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TRANSPORTATION SOLUTIONS LIMITED

**825 Riverside Drive West,
Windsor**

**Transportation Impact
Study Update and
Parking Study**

Paradigm Transportation Solutions Limited

December 2025
240453



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825 Riverside Drive West, Windsor Transportation Impact Study Update and Parking Study



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Executive Summary

Content

Paradigm Transportation Solutions Limited has been retained to conduct this Transportation Impact Study (TIS) Update and Parking Study (PS) for a proposed residential development located at 825 Riverside Drive West in the City of Windsor.

A TIS was completed for the subject site in April 2020¹. This study is an update to the April 2020 TIS and reflects site statistics changes, new (2024) traffic counts and parking assessment.

This TIS includes an analysis of existing traffic conditions, a description of the proposed development, traffic forecasts for five years from the date of TIS (2030), and assessment of traffic impacts with recommendations to accommodate the proposed development as appropriate.

Development Concept

The subject site is located on the east side of Crawford Avenue between Riverside Drive West and University Avenue West.

The subject site is currently occupied by the existing CBC Windsor building which will be redeveloped to accommodate 20 townhouse units and 1,558 apartment units in three high-rise buildings, and 24 back-to-back townhouse units. Vehicle access is proposed via the existing driveway onto Crawford Avenue and to University Avenue via the existing intersection with Salter Avenue.

A total of 1,725 parking spaces is proposed on-site including 1,477 spaces within an underground parking garage and 248 spaces in a parking podium.

Conclusions

Based on the investigations carried out, it is concluded that:

Transportation Impact Study

- ▶ **Existing Traffic Conditions:** The study area intersections are operating with acceptable levels of service, except for the following movements:

¹ Paradigm Transportation Solutions Limited, 825 Riverside Drive West Windsor Transportation Impact Study Project #190533, April 2020.



- University Avenue West and Ouellette Avenue: The northbound left-turn movement is operating with queues exceeding the available storage of 15 metres during the PM peak hour.
- Crawford Avenue and Wyandotte Street West: The westbound left-turn movement is operating with queues exceeding the available storage of 20 metres during the AM and PM peak hours;

The northbound left-turn movement is operating with queues exceeding the available storage of 20 metres during the PM peak hour; and

The northbound shared through/right-turn movement is operating with LOS C and a v/c ratio greater than 0.85 during the AM peak hour.
- ▶ **Development Trip Generation:** The development is forecast to generate 371 and 440 trips during the AM and PM peak hours, respectively.
- ▶ **Background Traffic Conditions:** The study area intersections are forecast to operate with similar levels of service as under existing traffic conditions.
- ▶ **Total Traffic Conditions:** The study area intersections are forecast to operate with similar levels of service as under background traffic conditions, with the addition of the following movements:
 - University Avenue West and Crawford Avenue: The westbound left-turn movement is forecast to operate with 95th percentile queues exceeding the noted storage of 25 metres by two metres during the AM peak hour. It is noted that the left-turn lane extends to the east as a two-way centre left-turn lane and can accommodate these queues.
 - University Avenue West and Ouellette Avenue: The northbound left-turn movement is forecast to operate with queues exceeding the available storage of 15 metres during the AM peak hour. It is noted that under existing and background traffic conditions, this movement is already operating with queues exceeding the available storage during the PM peak hour.
- ▶ **Site Access:** A southbound left-turn lane is not warranted at the Crawford Avenue site driveway under total traffic conditions.



▶ **Sensitivity Analysis:**

- Trip Generation: The alternative development concept with ground floor retail is forecast to generate 392 AM peak hour trips and 505 PM peak hour trips.
- Total Traffic Operations: The study area intersections are forecast to operate with similar levels of service as in the original development concept.
- Site Access: A southbound left-turn lane is not warranted at the Crawford Avenue Site Driveway under total traffic conditions.

Parking Study

▶ **Zoning By-Law Requirements:**

- City of Windsor: The development requires a total of 2,003 parking spaces (1.25 spaces per unit) to comply with the City's Zoning By-law. With a proposed supply of 1,725 (1.08 spaces per unit), the site has a potential shortfall of 278 spaces.
- Other Municipalities: A review of Zoning By-Law parking requirements in the cities of London, Kitchener, Edmonton and Toronto indicate that significant reductions of on-site parking are becoming an increasingly common practice. Minimum parking requirements range from 0 to 1.15 spaces per unit for residential developments.

▶ **Forecast Parking Demand:**

- ITE Rates: *The ITE Parking Generation Manual* indicates an average rate of 1.03 spaces per unit resulting in a total estimated demand of 1,650 spaces, including visitor parking demand.
- Trends in Other Municipalities: Observed parking utilization levels in apartment developments in other Ontario municipalities have shown that parking utilization is generally between 60% and 75%.

A review of residential developments in Waterloo, Cambridge and Welland indicates a maximum parking demand of between 0.73 and 0.92 spaces per unit, including visitor parking demand.

- ▶ **Policy Framework:** City and Provincial planning policies encourage intensification within built-up areas and support reduced parking standards as a means of encouraging intensification.



- ▶ **Transportation Demand Management:** The following TDM measures are proposed on-site or are located nearby:
 - Internal walkways with connections to the broader sidewalk network;
 - Secure bicycle parking within the parking garage; and
 - Access to multiple bus transit routes that provide good connectivity to the broader network and access to major destinations.

The following TDM measures should be considered on-site:

- A total of 88 bicycle parking spaces be provided on-site to meet the Zoning By-law requirements, including short-term bike parking be along the frontage of the buildings for visitors to the site;
- Unbundled parking; and
- Consideration given to offering travel planning resources, transit, car share, and active transportation information in a welcome package to new tenants and posting in a central location to further support all alternative modes.

Recommendations

Based on the findings of this study, it is recommended that the above TDM measures be considered, and the development be considered for approval as proposed.



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1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited has been retained to conduct this Transportation Impact Study (TIS) Update and Parking Study (PS) for a proposed residential development located at 825 Riverside Drive West in the City of Windsor. **Figure 1.1** illustrates the subject development location.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impact resulting from the proposed development. The scope of the study, developed in consultation with City of Windsor staff via e-mail in August/September 2024, includes:

- ▶ Assessment of the current traffic and site conditions within the study area;
- ▶ Estimates of background traffic growth for five years from the date of TIS (2030);
- ▶ Estimates of additional traffic generated by the subject site;
- ▶ Analyses of the impact of future traffic on the surrounding road network;
- ▶ Recommendations necessary to mitigate the site generated traffic in a satisfactory manner;
- ▶ Assessment of parking requirements and demand for the subject site; and
- ▶ Review and identify potential Transportation Demand Management (TDM) measures that can be implemented within the proposed development.

Based on the pre-study consultation, the following intersections were identified for investigation in this study:

- ▶ Riverside Drive West and Crawford Avenue (signalized);
- ▶ Riverside Drive West and Bruce Avenue (signalized);
- ▶ University Avenue West and Crawford Avenue (signalized);
- ▶ University Avenue West and Salter Avenue (unsignalized);
- ▶ University Avenue West and Caron Avenue (unsignalized);
- ▶ University Avenue West and Bruce Avenue (signalized);



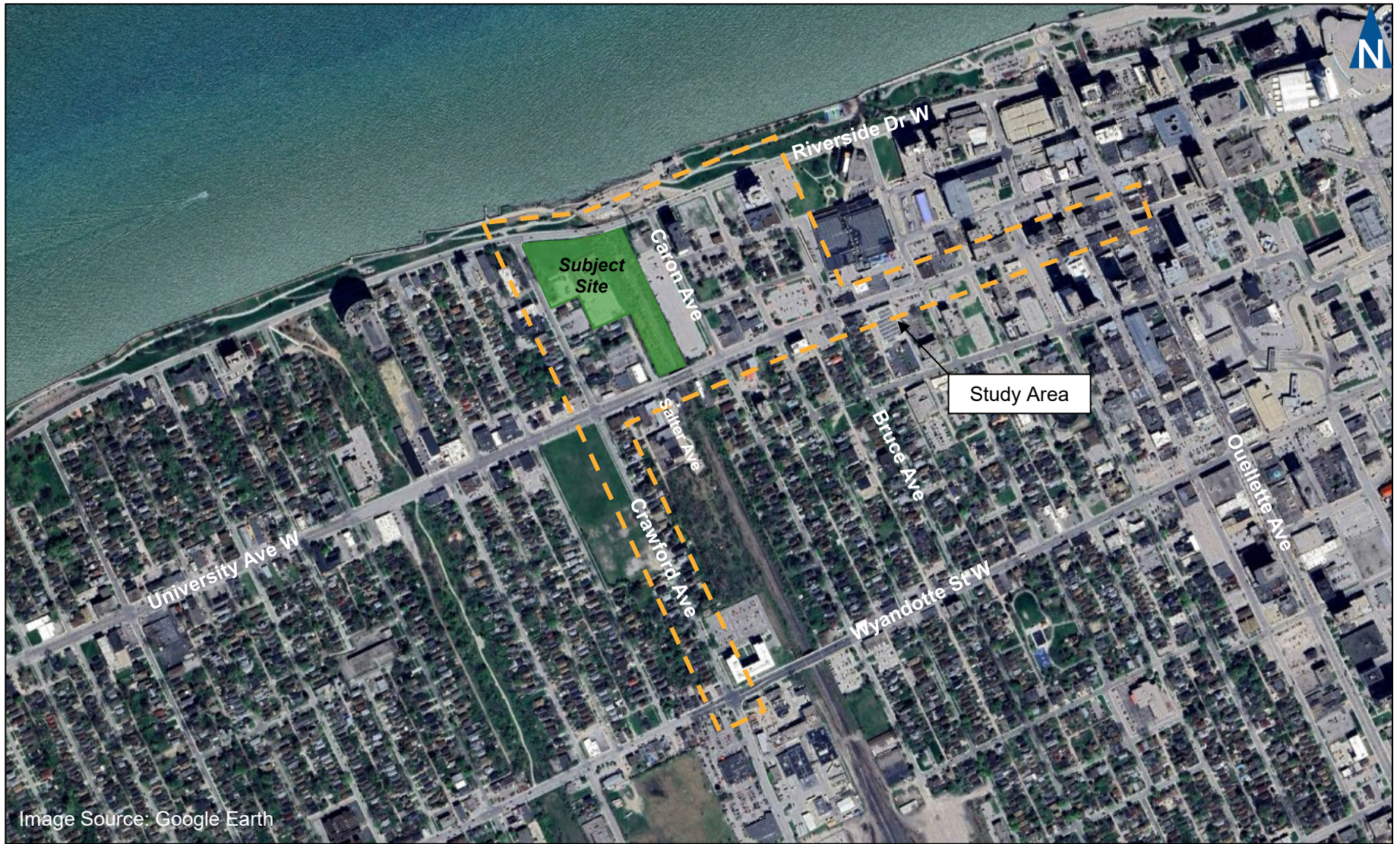
- ▶ University Avenue and Ouellette Avenue (signalized);
- ▶ Crawford Avenue and Wyandotte Street West (signalized); and
- ▶ Site Driveway on Crawford Avenue.

Appendix A contains the pre-study consultation material and responses from the City of Windsor.

This study has been prepared in accordance with the requirements detailed by the City of Windsor Transportation Impact Study Guidelines².

² City of Windsor, *Transportation Impact Study Guidelines*, October 2013.





Subject Site and Study Area Location

825 Riverside Drive West, Windsor TIS & PS
240453

Figure 1.1

2 Existing Conditions

2.1 Existing Roadways

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

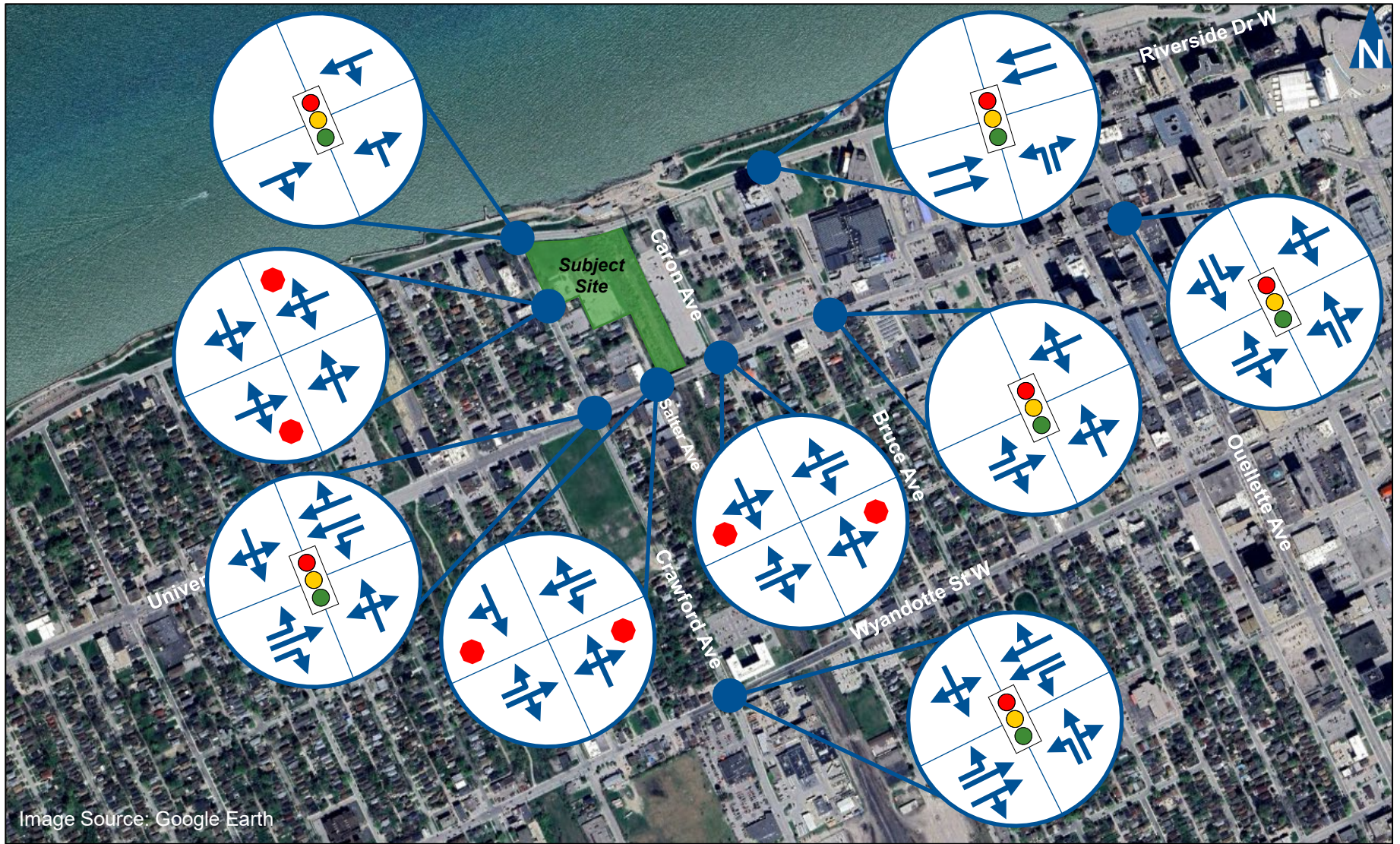
- ▶ **University Avenue West** is an east-west arterial road³ with a four-lane cross section west of Crawford Avenue and three-lane cross section with two travel lanes and one two-way centre turn-lane to the east. This roadway has a posted speed limit of 50 km/h within the study area.
- ▶ **Riverside Drive West** is an east-west scenic road with a two-lane cross section. This roadway has a posted speed limit of 50 km/h.
- ▶ **Ouellette Avenue** is a north-south arterial road with a predominately two-lane cross section within the study area. This roadway has an assumed speed limit of 50 km/h within the study area.
- ▶ **Wyandotte Street West** is an east-west arterial road with a four-lane cross section east of Crawford Avenue and two-lane cross section to the west. This roadway has an assumed speed limit of 50 km/h within the study area.
- ▶ **Crawford Avenue** is a north-south collector road with a two-lane cross-section. The roadway has a posted speed limit of 50 km/h.
- ▶ **Caron Avenue** is a north-south local road with a two-lane urban cross section. This roadway has an assumed speed limit of 50 km/h.
- ▶ **Bruce Avenue** is a north-south one-way collector road with a one-lane cross section south of University Avenue West and two-lane cross section to the north. This roadway has an assumed speed limit of 50 km/h within the study area.
- ▶ **Salter Avenue** is a north-south local road with a two-lane urban cross section. The speed limit is assumed to be 50 km/h. It is noted that “no left-turn” signage is provided on the southbound approach at the University Avenue West intersection. The pavement on Salter Avenue is in poor condition with cracking and potholes.

³ City of Windsor, *Official Plan – Schedule F: Roads and Bikeways*, April 2016



Figure 2.1 illustrates the existing lane configuration and traffic control at the study area intersections.





Existing Lane Configuration and Traffic Control

2.2 Active Transportation

2.2.1 Walking

Sidewalks are generally provided on both sides of all surrounding roadways, except for Salter Avenue which only has sidewalks along the west side of the roadway.

The subject site is noted to score a Walk Score⁴ of 85 and is considered “Very Walkable” which means that most errands can be accomplished on foot. Walk Score is an online tool that assigns a numerical walkability score between 0 and 100. Walk Score ranks communities nationwide based on how many businesses, parks, theatres, schools, and other common destinations are within walking distance.

2.2.2 Cycling

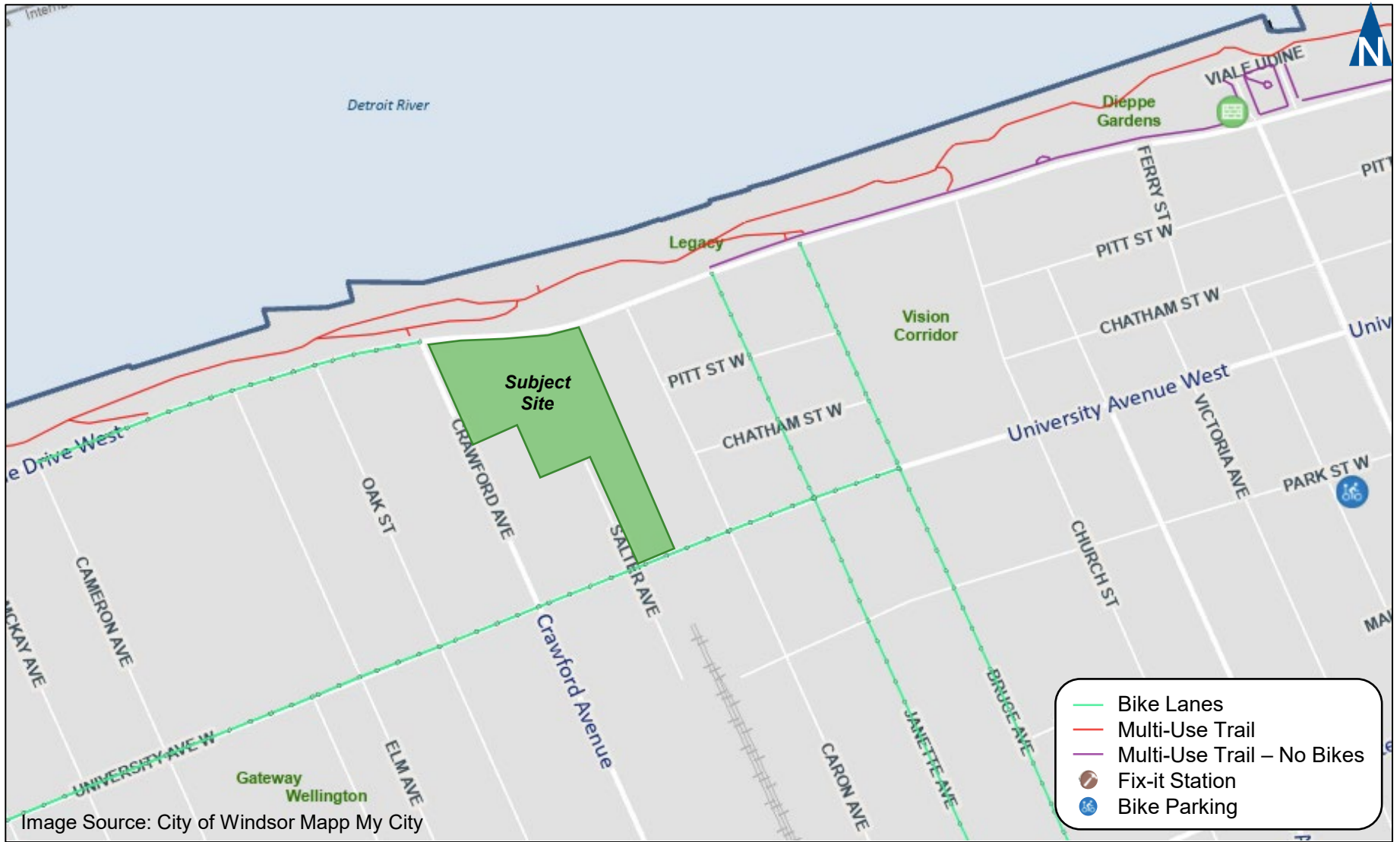
Bike lanes are provided along University Avenue West (west of Bruce Avenue), Janette Avenue and Bruce Avenue. Bike lanes are also periodically provided along Riverside Drive West as well as a multi-use trail that runs along the riverfront.

