell Dr
Social	Neighbourhood impacts due to increased traffic (noise / safety)
Environmental	No additional disruption to natural areas
Economic	\$
Overall	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>

# 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	<b>NOT RECOMMENDED</b>

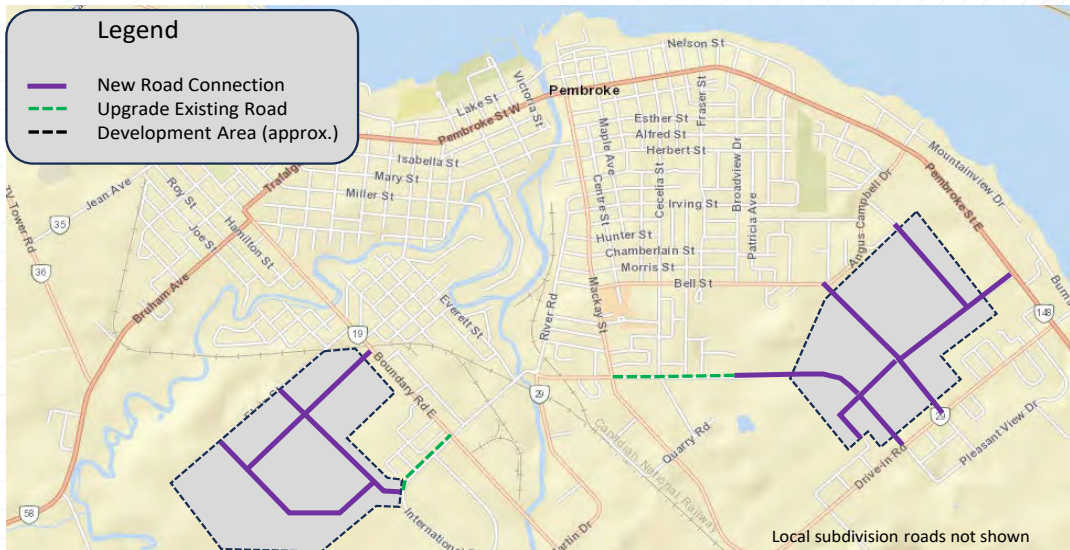


# FUTURE ROAD OPTIONS:

## 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	<b>RECOMMENDED - COMBINE WITH OTHER IMPROVEMENTS</b>

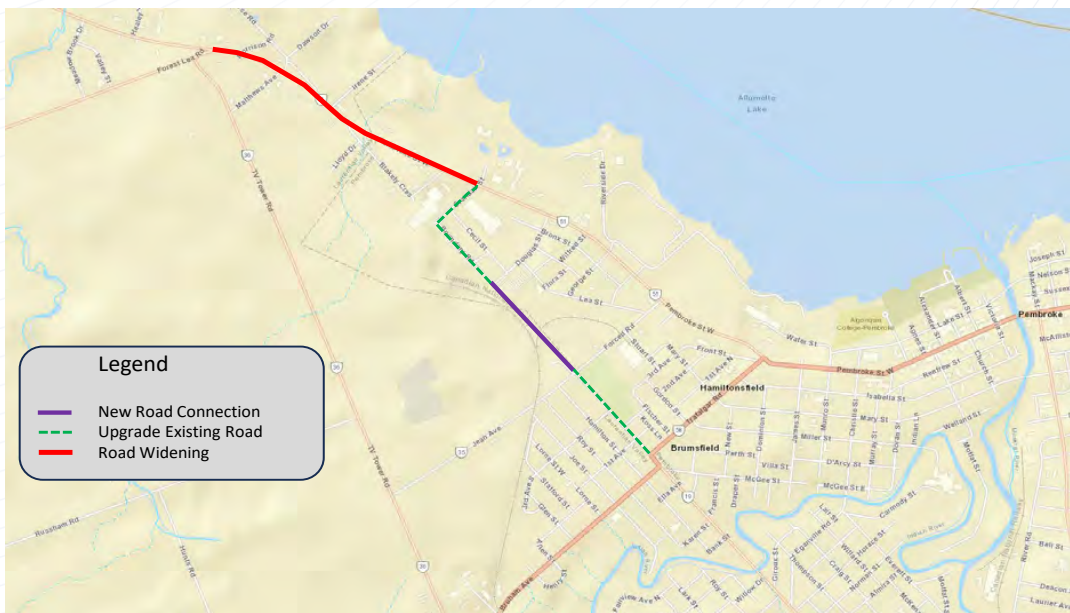


# FUTURE ROAD OPTIONS:

## 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

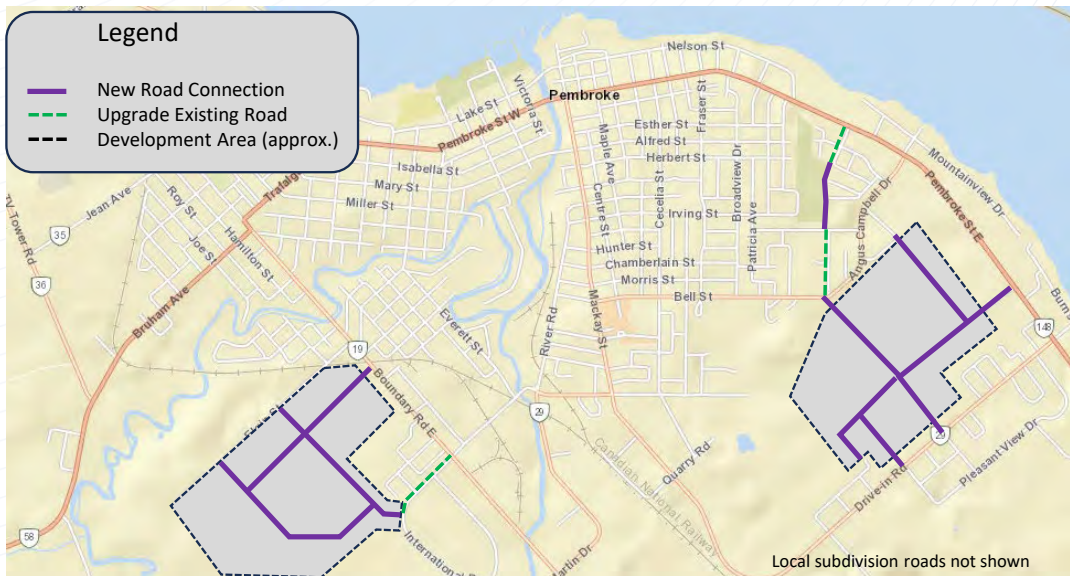
Criteria	Evaluation
<b>Transportation</b>	Draws traffic from TV Tower Road Congestion worse on Pembroke St W - east of Forced Road Increase in traffic on Boundary Road – may need widening
<b>Social</b>	Neighbourhood impacts due to increased traffic (noise / safety); Boundary Road extension impacts Algonquin Trail
<b>Environmental</b>	Boundary Road connection disturbs natural area Increased emissions through residential area
<b>Economic</b>	\$\$\$
<b>Overall</b>	<b>NOT RECOMMENDED</b>

# 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	<b>NOT RECOMMENDED</b>

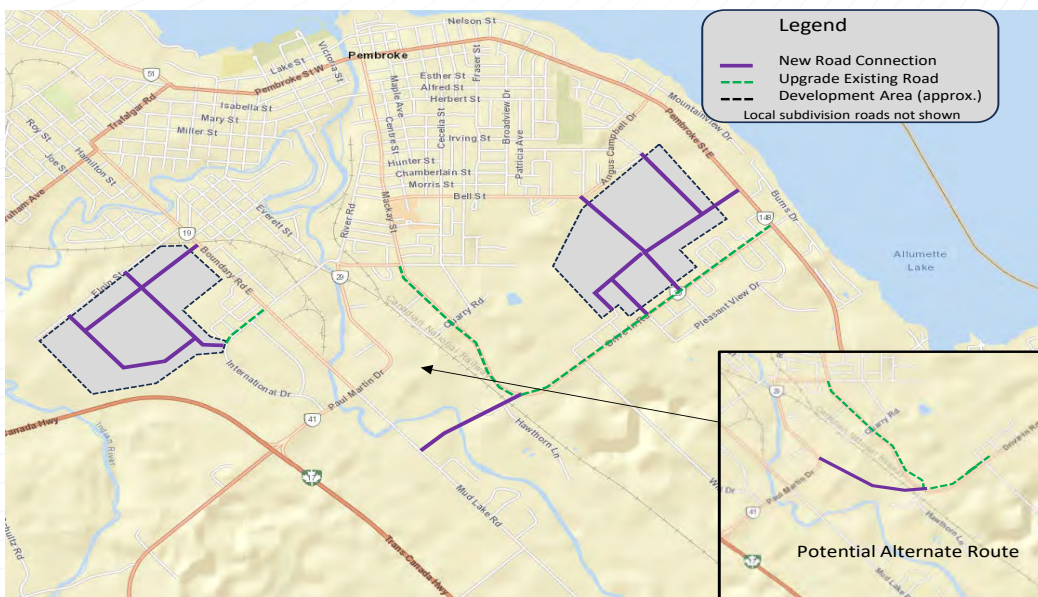


# FUTURE ROAD OPTIONS:

## 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	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>

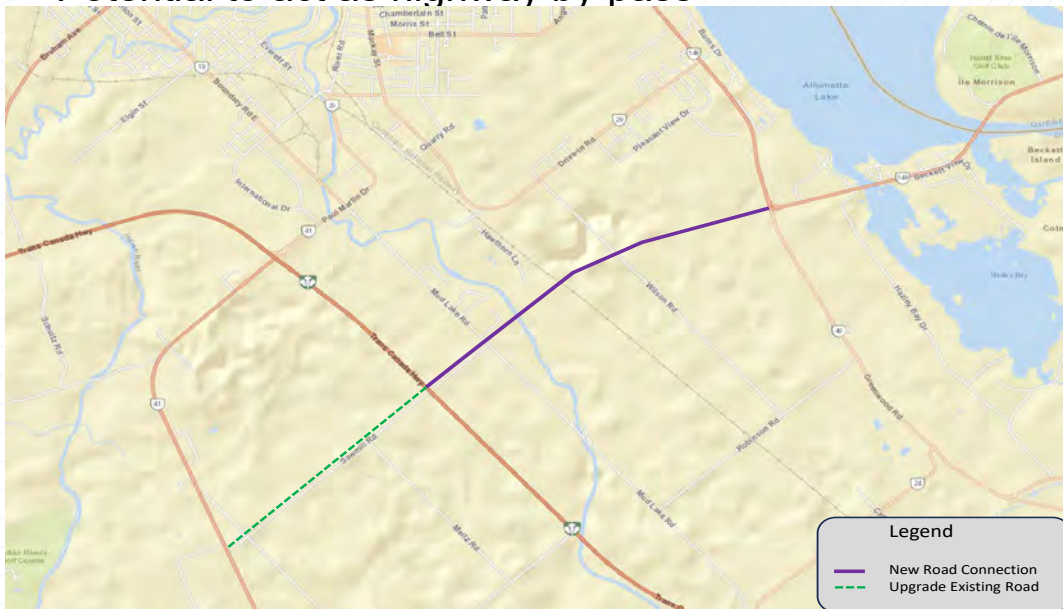


# FUTURE ROAD OPTIONS:

## 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

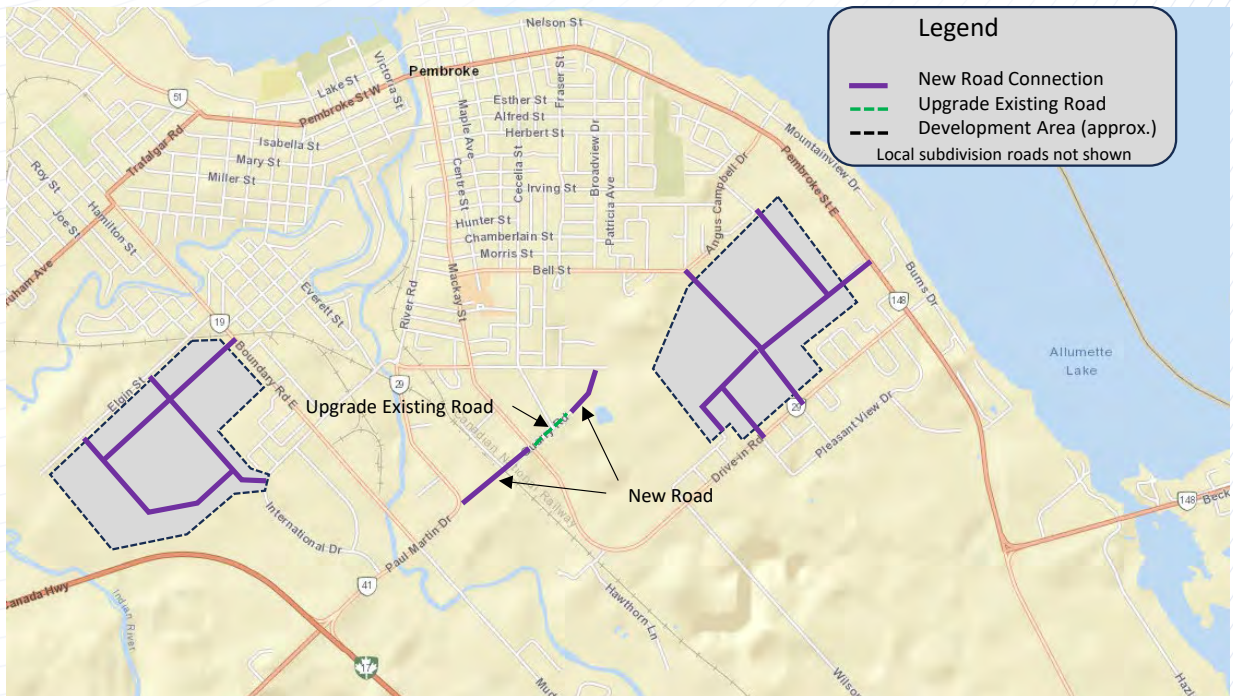
Criteria	Evaluation
<b>Transportation</b>	Removes external through traffic / trucks from downtown; Modest benefit to Pembroke St E / Highway 148; Adds traffic to Mud Lake Rd and Boundary Rd – may need widening
<b>Social</b>	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on local streets
<b>Environmental</b>	New connection crosses open space area Requires new river crossing (potential future interchange)
<b>Economic</b>	\$\$\$\$\$ By-pass of downtown may impact local businesses
<b>Overall</b>	<b>NOT RECOMMENDED</b>

# 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
<b>Transportation</b>	Directs traffic away from Townline Rd / Bennett St Provides direct connection between new development areas and Paul Martin Dr
<b>Social</b>	Requires crossing of CN Rail corridor (potential future trail) Reduction in traffic on Bell St / Angus Campbell Dr
<b>Environmental</b>	New connection crosses open space area (industrial) Potential impacts to wooded area
<b>Economic</b>	\$\$ May open up lands for new industrial development
<b>Overall</b>	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>



# 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
<b>Transportation</b>	Draws traffic from Pembroke St W Improves congestion Pembroke St W - east of Forced Road
<b>Social</b>	Neighbourhood impacts due to increased traffic (noise / safety); Boundary Road extension impacts Algonquin Trail
<b>Environmental</b>	Boundary Road connection disturbs natural area Increased emissions through residential area
<b>Economic</b>	\$\$
<b>Overall</b>	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>

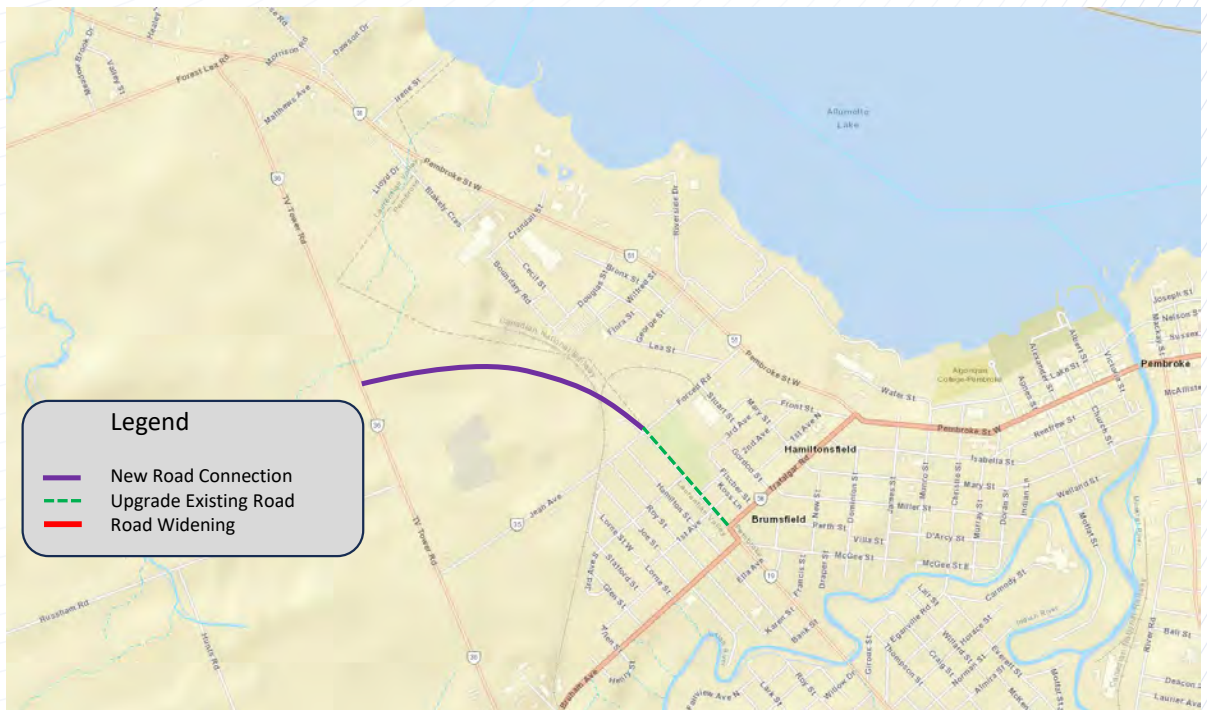


# FUTURE ROAD OPTIONS:

## 9) Boundary Rd Extension to TV Tower Rd

### ► Potential Improvements

- Extend Boundary Road East to connect to TV Tower Road



### ► Evaluation

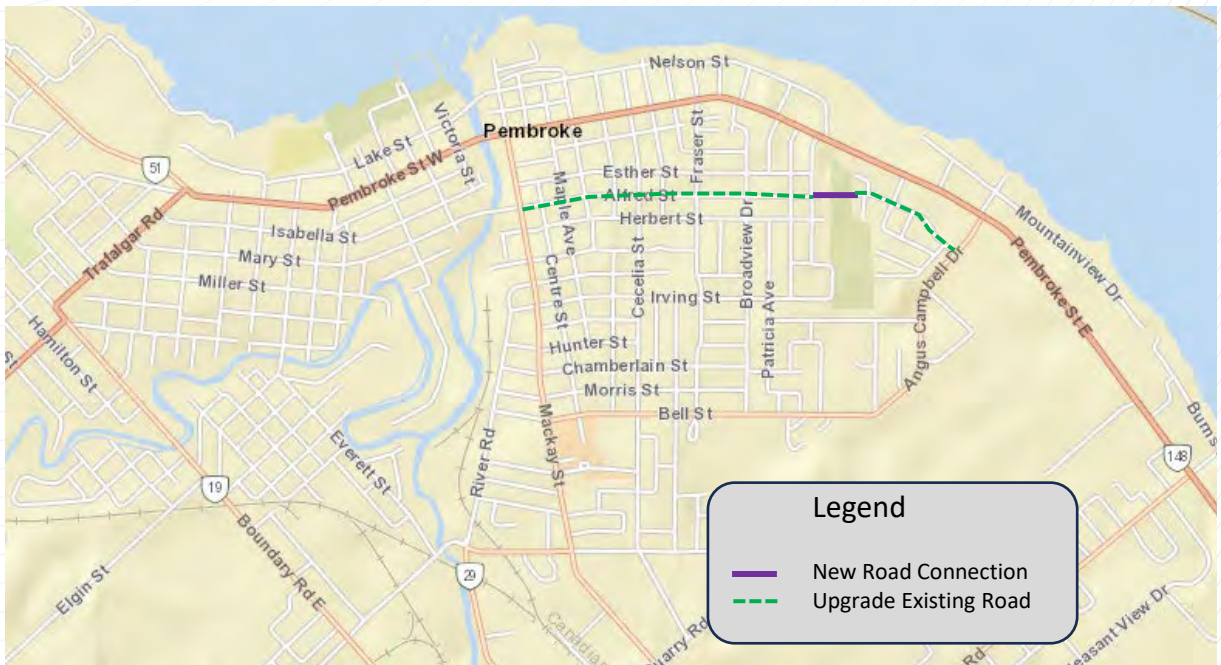
Criteria	Evaluation
<b>Transportation</b>	Draws traffic from TV Tower Rd No benefit to congestion on Pembroke St W Attracts traffic to Boundary Road – may require widening
<b>Social</b>	Avoids impacts to built up areas Boundary Road extension impacts Algonquin Trail
<b>Environmental</b>	Boundary Road connection disturbs heavily wooded area Potential to impact habitat areas
<b>Economic</b>	\$\$\$ - \$\$\$\$ May open new lands for development
<b>Overall</b>	<b>NOT RECOMMENDED</b>

# 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	<b>RECOMMENDED – COMBINE WITH OTHER IMPROVEMENTS</b>



# Appendix G

## Sample Speed Management / Traffic Calming Policy





# Sample

## Speed Management And Traffic Calming Policy

# Contents

- 1 Introduction..... 1**
- 1.1 Overview ..... 1
- 1.2 Policy Scope..... 1
- 1.3 Definitions..... 2
- 1.4 Traffic Advisory Working Group..... 3
- 2 Basis for Speed Limits and Speed Management ..... 4**
- 2.1 Policy Rationale ..... 4
- 2.2 Regulatory Framework in Ontario..... 4
- 2.3 Speed Limits on County Roads..... 5
- 3 Speed Limit Policy..... 6**
- 3.1 Guidelines for Determining Posted Speed Limits ..... 6
- 3.2 Posted Speed Limits in Rural Areas..... 6
- 3.3 Posted Speed Limits in Urban Areas ..... 6
- 3.4 Transitional Speed Zones..... 6
- 4 Speed Management Program..... 8**
- 4.1 Approach ..... 8
- 4.2 Screening Criteria for Speed Management Measures..... 8
- 4.3 Community Safety Zones ..... 9
- 4.4 Speed Limit Changes..... 10
- 4.5 Education and Enforcement..... 11
- 4.6 Traffic Calming ..... 12
- 4.7 Mitigation Measures for Pedestrian-Vehicle Conflicts on Rural Roads..... 16
- 5 Speed Management Review Process..... 17**
- 5.1 Step 1 – Review Initiation..... 17
- 5.2 Step 2 – Initial Screening ..... 17
- 5.3 Step 3 – Technical Assessment ..... 19
- 5.4 Step 4 – Plan Development..... 20
- 5.5 Step 5 – Approval ..... 21
- 5.6 Step 6 – Implementation..... 22
- 5.7 Step 7 – Monitoring and Evaluation..... 22





## Appendices

Appendix A	Request for Speed Management Measures Form
Appendix B	Speed Management Program Screening
Appendix C	Community Safety Zone Warrant
Appendix D	Speed Limit Change Warrant
Appendix E	Traffic Calming Screening
Appendix F	Traffic Calming Toolbox

## Figures

Figure 5.1:	Speed Management Review Process.....	18
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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*<sup>1</sup>, *Canadian Guidelines for Establishing Posted Speed Limits*<sup>2</sup>, *Canadian Guide to Traffic Calming*<sup>3</sup>, and *Geometric Design Guide for Canadian Roads*<sup>4</sup> and Ontario Traffic Manual (OTM) *Book 5 – Regulatory Signs*<sup>5</sup> and *Book 6 – Warning Signs*<sup>6</sup>, with considerations specific to Lanark County.

Policies 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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<sup>1</sup> Transportation Association of Canada (TAC), *Speed Management Guide*, (Ottawa, ON; 2016).

<sup>2</sup> TAC, *Canadian Guidelines for Establishing Posted Speed Limits*, (Ottawa, ON; 2009).

<sup>3</sup> TAC, *Canadian Guide to Traffic Calming*, 2nd ed., (Ottawa, ON; 2018).

<sup>4</sup> TAC, *Geometric Design Guide for Canadian Roads*, (Ottawa, ON; 2017).

<sup>5</sup> Ontario Ministry of Transportation, *Ontario Traffic Manual Book 5 – Regulatory Signs*, (Toronto, ON; 2021).

<sup>6</sup> 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.<sup>7</sup> In general, as the speed at impact increases, so does the severity of injury.<sup>8</sup> 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.<sup>9</sup>

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.<sup>10</sup>

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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<sup>7</sup> US Department of Transportation, National Highway Traffic Safety Administration, *An Analysis of Speeding-Related Crashes: Definitions and the Effects of Road Environments*, (2009).

<sup>8</sup> World Health Organization, *Managing Speed*, (2017), 5.

<sup>9</sup> TAC, "Driver Behaviour and Capabilities" in *Speed Management Guide*, (Ottawa: TAC, 2016).

<sup>10</sup> 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.”<sup>11</sup>

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

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<sup>11</sup> 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*.

## Posted Speed Limits

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.





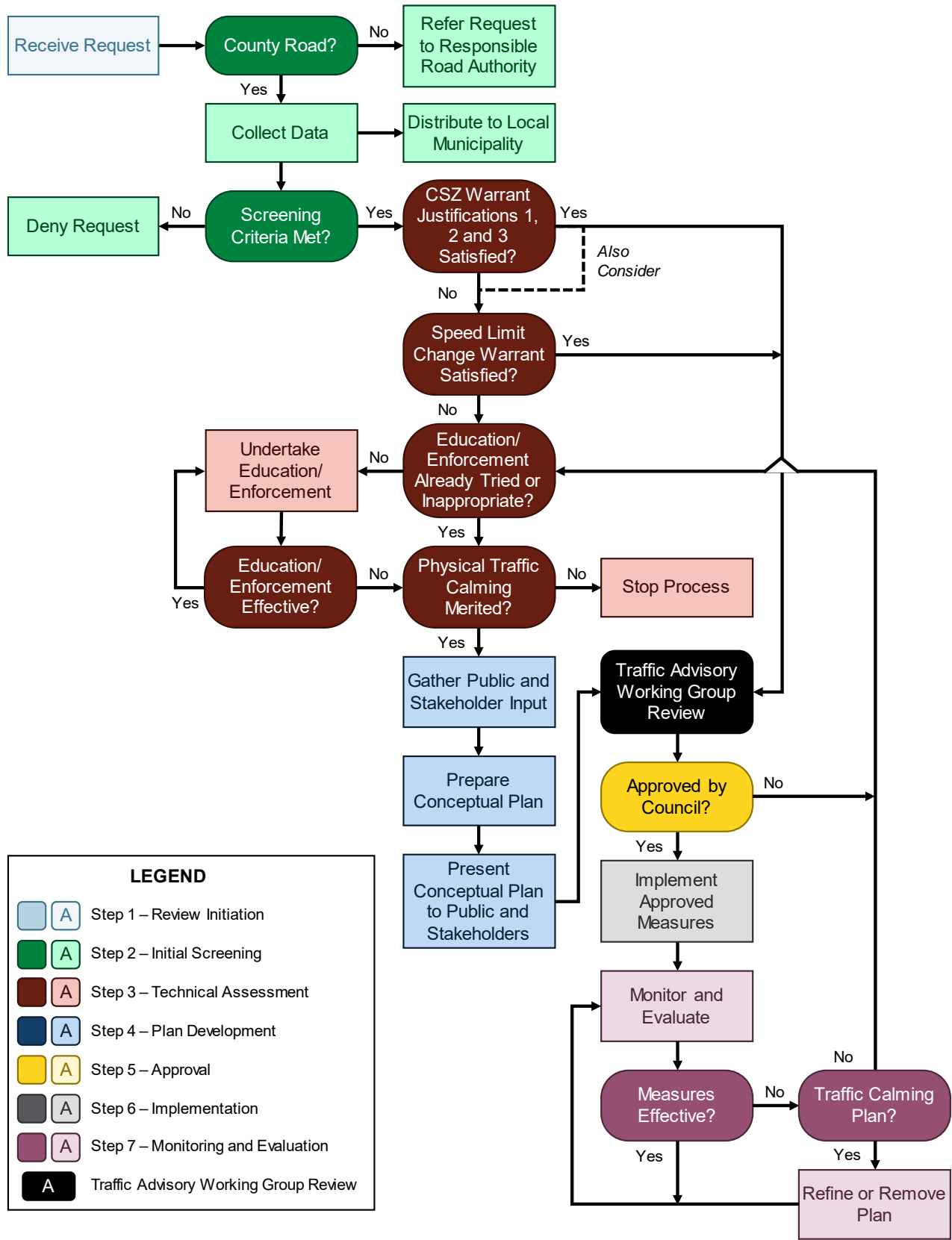


FIGURE 5.1: SPEED MANAGEMENT REVIEW PROCESS



### 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?

- |   |   |
|---|---|
| <input type="checkbox"/> I live on this street.               | <input type="checkbox"/> I work on this street.   |
| <input type="checkbox"/> My kids go to school on this street. | <input type="checkbox"/> I live nearby and use this street frequently for commuting, cycling, or walking. |
| <input type="checkbox"/> Other (please specify): _____        |   |
- 

Is there a specific time of day when speeding is an issue?

- |                                    |                                  |
|------------------------------------|----------------------------------|
| <input type="checkbox"/> Morning   | <input type="checkbox"/> Noon    |
| <input type="checkbox"/> Afternoon | <input type="checkbox"/> Evening |
| <input type="checkbox"/> Overnight | <input type="checkbox"/> All day |

Are there any other traffic issues concerning you about the street in question?

- |  |  |
|--|--|
| <input type="checkbox"/> Vehicle volumes               | <input type="checkbox"/> Cut-through traffic |
| <input type="checkbox"/> Pedestrian and cyclist safety | <input type="checkbox"/> Collisions          |
| <input type="checkbox"/> 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?
<b>All Criteria Must be Met:</b>		
1. Not Previously Requested	A prior request for speed management measures has not been denied in the preceding two years, unless new information is brought forward.	<input type="checkbox"/>
2. Measures Removed	Speed management measures (including traffic calming) have not been removed in the preceding three years.	<input type="checkbox"/>
<b>At Least One Criteria Must be Met:</b>		
3. Location of Special Consideration	The subject road section is within 500 m of:	
	a) A designated School Zone or Community Safety Zone <u>OR</u> b) Other location of special consideration (e.g., school, seniors' centre or residence, playground, hospital)	<input type="checkbox"/> <input type="checkbox"/>
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 <u>OR</u> b) By 10 km/h or more on all other Municipal Roads.	<input type="checkbox"/>
5. 95th Percentile Speed	The 95th percentile speed exceeds the current speed limit by 20 km/h or more.	<input type="checkbox"/>

**Screening Recommendation:**

<b>If Screening Satisfied (check all that apply):</b>	
Proceed with Technical Assessment	<input type="checkbox"/>
Investigate Community Safety Zone if Criteria 3.b) met	<input type="checkbox"/>
<b>If Screening Not Satisfied:</b>	
Deny request	<input type="checkbox"/>



# 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 ( $\geq 50$  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?
<b>At Least One Criteria Must be Met:</b>		
1. Adjacent Land Use	The subject road section is adjacent to an elementary or secondary school, seniors' centre or residence, community playground, or hospital.	<input type="checkbox"/>
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.	<input type="checkbox"/>
<b>Justification 1 Criteria Satisfied?</b>		<input type="checkbox"/>

**Justification 2 – Identified Safety Concern:**

Criteria	A Community Safety Zone may be considered if:	Satisfied?
<b>At Least One Criteria Must be Met:</b>		
1. Collision Ratio	The ratio of collisions per year to AADT (collision ratio) is less than 1:900 averaged over 36 consecutive months. <sup>1</sup>	<input type="checkbox"/>
2. Risk Factor	a) The subject road section experiences unusually high violation rates based on field observations and/or local law enforcement <u>AND</u>	<input type="checkbox"/>
	b) The <b>Risk Factor Score</b> from the table below is 15 points or more.	<input type="checkbox"/>
<b>Justification 2 Criteria Satisfied?</b>		<input type="checkbox"/>

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	<input type="checkbox"/> Alignment <input type="checkbox"/> Visibility <input type="checkbox"/> No Sidewalk/ Cycling Facility <input type="checkbox"/> Other	1 to 4 points assigned based on staff review			
<b>Total Score</b>					

**Justification 3 – Other Applicable Measures/Devices Tried**

Criteria	A Community Safety Zone may be considered if:	Satisfied?
<b>One Criteria Must be Met:</b>		
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).	<input type="checkbox"/>
<b>Justification 3 Criteria Satisfied?</b>		<input type="checkbox"/>

**Justification 4 – Ability to Enforce**

Criteria	A Community Safety Zone may be considered if:	Satisfied?
<b>One Criteria Must be Met:</b>		
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.	<input type="checkbox"/>
<b>Justification 4 Criteria Satisfied?</b>		<input type="checkbox"/>

**Warrant Recommendation:**

<b>If Warrant Satisfied (All Four Justifications Met):</b>	
Designate Community Safety Zone	<input type="checkbox"/>
<b>If Warrant Not Satisfied:</b>	
Consider speed limit change	<input type="checkbox"/>



# 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?
<b>At Least Two Criteria Must be Met</b>		
1. Suggested Speed Limit	The suggested speed limit determined using the Transportation Association of Canada <i>Canadian Guidelines for Establishing Posted Speed Limits</i> (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.	<input type="checkbox"/>
2. Geometric Constraints	Site-specific geometric constraints (such as reduced sight distance or curve radii) do not match the current speed limit.	<input type="checkbox"/>
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.	<input type="checkbox"/>

Criteria	A speed limit change may be considered if:	Satisfied?
4. Environment Characteristics	The <b>Environmental Factor Score</b> from the table below is 30 points or more.	<input type="checkbox"/>
<b>All Criteria Must be Met</b>		
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.	<input type="checkbox"/>

**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	<input type="checkbox"/> Yes <input type="checkbox"/> No	5 points if no sidewalks or multi-use paths	5	
Cycling Facilities	<input type="checkbox"/> Yes <input type="checkbox"/> No	5 points for designated cycling facilities	5	
Collision History	See above	1 point for each qualifying collision <sup>1</sup> over the last 36 months	5	
Residential Frontage		5 points for primarily residential frontage (> 10 entrances per km)	5	
Settlement Area	<input type="checkbox"/> Yes <input type="checkbox"/> No	5 points if within a Settlement Area designation (Towns, Villages, and Hamlets) in the Official Plan	5	
<b>Total Score</b>			<b>50</b>	

Note: 1. Includes all collisions along the subject road section except for collisions involving animals.

**Warrant Recommendation:**

<b>If Warrant Satisfied:</b>	
Change speed limit to TAC Method Suggested Speed Limit if the <b>Environmental Factor Score</b> is less than 30 points	<input type="checkbox"/>
Change speed limit to TAC Method Suggested Speed Limit less 10 km/h if the <b>Environmental Factor Score</b> is 30 points or more (but not less than 40 km/h)	<input type="checkbox"/>
Recommended Speed Limit: <input type="checkbox"/> 40 km/h <input type="checkbox"/> 50 km/h <input type="checkbox"/> 60 km/h <input type="checkbox"/> 70 km/h <input type="checkbox"/> 80 km/h	
<b>If Warrant Not Satisfied (check one):</b>	
Consider physical traffic calming if education and/or enforcement already tried and found ineffective or inappropriate under the circumstances	<input type="checkbox"/>
Undertake education and/or enforcement if not already tried	<input type="checkbox"/>



# 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?
<b>All Criteria Must be Met</b>		
1. Adequate Trial of Other Solutions	An adequate trial of education and/or enforcement has been undertaken to reduce speeds.	<input type="checkbox"/>
2. Number of Lanes	The subject road section is two-lanes.	<input type="checkbox"/>
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.	<input type="checkbox"/>
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.	<input type="checkbox"/>
5. Locational Characteristics	The <b>Locational Factor Score</b> from the table below is 50 points or more.	<input type="checkbox"/>

**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	
<b>Environmental Factor from Speed Limit Change Warrant:</b>				
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	<input type="checkbox"/> Yes <input type="checkbox"/> No	5 points if no sidewalks or multi-use paths	5	
Cycling Facilities	<input type="checkbox"/> Yes <input type="checkbox"/> No	5 points for designated cycling facilities	5	
Collision History	See above	1 point for each qualifying collision <sup>1</sup> over the last 36 months	5	
Residential Frontage		5 points for primarily residential frontage (> 10 entrances per km)	5	
Settlement Area	<input type="checkbox"/> Yes <input type="checkbox"/> No	5 points if within a Settlement Area designation (Towns, Villages, and Hamlets) in the Official Plan	5	
<b>Total Score</b>			<b>80</b>	

Note: 1. Includes all collisions along the subject road section except for collisions involving animals.

**Screening Recommendations:**

<b>If Screening Satisfied:</b>	
Proceed with traffic calming plan development	<input type="checkbox"/>
<b>If Warrant Not Satisfied:</b>	
Deny request	<input type="checkbox"/>

# 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).<sup>12</sup> 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.

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<sup>12</sup> 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*<sup>13</sup>, with adjustments to reflect Canadian dollars and inflation (from 2017 to 2022 dollars). Other municipal traffic calming guidelines<sup>14</sup> 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”.

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<sup>13</sup> Institute of Transportation Engineers, *Traffic Calming Fact Sheets*, Accessed September 27, 2022 from <https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures>

<sup>14</sup> 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](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 <sup>1</sup>			Design Details <sup>2</sup>	
	Local or Collector	Urban Arterial	Rural Arterial	Low	High	Trial		
<b>1. Education</b>								
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
<b>2. Enforcement</b>								
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
<b>3. Pavement Markings</b>								
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
<b>4. Surface Treatment</b>								
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
<b>5. Roadway Narrowing</b>								
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 <sup>3</sup>	●	●	✗	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 <sup>1</sup>			Design Details <sup>2</sup>	
	Local or Collector	Urban Arterial	Rural Arterial	Low	High	Trial		
<b>6. Gateways</b>								
6.1	Gateways <sup>4</sup>	●	●	●	\$10,000	\$50,000	\$5,000	n/a
<b>7. Horizontal Deflection</b>								
7.1	Lateral Shift	●	▲	×	\$16,000	\$62,500	\$25,000	n/a
7.2	Traffic Button/ Traffic Circle/ Mini-Roundabout	●	×	×	\$3,000	\$50,000	\$10,000	4.3.4
		●	×	▲	\$20,000	\$125,000	\$15,000	
<b>8. Vertical Deflection</b>								
8.1	Raised Crosswalk	●	×	×	\$5,000	\$20,000	\$10,000	4.2.1
<b>9. Access Restriction</b>								
9.1	Right-in/Right-out Island	●	▲	×	\$3,000	\$50,000	\$5,000	4.7.6
<b>10. Emerging Technologies and Measures</b>								
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*<sup>15</sup> 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.

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<sup>15</sup> 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	<input type="checkbox"/>
Volume Reduction	<input type="checkbox"/>
Conflict Reduction	<input type="checkbox"/>
Natural Environment	<input type="checkbox"/>

**Other Implementation Considerations**

Local Vehicle Access	<input type="checkbox"/>
Emergency Vehicle Response	<input type="checkbox"/>
Cycling Use	<input type="checkbox"/>
Traffic Enforcement	<input type="checkbox"/>
Vehicle Parking	<input type="checkbox"/>
Street Maintenance	<input type="checkbox"/>

/  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	<input checked="" type="checkbox"/>
Volume Reduction	<input type="checkbox"/>
Conflict Reduction	<input type="checkbox"/>
Natural Environment	<input type="checkbox"/>

**Implementation Considerations**

Local Vehicle Access	<input type="checkbox"/>
Emergency Vehicle Response	<input type="checkbox"/>
Cycling Use	<input type="checkbox"/>
Traffic Enforcement	<input type="checkbox"/>
Vehicle Parking	<input type="checkbox"/>
Street Maintenance	<input checked="" type="checkbox"/>

/  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	<input checked="" type="checkbox"/>
Volume Reduction	<input type="checkbox"/>
Conflict Reduction	<input checked="" type="checkbox"/>
Natural Environment	<input checked="" type="checkbox"/>

#### Implementation Considerations

Local Vehicle Access	<input type="checkbox"/>
Emergency Vehicle Response	<input type="checkbox"/>
Cycling Use	<input checked="" type="checkbox"/>
Traffic Enforcement	<input type="checkbox"/>
Vehicle Parking	<input type="checkbox"/>
Street Maintenance	<input checked="" type="checkbox"/>

<input type="checkbox"/> / <input type="checkbox"/>	No Benefit/Impact
<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/>	Minor Benefit/Impact
<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/>	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 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.



Source: www.surrey.ca

#### 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     | <input checked="" type="checkbox"/> |
| Volume Reduction    | <input type="checkbox"/>            |
| Conflict Reduction  | <input type="checkbox"/>            |
| Natural Environment | <input checked="" type="checkbox"/> |

#### Implementation Considerations

- |                            |                                     |
|----------------------------|-------------------------------------|
| Local Vehicle Access       | <input type="checkbox"/>            |
| Emergency Vehicle Response | <input type="checkbox"/>            |
| Cycling Use                | <input checked="" type="checkbox"/> |
| Traffic Enforcement        | <input type="checkbox"/>            |
| Vehicle Parking            | <input checked="" type="checkbox"/> |
| Street Maintenance         | <input checked="" type="checkbox"/> |

- |   |                            |
|---|----------------------------|
| <input type="checkbox"/> / <input type="checkbox"/>                       | No Benefit/Impact          |
| <input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> | Minor Benefit/Impact       |
| <input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> | 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     | <input checked="" type="checkbox"/> |
| Volume Reduction    | <input type="checkbox"/>            |
| Conflict Reduction  | <input type="checkbox"/>            |
| Natural Environment | <input type="checkbox"/>            |

#### Implementation Considerations

- |                            |                                     |
|----------------------------|-------------------------------------|
| Local Vehicle Access       | <input type="checkbox"/>            |
| Emergency Vehicle Response | <input type="checkbox"/>            |
| Cycling Use                | <input type="checkbox"/>            |
| Traffic Enforcement        | <input type="checkbox"/>            |
| Vehicle Parking            | <input type="checkbox"/>            |
| Street Maintenance         | <input checked="" type="checkbox"/> |

- |   |                            |
|---|----------------------------|
| <input type="checkbox"/> / <input type="checkbox"/>                       | No Benefit/Impact          |
| <input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> | Minor Benefit/Impact       |
| <input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> | 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.



#### 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 |

**Cost** – \$-\$\$

**Timeline** – Temporary or Permanent  
**Engineering Study Required** – Yes



## 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** –  $\geq 1\%$ , but  $\leq 8\%$

**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

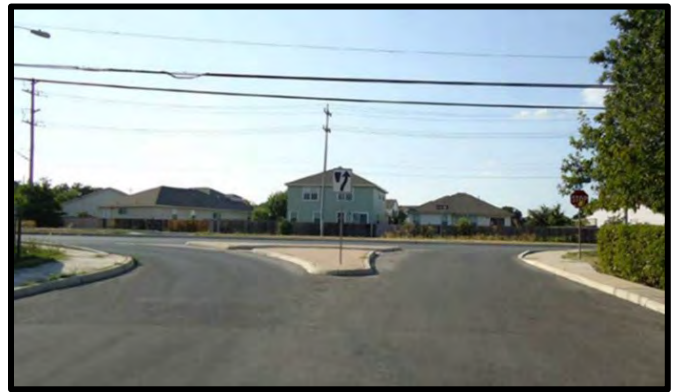
**9. ACCESS RESTRICTIONS**  
**9.1 Right-In/Right-Out Island**

**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



Project Cost Estimates and Phasing

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 Corridor 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 Street 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
<b>Total Major Road Projects</b>					<b>\$ 88,500,000</b>			

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	MacKay 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		
<b>Total Intersection Improvements</b>				<b>\$ 6,500,000</b>	

**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

**Project Cost Estimates - Breakdown**

Project #	Major Road Projects	Roadworks		Unit Cost	Roadwork Cost	Bridges		Intersections					Subtotal	Utilities 10%	Contingency 20%	Engineering 10%	Total Project Cost	Unit Cost \$/ km	
		Length	Unit			deck area	Unit Cost	Bridge Cost	Intersections	Signals	Turn Lanes	Roundabout							Intersection Cost
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		Unit Cost	Roadwork Cost	Bridges		Intersections					Subtotal	Utilities 10%	Contingency 20%	Engineering 10%	Total Project Cost	
		Length	Unit			deck area	Unit Cost	Bridge Cost	Intersections	Signals	Turn Lanes	Roundabout						Intersection 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	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
18	D'Youville Drive / Townline Road - turn lanes and signals	0		\$ -	\$ -	0	\$ -	\$ -	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
19	Drive-In Road - roundabout	0		\$ -	\$ -	0	\$ -	\$ -	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
20	Boundary Road - turn lanes and signals	0		\$ -	\$ -	0	\$ -	\$ -	0	0	0	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21	Boundary Road - turn lanes and signals	0		\$ -	\$ -	0	\$ -	\$ -	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	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

Check of Unit Costs Rates based on Conceptual Quantities for 1 km length of road

Items		Unit Cost	2 Lane Urban New - 1 km length				2 Lane Urban Reconstruct Road - 1 km length					
			unit	unit cost	quantity	cost	unit	unit cost	quantity	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										
			Grading	m3	\$ 12.00	10000	\$ 120,000	Grading	m3	\$ 12.00	5000	\$ 60,000
			Gran B	t	\$ 15.00	6750	\$ 101,250	Gran B	t	\$ 15.00	6750	\$ 101,250
			Gran A	t	\$ 20.00	2550	\$ 51,000	Gran A	t	\$ 20.00	2550	\$ 51,000
			HL8	t	\$ 150.00	2400	\$ 360,000	HL8	t	\$ 150.00	2400	\$ 360,000
			HL3	t	\$ 175.00	1200	\$ 210,000	HL3	t	\$ 175.00	1200	\$ 210,000
			Conc C&G	m	\$ 75.00	2000	\$ 150,000	Conc C&G	m	\$ 75.00	2000	\$ 150,000
			Conc Sidewalk	m	\$ 150.00	1000	\$ 150,000	Conc Sidewalk	m	\$ 150.00	1000	\$ 150,000
			Storm	m	\$ 500.00	1200	\$ 600,000	Storm	m	\$ 500.00	1200	\$ 600,000
			CB	ea	\$ 2,500.00	22	\$ 55,000	CB	ea	\$ 2,500.00	22	\$ 55,000
			Sanitary	m	\$ 300.00	1000	\$ 300,000	Sanitary	m	\$ 300.00	0	\$ -
			San Mholes	ea	\$ 4,000.00	10	\$ 40,000	San Mholes	ea	\$ 4,000.00	0	\$ -
			Services	ea	\$ 5,000.00	50	\$ 250,000	Services	ea	\$ 5,000.00	0	\$ -
			watermain	m	\$ 400.00	1000	\$ 400,000	watermain	m	\$ 400.00	0	\$ -
			services	ea	\$ 4,000.00	50	\$ 200,000	services	ea	\$ 4,000.00	0	\$ -
			Streetlights	ea	\$ 10,000.00	10	\$ 100,000	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
			<b>subtotal</b>			<b>\$ 3,087,250</b>	<b>subtotal</b>			<b>\$ 1,927,250</b>		
			Minor Items		20%	\$ 617,450	Minor Items		20%	\$ 385,450		
			Contingency		15%	\$ 463,088	Contingency		15%	\$ 289,088		
						<b>\$ 4,167,788</b>				<b>\$ 2,601,788</b>		
					rounded	<b>\$ 4,200,000</b>			rounded	<b>\$ 2,600,000</b>		

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





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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](http://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.

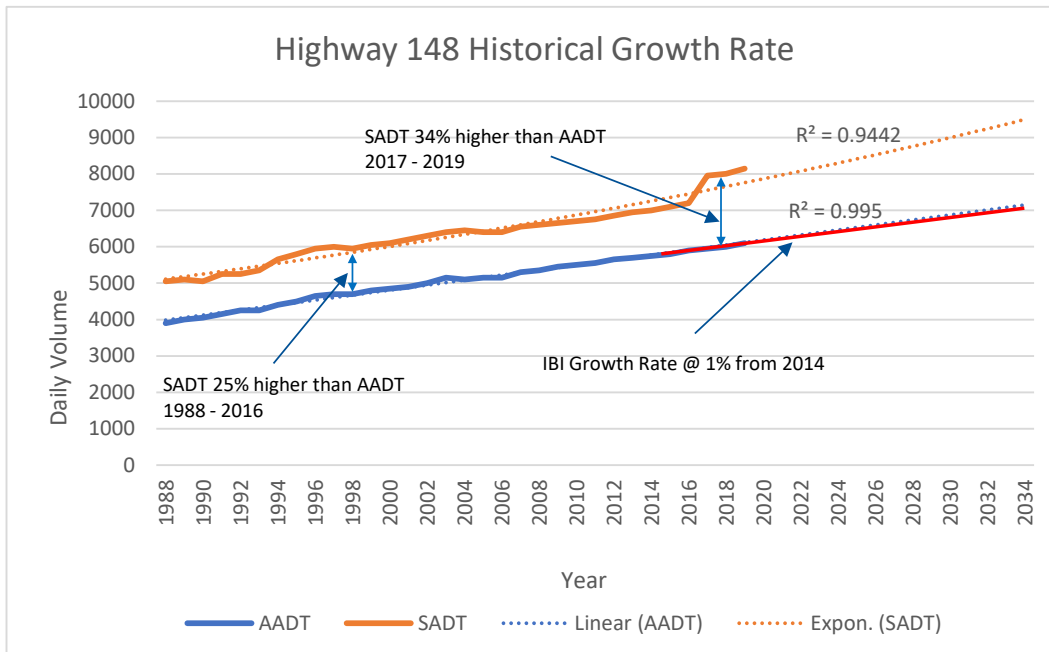
### Assessment of Daily Volumes and Forecasts

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.

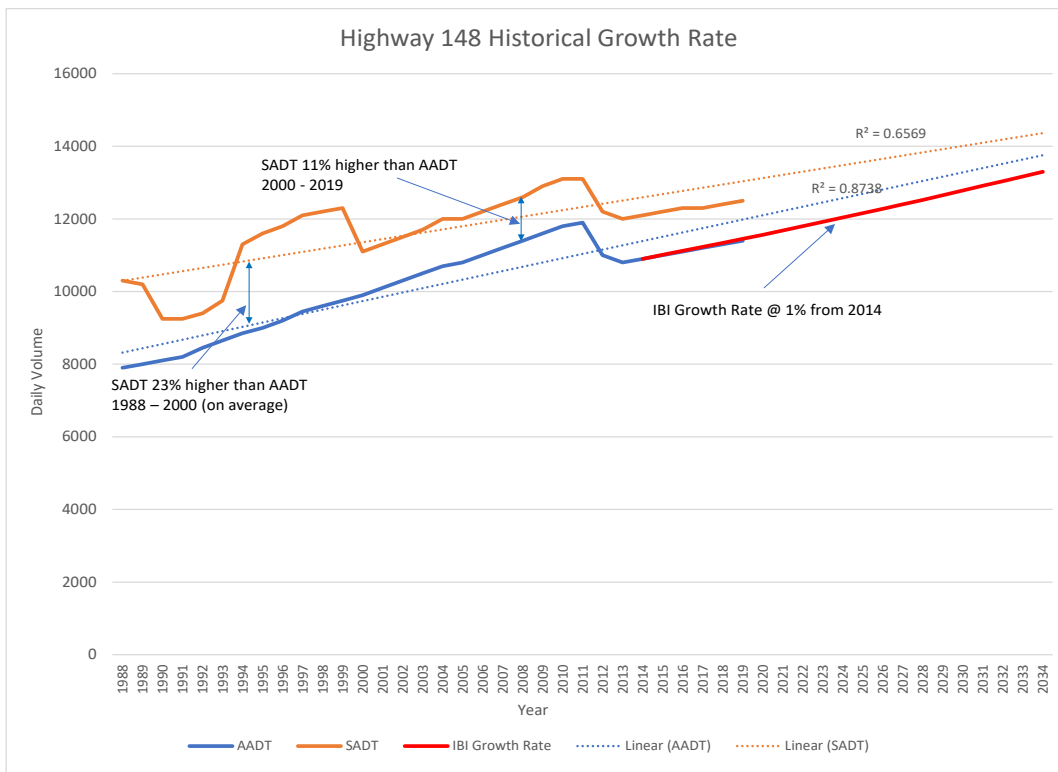
**Figure 1** illustrates the historical growth in AADT and SADT on Highway 148 between the Quebec Boundary and Greenwood Road, for the 1988 to 2019 period, representing the last published data by MTO. In addition to the historical volumes for this period, a trendline was generated to extend this historical 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

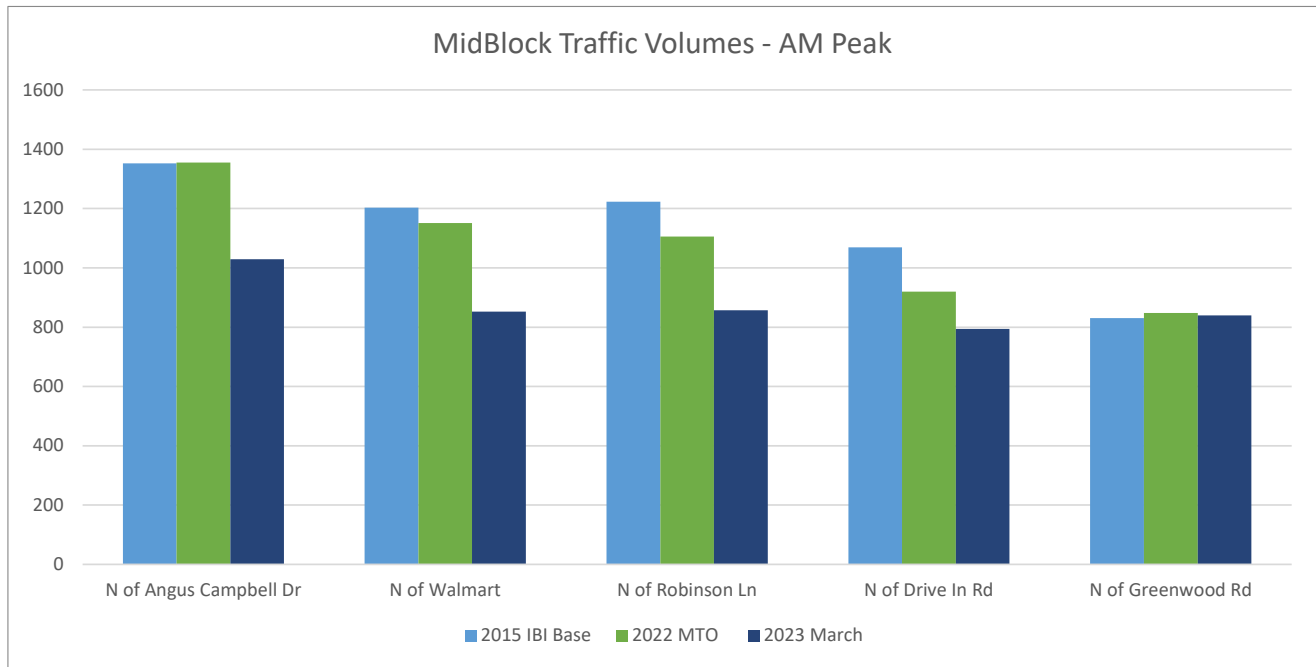
An assessment of traffic volumes used in the original traffic analysis for the TESR was also undertaken using the updated turning movement count data collected as part of the Transportation Master Plan (TMP) project and as provided by MTO. As this data considers peak hour traffic volumes, not just daily 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:

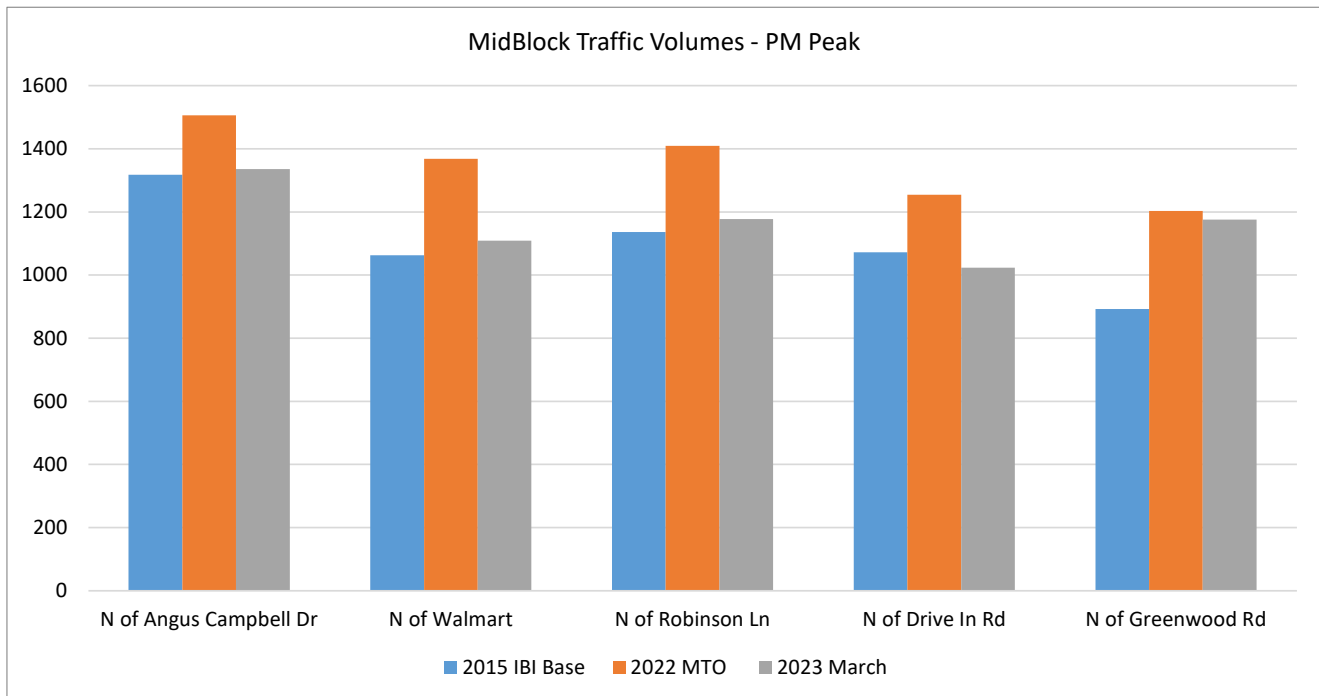
- ▶ 2015 IBI Base - Base peak hour volumes used in the original traffic study for the TESR
- ▶ 2022 MTO - Updated MTO Summer peak hour traffic volumes, normalized to a 2022 base year but not adjusted for seasonal variation
- ▶ 2023 March – Peak hour traffic volumes collected by Paradigm







**FIGURE 3 – AM PEAK HOUR VOLUME COMPARISON**



**FIGURE 4 – PM PEAK HOUR VOLUME COMPARISON**



A comparison of the mid-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.

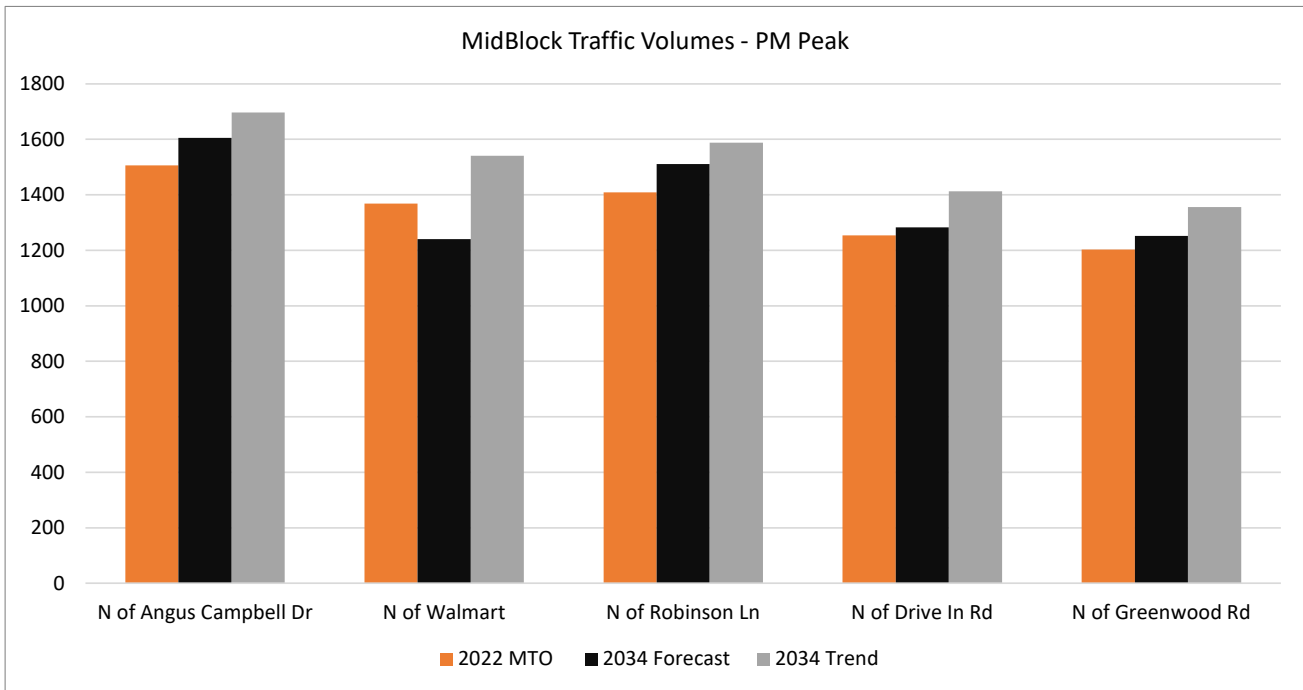
As illustrated in **Figure 5**, the 2034 forecasts prepared as part of the MTO TESR are on average approximately 2.2% higher than the MTO 2022 base summer count volumes. For the segment between the Walmart Entrance and Angus Campbell Drive, the MTO 2022 Summer volumes exceed the 2034 PM peak hour forecasts 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.<sup>1</sup> This assessment does not include additional traffic that would expect to be generated by additional growth on lands adjacent to the Highway 148 corridor.

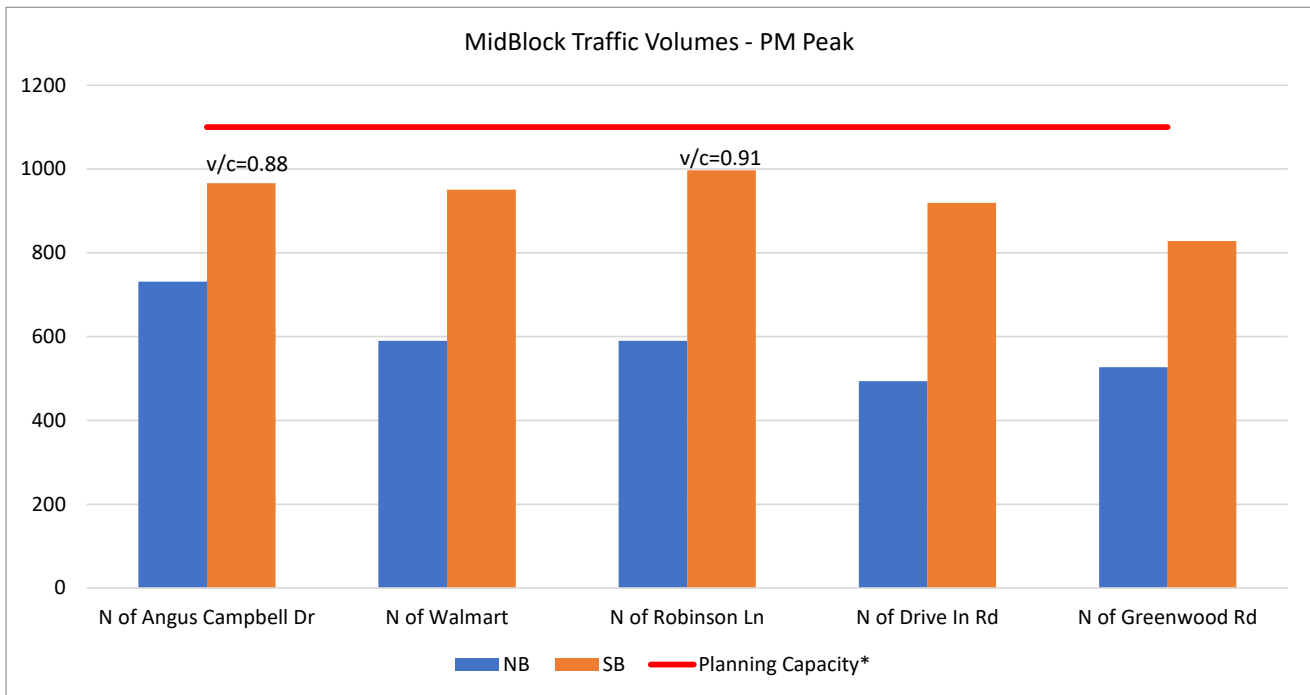
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<sup>1</sup> Based on a planning capacity of 1100 veh/hr/lane as noted in HCM Exhibit 10-7, Class I Urban Street





**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.”<sup>2</sup> 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.<sup>3</sup> Queues for through traffic will not be solved by the construction of the proposed Centre Turning 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.**

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<sup>2</sup> Highway 148 Traffic Operations and Safety Review – Existing Conditions, IBI Group, Oct 2017 (pg 19)

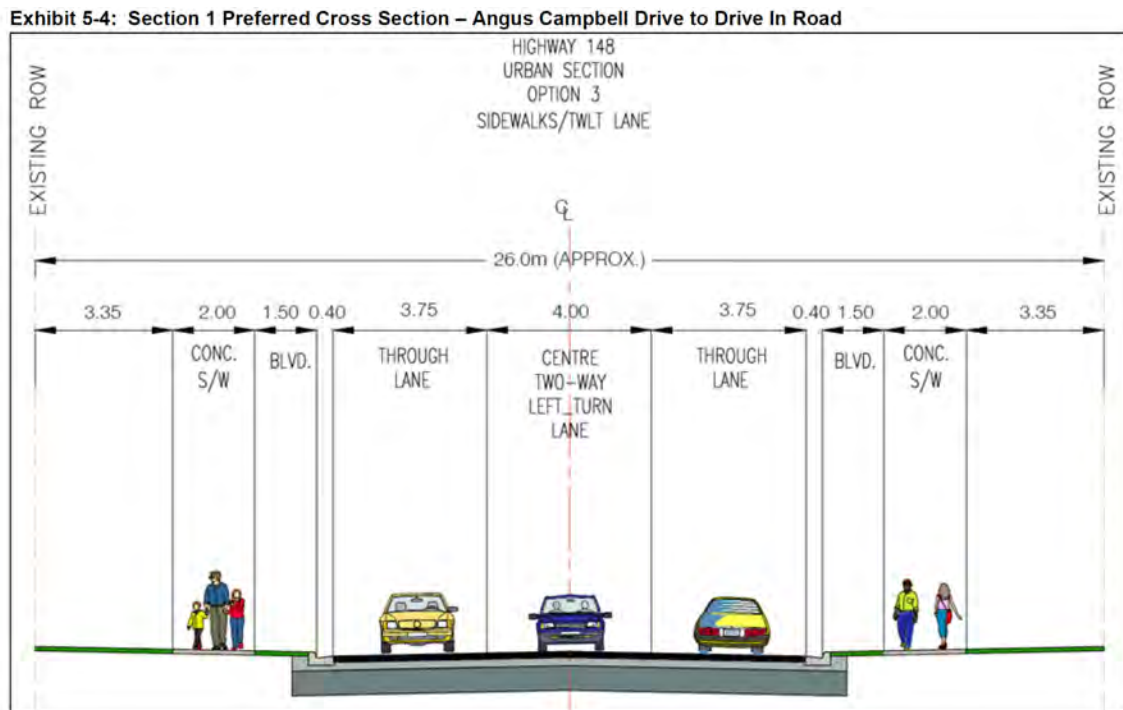
<sup>3</sup> Highway 148 Traffic Operations and Safety Review – Future Conditions Analysis, IBI Group, Oct 31, 2017 (pg 5)



## 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**.

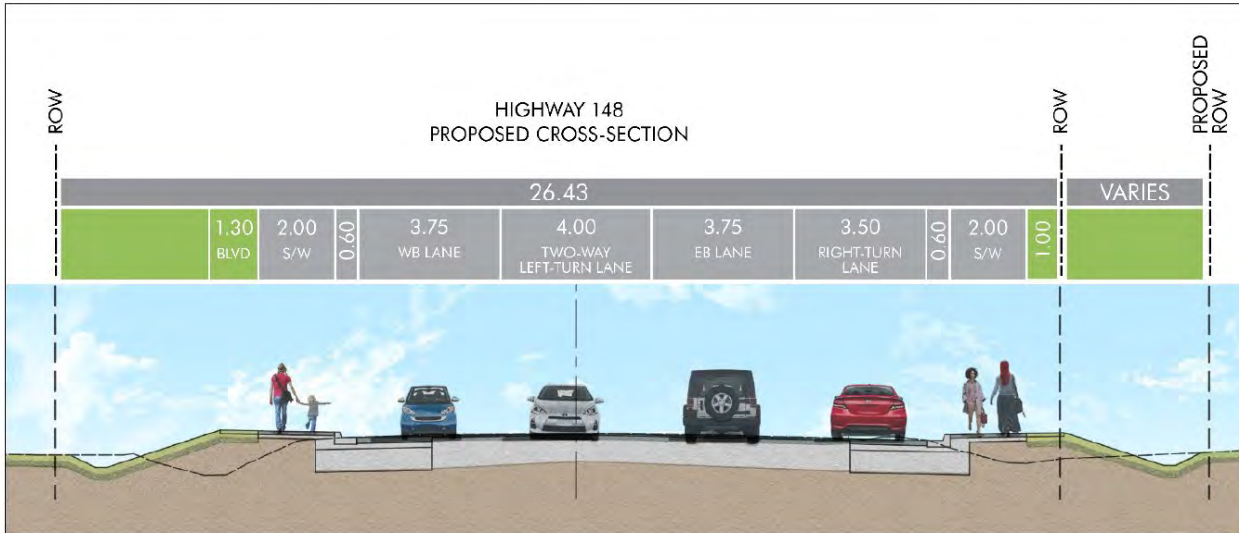


**FIGURE 7 – RECOMMENDED CROSS SECTION – INITIAL EVALUATION (TESR)**

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.

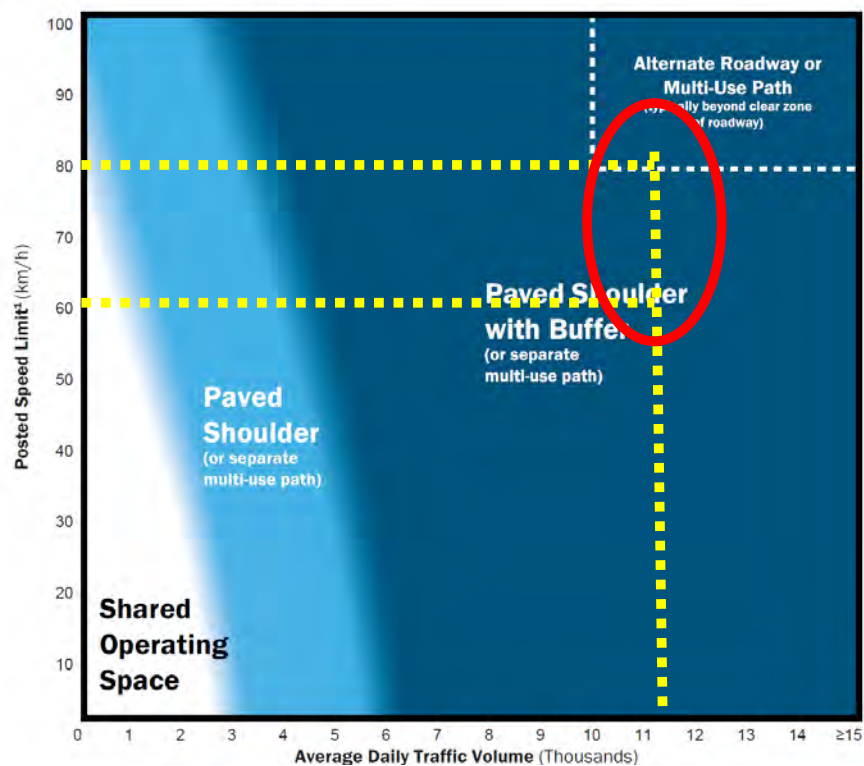
**We would also suggest that the City and Township monitor the need for cycling infrastructure on the side roads between the Algonquin Trail and the developments along Highway 148, as these may become popular routes to access the services along Highway 148.**

**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.

### Desirable Cycling Facility Pre-Selection Nomograph Rural Context<sup>1</sup> (Step 1)



**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.**



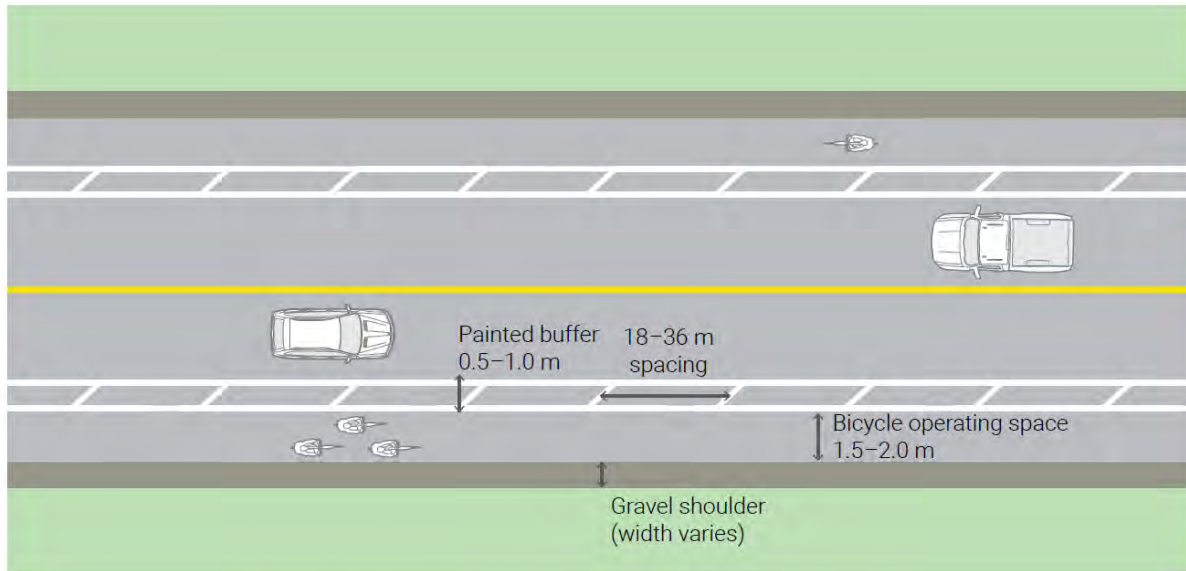


Figure 4.74 – Roadway with Buffered Paved Shoulders

## 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 turning 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.**

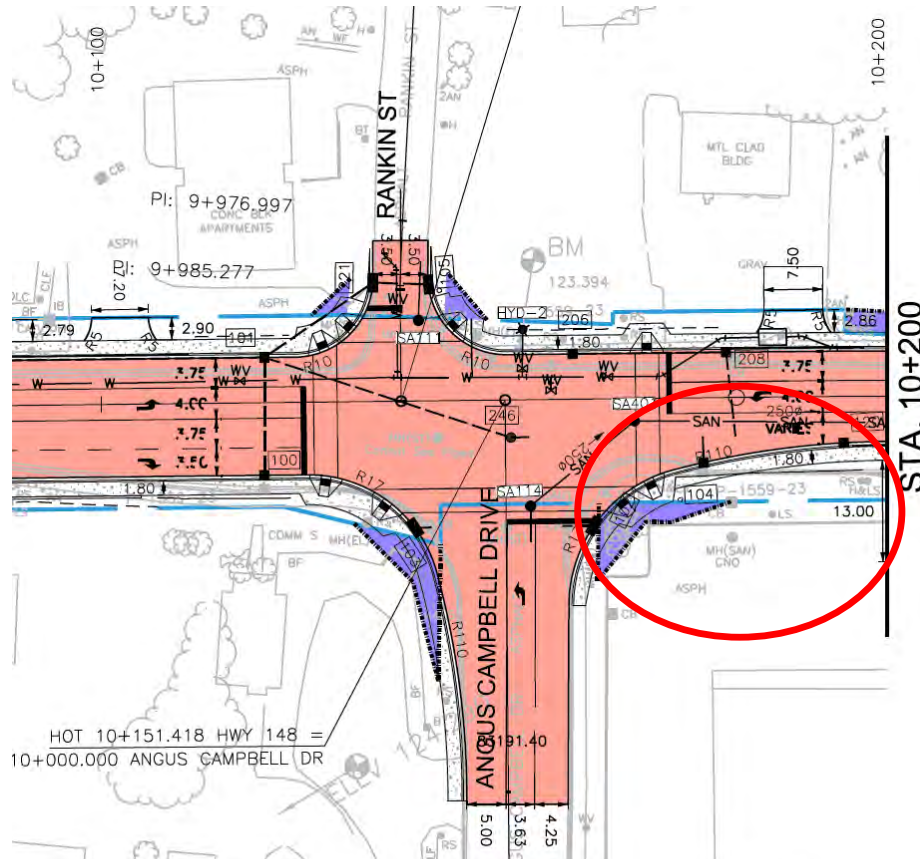
We would note that directing too much traffic to a limited number of sideroad intersections may not benefit the operation of Highway 148 either. Increased sideroad volumes will require a greater proportion of the available green time at the signalized intersections along Highway 148, reducing the available 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





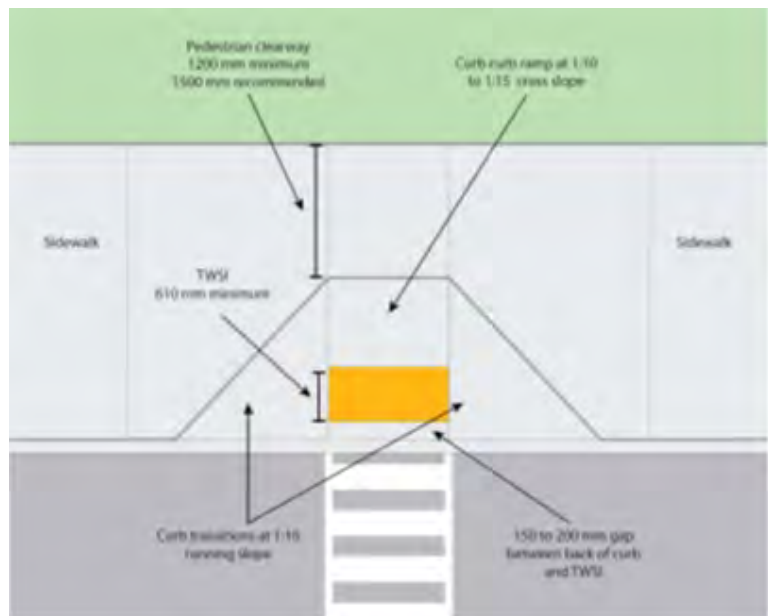
and promote slower speeds on turns. This comment is noted at a number of other intersections along the Highway 148 corridor as well.

**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.



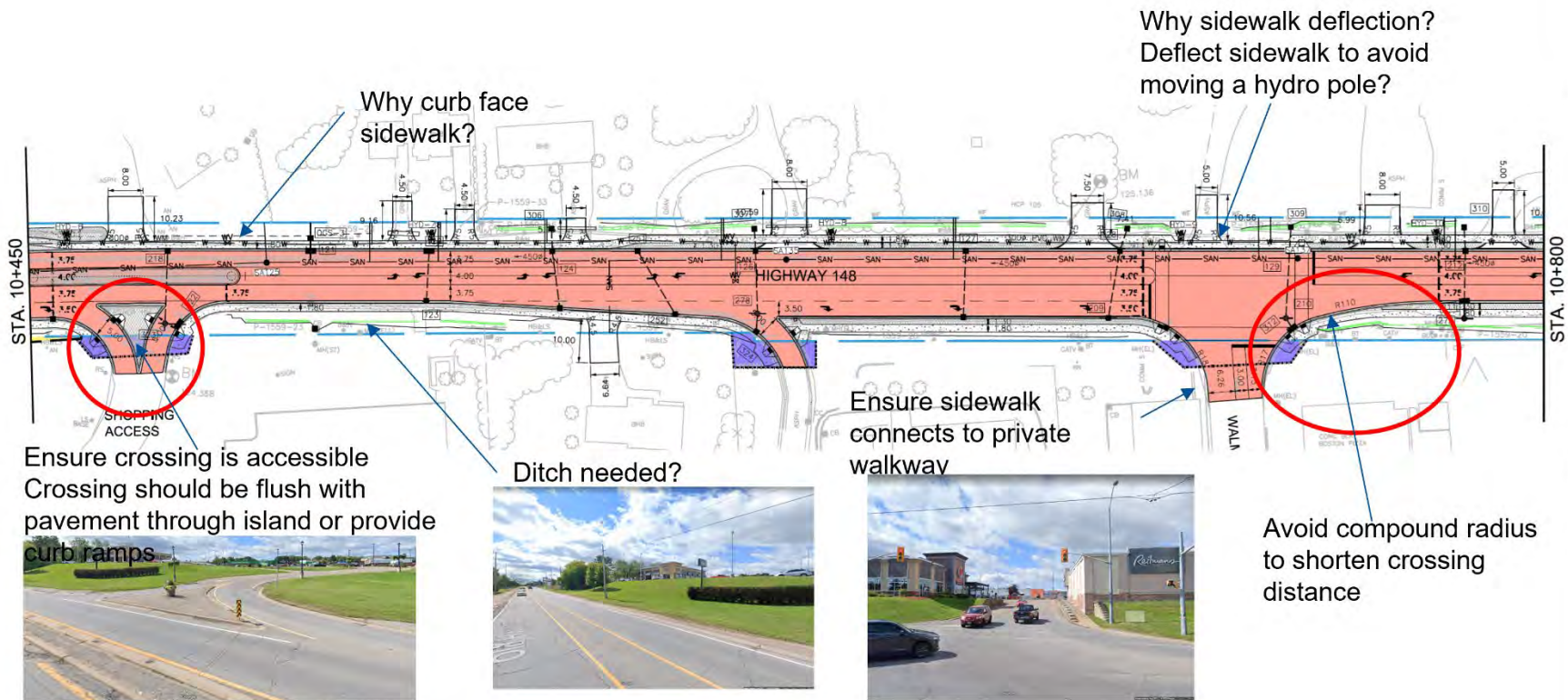
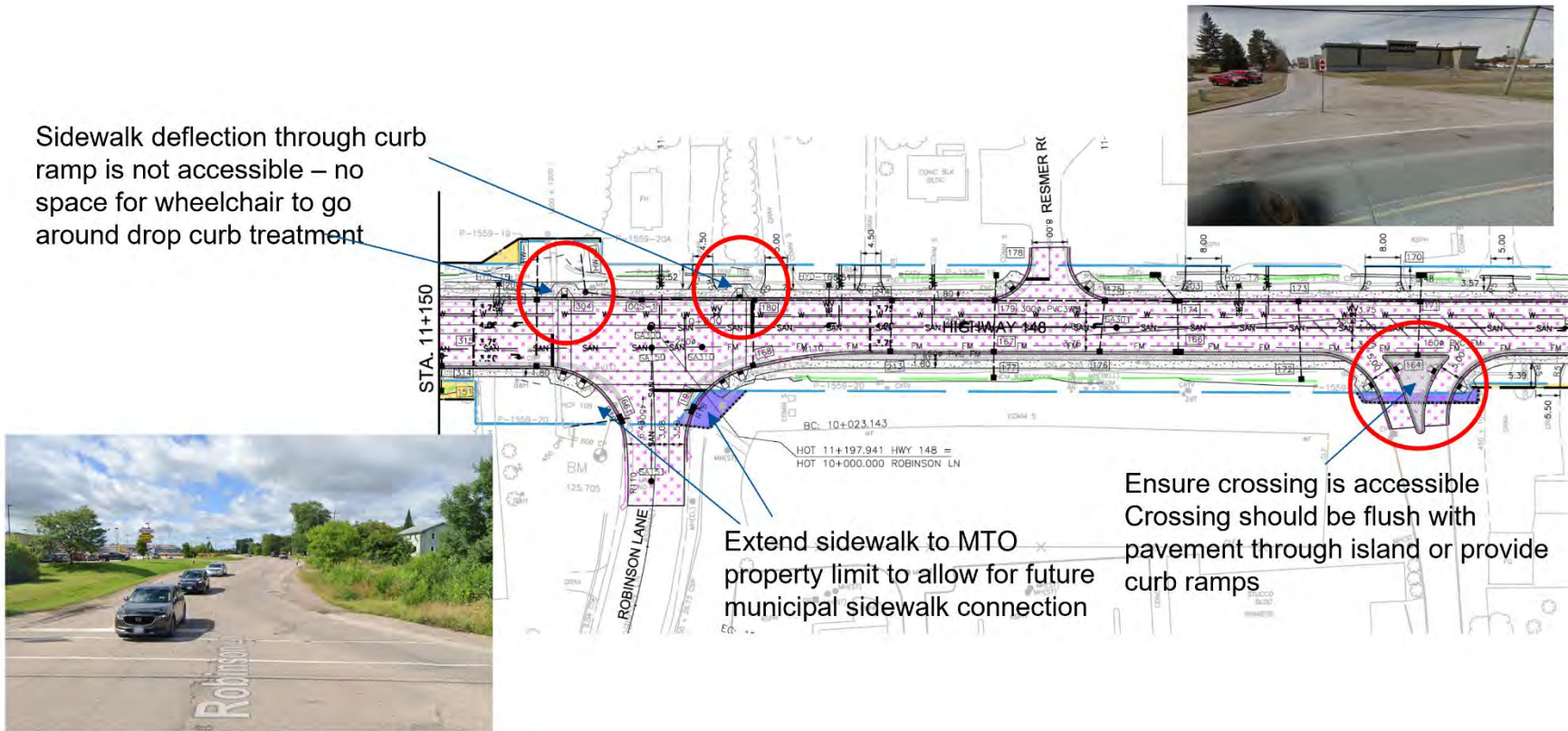


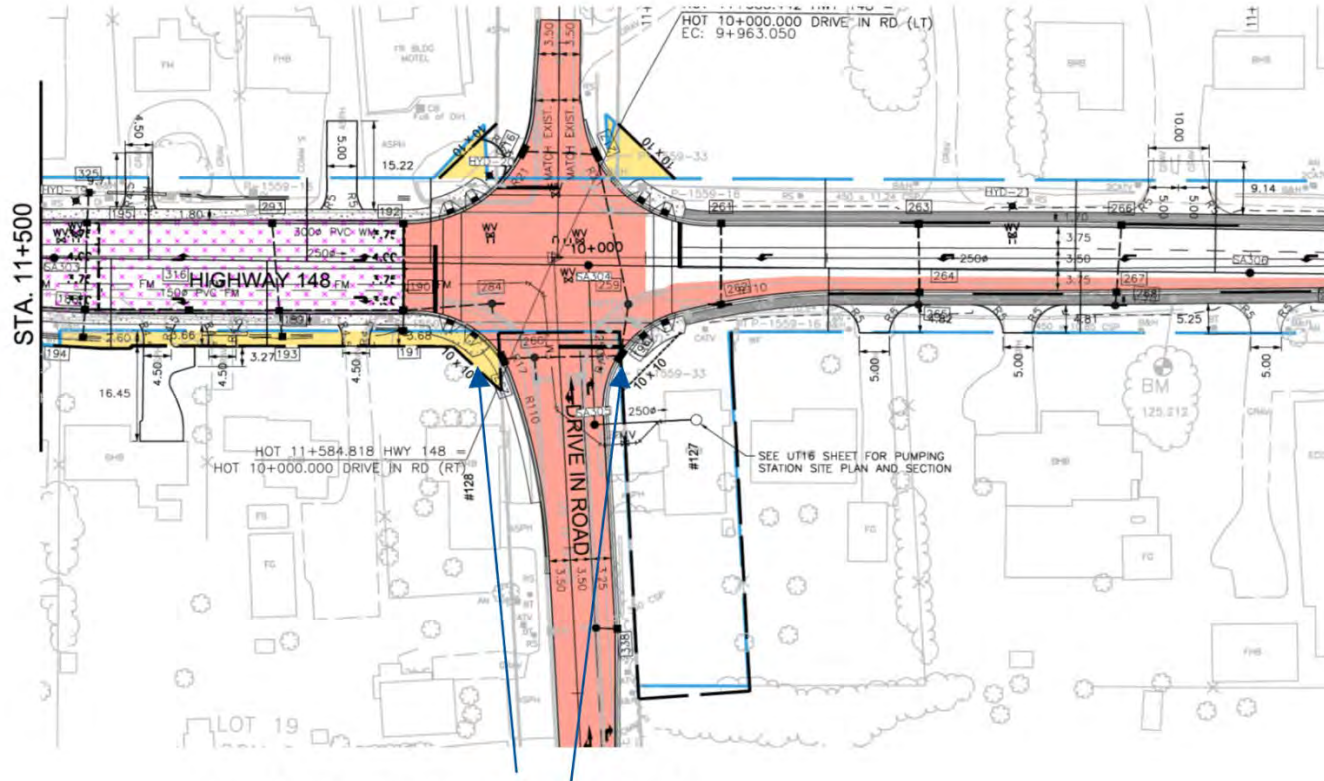
FIGURE 13 – MALL ENTRANCE TO WALMART INTERSECTION REVIEW AREAS





**FIGURE 14 – ROBINSON LANE TO MALL ENTRANCE REVIEW AREAS**





Extend sidewalk to MTO  
property limit to allow for future  
municipal sidewalk connection

**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 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.

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

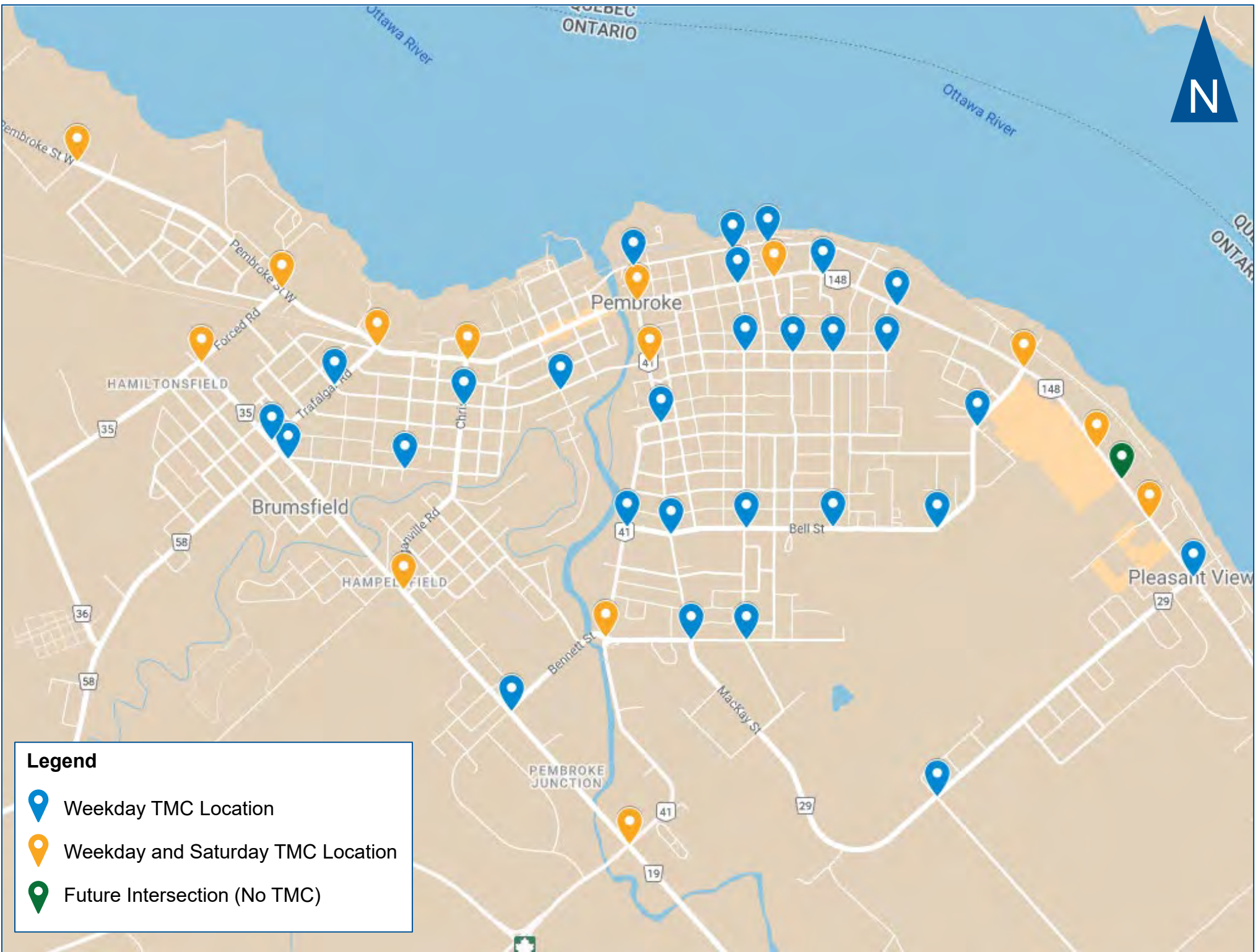


# Appendix J

## Traffic Count Data









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@pts1.com

Count Name: Alfred Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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	-	-

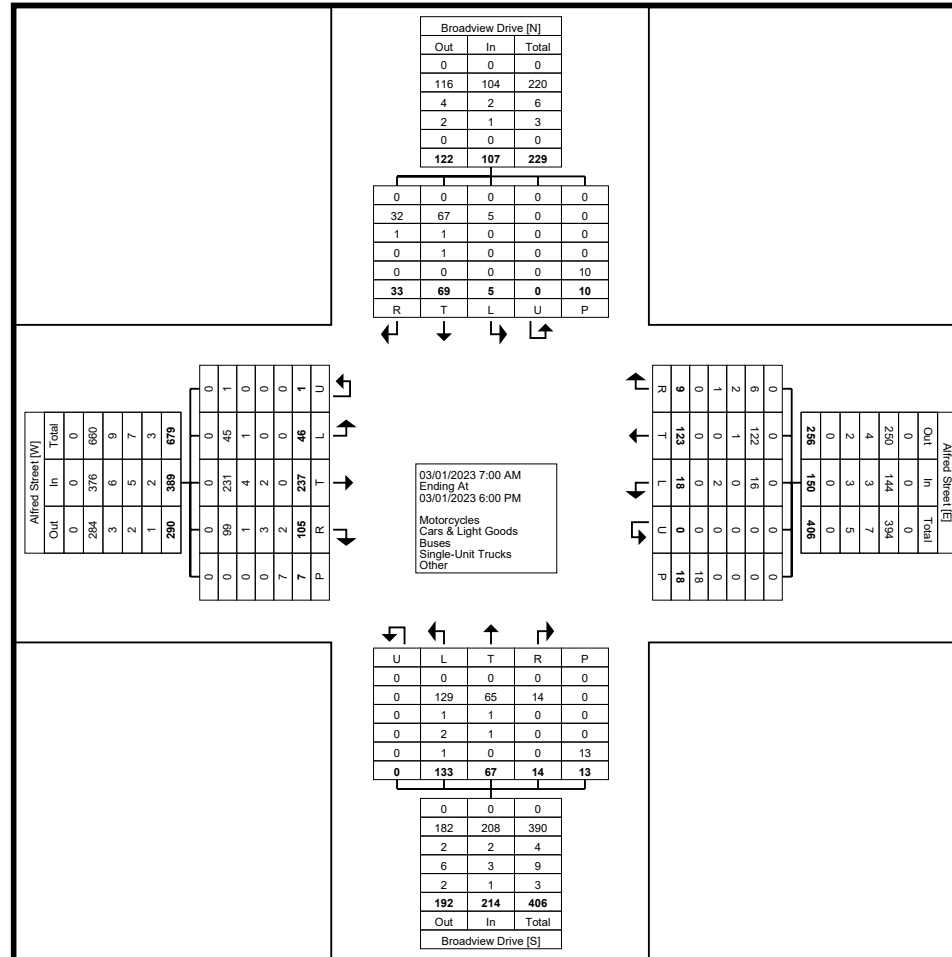




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Alfred Street & Broadview Drive  
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@ptsI.com

Count Name: Alfred Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (8:45 AM)

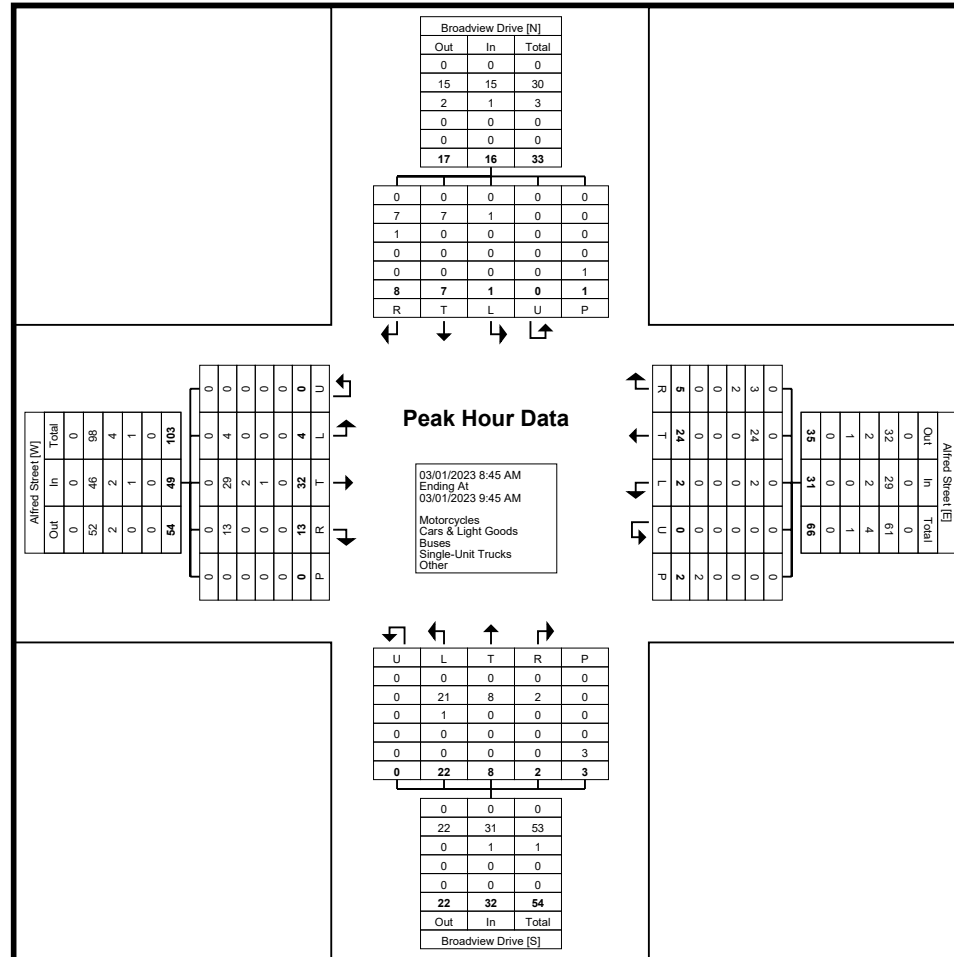
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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  
Page No: 5



Turning Movement Peak Hour Data Plot (8:45 AM)





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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519-896-3163 cbowness@ptsI.com

Count Name: Alfred Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

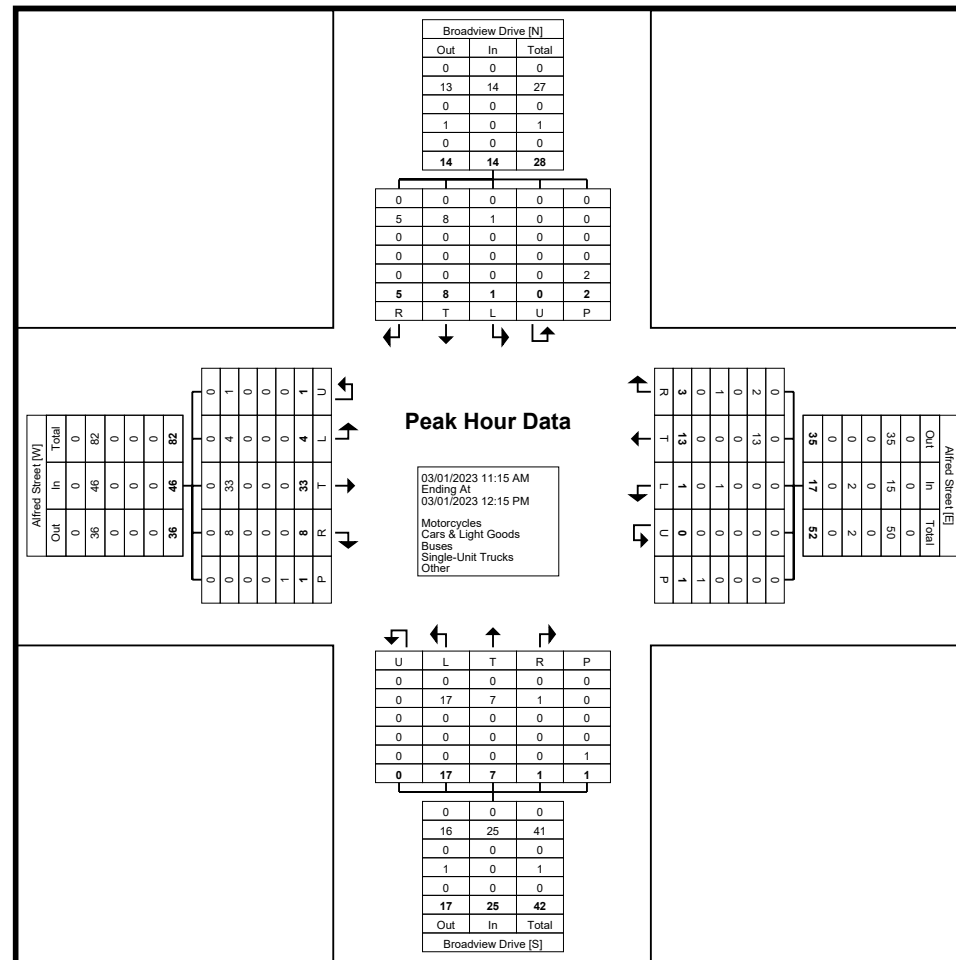
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>4</b>	<b>33</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>46</b>	<b>1</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>17</b>	<b>17</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>25</b>	<b>1</b>	<b>8</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>14</b>	<b>102</b>
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@ptsI.com

Count Name: Alfred Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsI.com

Count Name: Alfred Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Broadview Drive Northbound						Broadview Drive Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>14</b>	<b>44</b>	<b>20</b>	<b>0</b>	<b>1</b>	<b>78</b>	<b>4</b>	<b>21</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>26</b>	<b>17</b>	<b>19</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>39</b>	<b>1</b>	<b>13</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>19</b>	<b>162</b>
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	-	-

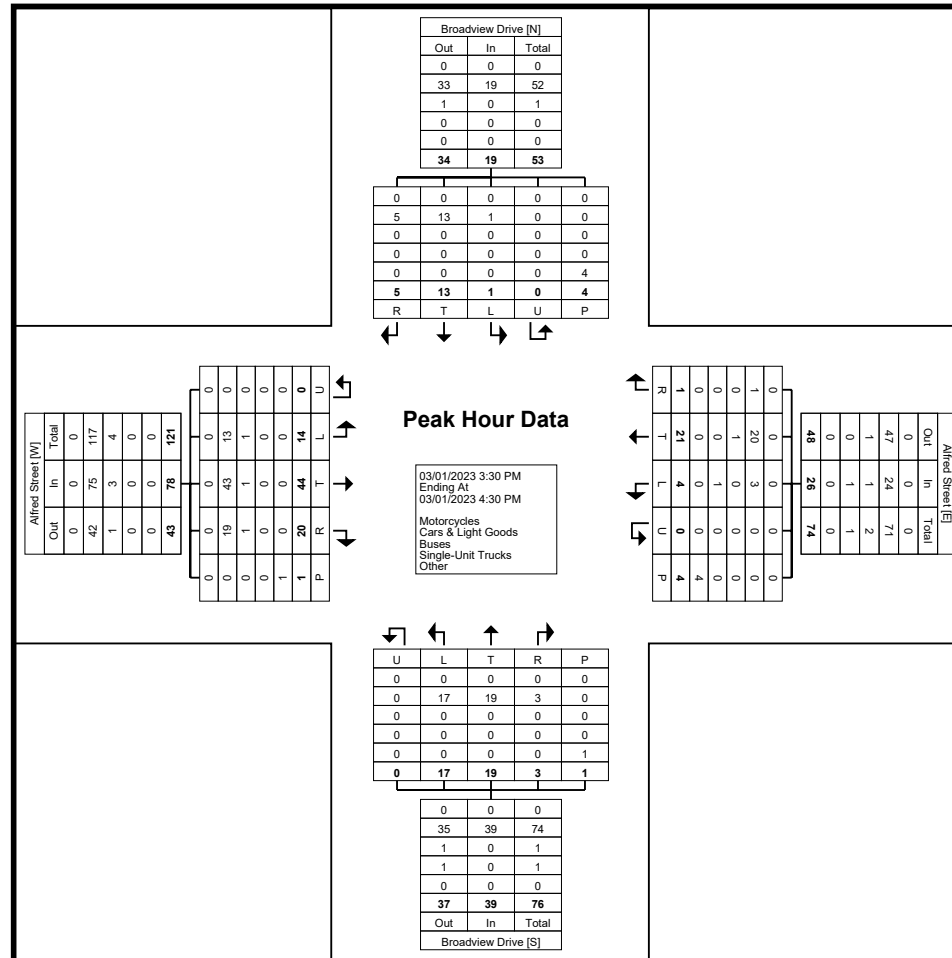




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Alfred Street & Broadview 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 cdowness@ptsll.com

Count Name: Alfred Street & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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	-	-

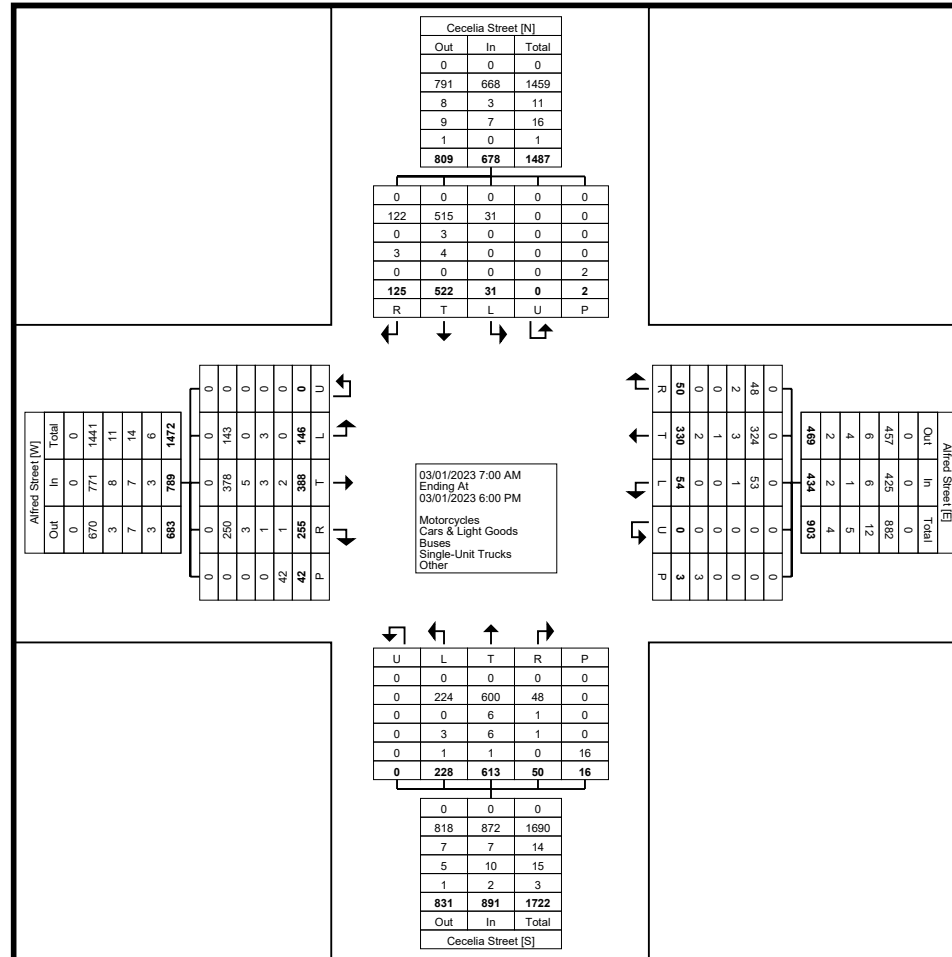




Paradigm Transportation Solutions Limited  
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Count Name: Alfred Street & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 3



Turning Movement Data Plot

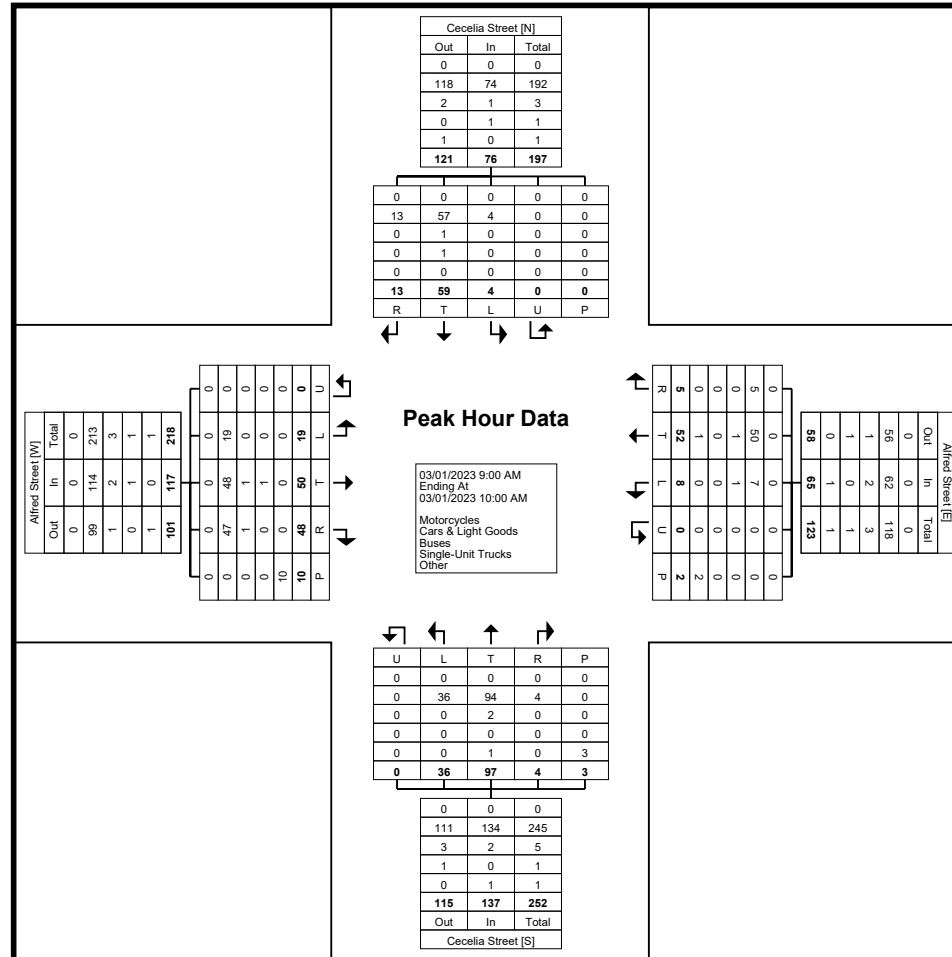




Paradigm Transportation Solutions Limited  
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Count Name: Alfred Street & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsll.com

Count Name: Alfred Street & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

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

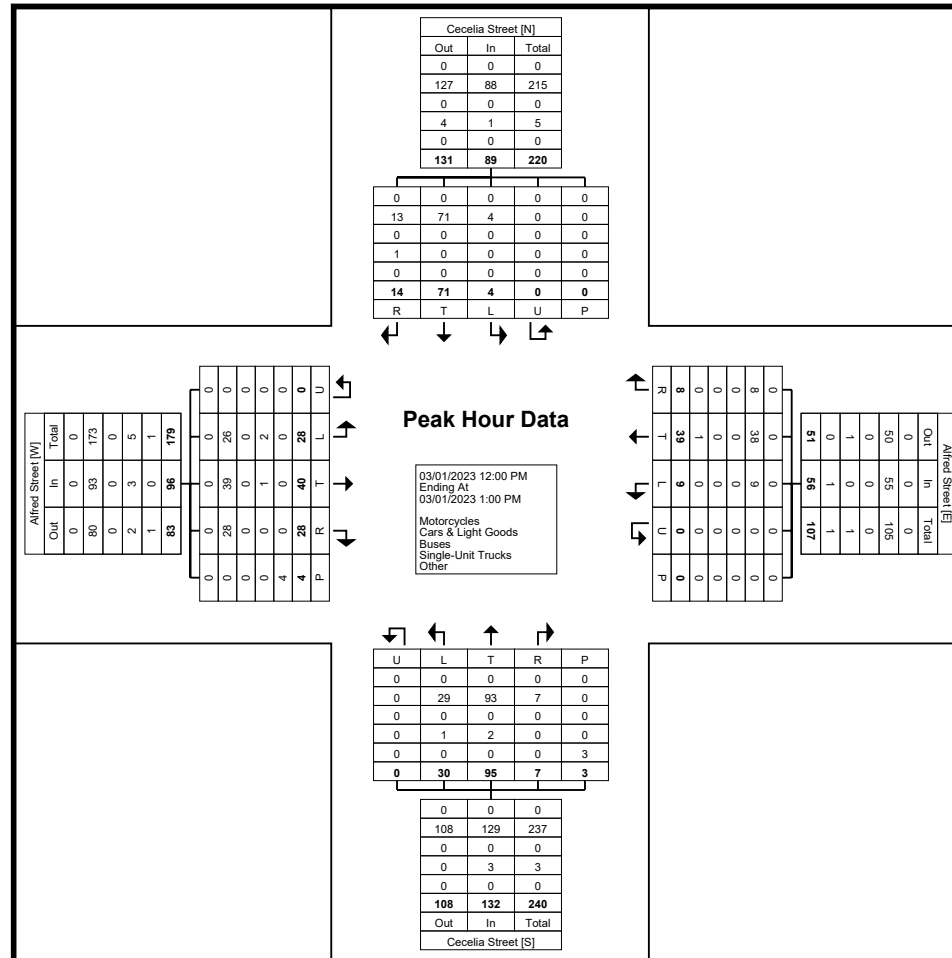
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>28</b>	<b>40</b>	<b>28</b>	<b>0</b>	<b>4</b>	<b>96</b>	<b>9</b>	<b>39</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>30</b>	<b>95</b>	<b>7</b>	<b>0</b>	<b>3</b>	<b>132</b>	<b>4</b>	<b>71</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>89</b>	<b>373</b>
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  
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsll.com

Count Name: Alfred Street & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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	-	-

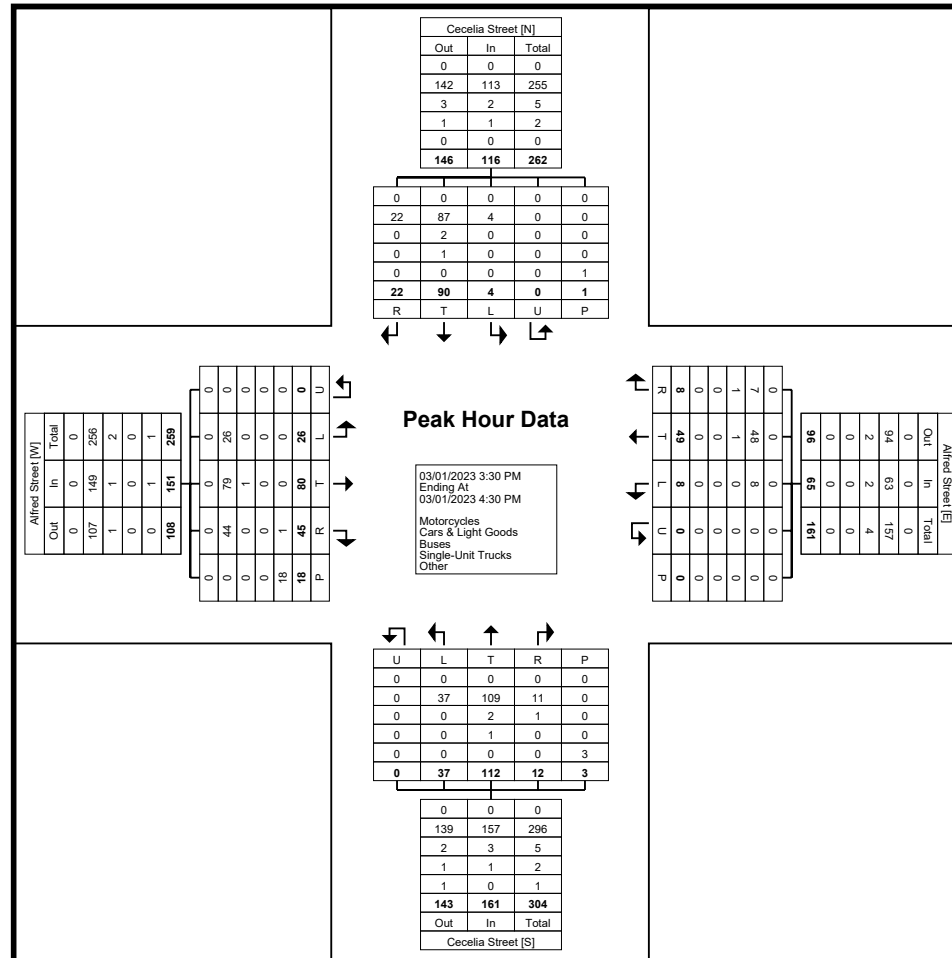




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Cecelia Street  
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@ptsI.com

Count Name: Alfred Street & Fraser Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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	-	-

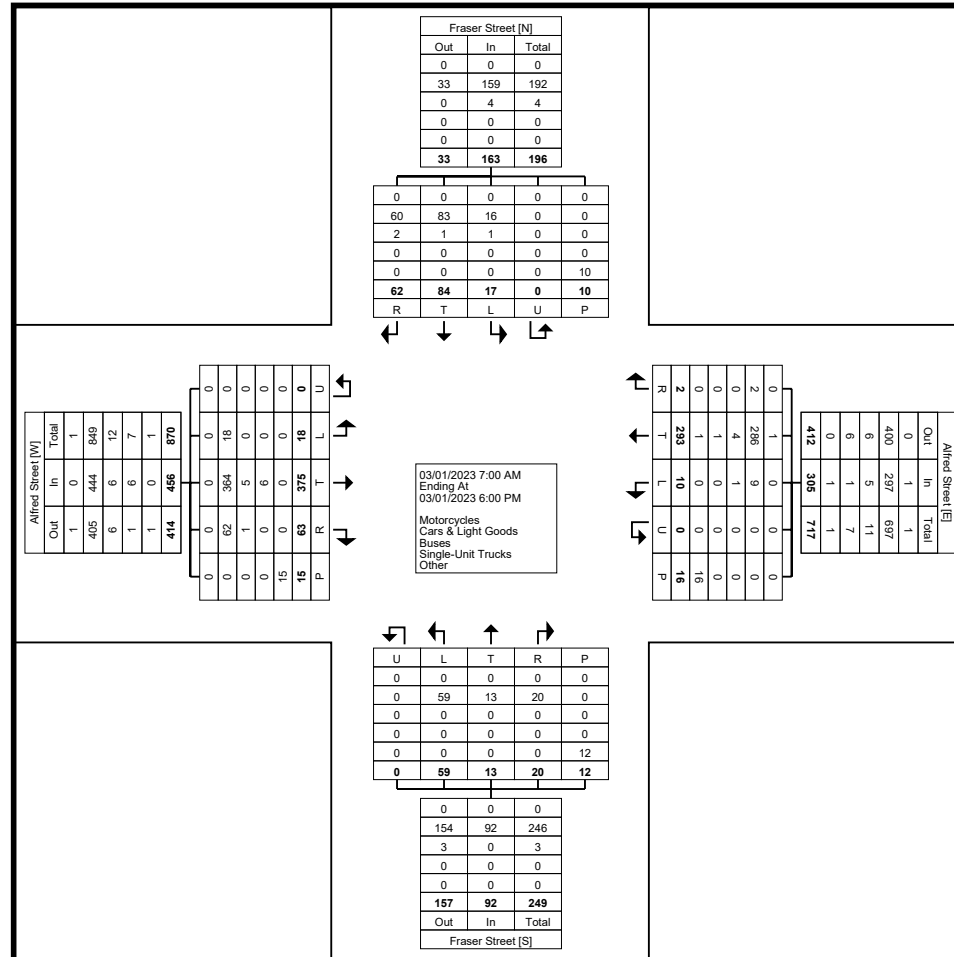




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: Alfred Street & Fraser 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@ptsll.com

Count Name: Alfred Street & Fraser Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

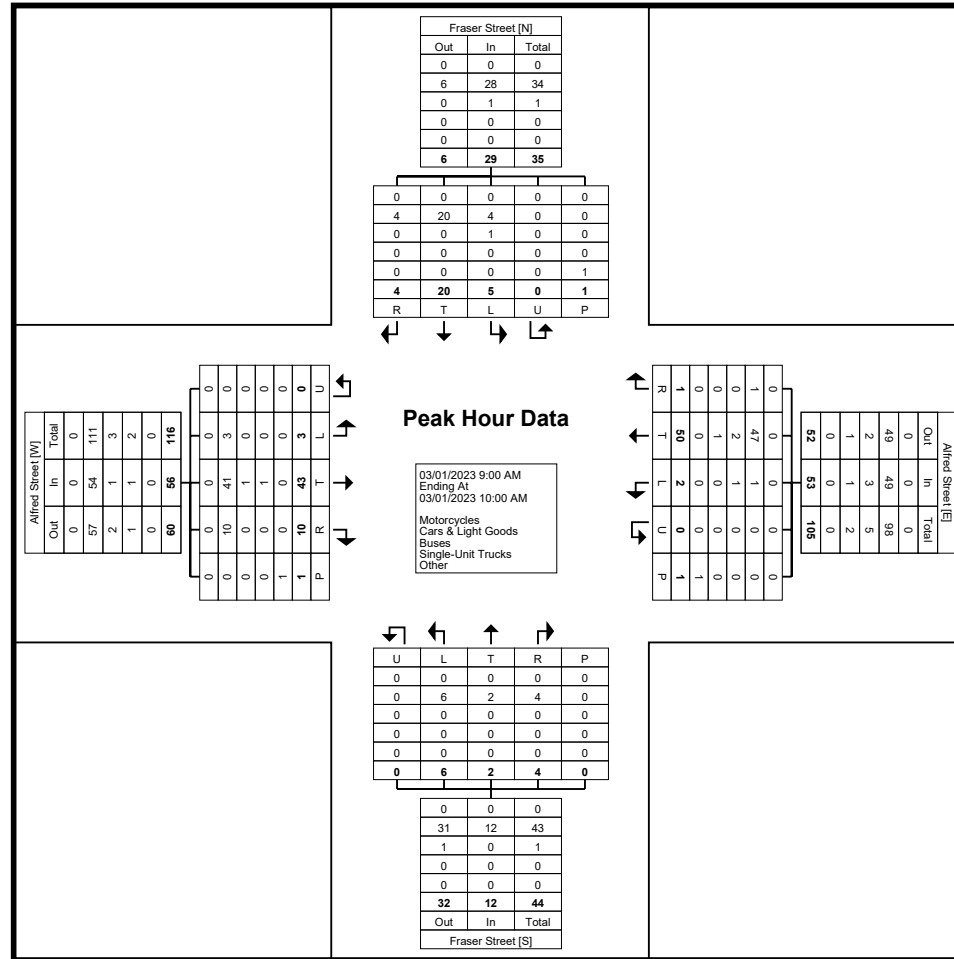
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
9:00 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
<b>Total</b>	<b>3</b>	<b>43</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>56</b>	<b>2</b>	<b>50</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>53</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>5</b>	<b>20</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>29</b>	<b>150</b>
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  
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Count Name: Alfred Street & Fraser Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsI.com

Count Name: Alfred Street & Fraser Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>2</b>	<b>43</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>53</b>	<b>2</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>39</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>5</b>	<b>13</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>128</b>
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  
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Count Name: Alfred Street & Fraser Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Fraser Street Northbound						Fraser Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>5</b>	<b>78</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>96</b>	<b>2</b>	<b>42</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>45</b>	<b>11</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>21</b>	<b>1</b>	<b>11</b>	<b>12</b>	<b>0</b>	<b>4</b>	<b>24</b>	<b>186</b>
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 & Rosewood Avenue  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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



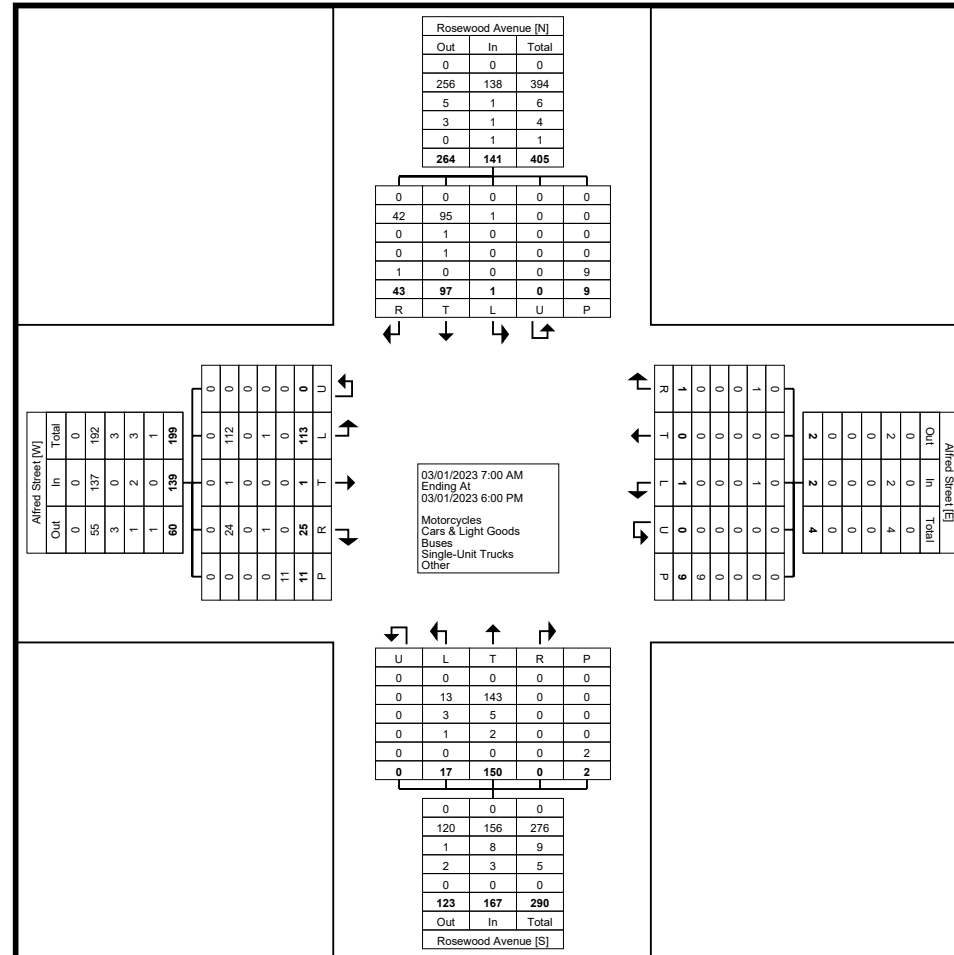
4:45 PM	2	0	1	0	0	3	0	0	0	0	0	0	0	6	0	0	0	6	0	4	4	0	0	8	17
Hourly Total	16	0	2	0	2	18	0	0	0	0	0	0	0	20	0	0	0	20	0	10	9	0	0	19	57
5:00 PM	6	0	3	0	0	9	0	0	0	0	2	0	1	8	0	0	0	9	0	4	1	0	0	5	23
5:15 PM	8	0	0	0	0	8	0	0	0	0	2	0	0	7	0	0	0	7	0	7	1	0	1	8	23
5:30 PM	6	0	1	0	2	7	0	0	0	0	0	0	2	5	0	0	0	7	0	5	0	0	1	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@ptsI.com

Count Name: Alfred Street & Rosewood Avenue  
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@ptsll.com

Count Name: Alfred Street & Rosewood Avenue  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (8:45 AM)

Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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	-	-







Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Rosewood Avenue  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

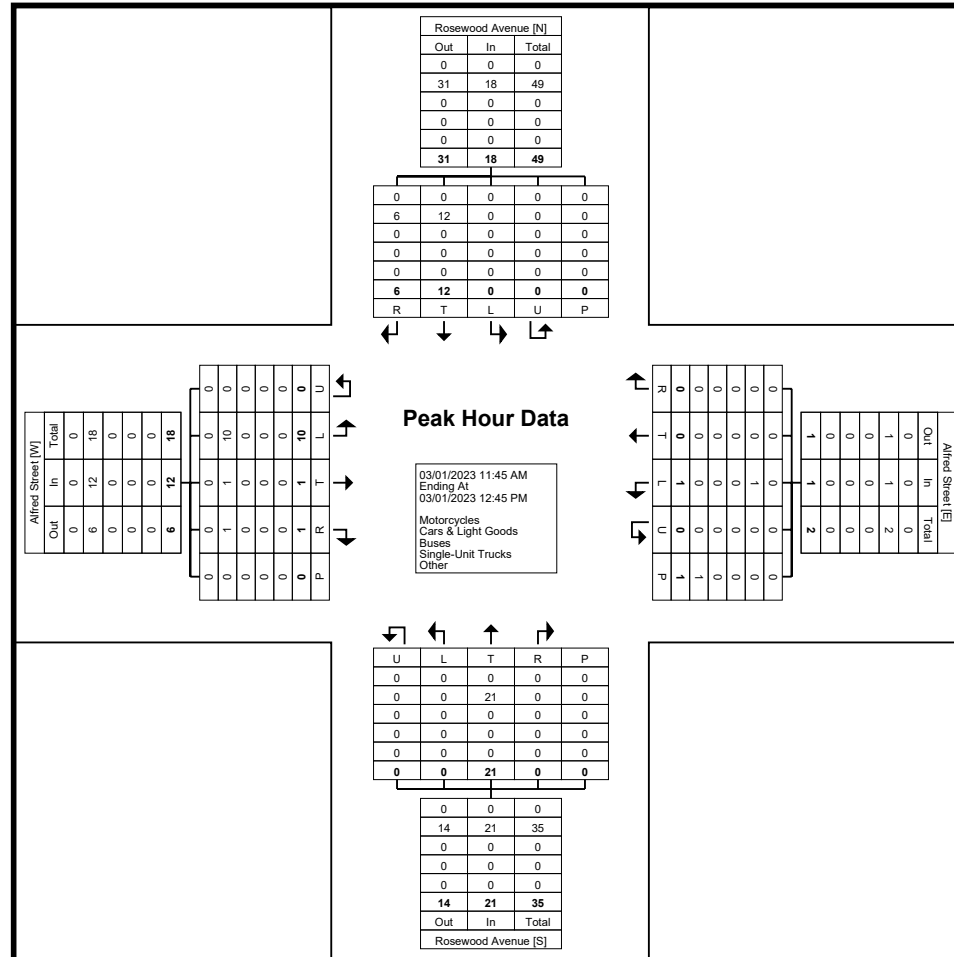
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Alfred Street & Rosewood Avenue  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsll.com

Count Name: Alfred Street & Rosewood Avenue  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

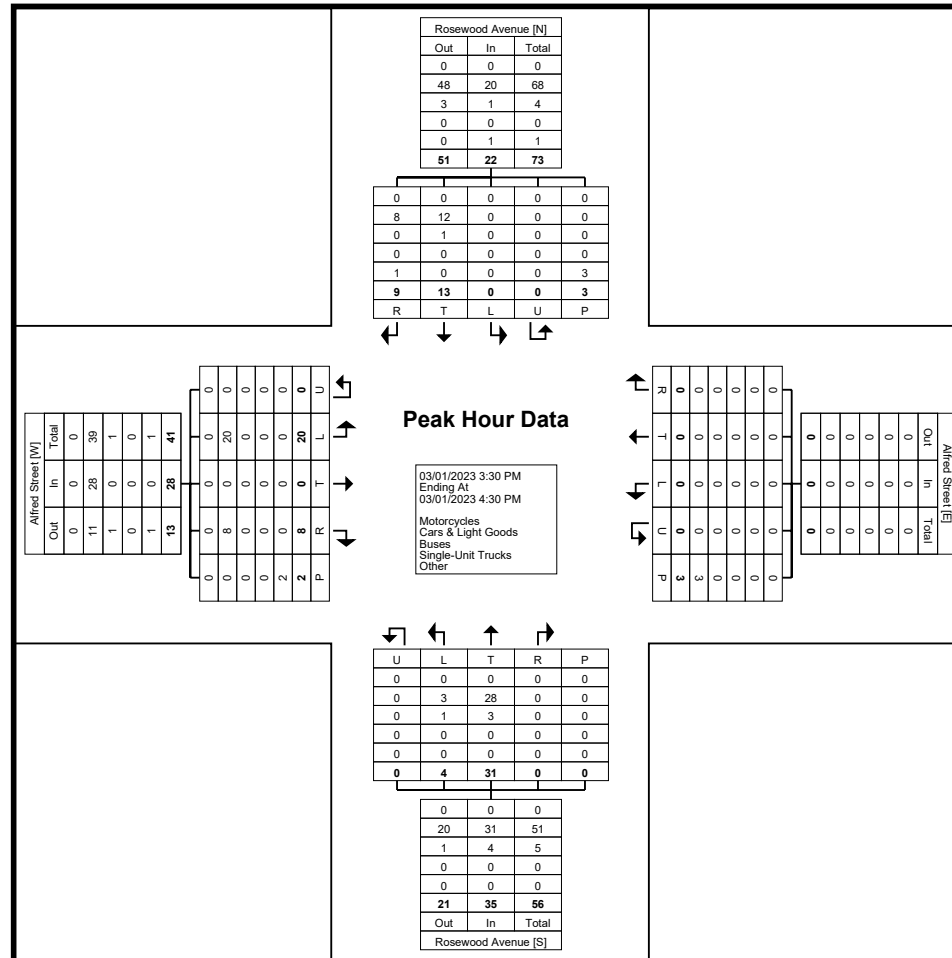
Start Time	Alfred Street Eastbound						Alfred Street Westbound						Rosewood Avenue Northbound						Rosewood Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>20</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>13</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>85</b>
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  
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Count Name: Alfred Street & Rosewood Avenue  
 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@pts.com

Count Name: Angus Campbell Drive &  
Matheson Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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

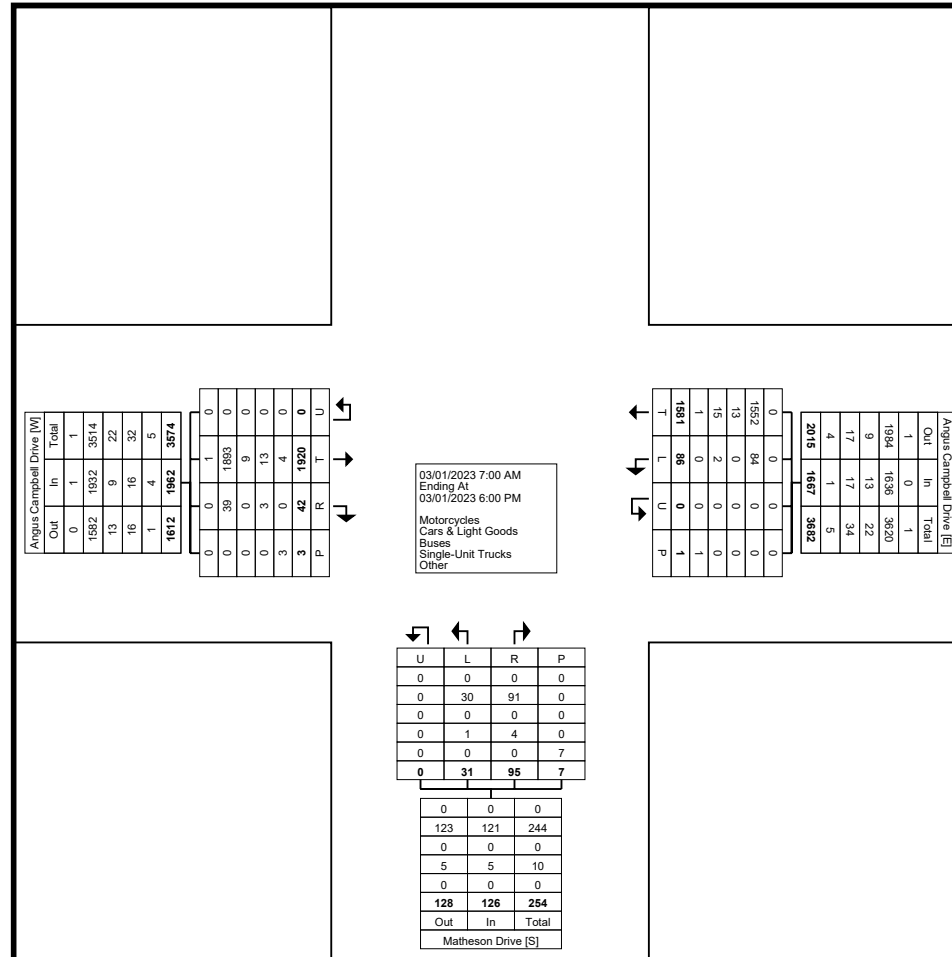
Hourly Total	316	6	0	0	322	18	259	0	0	277	4	18	0	0	22	621
5:00 PM	76	2	0	0	78	0	65	0	0	65	1	1	0	0	2	145
5:15 PM	54	0	0	0	54	3	59	0	0	62	1	1	0	0	2	118
5:30 PM	52	2	0	0	54	5	48	0	0	53	0	2	0	0	2	109
5:45 PM	47	0	0	0	47	1	53	0	0	54	0	0	0	0	0	101
Hourly Total	229	4	0	0	233	9	225	0	0	234	2	4	0	0	6	473
Grand 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@ptsil.com

Count Name: Angus Campbell Drive &  
Matheson Drive  
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@ptsI.com

Count Name: Angus Campbell Drive &  
Matheson Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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	-	-

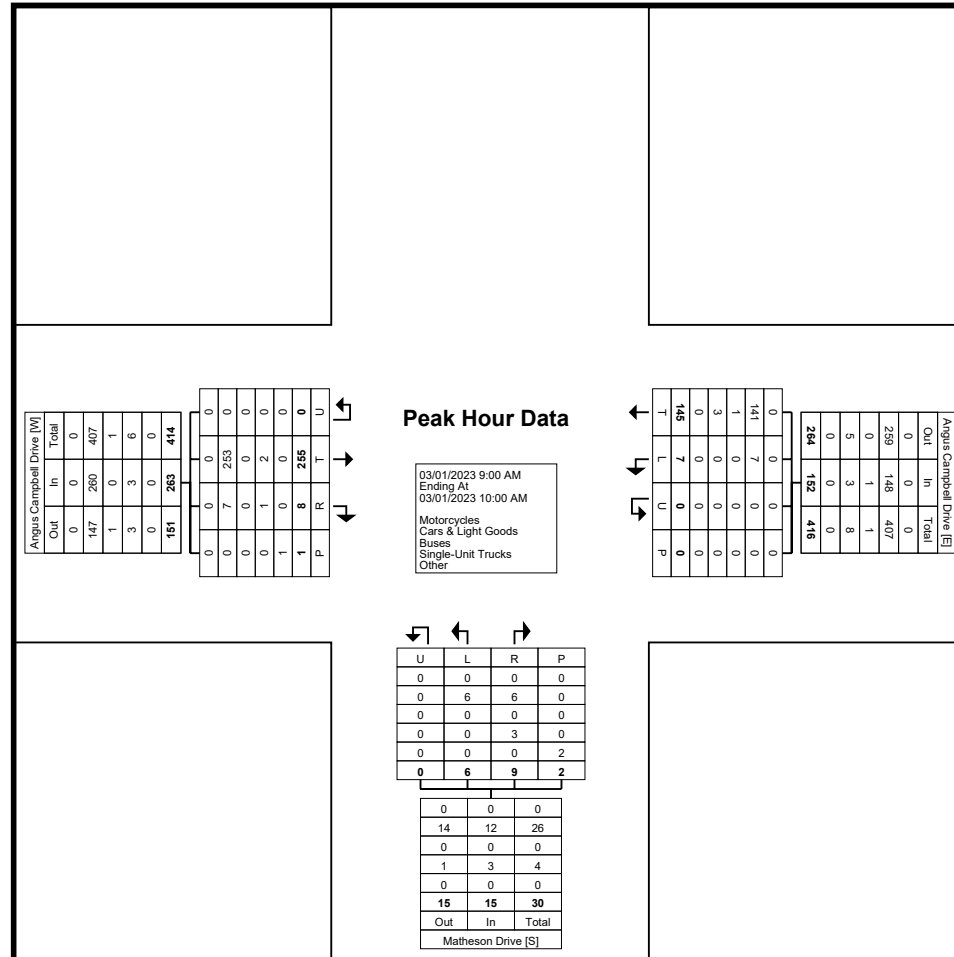




Paradigm Transportation Solutions Limited  
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Count Name: Angus Campbell Drive &  
Matheson Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsI.com

Count Name: Angus Campbell Drive &  
Matheson Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:00 AM)

Start Time	Angus Campbell Drive Eastbound					Angus Campbell Drive Westbound					Matheson Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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	-	-





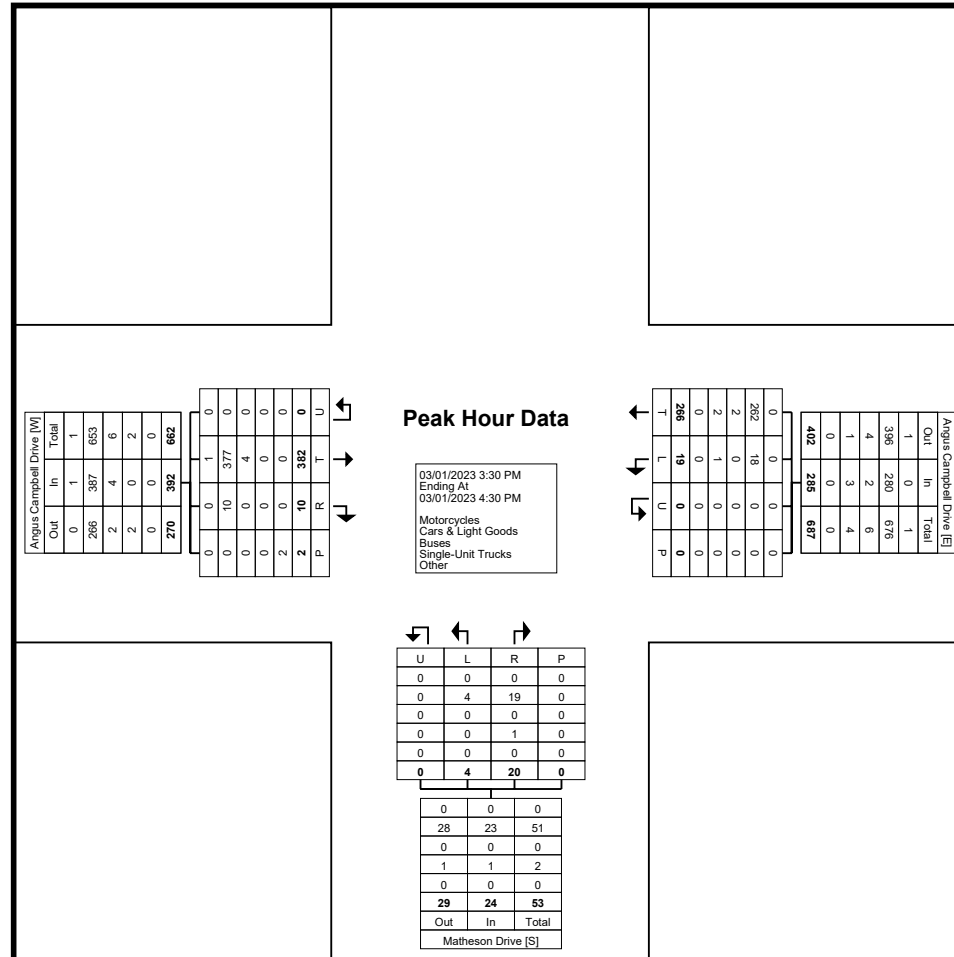




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Angus Campbell Drive &  
Matheson Drive  
Site Code: 220694  
Start Date: 03/01/2023  
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  
Page No: 1

### Turning Movement Data

Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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

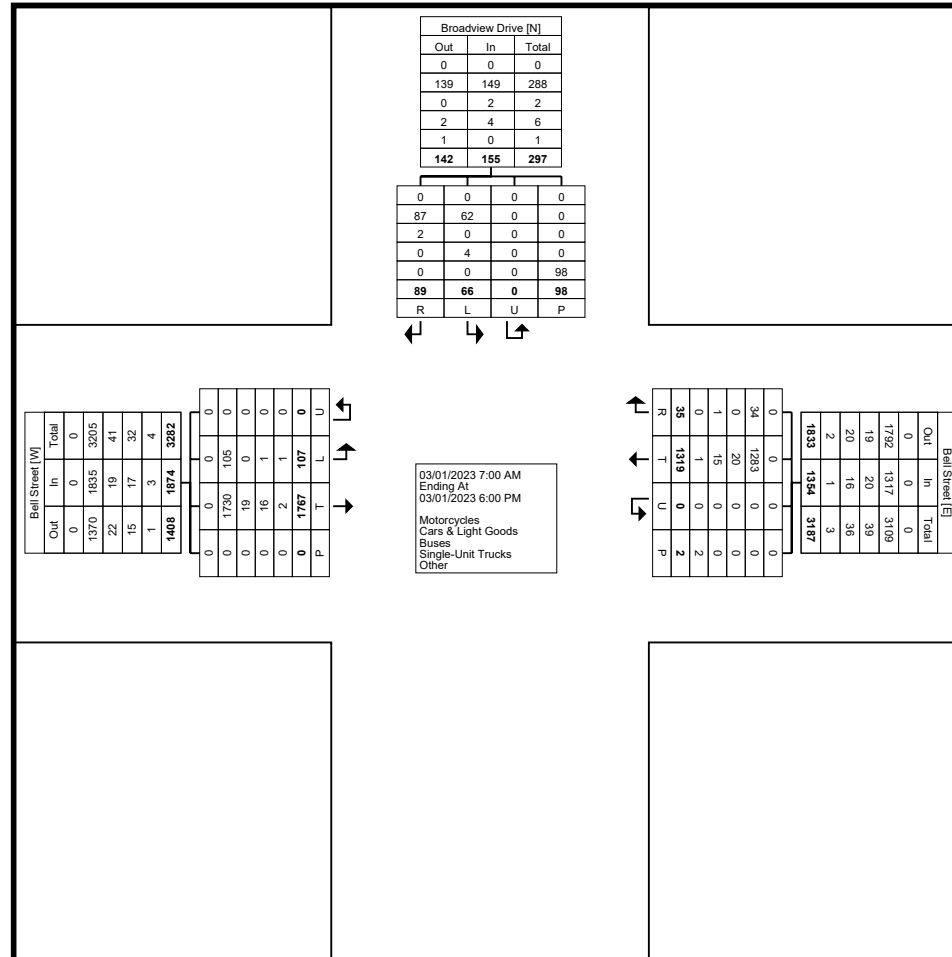
Hourly Total	15	264	0	0	279	204	10	0	1	214	9	9	0	8	18	511
5:00 PM	6	65	0	0	71	52	1	0	0	53	0	0	0	2	0	124
5:15 PM	2	49	0	0	51	42	2	0	0	44	2	0	0	0	2	97
5:30 PM	2	40	0	0	42	45	0	0	0	45	2	2	0	2	4	91
5:45 PM	0	39	0	0	39	38	0	0	0	38	0	3	0	2	3	80
Hourly Total	10	193	0	0	203	177	3	0	0	180	4	5	0	6	9	392
Grand 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@pts1.com

Count Name: Bell Street & Broadview Drive  
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@ptsil.com

Count Name: Bell Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

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

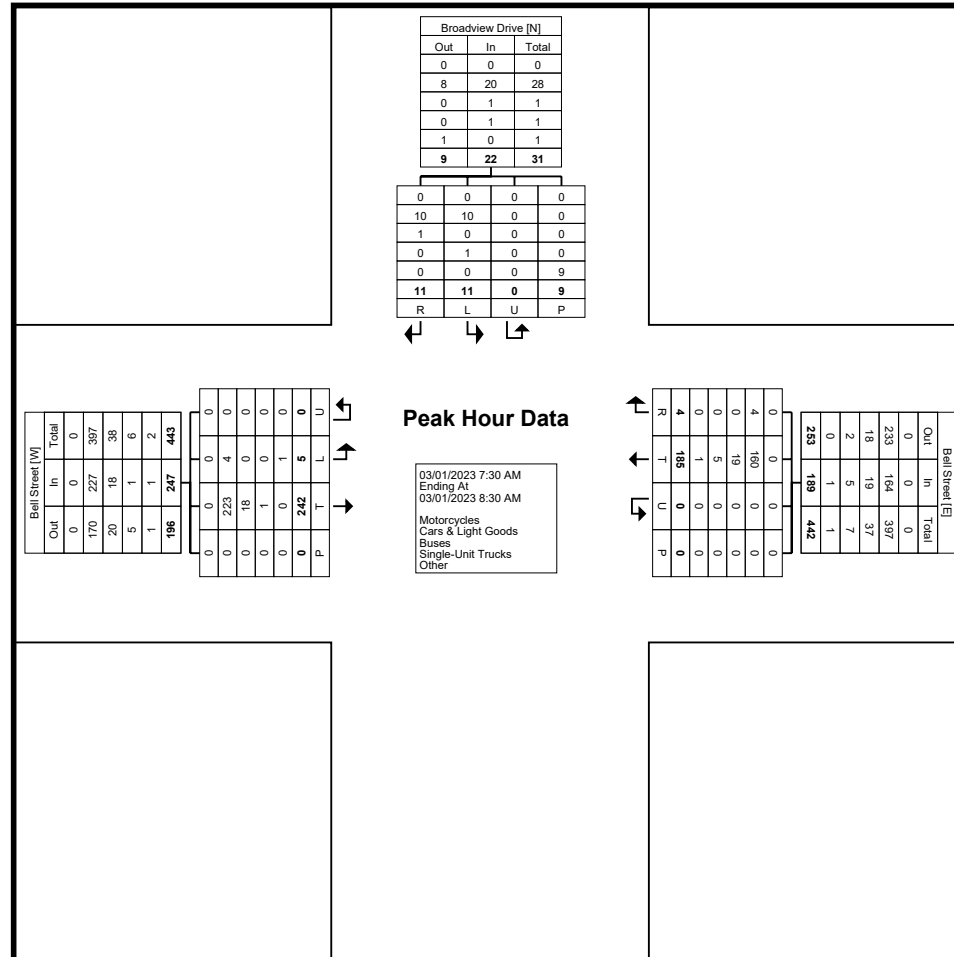
Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:30 AM	1	45	0	0	46	23	1	0	0	24	2	3	0	3	5	75
7:45 AM	2	62	0	0	64	49	0	0	0	49	1	4	0	1	5	118
8:00 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 cdowness@ptsll.com

Count Name: Bell Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsI.com

Count Name: Bell Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:00 AM)

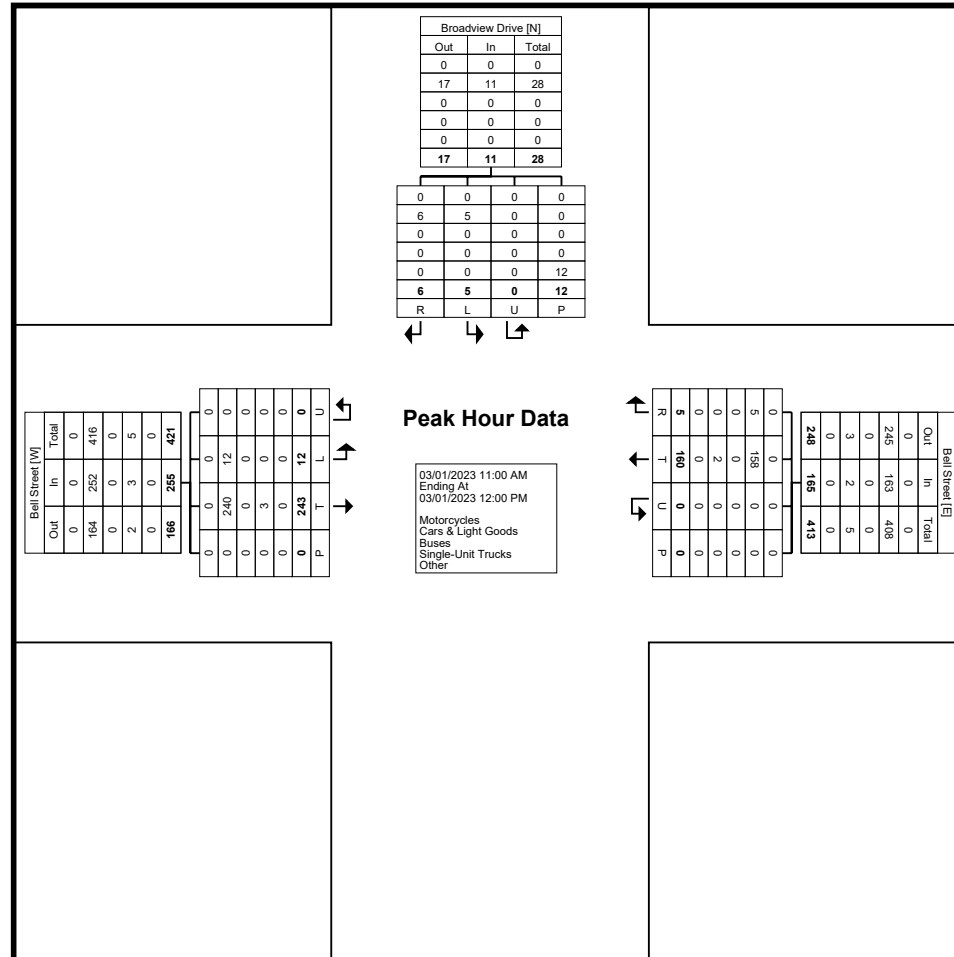
Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:00 AM	2	66	0	0	68	45	1	0	0	46	3	3	0	5	6	120
11:15 AM	5	64	0	0	69	35	0	0	0	35	0	2	0	3	2	106
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

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Count Name: Bell Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:00 AM)





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  
Page No: 8

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

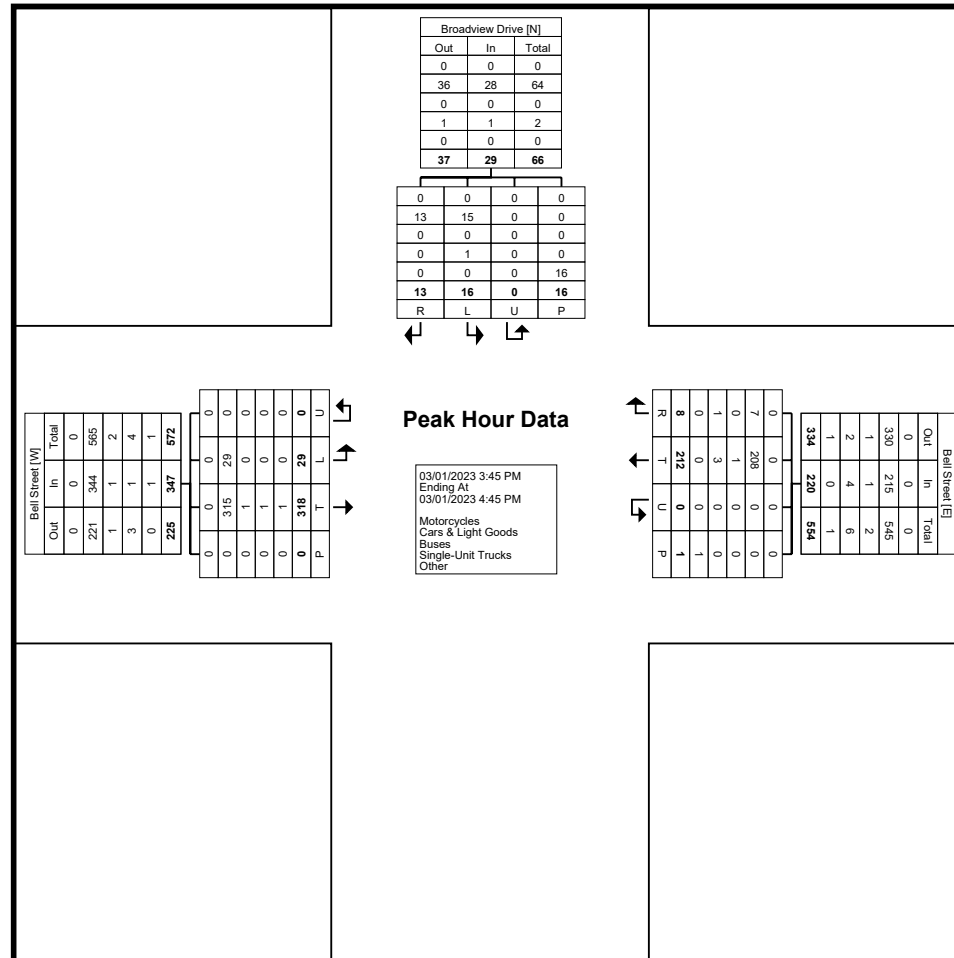
Start Time	Bell Street Eastbound					Bell Street Westbound					Broadview Drive Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:45 PM	15	106	0	0	121	46	1	0	0	47	8	5	0	8	13	181
4:00 PM	7	93	0	0	100	60	2	0	0	62	3	3	0	3	6	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 cdowness@ptsol.com

Count Name: Bell Street & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 9



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  
Page No: 1

### Turning Movement Data

Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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	-	-

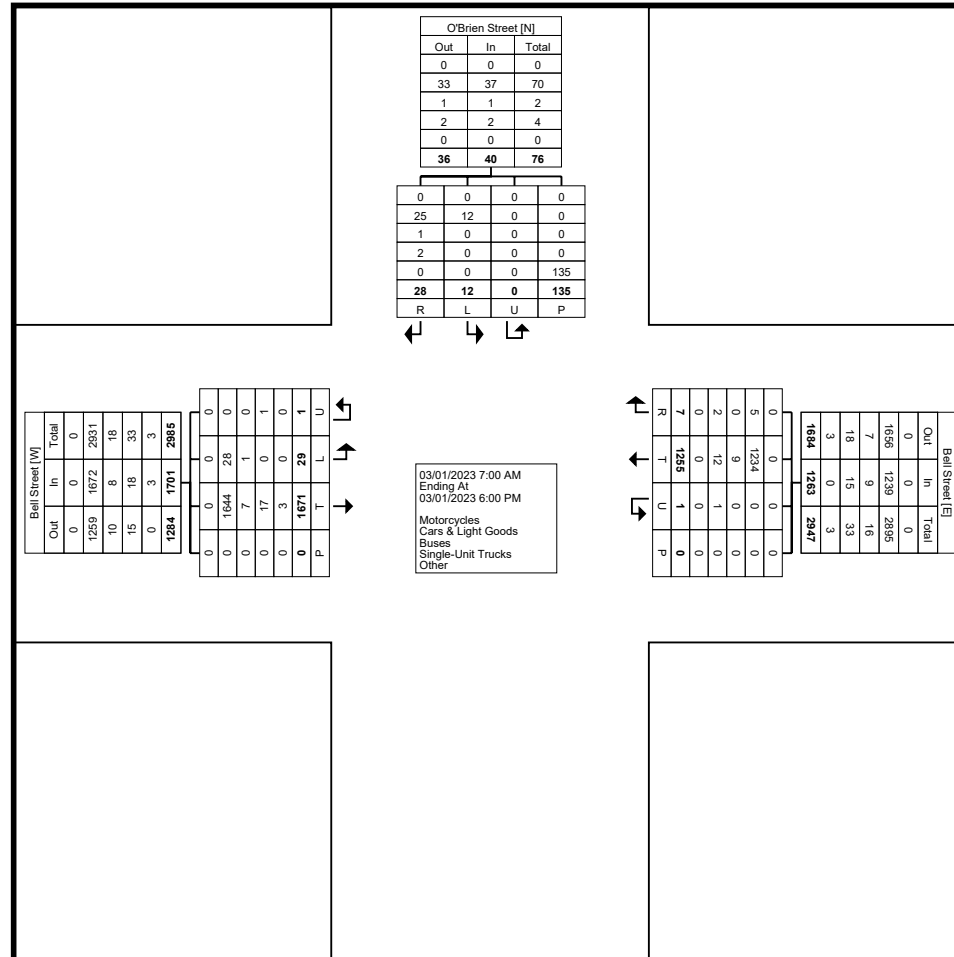




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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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@pts1.com

Count Name: Bell Street & O'Brien Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

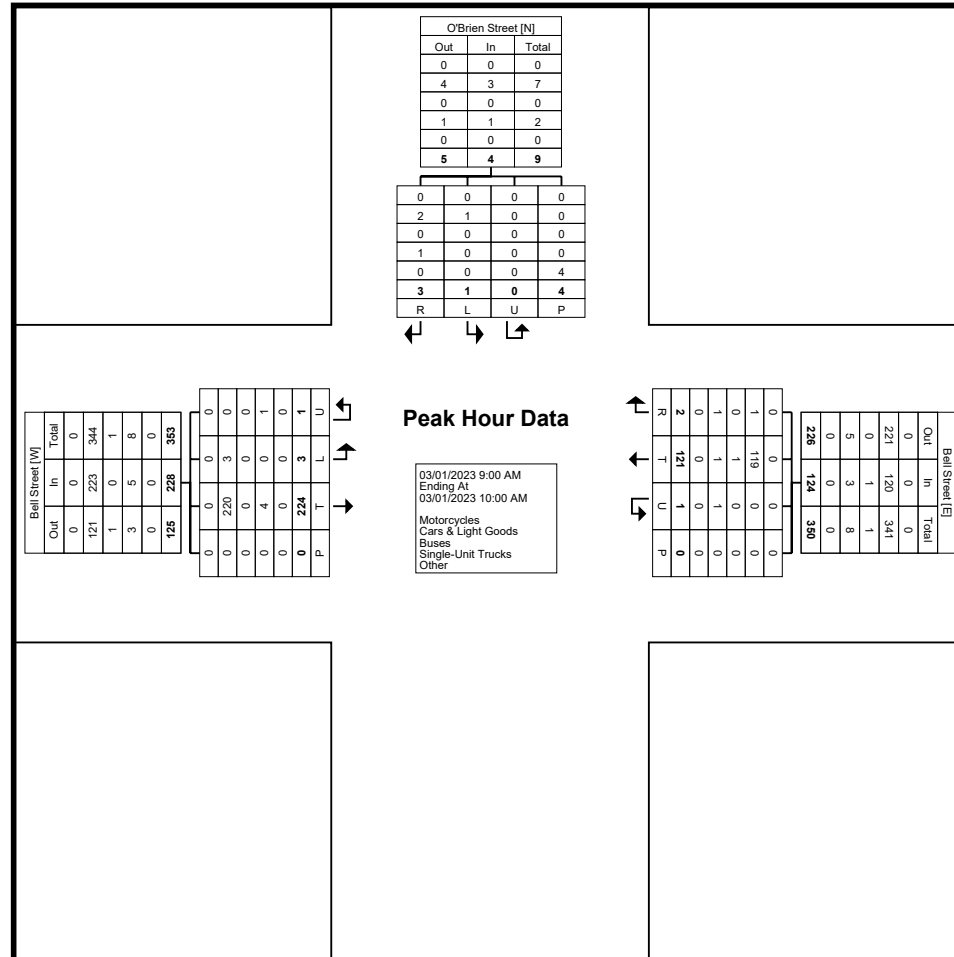
Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
9:00 AM	0	50	0	0	50	22	1	0	0	23	0	0	0	1	0	73
9:15 AM	0	57	0	0	57	26	0	0	0	26	1	0	0	0	1	84
9:30 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@pts1.com

Count Name: Bell Street & O'Brien Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsI.com

Count Name: Bell Street & O'Brien Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:00 AM)

Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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	-	-

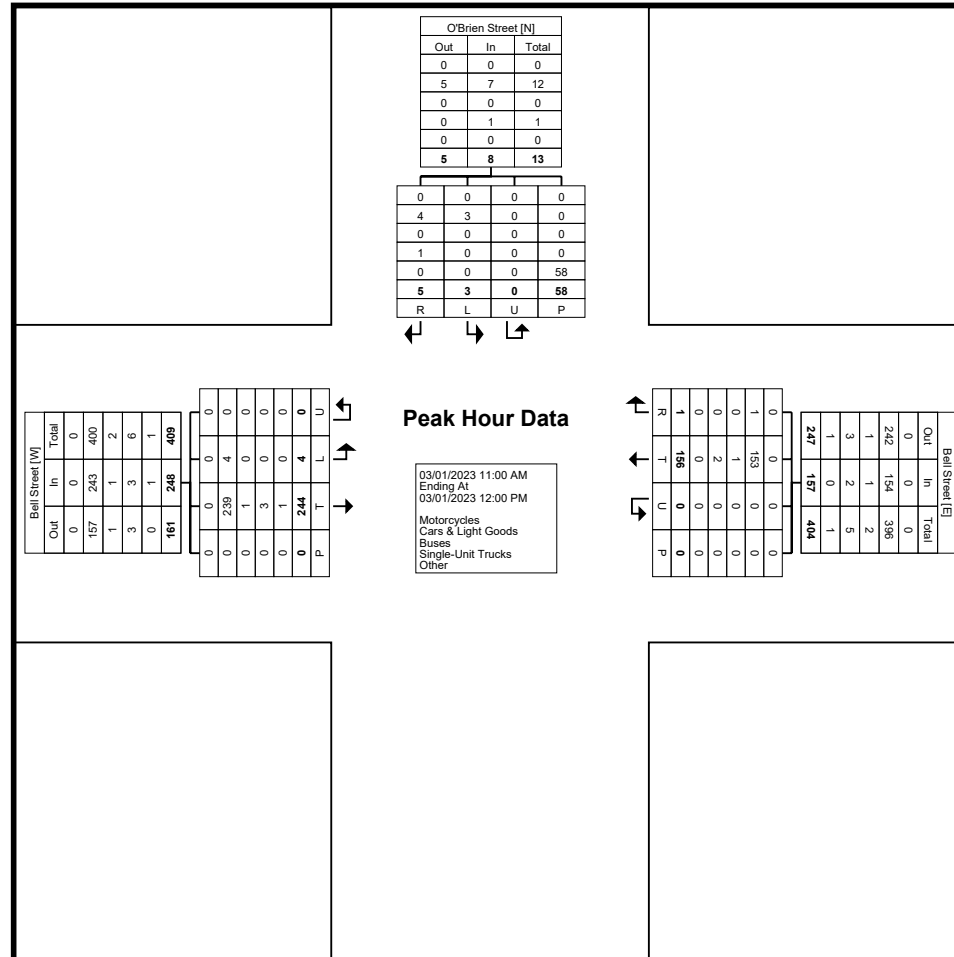




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Bell Street & O'Brien Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsI.com