The subject site is noted to score a bike score of 73. This is considered “Very Bikeable” which means that biking is convenient for most trips.

Figure 2.2 illustrates the cycling and trails facilities.

⁴ <https://www.walkscore.com/score/825-riverside-dr-w-windsor-on-canada>





Existing Cycling and Trails Network

2.3 Sight Distance

The minimum required sight distance for the north approach of the Salter Avenue connection to University Avenue West has been assessed based on methodology outlined in the *Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads*⁵.

For a design speed of 60 km/h (10 km/h over the posted speed limit), a minimum stopping sight distance of 85 metres and minimum intersection sight distance (right-turn from stop) of 110 metres is required.

Paradigm staff conducted a field investigation in October 2024 to collect road profile measurements on University Avenue West east of Salter Avenue. Based on the road profile results, a sight distance of approximately 78 metres is available. Although this measurement does not meet the minimum requirement outlined based on TAC guidelines, this is an existing condition and the connection to University Avenue West is not expected to be altered in the future. As noted in **Section 2.1**, southbound left-turns from Salter Avenue onto University Avenue West are restricted through signage.

2.4 Transit Network

Windsor Transit operates the following two routes close to the subject site:

- ▶ **Transway 1C** travels along University Avenue West within the study area with major stops at the downtown transit terminal, hospital and Tecumseh Mall. The route operates Monday to Sunday with 10 to 40-minute headways. The closest stop is located on University Avenue West at Crawford Avenue (approximately 200 metres from the subject site or three-minute walk).
- ▶ **Route 115** travels along Riverside Drive West within the study area with major stops located at the downtown transit terminal and St. Clair College. The route operates Monday to Sunday with 20 to 60-minute headways. The closest stop is located on Riverside Drive West west of Crawford Avenue (approximately 160 metres from the subject site or two-minute walk).

Figure 2.3 illustrates the existing transit network.

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



The subject site is noted to score a transit score of 68. This is considered “Good Transit” which means there are many nearby public transit options.





Existing Transit Network

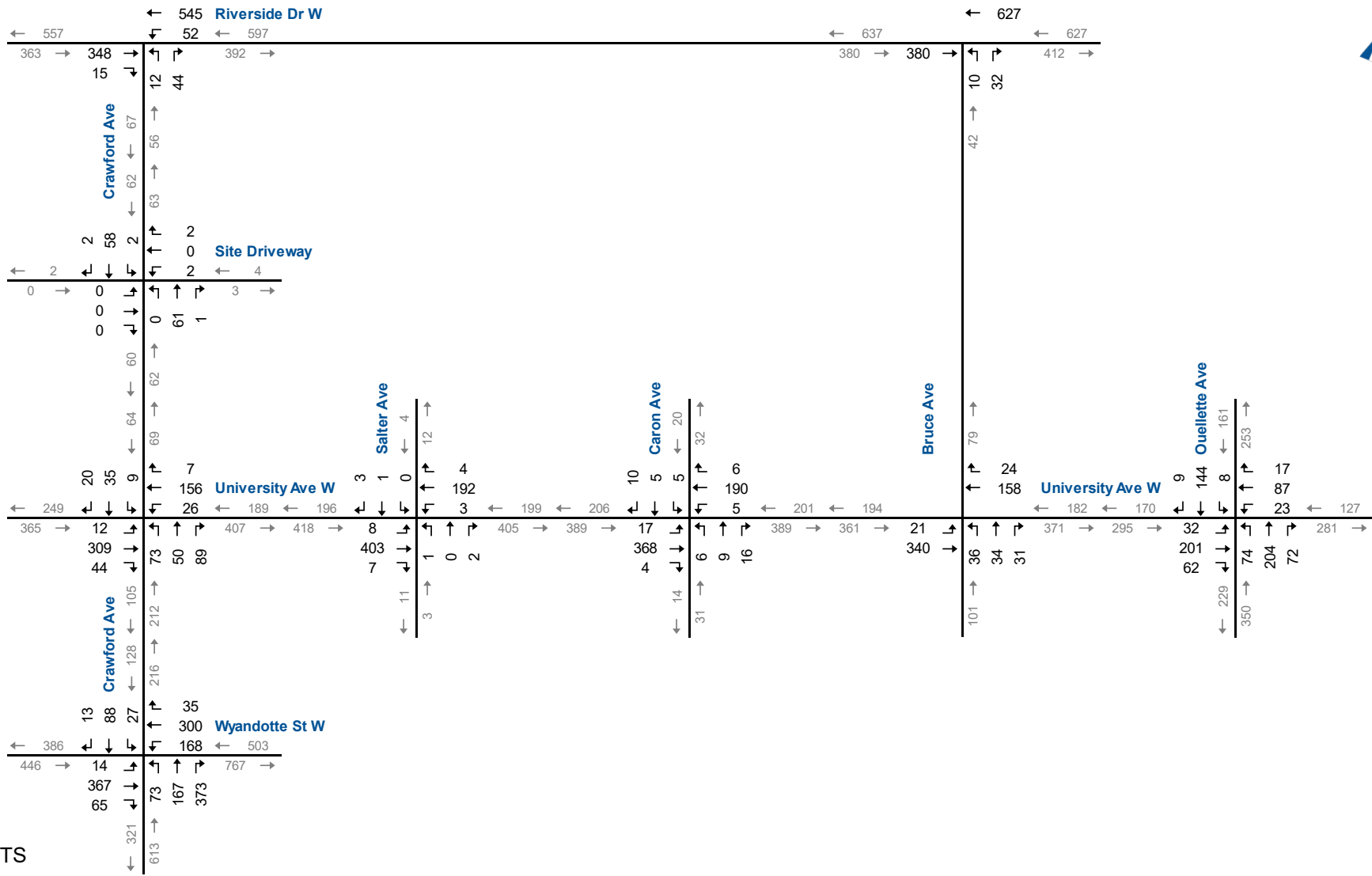
2.5 Traffic Volumes

Turning movement counts were collected by Paradigm on 1 October 2024.

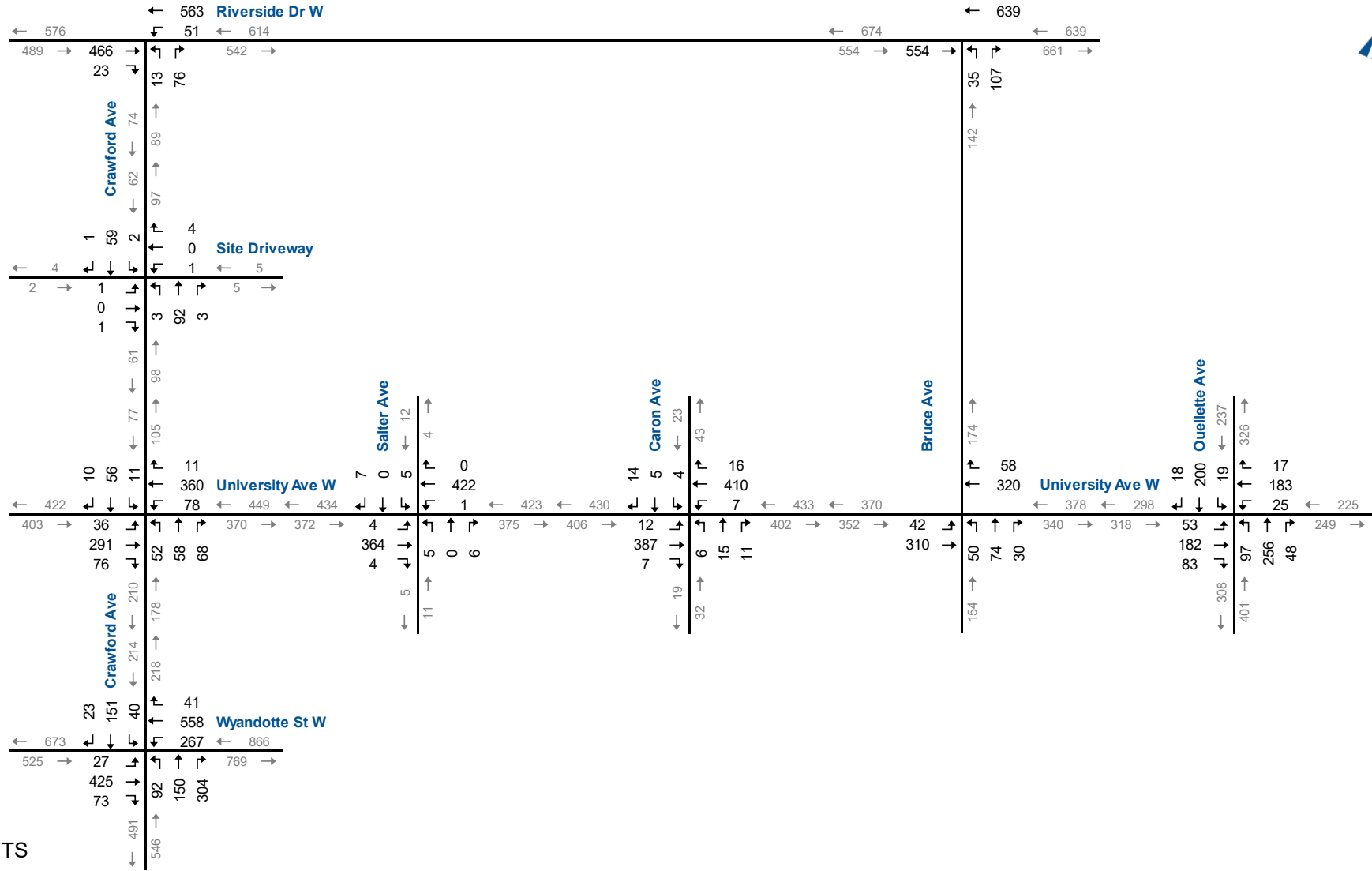
Figure 2.4a and **Figure 2.4b** illustrate the existing AM and PM weekday peak hour traffic volumes, respectively.

Appendix B contains the detailed traffic counts and signal timings for the study area intersections.





Existing Traffic Volumes – AM Peak Hour



NTS



Existing Traffic Volumes – PM Peak Hour

2.6 Traffic Operations

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

The highest possible rating is LOS A, under which the average total delay is equal to or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity ratio is greater than 1.0, the movement is classed as LOS F and remedial measures are usually implemented, if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

The operations at the study area intersections have been assessed using Synchro 11. Movements are considered critical under the following conditions for signalized intersections:

- ▶ Volume/capacity (v/c) ratios for through movements and shared through/turning movements increased to 0.85 or above;
- ▶ V/C ratios for exclusive turning movements equal or greater than 1.00;
- ▶ Any movement with LOS 'F' or worse;
- ▶ 95th percentile queue lengths for individual movements exceeds available lane storage.

Movements are considered critical under the following conditions for unsignalized intersections:

- ▶ Any movement with LOS 'E' or worse;
- ▶ 95th percentile queue lengths for individual movements exceeds available lane storage.

As noted in **Section 2.1**, “no left-turn” signage is provided on the southbound approach of Salter Avenue at the University Avenue West intersection. Despite the restriction, five southbound left-turn trips were observed during the PM peak hour. To capture these maneuvers in the operational analysis, the southbound approach has been analyzed with left-turns during the PM peak hour.



Table 2.1a and **Table 2.1b** summarize the results of the intersection operational analysis under existing conditions, including the AM and PM peak hour LOS, v/c ratios, and 95th percentile queues.

The study area intersections are operating within acceptable levels, with no specific problem movements under existing traffic conditions, except for the following movements:

University Avenue West and Ouellette Avenue

- ▶ The northbound left-turn movement is operating with queues exceeding the available storage of 15 metres during the PM peak hour.

Crawford Avenue and Wyandotte Street West

- ▶ The westbound left-turn movement is operating with queues exceeding the available storage of 20 metres during the AM and PM peak hours;
- ▶ The northbound left-turn movement is operating with queues exceeding the available storage of 20 metres during the PM peak hour; and
- ▶ The northbound shared through/right-turn movement is operating with LOS C and a v/c ratio greater than 0.85 during the AM peak hour.

Appendix C contains the detailed Synchro 11 reports.



TABLE 2.1A: EXISTING TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 3 0.25 23	> > >	A 3	< < <	A 7 0.43 61	> > >	A 7	B 19 0.22 13	> > >	B 19	< < <	< < <	< < <	< < <	A 7		
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 19 0.35 31	> > >	B 19	< < <	C 21 0.57 43	> > >	C 21	A 9 0.01 3	> > >	A 4 0.04 4	> > >	> > >	> > >	> > >	B 20		
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< < <	A 0 0.00 0	> > >	A 0	< < <	A 9 0.01 0	> > >	A 9	< < <	A 0 0.00 0	> > >	< < <	A 7 0.00 0	> > >	A 0		
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 10 0.03 3 35 32	B 13 0.40 44 - -	A 4 0.07 4 - -	B 12	A 8 0.07 4 25 21	A 8 0.11 9 - -	> > > > >	A 8	< < < < <	B 10 0.42 21 - -	> > > > >	B 10	< < < < <	A 8 0.12 11 - -	> > > > >	A 8 B 10	
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.01 0 25 25	A 0 0.00 0 - -	> > >	A 0	A 8 0.00 0 25 25	A 0 0.00 0 - -	> > >	A 0	< < < < <	B 12 0.01 0 - -	> > >	B 12	< < < < <	B 12 0.01 0 - -	> > >	B 12	
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.01 0 25 25	A 0 0.00 0 - -	> > >	A 0	A 8 0.01 0 25 25	A 0 0.00 0 - -	> > >	A 0	< < < < <	B 14 0.07 2 - -	> > >	B 14	< < < < <	B 13 0.04 1 - -	> > >	B 13	
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 2 0.03 1 30 29	A 2 0.26 11 - -	> > >	A 2	A 2 0.15 7 - -	> > >	A 2	< < < < <	C 24 0.41 21 - -	> > >	C 24	< < < < <	< < < < <	< < < < <	A 5		
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	B 12 0.11 4 - -	B 19 0.61 42 - -	> > >	B 18	< < <	C 20 0.33 23 - -	> > >	C 20	A 8 0.13 12 15 3	A 8 0.28 32 - -	> > >	A 8	A 7 0.01 2 15 13	A 7 0.15 19 - -	> > >	A 7 B 13	
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	B 15 0.05 5 20 15	B 16 0.37 32 - -	> > >	B 16	B 12 0.41 20 - -2	A 9 0.21 18 - -	> > >	A 10	B 18 0.18 16 20 4	C 31 0.87 109 - -	> > >	C 29	< < < < <	B 18 0.40 23 - -	> > >	B 18 B 19	

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)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



TABLE 2.1B: EXISTING TRAFFIC OPERATIONS – PM PEAK HOUR

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	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A	>	A	<	B		B	B	>	B					B	12	
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B		B		C		C	A	A	A					B	18	
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	0
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	B	B	A	B	A	A	>	A	<	C	>	C	<	B	>	B	13
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A	A	>	A	A	A	>	A	<	B	>	B	<	C	>	C	15
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A	A	>	A	A	A	>	A	<	C	>	C	<	C	>	C	16
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A	A		A	A	A	>	A	<	C	>	C				A	10
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	C	C	>	C	<	C	>	C	A	A	>	A	A	A	>	A	18
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	B	B	>	B	B	A	>	B	C	C	>	C	<	C	>	C	18

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)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
</> - Shared with through movement



3 Development Concept

3.1 Development Description

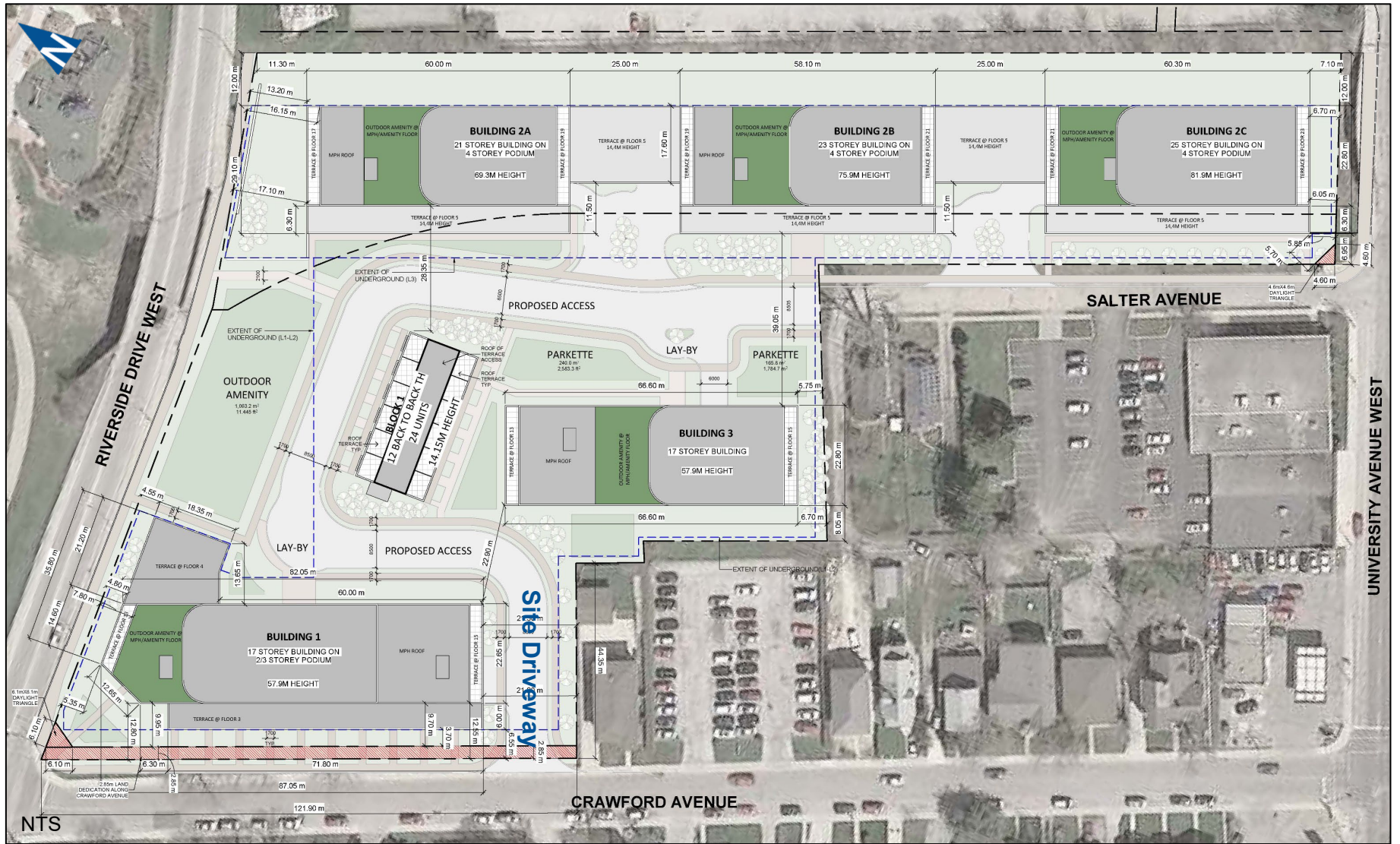
The subject site is located on the east side of Crawford Avenue between Riverside Drive West and University Avenue West.

The subject site is currently occupied by the existing CBC Windsor building which will be redeveloped to accommodate 20 townhouse units and 1,558 apartment units in three high-rise buildings, and 24 back-to-back townhouse units. Vehicle access is proposed via the existing driveway onto Crawford Avenue and to University Avenue via the existing intersection with Salter Avenue.

A total of 1,725 parking spaces is proposed on-site including 1,477 spaces within an underground parking garage and 248 spaces in a parking podium.

Figure 3.1 shows the development concept.





Proposed Site Plan

825 Riverside Drive West, Windsor TIS & PS
240453

Figure 3.1

3.2 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual⁶ provides rates and equations for Land Use Code (LUC) 222 (Multifamily Housing, High Rise) which has been used to estimate the peak hour traffic volumes generated by this development.