Count Name: Bell Street & O'Brien Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

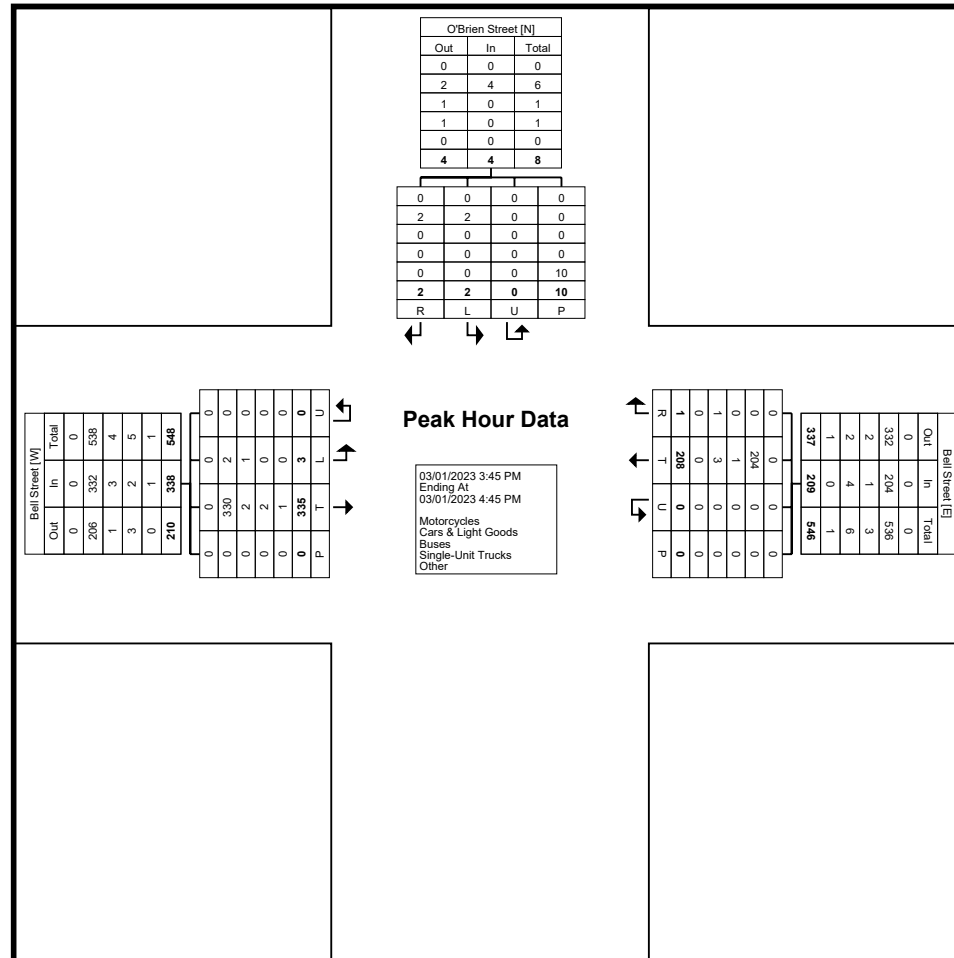
Start Time	Bell Street Eastbound					Bell Street Westbound					O'Brien Street Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:45 PM	2	104	0	0	106	49	1	0	0	50	1	0	0	4	1	157
4:00 PM	0	101	0	0	101	51	0	0	0	51	1	1	0	2	2	154
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 cdowness@ptsil.com

Count Name: Bell Street & O'Brien Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 9



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@pts1.com

Count Name: Boundary Road & Eganville Road -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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



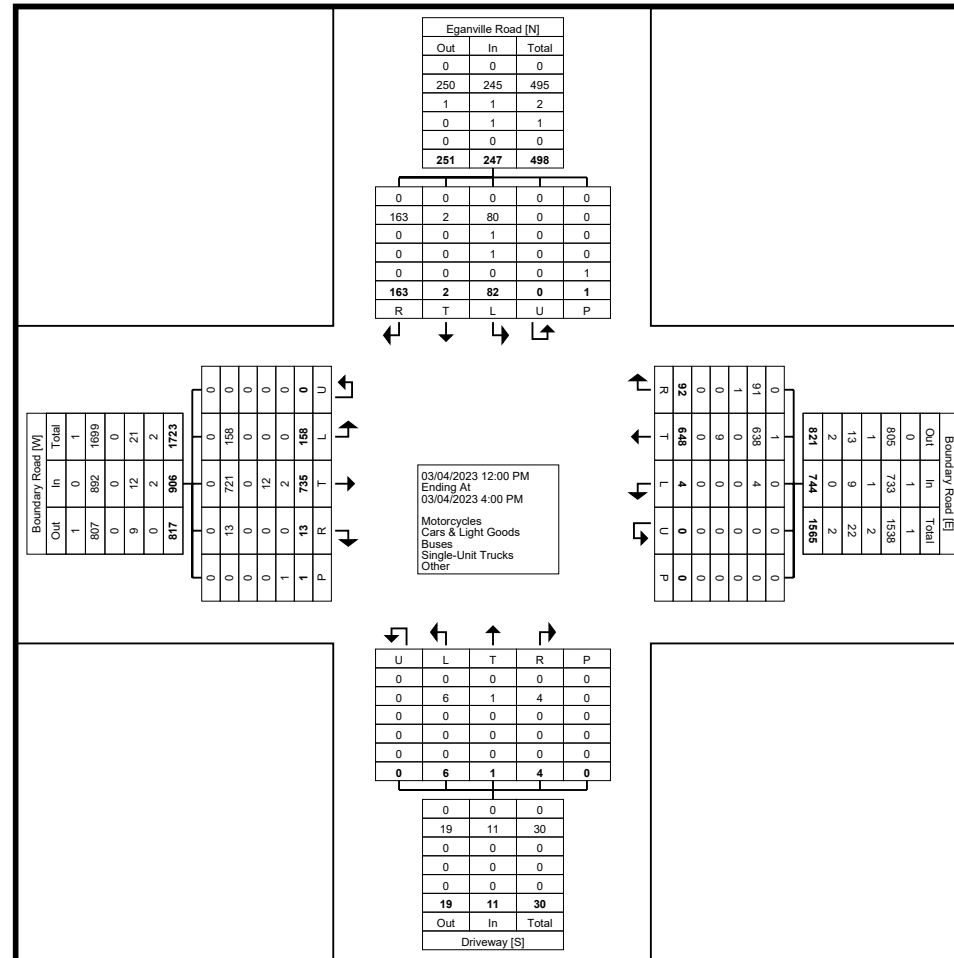
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
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@ptsll.com

Count Name: Boundary Road & Eganville Road -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (3:00 PM)

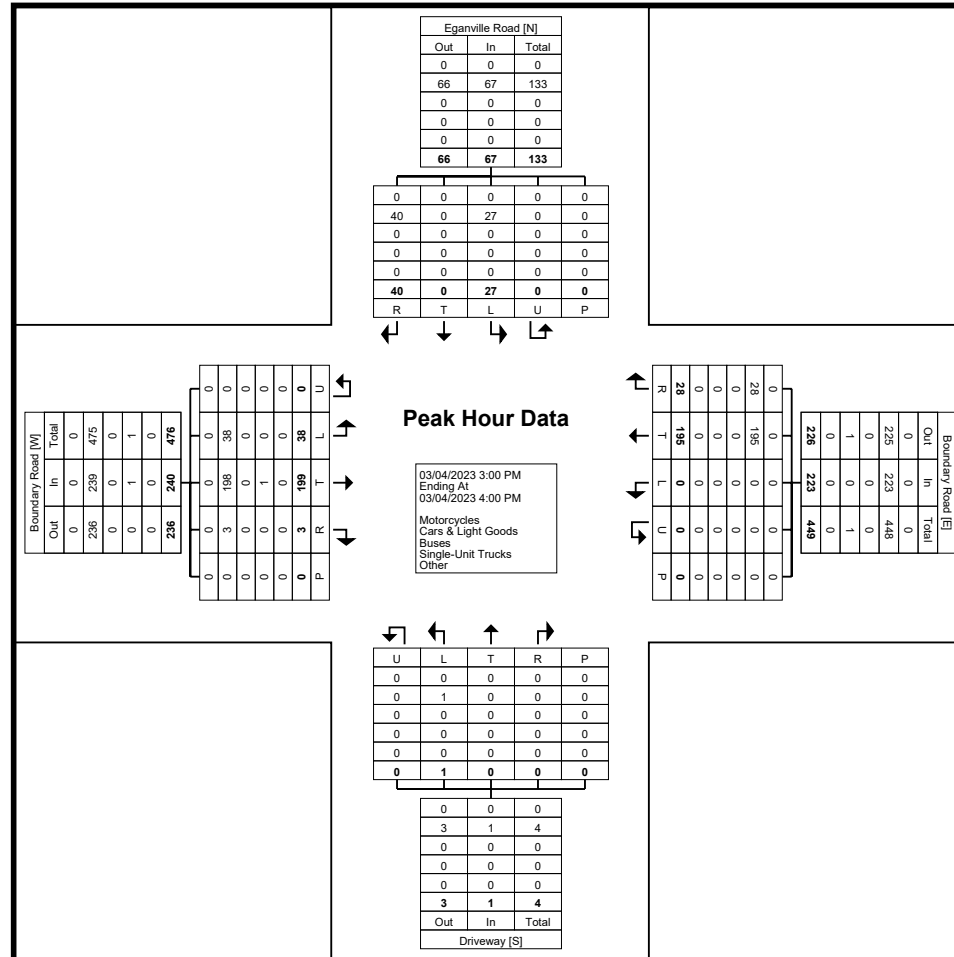
Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	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
<b>Total</b>	<b>38</b>	<b>199</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>240</b>	<b>0</b>	<b>195</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>223</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>531</b>
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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	4	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

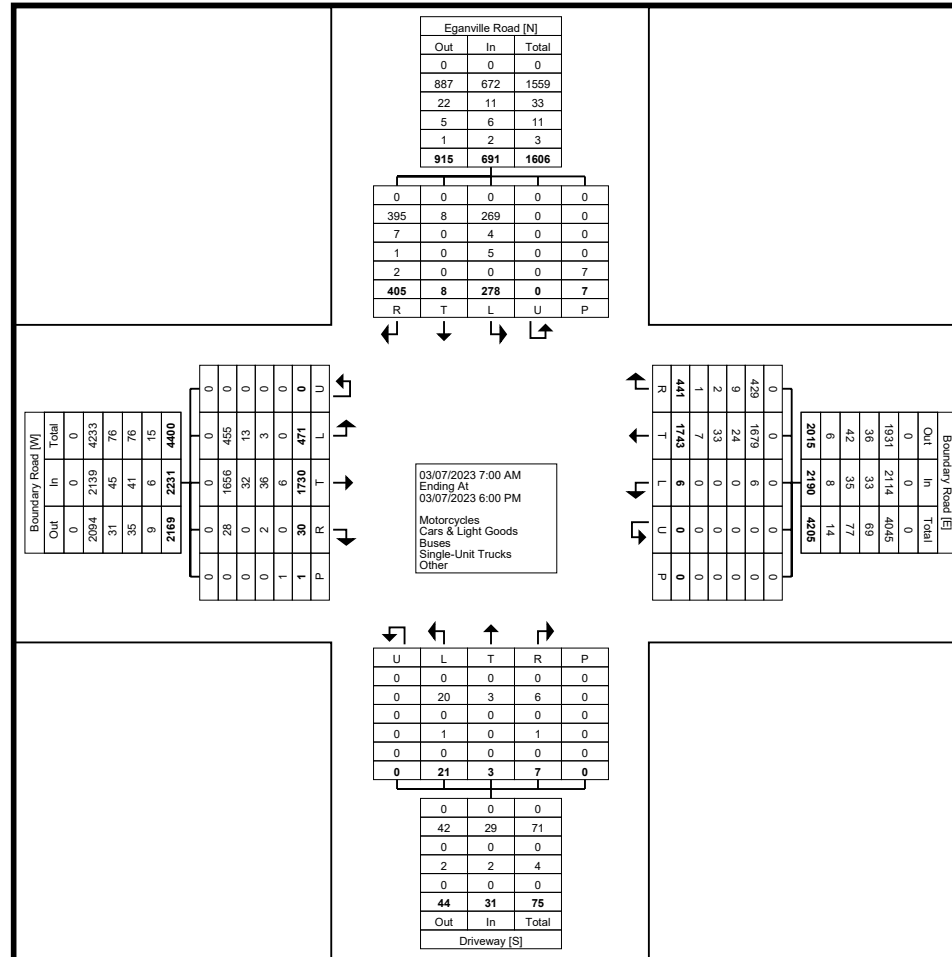
4:45 PM	18	69	1	0	0	88	0	66	10	0	0	76	2	0	1	0	0	3	3	0	22	0	0	25	192
Hourly Total	53	306	4	0	0	363	0	297	49	0	0	346	6	1	3	0	0	10	55	2	82	0	0	139	858
5:00 PM	20	73	0	0	0	93	0	56	13	0	0	69	1	0	0	0	0	1	17	0	10	0	0	27	190
5:15 PM	13	49	1	0	0	63	0	66	12	0	0	78	1	0	0	0	0	1	7	0	13	0	1	20	162
5:30 PM	9	48	0	0	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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 3



Turning Movement Data Plot



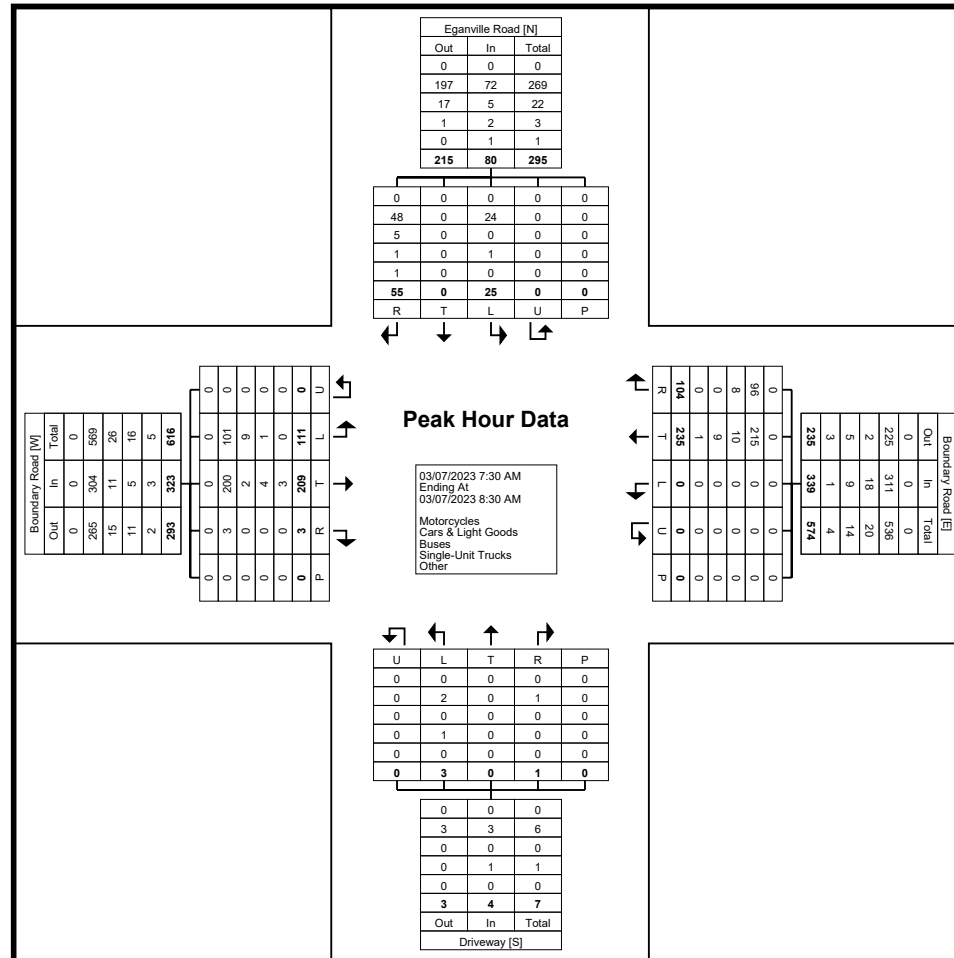




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

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

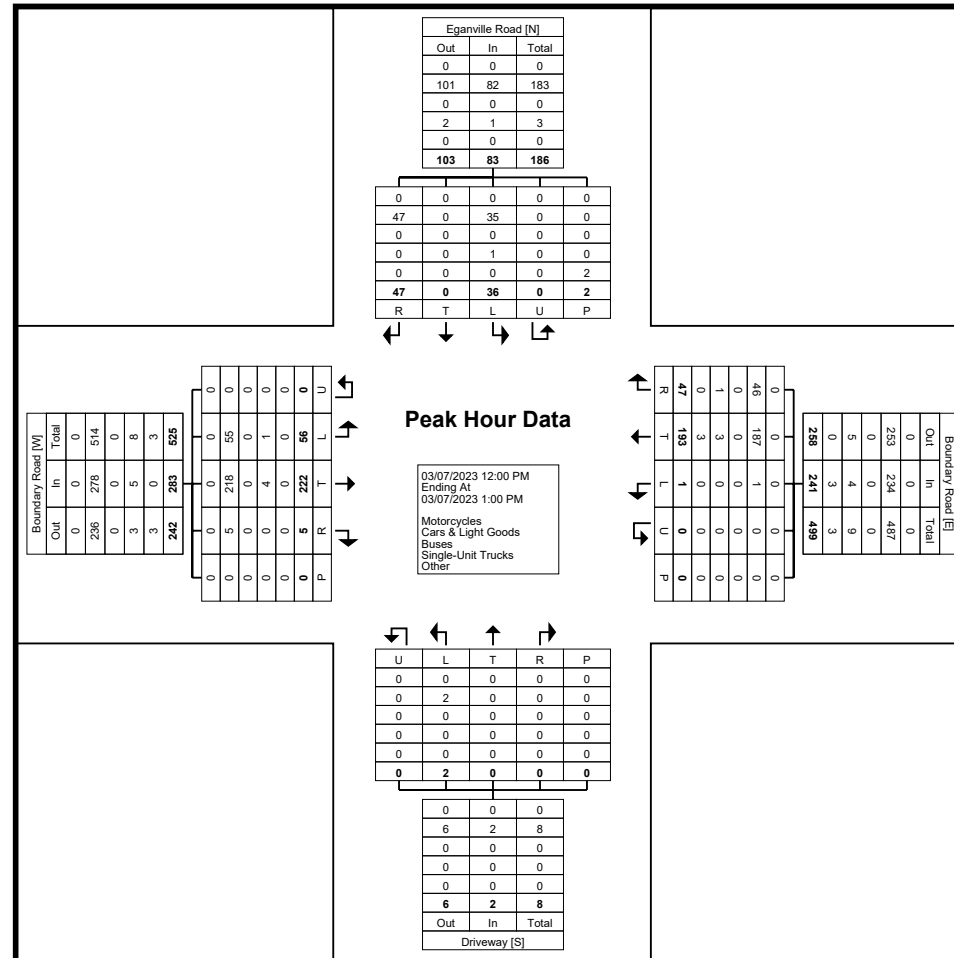
Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>56</b>	<b>222</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>283</b>	<b>1</b>	<b>193</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>241</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>36</b>	<b>0</b>	<b>47</b>	<b>0</b>	<b>2</b>	<b>83</b>	<b>609</b>
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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



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@ptsI.com

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						Eganville Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	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
<b>Total</b>	<b>53</b>	<b>306</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>0</b>	<b>297</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>346</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>55</b>	<b>2</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>139</b>	<b>858</b>
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

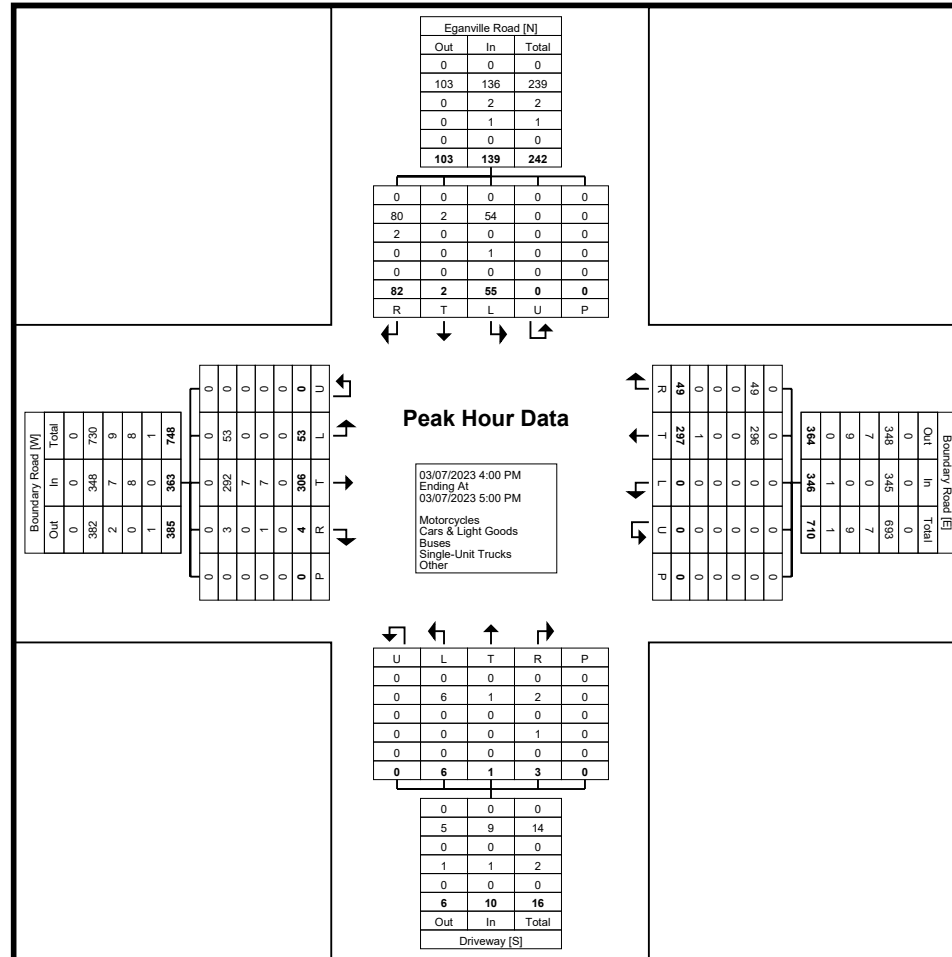




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Eganville Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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@ptsI.com

Count Name: Boundary Road & International  
Drive Bennett Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

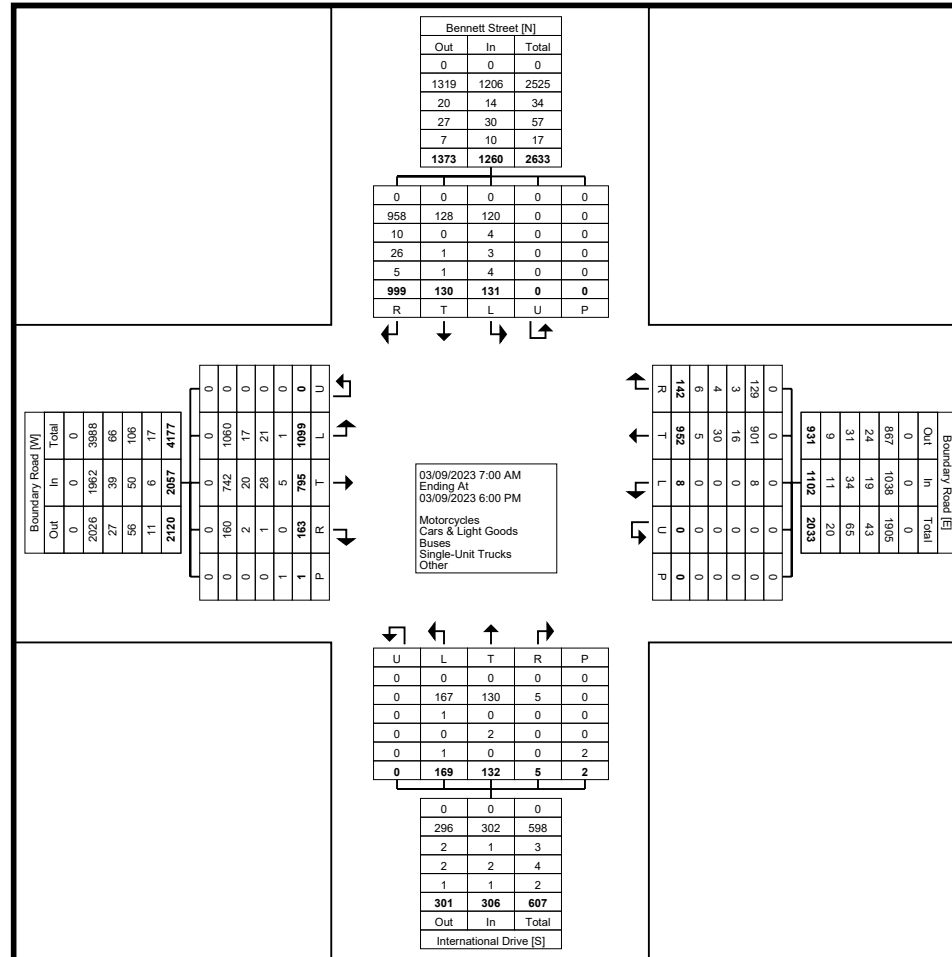




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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@ptsI.com

Count Name: Boundary Road & International  
Drive Bennett Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>163</b>	<b>95</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>284</b>	<b>0</b>	<b>180</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>200</b>	<b>17</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>26</b>	<b>20</b>	<b>105</b>	<b>0</b>	<b>0</b>	<b>151</b>	<b>665</b>
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  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & International  
Drive Bennett Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

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

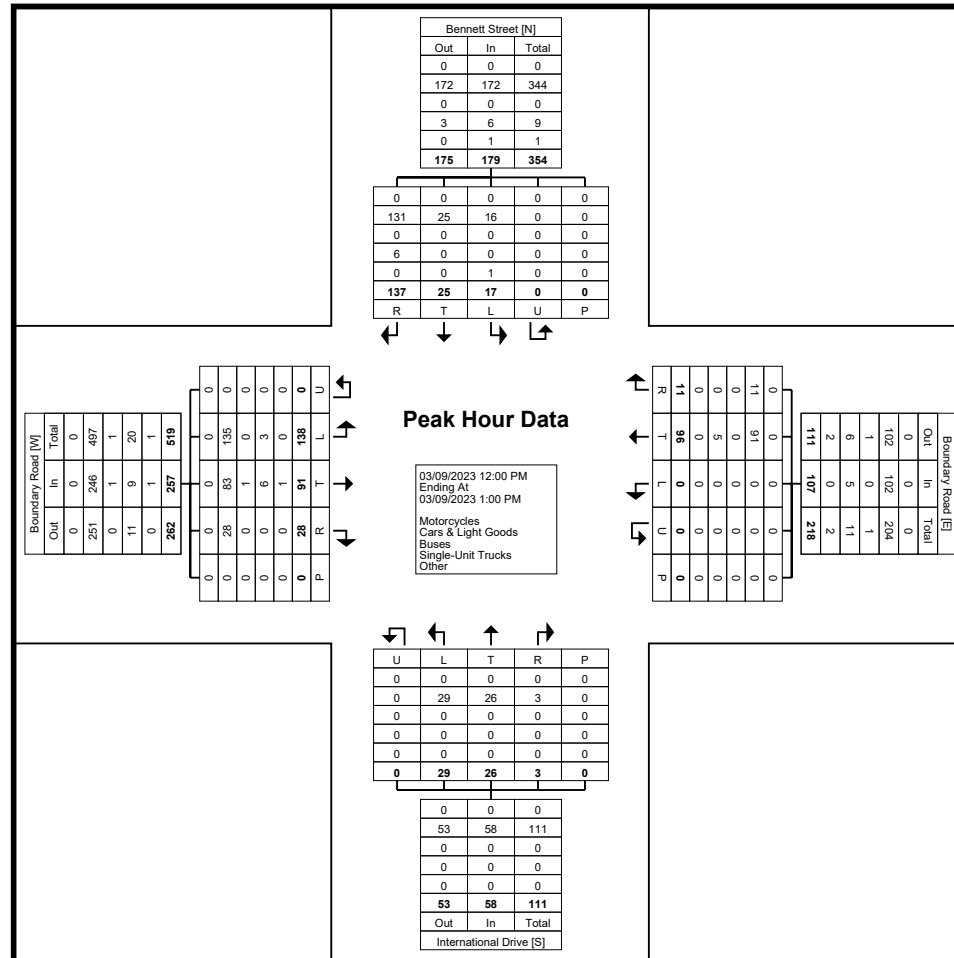
Start Time	Boundary Road Eastbound						Boundary Road Westbound						International Drive Northbound						Bennett Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>138</b>	<b>91</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>257</b>	<b>0</b>	<b>96</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>29</b>	<b>26</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>17</b>	<b>25</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>601</b>
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & International  
Drive Bennett Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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 cdowness@ptsll.com

Count Name: Boundary Road & Jean Avenue  
Forced Road - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	0	0	0	0	0	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-







Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Jean Avenue  
Forced Road - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:45 PM)

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Jean Avenue  
Forced Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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









Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cdowness@ptsll.com

Count Name: Boundary Road & Jean Avenue  
Forced Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>116</b>	<b>0</b>	<b>123</b>	<b>0</b>	<b>0</b>	<b>239</b>	<b>0</b>	<b>39</b>	<b>159</b>	<b>0</b>	<b>0</b>	<b>198</b>	<b>63</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>519</b>
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@pts1.com

Count Name: Boundary Road & Jean Avenue  
Forced Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

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

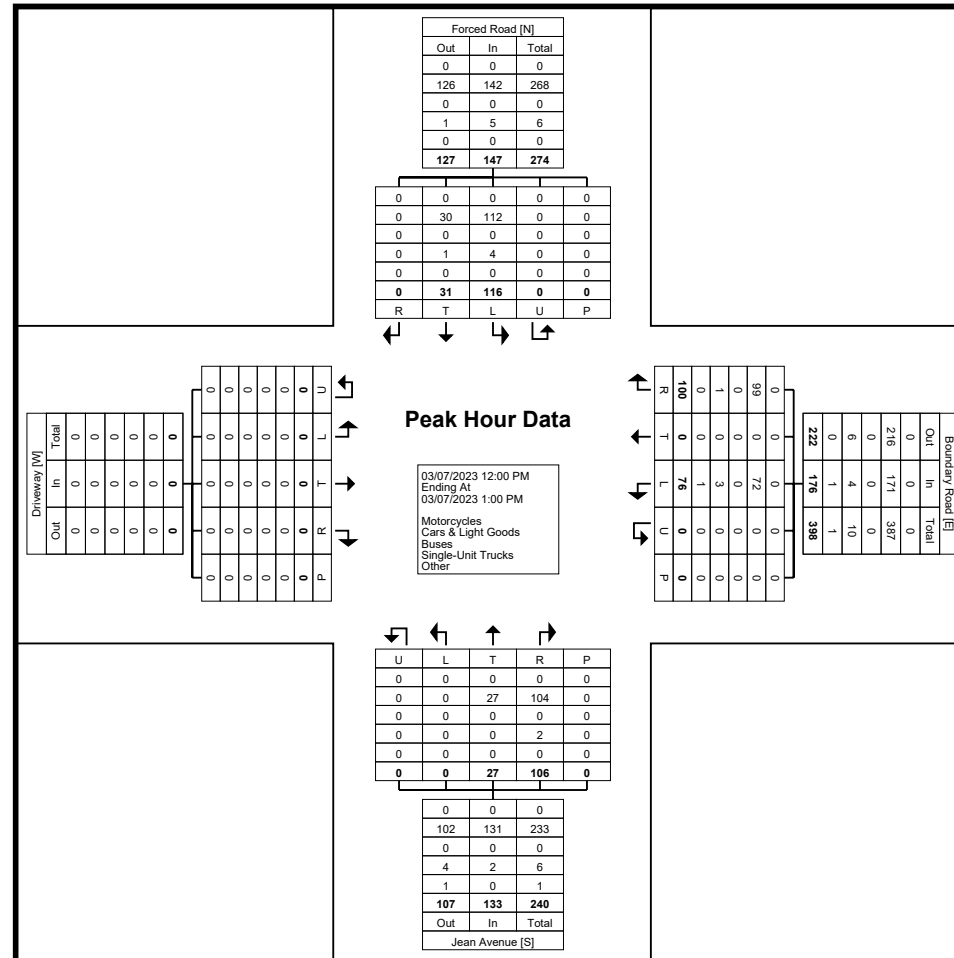
Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	0	0	0	0	0	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
<b>Total</b>	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Boundary Road & Jean Avenue  
Forced Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



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@pts1.com

Count Name: Boundary Road & Jean Avenue  
Forced Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

Start Time	Driveway Eastbound						Boundary Road Westbound						Jean Avenue Northbound						Forced Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	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
<b>Total</b>	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@ptsI.com

Count Name: Boundary Road & McGee Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

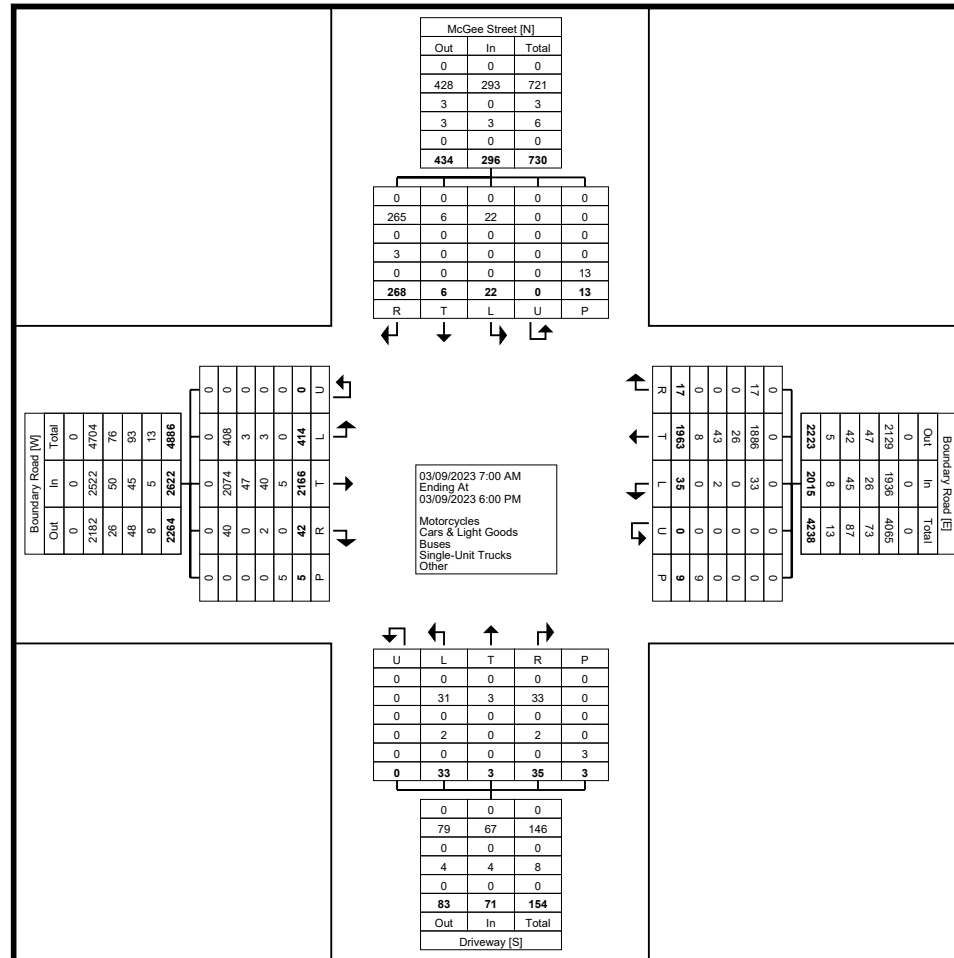
4:45 PM	14	98	3	0	2	115	0	63	1	0	0	64	2	1	2	0	0	5	0	0	11	0	0	11	195
Hourly Total	70	412	7	0	2	489	6	311	4	0	1	321	7	3	9	0	0	19	4	1	63	0	0	68	897
5:00 PM	11	105	1	0	0	117	1	87	0	0	0	88	2	0	2	0	0	4	1	0	11	0	2	12	221
5:15 PM	12	70	2	0	0	84	4	57	0	0	0	61	2	0	1	0	0	3	0	0	12	0	0	12	160
5:30 PM	10	60	2	0	0	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

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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@ptsll.com

Count Name: Boundary Road & McGee Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>80</b>	<b>306</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>386</b>	<b>2</b>	<b>279</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>283</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>39</b>	<b>0</b>	<b>4</b>	<b>42</b>	<b>712</b>
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	-	-	-

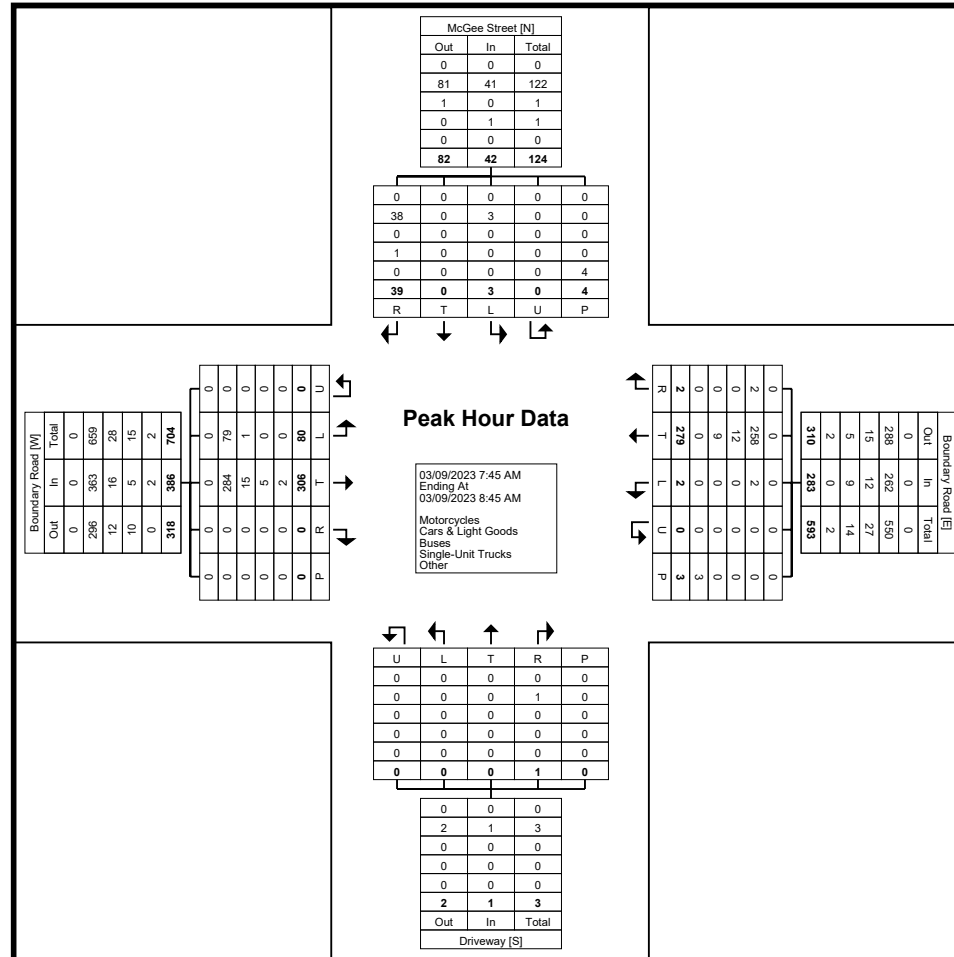




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: Boundary Road & McGee Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (7:45 AM)



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: Boundary Road & McGee Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

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

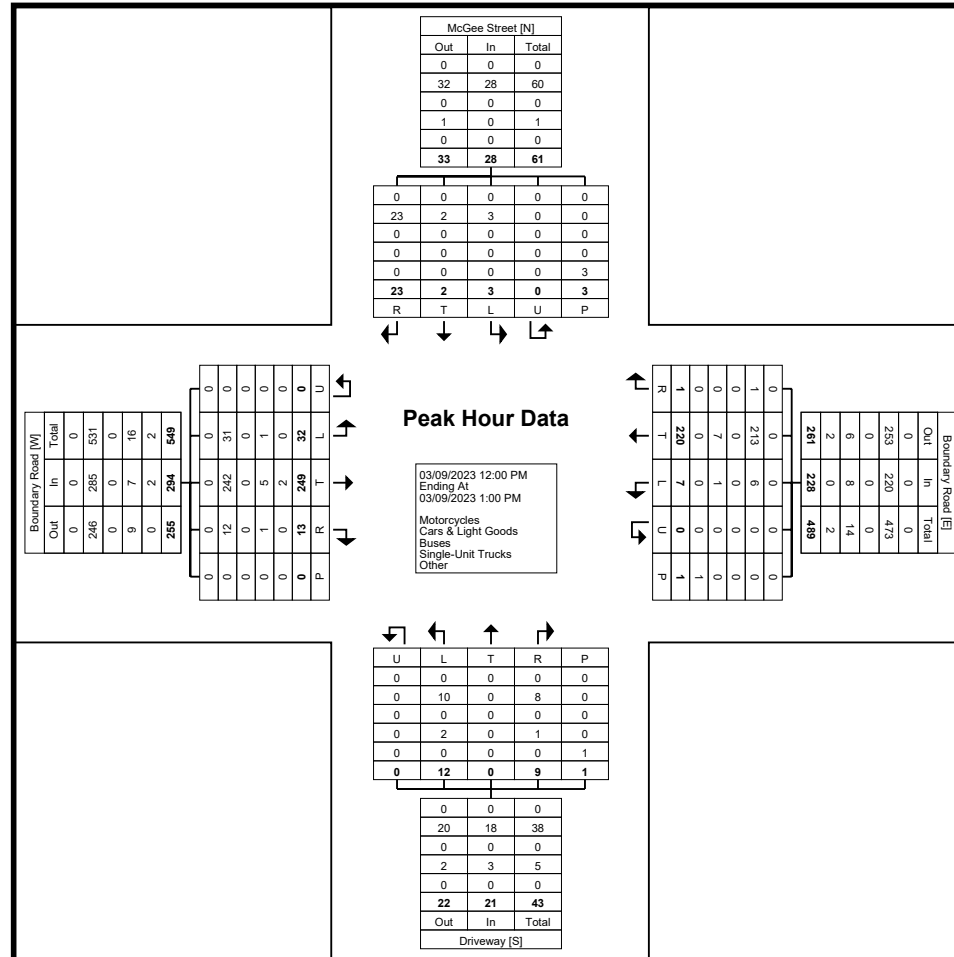
Start Time	Boundary Road Eastbound						Boundary Road Westbound						Driveway Northbound						McGee Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>32</b>	<b>249</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>294</b>	<b>7</b>	<b>220</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>228</b>	<b>12</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>21</b>	<b>3</b>	<b>2</b>	<b>23</b>	<b>0</b>	<b>3</b>	<b>28</b>	<b>571</b>
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  
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Count Name: Boundary Road & McGee Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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



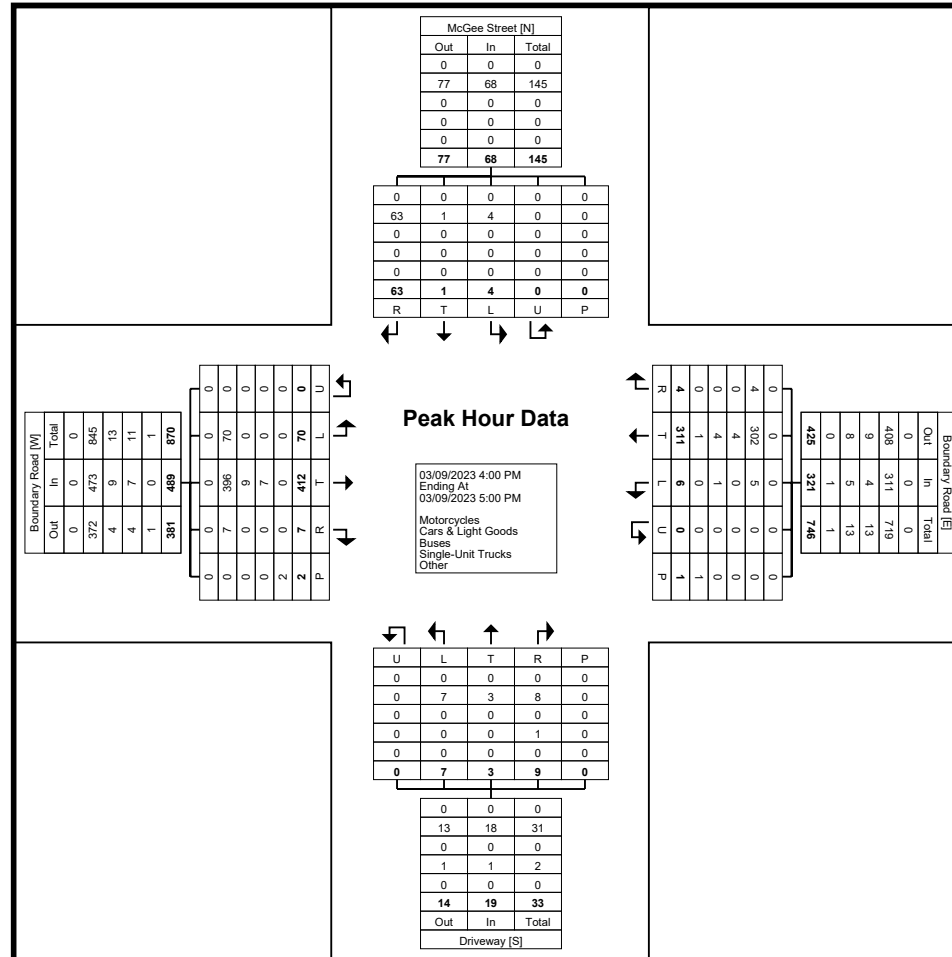




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Count Name: Boundary Road & McGee Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 9



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@pts.com

Count Name: Cecelia Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

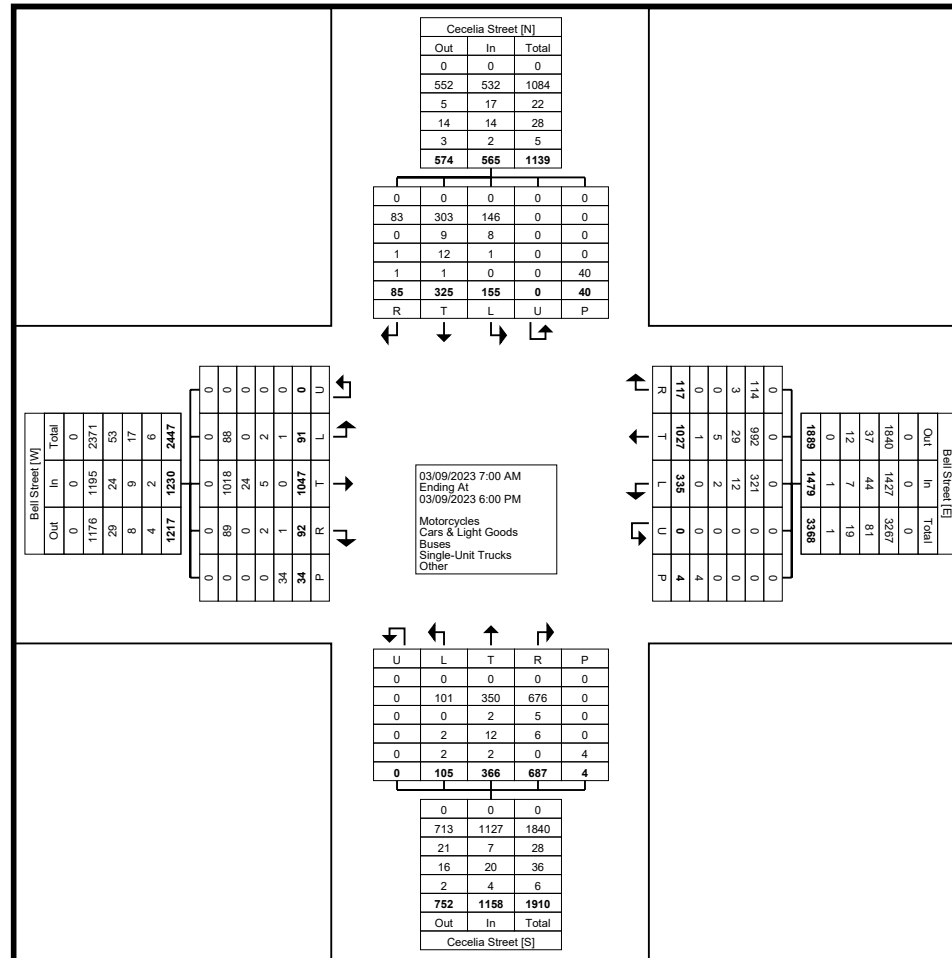
4:45 PM	0	38	4	0	0	42	13	38	0	0	0	51	5	13	21	0	2	39	10	6	1	0	1	17	149
Hourly Total	10	143	15	0	7	168	54	155	16	0	0	225	14	48	101	0	2	163	24	48	7	0	4	79	635
5:00 PM	3	38	3	0	1	44	8	30	2	0	0	40	1	14	20	0	0	35	3	3	2	0	2	8	127
5:15 PM	1	35	1	0	0	37	8	32	3	0	0	43	3	5	26	0	0	34	6	9	2	0	0	17	131
5:30 PM	3	24	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	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: Cecelia 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@pts1.com

Count Name: Cecelia Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

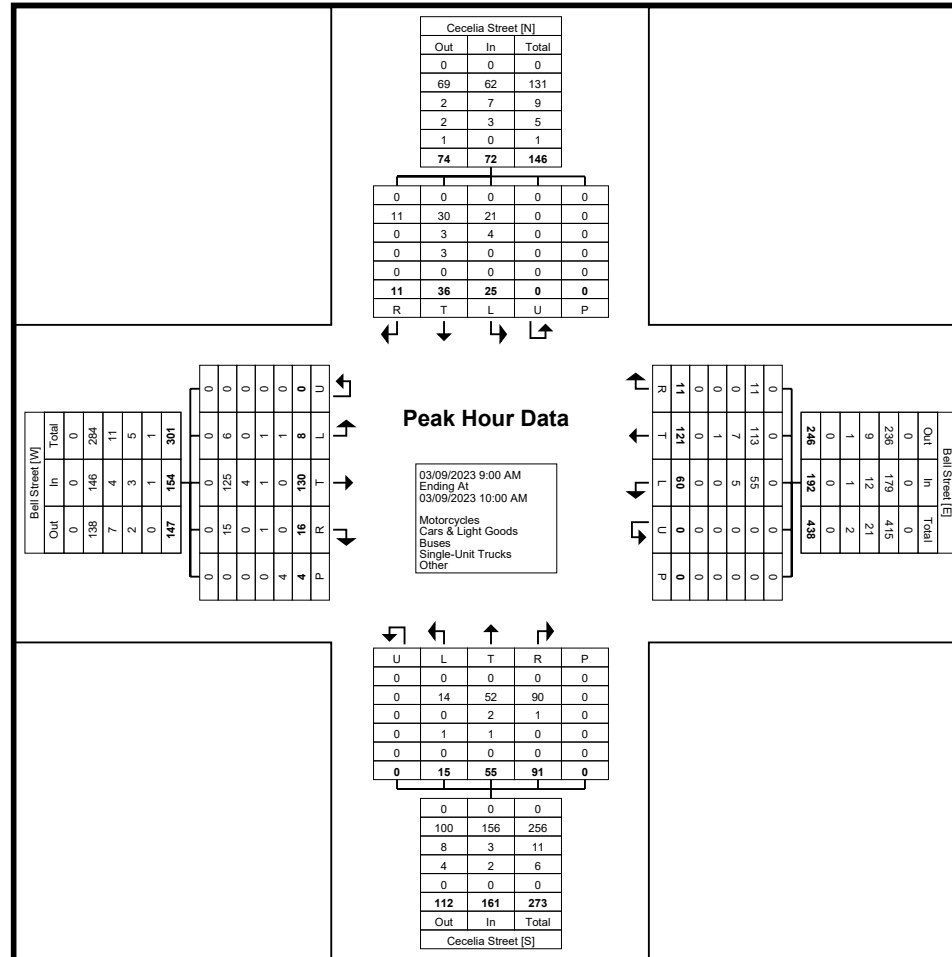
Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
9:00 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
<b>Total</b>	<b>8</b>	<b>130</b>	<b>16</b>	<b>0</b>	<b>4</b>	<b>154</b>	<b>60</b>	<b>121</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>192</b>	<b>15</b>	<b>55</b>	<b>91</b>	<b>0</b>	<b>0</b>	<b>161</b>	<b>25</b>	<b>36</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>579</b>
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

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Count Name: Cecelia Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)



Paradigm Transportation Solutions Limited  
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Count Name: Cecelia Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:30 AM)

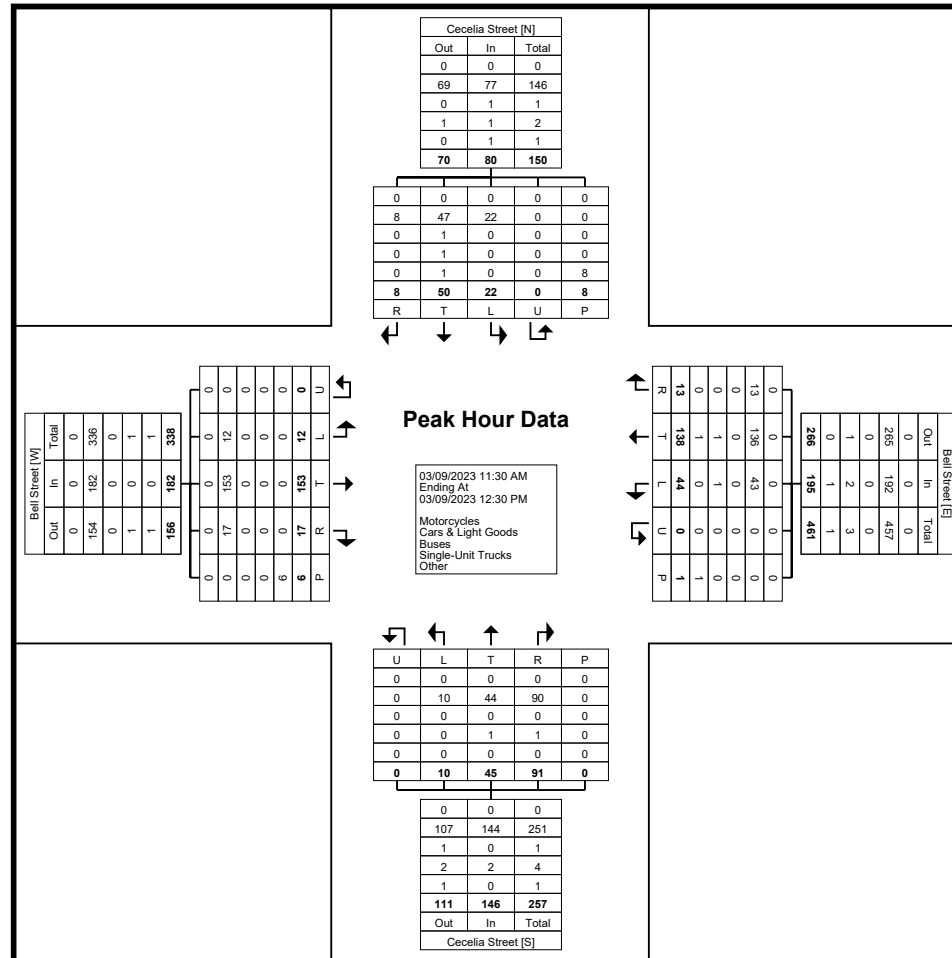
Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:30 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
<b>Total</b>	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  
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Count Name: Cecelia Street & Bell Street  
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Start Date: 03/09/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:30 AM)





Paradigm Transportation Solutions Limited  
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Count Name: Cecelia Street & Bell Street  
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Start Date: 03/09/2023  
Page No: 8

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

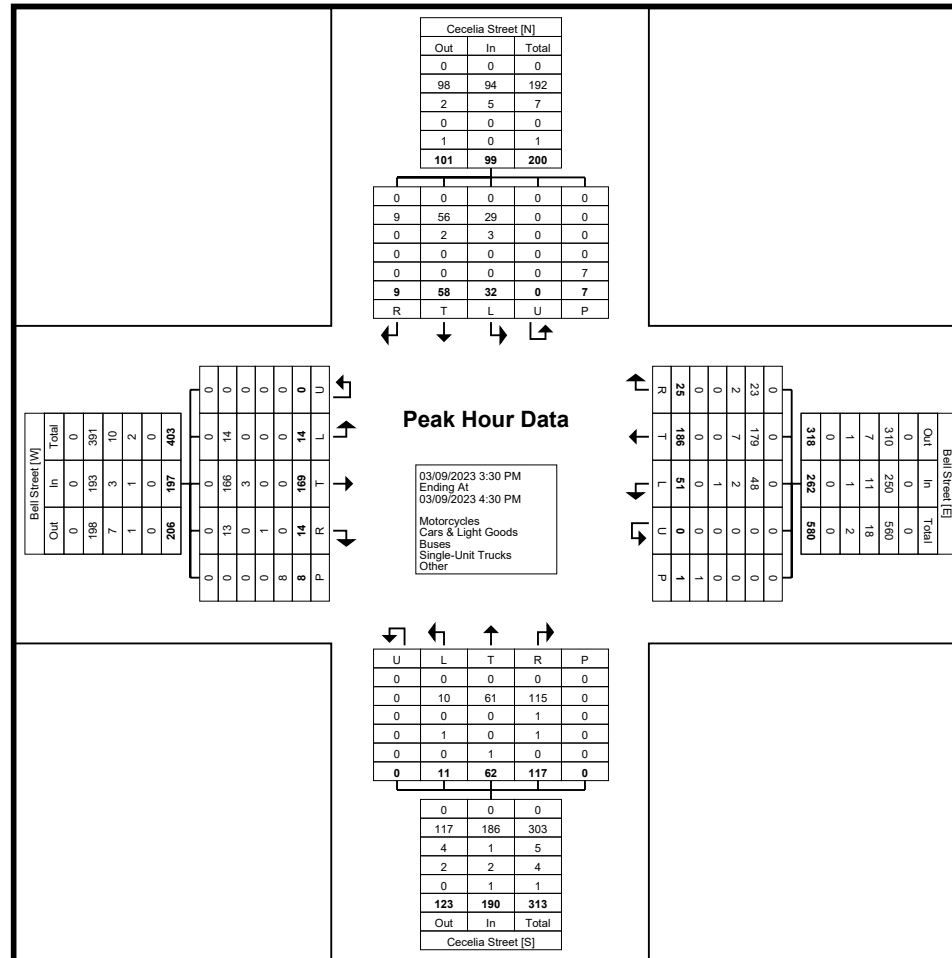
Start Time	Bell Street Eastbound						Bell Street Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 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
<b>Total</b>	<b>14</b>	<b>169</b>	<b>14</b>	<b>0</b>	<b>8</b>	<b>197</b>	<b>51</b>	<b>186</b>	<b>25</b>	<b>0</b>	<b>1</b>	<b>262</b>	<b>11</b>	<b>62</b>	<b>117</b>	<b>0</b>	<b>0</b>	<b>190</b>	<b>32</b>	<b>58</b>	<b>9</b>	<b>0</b>	<b>7</b>	<b>99</b>	<b>748</b>
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

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

Count Name: Cecelia Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
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@ptsI.com

Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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	-	-

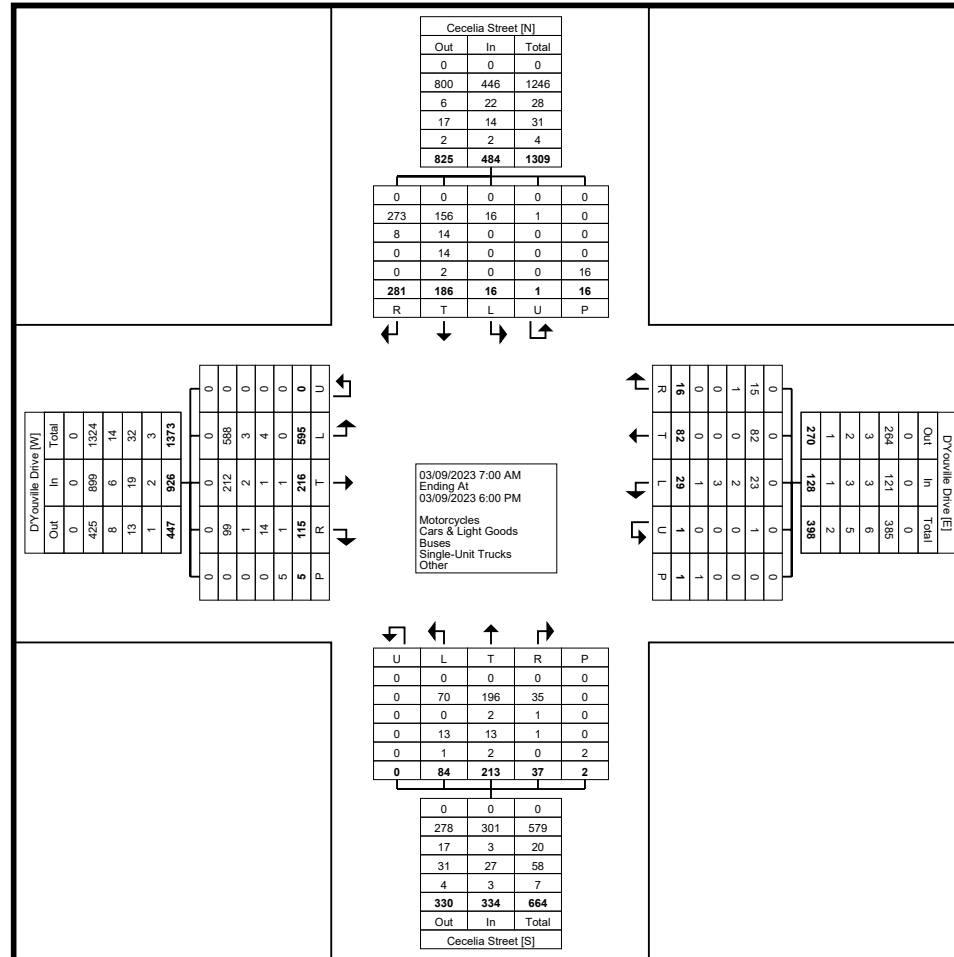




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Cecelia Street & D'Youville Drive  
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@ptsI.com

Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

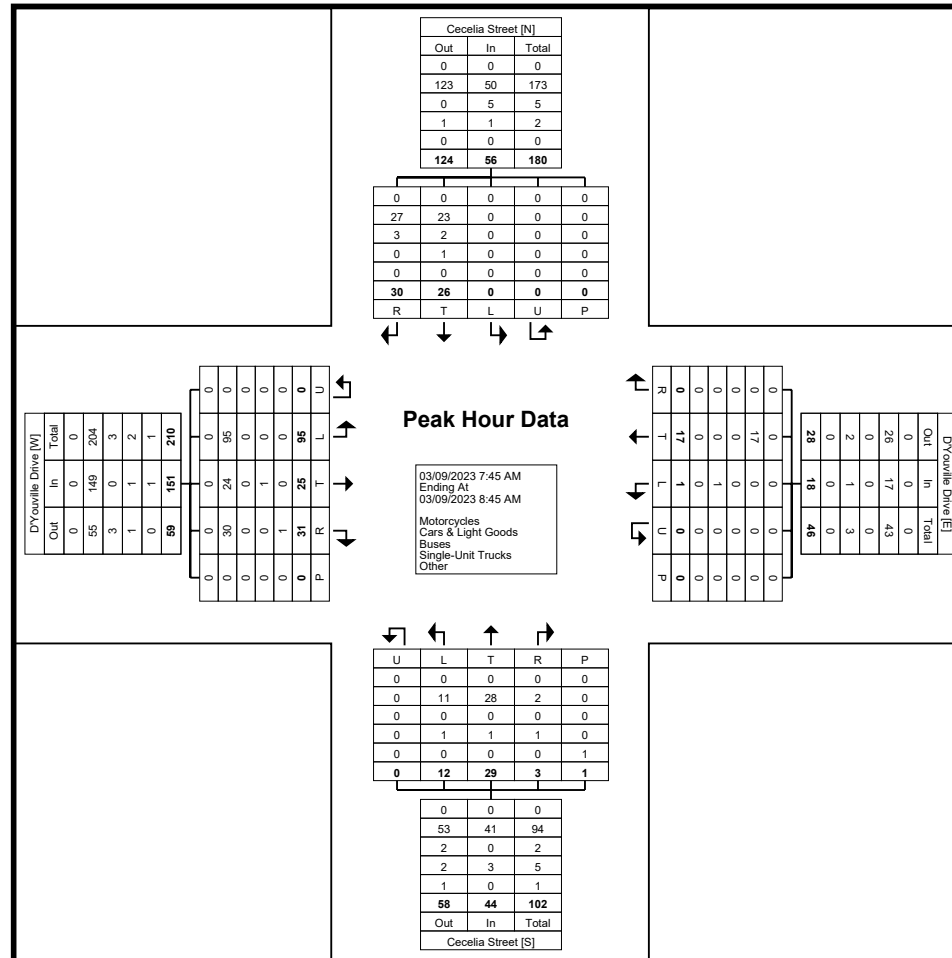
Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>95</b>	<b>25</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>151</b>	<b>1</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>12</b>	<b>29</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>44</b>	<b>0</b>	<b>26</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>269</b>
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  
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Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@ptsI.com

Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:30 AM)

Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>58</b>	<b>25</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>92</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>7</b>	<b>26</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>1</b>	<b>24</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>210</b>
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

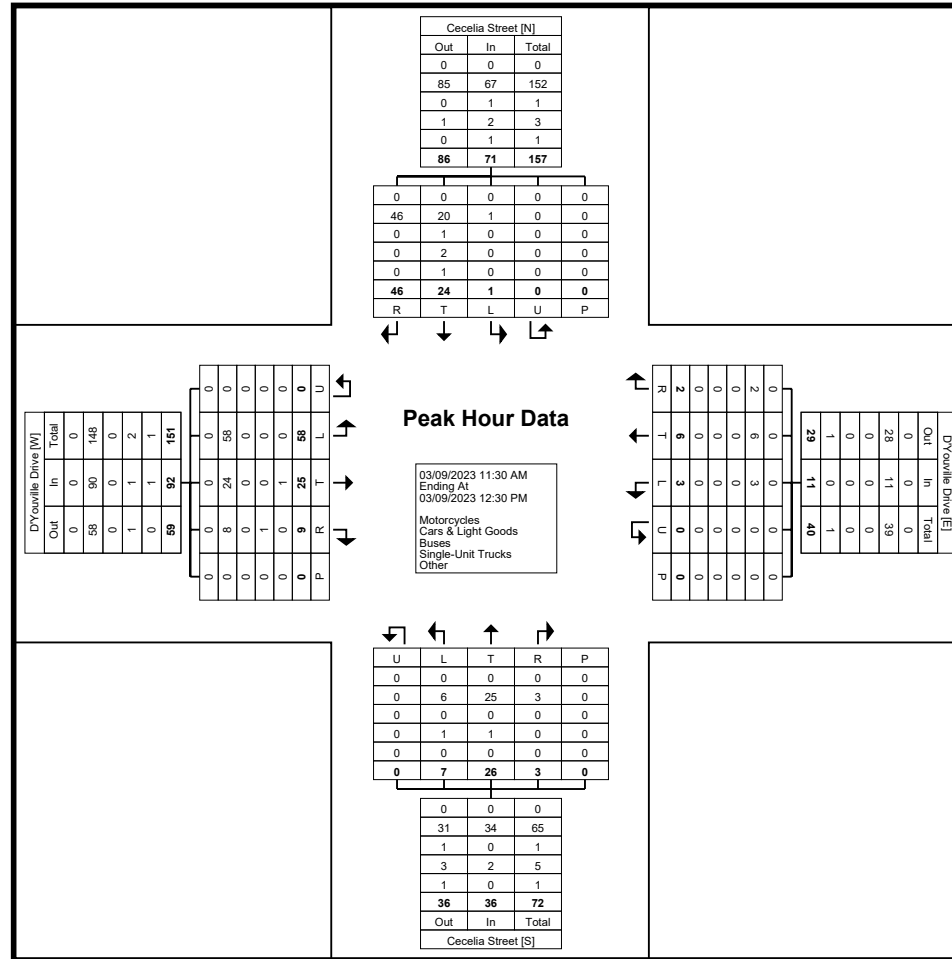




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:30 AM)



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

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

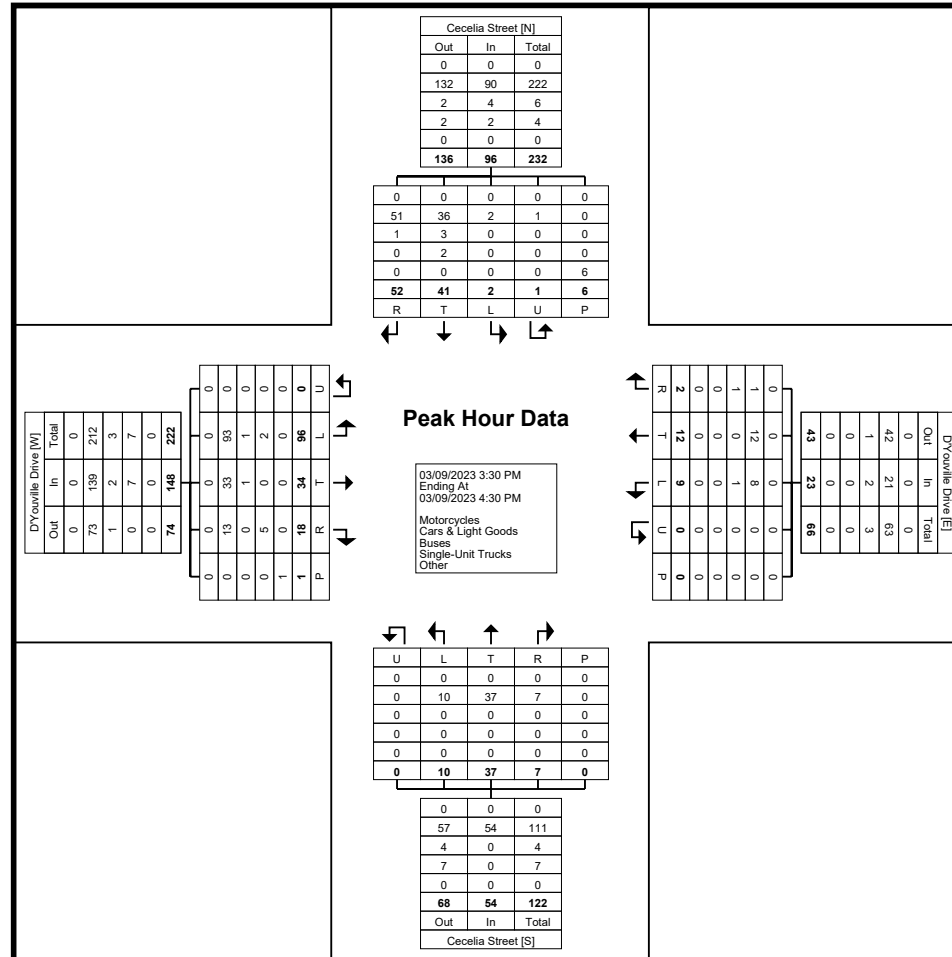
Start Time	D'Youville Drive Eastbound						D'Youville Drive Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>96</b>	<b>34</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>148</b>	<b>9</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>10</b>	<b>37</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>2</b>	<b>41</b>	<b>52</b>	<b>1</b>	<b>6</b>	<b>96</b>	<b>321</b>
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  
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Count Name: Cecelia Street & D'Youville Drive  
Site Code: 220694  
Start Date: 03/09/2023  
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@pts.com

Count Name: Cecelia Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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	-	-

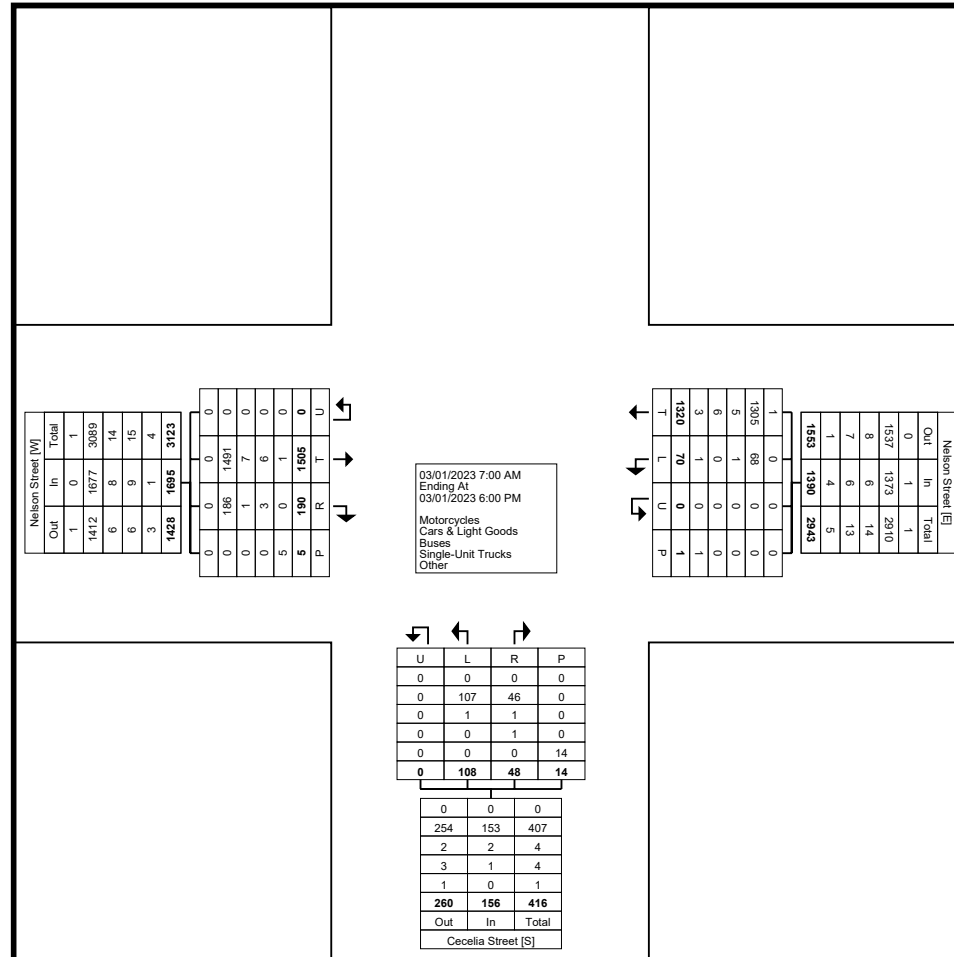




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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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@ptsll.com

Count Name: Cecelia Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

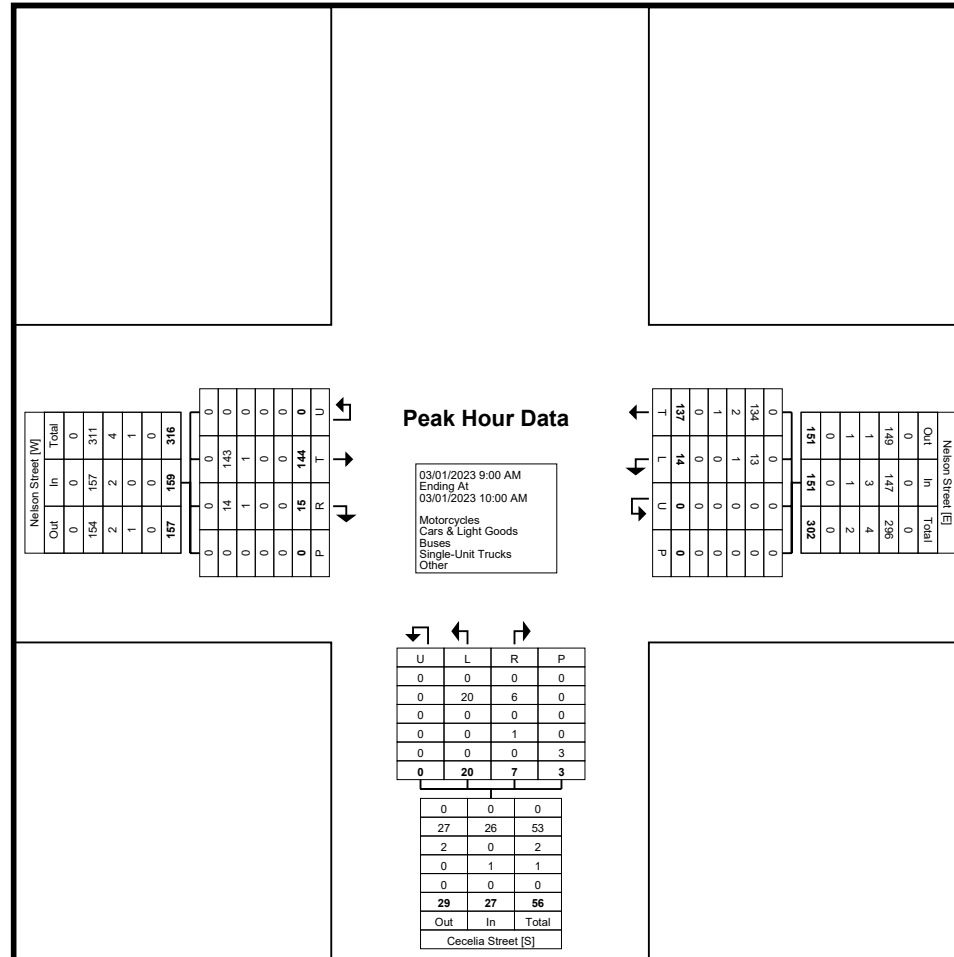
Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
9:00 AM	24	5	0	0	29	6	28	0	0	34	1	1	0	2	2	65
9:15 AM	42	4	0	0	46	4	32	0	0	36	5	2	0	0	7	89
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  
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Count Name: Cecelia Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)

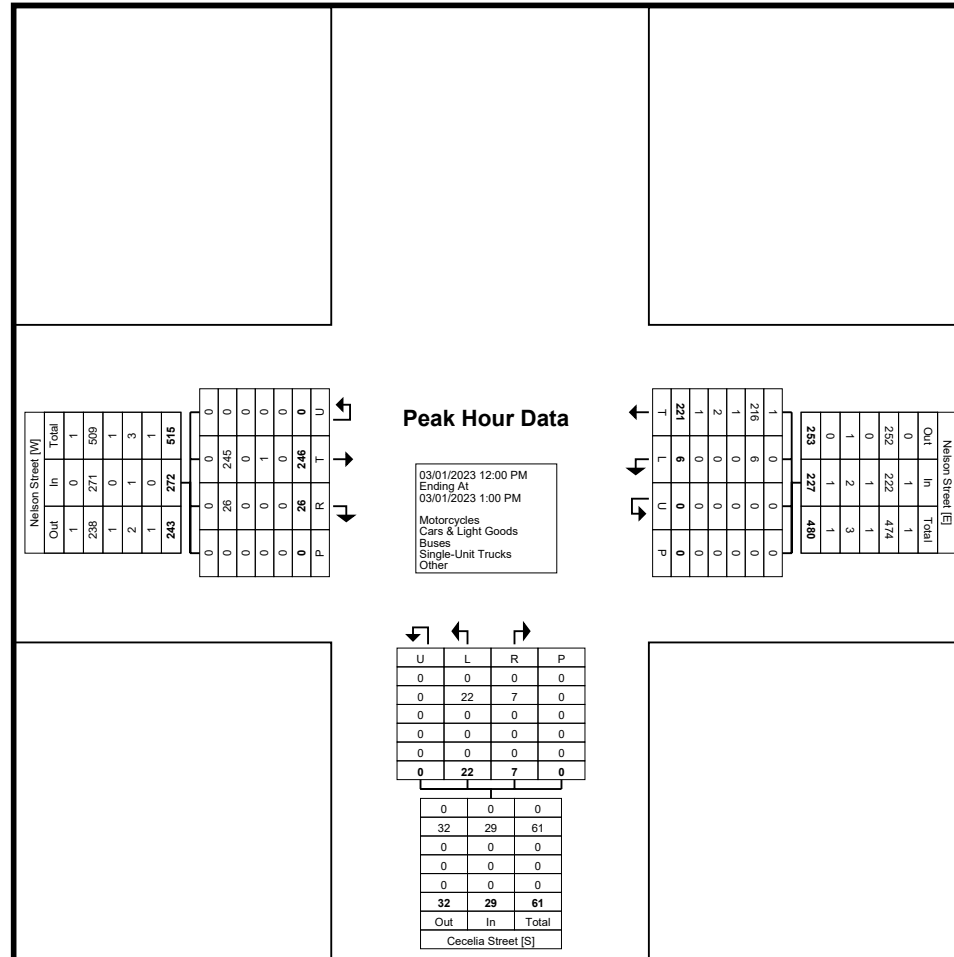




Paradigm Transportation Solutions Limited  
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Count Name: Cecelia Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsI.com

Count Name: Cecelia Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

### Turning Movement Peak Hour Data (3:15 PM)

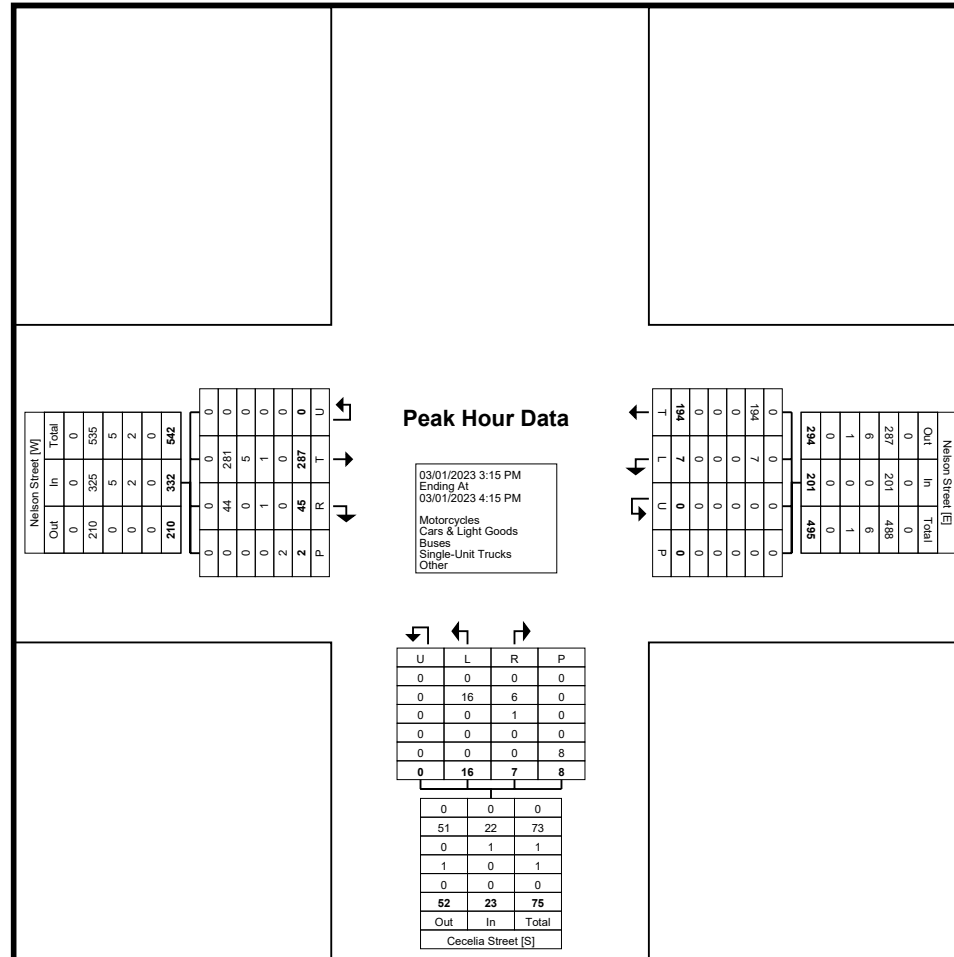
Start Time	Nelson Street Eastbound					Nelson Street Westbound					Cecelia Street Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:15 PM	72	11	0	0	83	3	53	0	0	56	1	2	0	1	3	142
3:30 PM	62	13	0	0	75	1	48	0	0	49	6	1	0	0	7	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@ptsll.com

Count Name: Cecelia Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 9



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@ptsll.com

Count Name: Christie Street & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

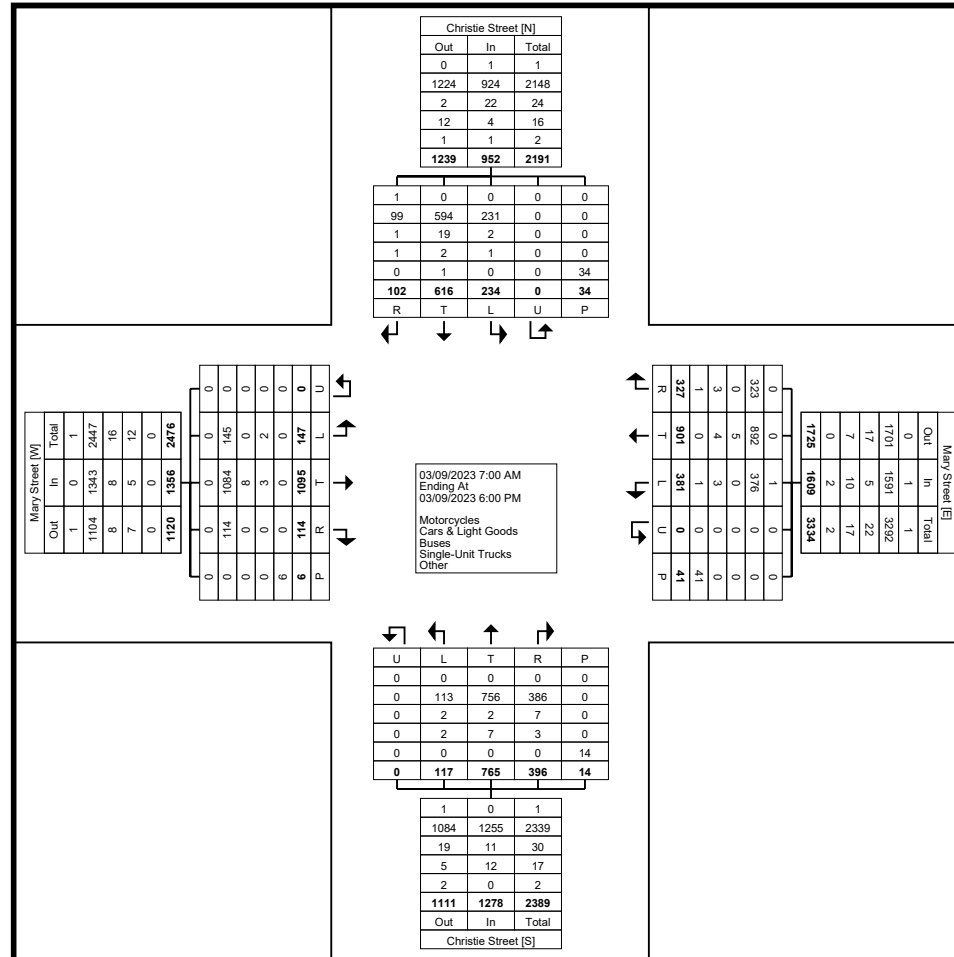
4:45 PM	4	44	6	0	0	54	9	35	10	0	0	54	6	26	21	0	2	53	9	23	1	0	5	33	194
Hourly Total	14	167	26	0	0	207	62	161	50	0	1	273	17	93	58	0	4	168	38	111	25	0	7	174	822
5:00 PM	3	40	2	0	2	45	27	38	9	0	1	74	8	18	12	0	0	38	9	26	7	0	0	42	199
5:15 PM	5	20	4	0	0	29	11	29	13	0	0	53	2	21	13	0	0	36	9	18	3	0	0	30	148
5:30 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@ptsI.com

Count Name: Christie Street & Mary 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@ptsI.com

Count Name: Christie Street & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>30</b>	<b>164</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>214</b>	<b>50</b>	<b>109</b>	<b>41</b>	<b>0</b>	<b>4</b>	<b>200</b>	<b>26</b>	<b>148</b>	<b>80</b>	<b>0</b>	<b>1</b>	<b>254</b>	<b>24</b>	<b>55</b>	<b>7</b>	<b>0</b>	<b>3</b>	<b>86</b>	<b>754</b>
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@ptsll.com

Count Name: Christie Street & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

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

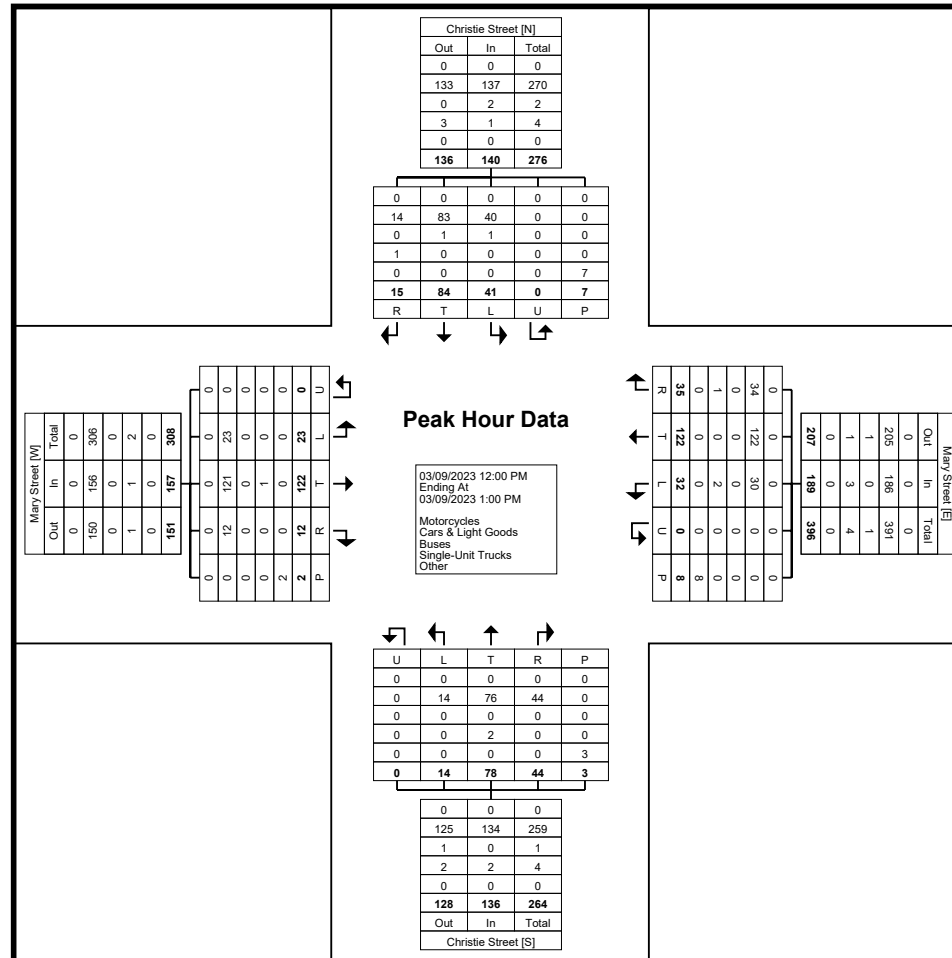
Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	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@ptsI.com

Count Name: Christie Street & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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@ptsll.com

Count Name: Christie Street & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

### Turning Movement Peak Hour Data (3:15 PM)

Start Time	Mary Street Eastbound						Mary Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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	-	-

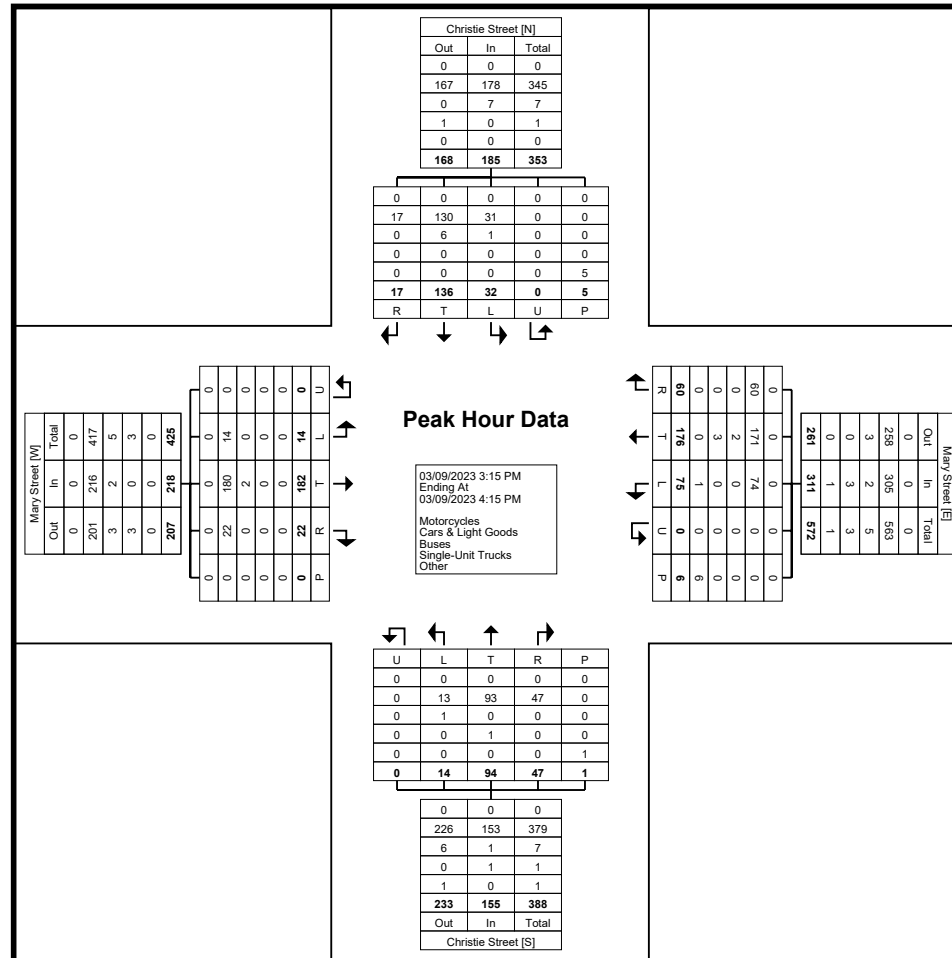




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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  
Page No: 9



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@pts1.com

Count Name: Drive-in Road & Wilson Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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@ptsI.com

Count Name: Drive-in Road & Wilson Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

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

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	2	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
<b>Total</b>	<b>2</b>	<b>69</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>80</b>	<b>5</b>	<b>160</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>166</b>	<b>36</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>1</b>	<b>15</b>	<b>303</b>
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  
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Count Name: Drive-in Road & Wilson Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

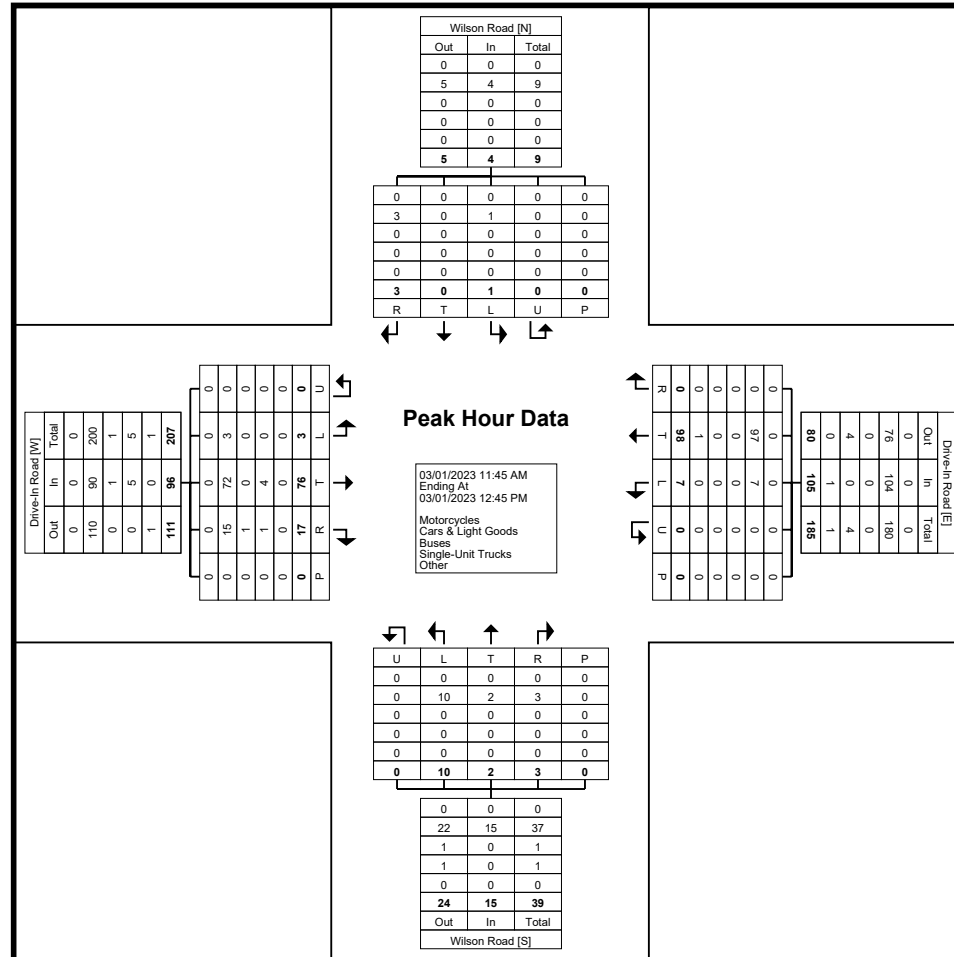
Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:45 AM	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
<b>Total</b>	<b>3</b>	<b>76</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>7</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>105</b>	<b>10</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>220</b>
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  
519-896-3163 cbowness@pts1.com

Count Name: Drive-in Road & Wilson Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsll.com

Count Name: Drive-in Road & Wilson Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Wilson Road Northbound						Wilson Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>6</b>	<b>167</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>212</b>	<b>11</b>	<b>119</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>131</b>	<b>17</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>25</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>375</b>
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 cdowness@pts1.com

Count Name: Elizabeth Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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@ptsll.com

Count Name: Elizabeth Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

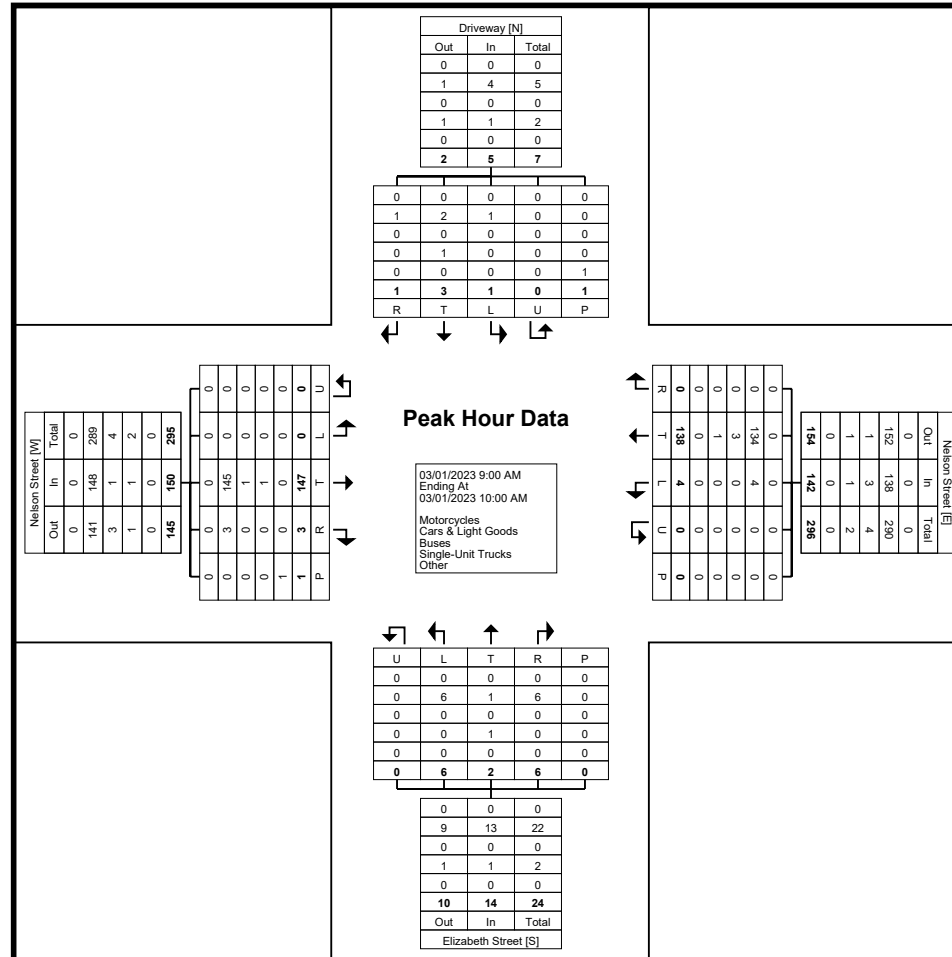
Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
9:00 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
<b>Total</b>	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@ptsI.com

Count Name: Elizabeth Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsI.com

Count Name: Elizabeth Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

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

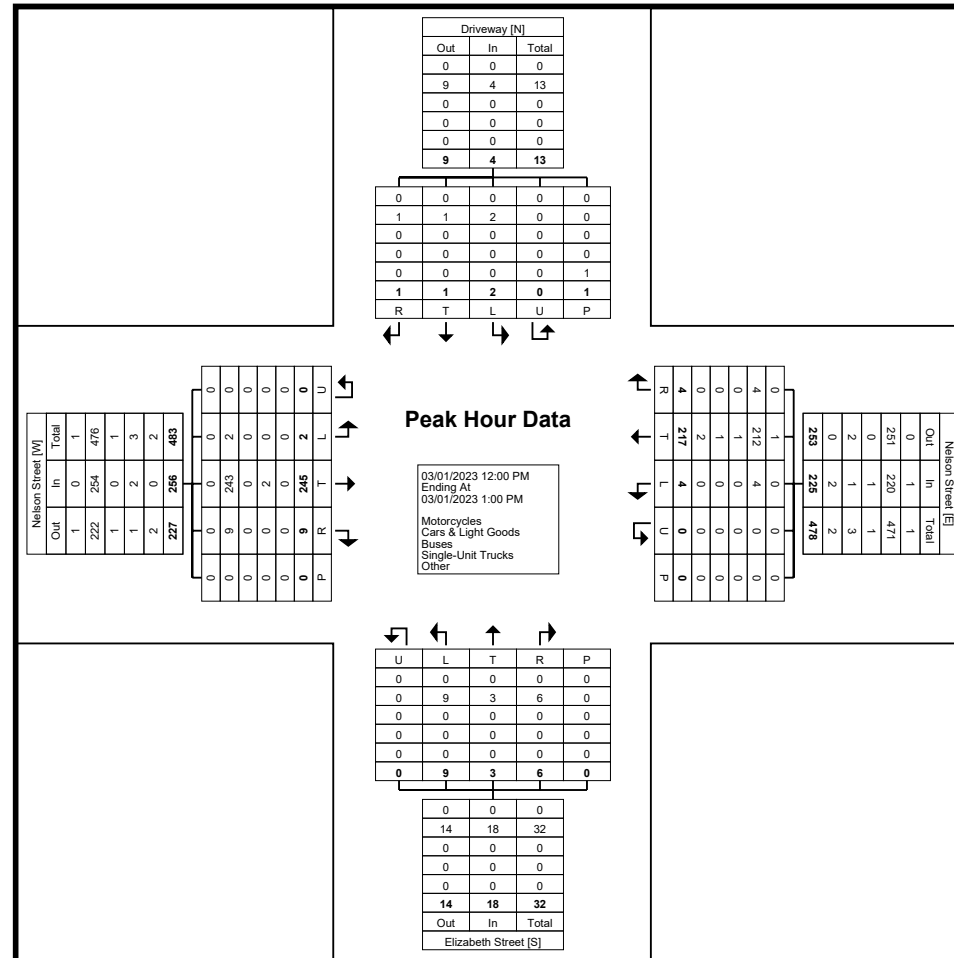
Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	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
<b>Total</b>	<b>2</b>	<b>245</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>256</b>	<b>4</b>	<b>217</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>225</b>	<b>9</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>503</b>
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@ptsll.com

Count Name: Elizabeth Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsI.com

Count Name: Elizabeth Street & Nelson Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

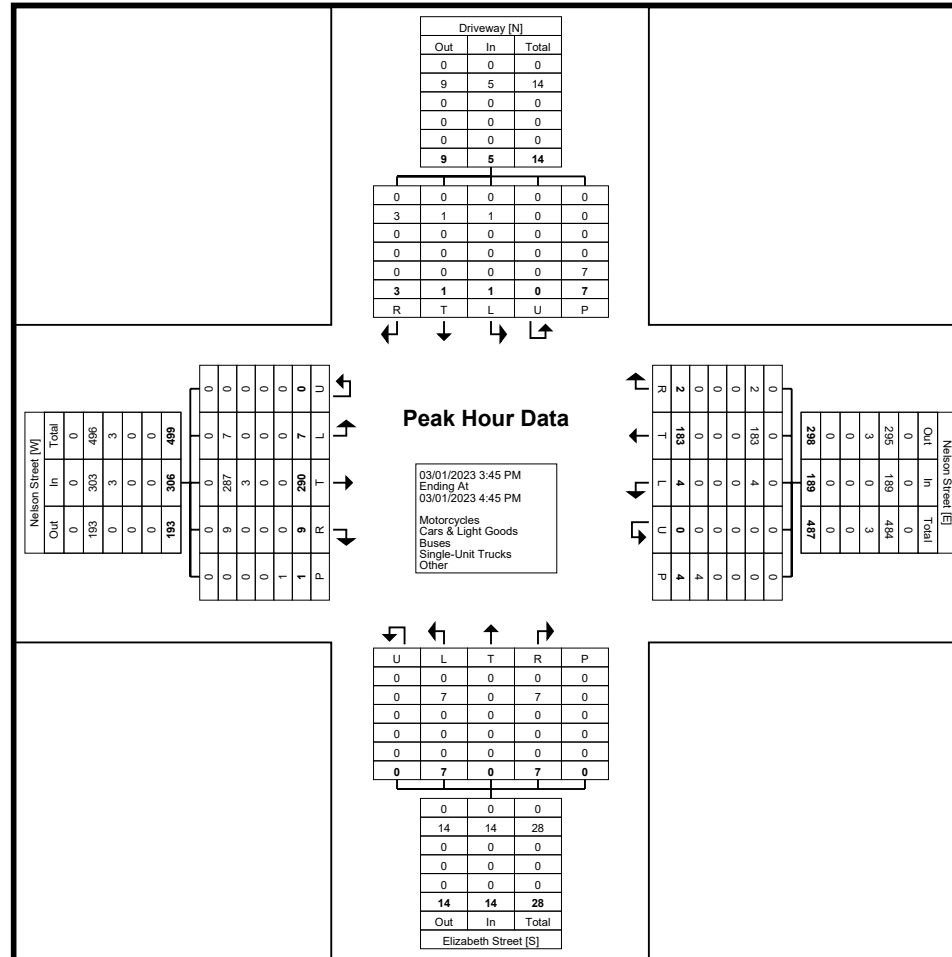
Start Time	Nelson Street Eastbound						Nelson Street Westbound						Elizabeth Street Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:45 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
<b>Total</b>	<b>7</b>	<b>290</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>306</b>	<b>4</b>	<b>183</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>189</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>514</b>
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	-	-



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Count Name: Elizabeth Street & Nelson Street  
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Start Date: 03/01/2023  
Page No: 9



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@pts.com

Count Name: Highway 148 & Angus Campbell  
Drive - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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



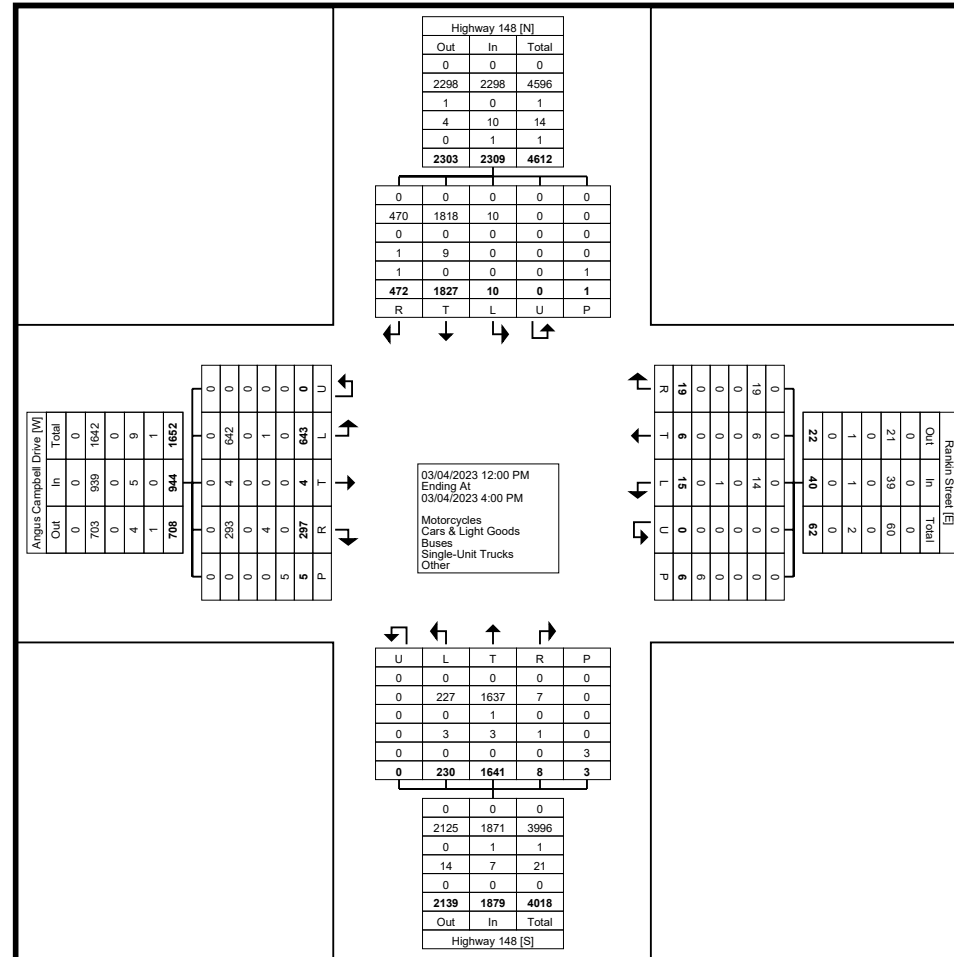
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	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@pts1.com

Count Name: Highway 148 & Angus Campbell Drive - 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@ptsI.com

Count Name: Highway 148 & Angus Campbell  
Drive - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:45 PM)

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>172</b>	<b>1</b>	<b>78</b>	<b>0</b>	<b>0</b>	<b>251</b>	<b>8</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>14</b>	<b>65</b>	<b>452</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>519</b>	<b>4</b>	<b>468</b>	<b>121</b>	<b>0</b>	<b>0</b>	<b>593</b>	<b>1377</b>
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@ptsI.com

Count Name: Highway 148 & Angus Campbell  
Drive - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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



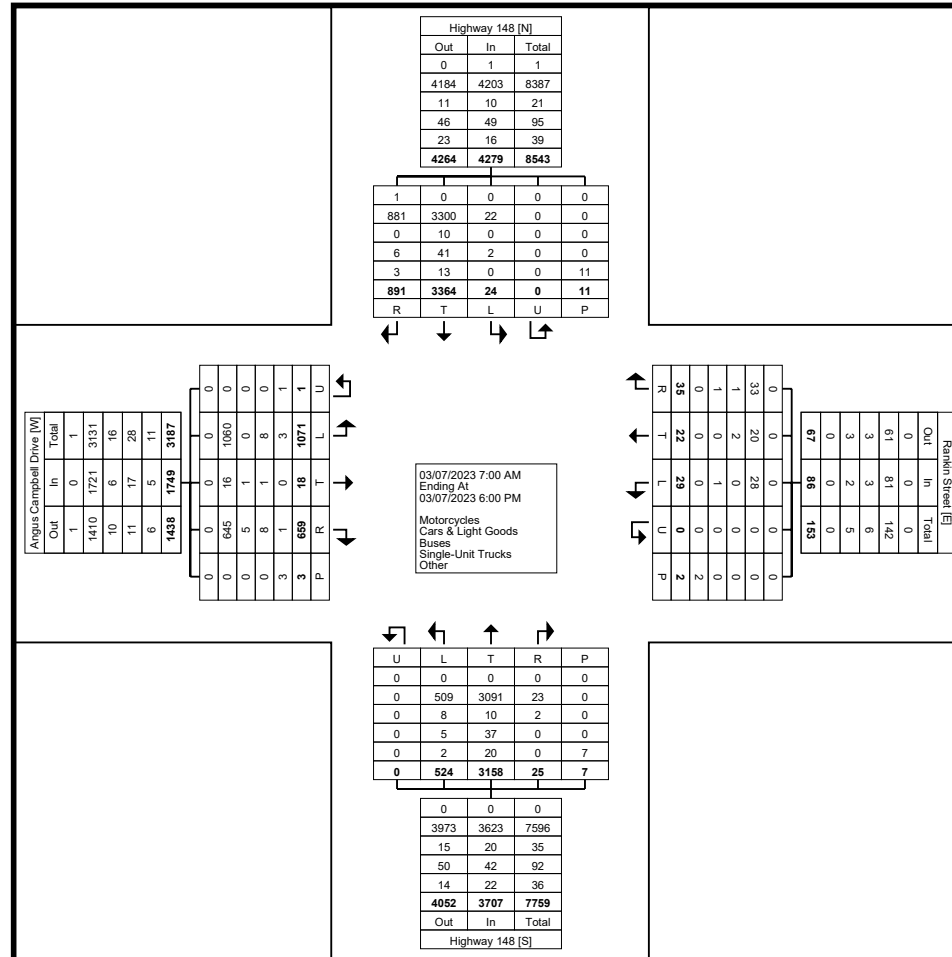
4:45 PM	46	1	18	0	0	65	0	0	0	0	0	0	15	80	0	0	0	95	1	128	20	0	0	149	309
Hourly Total	156	6	95	0	0	257	5	3	5	0	0	13	61	411	2	0	0	474	4	585	119	0	0	708	1452
5:00 PM	35	1	24	0	1	60	2	1	3	0	0	6	15	84	2	0	0	101	2	156	35	0	1	193	360
5:15 PM	31	0	21	0	0	52	0	0	2	0	0	2	12	91	1	0	0	104	0	125	33	0	1	158	316
5:30 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  
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Angus Campbell  
Drive - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

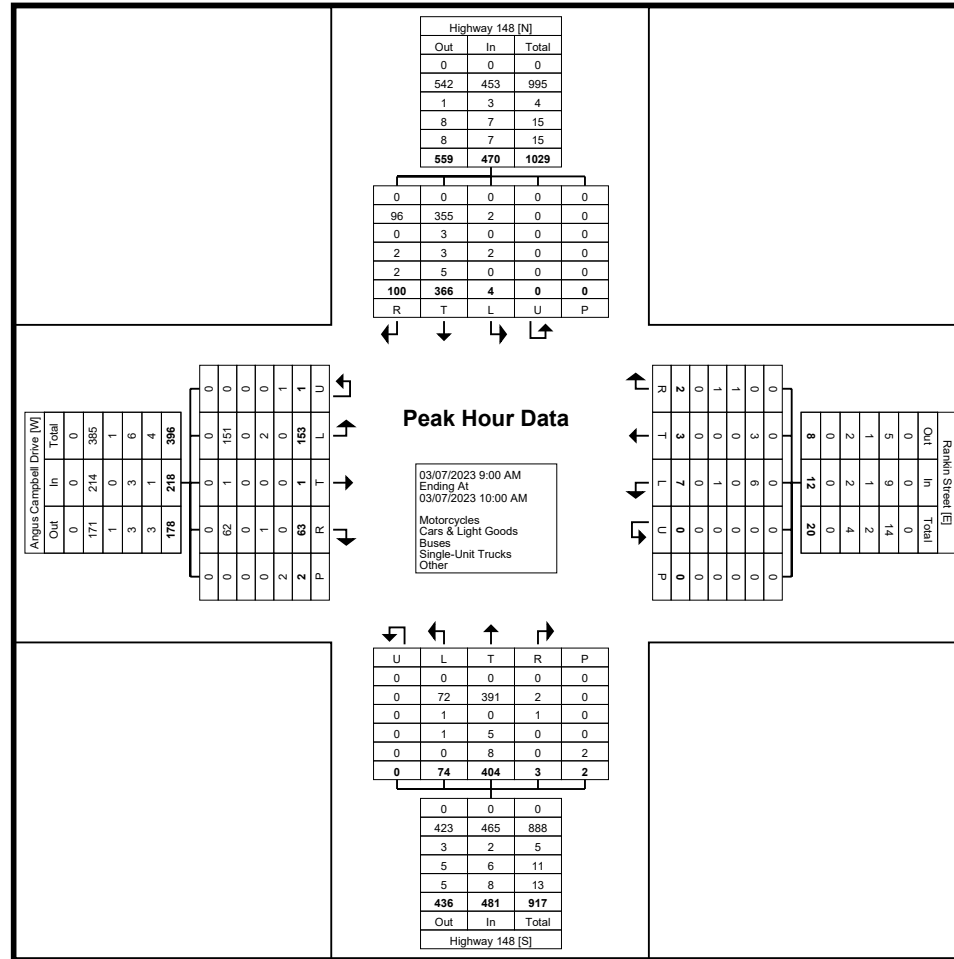
Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>153</b>	<b>1</b>	<b>63</b>	<b>1</b>	<b>2</b>	<b>218</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>74</b>	<b>404</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>481</b>	<b>4</b>	<b>366</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>470</b>	<b>1181</b>
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 cdowness@ptsI.com

Count Name: Highway 148 & Angus Campbell Drive - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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@ptsI.com

Count Name: Highway 148 & Angus Campbell  
Drive - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:30 AM)

Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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@ptsI.com

Count Name: Highway 148 & Angus Campbell  
Drive - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

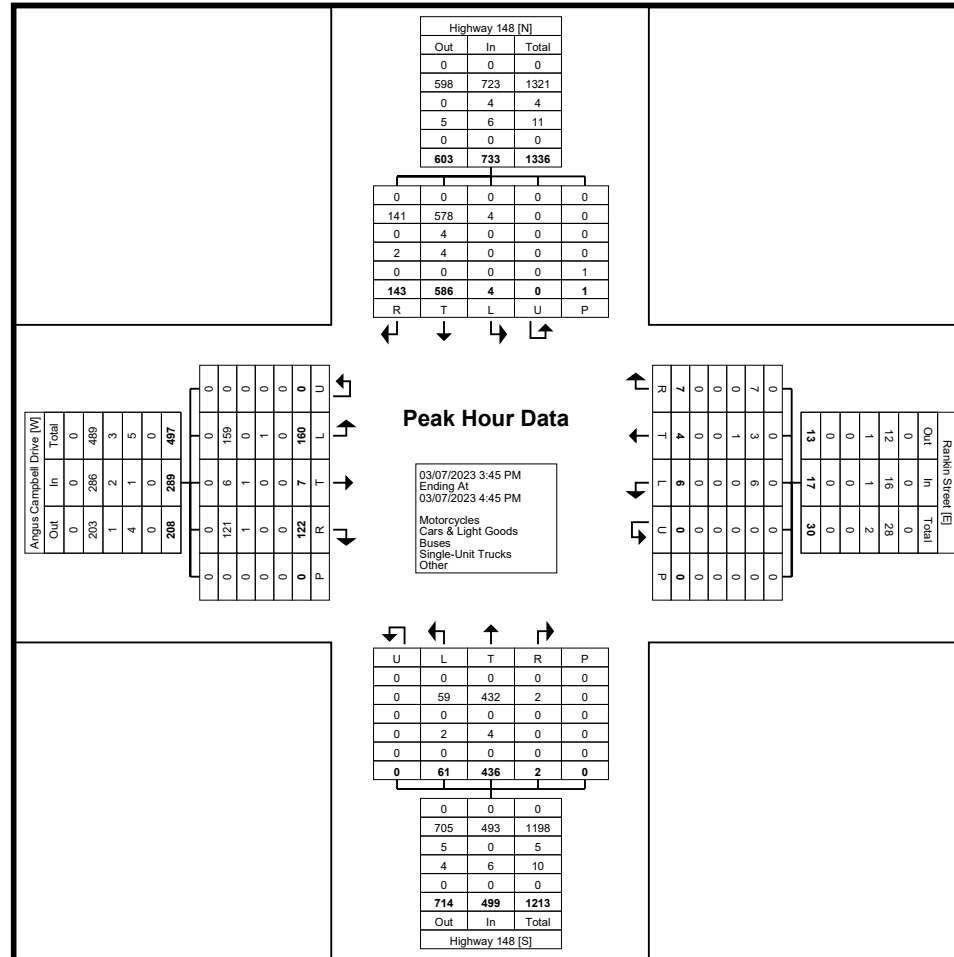
Start Time	Angus Campbell Drive Eastbound						Rankin Street Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>160</b>	<b>7</b>	<b>122</b>	<b>0</b>	<b>0</b>	<b>289</b>	<b>6</b>	<b>4</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>61</b>	<b>436</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>499</b>	<b>4</b>	<b>586</b>	<b>143</b>	<b>0</b>	<b>1</b>	<b>733</b>	<b>1538</b>
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@ptsll.com

Count Name: Highway 148 & Angus Campbell  
Drive - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Drive-in Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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









Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Highway 148 & Drive-in Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

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

Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	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
<b>Total</b>	<b>57</b>	<b>0</b>	<b>47</b>	<b>0</b>	<b>1</b>	<b>104</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>71</b>	<b>522</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>594</b>	<b>2</b>	<b>198</b>	<b>51</b>	<b>0</b>	<b>0</b>	<b>251</b>	<b>957</b>
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

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

Count Name: Highway 148 & Drive-in Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

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

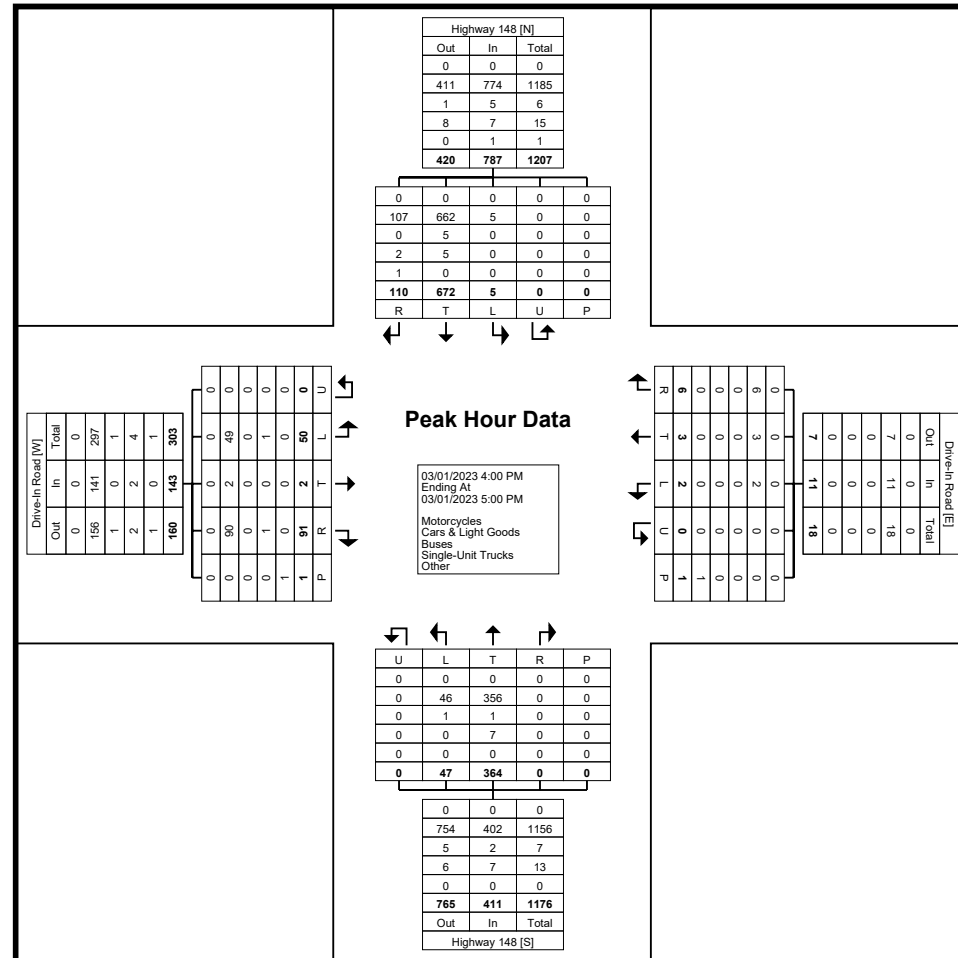
Start Time	Drive-In Road Eastbound						Drive-In Road Westbound						Highway 148 Northbound						Highway 148 Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	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@pts.com

Count Name: Highway 148 & Drive-in Road  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsll.com

Count Name: Highway 148 & Howard Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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

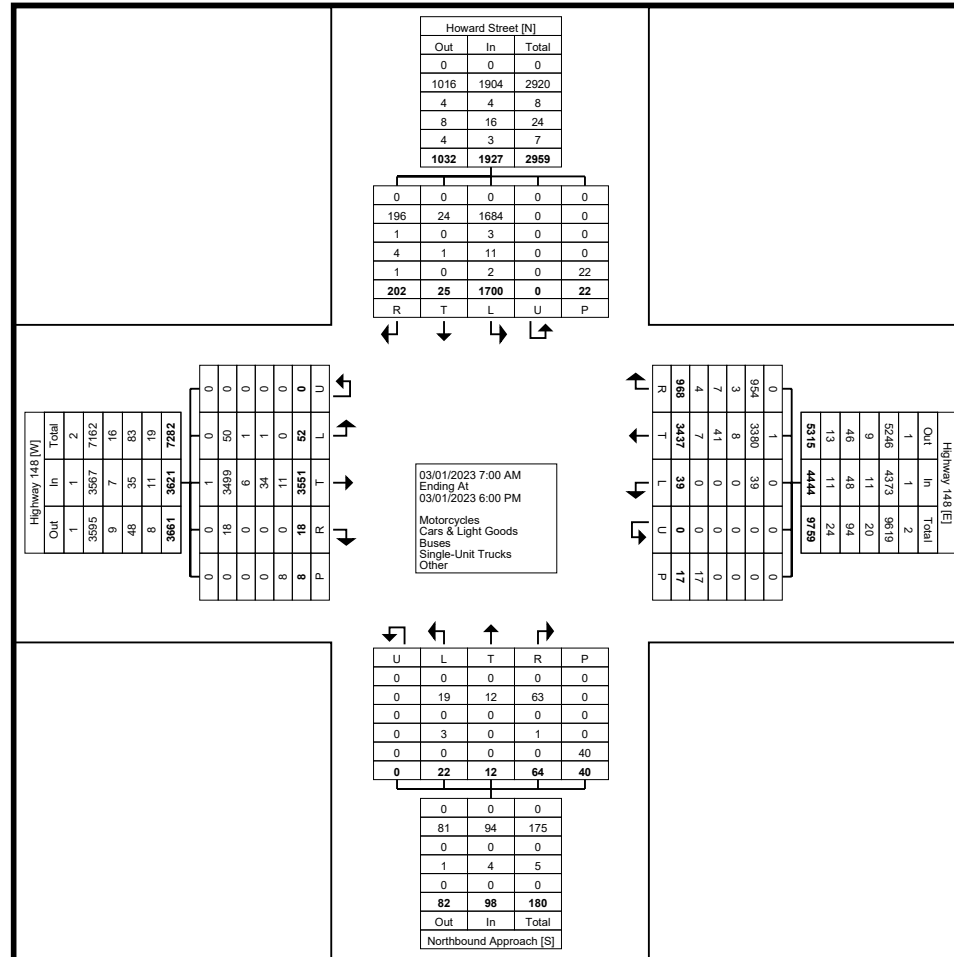
4:45 PM	0	138	0	0	0	138	0	131	32	0	0	163	2	1	1	0	0	4	75	0	8	0	0	83	388
Hourly Total	7	552	2	0	3	561	5	522	131	0	3	658	8	1	8	0	2	17	333	2	25	0	3	360	1596
5:00 PM	1	119	0	0	0	120	0	138	36	0	0	174	2	0	5	0	2	7	78	0	6	0	0	84	385
5:15 PM	0	134	0	0	0	134	0	105	25	0	0	130	1	0	3	0	0	4	52	0	8	0	3	60	328
5:30 PM	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

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Count Name: Highway 148 & Howard 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  
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Count Name: Highway 148 & Howard Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

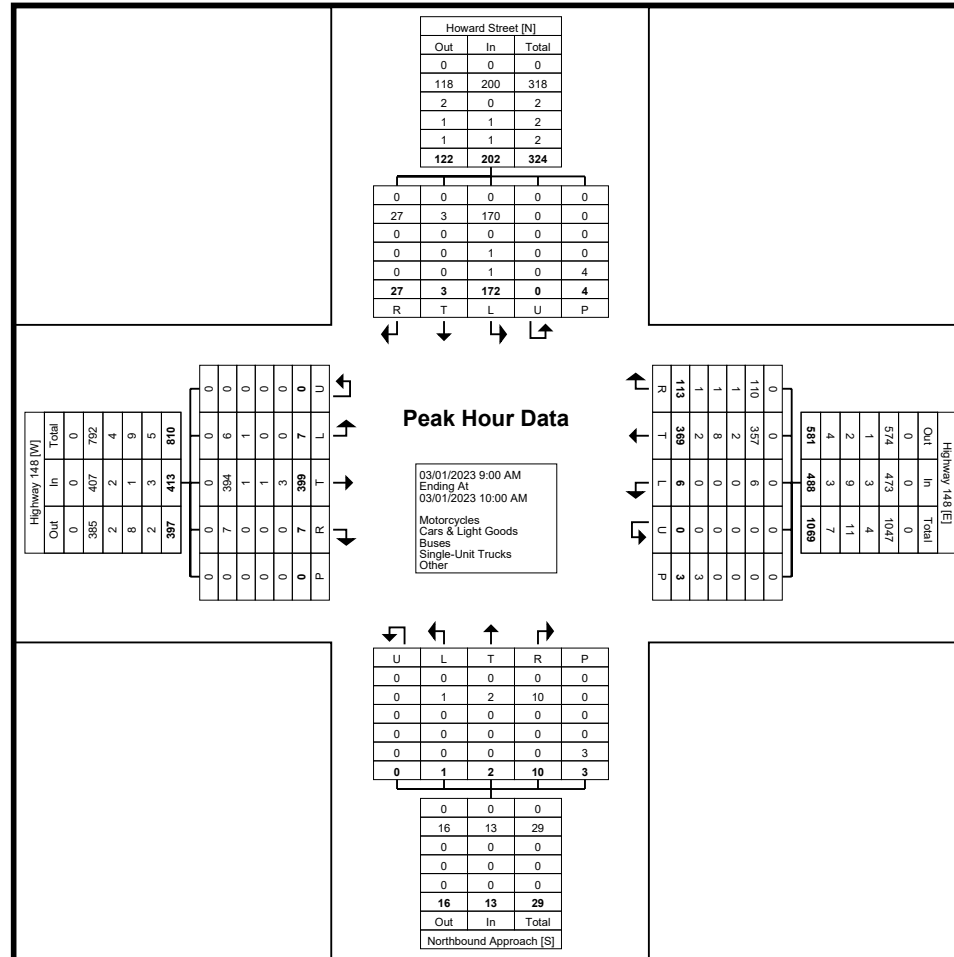
Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
9:00 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
<b>Total</b>	<b>7</b>	<b>399</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>413</b>	<b>6</b>	<b>369</b>	<b>113</b>	<b>0</b>	<b>3</b>	<b>488</b>	<b>1</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>3</b>	<b>13</b>	<b>172</b>	<b>3</b>	<b>27</b>	<b>0</b>	<b>4</b>	<b>202</b>	<b>1116</b>
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	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Highway 148 & Howard Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Highway 148 & Howard Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

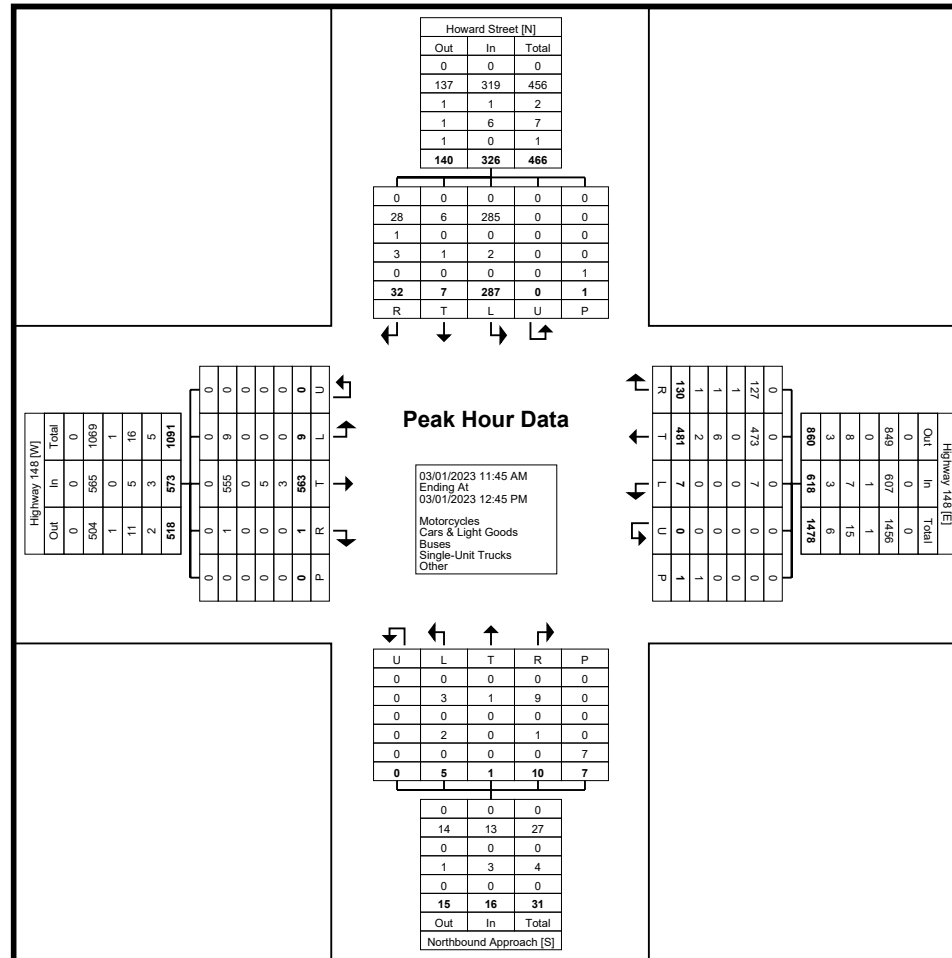
Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:45 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
<b>Total</b>	<b>9</b>	<b>563</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>573</b>	<b>7</b>	<b>481</b>	<b>130</b>	<b>0</b>	<b>1</b>	<b>618</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>7</b>	<b>16</b>	<b>287</b>	<b>7</b>	<b>32</b>	<b>0</b>	<b>1</b>	<b>326</b>	<b>1533</b>
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

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Count Name: Highway 148 & Howard Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:45 AM)



Paradigm Transportation Solutions Limited  
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Count Name: Highway 148 & Howard Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

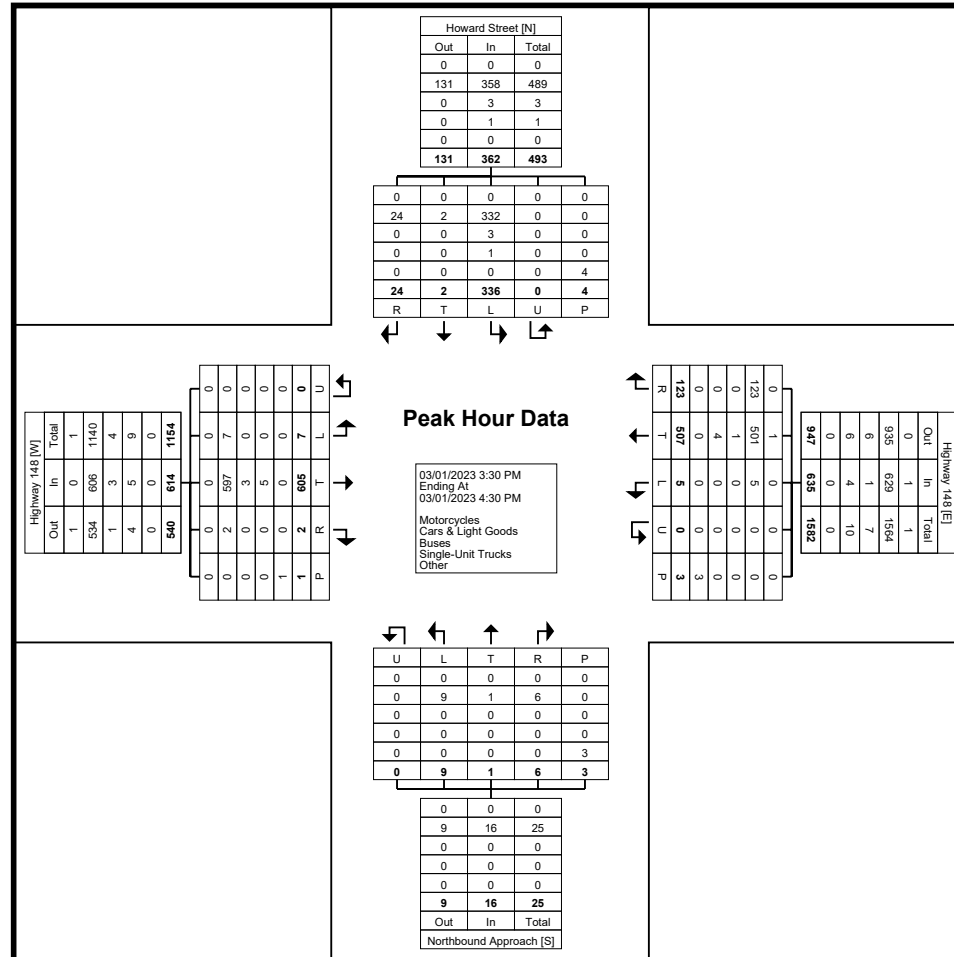
Start Time	Highway 148 Eastbound						Highway 148 Westbound						Northbound Approach Northbound						Howard Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 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
<b>Total</b>	<b>7</b>	<b>605</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>614</b>	<b>5</b>	<b>507</b>	<b>123</b>	<b>0</b>	<b>3</b>	<b>635</b>	<b>9</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>16</b>	<b>336</b>	<b>2</b>	<b>24</b>	<b>0</b>	<b>4</b>	<b>362</b>	<b>1627</b>
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  
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  
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@ptsll.com

Count Name: Mackay Street & Alfred Street -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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



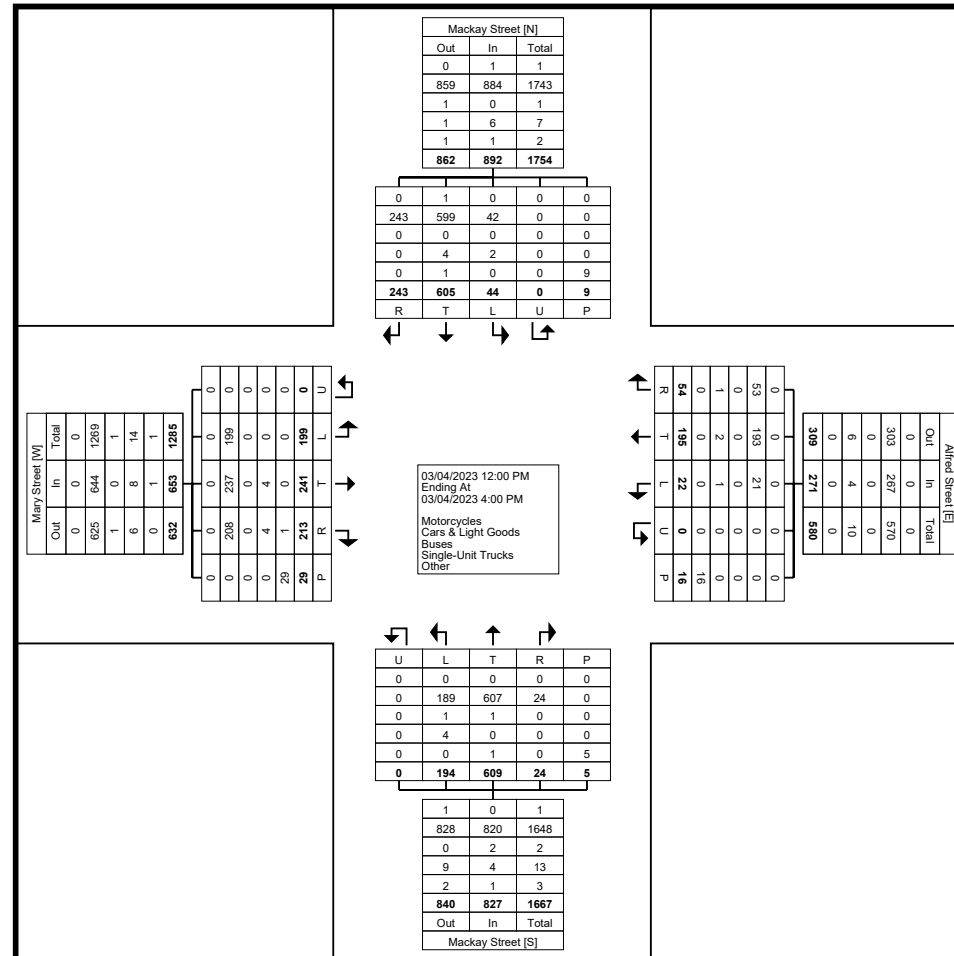
Bicycles on Road	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.5	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	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@ptsI.com

Count Name: Mackay Street & Alfred 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@ptsI.com

Count Name: Mackay Street & Alfred Street -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:15 PM)

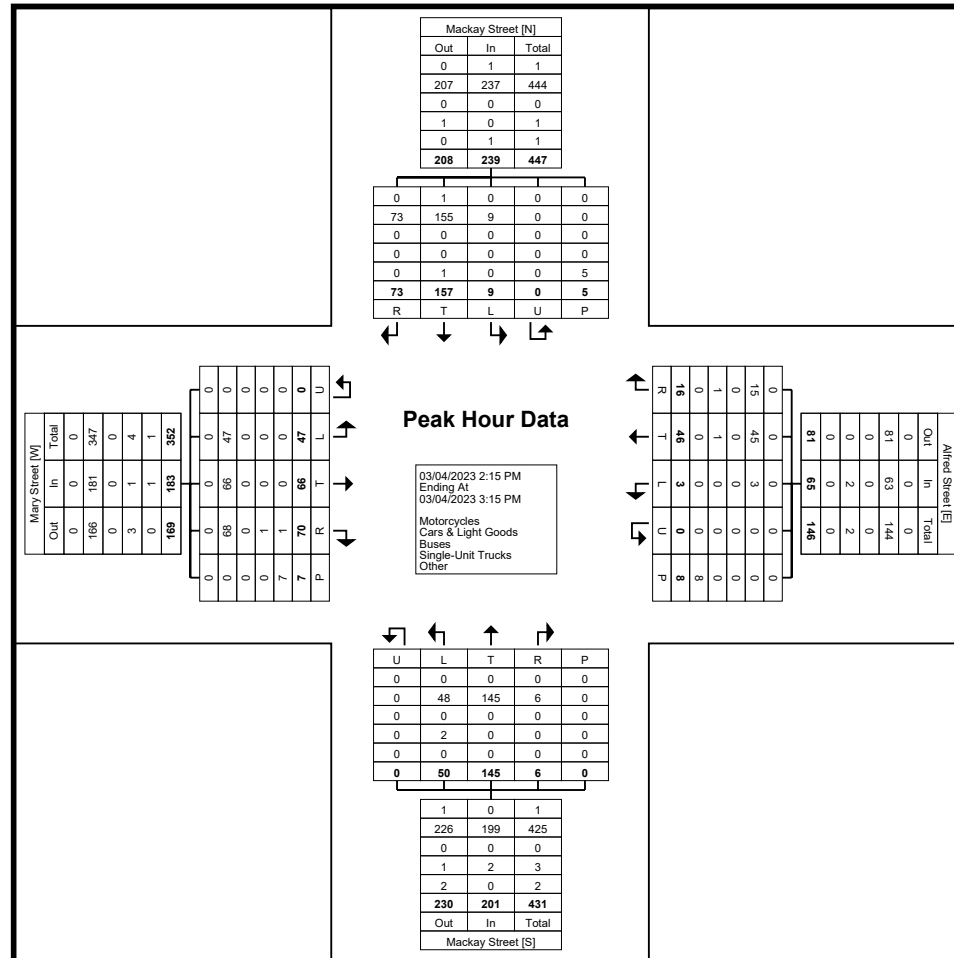
Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
2:15 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
<b>Total</b>	<b>47</b>	<b>66</b>	<b>70</b>	<b>0</b>	<b>7</b>	<b>183</b>	<b>3</b>	<b>46</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>65</b>	<b>50</b>	<b>145</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>201</b>	<b>9</b>	<b>157</b>	<b>73</b>	<b>0</b>	<b>5</b>	<b>239</b>	<b>688</b>
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@ptsI.com

Count Name: Mackay Street & Alfred Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@ptsll.com

Count Name: Mackay Street & Alfred Street -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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



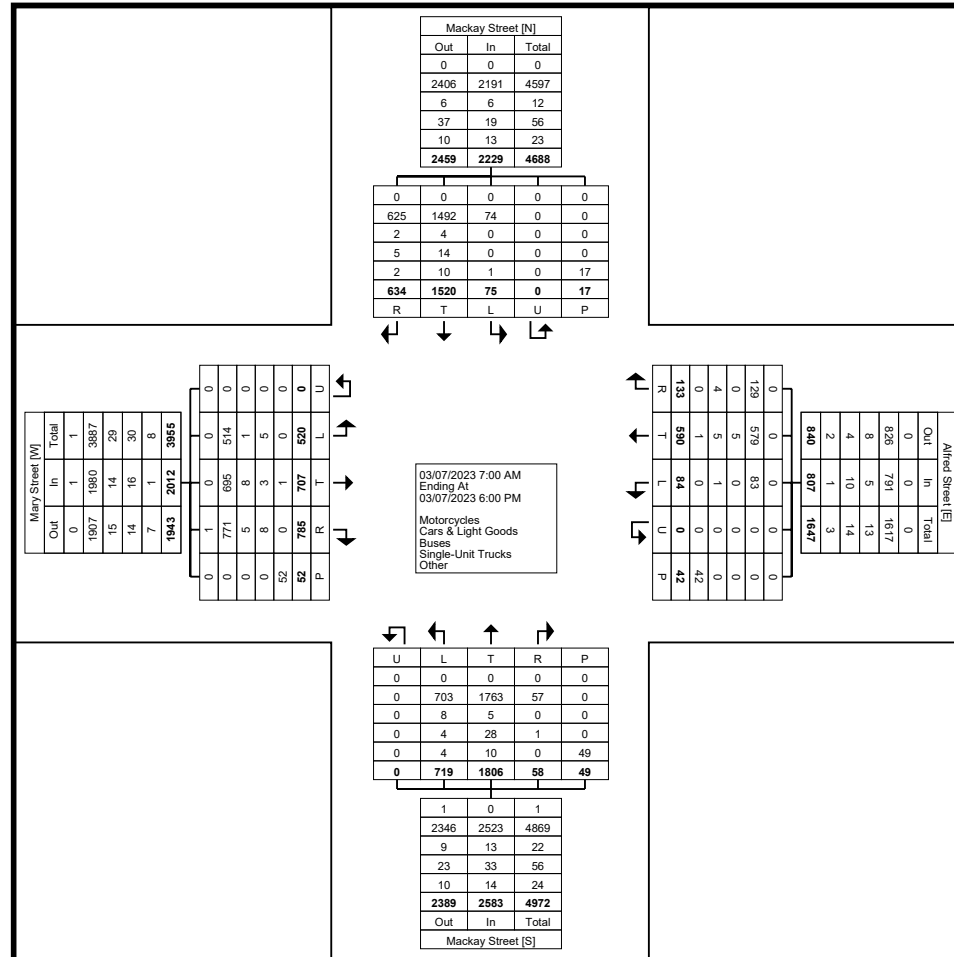
4:45 PM	18	20	26	0	1	64	2	19	5	0	2	26	20	61	1	0	0	82	2	57	21	0	1	80	252
Hourly Total	66	110	128	0	8	304	9	95	23	0	6	127	104	226	13	0	2	343	9	235	89	0	3	333	1107
5:00 PM	28	31	27	0	3	86	6	22	2	0	2	30	19	62	1	0	0	82	2	59	24	0	0	85	283
5:15 PM	18	18	19	0	1	55	2	19	4	0	1	25	19	39	1	0	0	59	5	51	27	0	0	83	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  
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Count Name: Mackay Street & Alfred Street -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 3



Turning Movement Data Plot



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Count Name: Mackay Street & Alfred Street -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

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

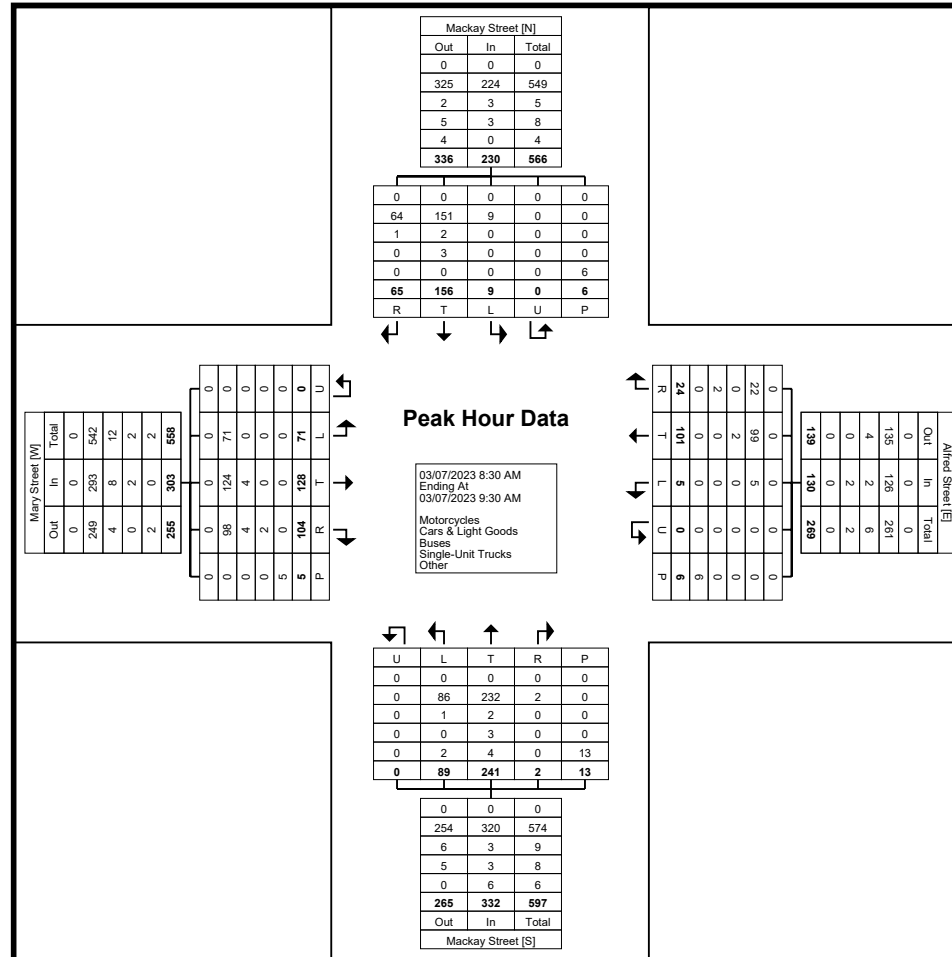
Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:30 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
<b>Total</b>	<b>71</b>	<b>128</b>	<b>104</b>	<b>0</b>	<b>5</b>	<b>303</b>	<b>5</b>	<b>101</b>	<b>24</b>	<b>0</b>	<b>6</b>	<b>130</b>	<b>89</b>	<b>241</b>	<b>2</b>	<b>0</b>	<b>13</b>	<b>332</b>	<b>9</b>	<b>156</b>	<b>65</b>	<b>0</b>	<b>6</b>	<b>230</b>	<b>995</b>
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	-	-



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Count Name: Mackay Street & Alfred Street -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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



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Count Name: Mackay Street & Alfred Street -  
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Start Date: 03/07/2023  
Page No: 6

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

Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>61</b>	<b>84</b>	<b>99</b>	<b>0</b>	<b>7</b>	<b>244</b>	<b>12</b>	<b>69</b>	<b>17</b>	<b>0</b>	<b>5</b>	<b>98</b>	<b>106</b>	<b>244</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>359</b>	<b>9</b>	<b>232</b>	<b>79</b>	<b>0</b>	<b>2</b>	<b>320</b>	<b>1021</b>
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	-	-

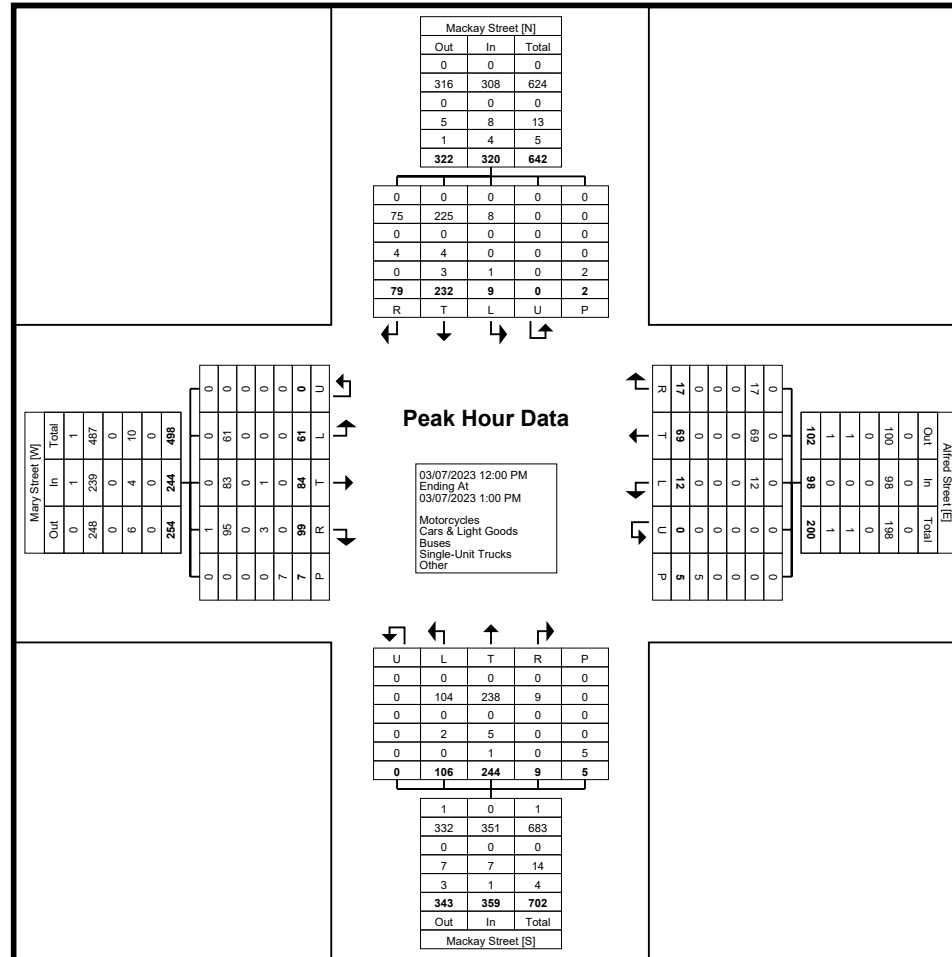




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Count Name: Mackay Street & Alfred Street -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



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



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Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

### Turning Movement Peak Hour Data (3:15 PM)

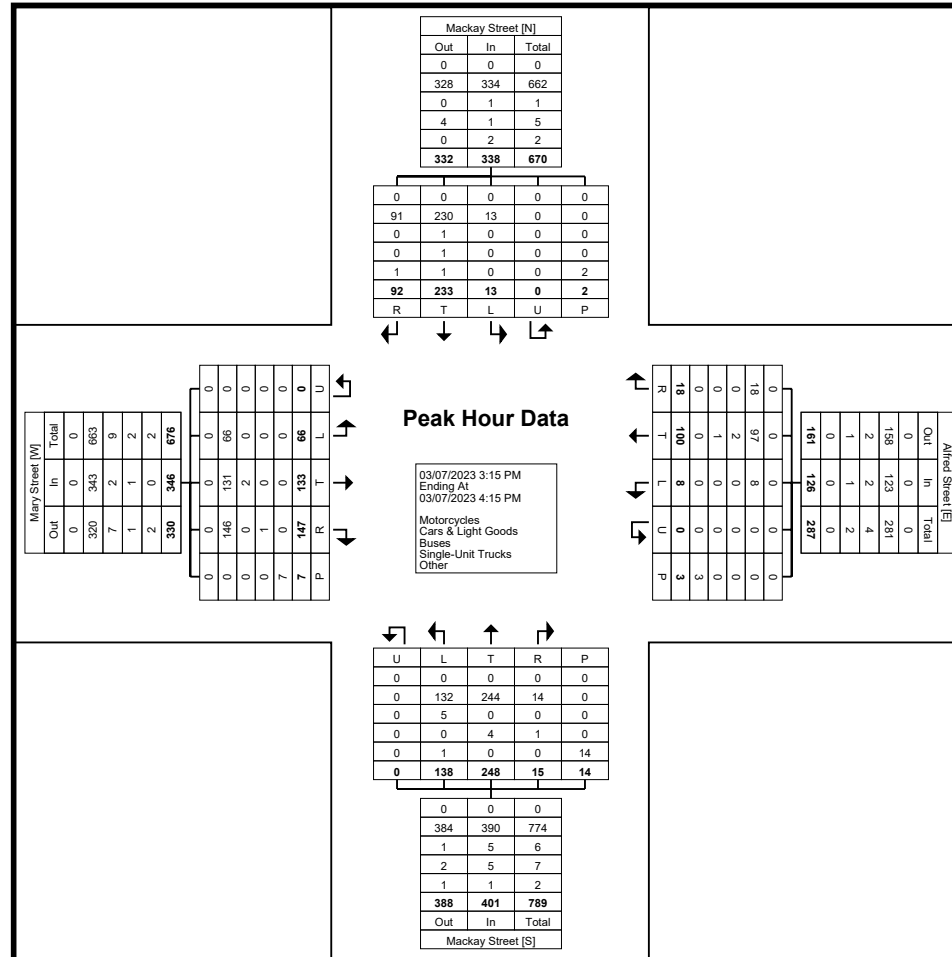
Start Time	Mary Street Eastbound						Alfred Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:15 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
<b>Total</b>	<b>66</b>	<b>133</b>	<b>147</b>	<b>0</b>	<b>7</b>	<b>346</b>	<b>8</b>	<b>100</b>	<b>18</b>	<b>0</b>	<b>3</b>	<b>126</b>	<b>138</b>	<b>248</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>401</b>	<b>13</b>	<b>233</b>	<b>92</b>	<b>0</b>	<b>2</b>	<b>338</b>	<b>1211</b>
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	-	-



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Count Name: Mackay Street & Alfred Street -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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@pts1.com

Count Name: Mackay Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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	-	-

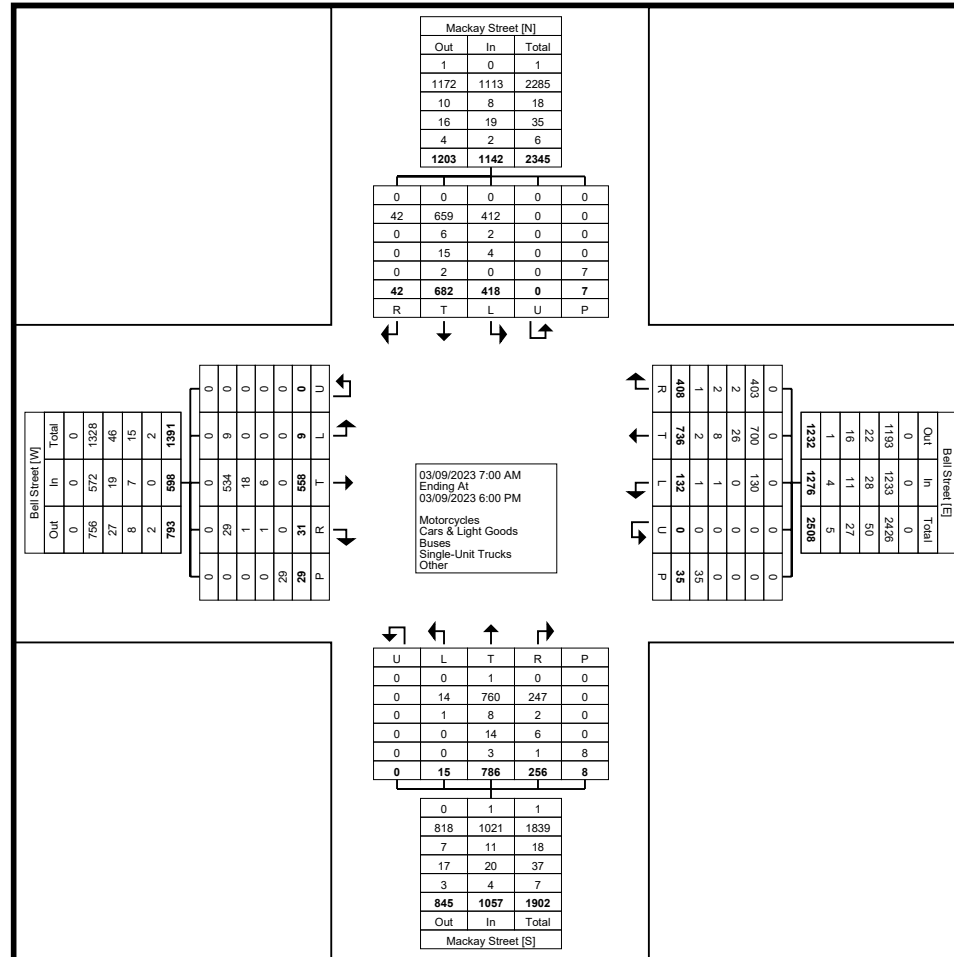




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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  
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  
Page No: 4

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

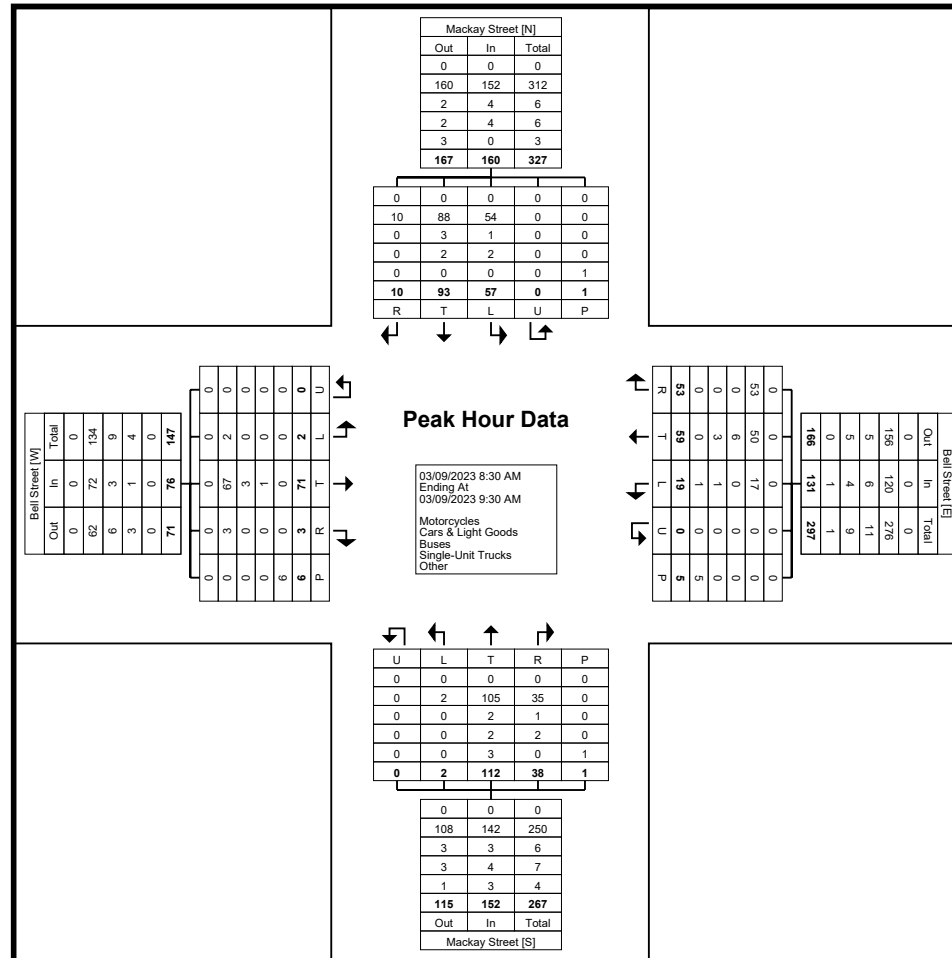
Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:30 AM	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
<b>Total</b>	<b>2</b>	<b>71</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>76</b>	<b>19</b>	<b>59</b>	<b>53</b>	<b>0</b>	<b>5</b>	<b>131</b>	<b>2</b>	<b>112</b>	<b>38</b>	<b>0</b>	<b>1</b>	<b>152</b>	<b>57</b>	<b>93</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>160</b>	<b>519</b>
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