LUC 222 is defined by having access to individual dwelling units through an outside building entrance, lobby, elevator and hallways. Although the townhouse units on-site have an external access, parking is provided in the shared underground parking garage. Therefore, the townhouse units have been included in the unit count for LUC 222 as they are expected to operate more like the other units on-site.

Table 3.1 summarizes the forecast number of net new trips generated by the proposed development.

TABLE 3.1: TRIP GENERATION

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 222 - Multifamily Housing (High-Rise)	1,602	Eq ¹	96	275	371	Eq ²	273	167	440
Total Trip Generation			96	275	371		273	167	440

$$^1 T = 0.22(X) + 18.85$$

$$^2 T = 0.26(X) + 23.12$$

3.3 Development Trip Distribution and Assignment

The trip distribution was determined based on likely origins/destinations and existing travel patterns within the study area.

Table 3.2 displays the breakdown of trip distributions used in this study.

⁶ Institute of Transportation Engineers, *Trip Generation Manual*, 11th ed., (Washington, DC: ITE, 2021).

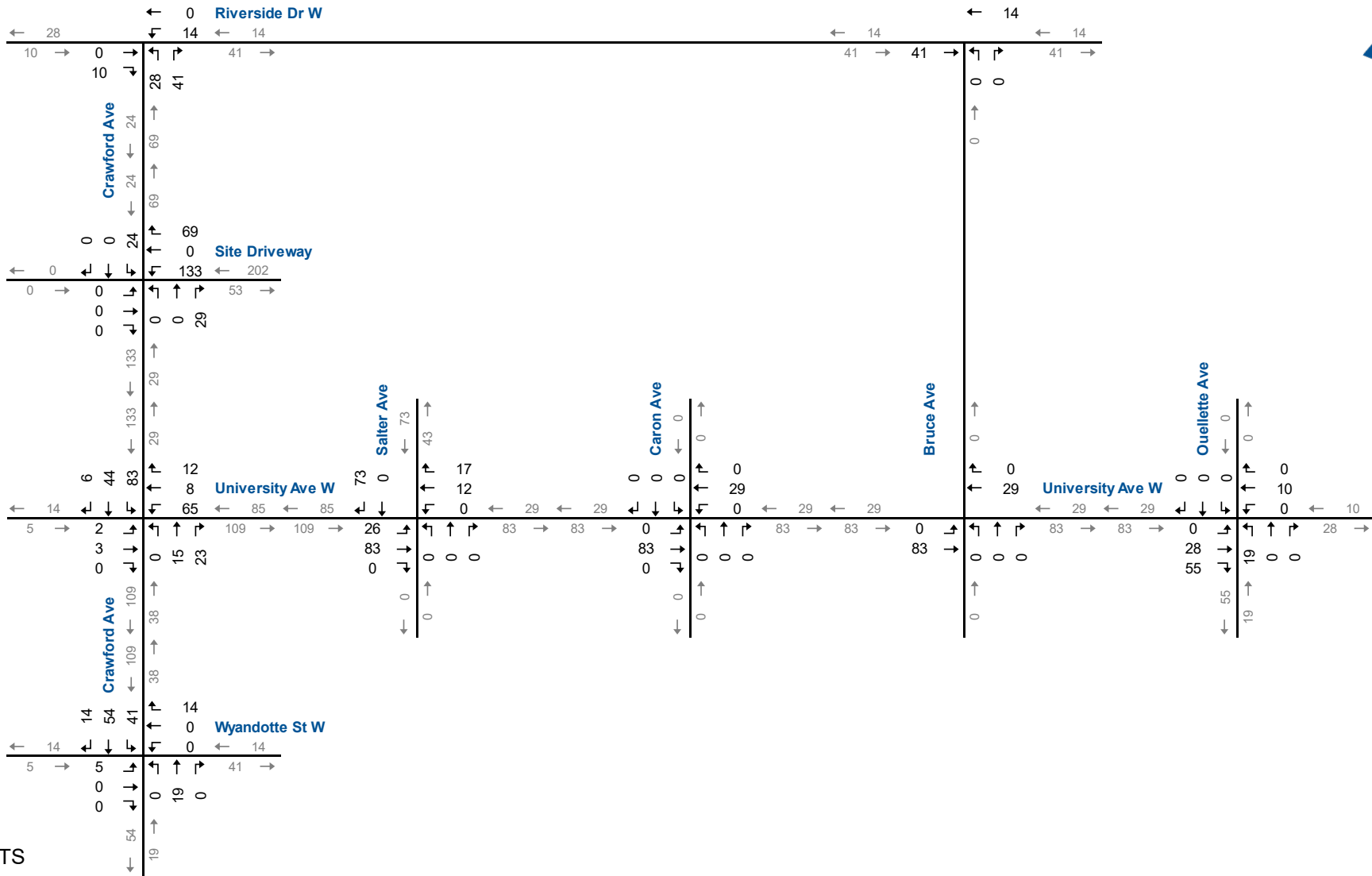


TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	Percentage
South via Crawford Ave	20%
South via Caron Ave	0%
South via Ouelette Ave	20%
East via University Ave W	10%
East via Riverside Dr W	15%
East via Wyandotte St W	15%
West via University Ave W	5%
West Riverside Dr W	10%
West via Wyandotte St W	5%
Total	100%

Figure 3.2a and **Figure 3.2b** illustrate the site-generated traffic volumes for the AM and PM peak hours, respectively.

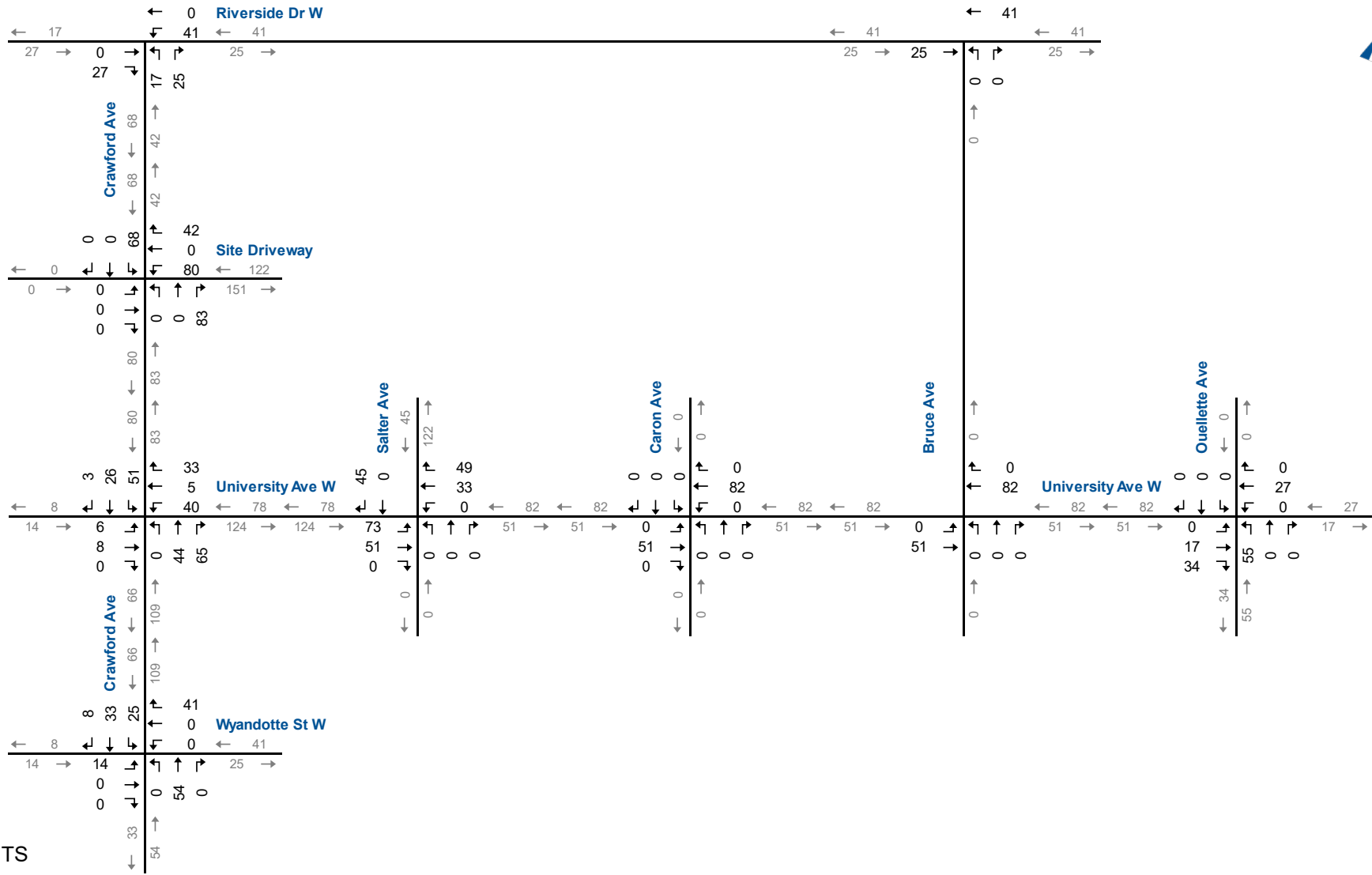




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Site Generated Traffic Volumes – AM Peak Hour



NTS



Site Generated Traffic Volumes – PM Peak Hour

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions in this section includes estimates of future background and total traffic volumes, and the analyses for the 2030 horizon year.

4.1 Planned Road Improvements

The *University Avenue West Class Environmental Assessment (EA)*⁷ recommends that University Avenue be reduced to one travel lane in each direction west of Crawford Avenue. As of March 2025, University Avenue is currently under construction between McEwan Avenue and Salter Avenue for storm sewer, watermain, street lighting and road rehabilitation improvements, and will be the City's first complete street.

4.2 Background Traffic Forecasts

The background traffic volumes consist of:

- ▶ Increased non-site traffic (generalized background traffic growth); and
- ▶ Traffic generated by any approved on in-stream developments near the subject site.

4.2.1 General Growth

The increased non-site traffic estimates were derived by applying a growth rate of 1.0% per annum to the existing traffic volumes. The growth rate was taken from the *2022 University EA* and was confirmed with the City of Windsor during the pre-study consultation.

4.2.2 Other Area Developments

In addition to the above general traffic growth, the following nearby developments have been included in the background traffic forecasts:

- ▶ **1220 University Avenue West:** The development consists of 133 units and 14,560 sq. ft. of commercial uses. Based on ITE rates, the development is forecast to generate 81 trips during the AM peak hour and 148 trips during the PM peak hour.
- ▶ **Riverside Drive West and Janette Avenue:** The residential development at the southwest corner of Riverside Drive West and Janette Avenue is proposed to consist of a 28-storey

⁷ CIMA+, *City of Windsor Municipal Class Environmental Assessment Study University Avenue and Victoria Avenue*, August 2022.



building with 166 units. Based on ITE rates, the development is forecast to generate 55 trips during the AM peak hour and 66 trips during the PM peak hour.

- ▶ **666 Chatham Street West:** The residential development at the northeast corner of Chatham Street West and Caron Avenue is proposed to consist of a 16-storey building with 88 units. Based on ITE rates, the development is forecast to generate 38 trips during the AM peak hour and 46 trips during the PM peak hour.

During pre-study consultation, the City also indicated that developments are proposed at 1223 University Avenue (3 units) and 163 Janette Avenue (6 units). These developments were not specifically included as these developments would generate a low number of trips that would be reflected in the 1.0% annual growth rate.

Figure 4.1 illustrates the location of the other area developments.

Appendix D contains the other area development trip generation and assignment.





Other Area Development Locations

4.3 Background Traffic

Figure 4.2a and **Figure 4.2b** illustrate the 2030 background traffic volumes, including road traffic growth and other area development traffic.

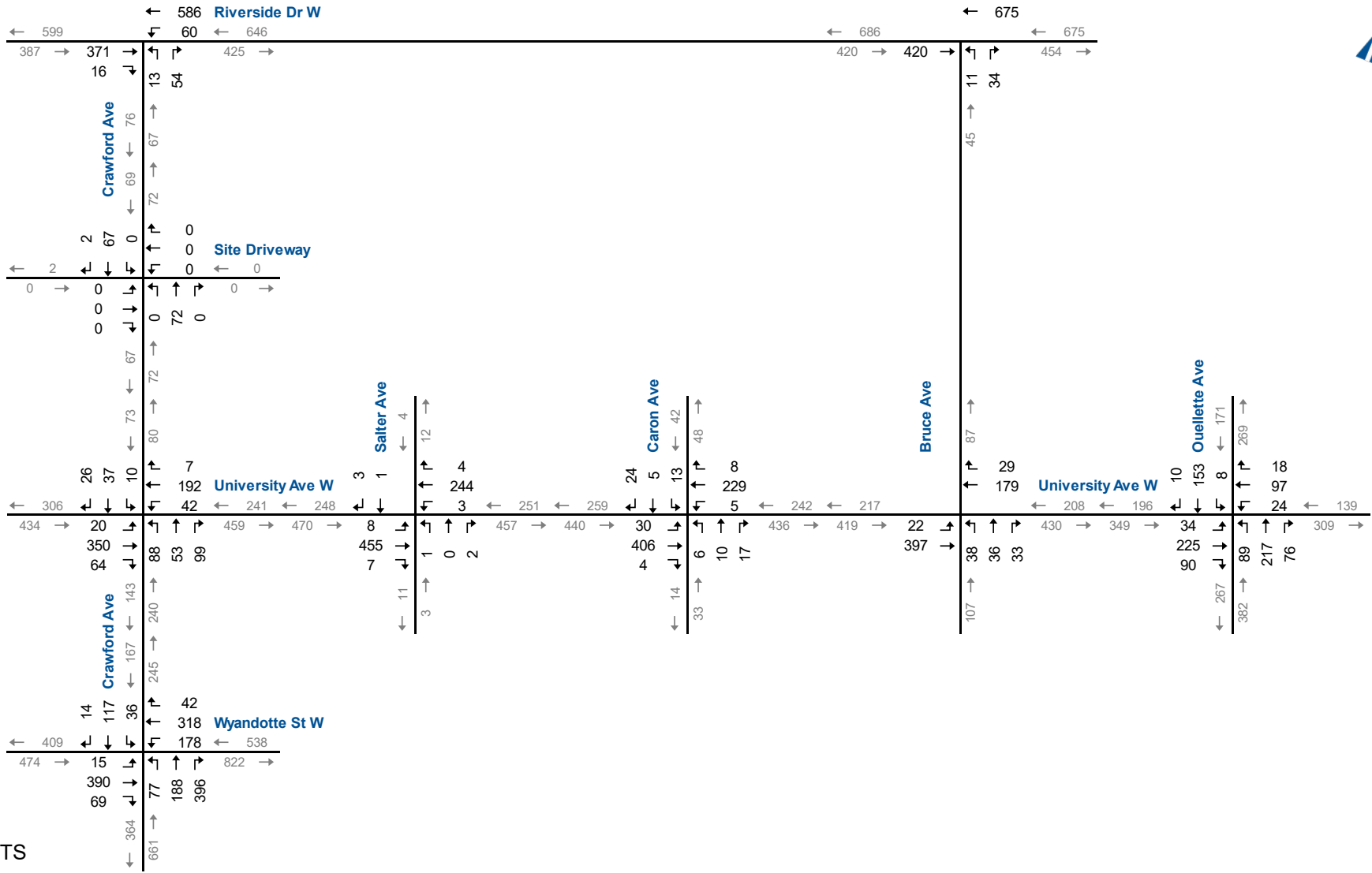
As noted in **Section 2.1**, “no left-turn” signage is provided on the southbound approach of Salter Avenue at the University Avenue West intersection. Despite the restriction, five southbound left-turn trips were observed during the PM peak hour. Salter Avenue currently terminates approximately 120 metres north of University Avenue West with properties fronting onto this portion of Salter Avenue required to exit at University Avenue West. Given that the development of the subject site would provide an alternative exit route onto Crawford Avenue, these southbound left-turn volumes have been re-assigned to turn left onto University Avenue from Crawford Avenue.

The 2030 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timings have been optimized.

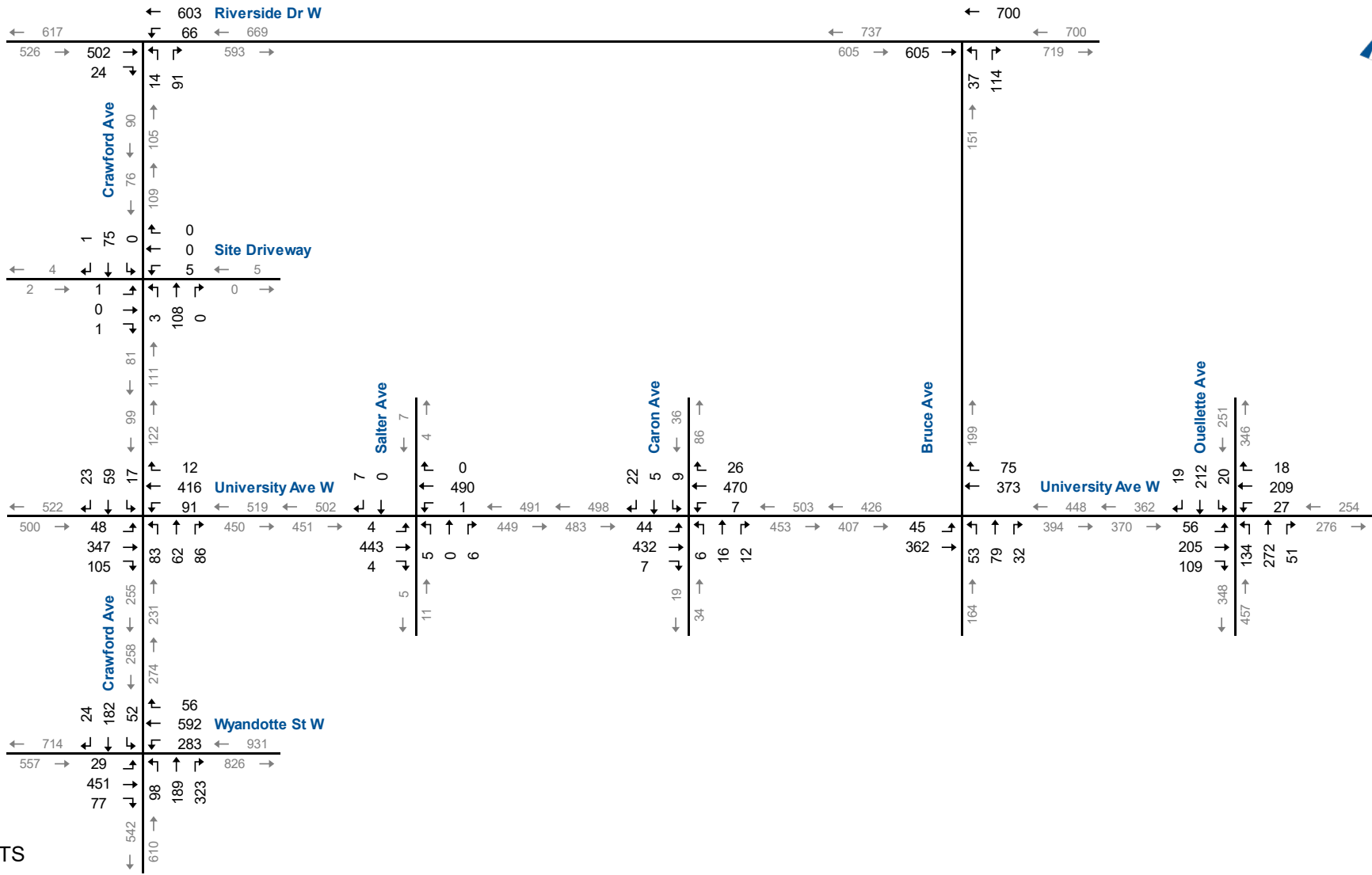
Table 4.1a and **Table 4.1b** summarize the results of the 2030 background traffic operations. The results indicate that the study area intersections are forecast to operate with similar levels of service as under existing traffic conditions.

Appendix E contains the supporting detailed Synchro 11 reports.





Background Traffic Volumes – AM Peak Hour



Background Traffic Volumes – PM Peak Hour

TABLE 4.1A: BACKGROUND TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 3 0.27 25	> > >	A 3	< < <	A 9 0.47 68	> > >	A 9	< < <	B 18 0.26 14	> > >	B 18	< < <				A 7	
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 19 0.37 33	> > >	B 19	< < <	C 20 0.58 43	> > >	C 20	< < <	B 10 0.01 3	> > >	A 6 0.04 5	< < <				B 19	
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< < <	A 0 0.00 0	> > >	A 0	< < <	A 0 0.00 0	> > >	A 0	< < <	A 0 0.00 0	> > >	A 0 0.00 0	< < <	A 0 0.00 0	> > >	A 0	
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 10 0.04 5 35 30	B 15 0.55 61 - -	> > >	B 15	< < <	B 10 0.15 29 25 16	> > >	B 10	< < <	B 15 0.49 36 - -	> > >	B 15	< < <	A 9 0.14 13 - -	> > >	A 9	B 13
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.01 0 25 25	A 0 0.00 0 - -	> > >	A 0	< < <	A 0 0.00 25 25	> > >	A 0	< < <	B 13 0.01 0 - -	> > >	B 13	< < <	B 13 0.01 0 - -	> > >	B 13	
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.03 1 25 24	A 0 0.00 0 - -	> > >	A 0	< < <	A 0 0.01 25 25	> > >	A 0	< < <	C 15 0.09 2 - -	> > >	C 15	< < <	B 14 0.10 2 - -	> > >	B 14	
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 2 0.03 1 30 29	A 2 0.31 14 - -	> > >	A 2	< < <	A 3 0.17 14 - -	> > >	A 3	< < <	C 24 0.43 22 - -	> > >	C 24	< < <				A 6
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 10 0.11 4 - -	B 18 0.67 40 - -	> > >	B 18	< < <	B 19 0.33 23 - -	> > >	B 19	< < <	A 9 0.16 15 0	> > >	A 9 0.31 38 - -	< < <	A 9 0.01 2 15 13	> > >	A 8 0.17 22 - -	B 13
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	C 21 0.08 6 20 14	C 24 0.56 42 - -	> > >	C 24	< < <	B 15 0.56 20 20 -8	> > >	B 15	< < <	B 18 0.15 14 20 6	> > >	B 18 0.76 87 - -	< < <	B 18 0.33 27 - -	> > >	B 10	B 18

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)
 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement

TABLE 4.1B: BACKGROUND TRAFFIC OPERATIONS – PM PEAK HOUR

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	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 4 0.38 40	> > >	A 4	< < <	B 19 0.53 144	> > >	B 19	B 15 0.36 18	> > >	B 15	< < <	< < <	< < <	< < <	B 13		
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 16 0.48 22	> > >	B 16	< < <	B 20 0.56 46	> > >	B 20	B 11 0.04 10	A 3 0.15 7	> > >	A 5	< < <	< < <	< < <	B 17		
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< 9 0.00 0	A > >	A 9	< < <	A 10 0.01 0	> > >	A 10	< 7 0.00 0	A > >	A 0	< < <	A > >	A > >	A 0			
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	B 14 0.16 11 35 24	B 18 0.58 74 - -	> > >	B 17	B 13 0.33 15 25 10	B 14 0.54 64 - -	> > >	B 13	< 14 0.38 32 - -	B > >	B 14	< 16 0.15 22 - -	B > >	B > >	B 16	B 15	
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.01 0 25 25	A 0 0.00 0 - -	> > >	A 0	A 8 0.00 0 25	A 0 0.00 0 - -	> > >	A 0	< 17 0.04 1 - -	C > >	C 17	B 12 0.01 0 - -	B > >	B > >	B 12		
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.04 1 25 24	A 0 0.00 0 - -	> > >	A 1	A 8 0.01 0 25	A 0 0.00 0 - -	> > >	A 0	< 24 0.16 4 - -	C > >	C 24	< 20 0.13 3 - -	C > >	C > >	C 20		
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.08 5 30 25	A 6 0.29 51 - -	> > >	A 6	A 5 0.37 38 - -	A > >	A 5	< 32 0.55 35 - -	C > >	C 32	< < <	< < <	< < <	< < <	A 10		
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	C 24 0.27 18 - -	C 31 0.68 70 - -	> > >	C 30	C 29 0.62 47 - -	C > >	C 29	B 11 0.28 15 -10	A 10 0.34 48 - -	B > >	B 10	A 9 0.05 5 15 10	A 9 0.24 34 - -	A > >	A > >	A 9	B 19
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	C 25 0.16 10 20 10	C 27 0.61 52 - -	> > >	C 27	C 21 0.69 41 20 -21	B 14 0.41 44 - -	> > >	B 16	B 18 0.25 20 0	C 21 0.72 84 - -	C > >	C 20	< 23 0.60 41 - -	C > >	C > >	C 23	C 20

MOE - Measure of Effectiveness
 LOS - Level of Service
 Delay - Average Delay per Vehicle in Seconds
 V/C - Volume to Capacity Ratio
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 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement

4.4 Total Traffic

Figure 4.3a and **Figure 4.3b** illustrate the 2030 total traffic volumes, including trips generated by the proposed development.

The 2030 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timings have been optimized.

Table 4.2a and **Table 4.2b** summarize the results of the 2030 total traffic operations. The results indicate that the study area intersections are forecast to operate with similar levels of service as under background traffic conditions, except for the following movements:

University Avenue West and Crawford Avenue

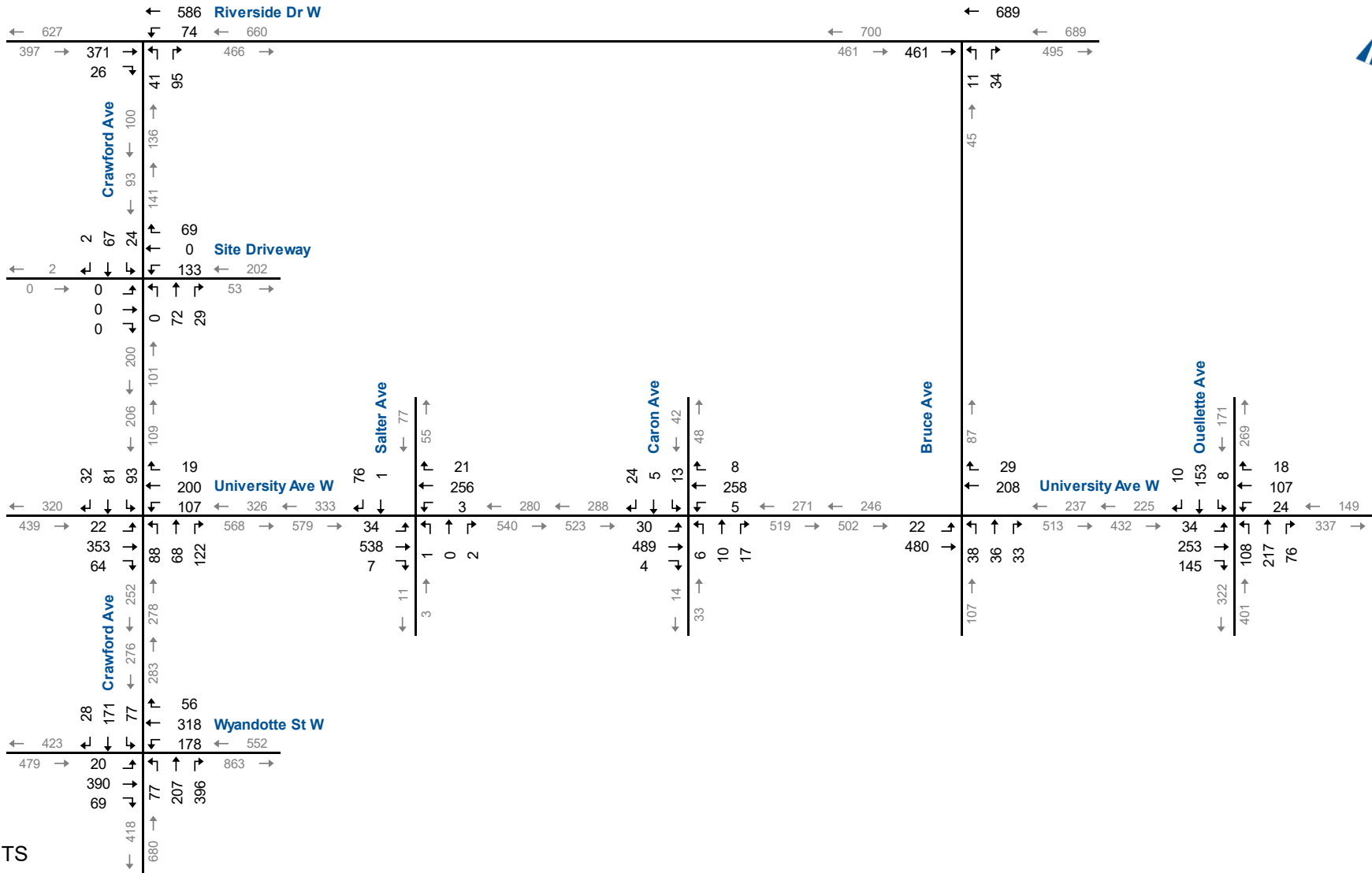
- ▶ The westbound left-turn movement is forecast to operate with 95th percentile queues exceeding the noted storage of 25 metres by two metres during the AM peak hour. It is noted that the left-turn lane extends to the east as a two-way centre left-turn lane and can accommodate these queues.

University Avenue West and Ouellette Avenue

- ▶ The northbound left-turn movement is forecast to operate with queues exceeding the available storage of 15 metres during the AM peak hour. It is noted that under existing and background traffic conditions, this movement is already operating with queues exceeding the available storage during the PM peak hour.

Appendix F contains the supporting detailed Synchro 11 reports.

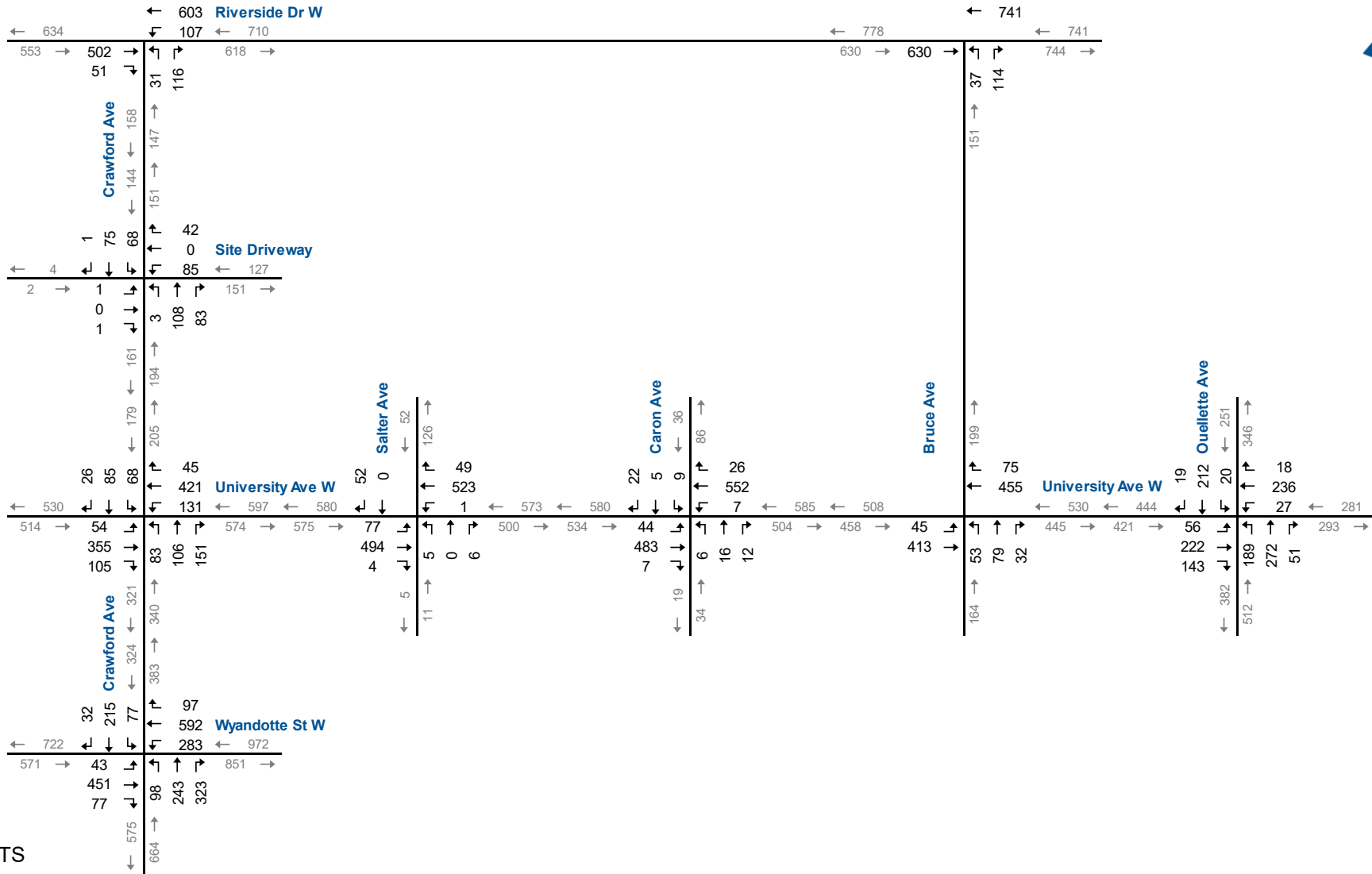




NTS



Total Traffic Volumes – AM Peak Hour



Total Traffic Volumes – PM Peak Hour

TABLE 4.2A: TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 4 0.30 31	> > >	A 4	< < <	B 10	> > >	B 16	> > >	B 16	< < <		> > >			A 9		
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 18 0.39 34	> > >	B 18	< < <	B 20	> > >	B 12	> > >	A 7	< < <		> > >			B 18		
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< 0 0.00 0	> > >	A 0	< < <	B 11	> > >	< 0 0.00 0	> > >	A 0	< < <	A 8 0.02 1	> > >			A 2		
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 10 0.05 5 35 30	> > >	B 15	< < <	B 12	> > >	< 17 0.58 44	> > >	B 17	< < <	A 19 0.50 42	> > >			B 19		
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.03 2 30 28	> > >	A 4	< < <	A 4	> > >	< 24 0.43 22	> > >	C 24	< < <		> > >			A 7		
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.03 1 25 24	> > >	A 0	< < <	A 0	> > >	< 16 0.01 0	> > >	C 16	< < <	B 11 0.12 3	> > >			B 11		
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.03 1 25 24	> > >	A 0	< < <	A 0	> > >	< 17 0.11 3	> > >	C 17	< < <	C 16 0.12 3	> > >			C 16		
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 9 0.09 3 - -	> > >	B 19	< < <	B 17	> > >	B 12 0.21 20 -5	> > >	B 11	< < <	B 11 0.02 3 15 12	> > >			B 10		
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	C 22 0.11 7 20 13	> > >	C 24	< < <	B 17	> > >	B 12 0.17 14 20 6	> > >	B 18	< < <	C 28 0.74 58	> > >			C 20		

MOE - Measure of Effectiveness
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 Stor. - Existing Storage (m)
 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement

TABLE 4.2B: TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall	
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
PM Peak Hour	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 5 0.44 48	> > > >	A 5	< < < <	C 24 0.66 153	> > > >	C 24	B 15 0.46 21	> > > >	B 15	< < < <	< < < <	< < < <	< < < <	B 16			
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 15 0.48 22	> > > >	B 15	< < < <	B 19 0.56 46	> > > >	B 19	B 12 0.05 10	> > > >	A 4 0.15 7	> > > >	A 6	< < < <	< < < <	< < < <	B 16		
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< < < <	B 11 0.00 0	> > > >	B 11	< < < <	B 13 0.23 7	> > > >	B 13	< < < <	A 7 0.00 0	> > > >	A 0	< < < <	A 8 0.06 2	> > > >	A 4		
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	B 13 0.18 11 35 24	B > > > >	B 16	B < < < <	B 14 0.43 23 25 2	B > > > >	B 12 0.56 63 - -	B > > > >	B 13	< < < <	B 17 0.58 53 - -	> > > >	B 17	< < < <	A 20 0.35 36 - -	> > > >	C 20	B 16
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 10 0.10 2 25 23	A > > > >	A 1	A < < < <	A 8 0.00 0 25 25	A > > > >	A 0	< < < <	D 26 0.06 2 - -	> > > >	D 26	< < < <	B 13 0.11 3 - -	> > > >	B 13			
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.05 2 25 23	A > > > >	A 1	A < < < <	A 9 0.01 0 25 25	A > > > >	A 0	< < < <	D 29 0.19 5 - -	> > > >	D 29	< < < <	C 23 0.16 4 - -	> > > >	C 23			
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.09 4 30 26	A > > > >	A 5	A < < < <	A 6 0.43 51 - -	A > > > >	A 6	< < < <	C 32 0.55 35 - -	> > > >	C 32	< < < <	< < < <	< < < <	< < < <	A 10		
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	C 20 0.24 15 - -	C > > > >	C 27	C < < < <	C 28 0.64 52 - -	C > > > >	C 28	B 15 0.42 38 15 -23	B 11 0.36 49 - -	> > > >	B 12	B 10 0.05 5 15 10	B > > > >	B 10 0.25 34 - -	> > > >	B 10	B 19	
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	C 29 0.27 14 20 6	C > > > >	C 30	D < < < <	B 37 0.83 60 20 -40	B > > > >	C 23	B 15 0.24 19 20 1	B 20 0.72 92 - -	> > > >	B 19	< < < <	C 26 0.75 77 - -	> > > >	C 26	C 24		

MOE - Measure of Effectiveness
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 Avail. - Available Storage (m)
 TCS - Traffic Control Signal
 TWSC - Two-Way Stop Control
 </> - Shared with through movement