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Count Name: Mackay Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

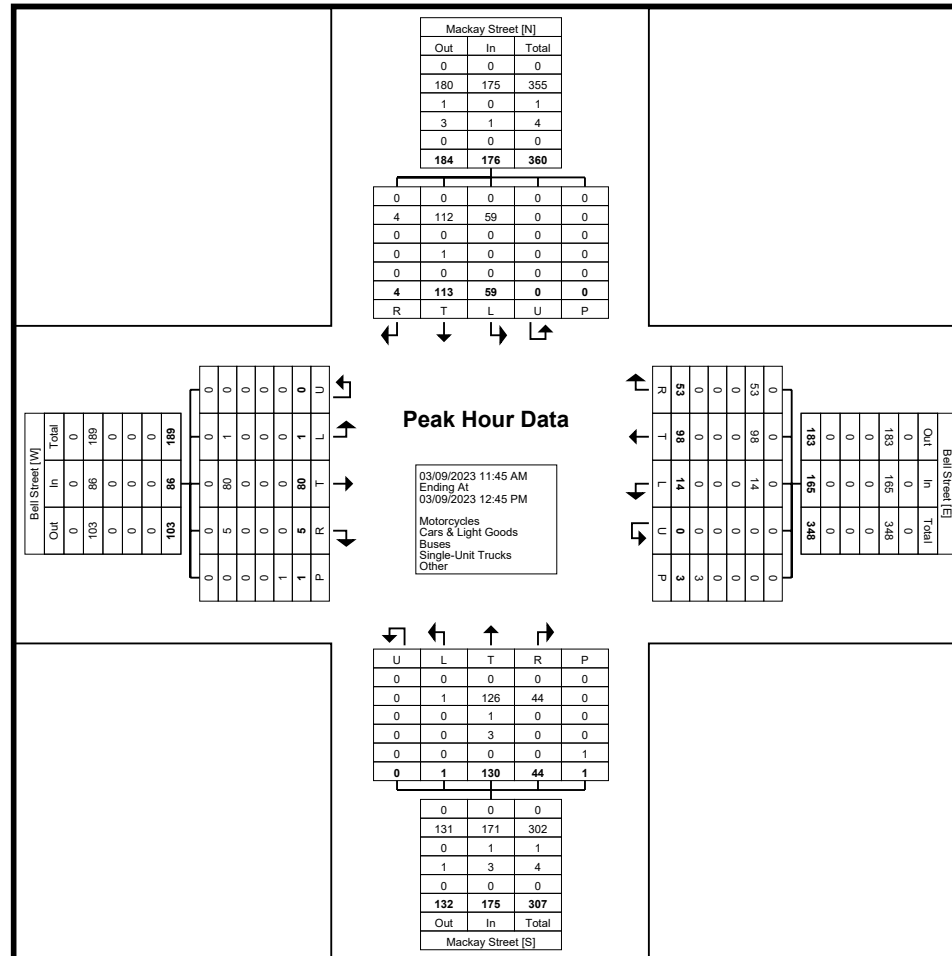
Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:45 AM	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
<b>Total</b>	<b>1</b>	<b>80</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>86</b>	<b>14</b>	<b>98</b>	<b>53</b>	<b>0</b>	<b>3</b>	<b>165</b>	<b>1</b>	<b>130</b>	<b>44</b>	<b>0</b>	<b>1</b>	<b>175</b>	<b>59</b>	<b>113</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>176</b>	<b>602</b>
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@ptsI.com

Count Name: Mackay Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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  
Page No: 8

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

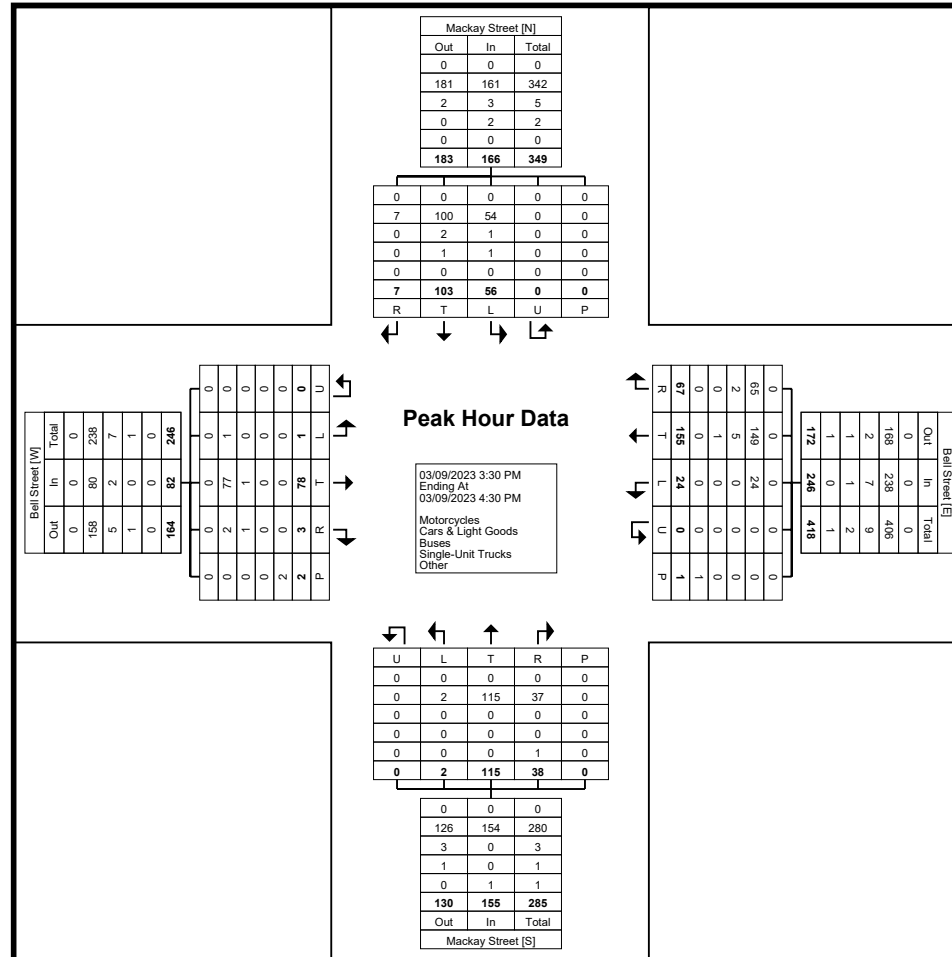
Start Time	Bell Street Eastbound						Bell Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 PM	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
<b>Total</b>	<b>1</b>	<b>78</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>82</b>	<b>24</b>	<b>155</b>	<b>67</b>	<b>0</b>	<b>1</b>	<b>246</b>	<b>2</b>	<b>115</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>155</b>	<b>56</b>	<b>103</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>166</b>	<b>649</b>
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@ptsI.com

Count Name: Mackay Street & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
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@pts1.com

Count Name: Mackay Street & Lake Street  
Nelson Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

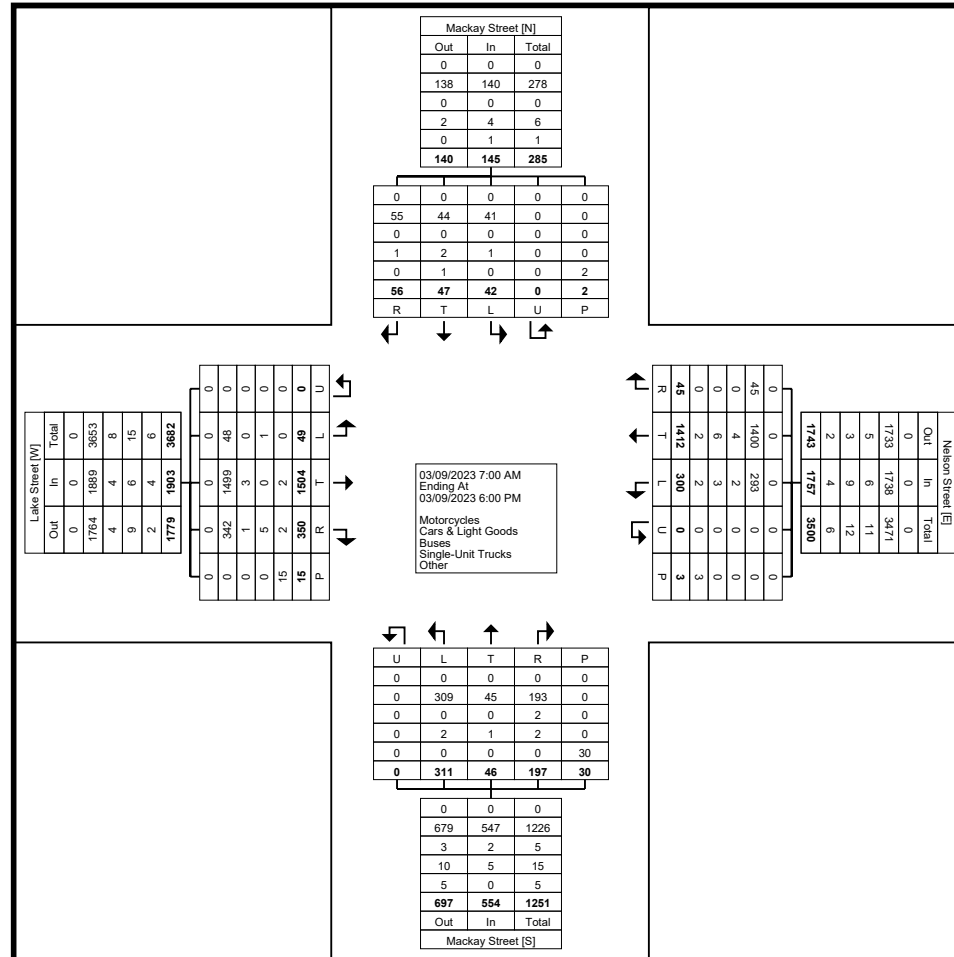
4:45 PM	1	75	4	0	0	80	9	46	1	0	0	56	14	0	7	0	0	21	1	1	0	0	0	2	159
Hourly Total	4	277	64	0	2	345	60	188	4	0	0	252	33	3	31	0	5	67	7	5	9	0	1	21	685
5:00 PM	1	62	13	0	0	76	18	59	0	0	0	77	5	0	5	0	2	10	2	2	1	0	0	5	168
5:15 PM	2	52	6	0	1	60	9	50	0	0	0	59	4	0	7	0	1	11	1	3	1	0	0	5	135
5:30 PM	0	59	5	0	2	64	14	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@ptsil.com

Count Name: Mackay Street & Lake Street  
Nelson 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@ptsll.com

Count Name: Mackay Street & Lake Street  
Nelson Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

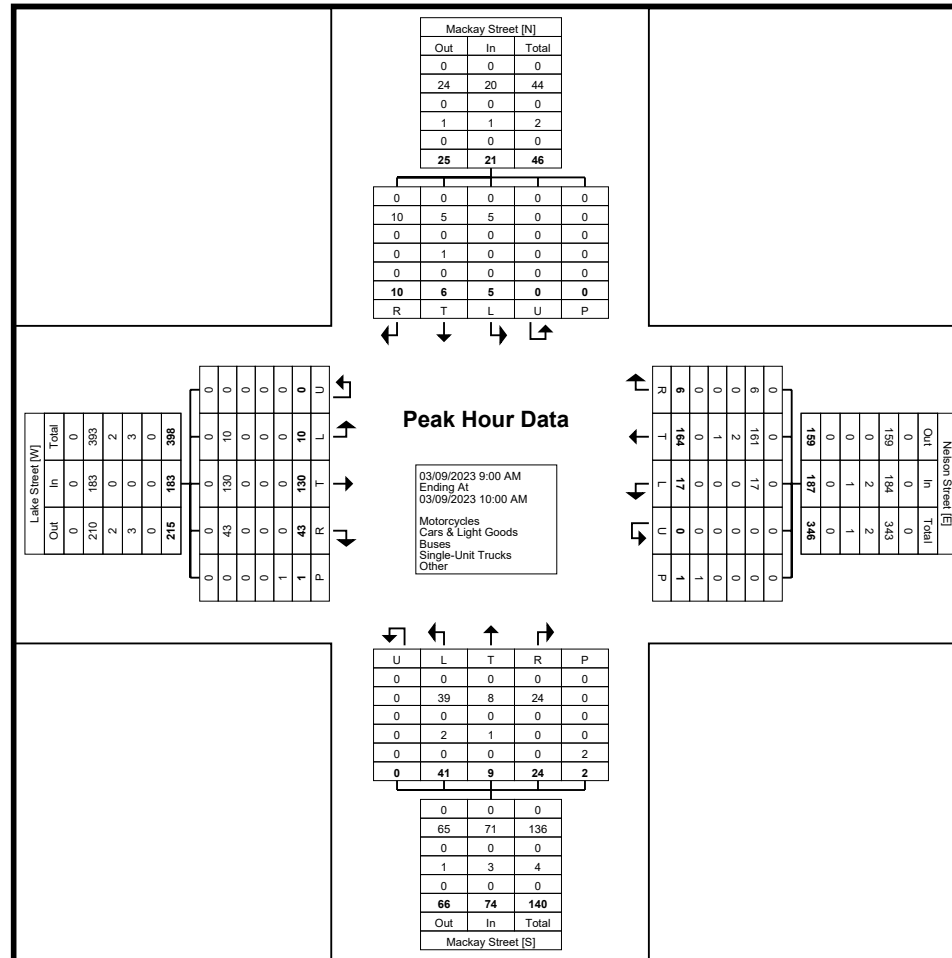
Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
9:00 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
<b>Total</b>	<b>10</b>	<b>130</b>	<b>43</b>	<b>0</b>	<b>1</b>	<b>183</b>	<b>17</b>	<b>164</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>187</b>	<b>41</b>	<b>9</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>74</b>	<b>5</b>	<b>6</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>465</b>
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	-	-	-	-	-	-	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Lake Street  
Nelson Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@pts1.com

Count Name: Mackay Street & Lake Street  
Nelson Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>9</b>	<b>260</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>328</b>	<b>53</b>	<b>239</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>306</b>	<b>51</b>	<b>7</b>	<b>35</b>	<b>0</b>	<b>1</b>	<b>93</b>	<b>7</b>	<b>8</b>	<b>13</b>	<b>0</b>	<b>1</b>	<b>28</b>	<b>755</b>
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	-	-





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Lake Street  
Nelson Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

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

Start Time	Lake Street Eastbound						Nelson Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>3</b>	<b>266</b>	<b>76</b>	<b>0</b>	<b>2</b>	<b>345</b>	<b>60</b>	<b>197</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>261</b>	<b>35</b>	<b>7</b>	<b>34</b>	<b>0</b>	<b>6</b>	<b>76</b>	<b>8</b>	<b>7</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>26</b>	<b>708</b>
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	-	-

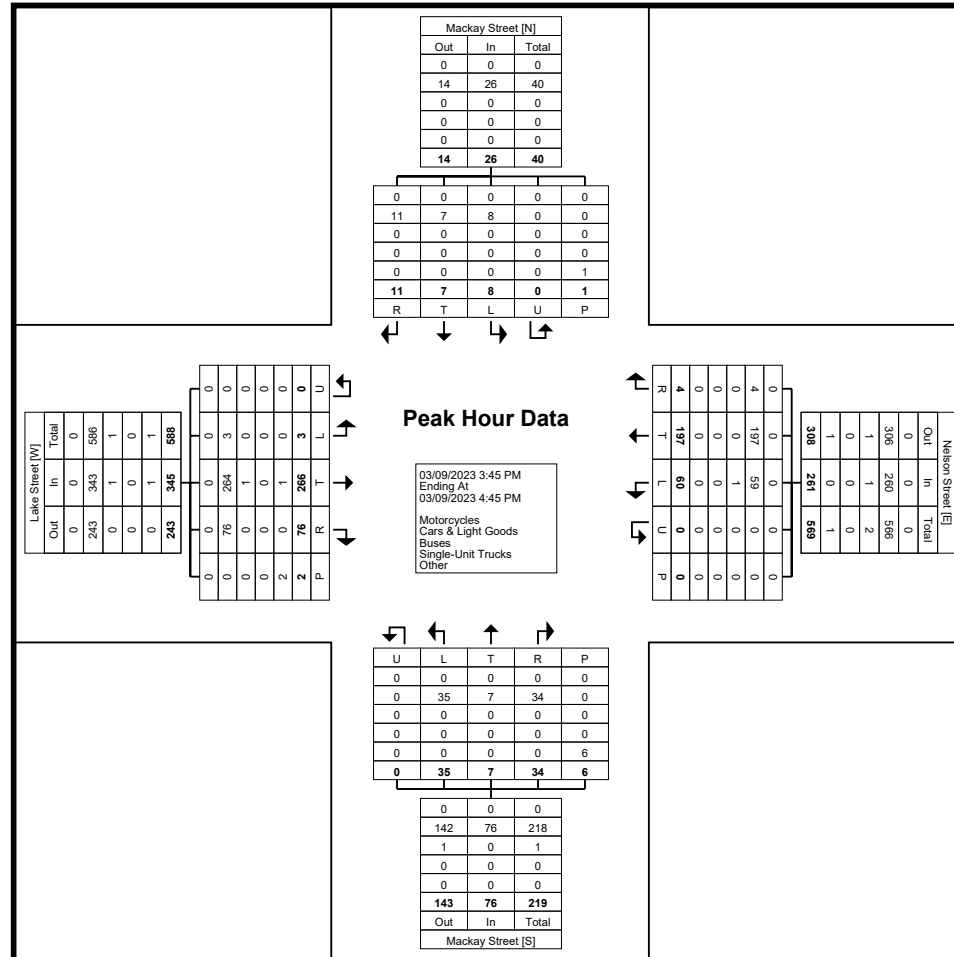




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Lake Street  
Nelson Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 9



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



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Mackay Street & Town Line Road  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

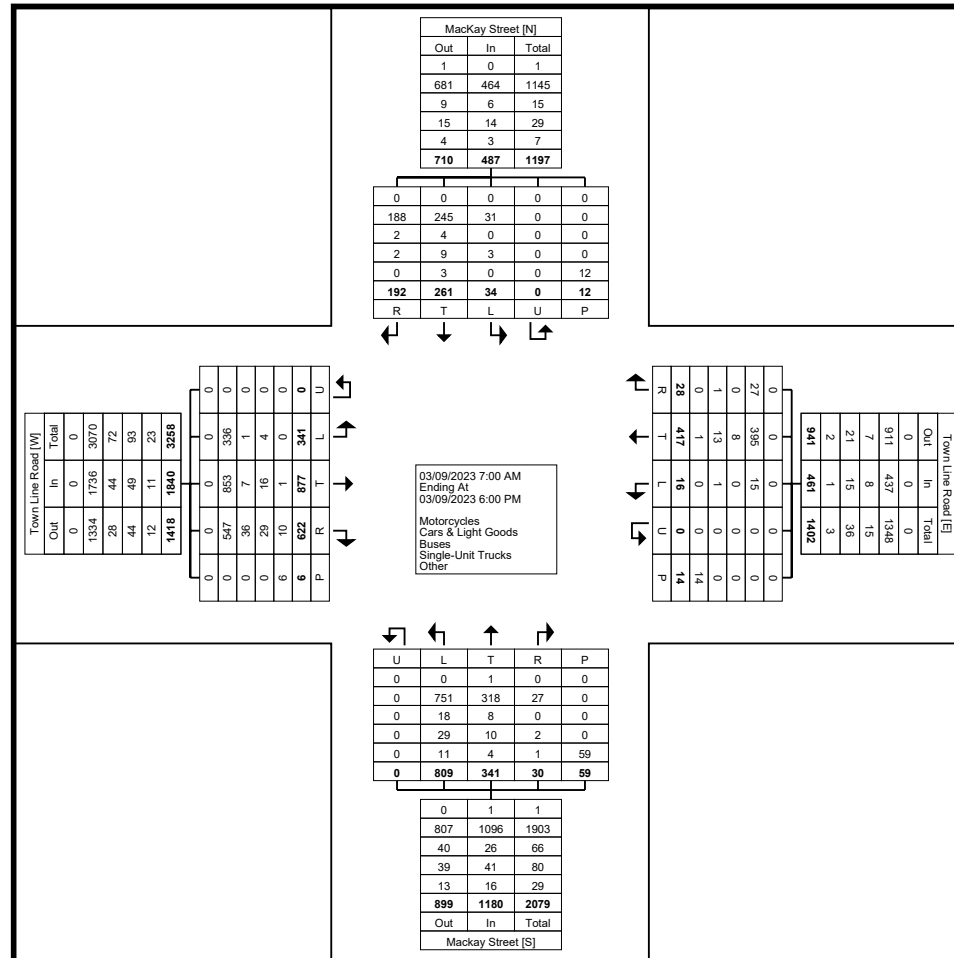
4:45 PM	11	29	28	0	0	68	0	15	0	0	4	15	28	13	1	0	0	42	1	13	3	0	0	17	142
Hourly Total	33	132	117	0	1	282	2	78	4	0	6	84	122	44	6	0	10	172	2	55	38	0	1	95	633
5:00 PM	9	29	29	0	0	67	0	12	2	0	0	14	35	9	0	0	0	44	1	9	8	0	0	18	143
5:15 PM	6	36	17	0	0	59	0	11	0	0	0	11	16	5	0	0	0	21	0	8	4	0	1	12	103
5:30 PM	9	28	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  
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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@ptsI.com

Count Name: Mackay Street & Town Line Road  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>42</b>	<b>144</b>	<b>73</b>	<b>0</b>	<b>4</b>	<b>259</b>	<b>2</b>	<b>52</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>62</b>	<b>113</b>	<b>67</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>182</b>	<b>8</b>	<b>26</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>58</b>	<b>561</b>
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	-	-

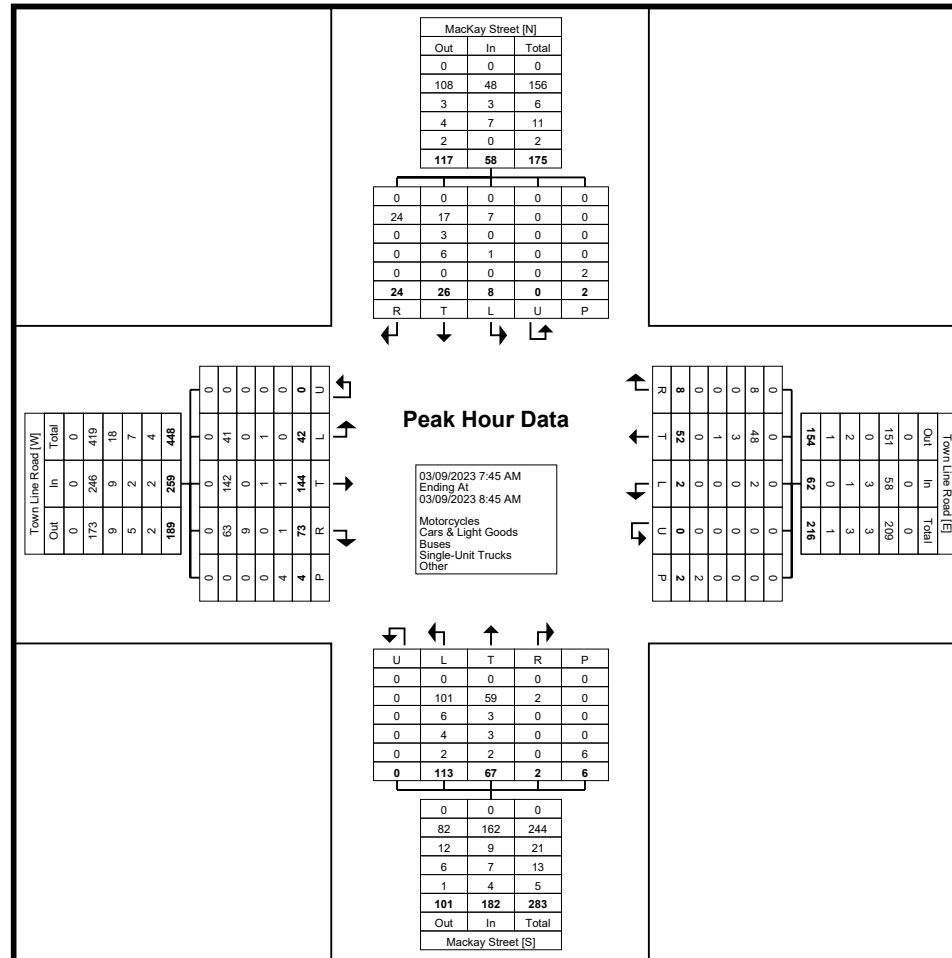




Paradigm Transportation Solutions Limited  
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Count Name: Mackay Street & Town Line Road  
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Start Date: 03/09/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (7:45 AM)



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Count Name: Mackay Street & Town Line Road  
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Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

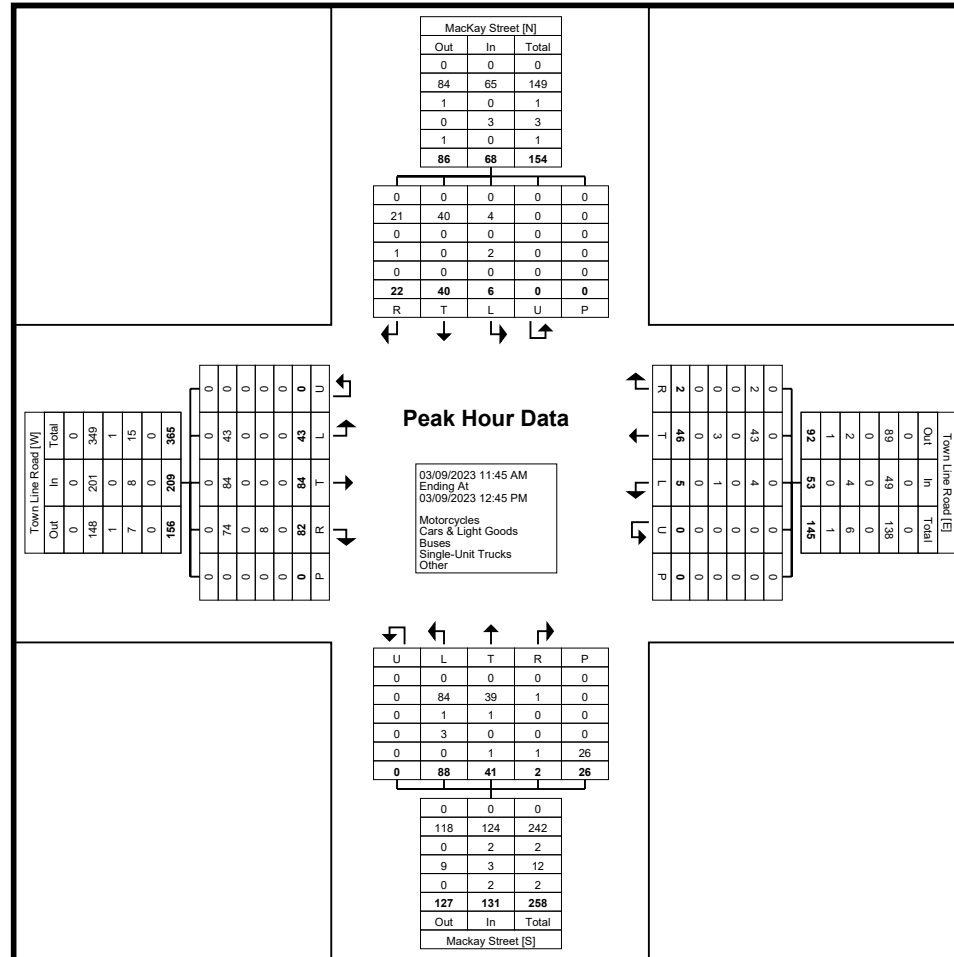
Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:45 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
<b>Total</b>	<b>43</b>	<b>84</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>209</b>	<b>5</b>	<b>46</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>53</b>	<b>88</b>	<b>41</b>	<b>2</b>	<b>0</b>	<b>26</b>	<b>131</b>	<b>6</b>	<b>40</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>68</b>	<b>461</b>
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	-	-	-	-	-	-	-	-



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Count Name: Mackay Street & Town Line Road  
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Start Date: 03/09/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:45 AM)



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Count Name: Mackay Street & Town Line Road  
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Page No: 8

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

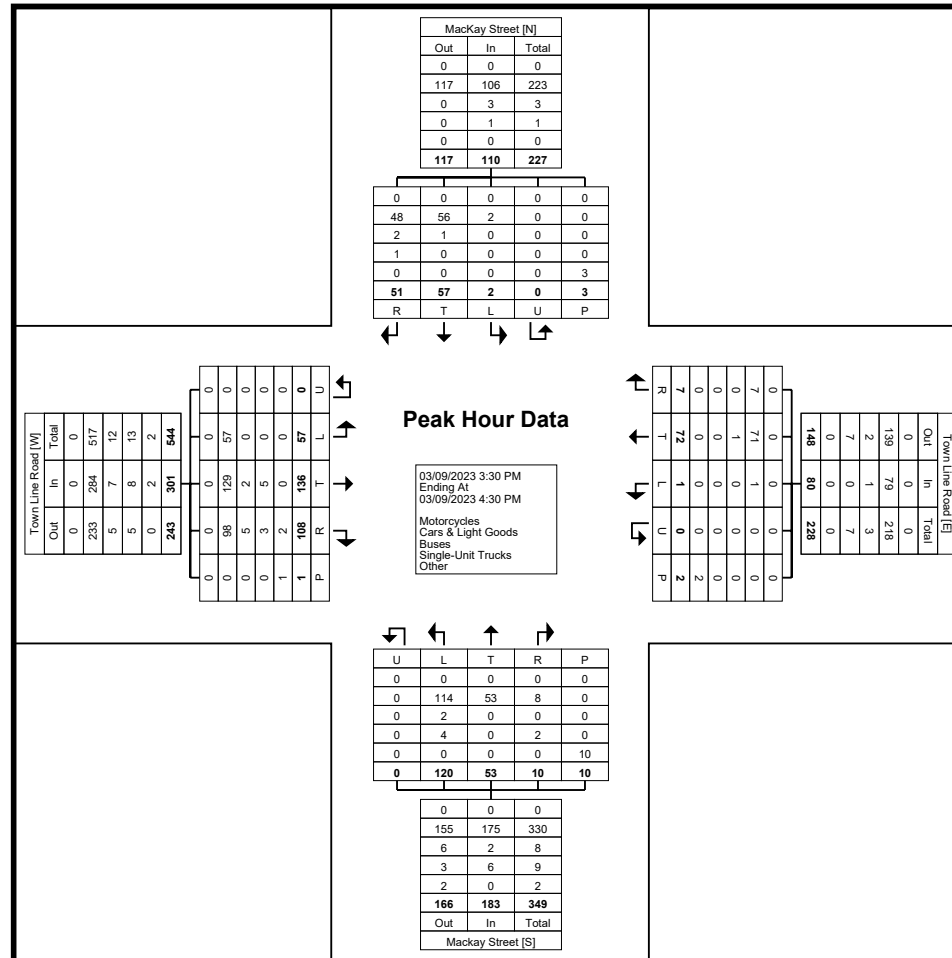
Start Time	Town Line Road Eastbound						Town Line Road Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 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
<b>Total</b>	<b>57</b>	<b>136</b>	<b>108</b>	<b>0</b>	<b>1</b>	<b>301</b>	<b>1</b>	<b>72</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>80</b>	<b>120</b>	<b>53</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>183</b>	<b>2</b>	<b>57</b>	<b>51</b>	<b>0</b>	<b>3</b>	<b>110</b>	<b>674</b>
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@ptsI.com

Count Name: Mackay Street & Town Line Road  
Site Code: 220694  
Start Date: 03/09/2023  
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@pts.com

Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

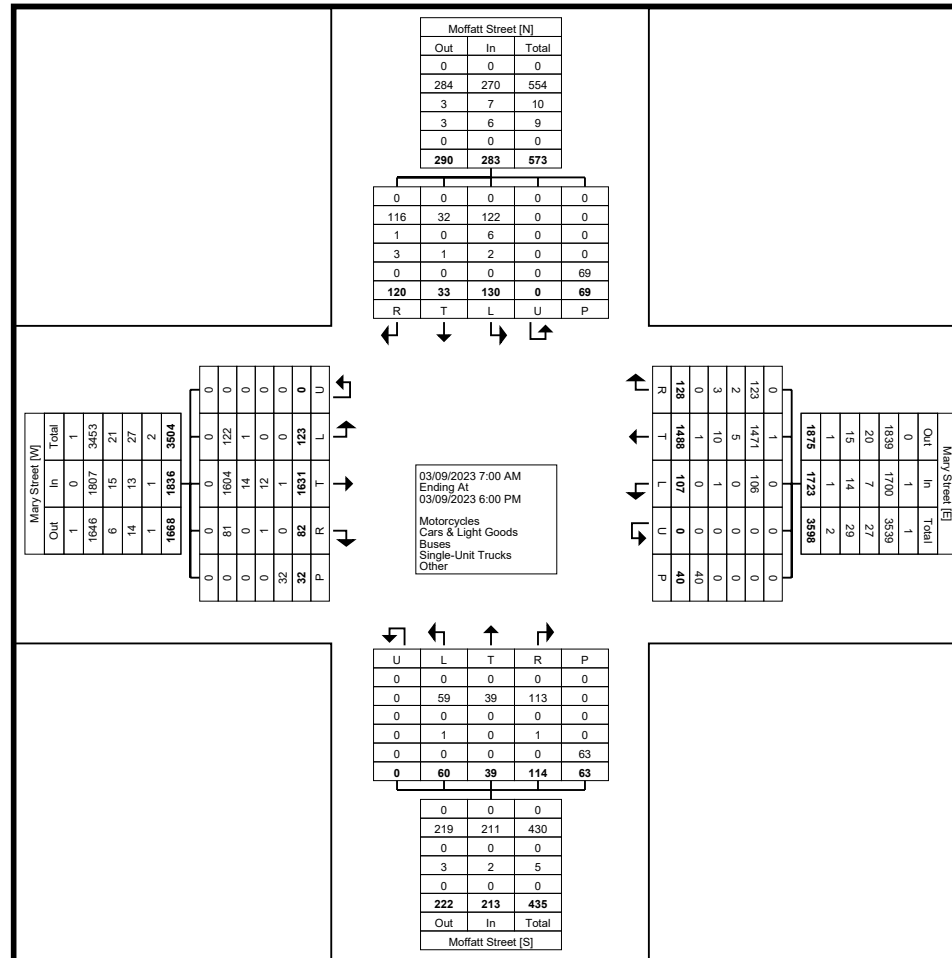
4:45 PM	4	70	4	0	1	78	3	43	2	0	4	48	2	2	1	0	4	5	5	3	9	0	0	17	148
Hourly Total	12	235	22	0	1	269	14	242	13	0	9	269	12	4	11	0	11	27	29	10	30	0	5	69	634
5:00 PM	7	52	4	0	0	63	7	63	2	0	1	72	3	1	1	0	0	5	4	1	7	0	0	12	152
5:15 PM	2	42	7	0	1	51	1	49	3	0	2	53	1	3	2	0	2	6	2	1	6	0	1	9	119
5:30 PM	3	47	2	0	0	52	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

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

Count Name: Mary Street & Moffatt 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@ptsll.com

Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

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

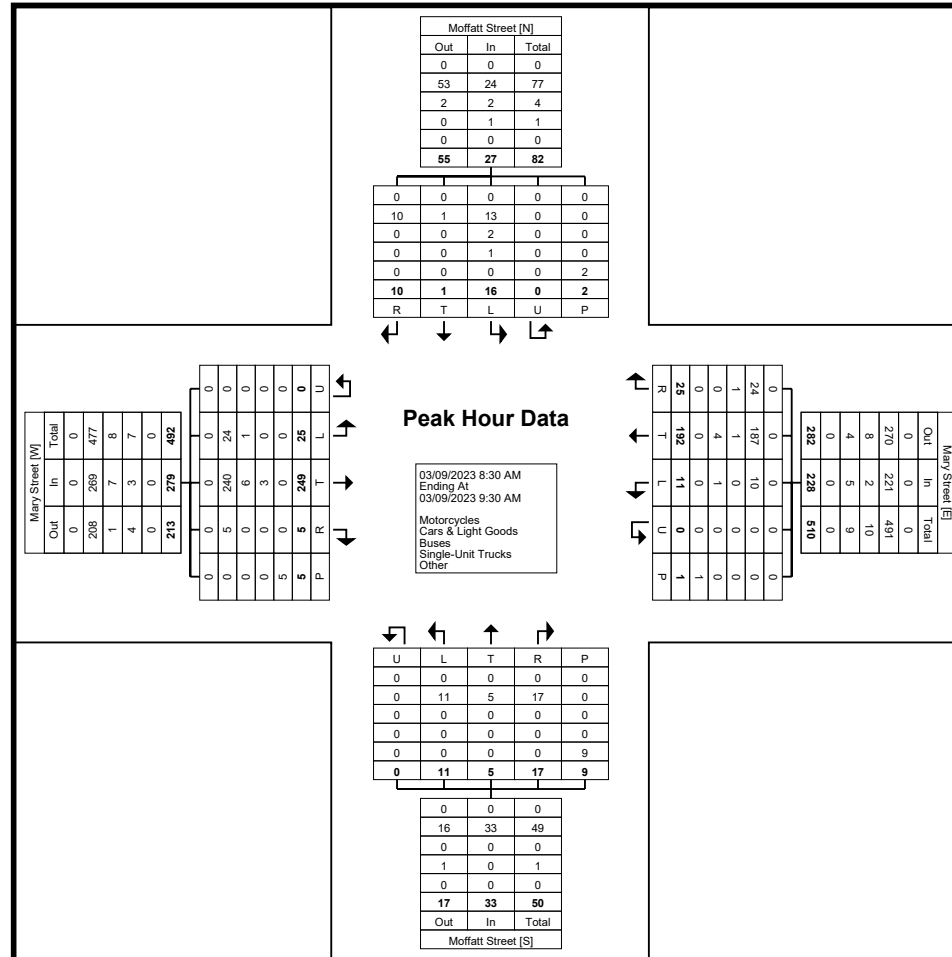
Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:30 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
<b>Total</b>	<b>25</b>	<b>249</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>279</b>	<b>11</b>	<b>192</b>	<b>25</b>	<b>0</b>	<b>1</b>	<b>228</b>	<b>11</b>	<b>5</b>	<b>17</b>	<b>0</b>	<b>9</b>	<b>33</b>	<b>16</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>2</b>	<b>27</b>	<b>567</b>
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@ptsil.com

Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@ptsI.com

Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

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

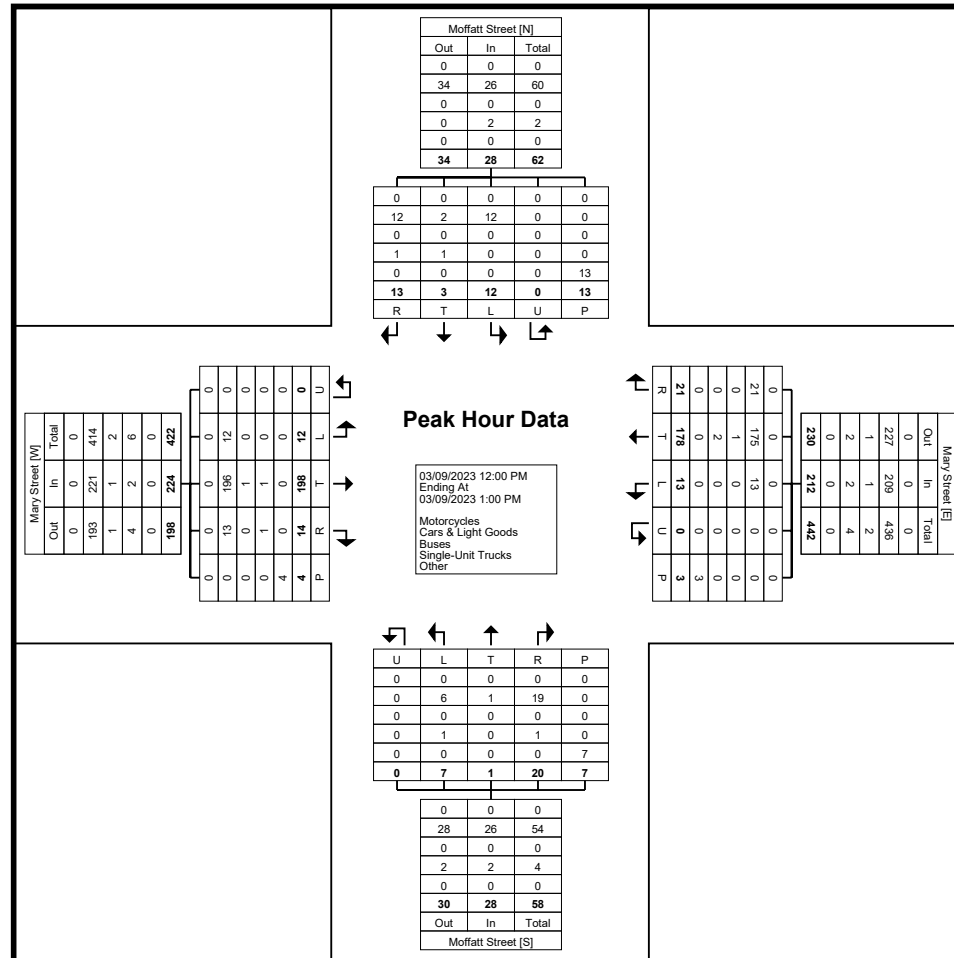
Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	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@ptsI.com

Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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@ptsll.com

Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

### Turning Movement Peak Hour Data (3:15 PM)

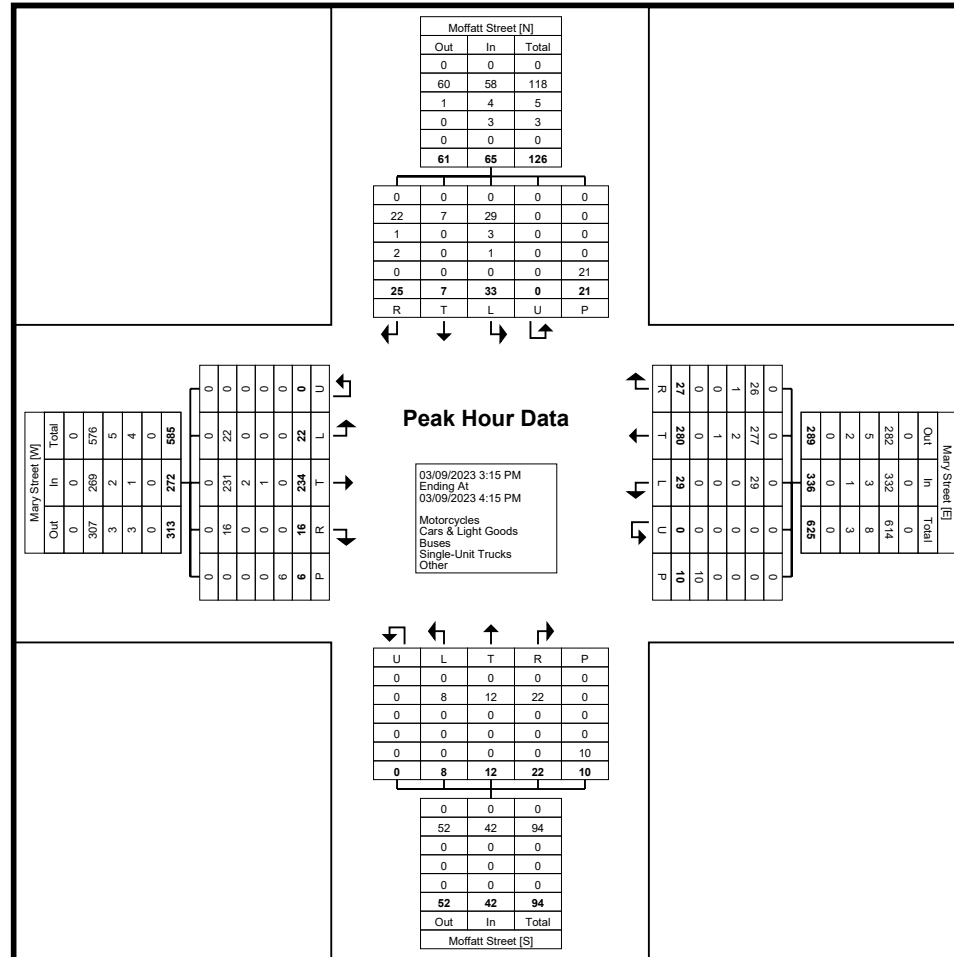
Start Time	Mary Street Eastbound						Mary Street Westbound						Moffatt Street Northbound						Moffatt Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:15 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
<b>Total</b>	<b>22</b>	<b>234</b>	<b>16</b>	<b>0</b>	<b>6</b>	<b>272</b>	<b>29</b>	<b>280</b>	<b>27</b>	<b>0</b>	<b>10</b>	<b>336</b>	<b>8</b>	<b>12</b>	<b>22</b>	<b>0</b>	<b>10</b>	<b>42</b>	<b>33</b>	<b>7</b>	<b>25</b>	<b>0</b>	<b>21</b>	<b>65</b>	<b>715</b>
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  
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Count Name: Mary Street & Moffatt Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 9



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@ptsI.com

Count Name: McGee Street & James Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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	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	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	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	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	10	0	0	10	24	
8:30 AM	28	0	0	0	0	28	0	1	0	0	4	1	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	2	0	0	2	18	
Hourly Total	78	0	0	0	0	78	0	1	0	0	4	1	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	4	0	0	5	21	
9:15 AM	21	0	0	0	0	21	0	0	0	0	1	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	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	5	0	0	5	17	
Hourly Total	56	0	0	0	0	56	0	0	1	0	2	1	0	1	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	1	0	1	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	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	5	0	0	5	17	
11:45 AM	8	1	0	0	0	9	0	0	0	0	1	0	0	1	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	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	4	0	0	4	11	
12:30 PM	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	1	0	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	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	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	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	8	0	0	8	16	
3:30 PM	15	0	0	0	2	15	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	13	0	0	13	28	
Hourly Total	50	0	0	0	2	50	0	1	0	0	0	1	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	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	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	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	-	-





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Count Name: McGee Street & James Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

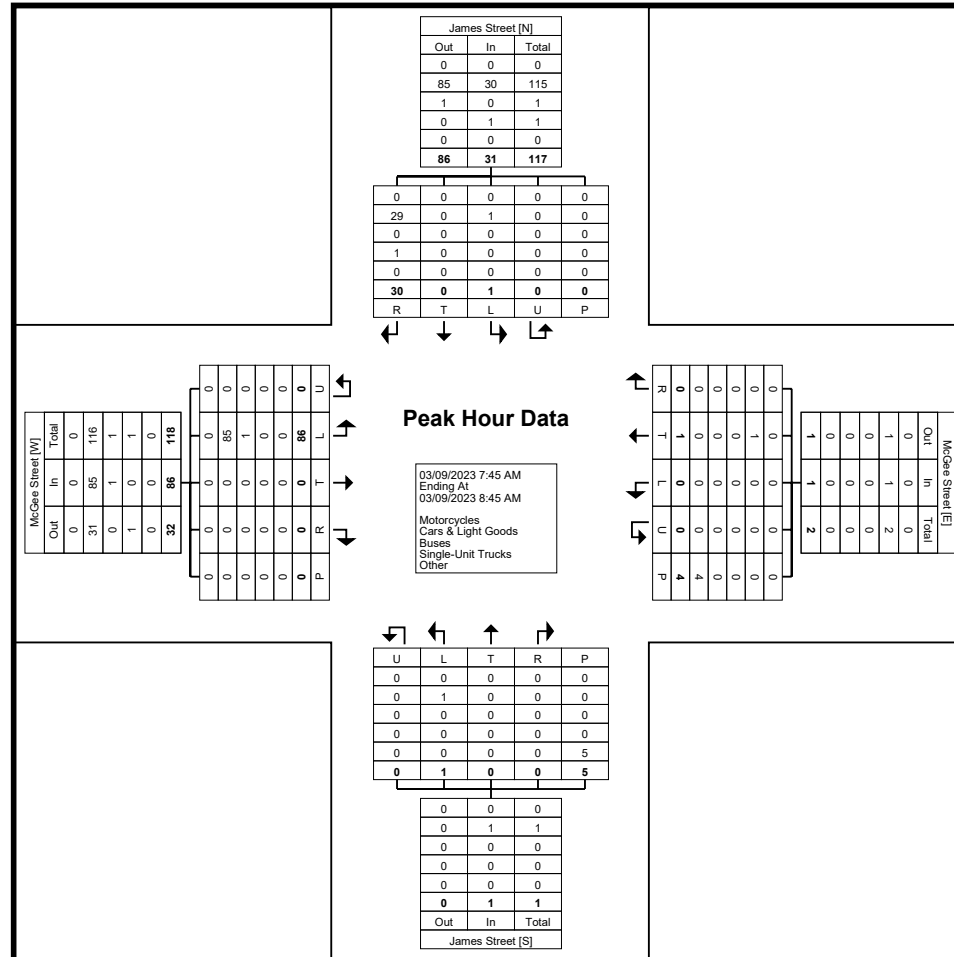
Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 AM	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@pts1.com

Count Name: McGee Street & James Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@ptsll.com

Count Name: McGee Street & James Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

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

Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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@ptsI.com

Count Name: McGee Street & James Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

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

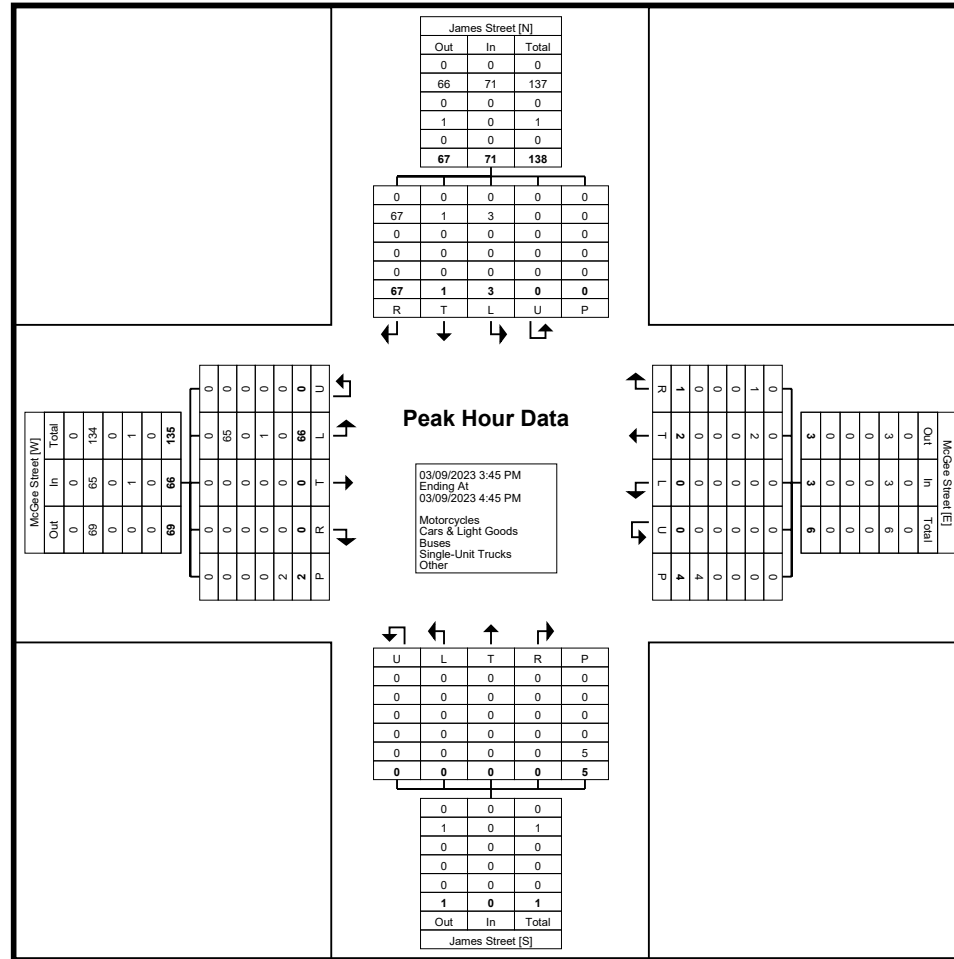
Start Time	McGee Street Eastbound						McGee Street Westbound						James Street Northbound						James Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:45 PM	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
<b>Total</b>	<b>66</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>66</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>67</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>140</b>
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@pts1.com

Count Name: McGee Street & James Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 9



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@pts1.com

Count Name: Pembroke Road & Forced Road -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Road Eastbound					Pembroke Road Westbound					Forced Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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	-	-

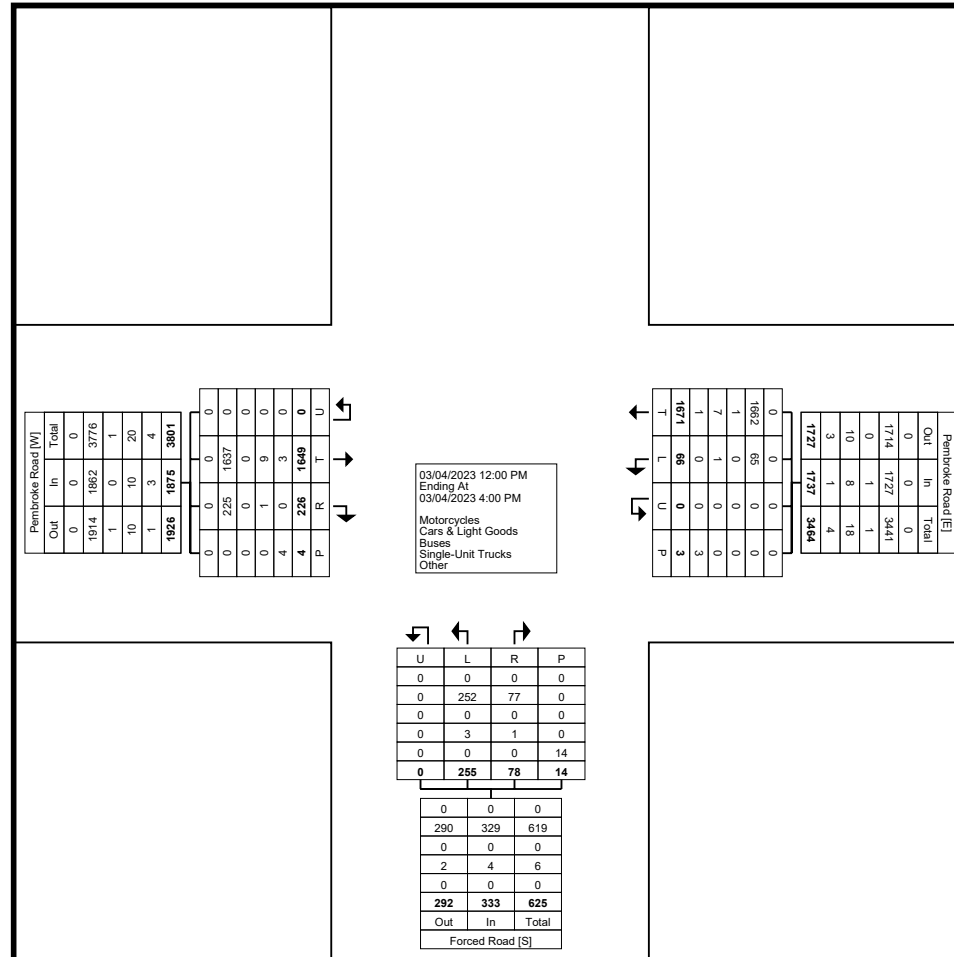




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Road & Forced Road - 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@ptsI.com

Count Name: Pembroke Road & Forced Road -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:45 PM)

Start Time	Pembroke Road Eastbound					Pembroke Road Westbound					Forced Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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@pts.com

Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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

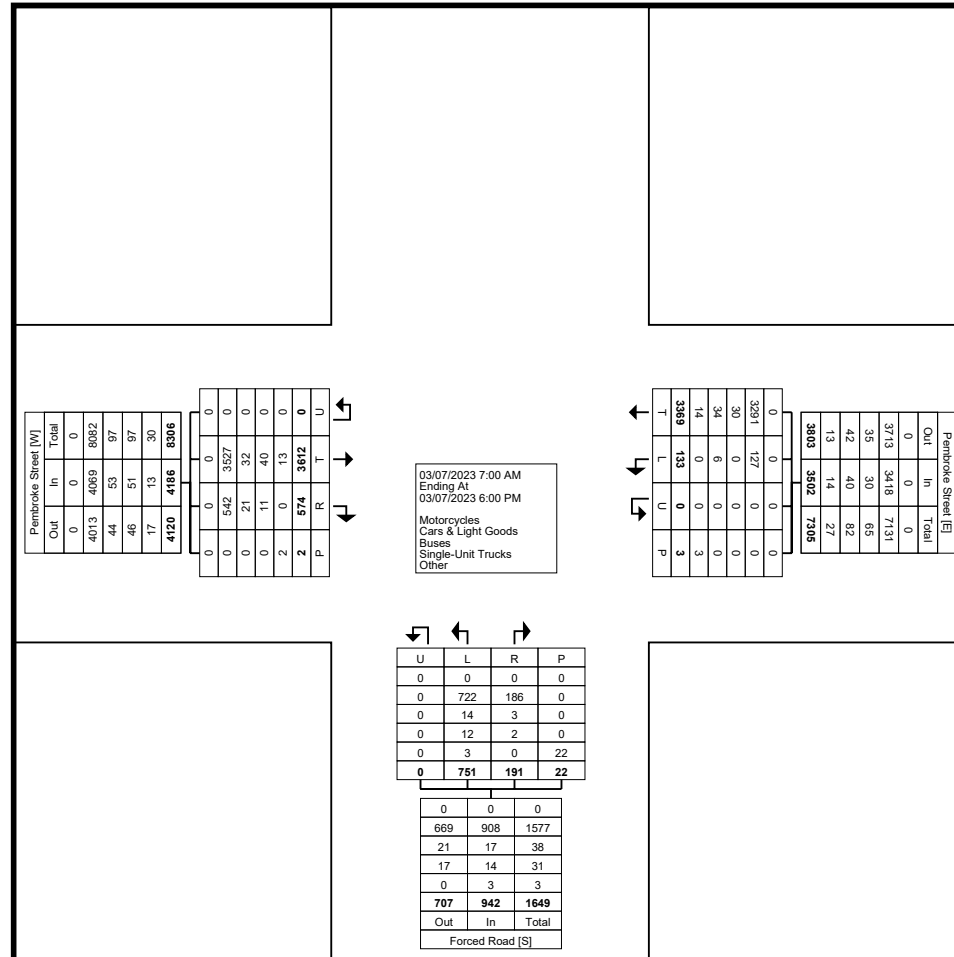
Hourly Total	516	133	0	0	649	27	561	0	0	588	105	23	0	7	128	1365
5:00 PM	129	27	0	0	156	6	121	0	0	127	18	4	0	2	22	305
5:15 PM	110	23	0	0	133	9	118	0	0	127	23	8	0	0	31	291
5:30 PM	86	22	0	0	108	4	88	0	0	92	15	6	0	0	21	221
5:45 PM	106	9	0	0	115	3	81	0	0	84	17	11	0	1	28	227
Hourly Total	431	81	0	0	512	22	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@ptsll.com

Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 3



Turning Movement Data Plot



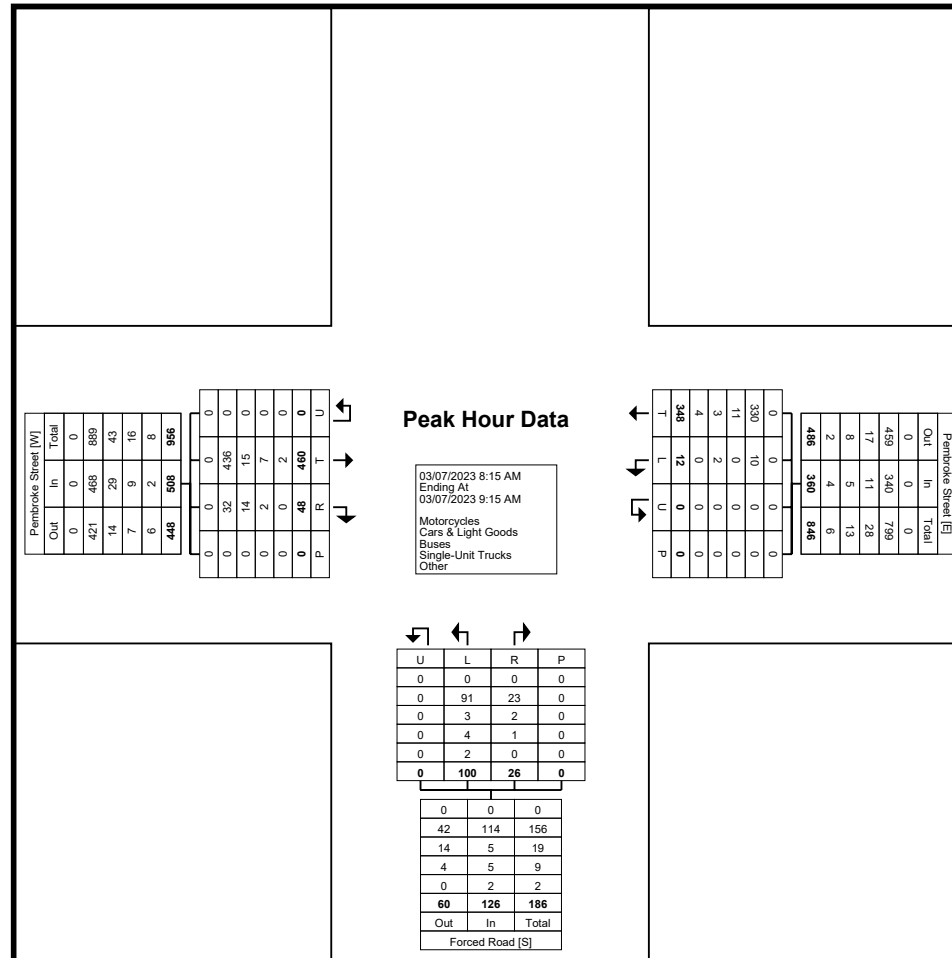




Paradigm Transportation Solutions Limited  
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Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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@ptsI.com

Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

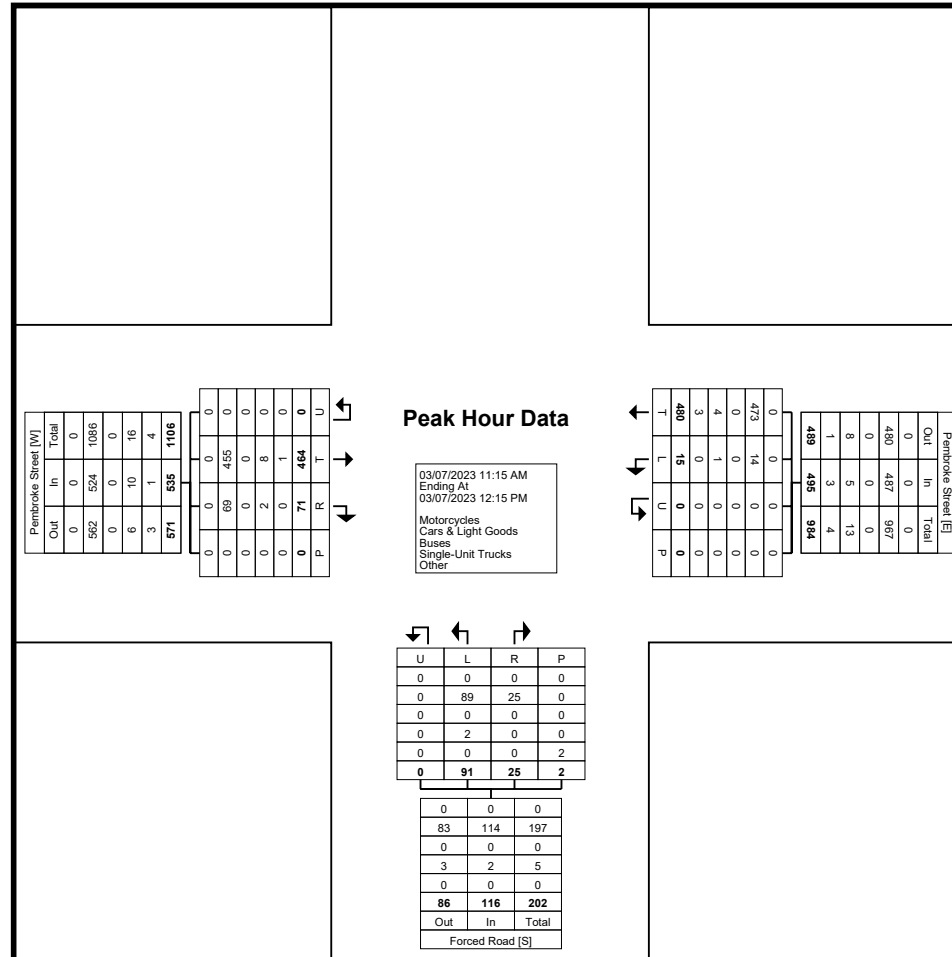
Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:15 AM	132	21	0	0	153	5	111	0	0	116	29	6	0	1	35	304
11:30 AM	130	16	0	0	146	3	112	0	0	115	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  
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Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



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@ptsI.com

Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

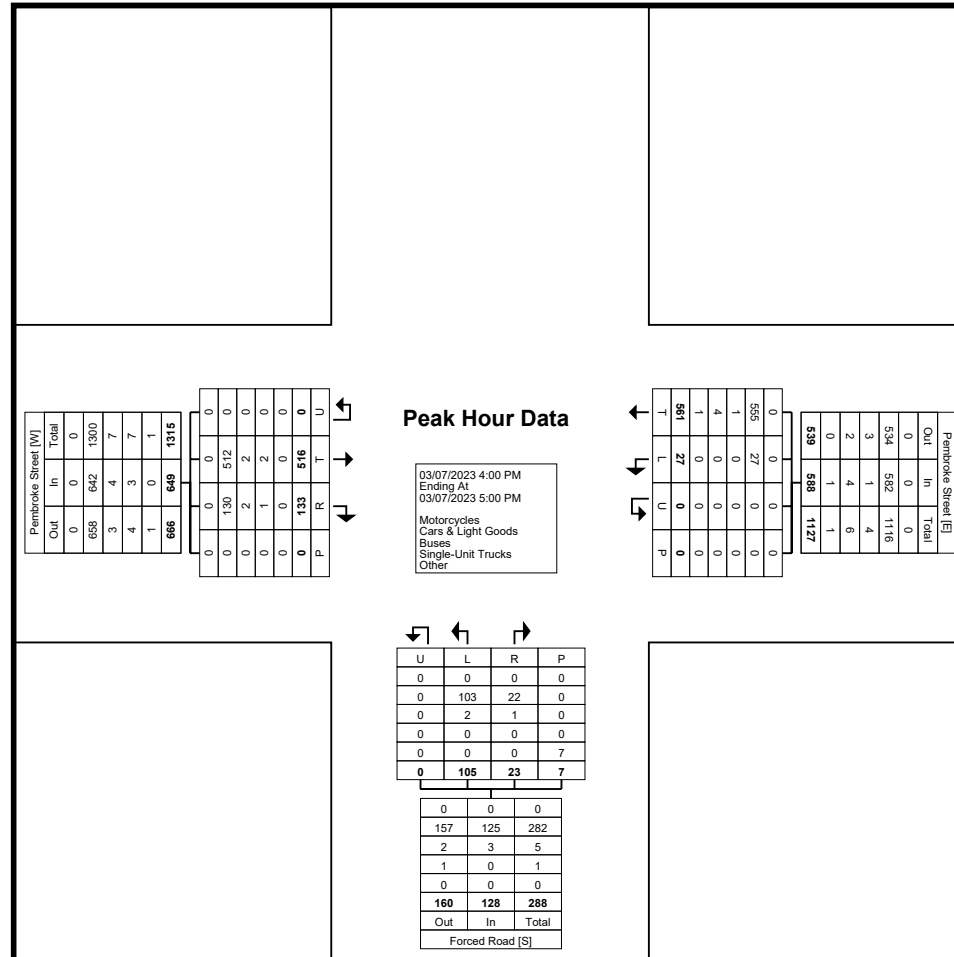
Start Time	Pembroke Street Eastbound					Pembroke Street Westbound					Forced Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:00 PM	109	30	0	0	139	11	161	0	0	172	31	7	0	2	38	349
4:15 PM	133	35	0	0	168	4	144	0	0	148	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@pts1.com

Count Name: Pembroke Road & Forced Road -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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@ptsll.com

Count Name: Pembroke Street & Blakely Cres -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						Int. Total	
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total		
12:00 PM	0	100	0	0	0	100	3	99	0	0	0	102	0	0	1	0	0	1	0	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0	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	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	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	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	0	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	0	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	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	1628	2	0	-	1630	41	1680	1	0	-	1722	6	0	45	0	-	51	0	0	1	0	-	1	0	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	99.3
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	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	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	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	0.5
Articulated Trucks	0	3	1	0	-	4	1	1	0	0	-	2	0	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	0.2

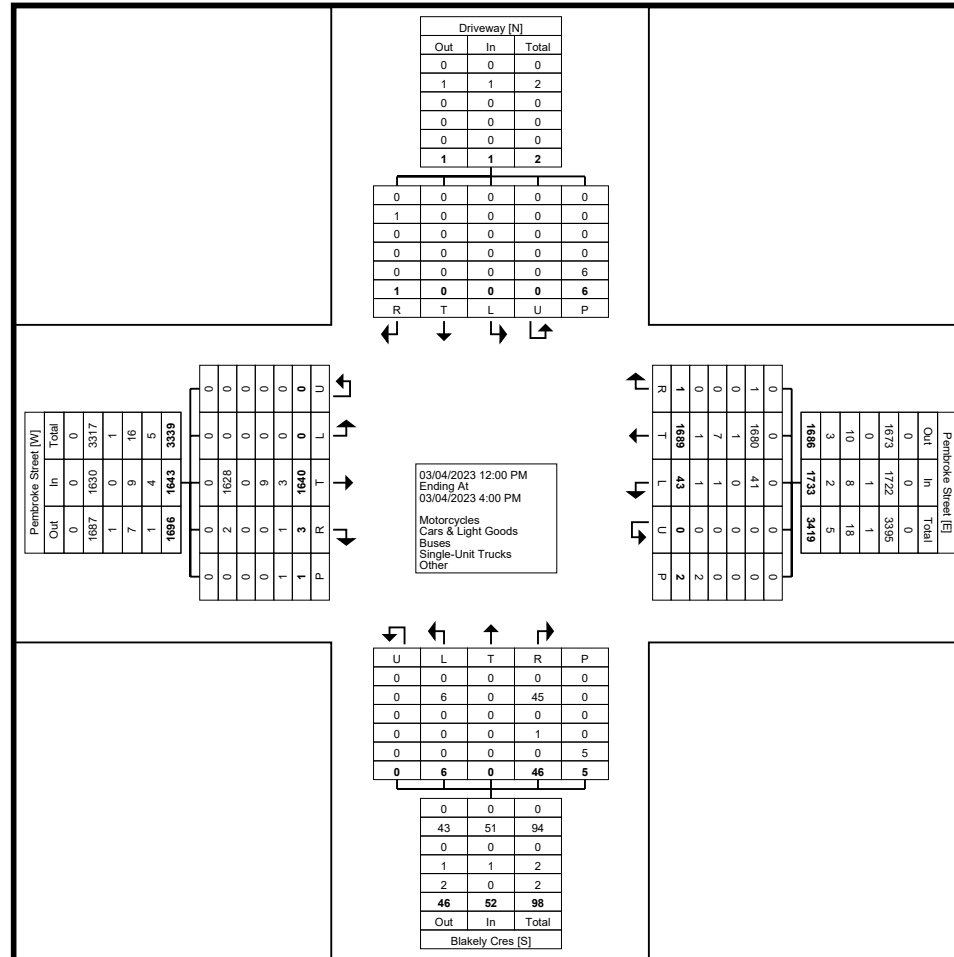
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	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@ptsil.com

Count Name: Pembroke Street & Blakely Cres -  
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@ptsll.com

Count Name: Pembroke Street & Blakely Cres -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:15 PM)

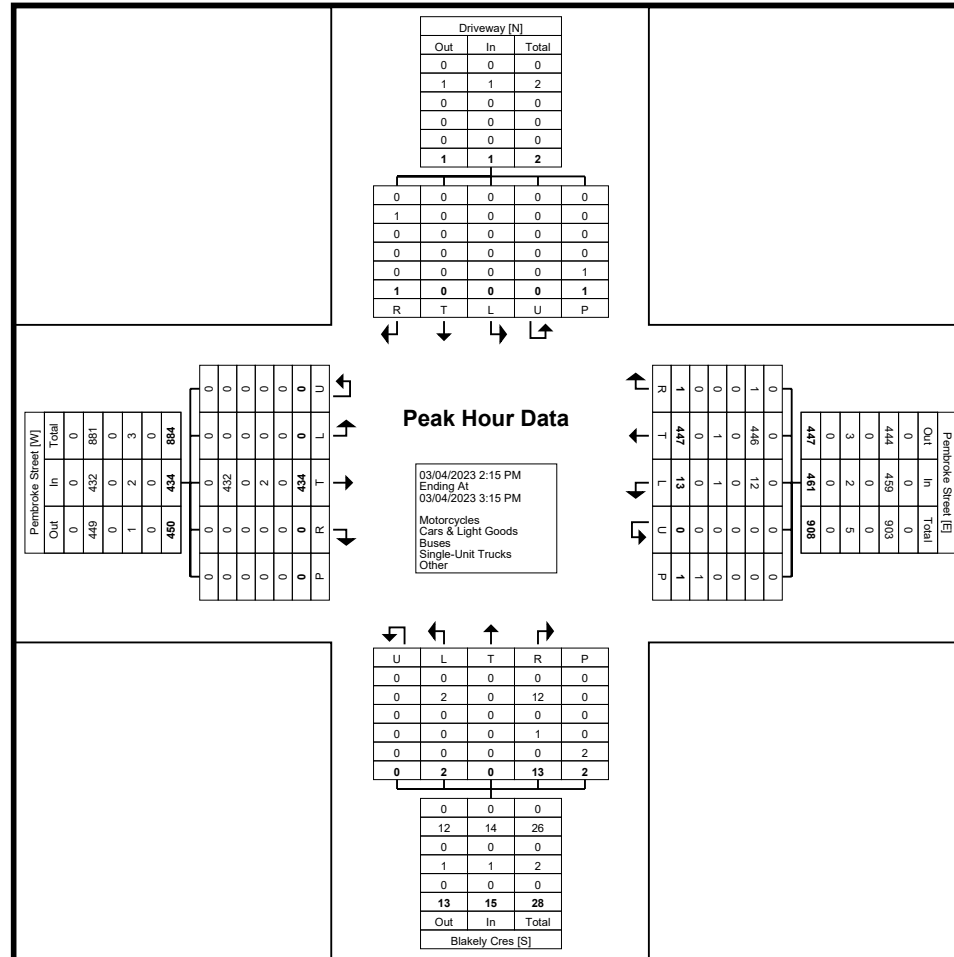
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						Int. Total	
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total		
2:15 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	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	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	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	0	1	228
<b>Total</b>	0	434	0	0	0	434	13	447	1	0	1	461	2	0	13	0	2	15	0	0	1	0	1	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	0.953
Motorcycles	0	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	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

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

Count Name: Pembroke Street & Blakely Cres -  
Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@pts1.com

Count Name: Pembroke Street & Blakely Cres -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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



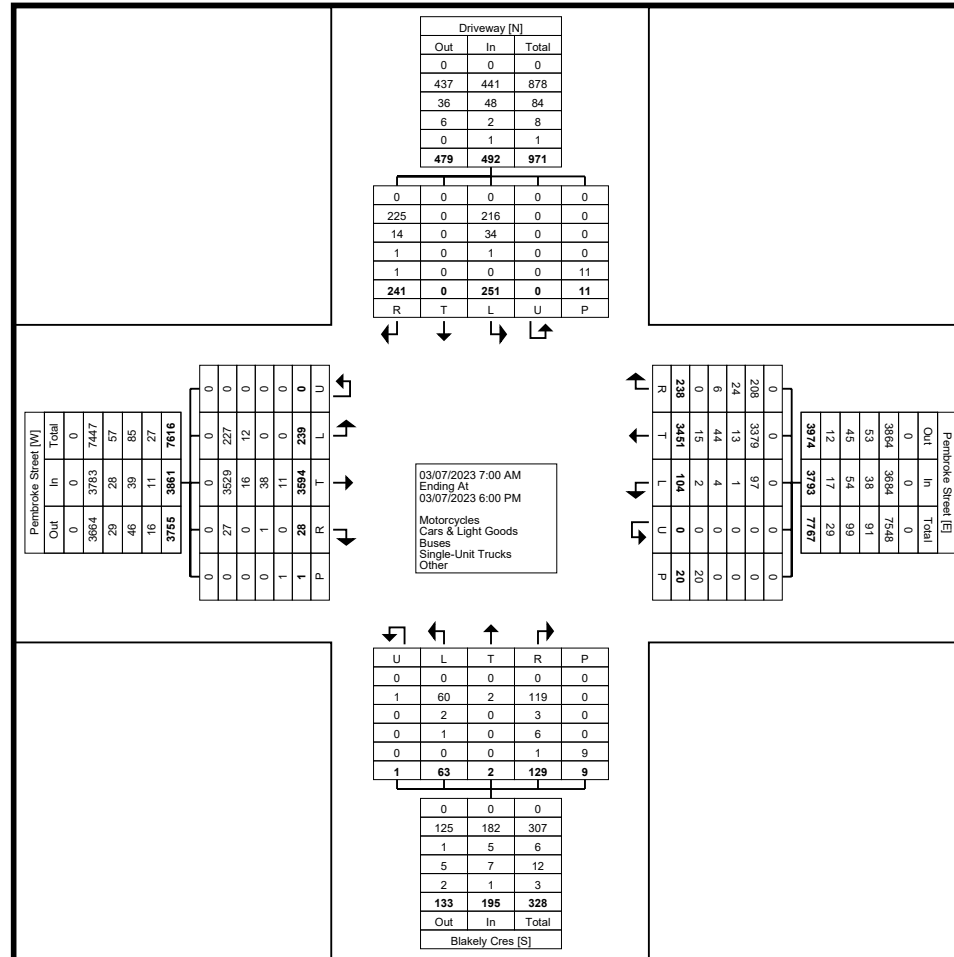
4:45 PM	4	129	1	0	0	134	4	144	4	0	0	152	2	0	2	0	0	4	10	0	10	0	0	20	310
Hourly Total	53	506	4	0	0	563	17	606	50	0	0	673	22	0	22	0	0	44	69	0	82	0	0	151	1431
5:00 PM	4	150	2	0	0	156	3	136	4	0	0	143	4	0	7	0	0	11	9	0	11	0	0	20	330
5:15 PM	0	121	0	0	0	121	2	124	0	0	0	126	0	0	3	0	0	3	2	0	5	0	0	7	257
5:30 PM	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  
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Count Name: Pembroke Street & Blakely Cres -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 3



Turning Movement Data Plot

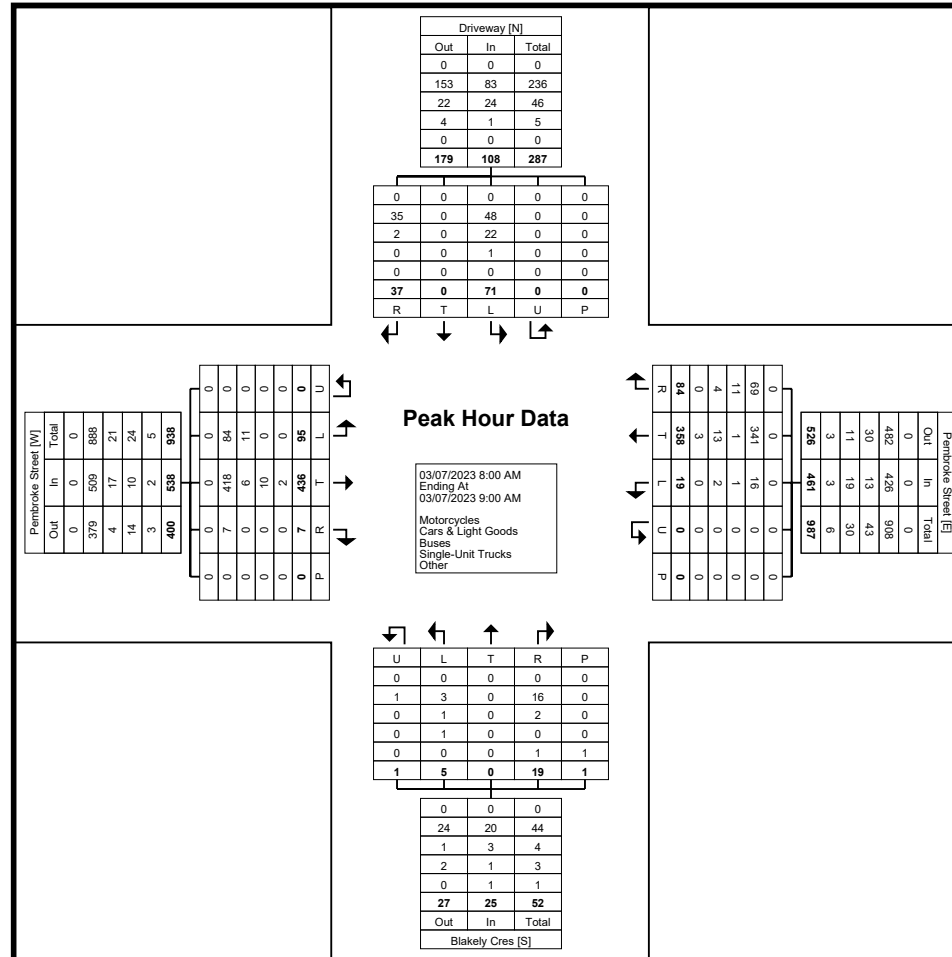




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Blakely Cres -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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@ptsI.com

Count Name: Pembroke Street & Blakely Cres -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