4.5 Left-Turn Lanes

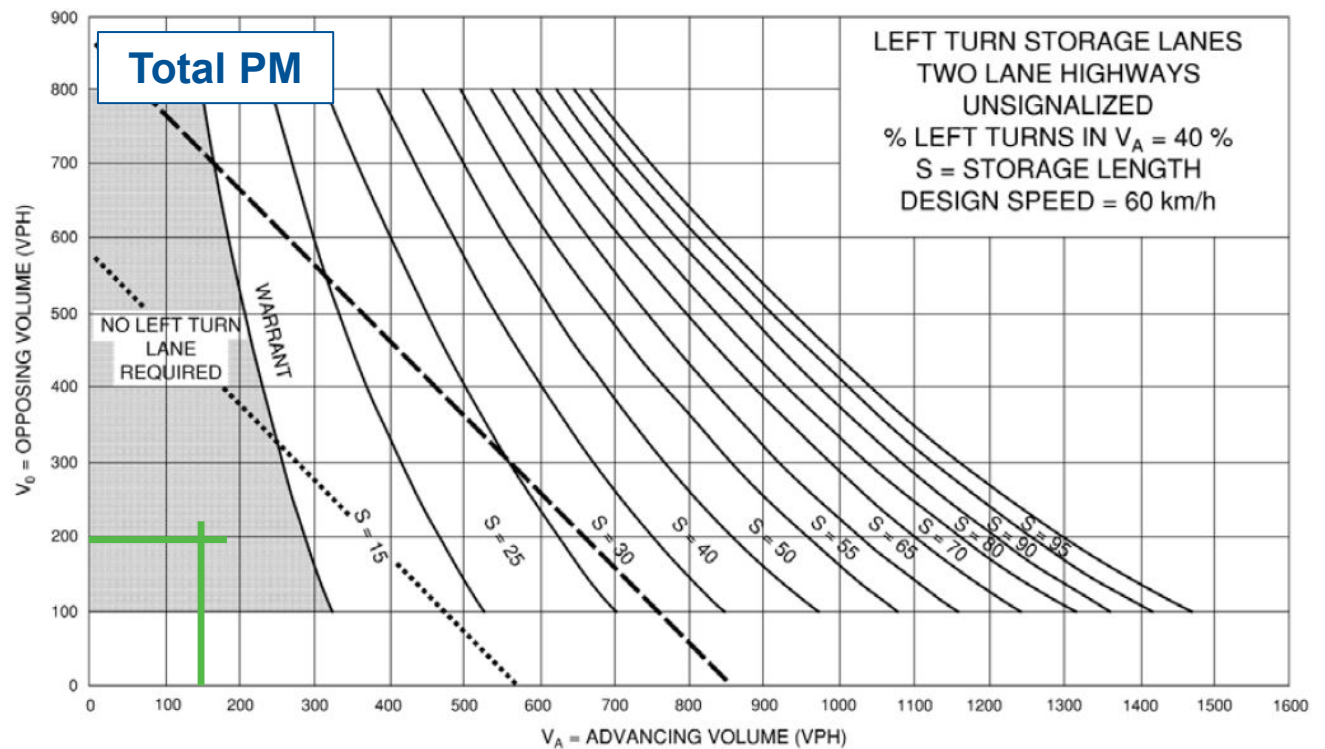
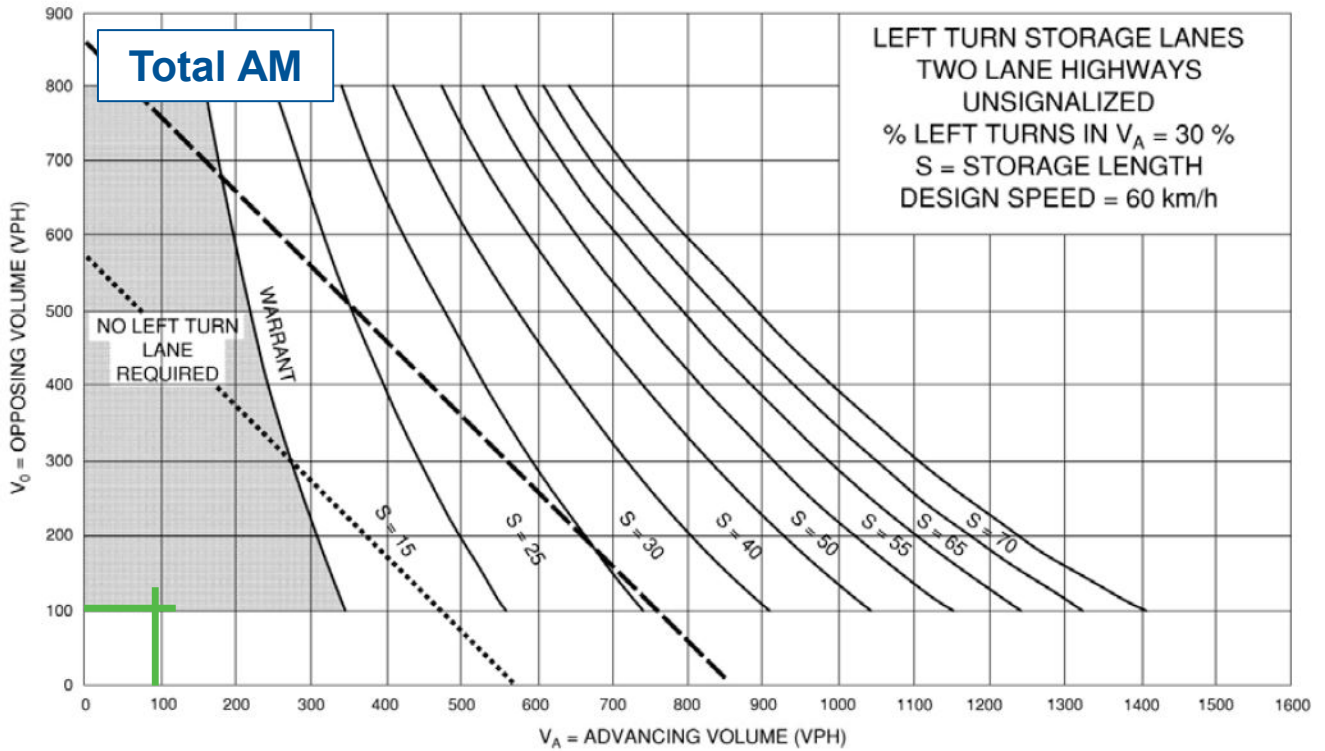
The *Ministry of Transportation Design Supplement for the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads*⁸ provides guidance on the assessment and/or need for auxiliary left-turn lanes.

Warrants have been calculated for southbound left-turns at Crawford Avenue and the site driveway. The warrant was calculated using the nomographs for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 60 km/h (10 km/h over the posted speed limit). Based on this criterion, a southbound left-turn lane is not warranted under total traffic conditions.

Figure 4.4 illustrates the warrant nomographs.

⁸ Ontario Ministry of Transportation, *MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads*, (Toronto: Queen's Printer for Ontario, 2020).





Southbound Left-Turn Lane Warrants Crawford Avenue & Site Driveway

5 Sensitivity Analysis

An alternative development concept is being considered with approximately 1,000 m² (10,764 sq. ft.) GFA of ground floor retail. In this alternative, the ground floor retail would replace approximately 21 units resulting in a total of 1,581 units.

This section reviews the traffic impacts on the study area road network for the alternative development concept.

5.1 Trip Generation

In addition to the LUC's outlined in **Section 3.2**, LUC 822 (Strip Retail Plaza, <40k) has been used to estimate the trips generated by the retail component. **Table 5.1** summarizes the trip generation for the alternative development concept.

TABLE 5.1: ALTERNATIVE CONCEPT TRIP GENERATION

Land Use	Number of Units	AM Peak Hour			PM Peak Hour				
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 222 - Multifamily Housing (High-Rise)	1,581	Eq ¹	95	272	367	Eq ²	269	165	434
LUC 822 - Strip Retail Plaza, <40k (1,000 sq. ft.)	10.76	2.36	15	10	25	6.59	36	35	71
Total Trip Generation			110	282	392		305	200	505

¹ $T = 0.22(X) + 18.85$

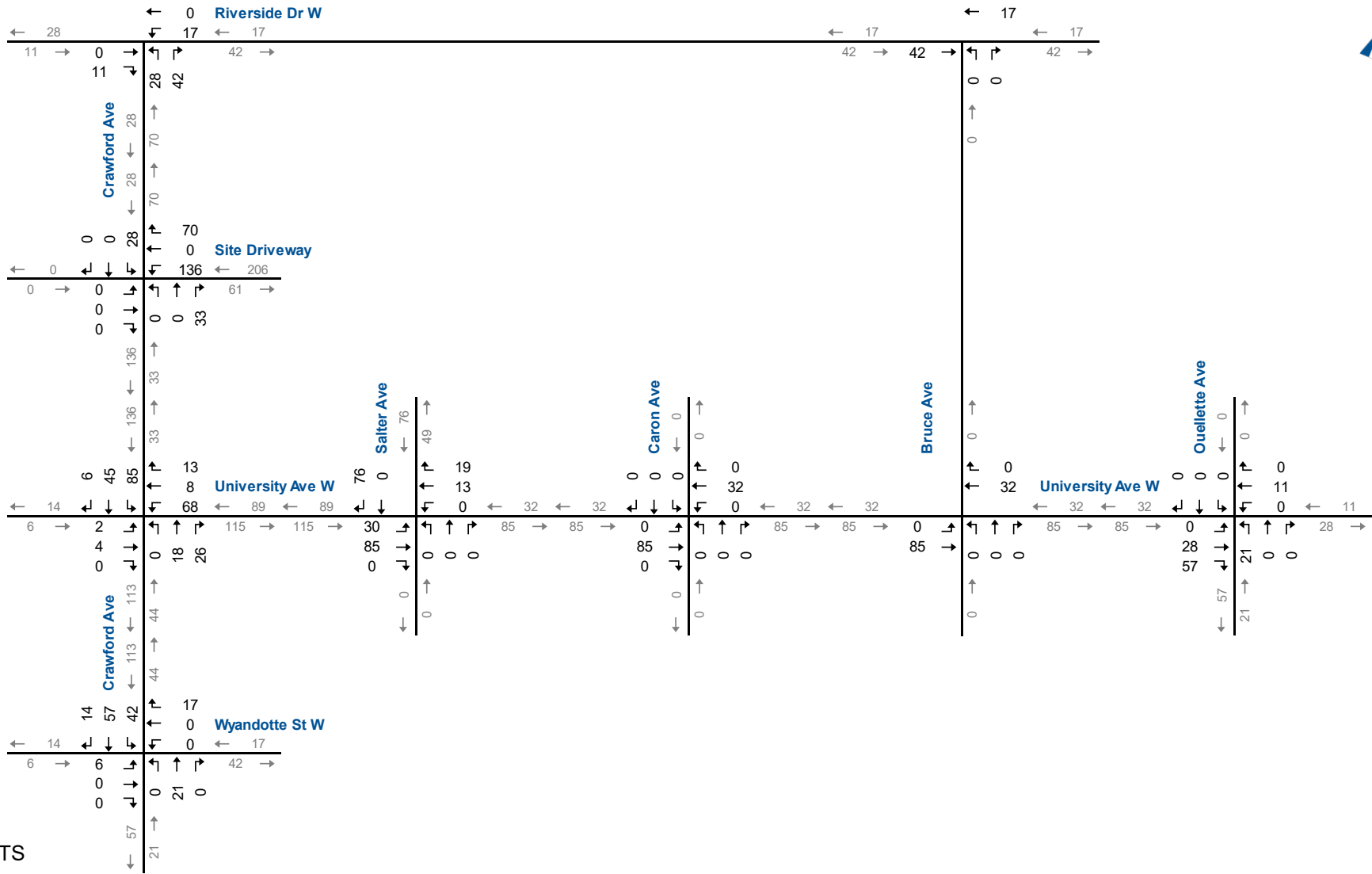
² $T = 0.26(X) + 23.12$

To remain conservative and given the location of the retail uses within the ground floor of residential buildings, pass-by and internal capture reductions have not been applied.

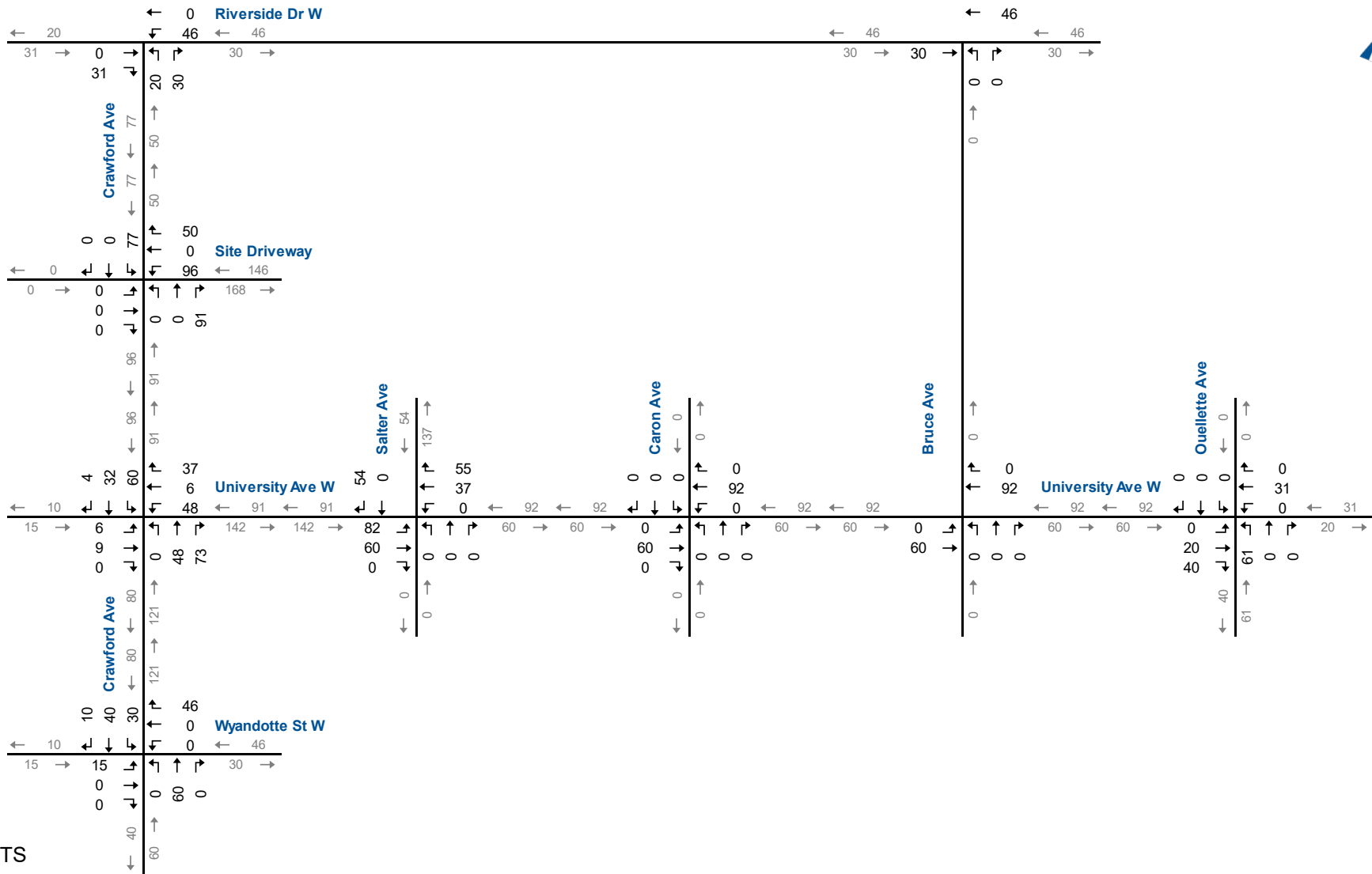
The site generated trips for the alternative development concept have been distributed to the study area network following the methodology outlined in **Section 3.3**.

Figure 5.1a and **Figure 5.1b** illustrate the site generated traffic volumes for the alternative development concept.





Site Generated Traffic Volumes Alternative Development Concept AM Peak Hour



Site Generated Traffic Volumes Alternative Development Concept PM Peak Hour

5.2 Total Traffic Forecasts

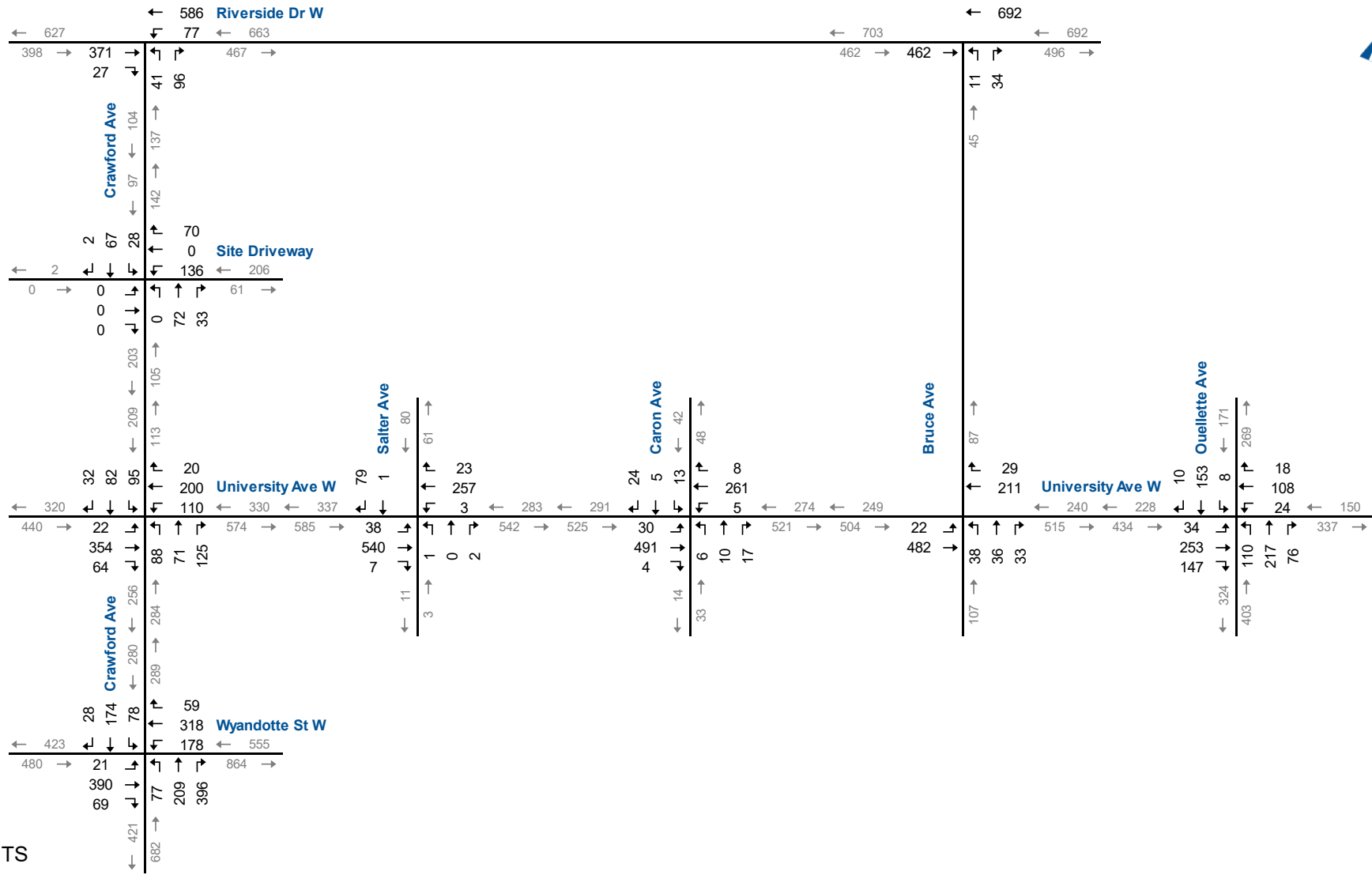
Figure 5.2a and **Figure 5.2b** illustrate the total traffic volumes for the alternative development concept, including background traffic (**Figure 4.2a** and **Figure 4.2b**) and site traffic volumes (**Figure 5.1a** and **Figure 5.1b**).

The total traffic volumes for the alternative development concept have been analyzed following the methodology outlined in **Section 4**.

Table 5.2a and **Table 5.2b** summarize the results of the operational analysis, indicating that the study area intersections are forecast to operate with similar levels of service as in **Section 4.4**.

Appendix G contains the supporting detailed Synchro 11 reports.