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

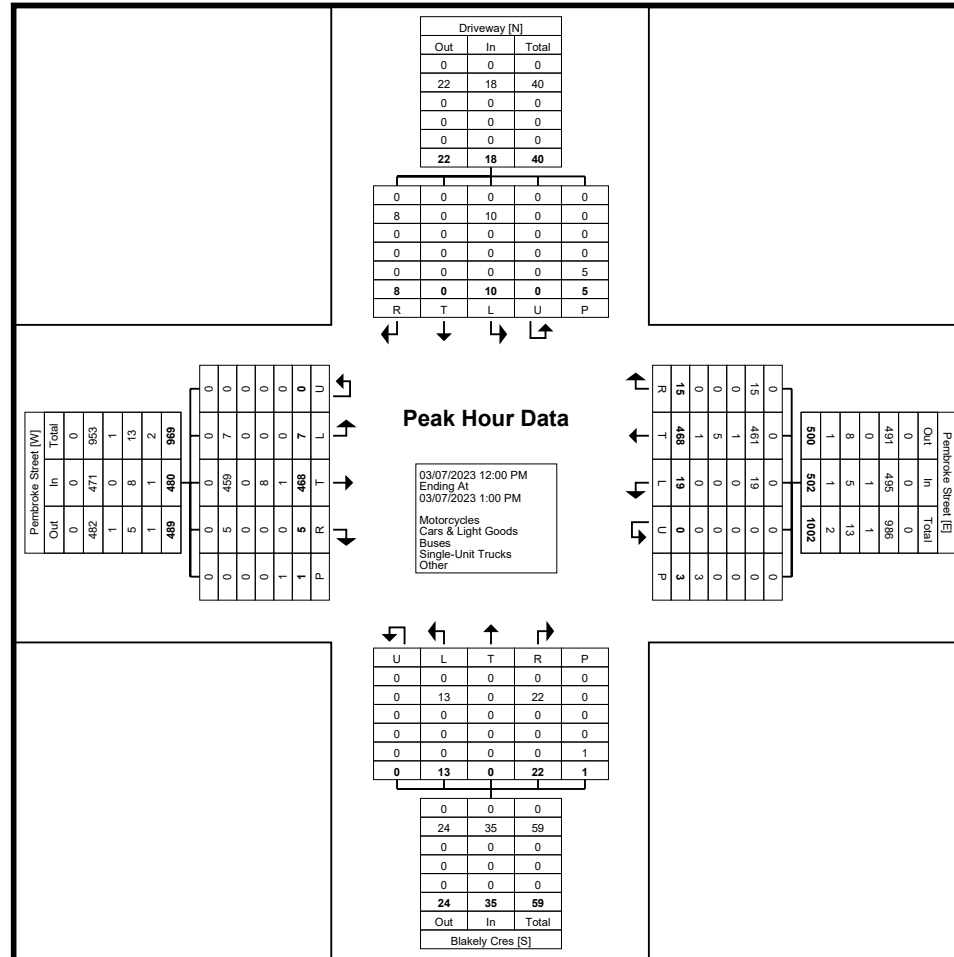
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Blakely Cres Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>7</b>	<b>468</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>480</b>	<b>19</b>	<b>468</b>	<b>15</b>	<b>0</b>	<b>3</b>	<b>502</b>	<b>13</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>35</b>	<b>10</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>18</b>	<b>1035</b>
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	-	-



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  
Page No: 7



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



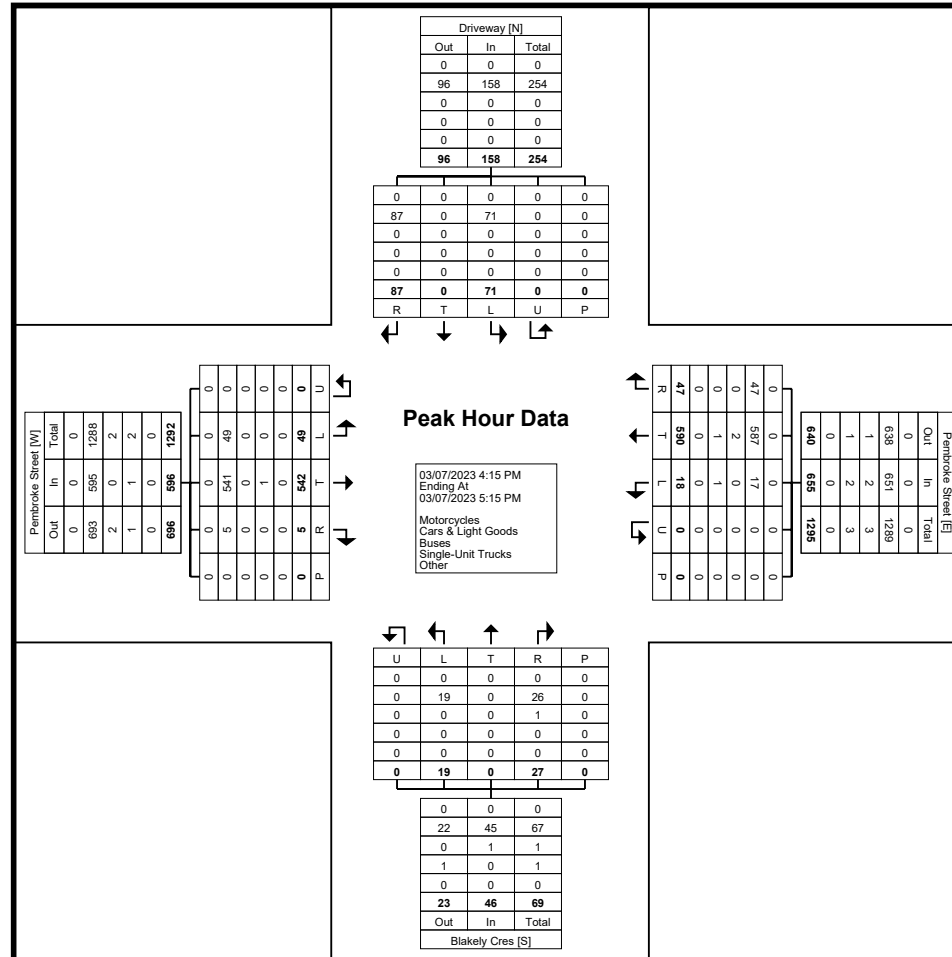




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Pembroke Street & Blakely Cres -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



Turning Movement Peak Hour Data Plot (4:15 PM)



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Christie Street  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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

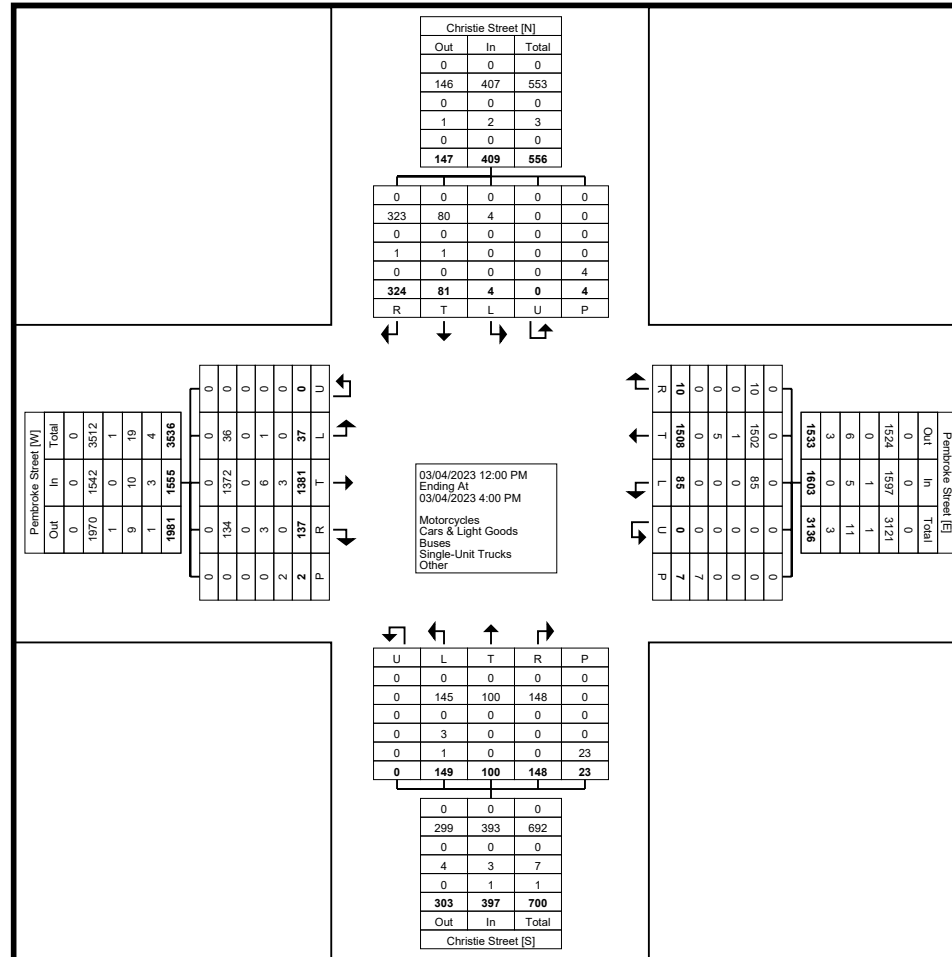
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	7	-	-	-	-	-	23	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Christie 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 & Christie Street  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:30 PM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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	-	-	-	-	-	-	-	-

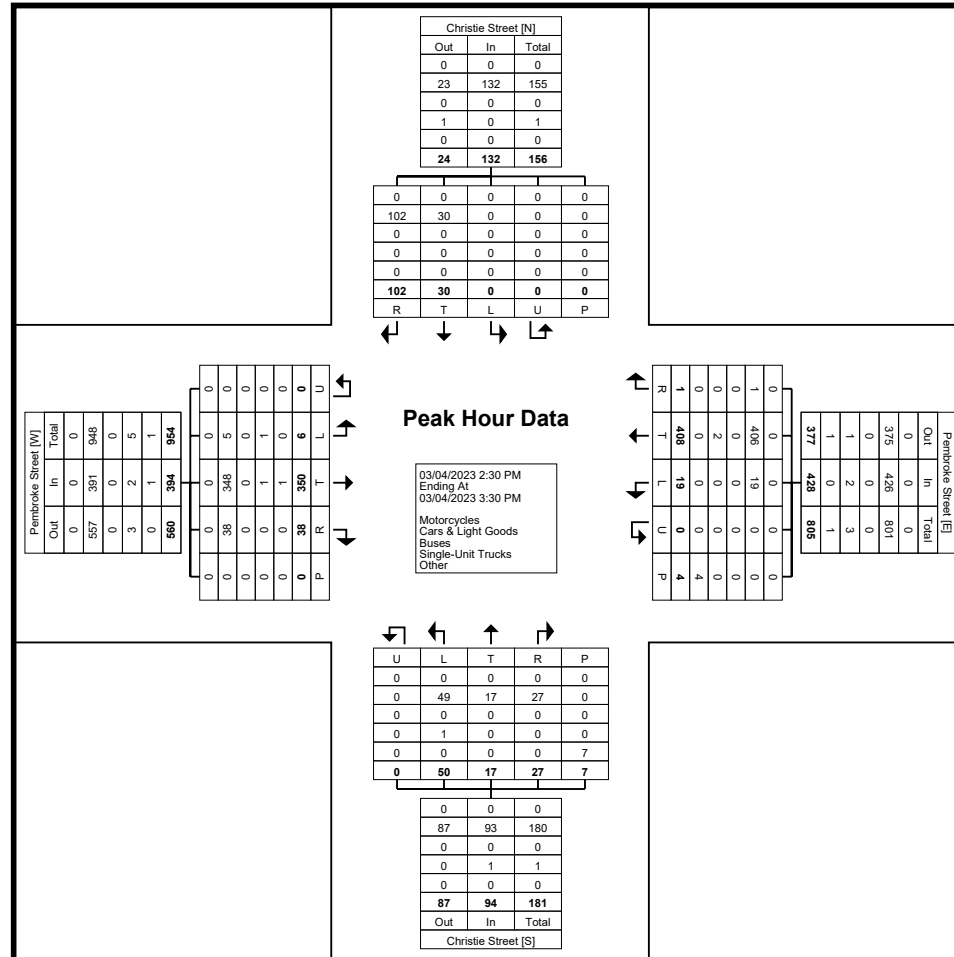




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Christie Street  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@pts1.com

Count Name: Pembroke Street & Christie Street  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

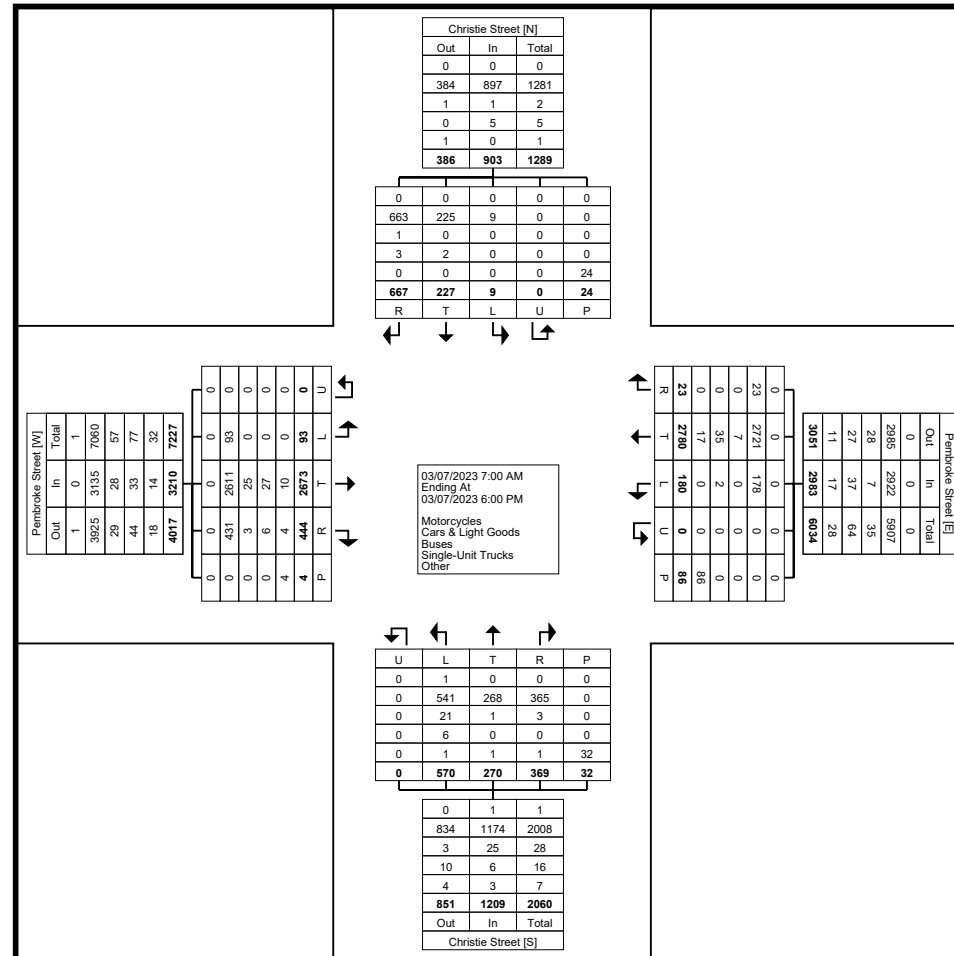
4:45 PM	5	114	13	0	0	132	4	81	0	0	1	85	26	14	9	0	3	49	0	8	31	0	0	39	305
Hourly Total	14	390	70	0	0	474	28	430	0	0	6	458	95	32	50	0	7	177	0	41	130	0	1	171	1280
5:00 PM	1	86	13	0	0	100	8	116	1	0	0	125	20	11	12	0	0	43	0	12	34	0	2	46	314
5:15 PM	3	81	14	0	0	98	7	98	0	0	2	105	19	4	7	0	2	30	0	4	20	0	1	24	257
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  
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Count Name: Pembroke Street & Christie 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@ptsI.com

Count Name: Pembroke Street & Christie Street  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (8:00 AM)

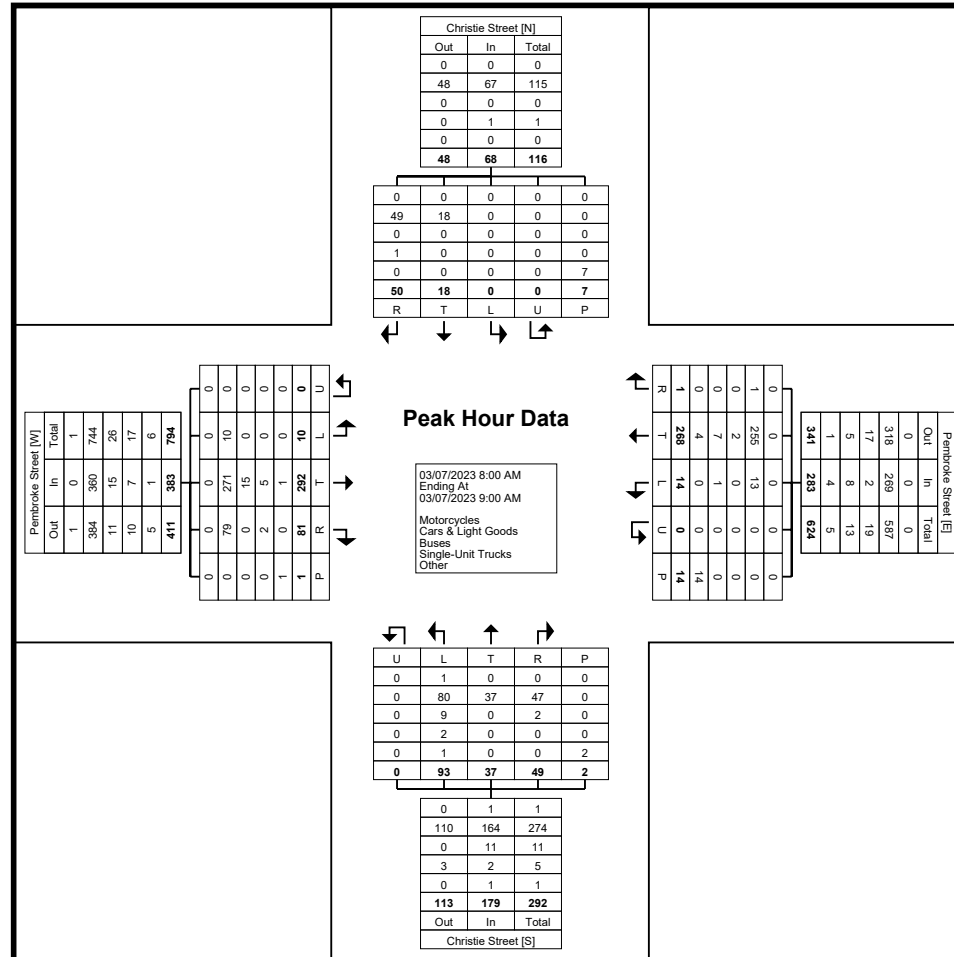
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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  
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Count Name: Pembroke Street & Christie Street  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (8:00 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  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

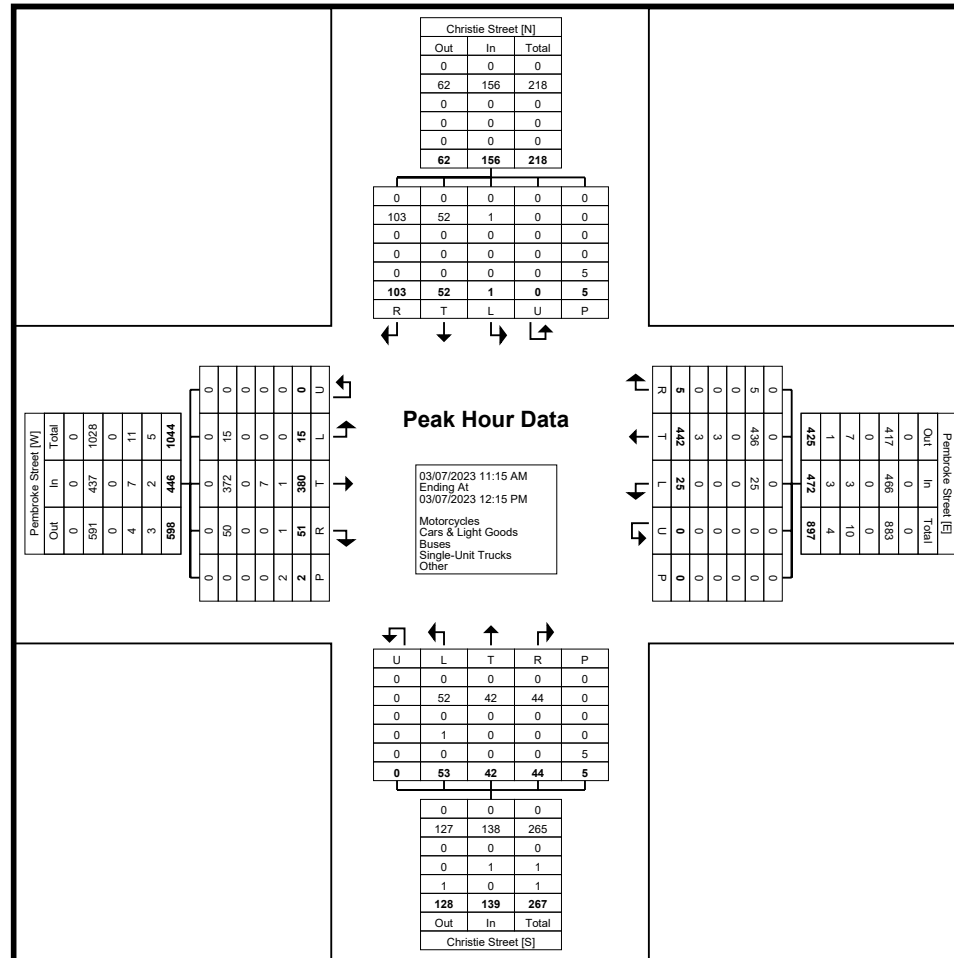
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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	-	-



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  
Page No: 7



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@pts.com

Count Name: Pembroke Street & Christie Street  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

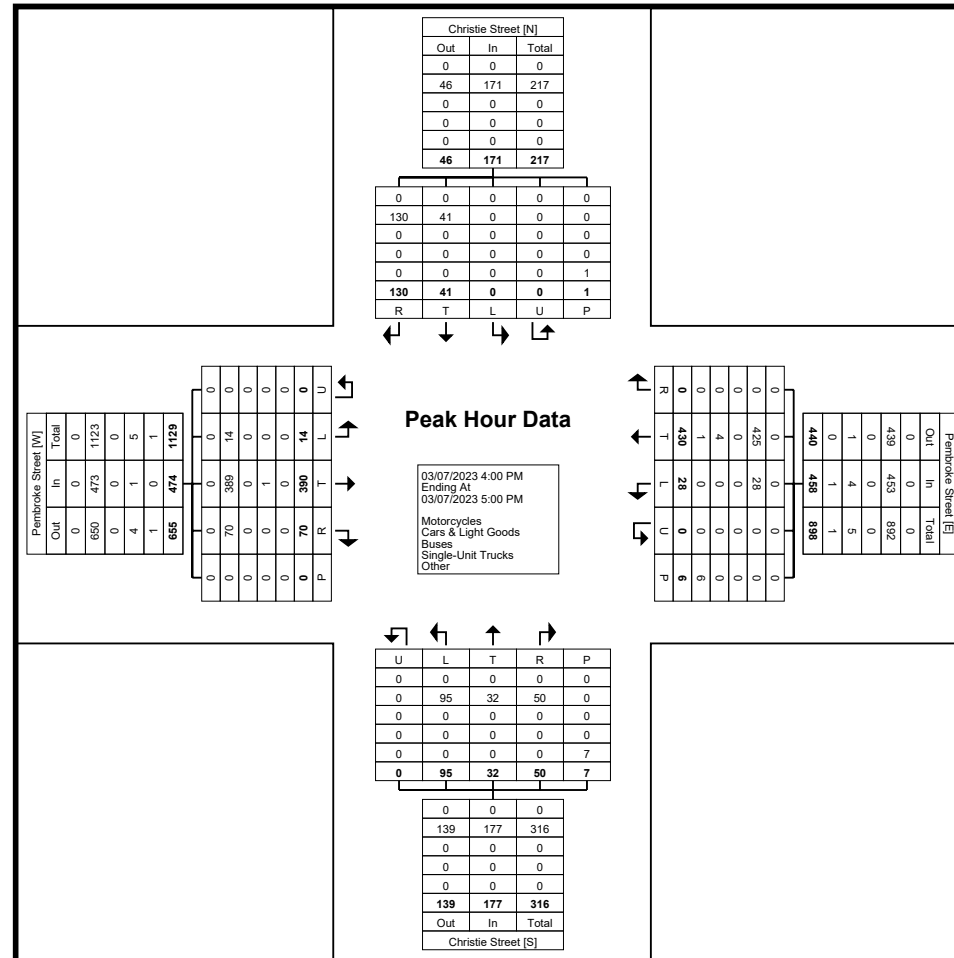
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Christie Street Northbound						Christie Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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  
Page No: 9



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@ptsll.com

Count Name: Pembroke Street & Elizabeth Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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	-	-

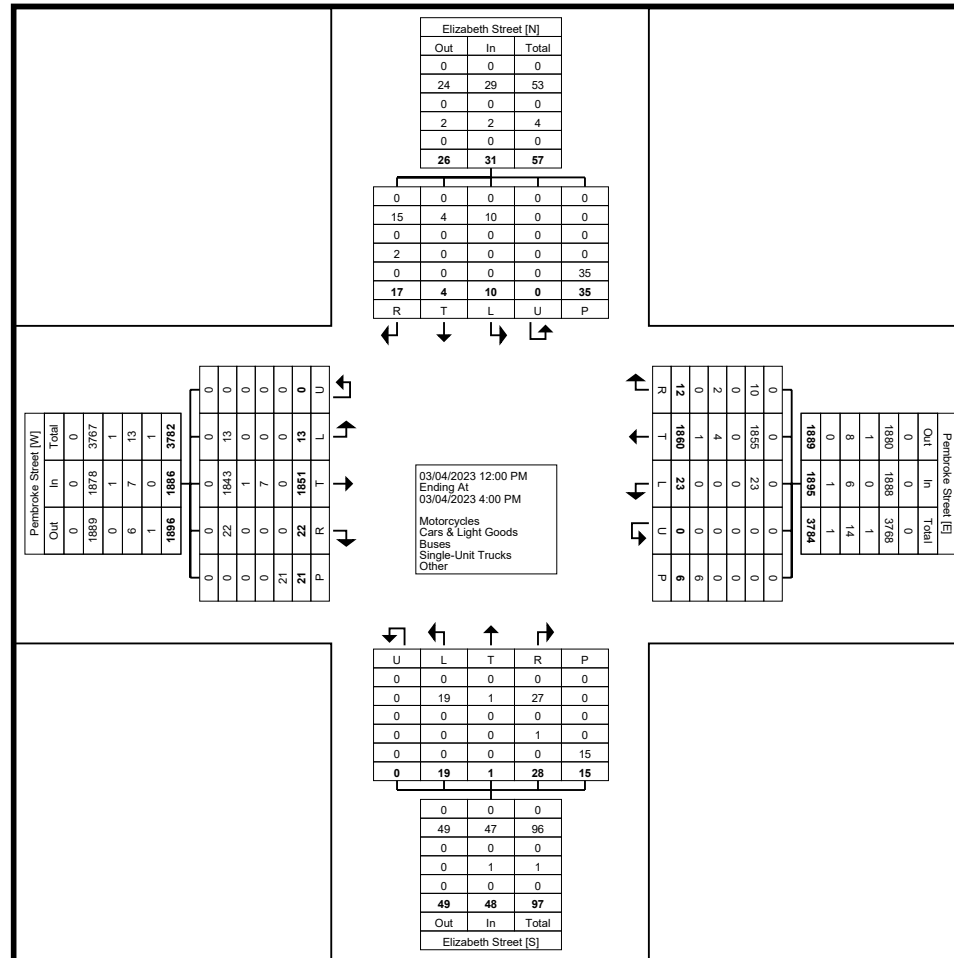




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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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@ptsI.com

Count Name: Pembroke Street & Elizabeth Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (3:00 PM)

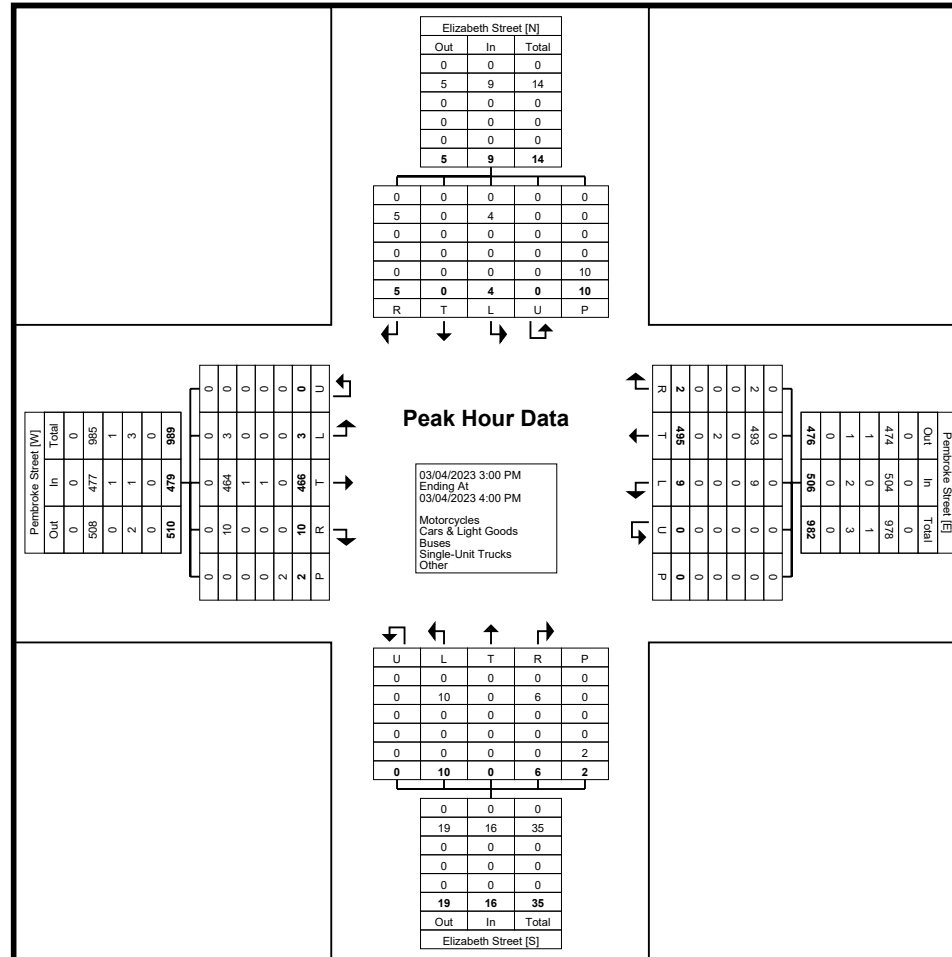
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>3</b>	<b>466</b>	<b>10</b>	<b>0</b>	<b>2</b>	<b>479</b>	<b>9</b>	<b>495</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>506</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>16</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>9</b>	<b>1010</b>
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

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Pembroke Street & Elizabeth  
Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@ptsll.com

Count Name: Pembroke Street & Elizabeth Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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

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Count Name: Pembroke Street & Elizabeth Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

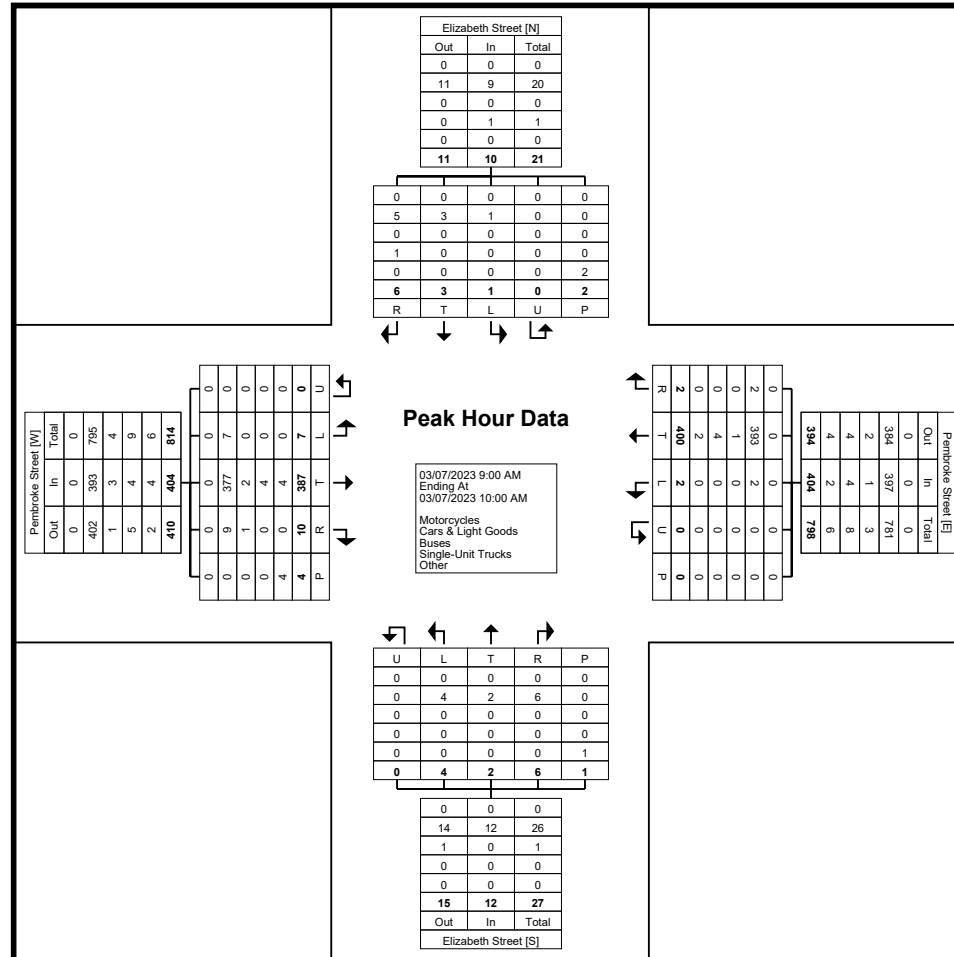
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>7</b>	<b>387</b>	<b>10</b>	<b>0</b>	<b>4</b>	<b>404</b>	<b>2</b>	<b>400</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>404</b>	<b>4</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>12</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>10</b>	<b>830</b>
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

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Count Name: Pembroke Street & Elizabeth  
Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: Pembroke Street & Elizabeth Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

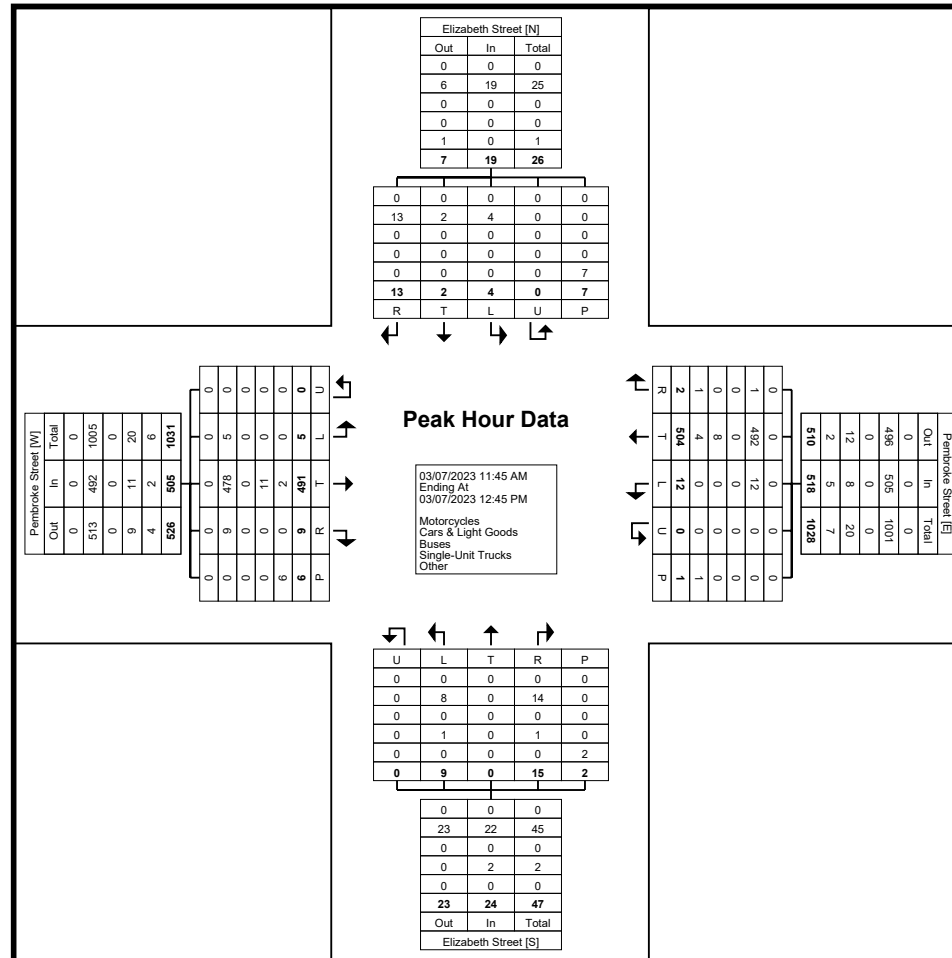
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>5</b>	<b>491</b>	<b>9</b>	<b>0</b>	<b>6</b>	<b>505</b>	<b>12</b>	<b>504</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>518</b>	<b>9</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>24</b>	<b>4</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>7</b>	<b>19</b>	<b>1066</b>
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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Count Name: Pembroke Street & Elizabeth  
Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:45 AM)



Paradigm Transportation Solutions Limited  
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Count Name: Pembroke Street & Elizabeth Street - Tuesday  
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Page No: 8

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

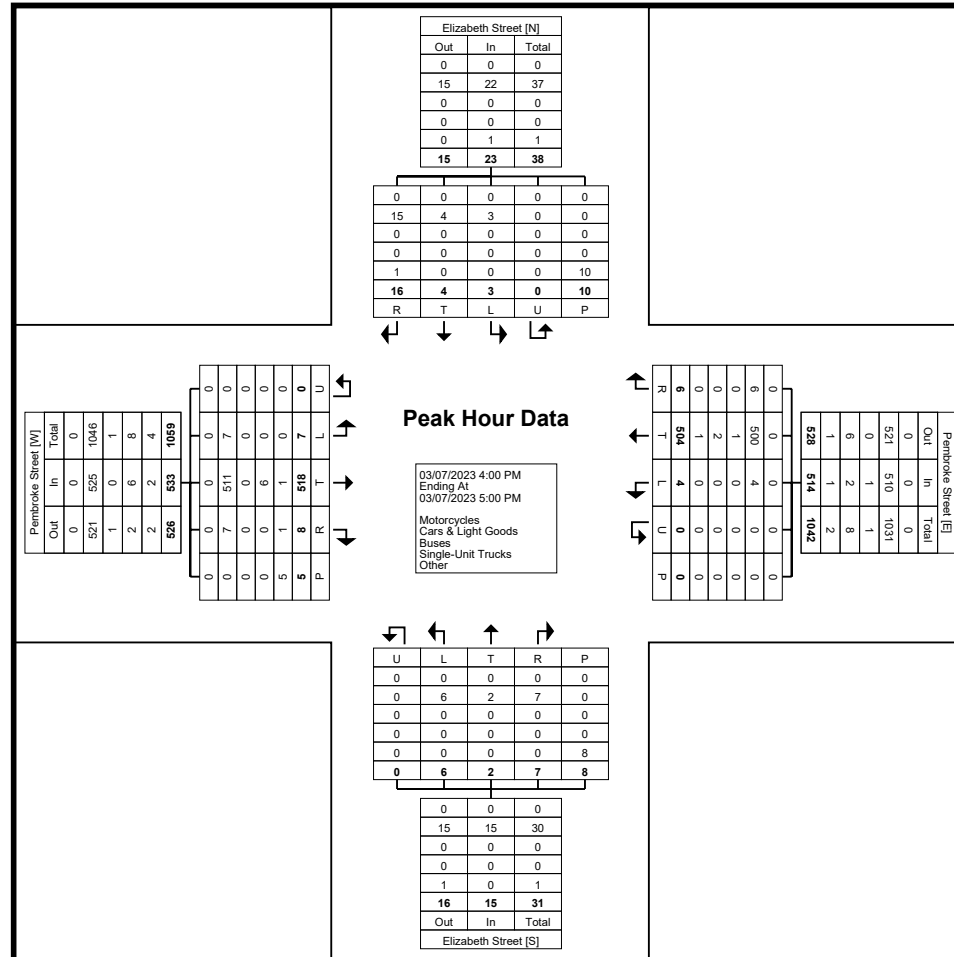
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Elizabeth Street Northbound						Elizabeth Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>7</b>	<b>518</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>533</b>	<b>4</b>	<b>504</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>514</b>	<b>6</b>	<b>2</b>	<b>7</b>	<b>0</b>	<b>8</b>	<b>15</b>	<b>3</b>	<b>4</b>	<b>16</b>	<b>0</b>	<b>10</b>	<b>23</b>	<b>1085</b>
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  
Page No: 9



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@ptsll.com

Count Name: Pembroke Street & Trafalgar Road  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Southbound Approach Southbound						Int. Total	
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total		
12:00 PM	0	80	7	0	0	87	15	100	0	0	0	115	7	0	12	0	0	19	0	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	
Cars & Light Goods	0	1624	115	0	-	1739	246	1665	0	0	-	1911	78	1	167	0	-	246	1	1	0	0	-	-	2	
% 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	
Buses	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	-	0	
% 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	
Single-Unit Trucks	0	9	2	0	-	11	1	6	0	0	-	7	0	0	1	0	-	1	0	0	0	0	-	-	0	
% 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	
Articulated Trucks	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	-	0	
% 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	

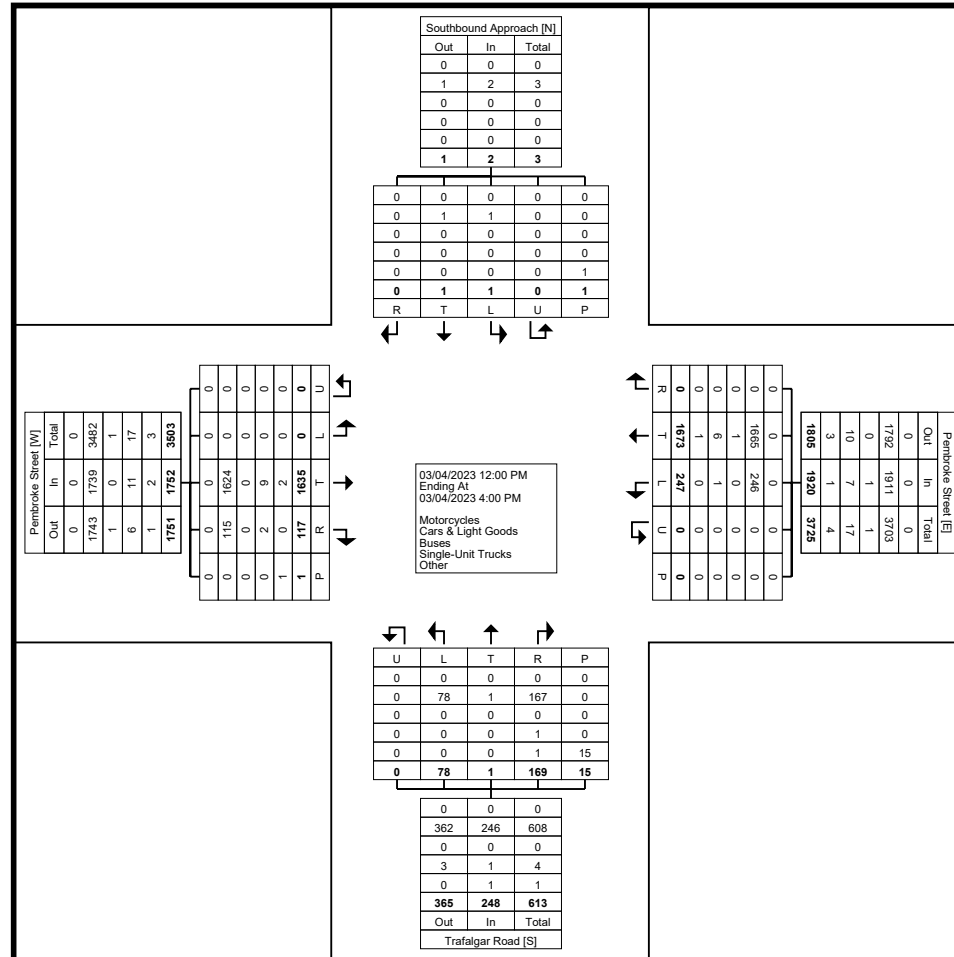
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.6	-	-	0.4	0.0	0.0	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	-	-	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



Turning Movement Data Plot



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street & Trafalgar Road  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:45 PM)

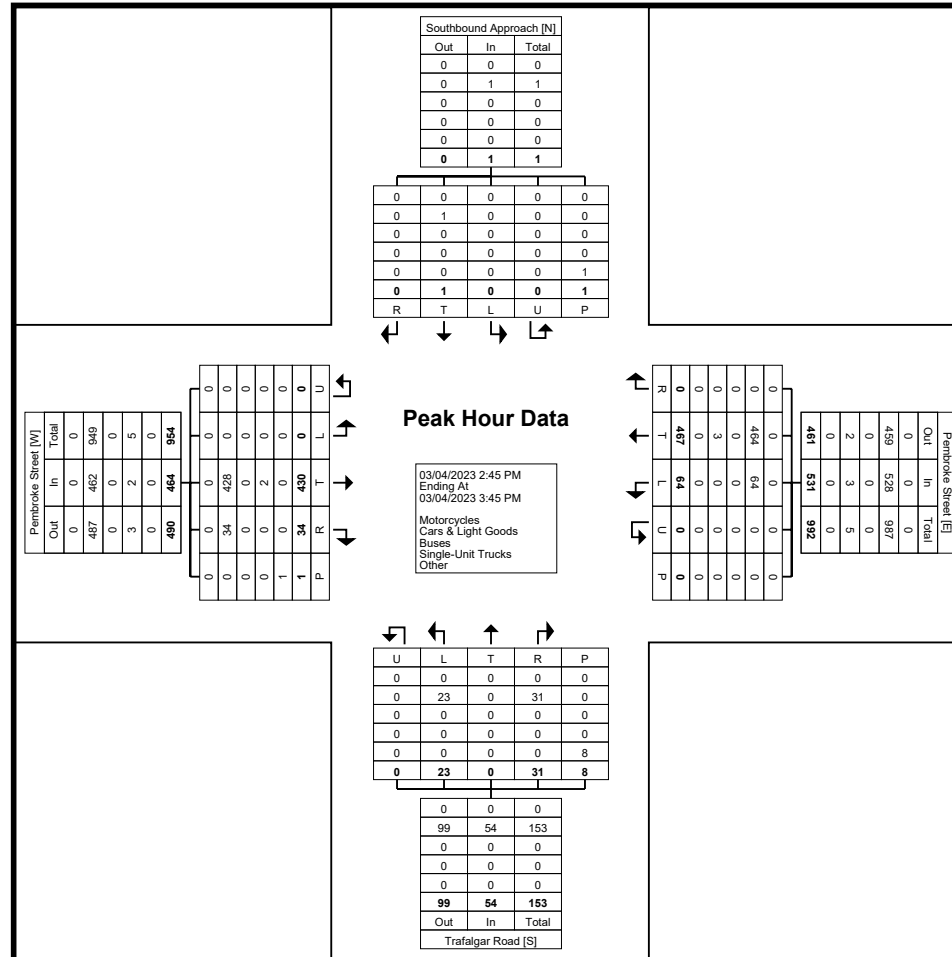
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Southbound Approach Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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  
Page No: 5



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@ptsll.com

Count Name: Pembroke Street & Trafalgar Road  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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



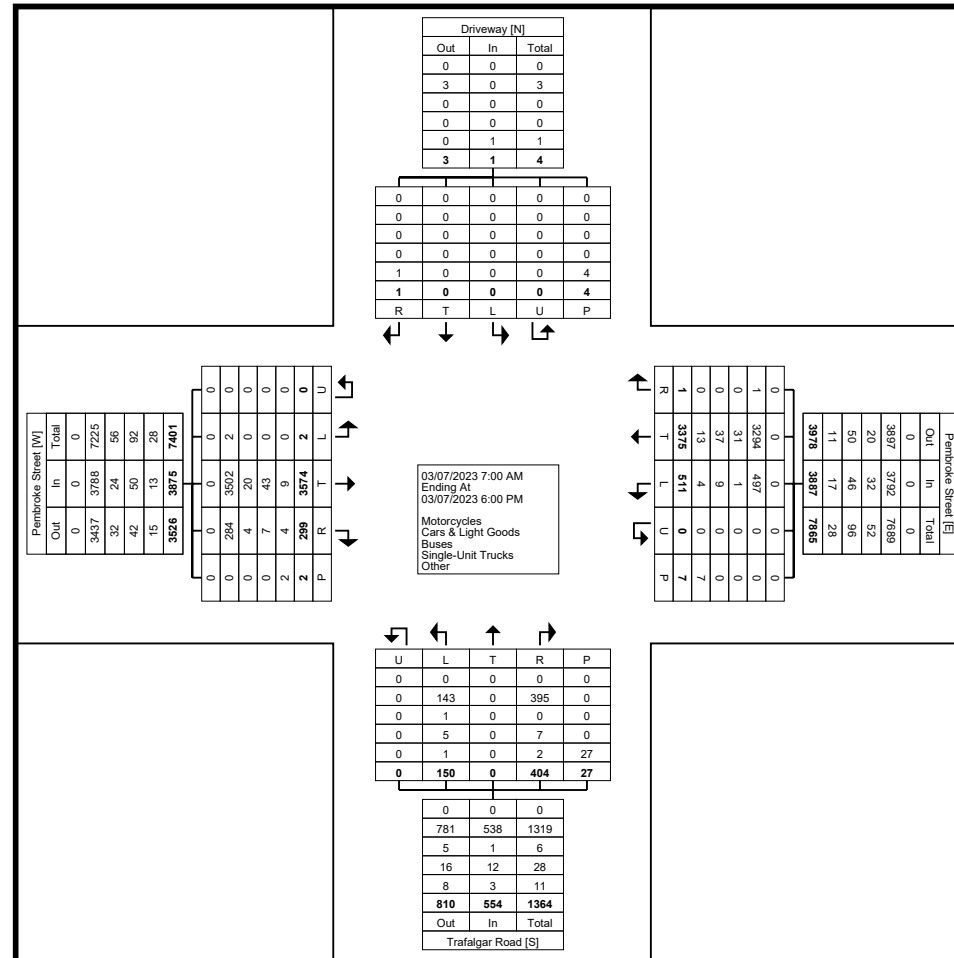
4:45 PM	0	134	9	0	0	143	21	118	0	0	0	139	2	0	17	0	0	19	0	0	0	0	0	301	
Hourly Total	0	512	41	0	2	553	76	567	0	0	3	643	16	0	48	0	7	64	0	0	0	0	0	1260	
5:00 PM	0	117	19	0	0	136	33	134	0	0	0	167	2	0	8	0	1	10	0	0	0	0	0	313	
5:15 PM	0	111	13	0	0	124	16	116	0	0	0	132	3	0	9	0	1	12	0	0	0	0	0	268	
5:30 PM	0	89	6	0	0	95	12	86	0	0	0	98	0	0	9	0	1	9	0	0	0	0	0	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	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	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@pts1.com

Count Name: Pembroke Street & Trafalgar 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@ptsI.com

Count Name: Pembroke Street & Trafalgar Road  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

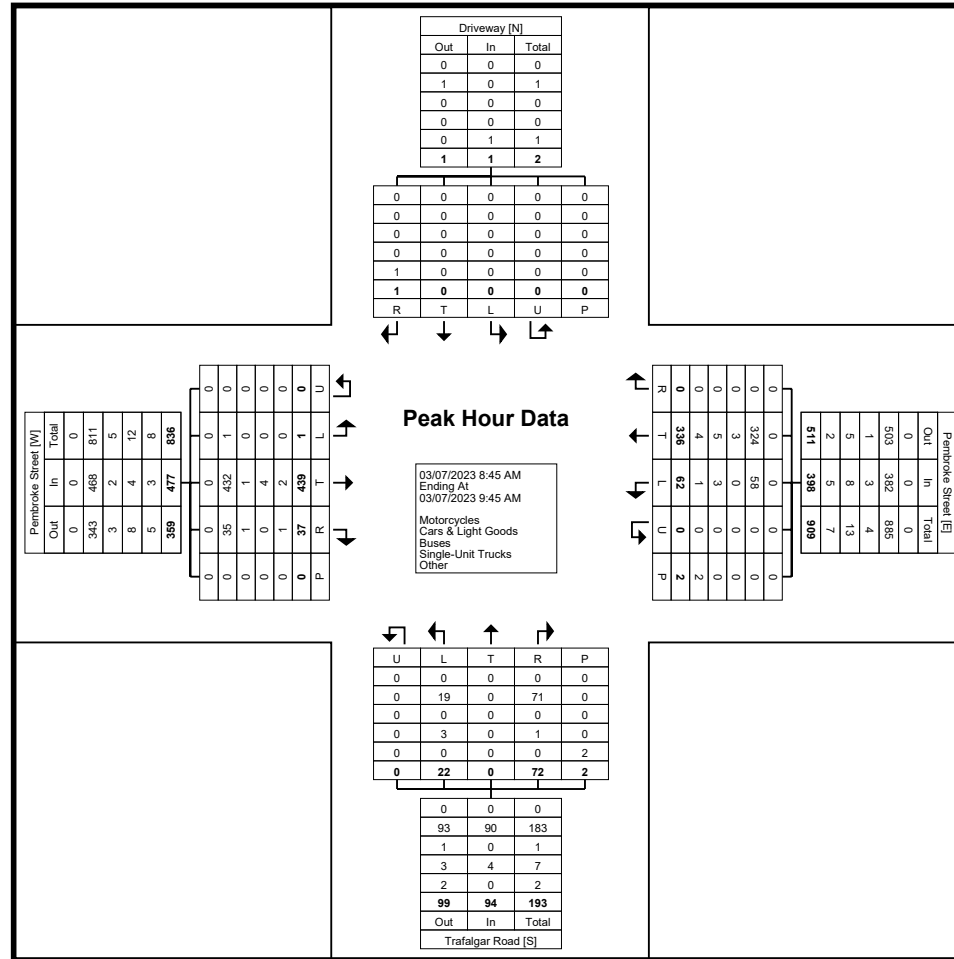
### Turning Movement Peak Hour Data (8:45 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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  
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Count Name: Pembroke Street & Trafalgar Road  
 - Tuesday  
 Site Code: 220694  
 Start Date: 03/07/2023  
 Page No: 5



Turning Movement Peak Hour Data Plot (8:45 AM)



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Pembroke Street & Trafalgar Road  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>0</b>	<b>470</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>498</b>	<b>85</b>	<b>488</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>573</b>	<b>9</b>	<b>0</b>	<b>49</b>	<b>0</b>	<b>2</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1129</b>
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@pts1.com

Count Name: Pembroke Street & Trafalgar Road  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

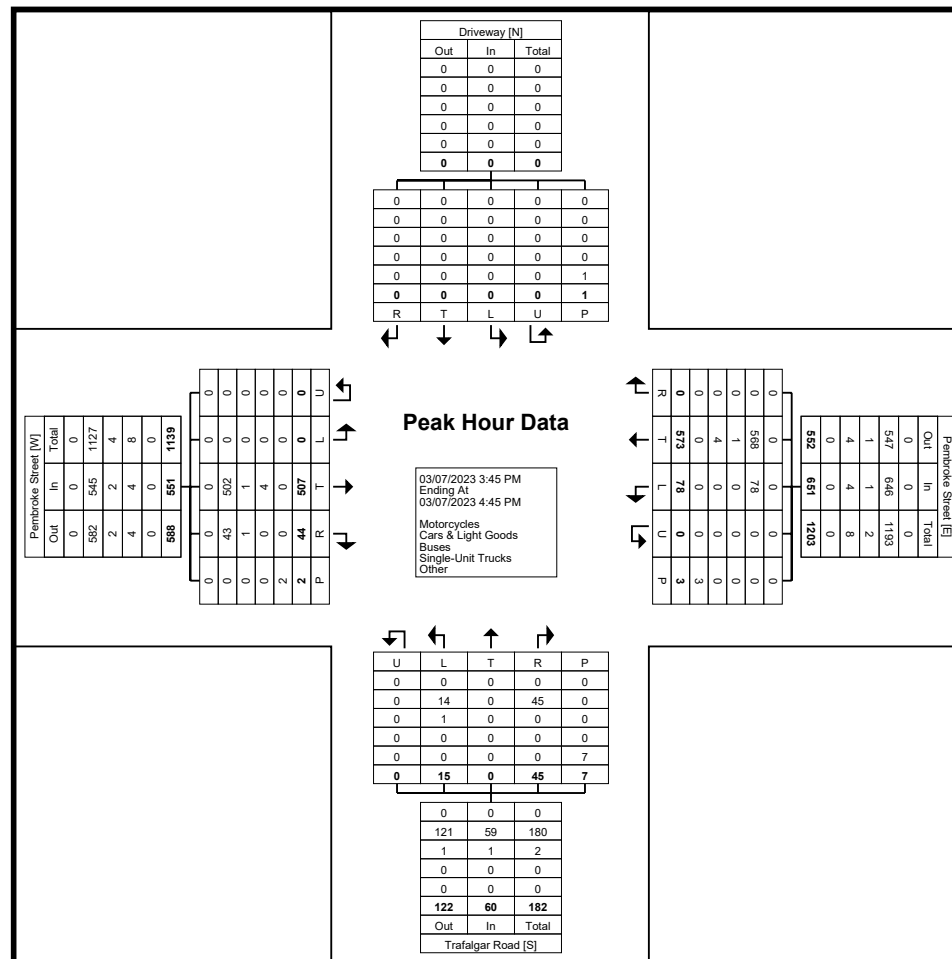
Start Time	Pembroke Street Eastbound						Pembroke Street Westbound						Trafalgar Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:45 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
<b>Total</b>	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  
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Count Name: Pembroke Street & Trafalgar Road  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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 E & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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

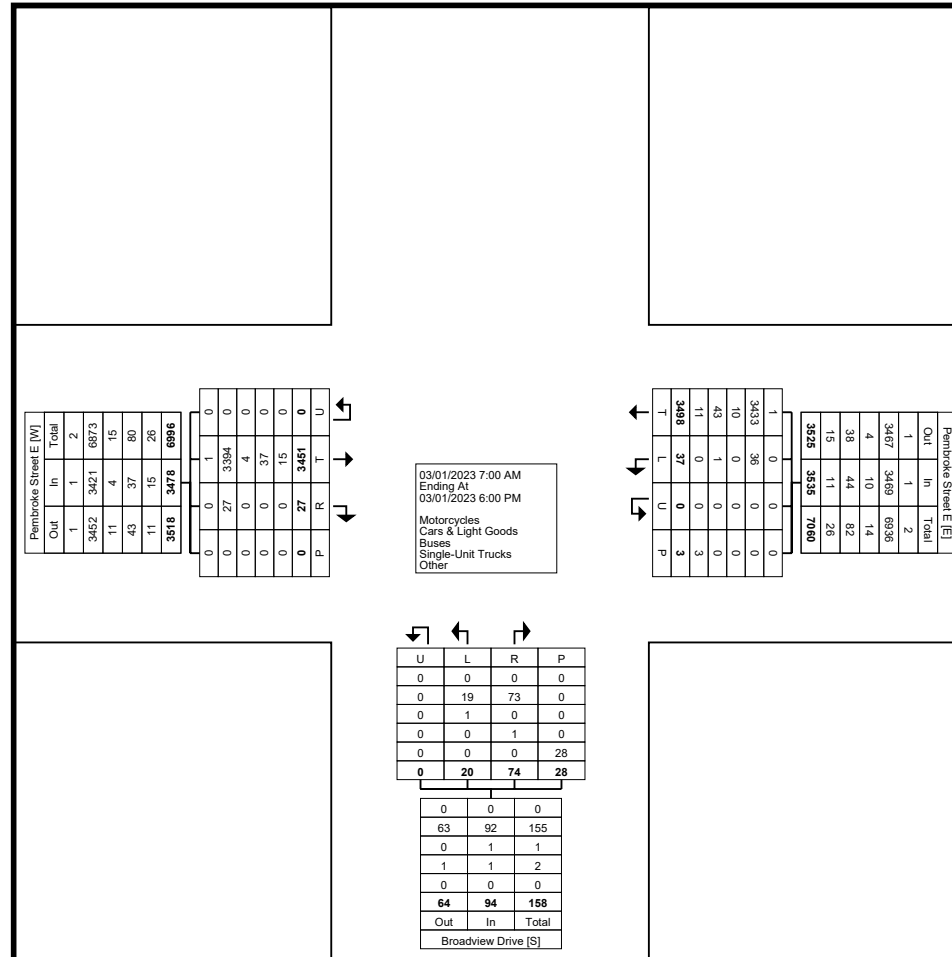
Hourly Total	489	8	0	0	497	4	539	0	0	543	5	17	0	6	22	1062
5:00 PM	123	1	0	0	124	2	145	0	0	147	1	0	0	1	1	272
5:15 PM	119	3	0	0	122	0	104	0	1	104	0	3	0	0	3	229
5:30 PM	97	1	0	0	98	2	106	0	0	108	1	1	0	0	2	208
5:45 PM	113	1	0	0	114	0	108	0	0	108	1	1	0	3	2	224
Hourly Total	452	6	0	0	458	4	463	0	1	467	3	5	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  
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Count Name: Pembroke Street E & Broadview Drive  
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@ptsI.com

Count Name: Pembroke Street E & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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	-	-

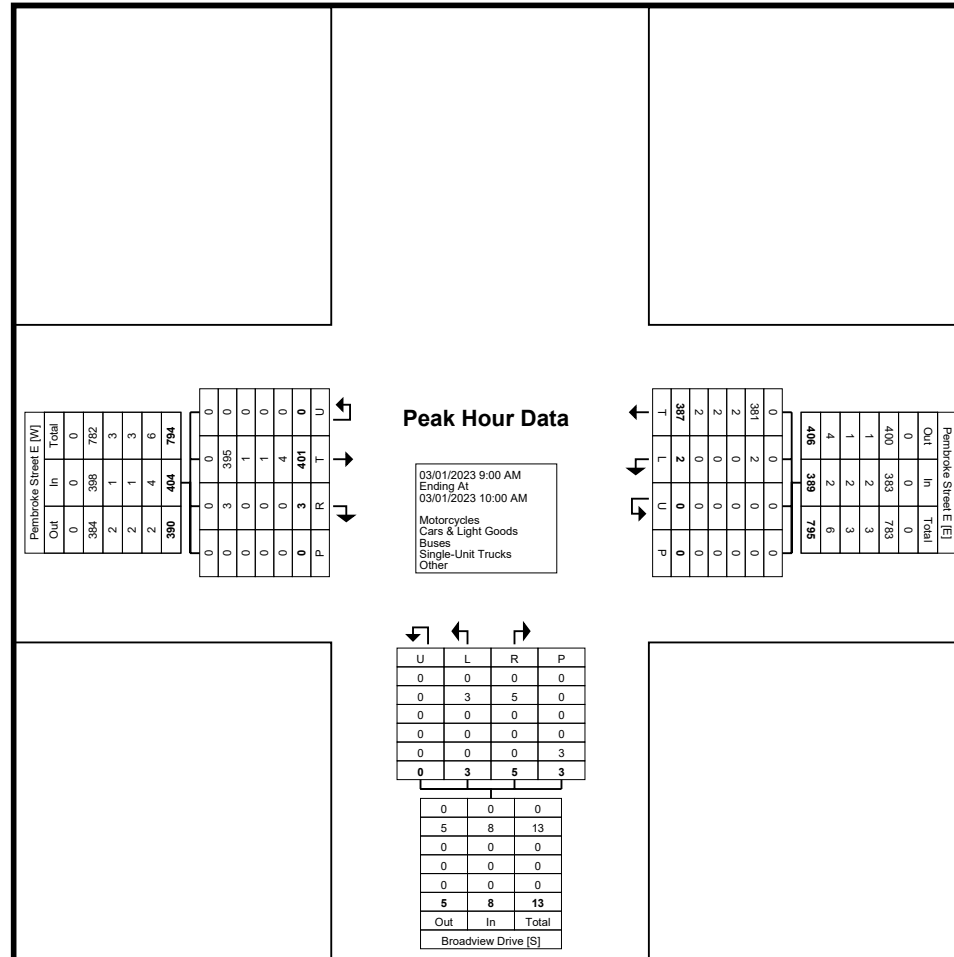




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Pembroke Street E & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@ptsI.com

Count Name: Pembroke Street E & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:30 AM)

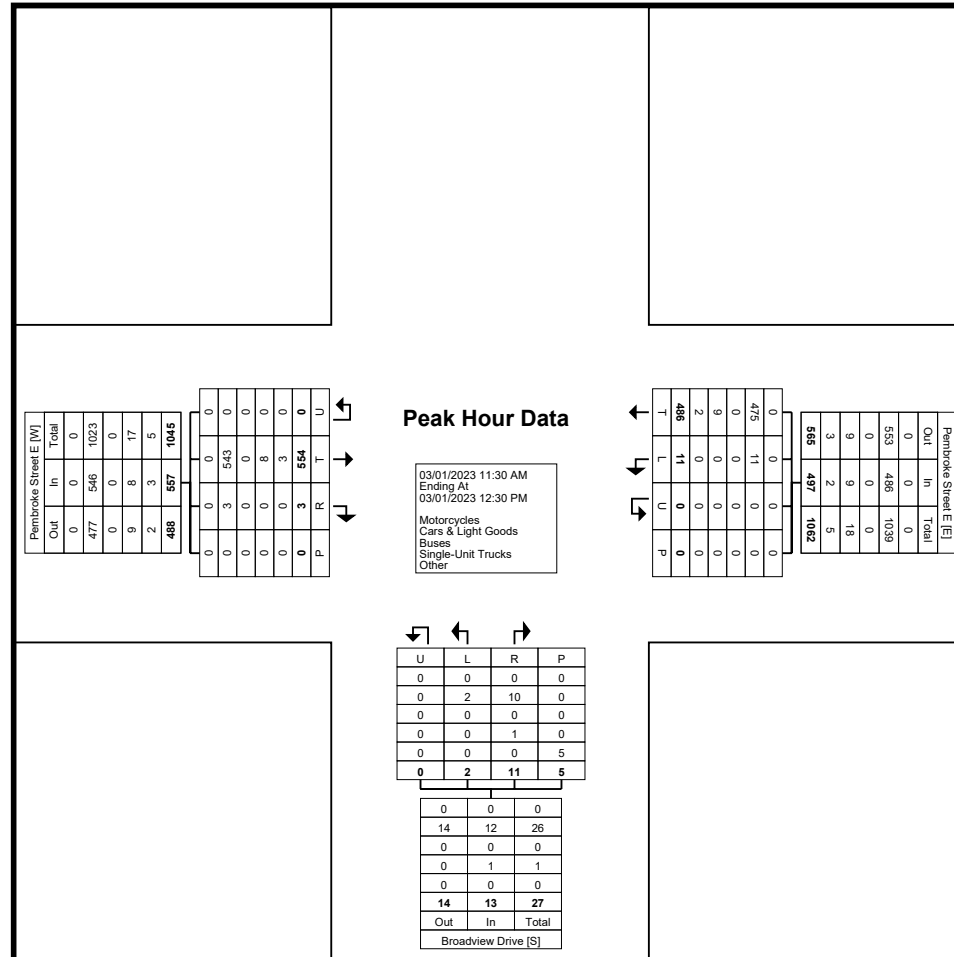
Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
11:30 AM	128	2	0	0	130	2	118	0	0	120	2	3	0	3	5	255
11:45 AM	156	0	0	0	156	2	122	0	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  
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Count Name: Pembroke Street E & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsll.com

Count Name: Pembroke Street E & Broadview Drive  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 8

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

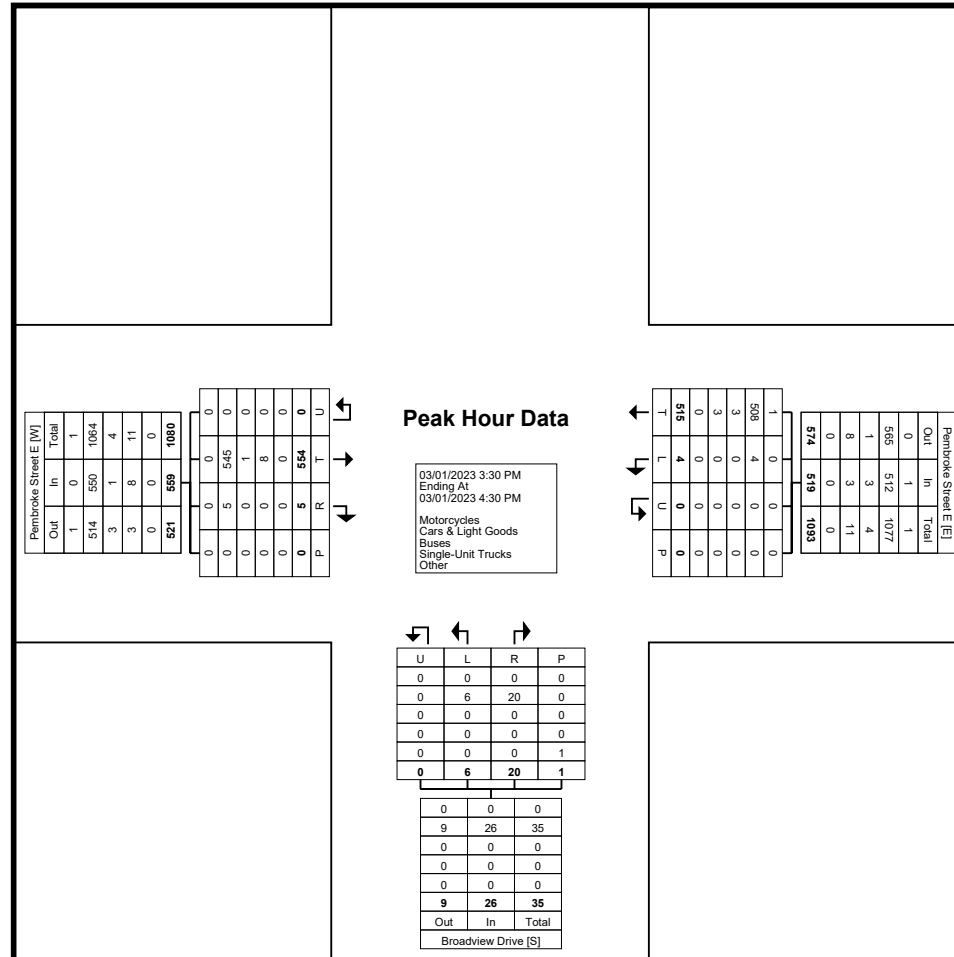
Start Time	Pembroke Street E Eastbound					Pembroke Street E Westbound					Broadview Drive Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:30 PM	168	1	0	0	169	2	123	0	0	125	0	5	0	1	5	299
3:45 PM	139	1	0	0	140	1	109	0	0	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

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Count Name: Pembroke Street E & Broadview 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@ptsI.com

Count Name: Pembroke Street E & Mackay  
Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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



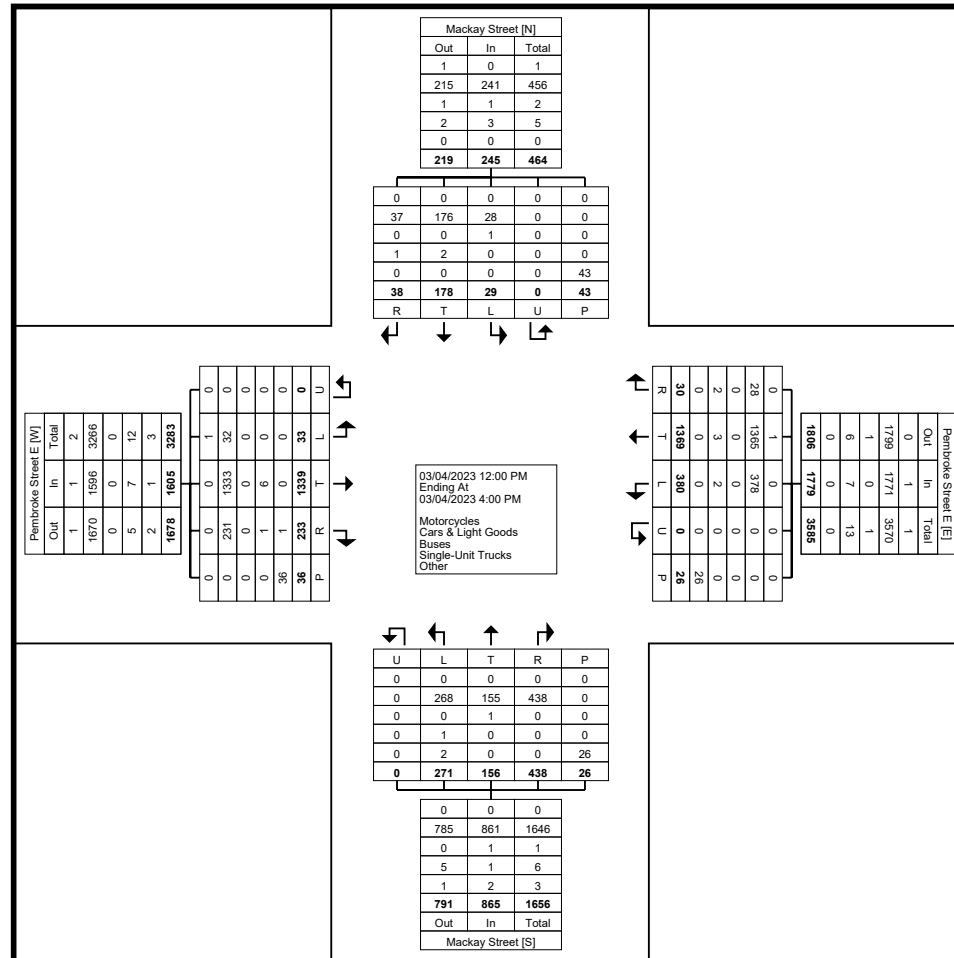
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4	0.0	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	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  
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Count Name: Pembroke Street E & Mackay  
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@ptsI.com

Count Name: Pembroke Street E & Mackay  
Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 4

### Turning Movement Peak Hour Data (2:30 PM)

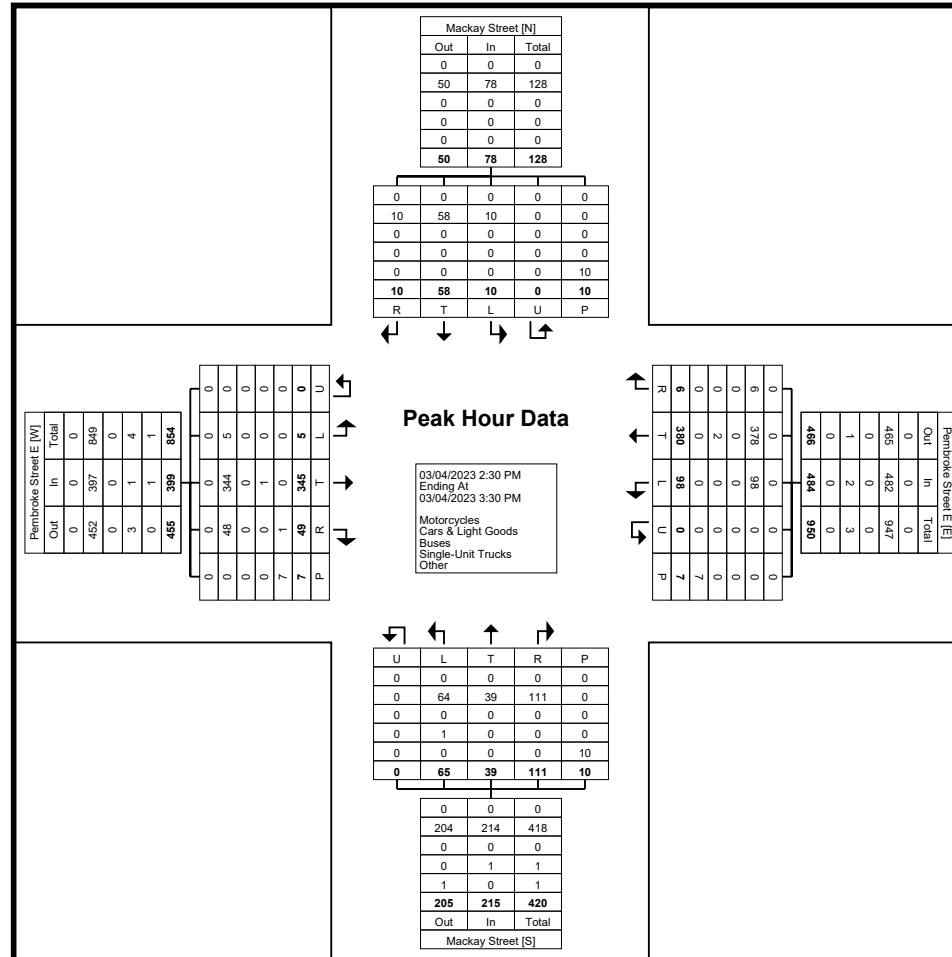
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>5</b>	<b>345</b>	<b>49</b>	<b>0</b>	<b>7</b>	<b>399</b>	<b>98</b>	<b>380</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>484</b>	<b>65</b>	<b>39</b>	<b>111</b>	<b>0</b>	<b>10</b>	<b>215</b>	<b>10</b>	<b>58</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>78</b>	<b>1176</b>
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  
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Count Name: Pembroke Street E & Mackay  
Street - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@pts.com

Count Name: Pembroke Street East & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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	-	-

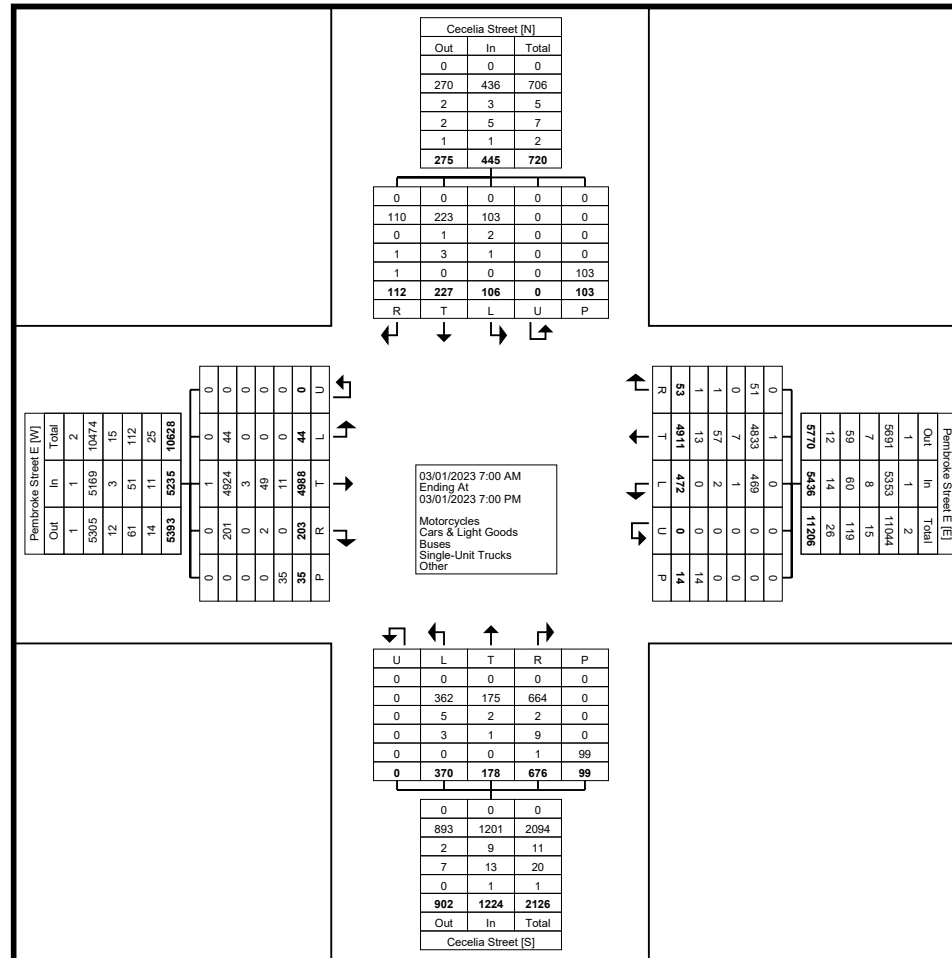




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: Pembroke Street East & Cecelia Street  
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  
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Count Name: Pembroke Street East & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 4

### Turning Movement Peak Hour Data (11:00 AM)

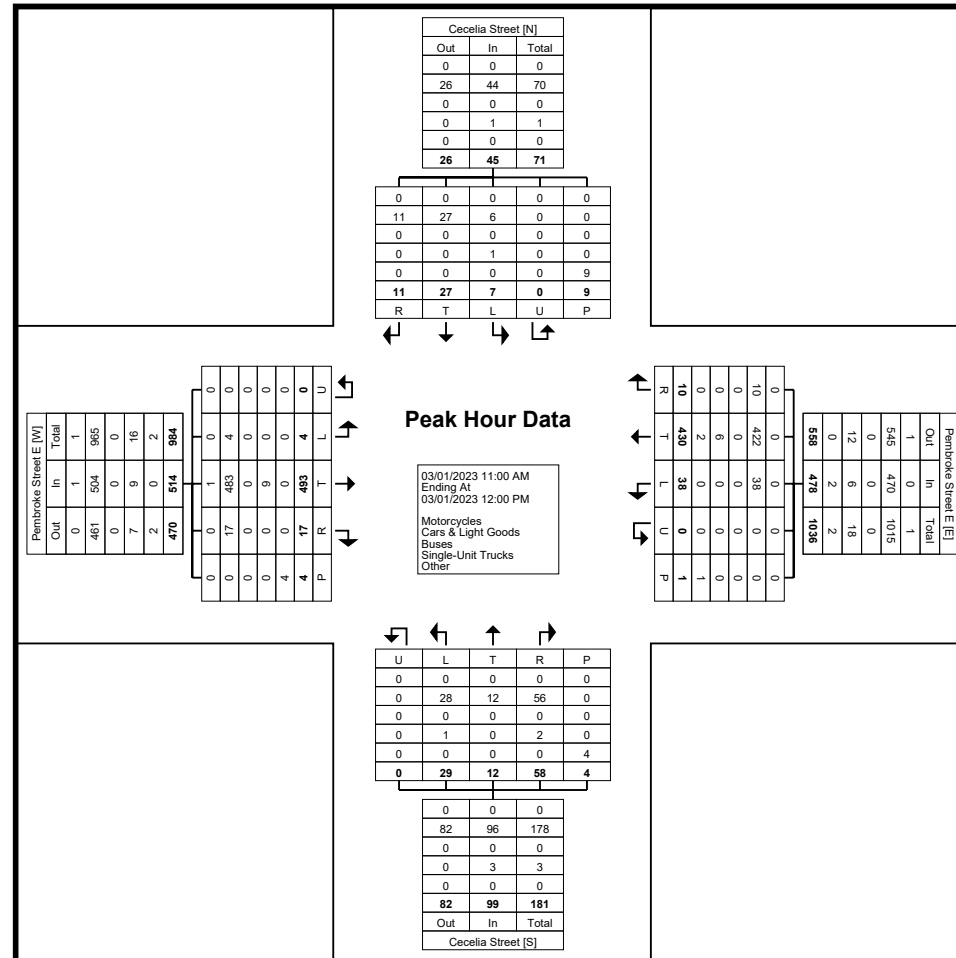
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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  
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Count Name: Pembroke Street East & Cecelia Street  
Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 5