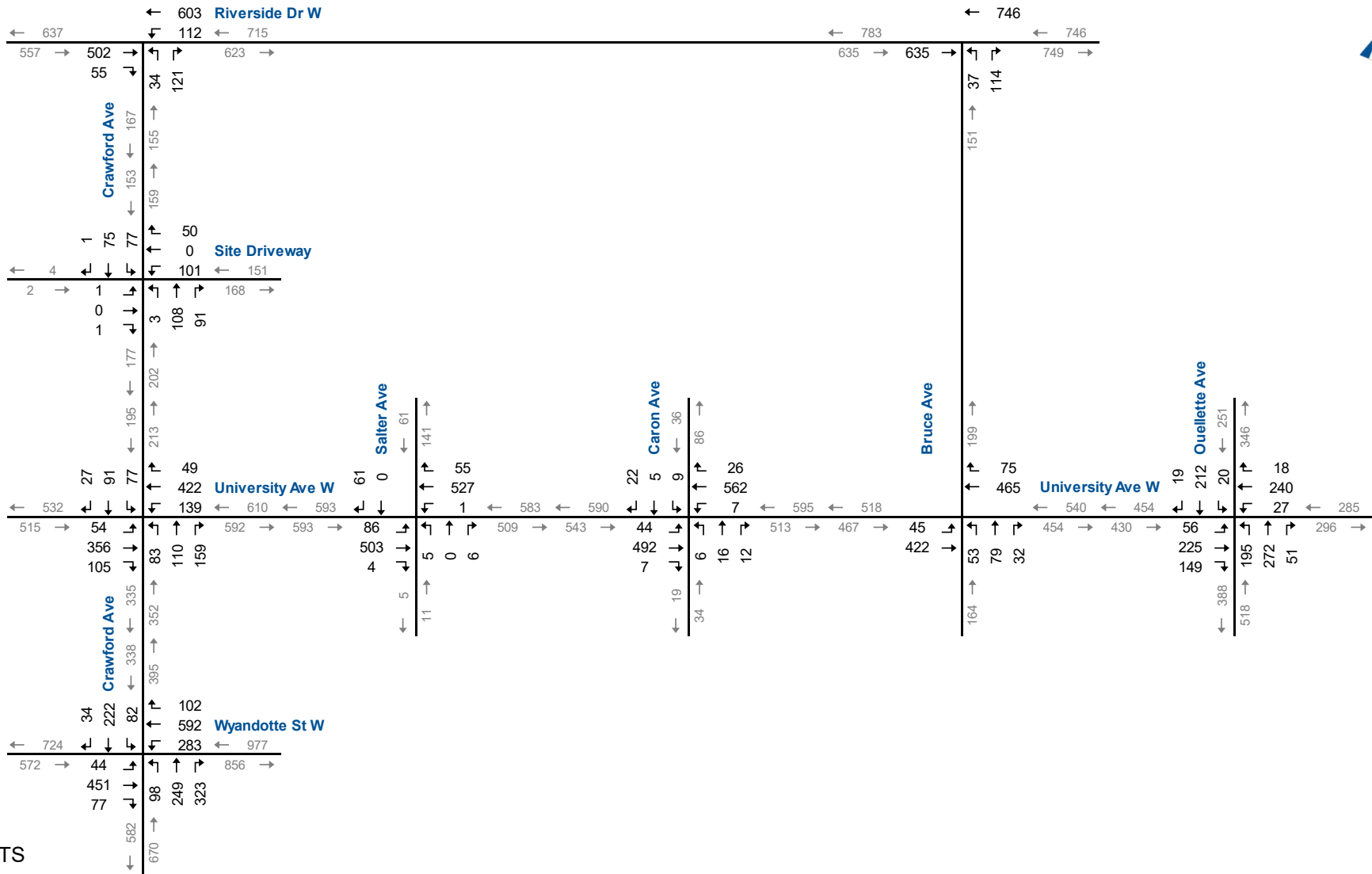




NTS



Total Traffic Volumes Alternative Development Concept AM Peak Hour



NTS



Total Traffic Volumes Alternative Development Concept PM Peak Hour

TABLE 5.2A: ALTERNATIVE DEVELOPMENT CONCEPT TOTAL TRAFFIC OPERATIONS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 4 0.30 31	> > >	A 4	< < <	B 10	B 16 0.43 21	> > >	B 16	< < <	< < <	< < <	< < <	< < <	A 9			
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 18 0.39 34	> > >	B 18	< < <	B 20	B 12 0.01 4	> > >	A 6 0.04 5	< < <	< < <	< < <	< < <	< < <	B 18			
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< < <	A 0 0.00 0	> > >	A 0	< < <	B 12	< < <	A 0 0.00 0	> > >	A 0	< < <	A 8 0.02 1	> > >	A 2			
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 10 0.05 5 35 30	B 15 > > >	B 15	B 16 0.39 26 25 -1	B 11 0.29 37 -> >	B 12	< < <	B 17 0.59 45 -> >	> > >	B 17	< < <	B 20 0.51 43 -> >	B 20	B 16			
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.04 1 25 24	A 0 > > >	A 0	A 9 0.00 0 25 25	A 0	A 0 > > >	A 0	< < <	C 16 0.01 0 -> >	> > >	C 16	< < <	B 11 0.12 3 -> >	B 11			
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.03 1 25 24	A 0 > > >	A 0	A 9 0.01 0 25 25	A 0	A 0 > > >	A 0	< < <	C 17 0.11 3 -> >	> > >	C 17	< < <	C 16 0.12 3 -> >	C 16			
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.03 2 30 28	A 4 > > >	A 4	A 4 0.19 26 -> >	A 4	< < <	C 24 0.43 22 -> >	> > >	C 24	< < <	< < <	< < <	< < <	A 7			
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 9 0.09 3 -> ->	C 20 > > >	B 19	< < <	B 17	B 12 0.22 20 15 -5	B 11 0.34 42 -> >	B 11 0.02 3 15 12	B 10 0.19 25 -> >	B 10 0.19 25 -> >	B 10	B 15					
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	C 22 0.12 8 20 12	C 24 > > >	C 24	C 23 0.60 29 20 -9	B 17	B 14 0.30 26 -> >	B 17	B 12 0.17 14 20 6	B 19 0.77 95 -> >	B 18	< < <	C 29 0.76 59 -> >	C 29	C 21			

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)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement



TABLE 5.2B: ALTERNATIVE DEVELOPMENT CONCEPT TOTAL TRAFFIC OPERATIONS – PM PEAK HOUR

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	Crawford Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	A 6 0.45 50	> > >	A 6	< < <	C 25 0.67 154	> > >	C 25	B 15 0.48 22	> > >	B 15	< < <	< < <	< < <	< < <	B 16		
	Bruce Avenue & Riverside Drive West	TCS	LOS Delay V/C Q	B 14 0.48 23	> > >	B 14	< < <	B 19 0.56 46	> > >	B 19	B 13 0.05 10	> > >	A 4 0.15 7	< < <	< < <	< < <	< < <	B 16		
	Crawford Avenue & Site Driveway	TWSC	LOS Delay V/C Q	< < <	B 11 0.00 0	> > >	B 11	< < <	B 14 0.29 9	> > >	B 14	< < <	A 7 0.00 0	> > >	A 0	< < <	A 8 0.06 2	> > >	A 4	
	Crawford Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	B 13 0.18 11 35 24	B > > > >	B 16	B 15 0.46 27 25 -2	B > > > >	B 13	< < < <	B 18 0.60 54 - -	> > > >	B 18	< < < <	C 21 0.40 40 - -	> > > >	C 21	B 16		
	Salter Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 10 0.11 3 25 22	A > > > >	A 1	A 8 0.00 0 25 25	A > > > >	A 0	< < < <	D 28 0.07 2 - -	> > > >	D 28	< < < <	B 14 0.13 4 - -	> > > >	B 14			
	Caron Avenue & University Avenue West	TWSC	LOS Delay V/C Q Stor. Avail.	A 9 0.05 2 25 23	A > > > >	A 1	A 9 0.01 0 25 25	A > > > >	A 0	< < < <	D 30 0.20 5 - -	> > > >	D 30	< < < <	C 24 0.16 4 - -	> > > >	C 24			
	Bruce Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	A 4 0.09 4 30 26	A > > > >	A 5	A 6 0.44 52 - -	A > > > >	A 6	< < < <	C 32 0.55 35 - -	> > > >	C 32	< < < <	< < < <	< < < <	< < < <	A 10		
	Ouellette Avenue & University Avenue West	TCS	LOS Delay V/C Q Stor. Avail.	B 20 0.24 15 - -	C > > > >	C 27	C 28 0.64 53 - -	C > > > >	C 28	B 15 0.43 39 15 -24	B 11 0.36 49 - -	> > > >	B 13	B 10 0.05 5 15 10	B 10 0.25 34 - -	> > > >	B 10	B 20		
	Crawford Avenue & Wyandotte Street West	TCS	LOS Delay V/C Q Stor. Avail.	C 29 0.28 14 20 6	C > > > >	C 30	D 37 0.83 60 20 -40	B > > > >	C 23	B 15 0.24 19 20 1	B 20 0.73 94 - -	> > > >	B 19	< < < <	C 32 0.82 86 - -	> > > >	C 32	C 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)

Stor. - Existing Storage (m)

Avail. - Available Storage (m)

TCS - Traffic Control Signal

TWSC - Two-Way Stop Control

</> - Shared with through movement

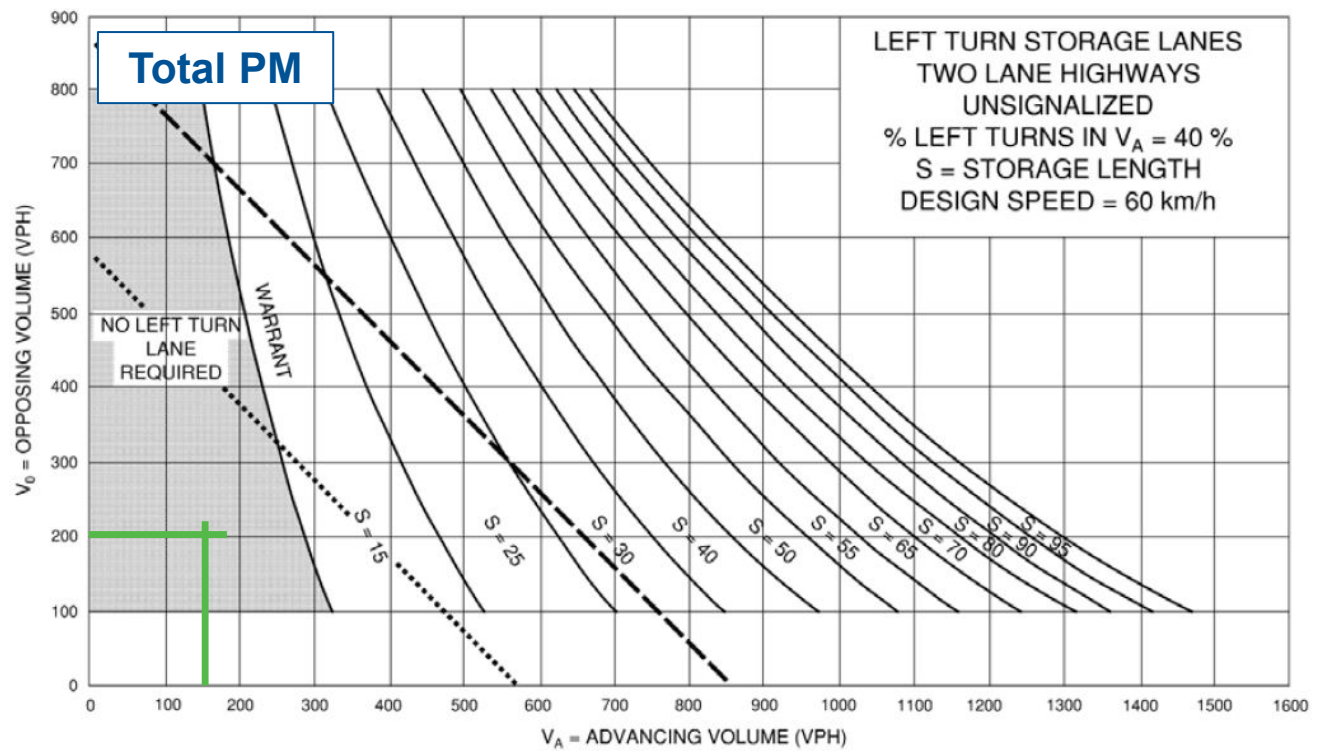
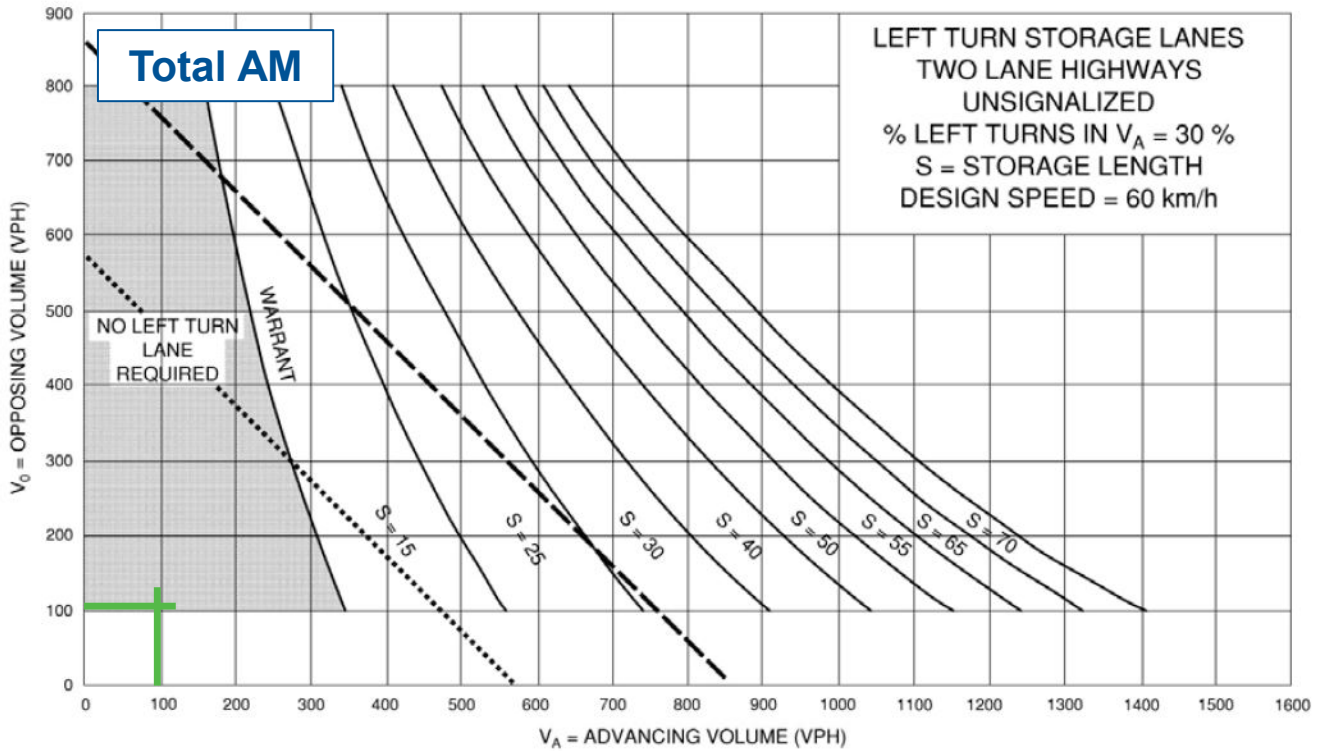


5.3 Left-Turn Lanes

Following the methodology outlined in **Section 4.5**, left-turn lane warrants have been reviewed for southbound left-turns at Crawford Avenue and the site driveway.

Figure 5.3 illustrates the warrant nomographs, indicating that a southbound left-turn lane is not warranted as in **Section 4.5**.





Southbound Left-Turn Lane Warrants Crawford Avenue & Site Driveway Alternative Development Concept

6 Parking

A total of 1,725 parking spaces is proposed for 1,602 units, resulting in an overall rate of 1.08 spaces per unit.

6.1 Zoning By-Law Requirements

6.1.1 City of Windsor

The *City of Windsor Zoning By-law 8600*⁹ indicates a requirement of 1.25 spaces per unit, including 15% for visitor parking spaces.

Therefore, a total of 2,003 parking spaces are required under *Zoning By-Law 8600*, including 301 visitor parking spaces. With 1,725 spaces proposed, this results in a potential shortfall of 278 spaces.

6.1.2 Other Municipalities

In recent years, some Canadian municipalities have reviewed and updated the vehicle parking requirements implemented under their respective Zoning By-Laws. These updates reflect locations and growth of sustainable transportation options, and their impacts on parking demand. Some notable examples are discussed as follows:

- ▶ **City of London:** The minimum parking requirements were recently updated under the in-force *Zoning By-Law Z.-1*¹⁰. Developments located in certain areas of the city including downtown, transit villages and rapid transit corridors, etc. are not subject to minimum parking requirements. In locations outside of these areas, the city reduced parking requirements for apartments from 1.25 to 0.50 spaces per unit.
- ▶ **City of Kitchener:** Under *Zoning By-Law 2019-051*¹¹, no parking minimums are required within the downtown. In mixed-use zones outside of the downtown, parking is required at 1.00 spaces per unit and in all other zones parking is required at 1.10 to 1.15 spaces per unit depending on the number of units proposed.
- ▶ **City of Edmonton:** No minimum parking requirements city-wide¹².

⁹ City of Windsor Zoning By-Law 8600, § Section 24.

¹⁰ City of London Zoning By-Law Z.-1, § Section 4.

¹¹ City of Kitchener Zoning By-Law 2019-051, § Section 5.

¹² City of Edmonton Zoning By-Law 12800, § Section 54.



- **City of Toronto:** Removal of minimum parking requirements for resident parking and commercial uses. Minimum parking requirements still apply for residential visitors¹³.

6.2 Forecast Parking Demand

6.2.1 ITE Rates

The *ITE Parking Generation Manual (6th Edition)*¹⁴ provides data on surveys across the USA and Canada of peak parking demand of different land uses.

The parking demand for the subject site has been estimated using average rates for LUC 222 Multifamily Housing – 2+ BR (High-Rise), which reflects a residence with at least one dwelling unit with two or more bedrooms. For a dense multi-use urban location/setting, a rate of 1.03 spaces per unit is provided resulting in a total demand of 1,650 spaces, including visitor demand. This results in 75 spaces fewer than the proposed parking supply of 1,725 spaces.

6.2.2 Trends in Other Municipalities

Observed parking utilization levels in apartment developments in other Ontario municipalities have shown that parking utilization is generally between 60% and 75%.

Parking surveys at high-rise apartment buildings in similar locations in Waterloo, Cambridge and Welland indicate parking demands between 0.73 and 0.92 spaces per unit, including visitor demand. **Table 6.1** summarizes the parking demand data.

TABLE 6.1: PARKING SURVEY SUMMARY

Location	Number of Units	Parking Supply	Survey Date	Maximum Demand
55 William Street East, Waterloo	142	147 spaces	June 2024	0.73 spaces/unit
150 & 180 Greenbriar Road, Cambridge	153	175 spaces	August 2023	0.92 spaces/unit
230 Denistoun Street, Welland	100	150 spaces	September 2023	0.92 spaces/unit

Appendix H contains the survey data.

¹³ City of Toronto Zoning By-Law 569-2013, § Section 200.

¹⁴ Institute of Transportation Engineers, *Parking Generation*, 6th ed., (Washington, DC: ITE, 2023).



6.3 Policy Framework

6.3.1 City Policies

City policies promote the use of non-auto travel modes and the implementation of TDM measures. These policies further promote the reduction of traditional parking supply requirements in major developments.

The *City of Windsor Active Transportation Master Plan (ATMP)*¹⁵ provides guidance on improvements to facilitate walking, cycling, and public transit use, and decrease the growth in private auto use. Objectives of the *ATMP* include developing safe and integrated active transportation facilities and improving the quality of active transportation. A key component of increasing the number of people pursuing alternative travel mode choice is through parking management.

The *ATMP* estimates a 10% increase in active transportation and transit trips by 2031 and 15% increase by 2041.

The City's *Official Plan (OP)*¹⁶ also encourages the use of alternative modes and outlines objectives including enacting TDM measures, establishing and maintaining a city-wide walking and cycling network, and facilitating transit use by encouraging higher density development surrounding existing transit corridors.

6.3.2 Provincial Planning Statement

The 2024 *Provincial Planning Statement (PPS)*¹⁷ contains several policies which promote efficient development and the optimization of land and infrastructure.

The 2024 PPS encourages compact and complete communities with density that supports alternative modes of transportation. A common theme within the statement is the prioritization of affordable housing and intensification that can be supported by public service facilities and municipal infrastructure.

The proposed reduction in parking supply associated with the development is an appropriate development standard to facilitate intensification and alternative mode supportive development. The proposed parking supply is part of the overall TDM strategy for the

¹⁵ City of Windsor, *Walk Wheel Windsor Active Transportation Master Plan*, May 2019.

¹⁶ City of Windsor, *Official Plan*, 2013.

¹⁷ Provincial Planning Statement, 2024.



proposed development to support the use of transit and active transportation infrastructure.

6.4 Transportation Demand Management

Transportation Demand Management (TDM) programs consider how people's choices of mode travel are affected by land use patterns, development design, parking availability, parking cost, and the relative cost, convenience, and availability of alternative modes of travel. Various TDM strategies are used to influence those factors so that alternatives to single occupant vehicle travel, such as transit or carpooling, are more competitive.

6.4.1 Walking

The pedestrian accessibility of a development is essential in helping to ensure that those that can walk, have access to accessible pedestrian connections. Proper pedestrian connections from the surrounding community to the site should be available to ensure safety and to enhance the experience of those that choose to walk.

Sidewalks are generally provided on both sides of all surrounding roadways, except for Salter Avenue which only has sidewalks along the west side of the roadway and the north side of Riverside Drive West between Crawford Avenue and Caron Avenue.

The City's *ATMP* indicates that sidewalks are proposed on the north side of Riverside Drive West between Crawford Avenue and Caron Avenue.

The site plan illustrates an internal network of sidewalks that provide connections to the broader sidewalk and multi-use path network. In addition, outdoor amenity areas and parkettes are located on-site.

The subject site is located approximately 300 metres (4-minute walk) from Downtown Windsor which provides access to retail, employment and entertainment uses. In addition, the University of Windsor is located approximately 1.6 metres from the subject site.

6.4.2 Cycling

In creating an environment that supports pedestrian and cycling activity, the public space must be accessible, safe and comfortable to encourage movement on the street and in the surrounding area(s).

Bike lanes are provided along University Avenue West (west of Bruce Avenue), Janette Avenue and Bruce Avenue. Bike lanes are also



periodically provided along Riverside Drive West as well as a multi-use trail that runs along the riverfront.

The *University Avenue West Class EA* recommends separated bike facilities along University Avenue West between McDougall Street and Huron Church Road. In addition, the City's *ATMP* proposes bike lanes along Crawford Avenue, Wyandotte Street West and Riverside Drive West east of Crawford Avenue.

The site plan indicates that there are secure bicycle storage areas in the underground parking levels. It is also recommended that bike parking be provided along the frontage of the buildings for short term parking needs such as visitors to the site.

The *City of Windsor Zoning By-Law 8600* requires 2 bicycle parking spaces for the first 19 vehicle parking spaces plus 1 bicycle parking space for each additional 20 vehicle parking spaces. A total of 1,725 vehicle parking spaces are provided on-site and therefore a minimum of 88 bicycle parking spaces are required.