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@pts.com

Count Name: Pembroke Street East & Cecelia Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 6

### Turning Movement Peak Hour Data (2:00 PM)

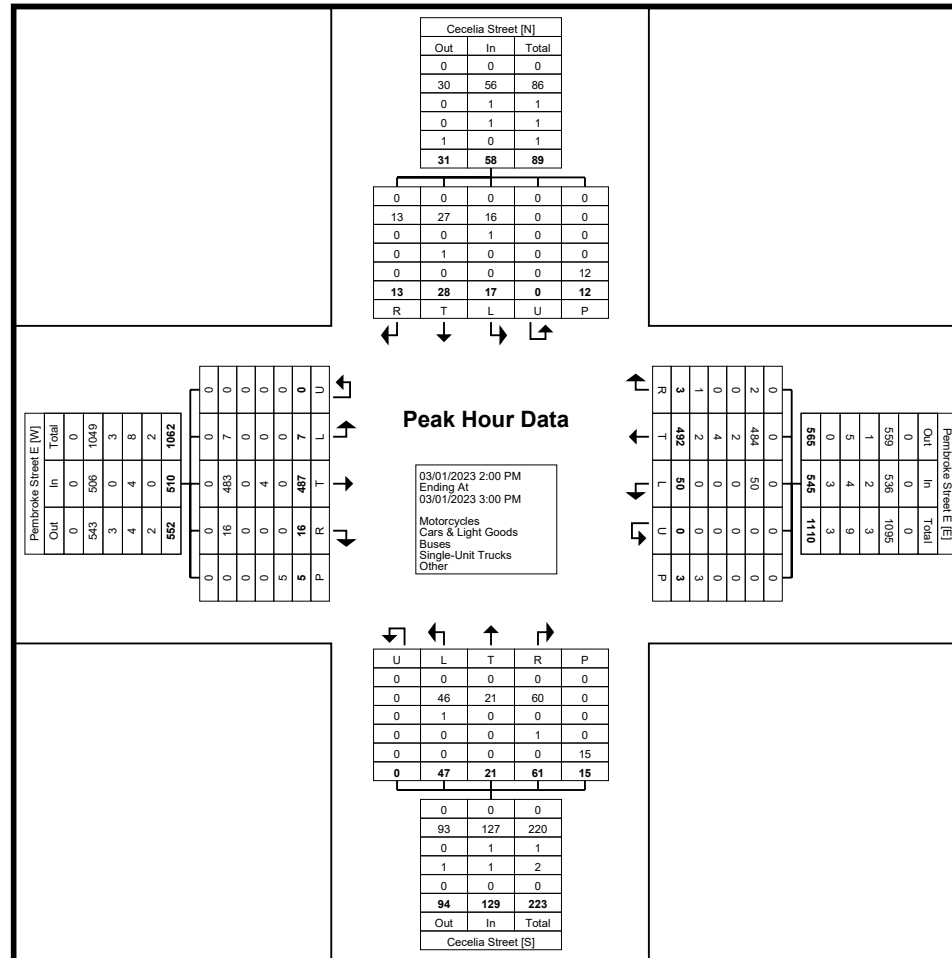
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						Cecelia Street Northbound						Cecelia Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>7</b>	<b>487</b>	<b>16</b>	<b>0</b>	<b>5</b>	<b>510</b>	<b>50</b>	<b>492</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>545</b>	<b>47</b>	<b>21</b>	<b>61</b>	<b>0</b>	<b>15</b>	<b>129</b>	<b>17</b>	<b>28</b>	<b>13</b>	<b>0</b>	<b>12</b>	<b>58</b>	<b>1242</b>
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

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Count Name: Pembroke Street East & Cecelia Street  
Street  
Site Code: 220694  
Start Date: 03/01/2023  
Page No: 7



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@ptsI.com

Count Name: Pembroke Street East & MacKay  
Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						MacKay Street Northbound						MacKay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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



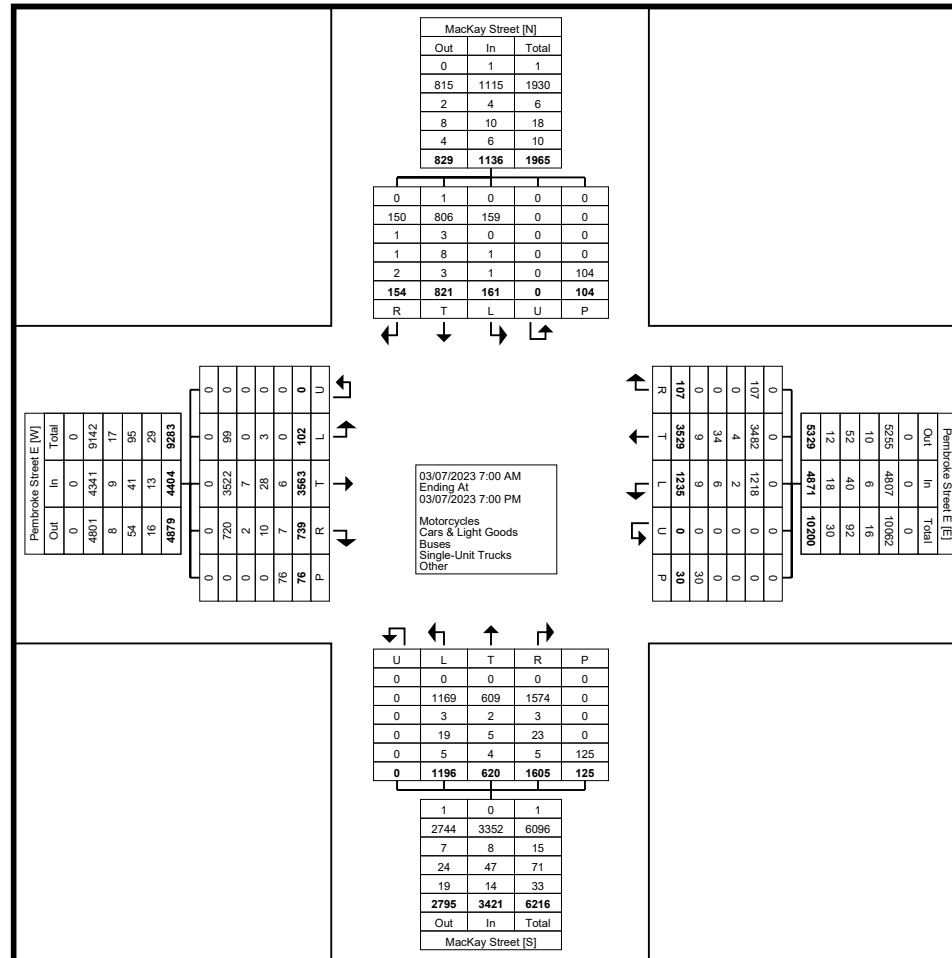
2:00 PM	4	70	23	0	0	97	28	74	2	0	1	104	18	12	38	0	3	68	2	19	6	0	2	27	296
2:15 PM	5	76	18	0	3	99	29	82	3	0	0	114	30	15	30	0	1	75	5	20	4	0	7	29	317
2:30 PM	5	82	11	0	1	98	33	91	4	0	0	128	33	9	34	0	3	76	2	17	4	0	3	23	325
2:45 PM	7	74	16	0	1	97	39	70	0	0	1	109	29	12	39	0	6	80	1	17	5	0	6	23	309
Hourly Total	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@pts1.com

Count Name: Pembroke Street East & MacKay  
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@pts1.com

Count Name: Pembroke Street East & MacKay  
Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

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

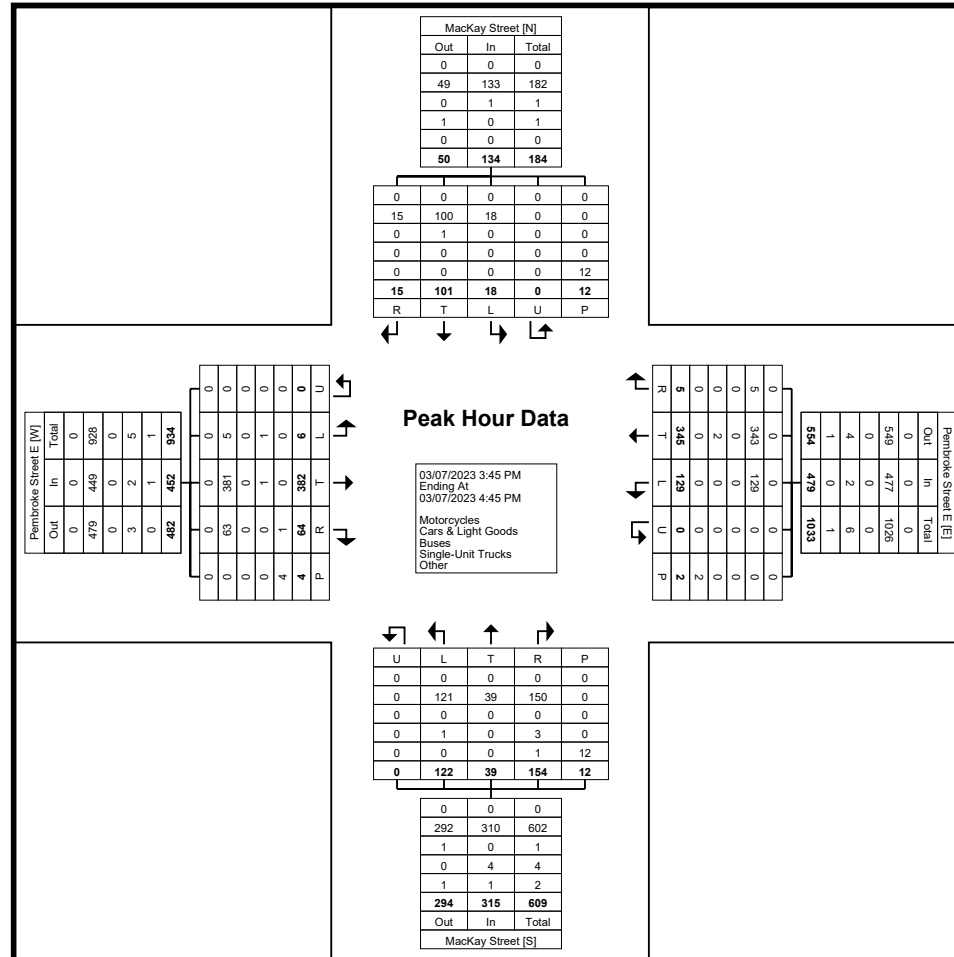
Start Time	Pembroke Street E Eastbound						Pembroke Street E Westbound						MacKay Street Northbound						MacKay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>6</b>	<b>382</b>	<b>64</b>	<b>0</b>	<b>4</b>	<b>452</b>	<b>129</b>	<b>345</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>479</b>	<b>122</b>	<b>39</b>	<b>154</b>	<b>0</b>	<b>12</b>	<b>315</b>	<b>18</b>	<b>101</b>	<b>15</b>	<b>0</b>	<b>12</b>	<b>134</b>	<b>1380</b>
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@ptsI.com

Count Name: Pembroke Street East & MacKay  
Street - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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@ptsll.com

Count Name: River Road & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	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









Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: River Road & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

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

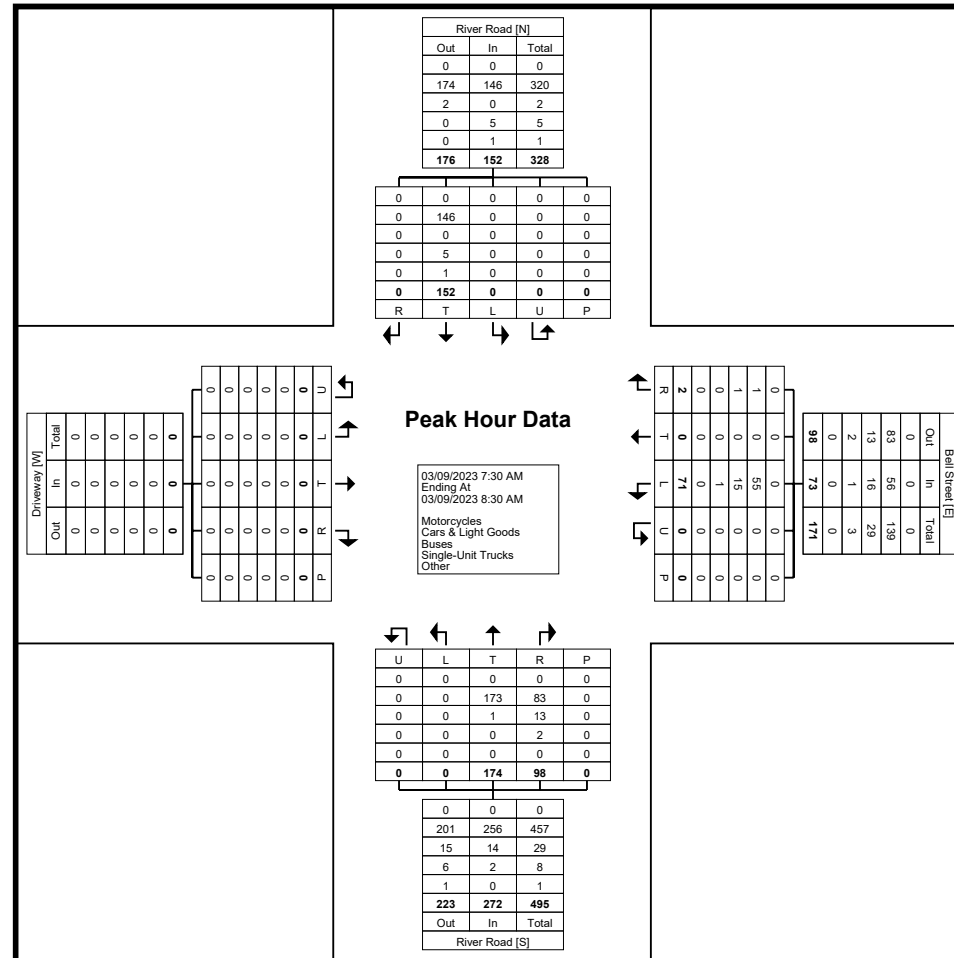
Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	0	0	0	0	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

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

Count Name: River Road & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@ptsI.com

Count Name: River Road & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: River Road & Bell Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

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

Start Time	Driveway Eastbound						Bell Street Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	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  
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Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

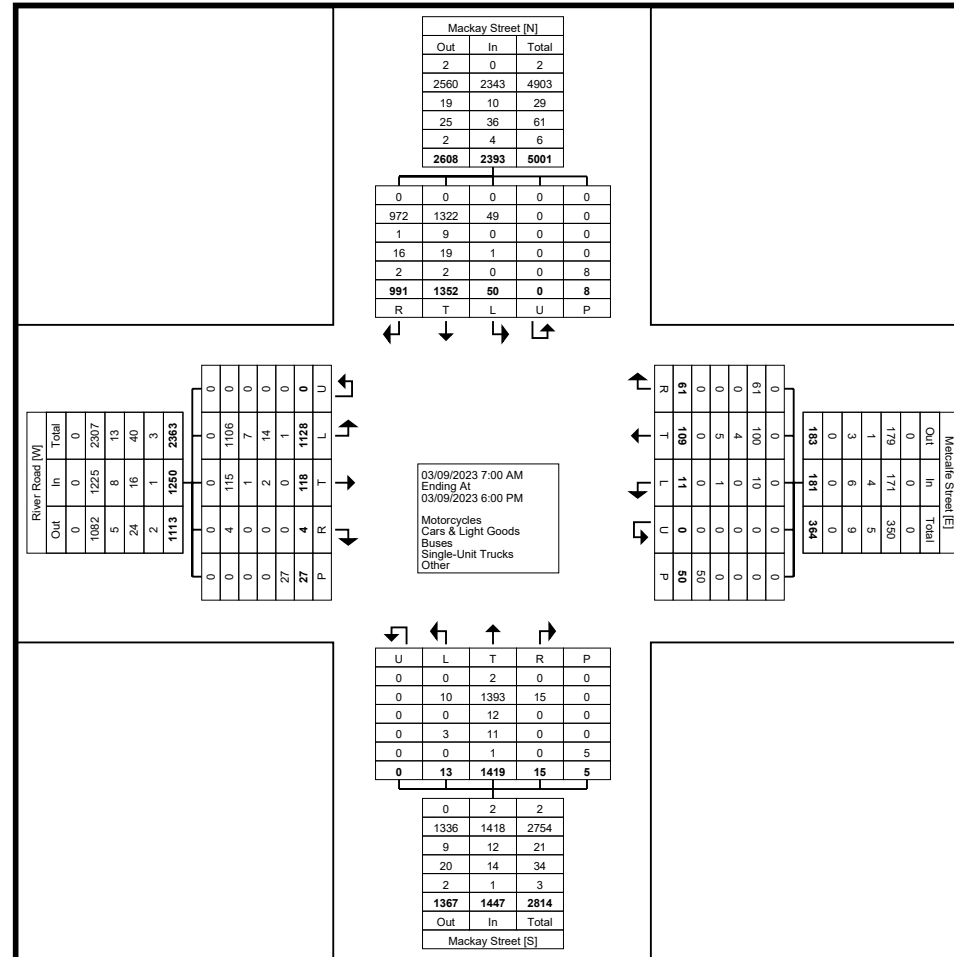
4:45 PM	38	6	0	0	2	44	0	3	2	0	0	5	3	51	1	0	0	55	1	43	35	0	0	79	183
Hourly Total	147	24	1	0	9	172	1	17	6	0	11	24	3	200	3	0	3	206	7	192	176	0	0	375	777
5:00 PM	32	2	0	0	0	34	0	3	0	0	0	3	0	43	0	0	0	43	4	35	41	0	0	80	160
5:15 PM	35	5	0	0	0	40	1	3	1	0	1	5	1	29	0	0	0	30	0	42	32	0	0	74	149
5:30 PM	32	2	0	0	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 cdowness@pts1.com

Count Name: River Road Metcalfe Street &  
Mackay 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 cdowness@ptsI.com

Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

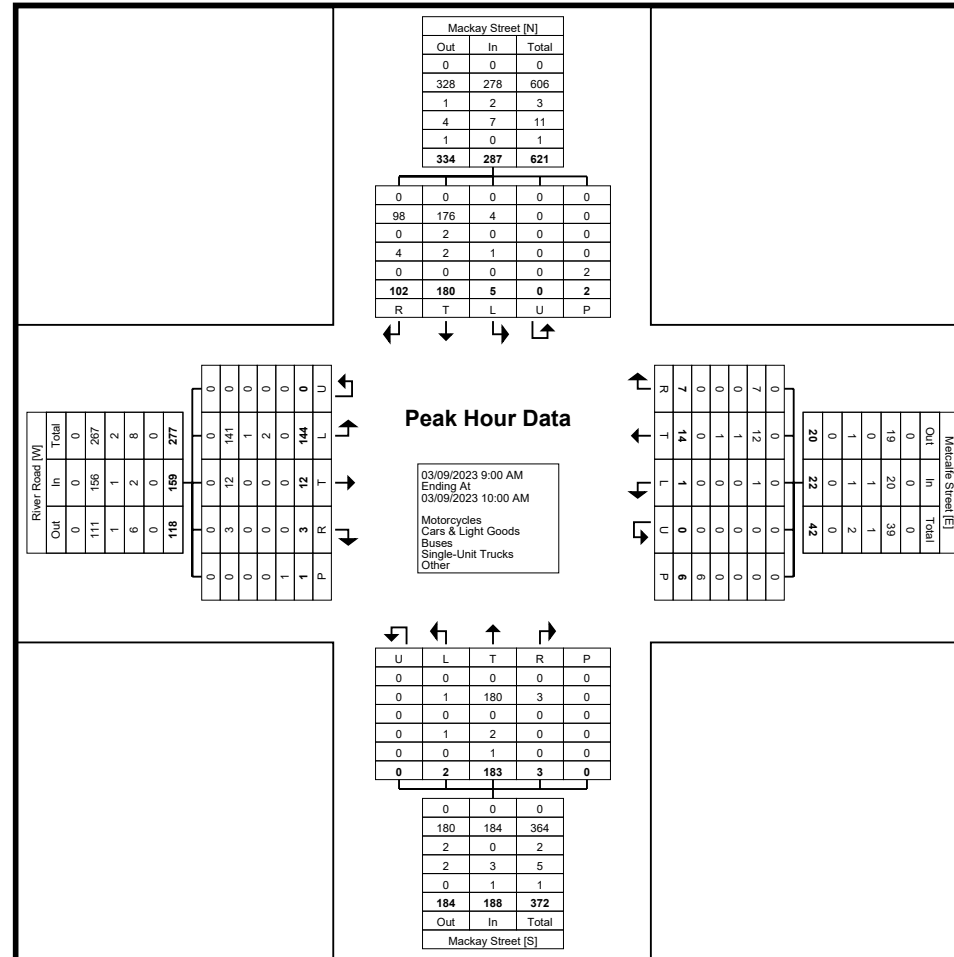
Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
9:00 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
<b>Total</b>	<b>144</b>	<b>12</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>159</b>	<b>1</b>	<b>14</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>22</b>	<b>2</b>	<b>183</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>5</b>	<b>180</b>	<b>102</b>	<b>0</b>	<b>2</b>	<b>287</b>	<b>656</b>
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	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)





Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:45 AM)

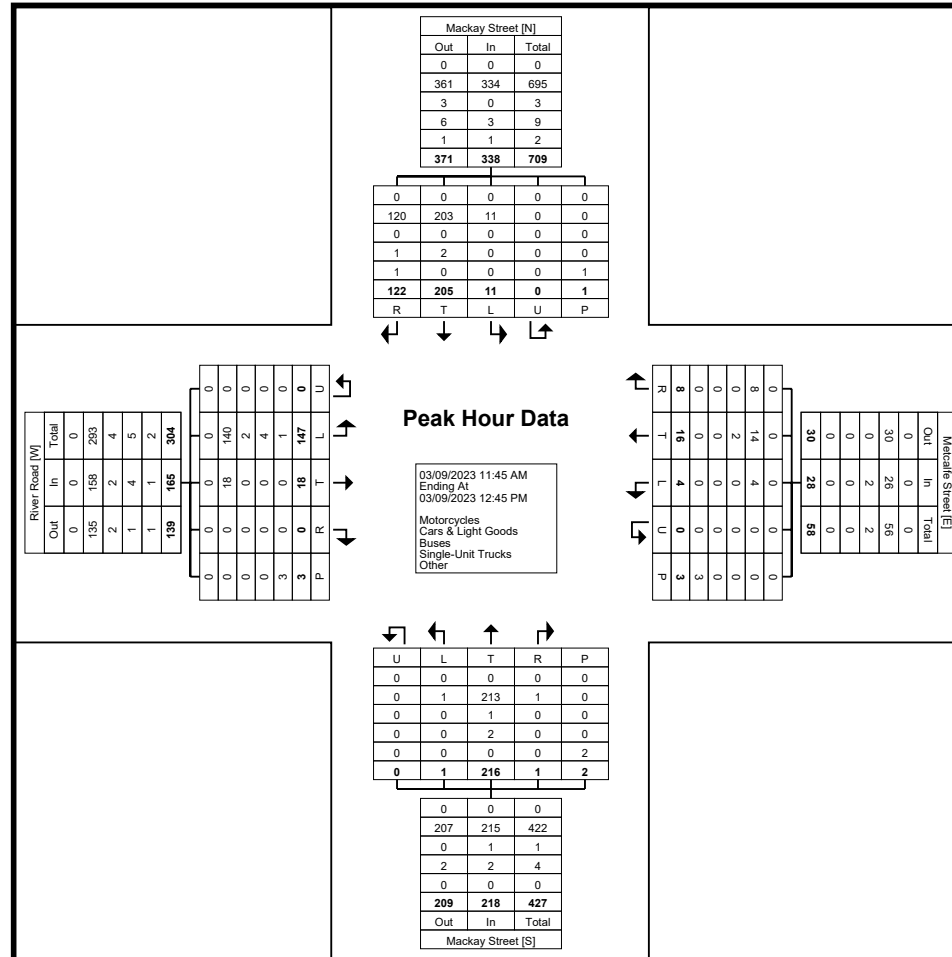
Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:45 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
<b>Total</b>	<b>147</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>165</b>	<b>4</b>	<b>16</b>	<b>8</b>	<b>0</b>	<b>3</b>	<b>28</b>	<b>1</b>	<b>216</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>218</b>	<b>11</b>	<b>205</b>	<b>122</b>	<b>0</b>	<b>1</b>	<b>338</b>	<b>749</b>
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  
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Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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 cdowness@ptsll.com

Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

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

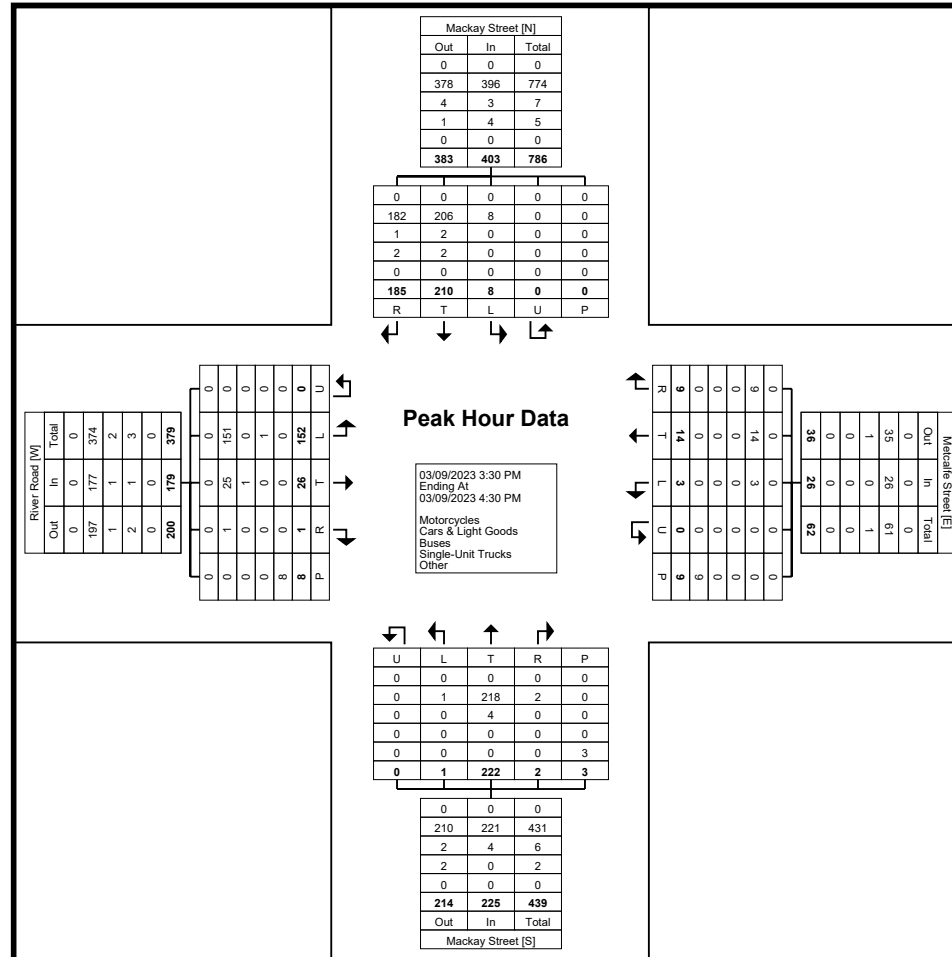
Start Time	River Road Eastbound						Metcalfe Street Westbound						Mackay Street Northbound						Mackay Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 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
<b>Total</b>	<b>152</b>	<b>26</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>179</b>	<b>3</b>	<b>14</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>26</b>	<b>1</b>	<b>222</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>225</b>	<b>8</b>	<b>210</b>	<b>185</b>	<b>0</b>	<b>0</b>	<b>403</b>	<b>833</b>
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  
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Count Name: River Road Metcalfe Street &  
Mackay Street  
Site Code: 220694  
Start Date: 03/09/2023  
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: Robinson Lane & Highway 148 -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. 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



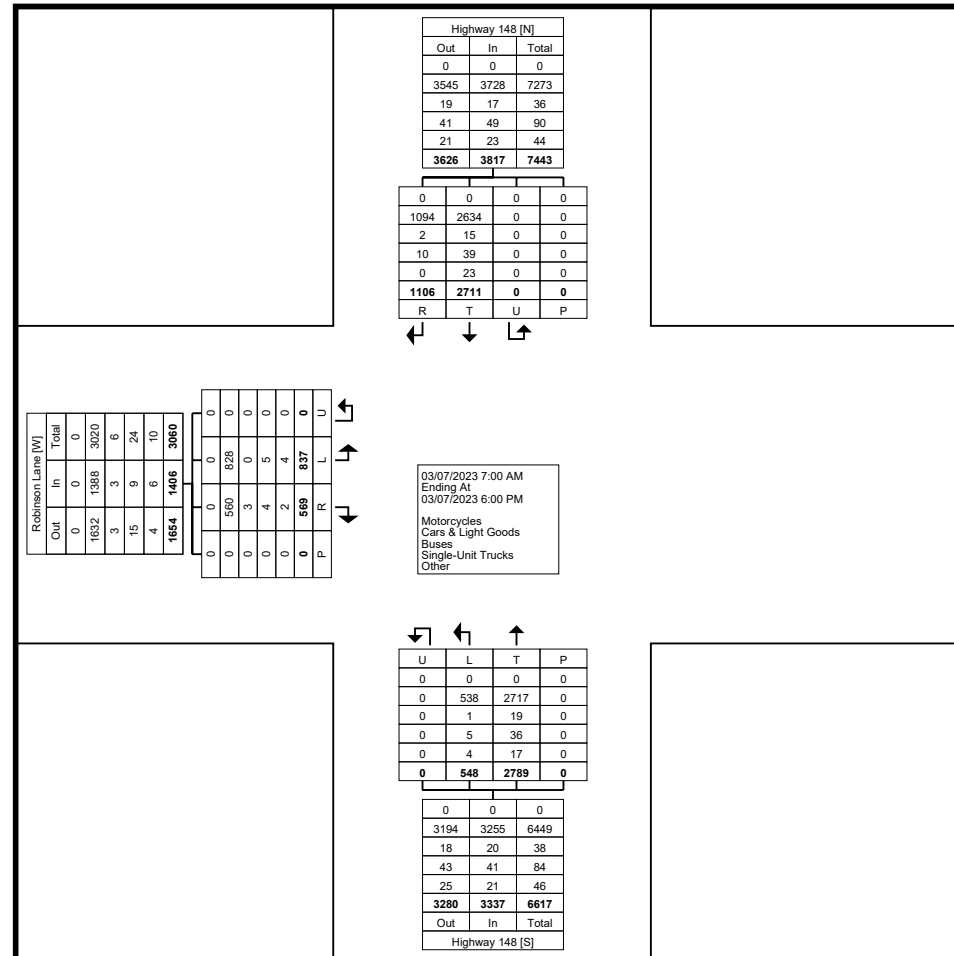




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 3



Turning Movement Data Plot

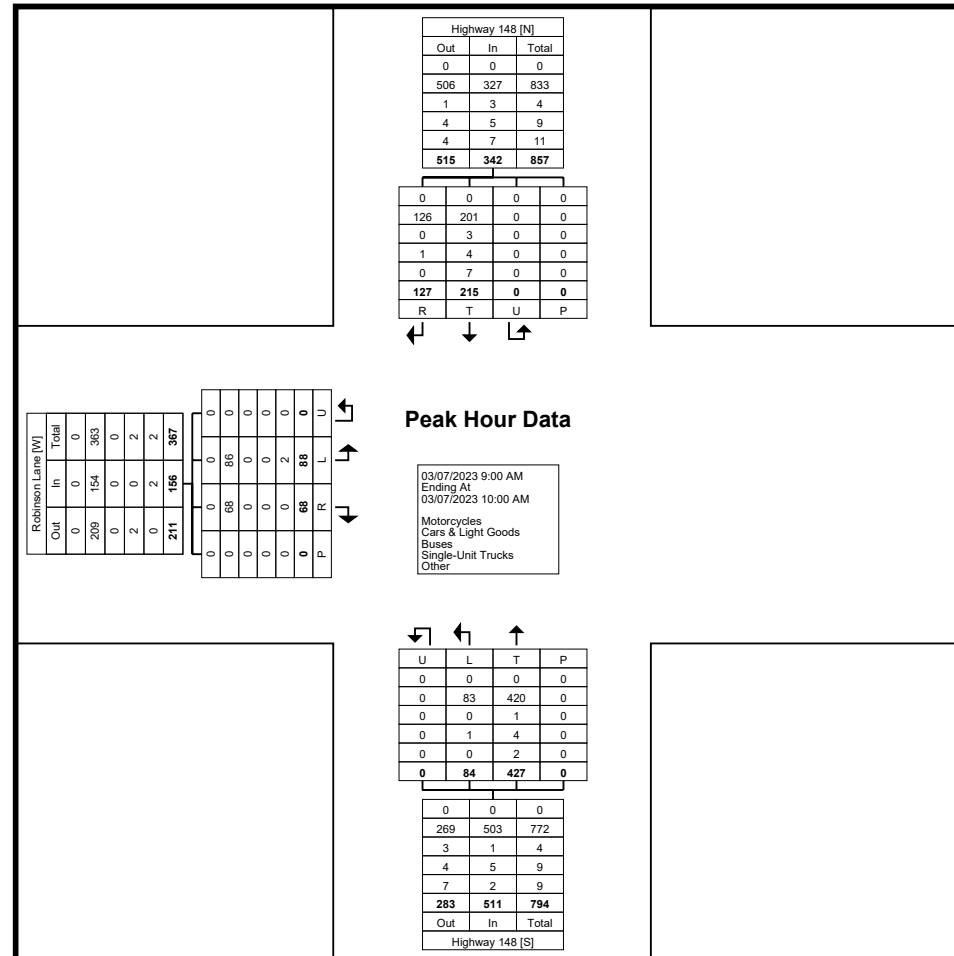




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)

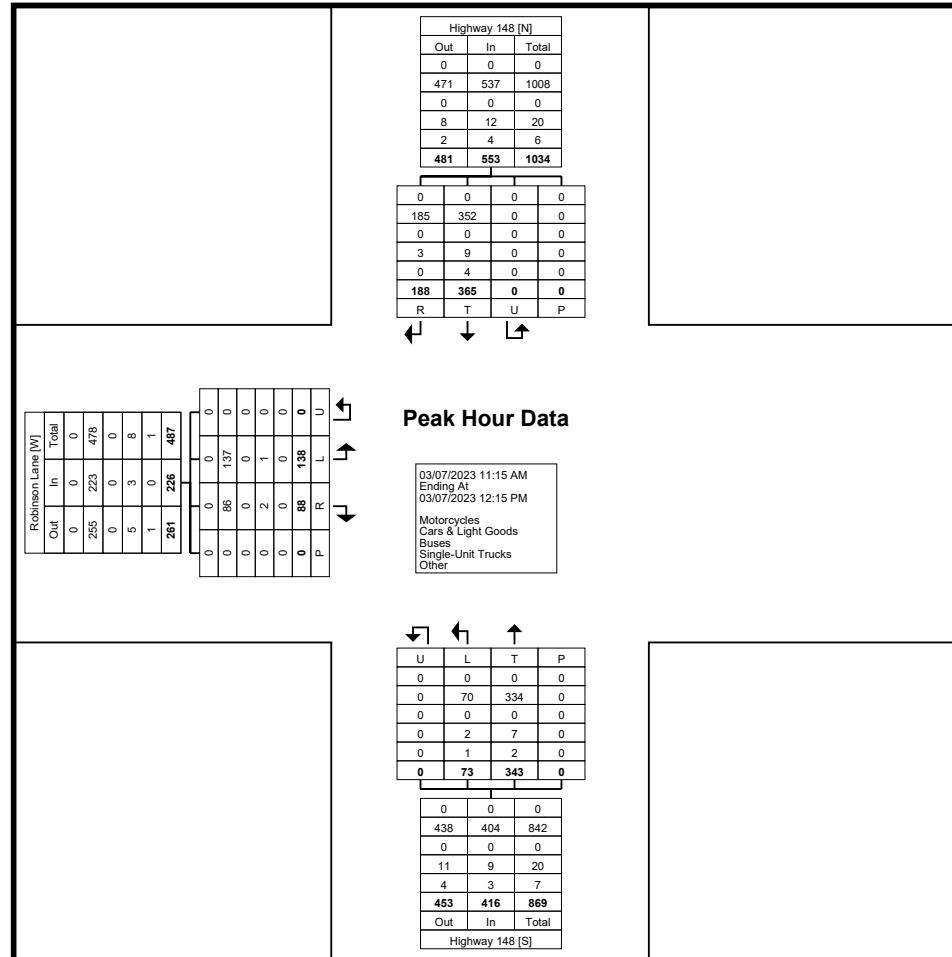




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:15 AM)



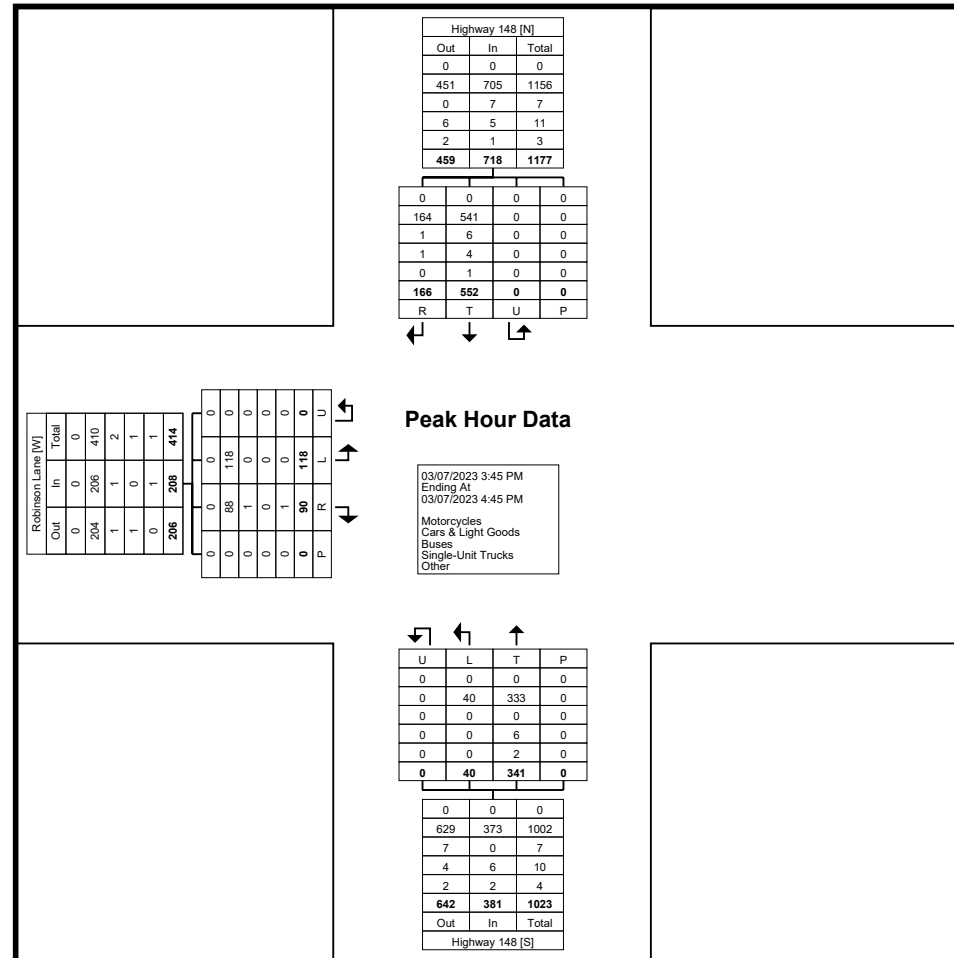




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148 -  
Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Robinson Lane Eastbound					Highway 148 Northbound					Highway 148 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. 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

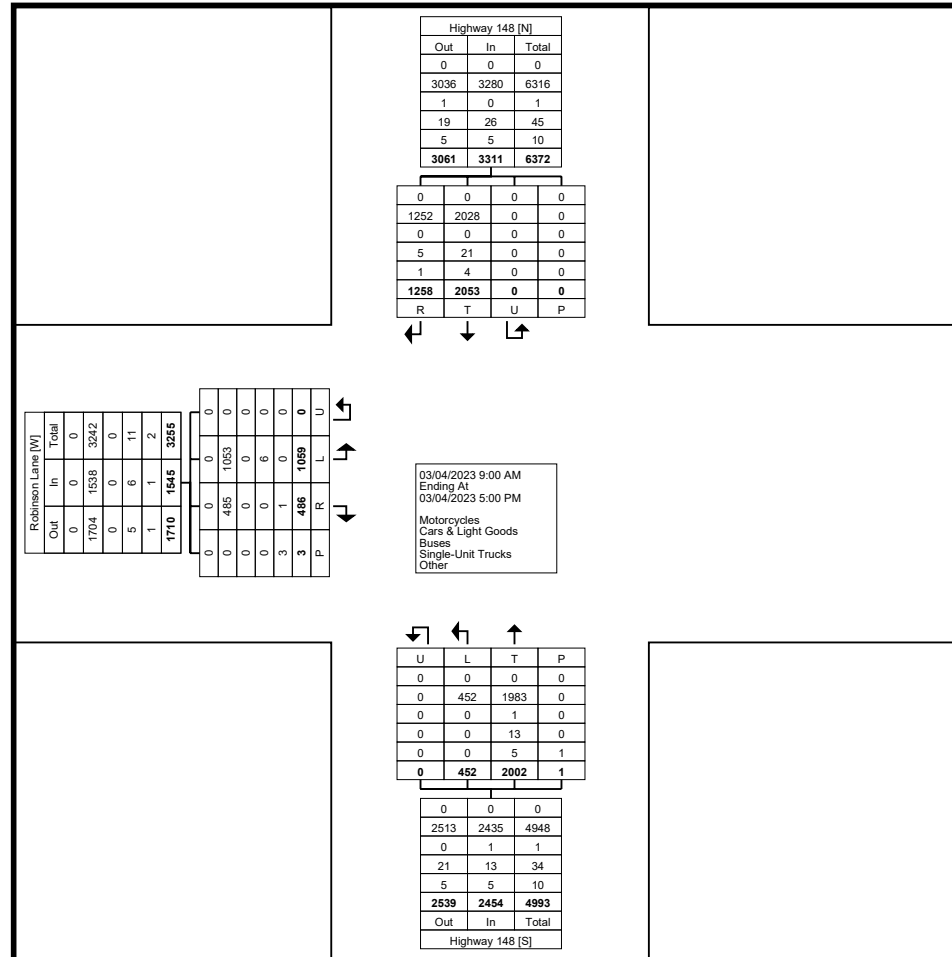
4:15 PM	38	14	0	1	52	8	71	0	0	79	100	38	0	0	138	269
4:30 PM	26	22	0	0	48	12	69	0	0	81	69	26	0	0	95	224
4:45 PM	20	10	0	1	30	10	63	0	0	73	83	25	0	0	108	211
Hourly Total	120	62	0	2	182	46	266	0	0	312	340	124	0	0	464	958
Grand Total	1059	486	0	3	1545	452	2002	0	1	2454	2053	1258	0	0	3311	7310
Approach %	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@ptsli.com

Count Name: Robinson Lane & Highway 148  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 3



Turning Movement Data Plot

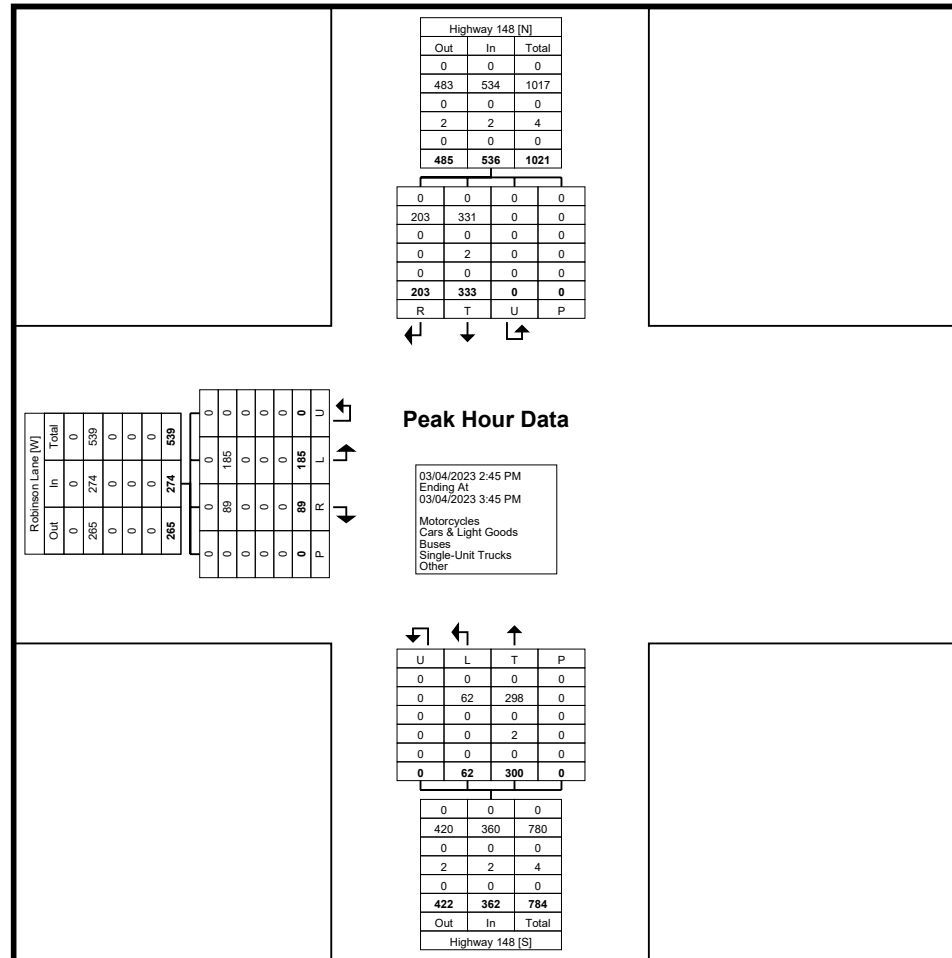




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Robinson Lane & Highway 148  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@ptsI.com

Count Name: Town Line Road/ Bennett Street &  
River Road - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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

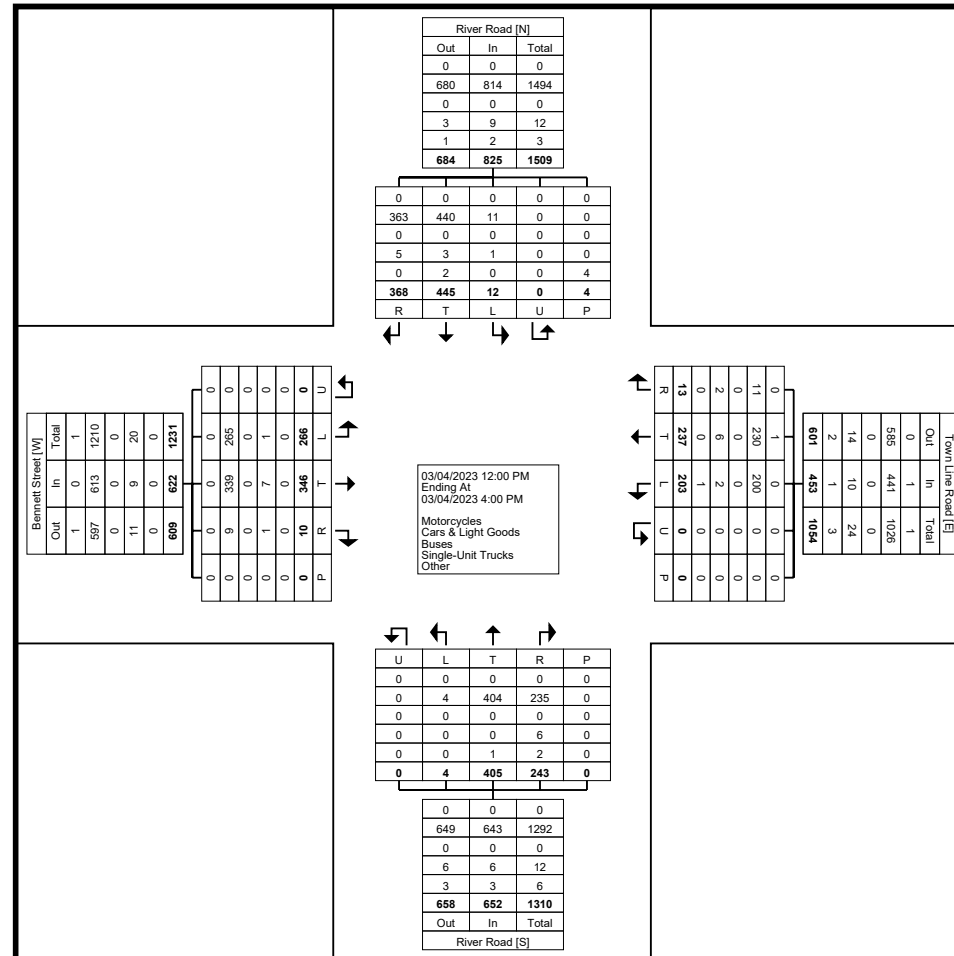
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.4	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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  
Page No: 3



Turning Movement Data Plot

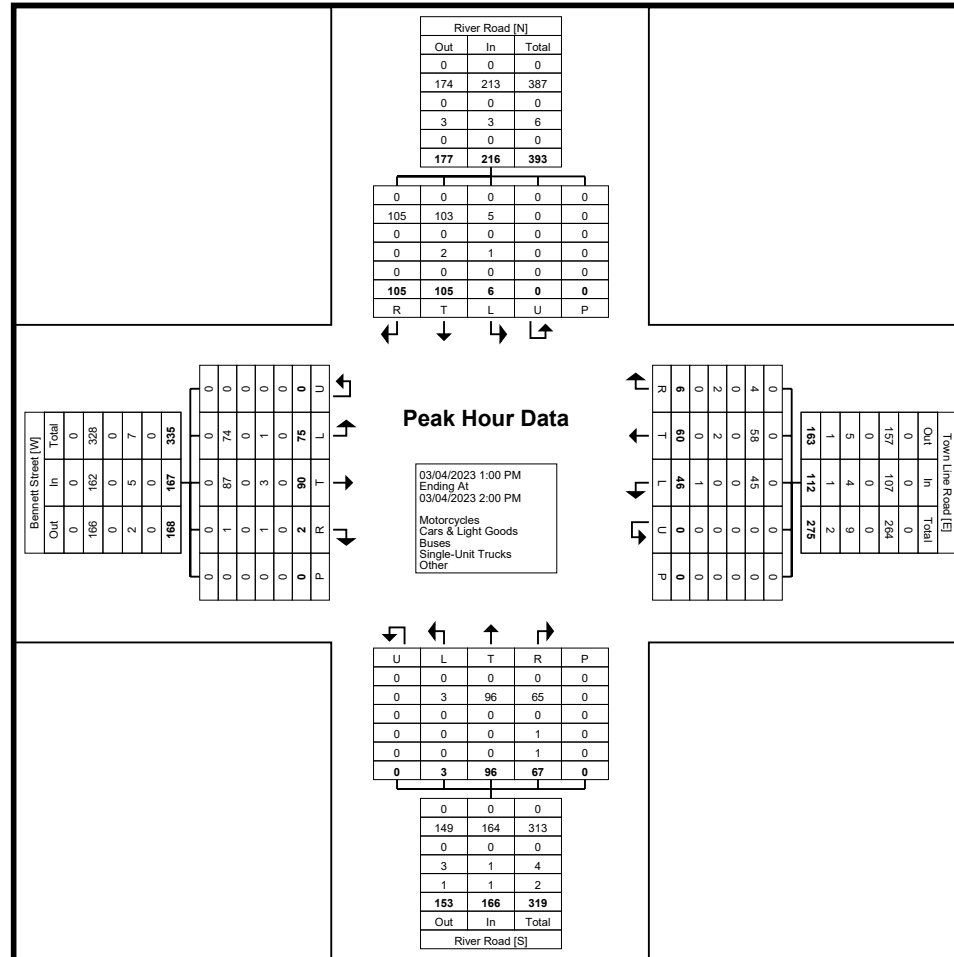




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Town Line Road/ Bennett Street &  
River Road - Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@ptsll.com

Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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



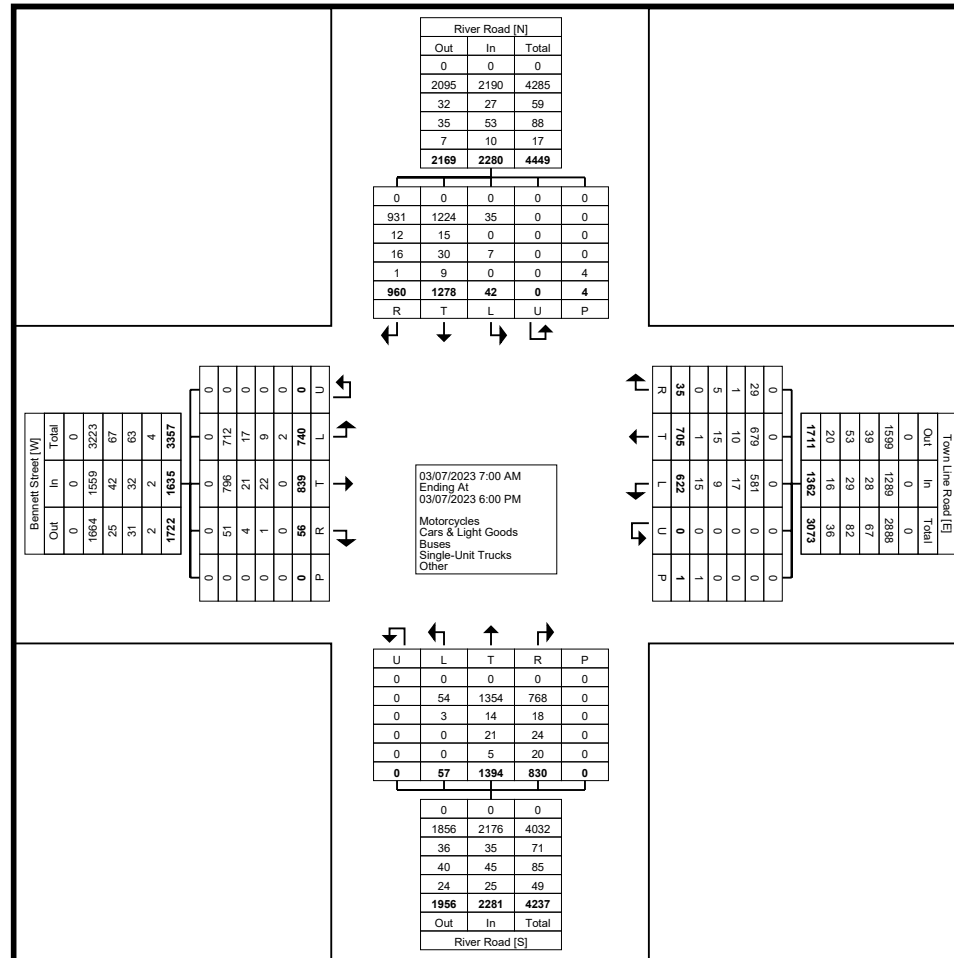
4:45 PM	16	37	1	0	0	54	18	33	2	0	0	53	3	37	34	0	0	74	3	52	39	0	0	94	275
Hourly Total	100	147	4	0	0	251	98	120	8	0	0	226	7	187	155	0	0	349	10	232	167	0	0	409	1235
5:00 PM	23	26	1	0	0	50	14	22	0	0	0	36	3	52	41	0	0	96	2	62	39	0	0	103	285
5:15 PM	19	24	0	0	0	43	24	22	1	0	0	47	1	33	16	0	0	50	2	31	19	0	0	52	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	-	-



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  
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

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

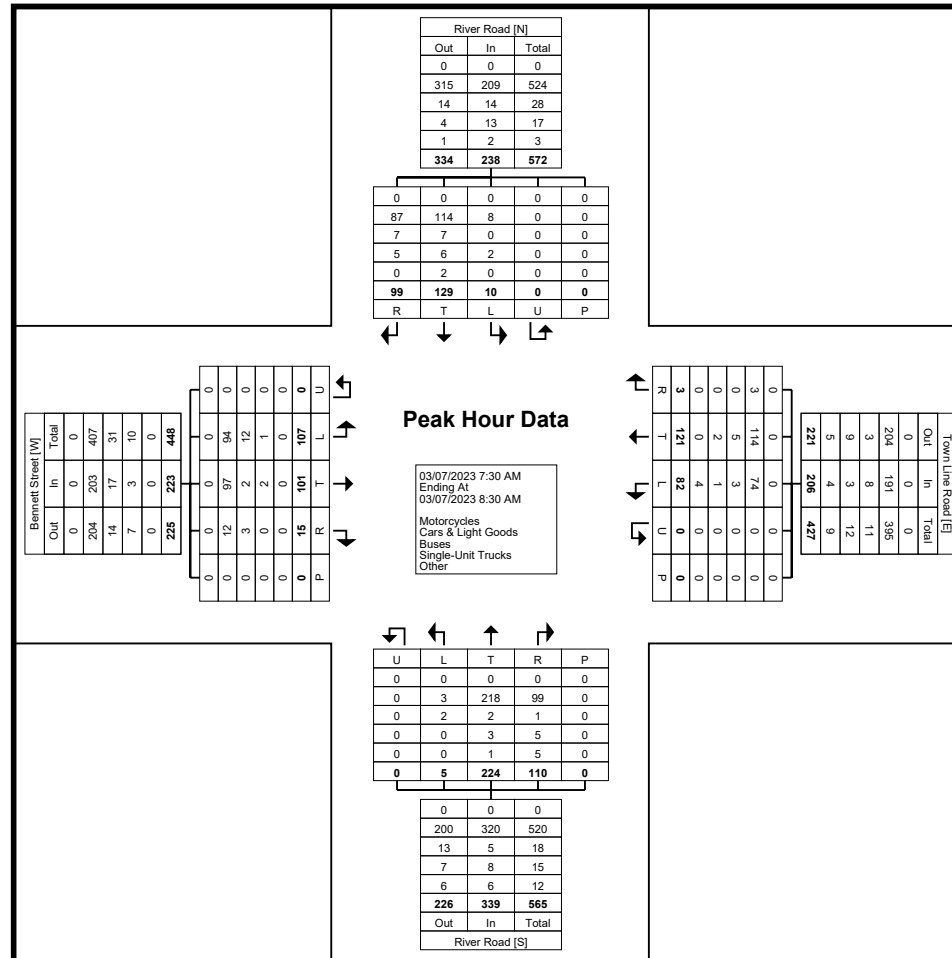
Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	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
<b>Total</b>	<b>107</b>	<b>101</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>223</b>	<b>82</b>	<b>121</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>206</b>	<b>5</b>	<b>224</b>	<b>110</b>	<b>0</b>	<b>0</b>	<b>339</b>	<b>10</b>	<b>129</b>	<b>99</b>	<b>0</b>	<b>0</b>	<b>238</b>	<b>1006</b>
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  
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Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



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@pts1.com

Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 6

### Turning Movement Peak Hour Data (11:15 AM)

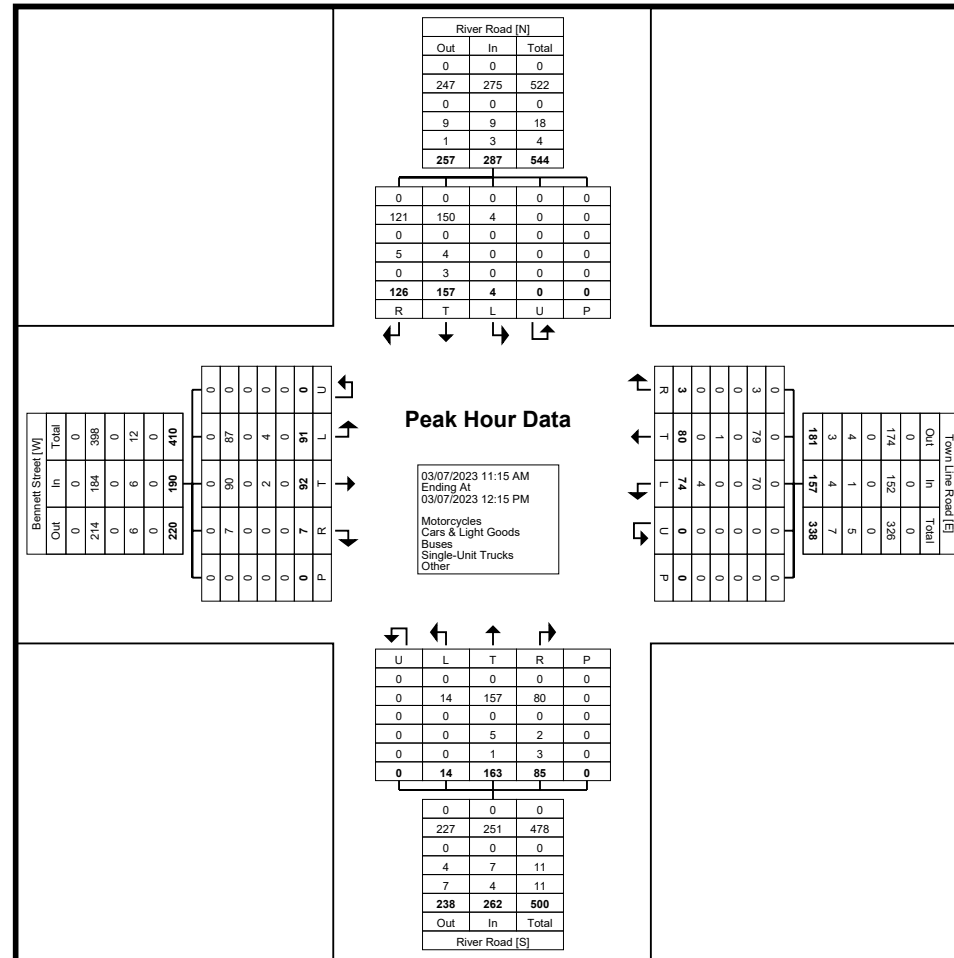
Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:15 AM	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
<b>Total</b>	<b>91</b>	<b>92</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>190</b>	<b>74</b>	<b>80</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>157</b>	<b>14</b>	<b>163</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>262</b>	<b>4</b>	<b>157</b>	<b>126</b>	<b>0</b>	<b>0</b>	<b>287</b>	<b>896</b>
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@ptsll.com

Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



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@ptsll.com

Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 8

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

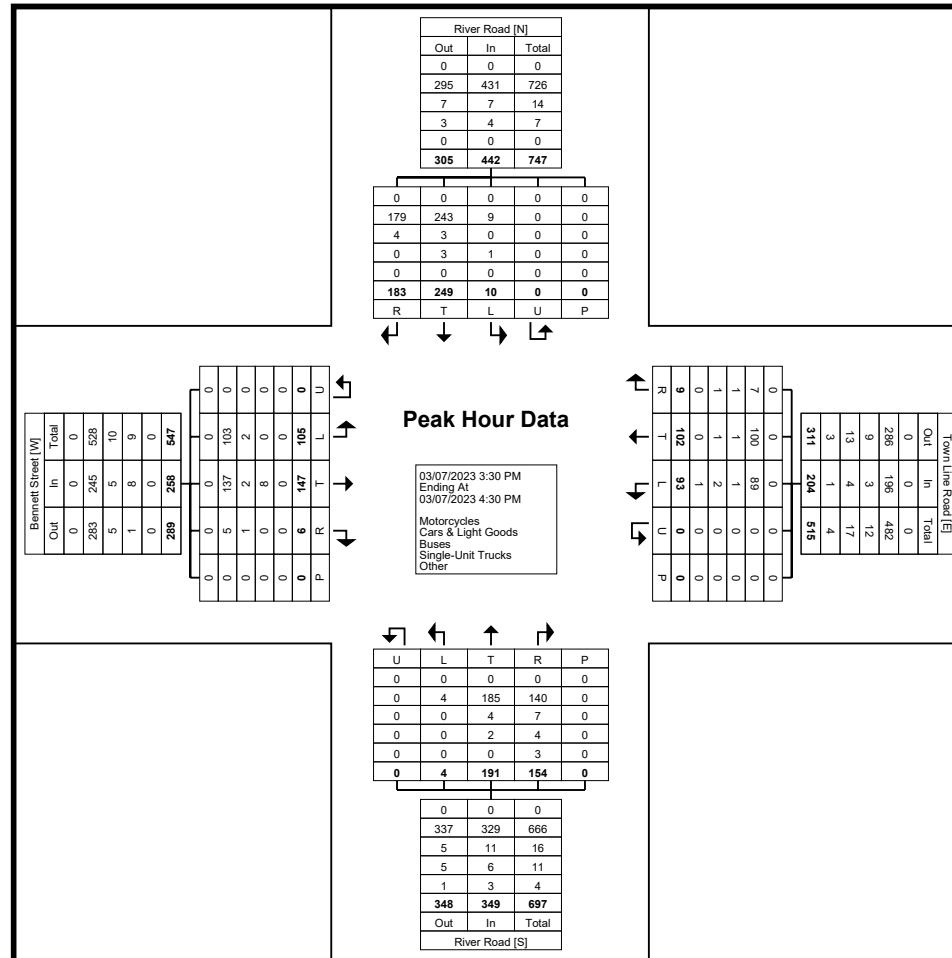
Start Time	Bennett Street Eastbound						Town Line Road Westbound						River Road Northbound						River Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 PM	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
<b>Total</b>	<b>105</b>	<b>147</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>258</b>	<b>93</b>	<b>102</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>204</b>	<b>4</b>	<b>191</b>	<b>154</b>	<b>0</b>	<b>0</b>	<b>349</b>	<b>10</b>	<b>249</b>	<b>183</b>	<b>0</b>	<b>0</b>	<b>442</b>	<b>1253</b>
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

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Count Name: Town Line Road/ Bennett Street &  
River Road - Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
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@ptsI.com

Count Name: Trafalgar Road & Boundary Road East  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Boundary Road E Eastbound						Boundary Road E Westbound						Northbound Approach Northbound						Trafalgar Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	4	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

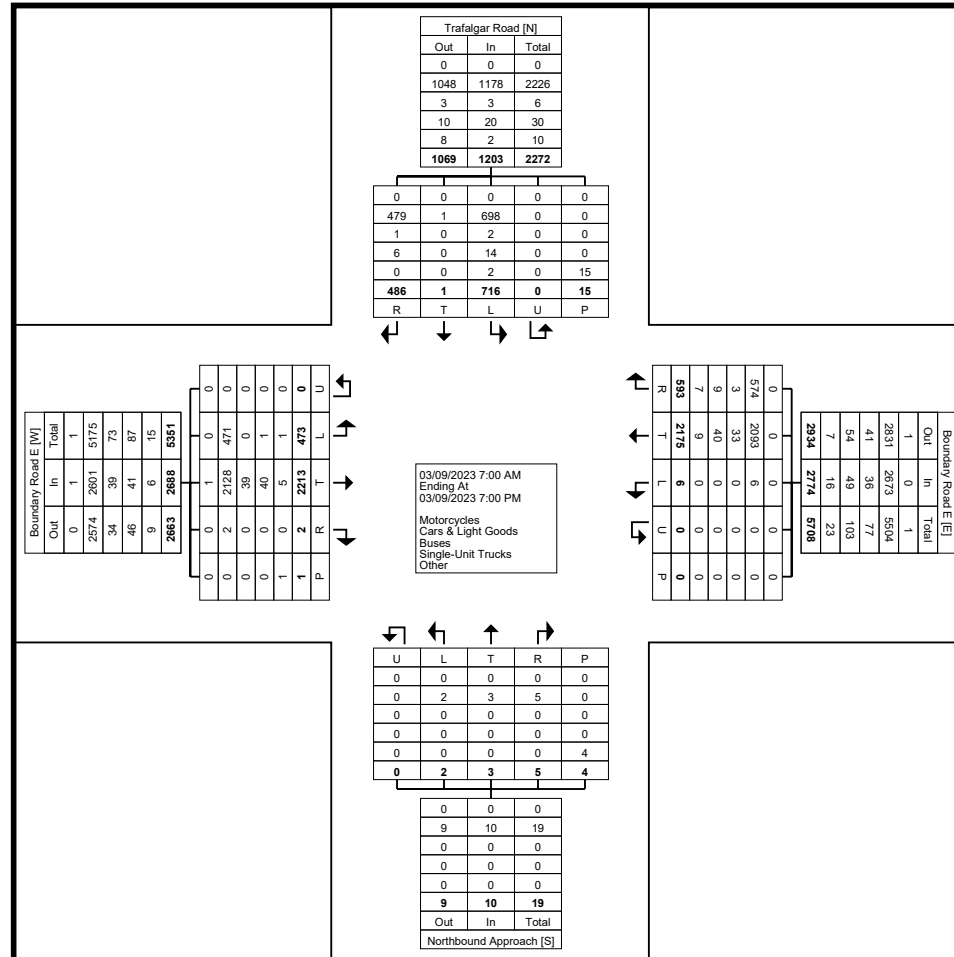
2:00 PM	6	47	0	0	0	53	0	39	11	0	0	50	1	1	1	0	0	3	14	0	16	0	0	30	136
2:15 PM	9	52	0	0	0	61	0	30	10	0	0	40	0	0	1	0	0	1	13	0	11	0	0	24	126
2:30 PM	8	43	0	0	0	51	0	62	13	0	0	75	0	0	0	0	0	0	19	0	17	0	0	36	162
2:45 PM	7	46	0	0	0	53	0	47	11	0	0	58	0	0	0	0	0	0	14	0	10	0	1	24	135
Hourly Total	30	188	0	0	0	218	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  
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Count Name: Trafalgar Road & Boundary Road  
East  
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@ptsI.com

Count Name: Trafalgar Road & Boundary Road  
East  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

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

Start Time	Boundary Road E Eastbound						Boundary Road E Westbound						Northbound Approach Northbound						Trafalgar Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	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
<b>Total</b>	<b>60</b>	<b>321</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>382</b>	<b>0</b>	<b>240</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>295</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>100</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>5</b>	<b>163</b>	<b>841</b>
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	-	-

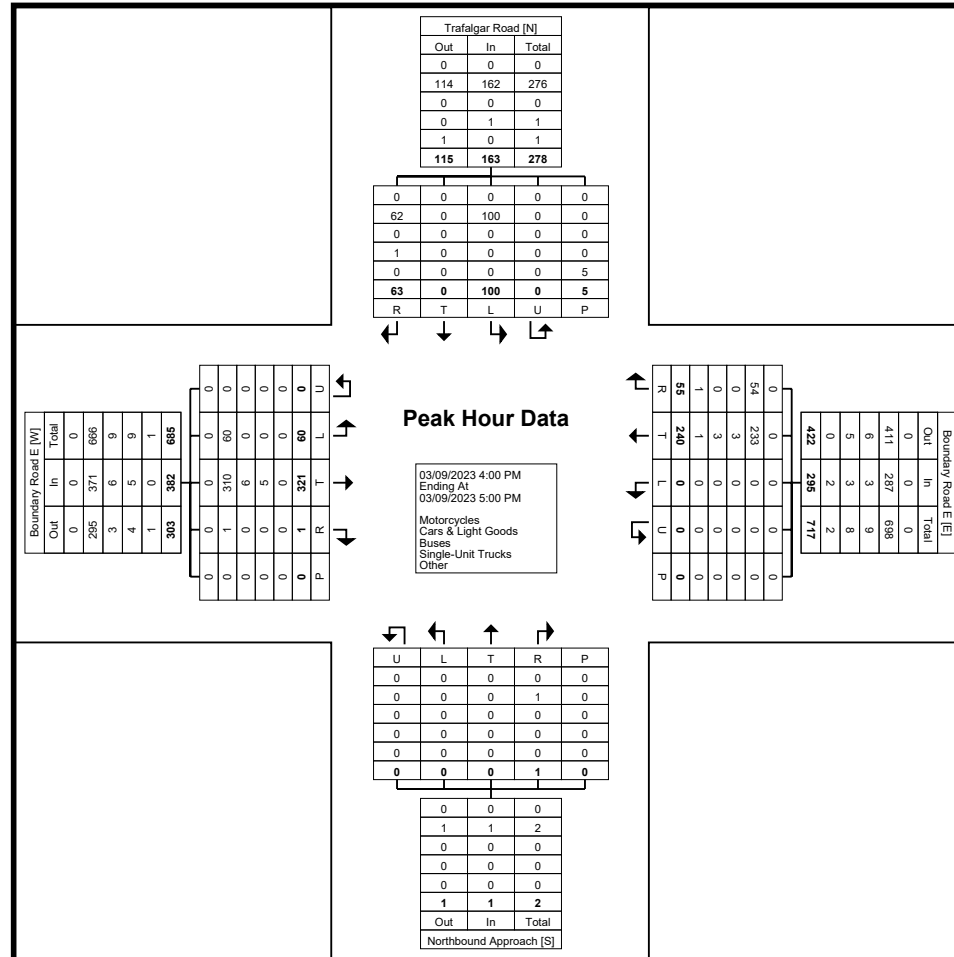




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Boundary Road  
East  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@pts1.com

Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 1

### Turning Movement Data

Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

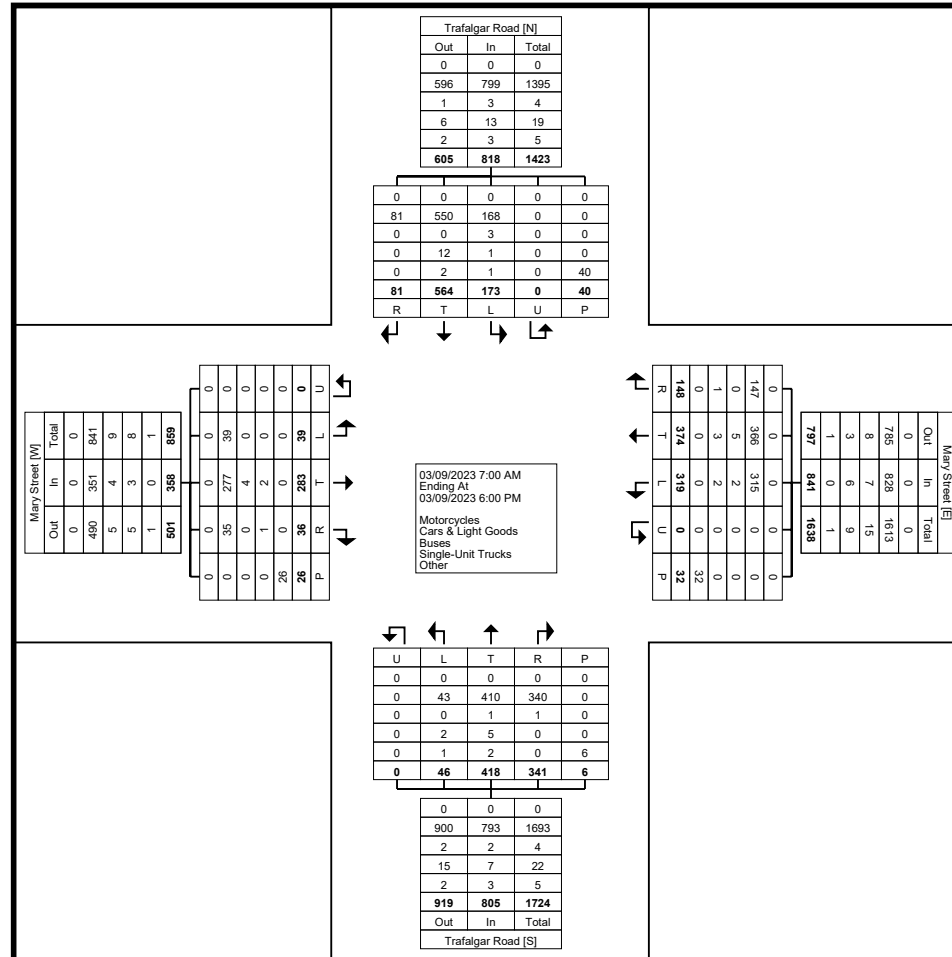
4:45 PM	0	18	1	0	4	19	14	13	4	0	1	31	0	16	9	0	0	25	10	22	3	0	5	35	110
Hourly Total	4	55	9	0	7	68	57	61	21	0	4	139	2	70	47	0	0	119	33	122	16	0	8	171	497
5:00 PM	1	10	1	0	0	12	13	20	7	0	2	40	2	7	17	0	0	26	6	30	2	0	1	38	116
5:15 PM	1	10	0	0	1	11	15	8	4	0	2	27	1	10	9	0	0	20	4	17	0	0	3	21	79
5:30 PM	0	7	0	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@ptsI.com

Count Name: Trafalgar Road & Mary 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@ptsll.com

Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 4

### Turning Movement Peak Hour Data (8:45 AM)

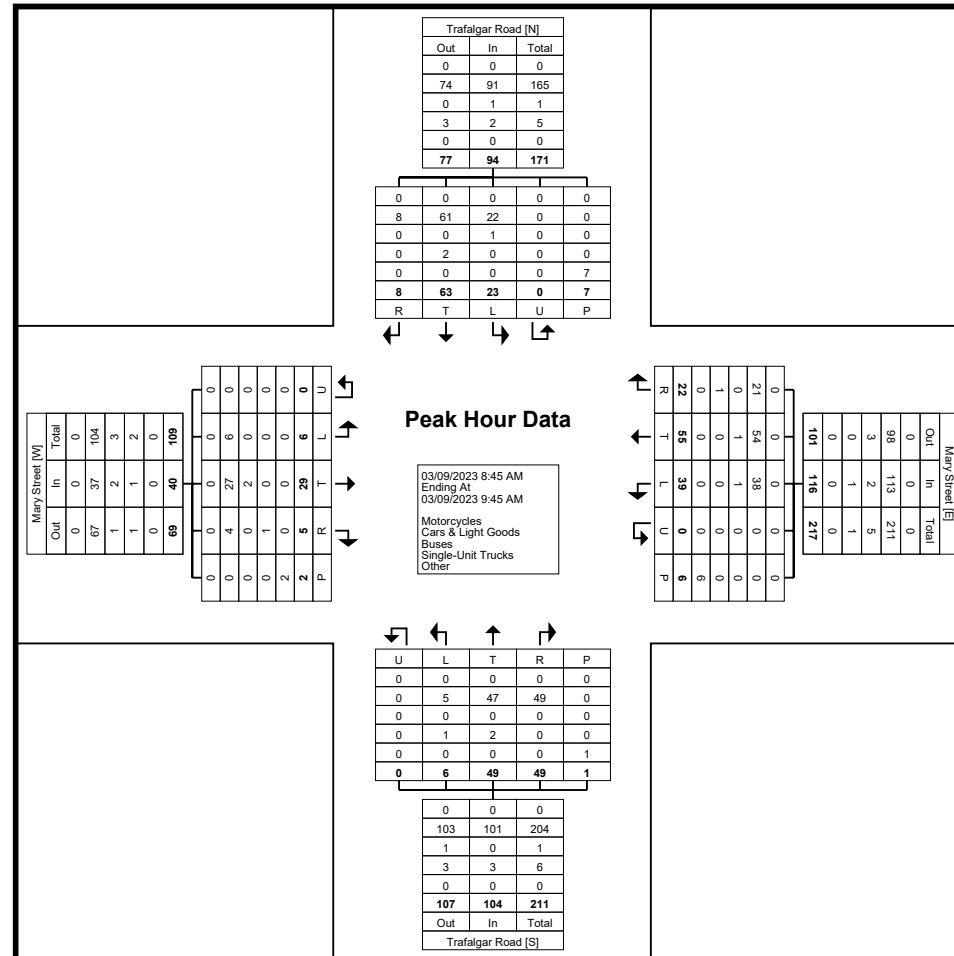
Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:45 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
<b>Total</b>	<b>6</b>	<b>29</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>40</b>	<b>39</b>	<b>55</b>	<b>22</b>	<b>0</b>	<b>6</b>	<b>116</b>	<b>6</b>	<b>49</b>	<b>49</b>	<b>0</b>	<b>1</b>	<b>104</b>	<b>23</b>	<b>63</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>94</b>	<b>354</b>
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

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Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 5



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@ptsll.com

Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 6

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

Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	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
<b>Total</b>	<b>11</b>	<b>34</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>48</b>	<b>43</b>	<b>53</b>	<b>17</b>	<b>0</b>	<b>1</b>	<b>113</b>	<b>3</b>	<b>49</b>	<b>38</b>	<b>0</b>	<b>1</b>	<b>90</b>	<b>23</b>	<b>74</b>	<b>10</b>	<b>0</b>	<b>4</b>	<b>107</b>	<b>358</b>
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	-	-

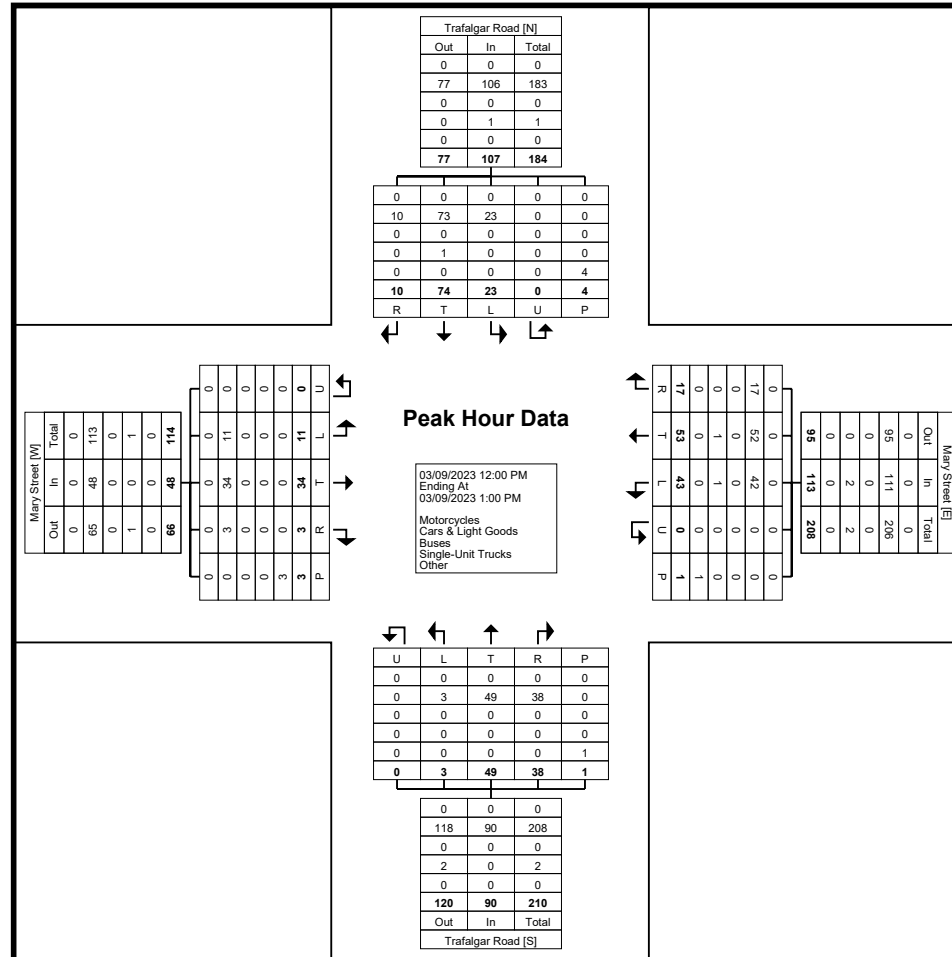




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 7



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@pts.com

Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
Page No: 8

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

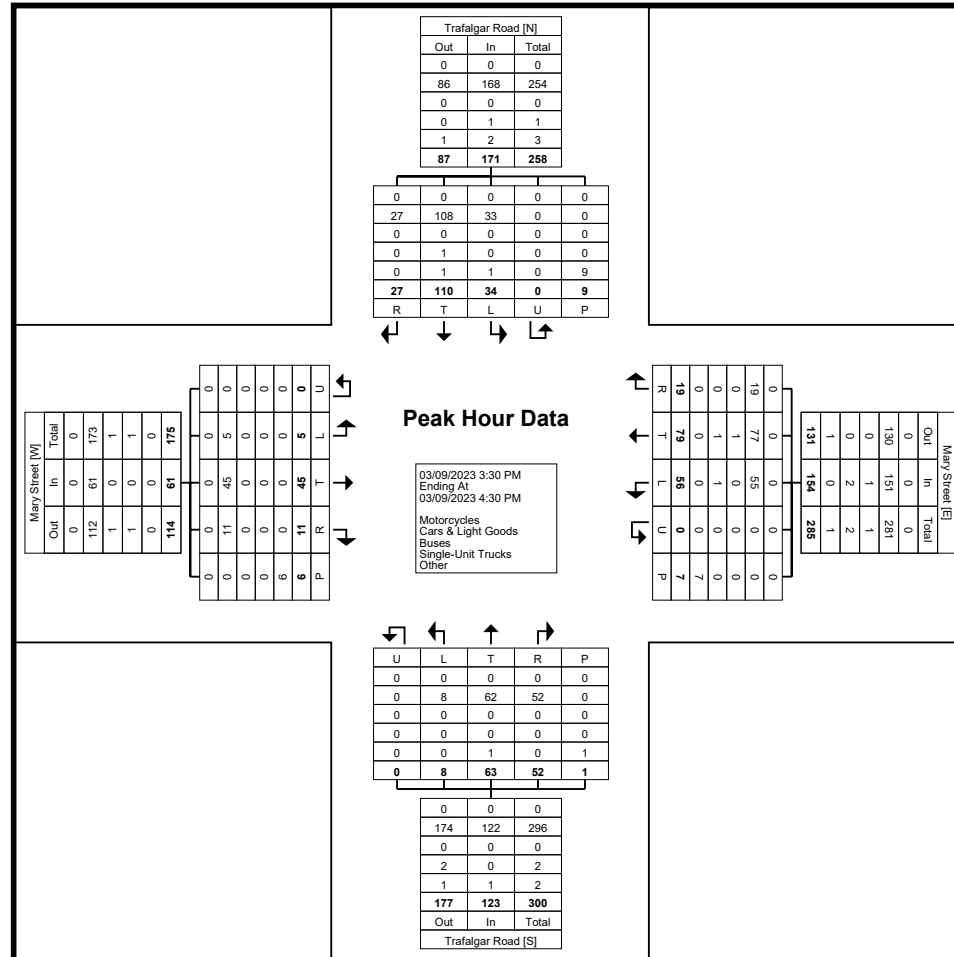
Start Time	Mary Street Eastbound						Mary Street Westbound						Trafalgar Road Northbound						Trafalgar Road Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 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
<b>Total</b>	<b>5</b>	<b>45</b>	<b>11</b>	<b>0</b>	<b>6</b>	<b>61</b>	<b>56</b>	<b>79</b>	<b>19</b>	<b>0</b>	<b>7</b>	<b>154</b>	<b>8</b>	<b>63</b>	<b>52</b>	<b>0</b>	<b>1</b>	<b>123</b>	<b>34</b>	<b>110</b>	<b>27</b>	<b>0</b>	<b>9</b>	<b>171</b>	<b>509</b>
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	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Trafalgar Road & Mary Street  
Site Code: 220694  
Start Date: 03/09/2023  
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@ptsll.com

Count Name: Walmart Entrance & Highway 148  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 1

### Turning Movement Data

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. 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	-	-

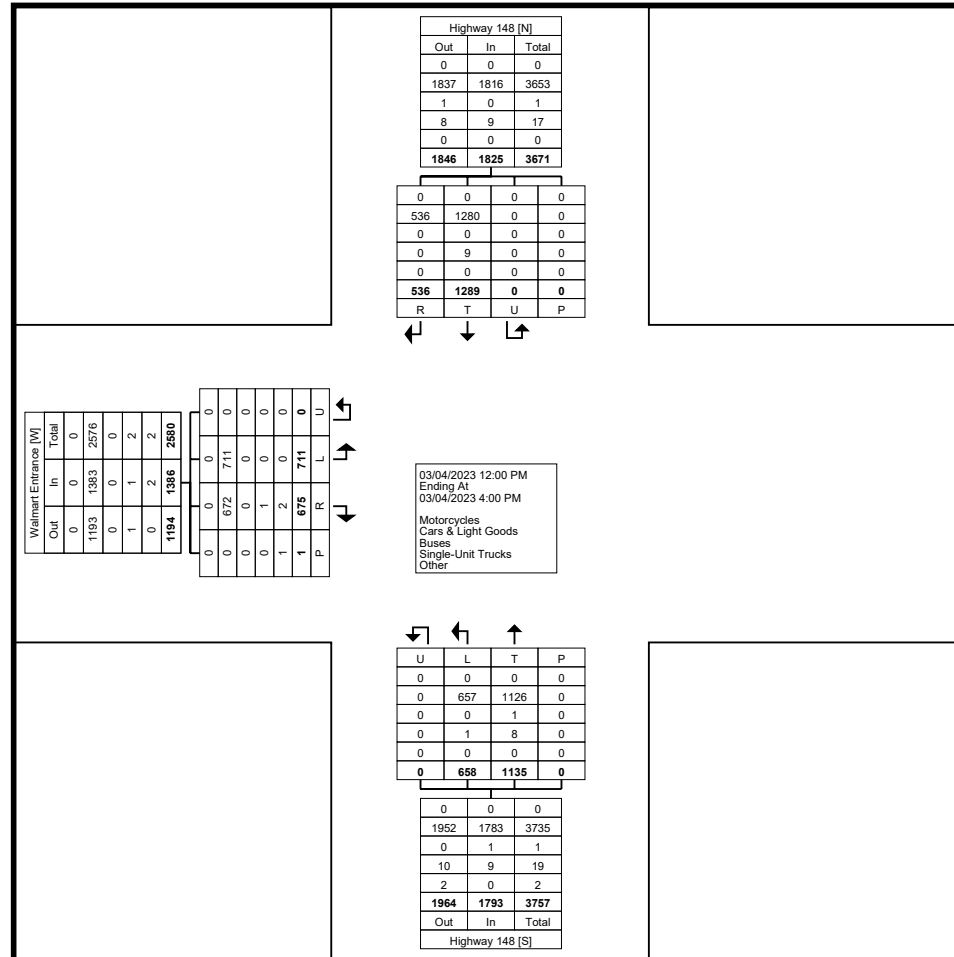




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 3



Turning Movement Data Plot



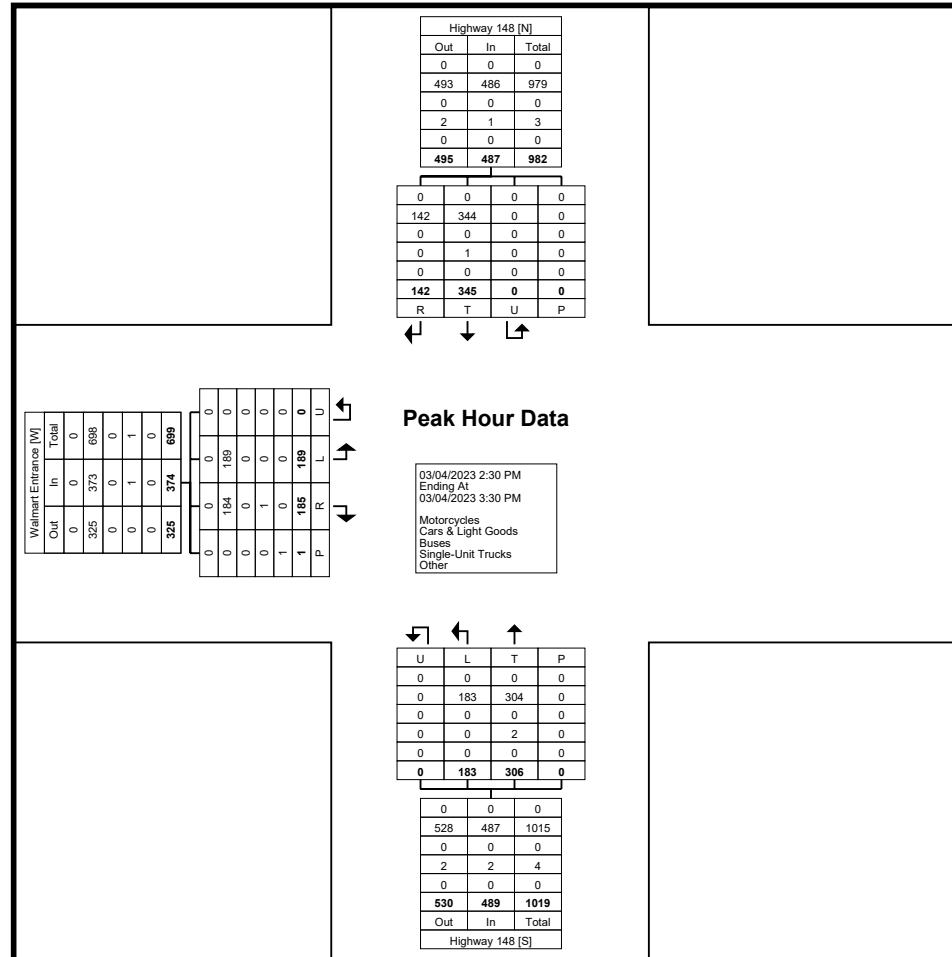




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148  
- Saturday  
Site Code: 220694  
Start Date: 03/04/2023  
Page No: 5



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@pts.com

Count Name: Walmart Entrance & Highway 148  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 1

### Turning Movement Data

Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. 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

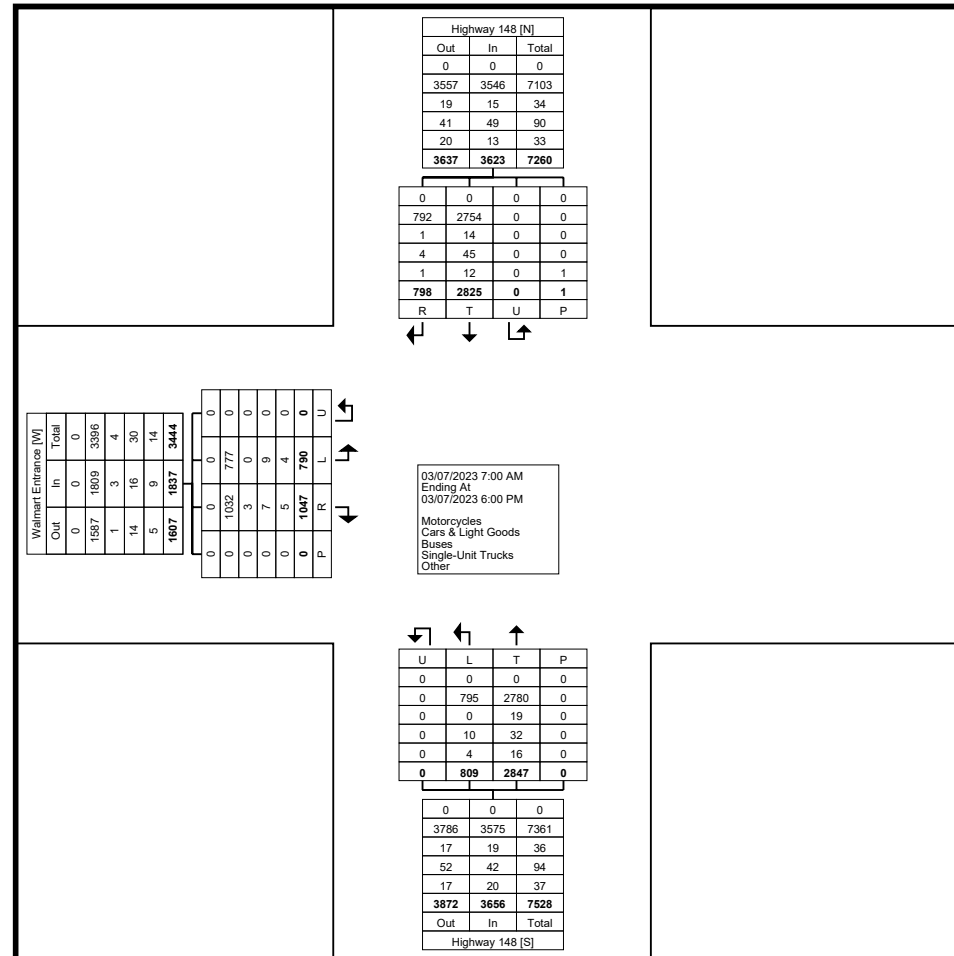
Hourly Total	118	230	0	0	348	100	347	0	0	447	499	111	0	0	610	1405
5:00 PM	29	37	0	0	66	16	68	0	0	84	146	30	0	0	176	326
5:15 PM	23	42	0	0	65	25	71	0	0	96	122	29	0	0	151	312
5:30 PM	29	48	0	0	77	21	76	0	0	97	92	31	0	0	123	297
5:45 PM	22	32	0	0	54	21	57	0	0	78	82	23	0	0	105	237
Hourly Total	103	159	0	0	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  
519-896-3163 cbowness@pts1.com

Count Name: Walmart Entrance & Highway 148  
- 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@ptsI.com

Count Name: Walmart Entrance & Highway 148  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 4

### Turning Movement Peak Hour Data (9:00 AM)

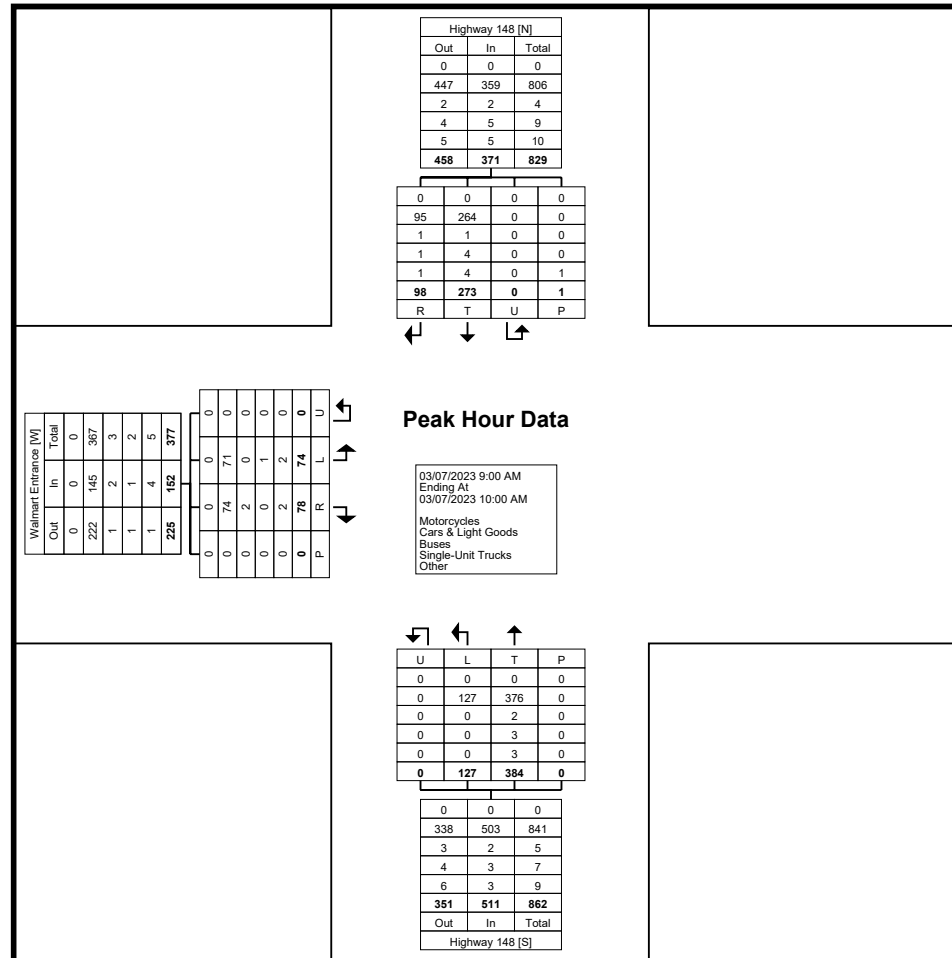
Start Time	Walmart Entrance Eastbound					Highway 148 Northbound					Highway 148 Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
9:00 AM	11	12	0	0	23	29	90	0	0	119	57	20	0	1	77	219
9:15 AM	14	14	0	0	28	36	96	0	0	132	71	20	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	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (9:00 AM)



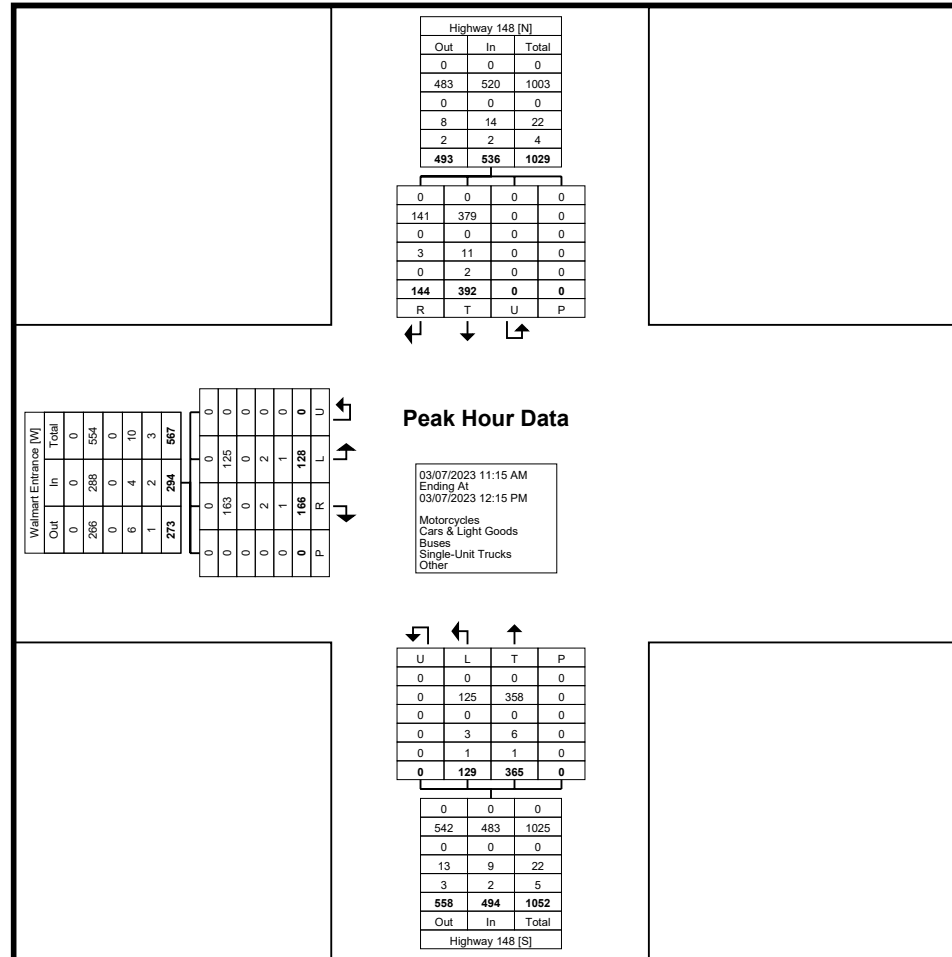




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 7



Turning Movement Peak Hour Data Plot (11:15 AM)

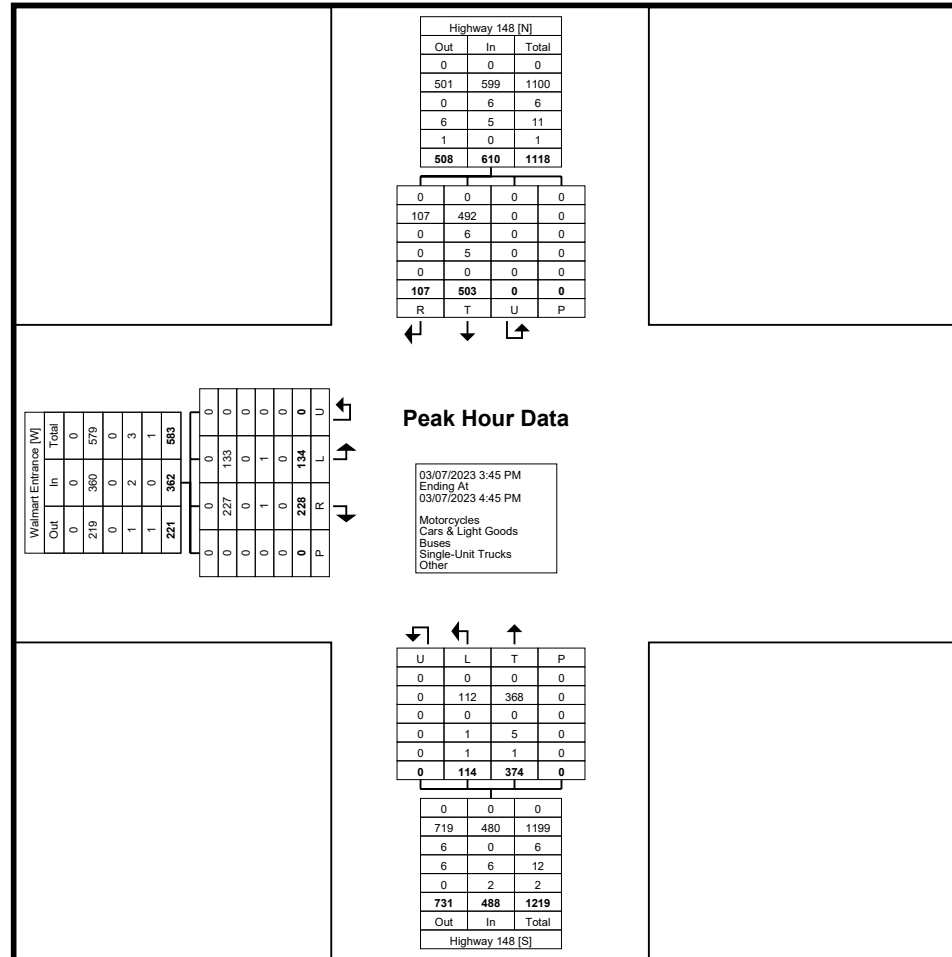




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Walmart Entrance & Highway 148  
- Tuesday  
Site Code: 220694  
Start Date: 03/07/2023  
Page No: 9



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@pts1.com

Count Name: Forest Lea Road & TV Tower  
Road - Saturday  
Site Code: 220694  
Start Date: 04/15/2023  
Page No: 1

### Turning Movement Data

Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. 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	-	-

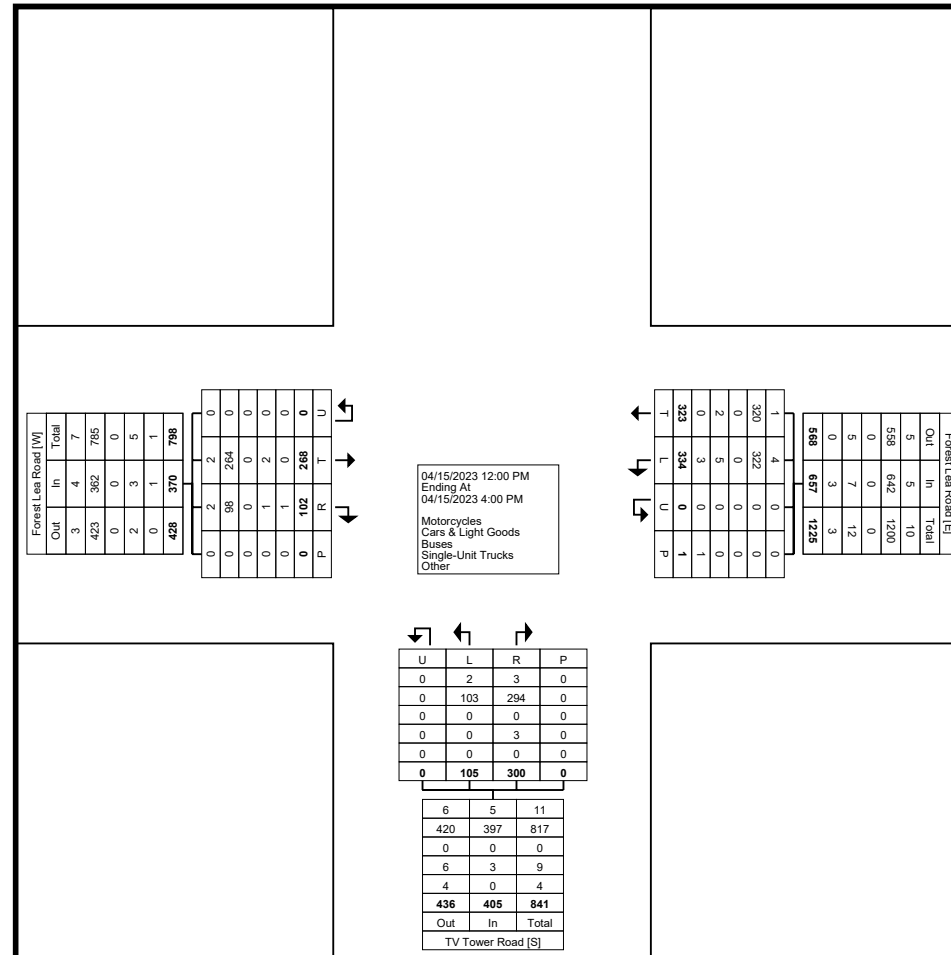
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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



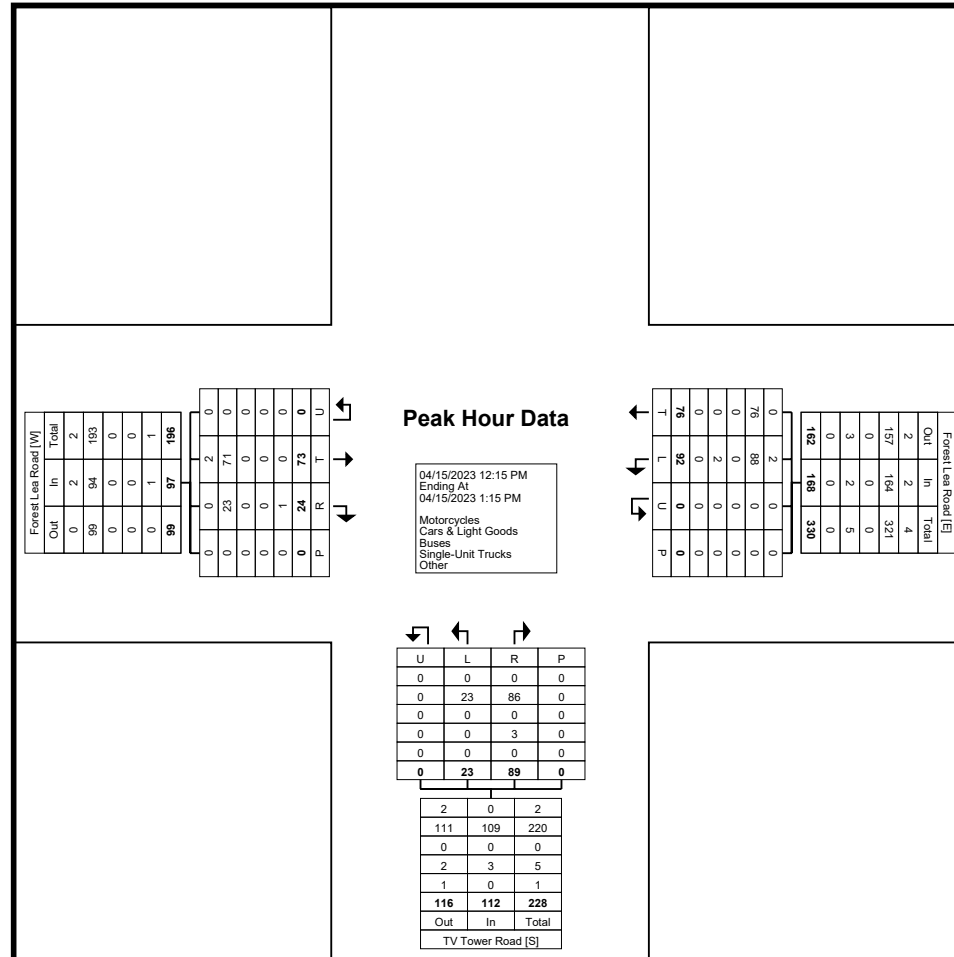




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cbowness@ptsll.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  
Page No: 1

### Turning Movement Data

Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	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

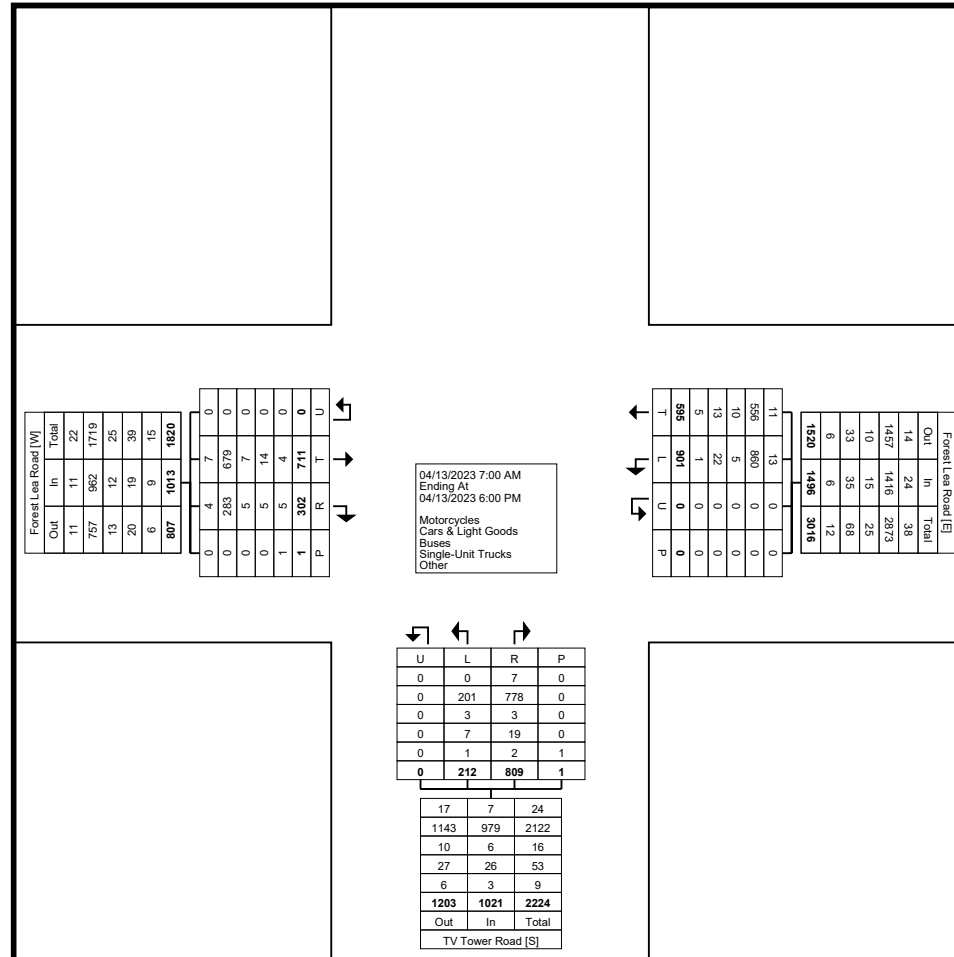
Hourly Total	123	52	0	1	175	167	119	0	0	286	34	132	0	1	166	627
5:00 PM	19	17	0	0	36	60	28	0	0	88	10	42	0	0	52	176
5:15 PM	21	11	0	0	32	31	24	0	0	55	9	22	0	0	31	118
5:30 PM	23	12	0	0	35	30	26	0	0	56	2	21	0	0	23	114
5:45 PM	23	8	0	0	31	28	15	0	0	43	5	25	0	0	30	104
Hourly Total	86	48	0	0	134	149	93	0	0	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@ptsll.com

Count Name: Forest Lea Road & TV Tower Road  
Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 3



Turning Movement Data Plot

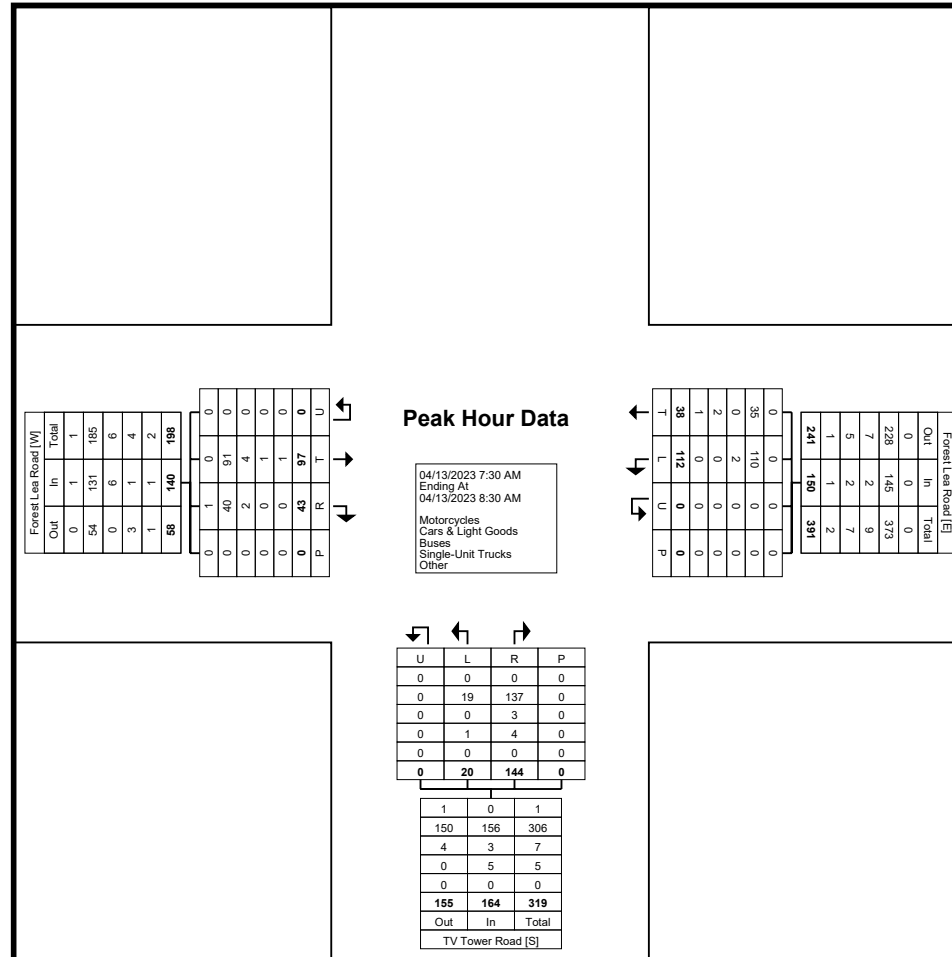




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Forest Lea Road & TV Tower Road  
Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 5



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



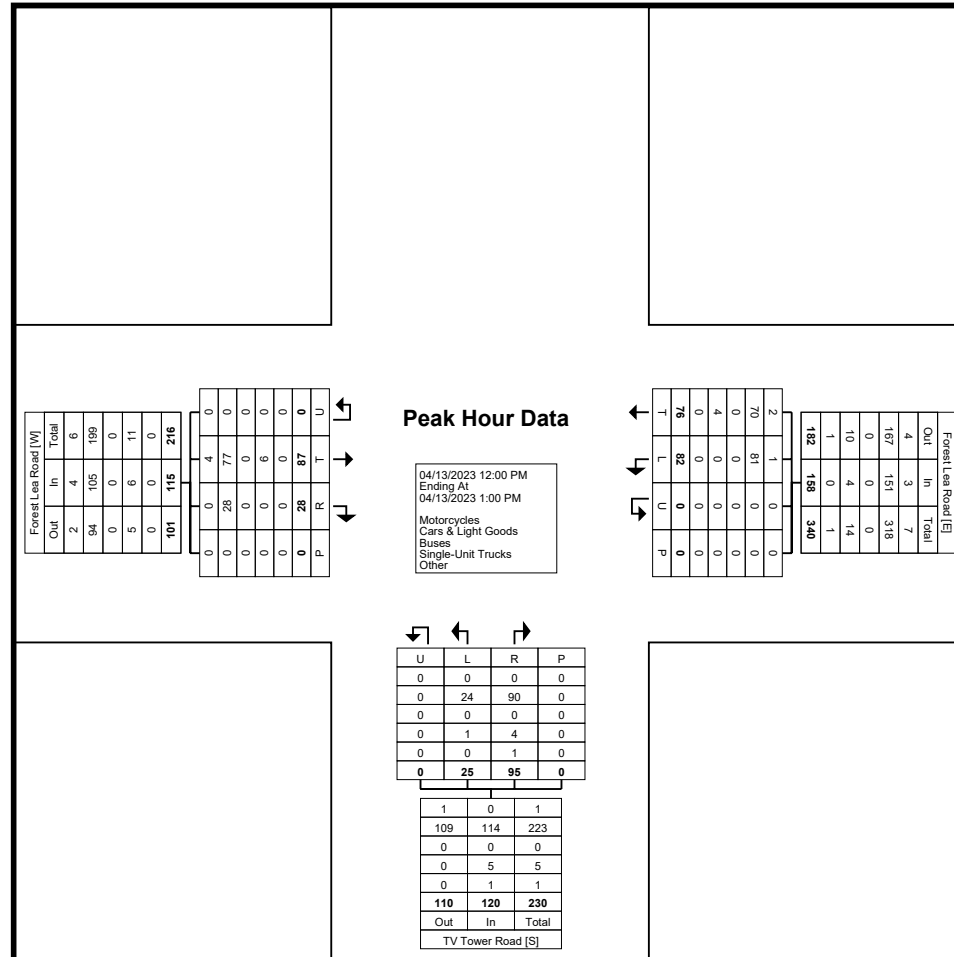




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Forest Lea Road & TV Tower Road  
Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 7



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@ptsll.com

Count Name: Forest Lea Road & TV Tower Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 8

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

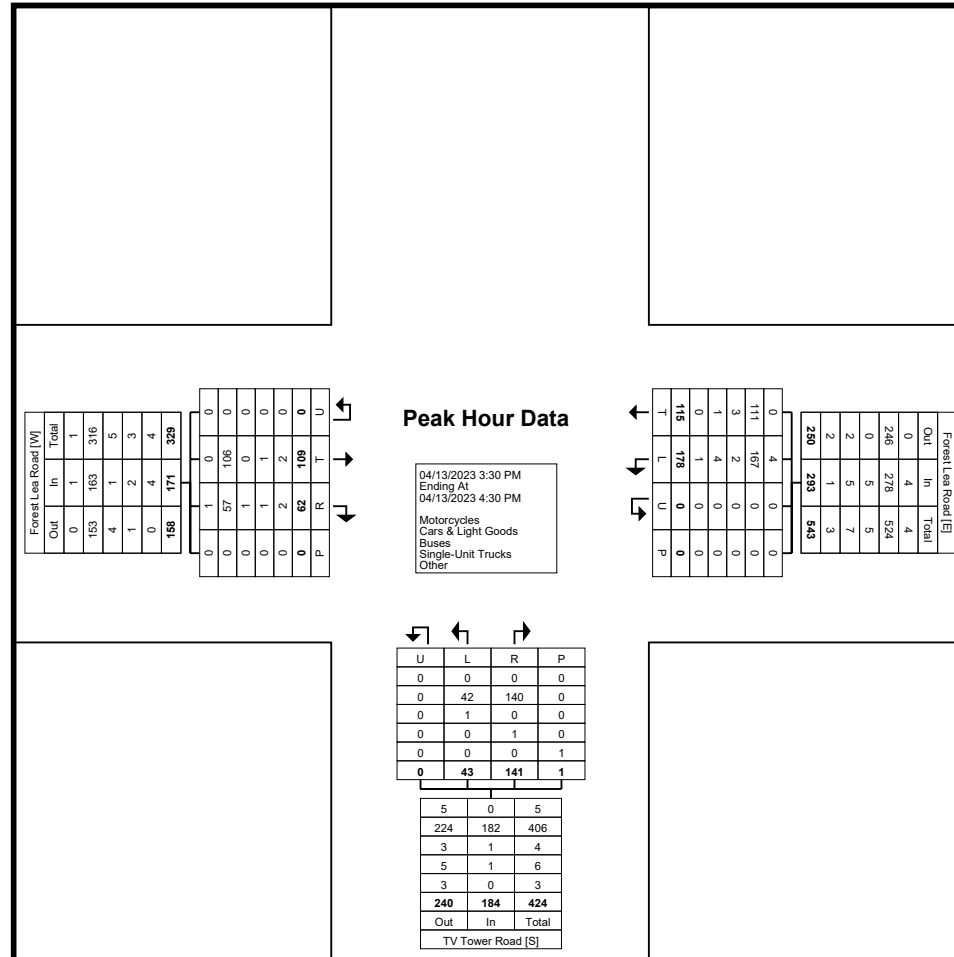
Start Time	Forest Lea Road Eastbound					Forest Lea Road Westbound					TV Tower Road Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
3:30 PM	21	15	0	0	36	33	28	0	0	61	14	37	0	0	51	148
3:45 PM	29	16	0	0	45	44	18	0	0	62	8	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@ptsil.com

Count Name: Forest Lea Road & TV Tower Road  
Road  
Site Code: 220694  
Start Date: 04/13/2023  
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@pts.com

Count Name: Paul Martin Drive & Boundary  
Road E - Saturday  
Site Code: 220694  
Start Date: 04/15/2023  
Page No: 1

### Turning Movement Data

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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

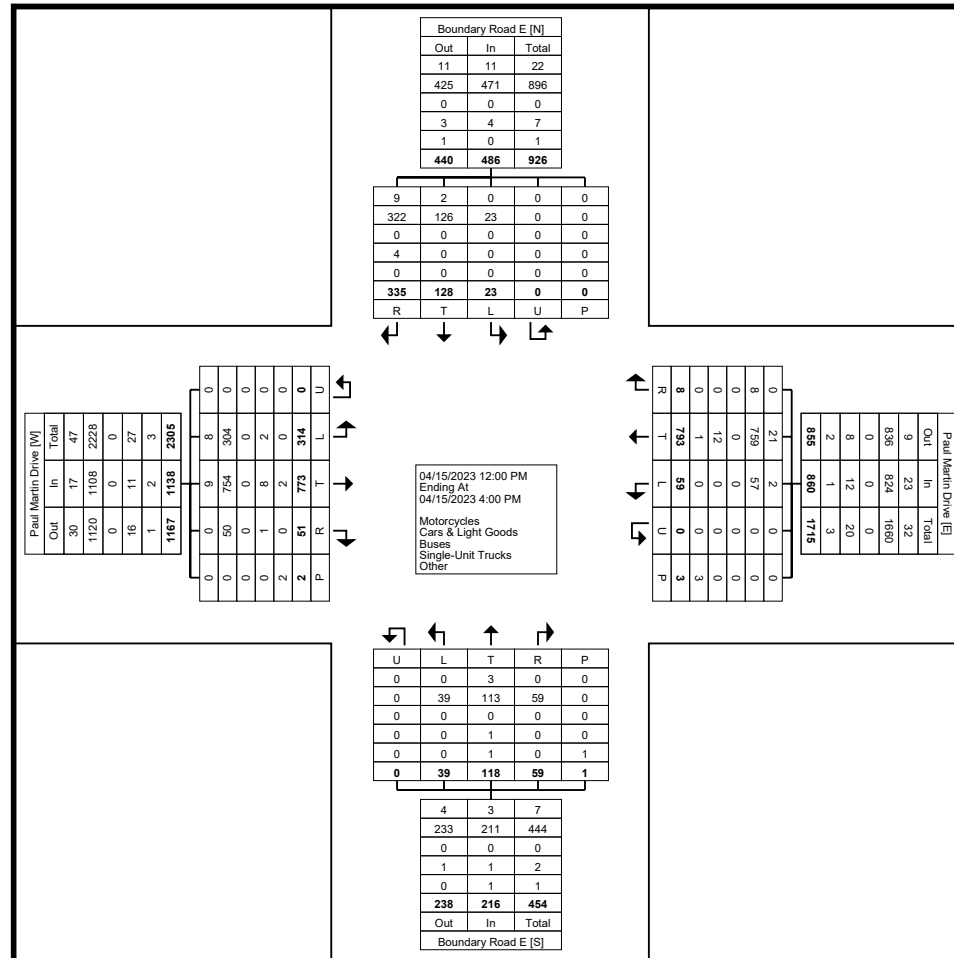
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	66.7	-	-	-	-	-	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@ptsll.com

Count Name: Paul Martin Drive & Boundary  
Road E - 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@pts.com

Count Name: Paul Martin Drive & Boundary  
Road E - Saturday  
Site Code: 220694  
Start Date: 04/15/2023  
Page No: 4

### 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						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>75</b>	<b>213</b>	<b>12</b>	<b>0</b>	<b>2</b>	<b>300</b>	<b>20</b>	<b>203</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>223</b>	<b>6</b>	<b>24</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>52</b>	<b>7</b>	<b>38</b>	<b>103</b>	<b>0</b>	<b>0</b>	<b>148</b>	<b>723</b>
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	-	-	-	-	-	-	-	-

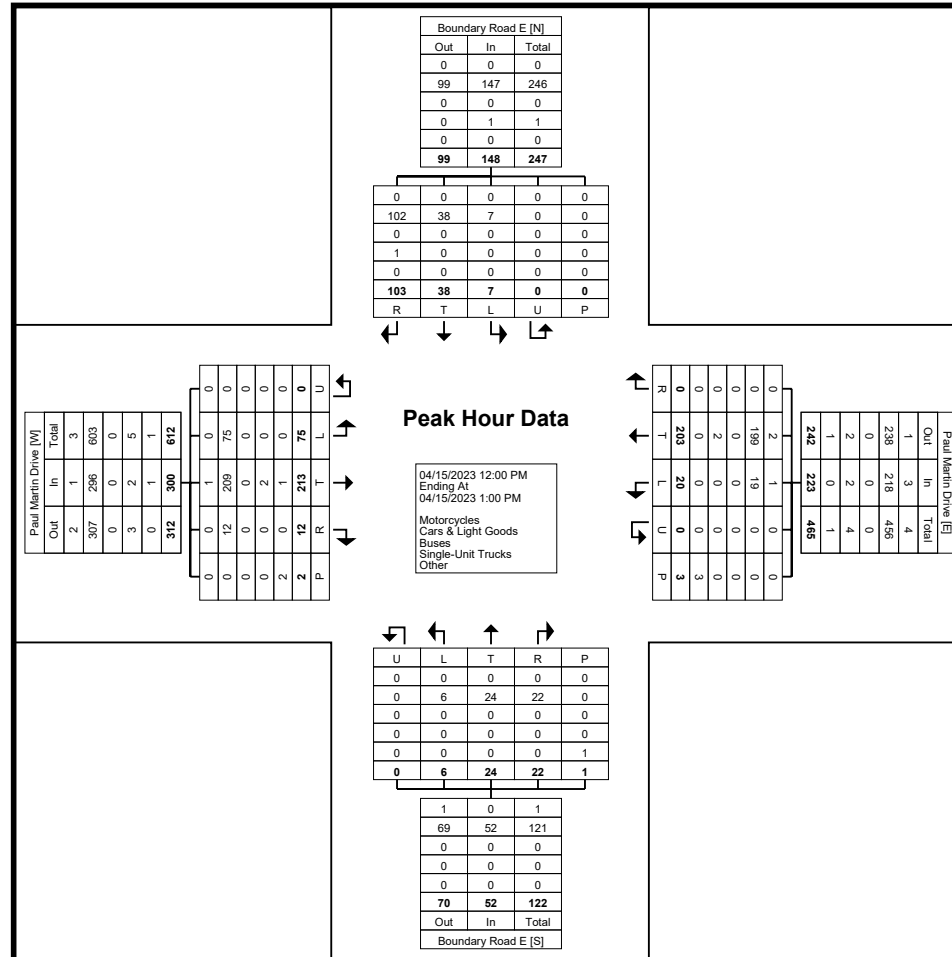




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

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@ptsll.com

Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 1

### Turning Movement Data

Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

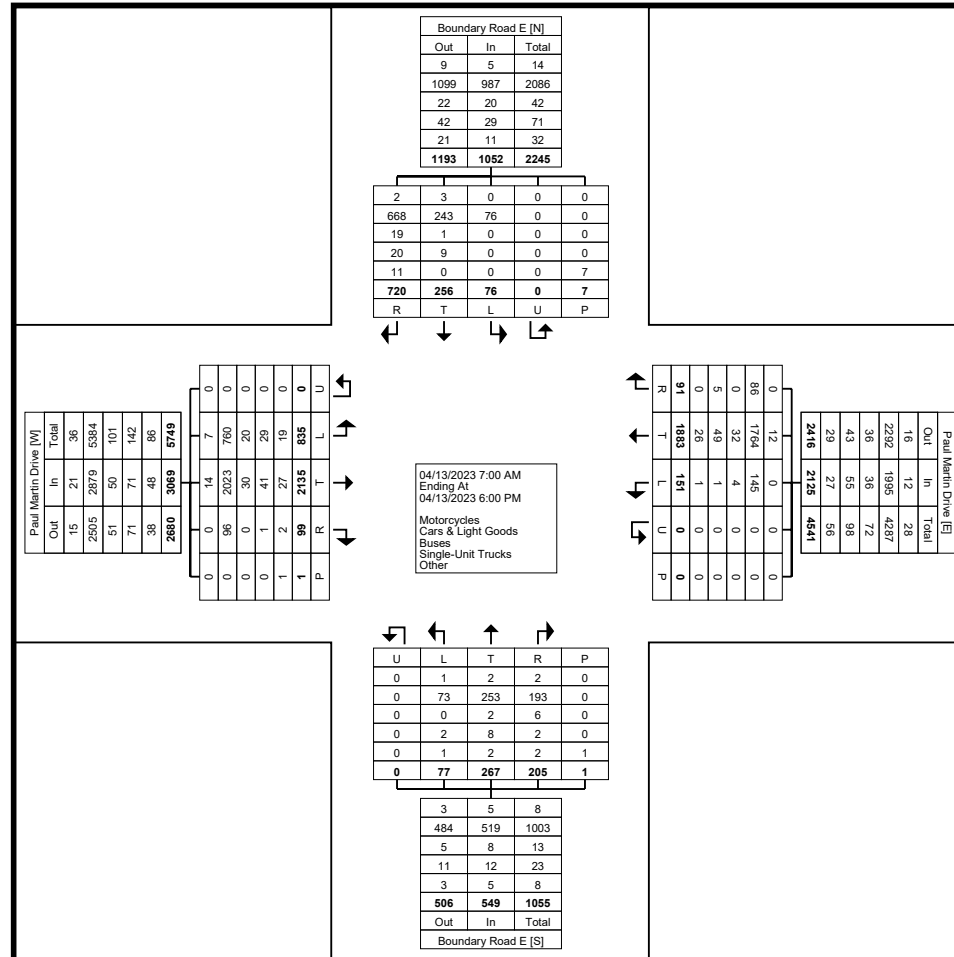
4:45 PM	30	69	5	0	0	104	10	63	1	0	0	74	2	10	4	0	0	16	3	11	23	0	0	37	231
Hourly Total	104	330	26	0	0	460	38	359	8	0	0	405	7	32	20	0	0	59	10	51	133	0	0	194	1118
5:00 PM	41	62	11	0	0	114	7	85	4	0	0	96	1	6	3	0	0	10	1	13	31	0	0	45	265
5:15 PM	20	47	4	0	0	71	6	64	2	0	0	72	2	6	10	0	0	18	0	12	24	0	0	36	197
5:30 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

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

Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 4

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

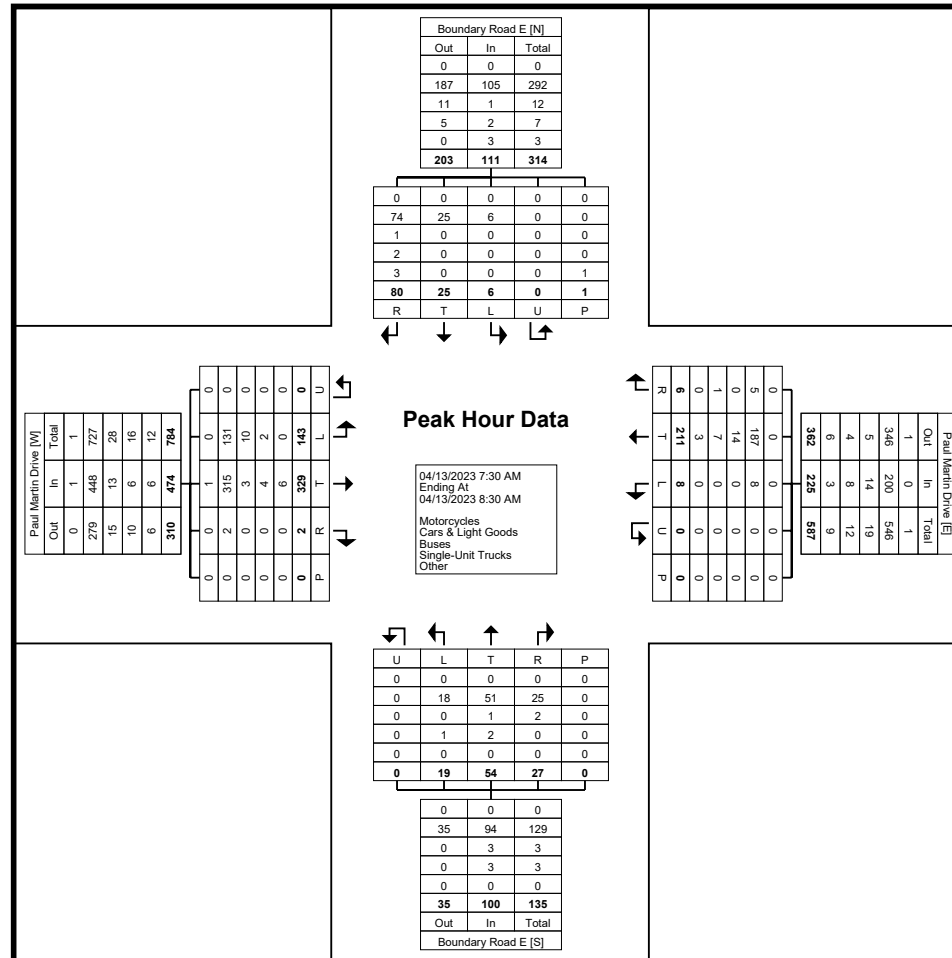
Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	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@ptsI.com

Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 5



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  
Page No: 6

### 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						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>97</b>	<b>258</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>25</b>	<b>220</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>11</b>	<b>26</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>55</b>	<b>11</b>	<b>27</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>792</b>
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

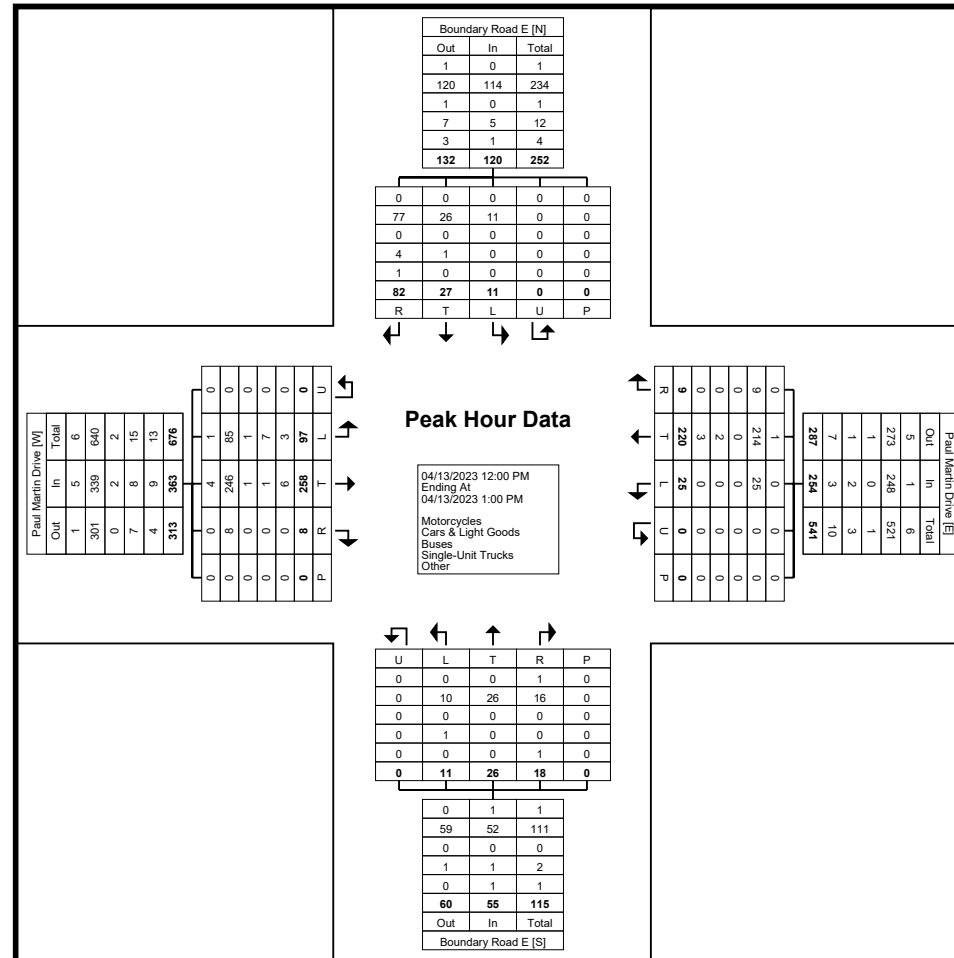




Paradigm Transportation Solutions Limited  
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Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 7



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@pts1.com

Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 8

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

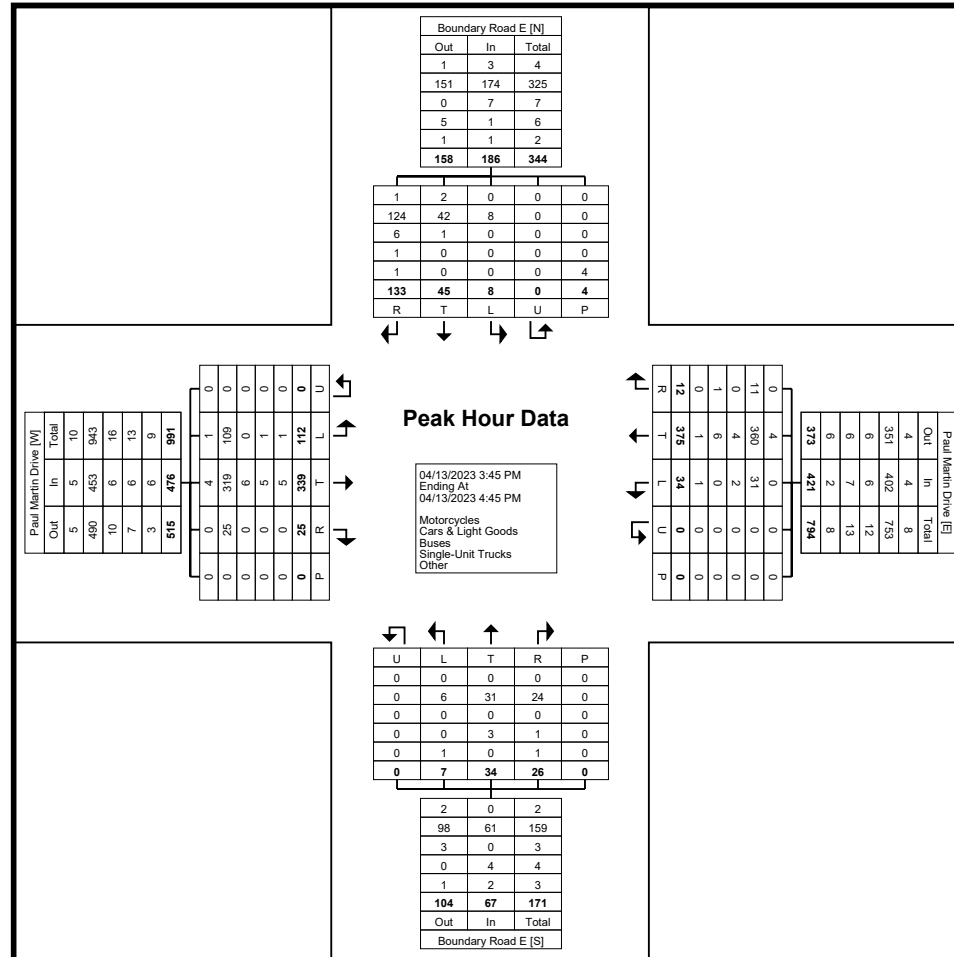
Start Time	Paul Martin Drive Eastbound						Paul Martin Drive Westbound						Boundary Road E Northbound						Boundary Road E Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
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
<b>Total</b>	<b>112</b>	<b>339</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>476</b>	<b>34</b>	<b>375</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>421</b>	<b>7</b>	<b>34</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>8</b>	<b>45</b>	<b>133</b>	<b>0</b>	<b>4</b>	<b>186</b>	<b>1150</b>
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@ptsI.com

Count Name: Paul Martin Drive & Boundary  
Road E  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 9



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



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea  
Road - Saturday  
Site Code: 220694  
Start Date: 04/15/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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

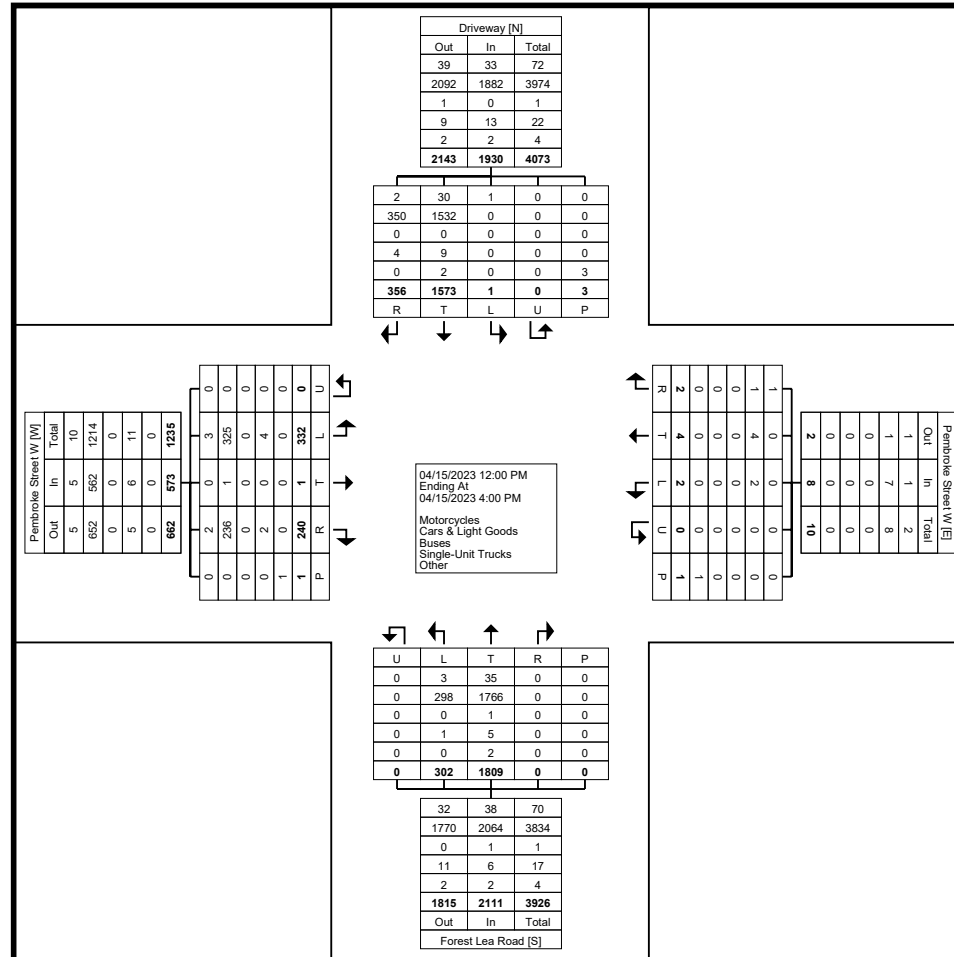
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	1	0	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	-	-	-	0.1	0.0	0.1	0.0	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	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@ptsI.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@ptsll.com

Count Name: Pembroke Street W & Forest Lea  
Road - Saturday  
Site Code: 220694  
Start Date: 04/15/2023  
Page No: 4

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

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>81</b>	<b>1</b>	<b>68</b>	<b>0</b>	<b>1</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>77</b>	<b>470</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>547</b>	<b>1</b>	<b>448</b>	<b>97</b>	<b>0</b>	<b>0</b>	<b>546</b>	<b>1244</b>
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-

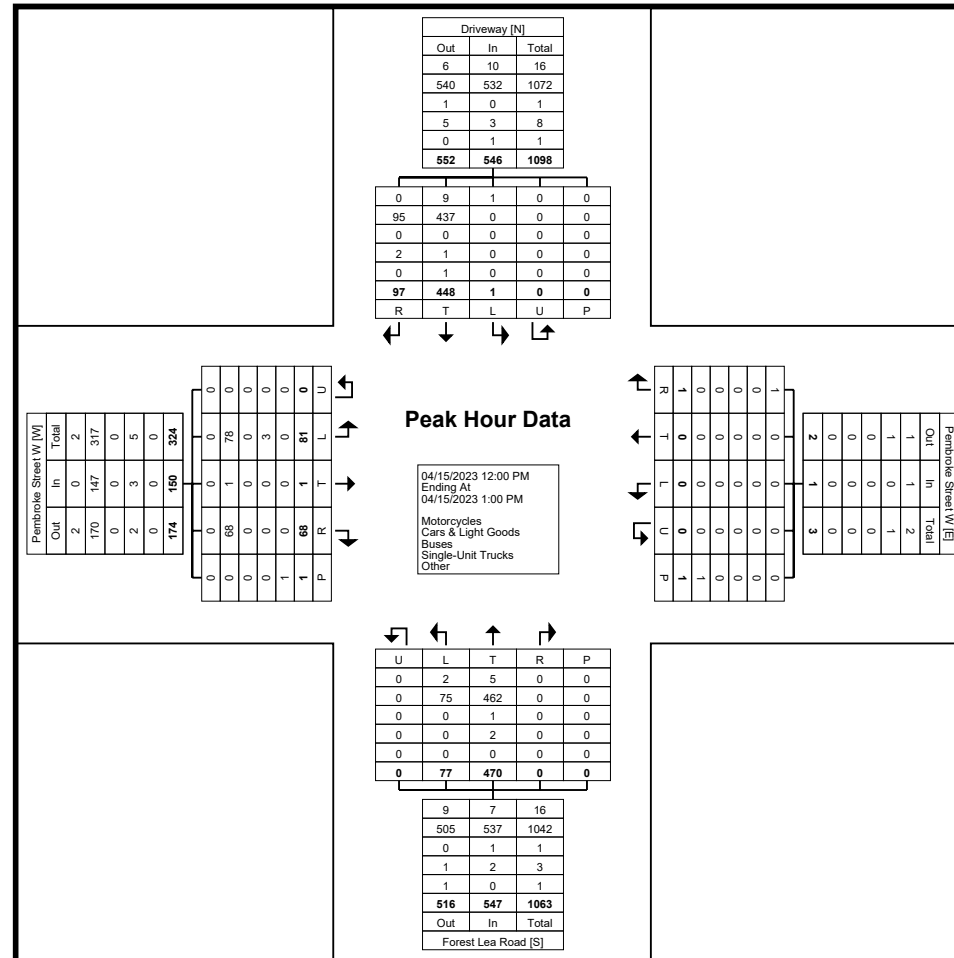




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
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Count Name: Pembroke Street W & Forest Lea Road - 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@ptsI.com

Count Name: Pembroke Street W & Forest Lea Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 1

### Turning Movement Data

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	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

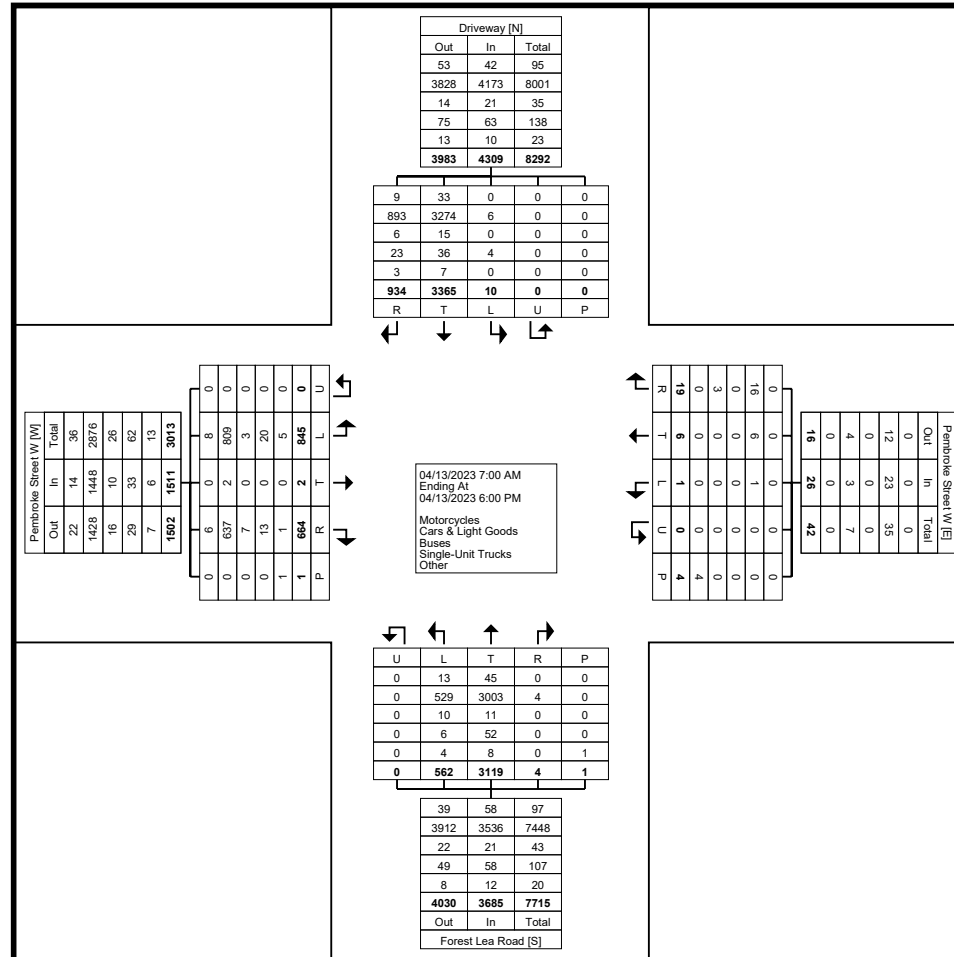




Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 3



Turning Movement Data Plot



Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8  
519-896-3163 cdowness@pts.com

Count Name: Pembroke Street W & Forest Lea Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 4

### Turning Movement Peak Hour Data (7:45 AM)

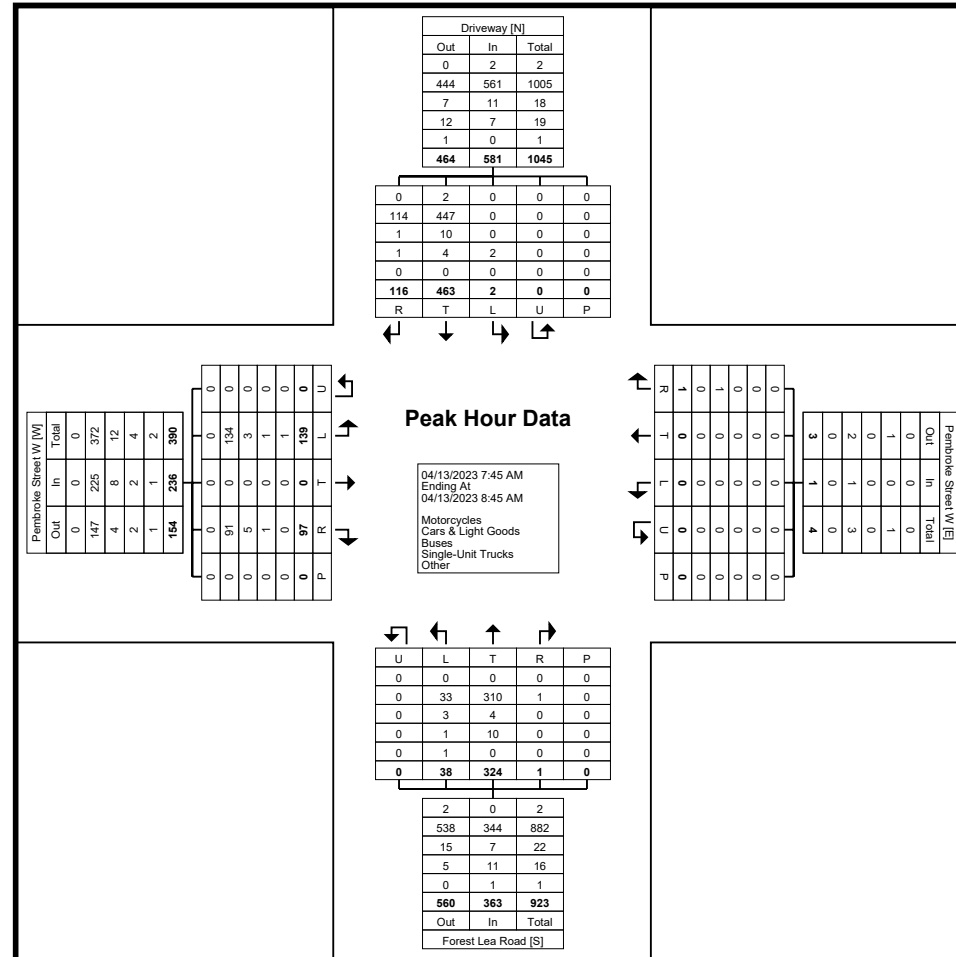
Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:45 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
<b>Total</b>	<b>139</b>	<b>0</b>	<b>97</b>	<b>0</b>	<b>0</b>	<b>236</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>38</b>	<b>324</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>2</b>	<b>463</b>	<b>116</b>	<b>0</b>	<b>0</b>	<b>581</b>	<b>1181</b>
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@ptsll.com

Count Name: Pembroke Street W & Forest Lea  
Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 5



Turning Movement Peak Hour Data Plot (7:45 AM)



Paradigm Transportation Solutions Limited  
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Count Name: Pembroke Street W & Forest Lea Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 6

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

Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	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
<b>Total</b>	<b>108</b>	<b>0</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>70</b>	<b>388</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>458</b>	<b>3</b>	<b>414</b>	<b>88</b>	<b>0</b>	<b>0</b>	<b>505</b>	<b>1144</b>
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-







Paradigm Transportation Solutions Limited  
5A-150 Pinebush Rd

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

Count Name: Pembroke Street W & Forest Lea Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 8

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

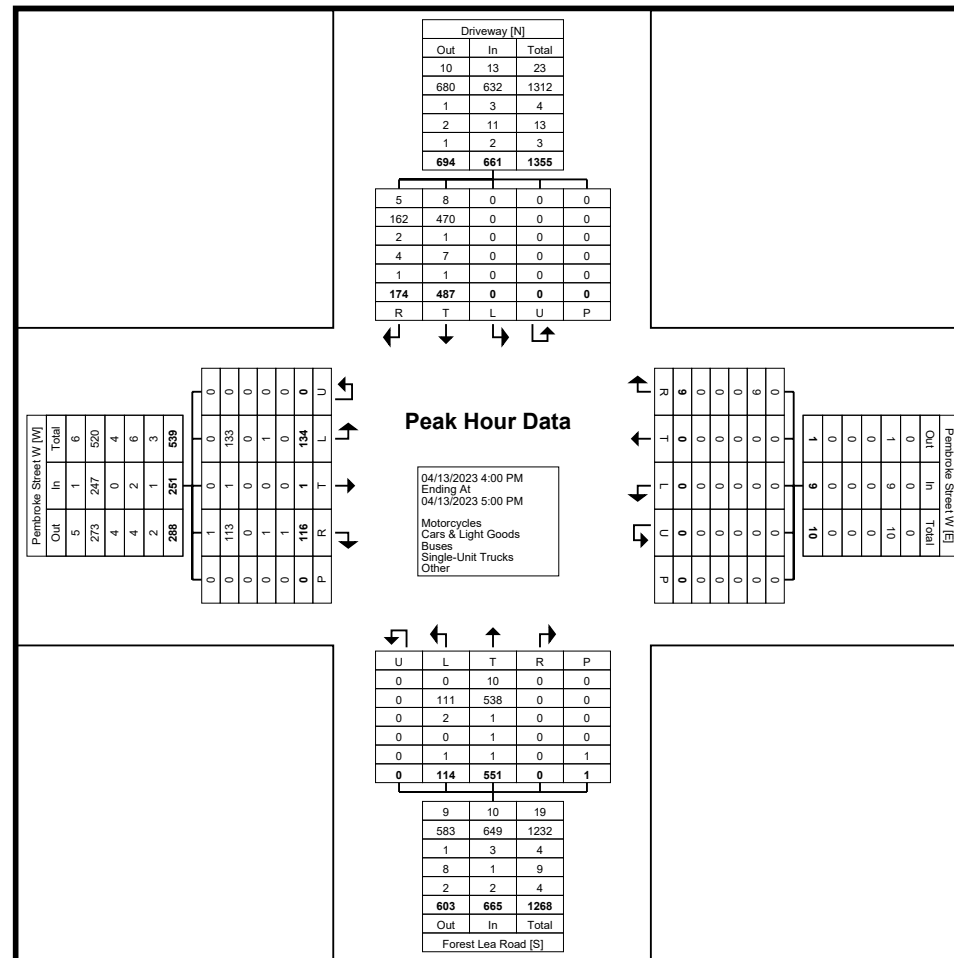
Start Time	Pembroke Street W Eastbound						Pembroke Street W Westbound						Forest Lea Road Northbound						Driveway Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	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
<b>Total</b>	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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Count Name: Pembroke Street W & Forest Lea  
Road  
Site Code: 220694  
Start Date: 04/13/2023  
Page No: 9



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



# Committee Report

**To:** Councillor Andrew Plummer  
Operations Committee

**From:** Victoria Charbonneau  
Municipal Clerk

**Date:** 2025-01-21

**Subject :** Integrity Commissioner Appointment

**Recommendation:**

That the Operations Committee endorse and recommend to Council the appointment of Bench Municipal: Law + Governance as Integrity Commissioner and Closed Meeting Investigator for the City of Pembroke.

Furthermore, that the Operation Committee endorse and recommend to Council that staff be directed to enter into negotiations with Bench Municipal: Law + Governance.

**CAO Review :**

I concur with the information presented in the report.

David Unrau, P.Eng., PMP

**Financial Comment:**

As per the submitted proposal, the proponent does not require an annual retainer and provides service on an as needed basis. An hourly rate of \$300 per hour or \$1,500 per day (up to 7 hours), whichever is less (plus applicable taxes) is the cost of service. Funds are budgeted in Council’s legal operating budget. Additional funds are available in the General legal operating budget when required.

Angela Lochtie  
Treasurer/Deputy Clerk

**Background:**

In accordance with Bill 68 municipalities are required to appoint an integrity commissioner and expanded the role of the Integrity Commissioner. Section 223.3 of the *Municipal Act*,



2001, as amended provides authorization to a municipality to appoint an integrity Commissioner who reports to council and who is responsible for performing in an independent manner the functions assigned by the municipality with respect to any or all of the following:

1. The application of the code of conduct for members of council and the code of conduct for members of local boards.
2. The application of any procedures, rules and policies of the municipality and local boards governing the ethical behaviour of members of council and of local boards.
3. The application of sections 5, 5.1 and 5.2 of the Municipal Conflict of Interest Act to members of council and of local boards.
4. Requests from members of council and of local boards for advice respecting their obligations under the code of conduct applicable to the member.
5. Requests from members of council and of local boards for advice respecting their obligations under a procedure, rule or policy of the municipality or of the local board governing the ethical behaviour of members.
6. Requests from members of council and of local boards for advice respecting their obligations under the Municipal Conflict of Interest Act.
7. The provision of educational information to members of council, members of local boards, the municipality and the public about the municipality's codes of conduct for members of council and members of local boards and about the Municipal Conflict of Interest Act.

In October 2024, staff was directed to go out for competitive bid for Integrity Commissioner and Closed Meeting Investigator Services.

- As directed, the Clerk's Department publicly advertised the Request for Proposal (RFP-24-10) Services for an Integrity Commissioner and Closed meeting Investigator.
- The RFP closed on Thursday December 12, 2024 at 2:00pm with five (5) proponents submitting.
- The proposals were reviewed and evaluated by a panel of two (2), consisting of the following:
  - David Unrau, CAO
  - Victoria Charbonneau, Clerk
- All scoring was done individually by the panel members and the compiling of scoring to recommend a proponent was monitored by the City's Purchasing Manager/ Deputy Treasurer.
- Proposals were reviewed and evaluated in accordance with the following pre-determined criteria:
  - Overall Impression – 5%
  - Qualification / Experience – 40%



- Past Projects / Performance – 30%
- Project Cost / Fees – 25%
- The proposal that, on average, scores highest when evaluated compared to the criteria above and when compared to all other proposals received shall be deemed to provide the best value for the City of Pembroke.
- The recommendation included was derived by using the highest score based on the average of the evaluators as per the attached Proposal Evaluation Matrix.
- Based on the review, the evaluation committee believes the proposal from Bench Municipal will offer the best value to the municipality

**Discussion:**

Staff will work with Bench Municipal to draft an agreement for services to be brought to Council in February 2025. The agreement will include (as outlined in the RFP) that the appointed Integrity Commissioner and Closed Meeting Investigator is tasked with (but not limited to), a review the current Council Code of Conduct with the objective of working with Council to update the Code. Services will also include the provision of relevant training for Council and staff (as needed) on relevant items to Integrity Commissioner and Closed Meeting Investigator matters.

**Alternatives Considered:**

N/A

**Strategic Plan Impact:**

Partnerships developed and maintained with other municipalities and organizations.

**Attachments:**

RFP Results Summary

Respectfully submitted,

Victoria Charbonneau  
Municipal Clerk



**RFP-24-10 – Service for an Integrity Commissioner and Closed meeting Investigator.**

<b>Proponent</b>	<b>Rank</b>
Aird & Berlis LLP	4
QMR Consulting	5
Boghosian & Allen LLP	2
ADR Chambers	3
Bench Municipal	1