6.4.3 Parking Management

To further encourage residents of the building to utilize sustainable travel modes, it is recommended that the parking spaces be sold/rented separately from the cost to rent/purchase a unit. This is more equitable and efficient, since occupants are not forced to pay for parking they do not need and allows consumers to adjust their parking supply to reflect their needs.

6.4.4 Transit

The availability of convenient and desirable transit options can reduce the number of personal automobile trips. As previously discussed, public transportation is provided via Windsor Transit Routes 1C and 115. These routes provide good connectivity to the broader transit network, and key destinations within the city.

These routes are easily accessible from the subject site as the existing sidewalks along both sides of Crawford Avenue and University Avenue West and the south side of Riverside Drive West, and crosswalks at the adjacent signalized intersections provide connections to nearby bus stops.

6.4.5 Education/Promotion and Incentives

The following measures could be implemented to inform residents of existing transit and active transportation opportunities and encourage their usage:



- ▶ Travel planning resources for residents (individualized marketing, active transportation maps, community resources);
- ▶ Wayfinding signage in the lobby or near main entrances; and
- ▶ Welcome package that outlines available transit and active transportation options.

The above TDM measures can assist in further mitigating the site's impact on the adjacent road network, promote a strong and vibrant economy, and create a livable community that has a balanced transportation network that accommodates all modes of transportation.

6.4.6 TDM Summary

The following TDM measures are proposed on-site or are located nearby:

- ▶ Internal walkways with connections to the broader sidewalk network;
- ▶ Secure bicycle parking within the parking garage; and
- ▶ Access to multiple bus transit routes that provide good connectivity to the broader network and access to major destinations.

The following TDM measures should be considered on-site:

- ▶ A total of 88 bicycle parking spaces be provided on-site to meet the Zoning By-law requirements, including short-term bike parking be along the frontage of the buildings for visitors to the site;
- ▶ Unbundled parking; and
- ▶ Consideration given to offering travel planning resources, transit, car share, and active transportation information in a welcome package to new tenants and posting in a central location to further support all alternative modes.



7 Conclusions and Recommendations

7.1 Conclusions

Based on the investigations carried out, it is concluded that:

Transportation Impact Study

- ▶ **Existing Traffic Conditions:** The study area intersections are operating with acceptable levels of service, except for the following movements:
 - University Avenue West and Ouellette Avenue: The northbound left-turn movement is operating with queues exceeding the available storage of 15 metres during the PM peak hour.
 - Crawford Avenue and Wyandotte Street West: The westbound left-turn movement is operating with queues exceeding the available storage of 20 metres during the AM and PM peak hours;

The northbound left-turn movement is operating with queues exceeding the available storage of 20 metres during the PM peak hour; and

The northbound shared through/right-turn movement is operating with LOS C and a v/c ratio greater than 0.85 during the AM peak hour.
- ▶ **Development Trip Generation:** The development is forecast to generate 371 and 440 trips during the AM and PM peak hours, respectively.
- ▶ **Background Traffic Conditions:** The study area intersections are forecast to operate with similar levels of service as under existing traffic conditions.
- ▶ **Total Traffic Conditions:** The study area intersections are forecast to operate with similar levels of service as under background traffic conditions, with the addition of the following movements:
 - University Avenue West and Crawford Avenue: The westbound left-turn movement is forecast to operate with 95th percentile queues exceeding the noted storage of 25 metres by two metres during the AM peak hour. It is noted that the left-turn lane extends to the east as a two-way centre left-turn lane and can accommodate these queues.



- University Avenue West and Ouellette Avenue: The northbound left-turn movement is forecast to operate with queues exceeding the available storage of 15 metres during the AM peak hour. It is noted that under existing and background traffic conditions, this movement is already operating with queues exceeding the available storage during the PM peak hour.
- ▶ **Site Access:** A southbound left-turn lane is not warranted at the Crawford Avenue site driveway under total traffic conditions.
- ▶ **Sensitivity Analysis:**
 - Trip Generation: The alternative development concept with ground floor retail is forecast to generate 392 AM peak hour trips and 505 PM peak hour trips.
 - Total Traffic Operations: The study area intersections are forecast to operate with similar levels of service as in the original development concept.
 - Site Access: A southbound left-turn lane is not warranted at the Crawford Avenue Site Driveway under total traffic conditions.

Parking Study

- ▶ **Zoning By-Law Requirements:**
 - City of Windsor: The development requires a total of 2,003 parking spaces (1.25 spaces per unit) to comply with the City's Zoning By-law. With a proposed supply of 1,725 (1.08 spaces per unit), the site has a potential shortfall of 278 spaces.
 - Other Municipalities: A review of Zoning By-Law parking requirements in the cities of London, Kitchener, Edmonton and Toronto indicate that significant reductions of on-site parking are becoming an increasingly common practice. Minimum parking requirements range from 0 to 1.15 spaces per unit for residential developments.
- ▶ **Forecast Parking Demand:**
 - ITE Rates: *The ITE Parking Generation Manual* indicates an average rate of 1.03 spaces per unit resulting in a total estimated demand of 1,650 spaces, including visitor parking demand.
 - Trends in Other Municipalities: Observed parking utilization levels in apartment developments in other Ontario



municipalities have shown that parking utilization is generally between 60% and 75%.

A review of residential developments in Waterloo, Cambridge and Welland indicates a maximum parking demand of between 0.73 and 0.92 spaces per unit, including visitor parking demand.

- ▶ **Policy Framework:** City and Provincial planning policies encourage intensification within built-up areas and support reduced parking standards as a means of encouraging intensification.
- ▶ **Transportation Demand Management:** The following TDM measures are proposed on-site or are located nearby:
 - Internal walkways with connections to the broader sidewalk network;
 - Secure bicycle parking within the parking garage; and
 - Access to multiple bus transit routes that provide good connectivity to the broader network and access to major destinations.

The following TDM measures should be considered on-site:

- A total of 88 bicycle parking spaces be provided on-site to meet the Zoning By-law requirements, including short-term bike parking be along the frontage of the buildings for visitors to the site;
- Unbundled parking; and
- Consideration given to offering travel planning resources, transit, car share, and active transportation information in a welcome package to new tenants and posting in a central location to further support all alternative modes.

7.2 Recommendations

Based on the findings of this study, it is recommended that the above TDM measures be considered, and the development be considered for approval as proposed.



Appendix A

Pre-Study Consultation



Maddison Murch

From: Abbs, James <jabbs@citywindsor.ca>
Sent: September 11, 2024 3:32 PM
To: Maddison Murch
Subject: RE: (240453) 825 Riverside Dr, Windsor TIS PS Pre-Study Consultation
Attachments: Devapps-near 825 Riverside.xlsx

As per your request.

The City also has an EOI out for the Caron Avenue parking Lot site adjacent to your site.
[City of Windsor :: Bid Details \(biddingo.com\)](#)

Jim

Jim Abbs
Planner III, Development



Planning & Development
350 City Hall Square West | Suite 320 | Windsor, ON | N9A 6S1
519-255-6543 ext.6317
www.citywindsor.ca

From: Maddison Murch <mmurch@ptsl.com>
Sent: Tuesday, September 10, 2024 3:19 PM
To: Abbs, James <jabbs@citywindsor.ca>
Cc: Matt Brouwer <mbrouwer@ptsl.com>
Subject: RE: (240453) 825 Riverside Dr, Windsor TIS PS Pre-Study Consultation

You don't often get email from mmurch@ptsl.com. [Learn why this is important](#)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Jim,

I'm following up regarding my email below. Please let me know if there are any proposed developments nearby.

Regards,

Maddison Murch, P.Eng.

Transportation Engineer



5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 519.896.3163 x205
m: 226.268.3697

Paradigm is operating on a 4-day workweek. Our offices are closed Fridays.

From: Maddison Murch
Sent: August 28, 2024 10:22 AM
To: jabbs@citywindsor.ca
Cc: Matt Brouwer <mbrouwer@ptsl.com>
Subject: FW: (240453) 825 Riverside Dr, Windsor TIS PS Pre-Study Consultation

Hi Jim,

We were provided with the following comments on our TIS scope of work from the transportation department. As Alex contacted you, I assume you are the planner on file.

We received the comments on the previous submission, thank you for sending those along. The only other item we need is to identify any nearby approved developments to include in our traffic forecasts. If there are any approved developments nearby, we would appreciate if you could send the TIS, if available, or site statistics.

Regards,

Maddison Murch, P.Eng.
Transportation Engineer



5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 519.896.3163 x205
m: 226.268.3697

Paradigm is operating on a 4-day workweek. Our offices are closed Fridays.

From: Mehrilou, Elara <EMehrilou@citywindsor.ca>
Sent: Monday, August 19, 2024 11:20 AM
To: Maddison Murch <mmurch@ptsl.com>
Cc: Matt Brouwer <mbrouwer@ptsl.com>
Subject: RE: (240453) 825 Riverside Dr, Windsor TIS PS Pre-Study Consultation

Good morning Maddison,

Please see TP responses in red.

Sincerely,

Elara Mehr

Ellie MehriLou MEng. | Transportation Planner I



OFFICE OF COMMISSIONER OF INFRASTRUCTURE SERVICES

Public Work Operation - Transportation Planning

350 City Hall Square West | Suit 320 | Windsor, ON | N9A 7K6

519-255-6100 ext. 6037

EMehrilou@citywindsor.ca

www.citywindsor.ca



From: Maddison Murch <mmurch@ptsl.com>

Sent: Wednesday, August 7, 2024 9:44 AM

To: MehriLou, Elara <EMehrilou@citywindsor.ca>

Cc: Matt Brouwer <mbrouwer@ptsl.com>

Subject: (240453) 825 Riverside Dr, Windsor TIS PS Pre-Study Consultation

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Ellie,

We have been retained to prepare the Transportation Impact Study (TIS) Update and Parking Study (PS) for the proposed development at 825 Riverside Drive in Windsor. We completed the original TIS in April 2020 (see attached). The updated development concept includes a total of 1,599 residential units within five apartment buildings and a townhouse block, and 1,813 parking spaces. Vehicle access remains the same with a driveway to Crawford Avenue and the extension of Salter Avenue. The updated concept plan is attached.

Based on the above information, we have prepared the following updated scope of work for your review/approval: **Please contact the involved planner to have a copy of the latest Transportation Planning comments on TIS in April 2020**

- Weekday AM and PM peak hours of adjacent road for analysis;
- Study area intersections (consistent with April 2020 TIS):
 - o Riverside Drive West & Crawford Avenue (signalized);
 - o Riverside Drive West & Bruce Avenue (signalized);
 - o University Avenue West & Crawford Avenue (signalized);
 - o University Avenue West & Salter Avenue (unsignalized);
 - o University Avenue West & Caron Avenue (unsignalized);
 - o University Avenue West and Bruce Avenue (signalized);
 - o University Avenue West and Ouellette Avenue (signalized);
 - o Crawford Avenue and Wyandotte Street West (signalized);
 - o Site Driveway & Crawford Avenue.

We will contact Mike Spagnuolo for relevant traffic counts and signal timings. Please confirm your policy on summer counts. **Please contact Dinesh Dhamotharan** ddhamotharan@citywindsor.ca

- Horizon Year: existing conditions and five years from date of TIS (2029), consistent with April 2020 TIS. **Please refer to the TIS scope of the study**
- Background Growth Rate: 1% compounded per annum, same as University EA and April 2020 TIS. **Please refer to the TIS scope of the study**
- Other Area developments: **please confirm and provide TIS reports, if available, or site statistics. Please coordinate with the involved planner to determine if there are any other known development proposals in the area.**
- Planned road improvements: **please confirm and provide available design drawings/relevant documents. Please refer to city website [Environmental Assessment Studies & Master Plans | City of Windsor \(citywindsor.ca\)](https://www.citywindsor.ca)**
- Trip Generation: ITE Trip Generation Manual 11th Edition. **Please provide all manual the referenced pages from ITE, TAC and other manuals need to be included in report , as well as Synchro/SimTraffic simulation files**
- Trip Distribution: Existing travel patterns. **Same as above**
- Sightline review for the northerly approach at Salter Avenue and University Avenue West. **Please contact your involved planner for scope of requested sightline review. Transportation planning will review and provide comments when receives the Sightline review.**
- Transportation Demand Management
- Parking study: **Transportation planning will review and provide comments when receives the parking study.**
 - o Zoning By-Law Requirement: 1.25 spaces per unit
 - o ITE Parking Generation Manual 6th Edition
 - o Zoning By-Law requirements in other municipalities
 - o Observed parking utilization and demand in other municipalities.

Please let us know if you have any comments or questions.

Regards,

Maddison Murch, P.Eng.

Transportation Engineer



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

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Paradigm is operating on a 4-day workweek. Our offices are closed Fridays.

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Appendix B

Existing Traffic Data





Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Crawford Ave & CBC Driveway
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	Driveway Eastbound						CBC Driveway Westbound						Crawford Avenue Northbound						Crawford 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	9	0	0	0	0	9	0	4	0	0	0	4	14
7:15 AM	0	0	1	0	0	1	0	0	1	0	0	1	0	8	0	0	0	0	8	0	6	1	0	0	7	17
7:30 AM	0	0	1	0	1	1	0	0	0	0	0	0	1	8	2	2	0	13	0	4	0	0	0	4	18	
7:45 AM	1	0	0	0	2	1	0	0	0	0	2	0	1	11	0	0	0	12	0	22	0	0	0	22	35	
Hourly Total	2	0	2	0	3	4	0	0	1	0	2	1	2	36	2	2	0	42	0	36	1	0	0	37	84	
8:00 AM	0	0	0	0	0	0	0	0	1	0	2	1	0	10	1	0	0	11	1	12	0	0	0	13	25	
8:15 AM	0	0	0	0	3	0	0	0	1	0	1	1	0	20	0	0	1	20	0	14	0	0	1	14	35	
8:30 AM	0	0	0	0	3	0	0	0	1	0	1	1	0	12	1	1	0	14	0	15	0	0	1	15	30	
8:45 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	17	0	0	1	17	1	15	0	0	0	16	33	
Hourly Total	0	0	0	0	9	0	0	0	3	0	4	3	0	59	2	1	2	62	2	56	0	0	2	58	123	
9:00 AM	0	0	0	0	2	0	2	0	0	0	1	2	0	12	0	0	0	12	1	14	2	0	0	17	31	
9:15 AM	0	0	2	0	9	2	0	0	0	0	0	0	1	9	1	0	0	11	1	17	0	0	0	18	31	
9:30 AM	0	0	0	0	3	0	1	0	1	0	0	2	0	14	1	0	0	15	0	9	0	0	0	9	26	
9:45 AM	1	0	0	0	7	1	1	0	0	0	2	1	0	12	1	0	0	13	4	17	0	0	0	21	36	
Hourly Total	1	0	2	0	21	3	4	0	1	0	3	5	1	47	3	0	0	51	6	57	2	0	0	65	124	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11:30 AM	0	0	0	0	4	0	0	0	0	0	0	0	1	4	0	0	0	5	1	14	0	0	1	15	20	
11:45 AM	0	0	1	0	2	1	1	0	0	0	0	1	1	17	1	0	0	19	2	11	0	0	0	13	34	
Hourly Total	0	0	1	0	6	1	1	0	0	0	0	1	2	21	1	0	0	24	3	25	0	0	1	28	54	
12:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	1	19	2	0	1	22	0	13	0	0	0	13	35	
12:15 PM	0	0	0	0	2	0	1	0	1	0	1	2	1	21	0	1	0	23	0	13	0	0	0	13	38	
12:30 PM	1	0	0	0	1	1	2	0	0	0	2	2	0	14	0	1	0	15	0	13	0	0	1	13	31	
12:45 PM	0	0	0	0	3	0	0	0	2	0	1	2	2	12	0	0	0	14	1	12	0	0	1	13	29	
Hourly Total	1	0	0	0	9	1	3	0	3	0	4	6	4	66	2	2	1	74	1	51	0	0	2	52	133	
1:00 PM	2	0	0	0	2	2	0	0	2	0	5	2	0	22	0	0	1	22	1	11	0	0	0	12	38	
1:15 PM	0	0	0	0	1	0	1	0	0	0	3	1	0	12	1	0	0	13	0	16	0	0	0	16	30	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hourly Total	2	0	0	0	3	2	1	0	2	0	8	3	0	34	1	0	1	35	1	27	0	0	0	28	68	
3:00 PM	0	0	0	0	1	0	1	0	1	0	2	2	0	32	1	0	1	33	0	12	0	0	0	12	47	
3:15 PM	0	0	0	0	3	0	0	0	2	0	1	2	3	18	2	0	0	23	1	13	0	0	1	14	39	
3:30 PM	0	0	1	0	6	1	0	0	0	0	1	0	0	21	0	1	0	22	1	18	1	0	0	20	43	
3:45 PM	1	0	0	0	0	1	0	0	1	0	0	1	0	21	0	1	0	22	0	16	0	0	0	16	40	
Hourly Total	1	0	1	0	10	2	1	0	4	0	4	5	3	92	3	2	1	100	2	59	1	0	1	62	169	
4:00 PM	1	0	0	0	2	1	0	0	1	0	1	1	0	25	0	0	0	25	0	11	0	0	1	11	38	
4:15 PM	0	0	0	0	1	0	1	0	1	0	2	2	0	15	0	0	0	15	0	20	0	0	2	20	37	

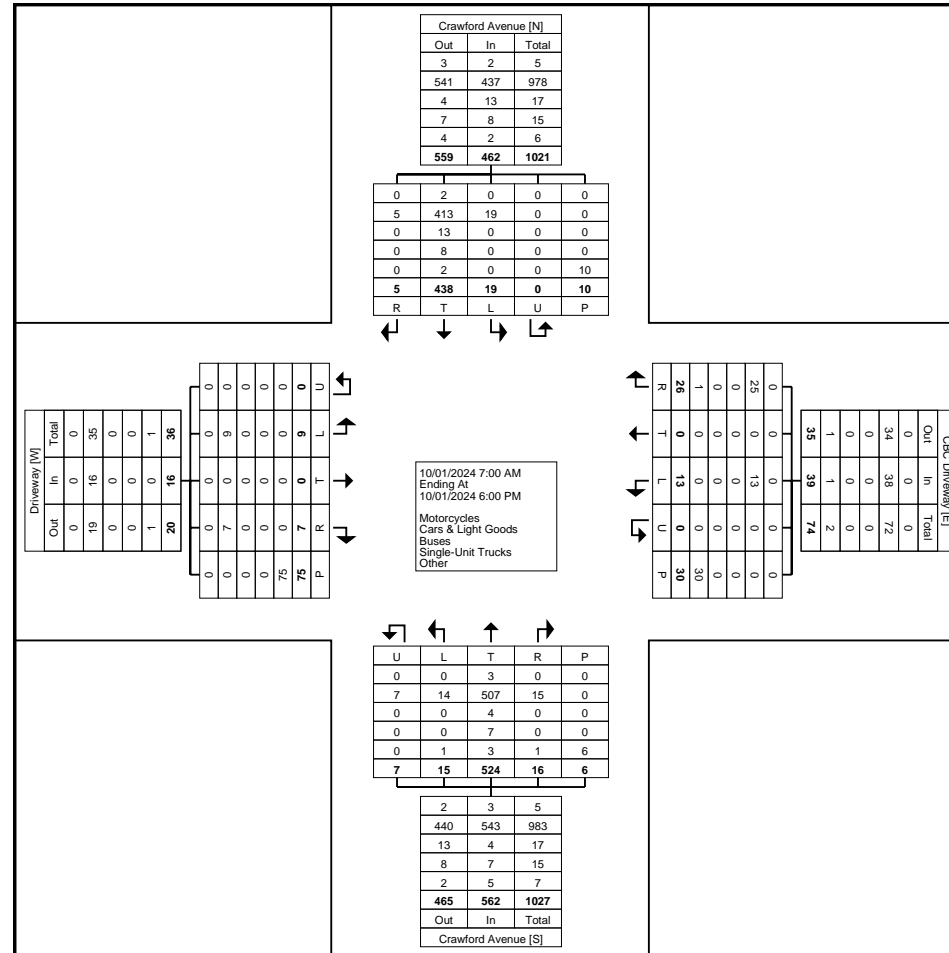
4:30 PM	1	0	0	0	4	1	0	0	1	0	0	1	1	20	1	0	0	22	0	20	1	0	0	21	45
4:45 PM	0	0	1	0	4	1	0	0	1	0	1	1	0	22	1	0	0	23	2	13	0	0	0	15	40
Hourly Total	2	0	1	0	11	3	1	0	4	0	4	5	1	82	2	0	0	85	2	64	1	0	3	67	160
5:00 PM	0	0	0	0	3	0	0	0	3	0	1	3	0	25	0	0	1	25	0	16	0	0	1	16	44
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	22	0	0	0	22	0	14	0	0	0	14	37
5:30 PM	0	0	0	0	0	0	2	0	1	0	0	3	0	27	0	0	0	27	0	18	0	0	0	18	48
5:45 PM	0	0	0	0	0	0	0	0	3	0	0	3	2	13	0	0	0	15	2	15	0	0	0	17	35
Hourly Total	0	0	0	0	3	0	2	0	8	0	1	10	2	87	0	0	1	89	2	63	0	0	1	65	164
Grand Total	9	0	7	0	75	16	13	0	26	0	30	39	15	524	16	7	6	562	19	438	5	0	10	462	1079
Approach %	56.3	0.0	43.8	0.0	-	-	33.3	0.0	66.7	0.0	-	-	2.7	93.2	2.8	1.2	-	-	4.1	94.8	1.1	0.0	-	-	-
Total %	0.8	0.0	0.6	0.0	-	1.5	1.2	0.0	2.4	0.0	-	3.6	1.4	48.6	1.5	0.6	-	52.1	1.8	40.6	0.5	0.0	-	42.8	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	3	0	0	-	3	0	2	0	0	-	2	5
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.6	0.0	0.0	-	0.5	0.0	0.5	0.0	-	-	0.4	0.5
Cars & Light Goods	9	0	7	0	-	16	13	0	25	0	-	38	14	507	15	7	-	543	19	413	5	0	-	437	1034
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	100.0	-	96.2	-	-	97.4	93.3	96.8	93.8	100.0	-	96.6	100.0	94.3	100.0	-	-	94.6	95.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	0	13	0	0	-	13	17
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.8	0.0	0.0	-	0.7	0.0	3.0	0.0	-	-	2.8	1.6
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	7	0	0	-	7	0	8	0	0	-	8	15
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	1.3	0.0	0.0	-	1.2	0.0	1.8	0.0	-	-	1.7	1.4
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	2	0	0	-	2	0	1	0	0	-	1	4
% Articulated Trucks	0.0	-	0.0	-	-	0.0	0.0	-	3.8	-	-	2.6	0.0	0.4	0.0	0.0	-	0.4	0.0	0.2	0.0	-	-	0.2	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	1	1	1	0	-	3	0	1	0	0	-	1	4
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	6.7	0.2	6.3	0.0	-	0.5	0.0	0.2	0.0	-	-	0.2	0.4
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	2.7	-	-	-	-	-	10.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	73	-	-	-	-	-	27	-	-	-	-	-	6	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	97.3	-	-	-	-	-	90.0	-	-	-	-	-	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: Crawford Ave & CBC Driveway
Site Code: 240453
Start Date: 10/01/2024
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: Crawford Ave & CBC Driveway
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:15 AM)

Start Time	Driveway Eastbound						CBC Driveway Westbound						Crawford Avenue Northbound						Crawford 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	
8:15 AM	0	0	0	0	3	0	0	0	1	0	1	1	0	20	0	0	1	20	0	14	0	0	1	14	35
8:30 AM	0	0	0	0	3	0	0	0	1	0	1	1	0	12	1	1	0	14	0	15	0	0	1	15	30
8:45 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	17	0	0	1	17	1	15	0	0	0	16	33
9:00 AM	0	0	0	0	2	0	2	0	0	0	1	2	0	12	0	0	0	12	1	14	2	0	0	17	31
Total	0	0	0	0	11	0	2	0	2	0	3	4	0	61	1	1	2	63	2	58	2	0	2	62	129
Approach %	0.0	0.0	0.0	0.0	-	-	50.0	0.0	50.0	0.0	-	-	0.0	96.8	1.6	1.6	-	-	3.2	93.5	3.2	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	1.6	0.0	1.6	0.0	-	3.1	0.0	47.3	0.8	0.8	-	48.8	1.6	45.0	1.6	0.0	-	48.1	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.250	0.000	0.500	0.000	-	0.500	0.000	0.763	0.250	0.250	-	0.788	0.500	0.967	0.250	0.000	-	0.912	0.921
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	0	0	0	0	-	0	2	0	2	0	-	4	0	58	1	1	-	60	2	52	2	0	-	56	120
% Cars & Light Goods	-	-	-	-	-	-	100.0	-	100.0	-	-	100.0	-	95.1	100.0	100.0	-	95.2	100.0	89.7	100.0	-	-	90.3	93.0
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	3	0	0	-	3	0	5	0	0	-	5	8
% Buses	-	-	-	-	-	-	0.0	-	0.0	-	-	0.0	-	4.9	0.0	0.0	-	4.8	0.0	8.6	0.0	-	-	8.1	6.2
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
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	1.7	0.0	-	-	1.6	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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Crawford Ave & CBC Driveway
Site Code: 240453
Start Date: 10/01/2024
Page No: 6

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Driveway Eastbound						CBC Driveway Westbound						Crawford Avenue Northbound						Crawford 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	0	0	1	0	2	1	1	0	0	0	0	1	1	17	1	0	0	19	2	11	0	0	0	13	34
12:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	1	19	2	0	1	22	0	13	0	0	0	13	35
12:15 PM	0	0	0	0	2	0	1	0	1	0	1	2	1	21	0	1	0	23	0	13	0	0	0	13	38
12:30 PM	1	0	0	0	1	1	2	0	0	0	2	2	0	14	0	1	0	15	0	13	0	0	1	13	31
Total	1	0	1	0	8	2	4	0	1	0	3	5	3	71	3	2	1	79	2	50	0	0	1	52	138
Approach %	50.0	0.0	50.0	0.0	-	-	80.0	0.0	20.0	0.0	-	-	3.8	89.9	3.8	2.5	-	-	3.8	96.2	0.0	0.0	-	-	-
Total %	0.7	0.0	0.7	0.0	-	1.4	2.9	0.0	0.7	0.0	-	3.6	2.2	51.4	2.2	1.4	-	57.2	1.4	36.2	0.0	0.0	-	-	37.7
PHF	0.250	0.000	0.250	0.000	-	0.500	0.500	0.000	0.250	0.000	-	0.625	0.750	0.845	0.375	0.500	-	0.859	0.250	0.962	0.000	0.000	-	1.000	0.908
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	2.0	-	-	-	1.9	0.7
Cars & Light Goods	1	0	1	0	-	2	4	0	1	0	-	5	3	71	2	2	-	78	2	49	0	0	-	51	136
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	100.0	100.0	66.7	100.0	-	98.7	100.0	98.0	-	-	-	98.1	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
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
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	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	33.3	0.0	-	1.3	0.0	0.0	-	-	-	0.0	0.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	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@ptsl.com

Count Name: Crawford Ave & CBC Driveway
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (3:00 PM)

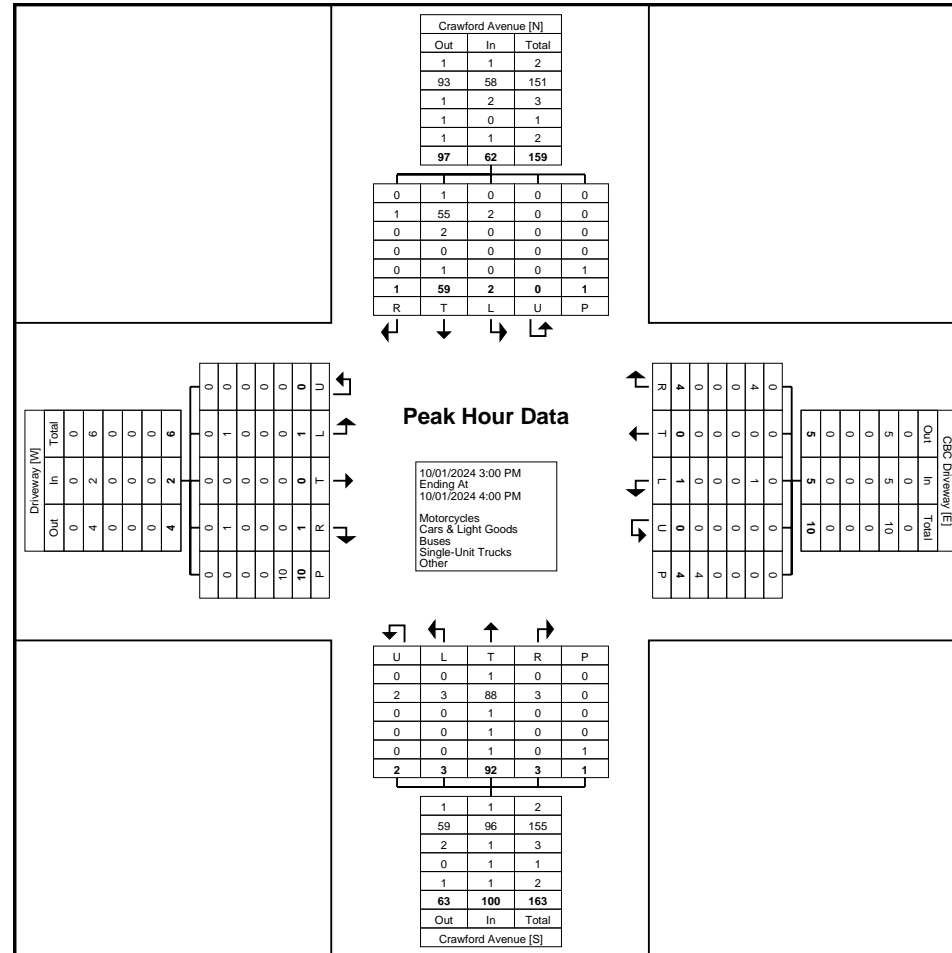
Start Time	Driveway Eastbound						CBC Driveway Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	0	0	0	0	1	0	1	0	1	0	2	2	0	32	1	0	1	33	0	12	0	0	0	12	47
3:15 PM	0	0	0	0	3	0	0	0	2	0	1	2	3	18	2	0	0	23	1	13	0	0	1	14	39
3:30 PM	0	0	1	0	6	1	0	0	0	0	1	0	0	21	0	1	0	22	1	18	1	0	0	20	43
3:45 PM	1	0	0	0	0	1	0	0	1	0	0	1	0	21	0	1	0	22	0	16	0	0	0	16	40
Total	1	0	1	0	10	2	1	0	4	0	4	5	3	92	3	2	1	100	2	59	1	0	1	62	169
Approach %	50.0	0.0	50.0	0.0	-	-	20.0	0.0	80.0	0.0	-	-	3.0	92.0	3.0	2.0	-	-	3.2	95.2	1.6	0.0	-	-	-
Total %	0.6	0.0	0.6	0.0	-	1.2	0.6	0.0	2.4	0.0	-	3.0	1.8	54.4	1.8	1.2	-	59.2	1.2	34.9	0.6	0.0	-	36.7	-
PHF	0.250	0.000	0.250	0.000	-	0.500	0.250	0.000	0.500	0.000	-	0.625	0.250	0.719	0.375	0.500	-	0.758	0.500	0.819	0.250	0.000	-	0.775	0.899
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	1.1	0.0	0.0	-	1.0	0.0	1.7	0.0	-	-	1.6	1.2
Cars & Light Goods	1	0	1	0	-	2	1	0	4	0	-	5	3	88	3	2	-	96	2	55	1	0	-	58	161
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	100.0	95.7	100.0	100.0	-	96.0	100.0	93.2	100.0	-	-	93.5	95.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	2	0	0	-	2	3
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	1.1	0.0	0.0	-	1.0	0.0	3.4	0.0	-	-	3.2	1.8
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	1.1	0.0	0.0	-	1.0	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
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	1.1	0.0	0.0	-	1.0	0.0	1.7	0.0	-	-	1.6	1.2
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	10.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	9	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	90.0	-	-	-	-	-	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: Crawford Ave & CBC Driveway
Site Code: 240453
Start Date: 10/01/2024
Page No: 9



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: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	Wyandotte Street Eastbound						Wyandotte Street Westbound						Crawford Avenue Northbound						Crawford 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	37	9	0	1	47	18	36	1	0	0	55	4	12	32	0	2	48	2	5	0	0	1	7	157
7:15 AM	0	48	16	0	0	64	25	43	3	0	4	71	8	21	47	0	8	76	2	14	2	0	1	18	229
7:30 AM	2	59	7	0	2	68	42	52	5	0	0	99	14	26	60	0	6	100	5	21	3	0	1	29	296
7:45 AM	2	87	14	0	2	103	51	64	4	0	0	119	12	39	74	0	4	125	3	25	3	0	5	31	378
Hourly Total	5	231	46	0	5	282	136	195	13	0	4	344	38	98	213	0	20	349	12	65	8	0	8	85	1060
8:00 AM	3	62	16	0	0	81	42	65	4	0	2	111	22	41	94	0	5	157	1	16	1	0	7	18	367
8:15 AM	3	93	22	0	1	118	42	74	12	0	6	128	19	36	112	0	4	167	9	21	5	0	12	35	448
8:30 AM	2	108	7	0	8	117	31	81	10	0	0	122	15	45	74	0	8	134	13	29	2	0	12	44	417
8:45 AM	6	104	20	1	4	131	53	80	9	0	1	142	17	45	93	0	9	155	4	22	5	0	8	31	459
Hourly Total	14	367	65	1	13	447	168	300	35	0	9	503	73	167	373	0	26	613	27	88	13	0	39	128	1691
9:00 AM	6	61	14	0	5	81	44	81	7	0	2	132	18	30	61	0	13	109	2	27	3	0	11	32	354
9:15 AM	3	86	21	0	6	110	44	83	4	0	1	131	14	33	59	0	10	106	5	22	3	0	9	30	377
9:30 AM	4	63	12	0	3	79	40	97	10	0	1	147	24	27	62	0	10	113	1	24	3	0	1	28	367
9:45 AM	6	90	21	0	8	117	39	80	4	0	1	123	13	33	48	0	4	94	4	20	5	0	4	29	363
Hourly Total	19	300	68	0	22	387	167	341	25	0	5	533	69	123	230	0	37	422	12	93	14	0	25	119	1461
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	4	86	20	0	3	110	47	103	5	0	5	155	14	15	46	0	17	75	10	27	6	0	5	43	383
11:45 AM	6	109	20	0	12	135	45	102	7	0	1	154	16	28	66	0	20	110	5	22	4	0	7	31	430
Hourly Total	10	195	40	0	15	245	92	205	12	0	6	309	30	43	112	0	37	185	15	49	10	0	12	74	813
12:00 PM	6	94	32	0	10	132	46	100	3	0	1	149	21	27	61	0	8	109	6	26	6	0	7	38	428
12:15 PM	5	77	16	0	7	98	38	103	12	0	4	153	19	25	60	0	9	104	5	23	5	0	12	33	388
12:30 PM	5	78	13	0	8	96	46	113	7	0	2	166	35	31	89	0	9	155	11	38	1	0	8	50	467
12:45 PM	4	91	15	1	5	111	57	133	13	1	0	204	15	15	85	0	13	115	6	33	9	0	6	48	478
Hourly Total	20	340	76	1	30	437	187	449	35	1	7	672	90	98	295	0	39	483	28	120	21	0	33	169	1761
1:00 PM	5	121	26	0	9	152	53	100	10	1	0	164	16	28	66	0	14	110	14	25	4	0	11	43	469
1:15 PM	7	95	19	0	6	121	50	98	7	0	0	155	17	26	78	0	12	121	6	28	2	0	5	36	433
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	12	216	45	0	15	273	103	198	17	1	0	319	33	54	144	0	26	231	20	53	6	0	16	79	902
3:00 PM	3	98	16	0	13	117	67	105	9	0	5	181	16	32	61	0	10	109	5	34	0	0	17	39	446
3:15 PM	3	111	19	0	4	133	73	107	10	0	6	190	17	33	69	0	9	119	10	31	4	0	5	45	487
3:30 PM	5	105	21	0	3	131	64	131	16	0	3	211	25	35	77	0	15	137	7	37	4	0	5	48	527
3:45 PM	6	132	21	0	9	159	53	123	10	0	3	186	19	30	56	0	14	105	11	35	1	0	3	47	497
Hourly Total	17	446	77	0	29	540	257	466	45	0	17	768	77	130	263	0	48	470	33	137	9	0	30	179	1957
4:00 PM	11	121	27	0	10	159	68	135	8	0	0	211	22	26	59	0	17	107	8	39	0	0	6	47	524
4:15 PM	5	104	22	0	2	131	64	126	7	0	0	197	24	29	73	0	18	126	5	40	2	0	13	47	501

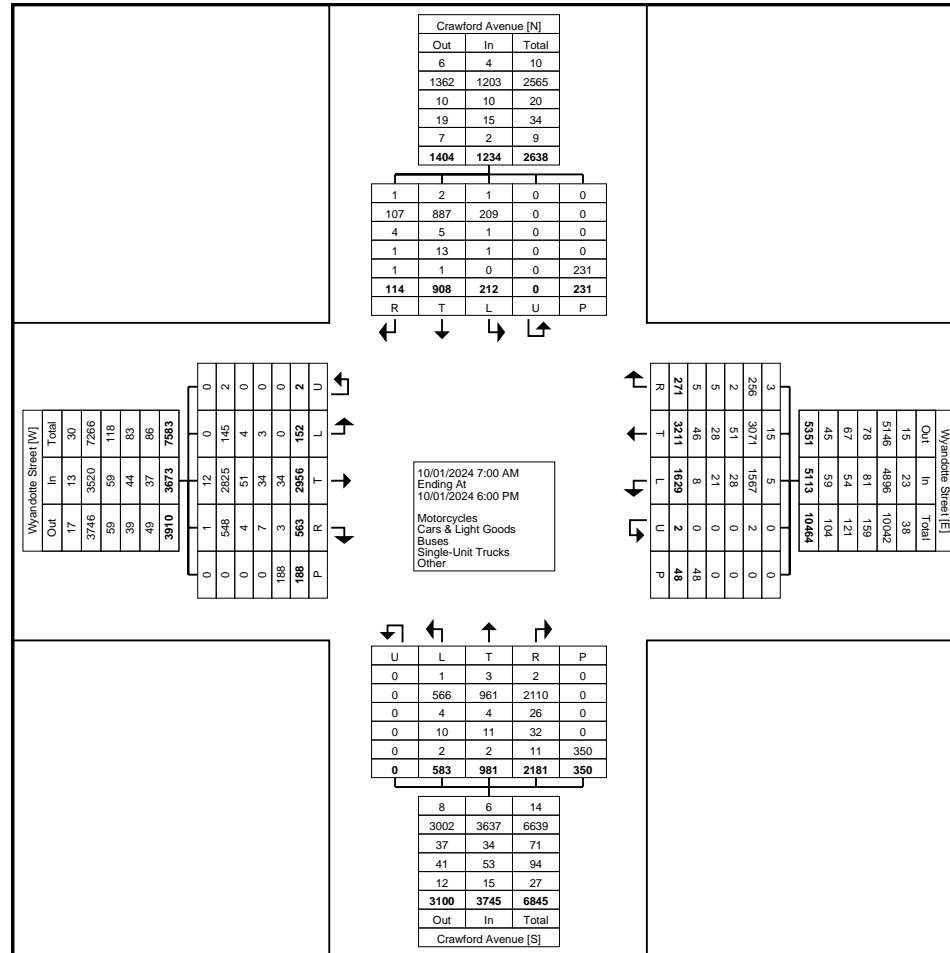
4:30 PM	6	110	12	0	14	128	68	116	16	0	0	200	15	30	63	0	13	108	8	51	6	0	11	65	501
4:45 PM	4	123	23	0	19	150	70	148	14	0	0	232	22	37	64	0	19	123	6	33	3	0	19	42	547
Hourly Total	26	458	84	0	45	568	270	525	45	0	0	840	83	122	259	0	67	464	27	163	11	0	49	201	2073
5:00 PM	10	110	16	0	6	136	71	145	7	0	0	223	24	39	90	0	21	153	14	38	5	0	9	57	569
5:15 PM	4	85	16	0	1	105	67	129	10	0	0	206	22	38	73	0	9	133	6	39	8	0	3	53	497
5:30 PM	9	107	18	0	1	134	59	136	10	0	0	205	24	36	77	0	11	137	14	41	7	0	3	62	538
5:45 PM	6	101	12	0	6	119	52	122	17	0	0	191	20	33	52	0	9	105	4	22	2	0	4	28	443
Hourly Total	29	403	62	0	14	494	249	532	44	0	0	825	90	146	292	0	50	528	38	140	22	0	19	200	2047
Grand Total	152	2956	563	2	188	3673	1629	3211	271	2	48	5113	583	981	2181	0	350	3745	212	908	114	0	231	1234	13765
Approach %	4.1	80.5	15.3	0.1	-	-	31.9	62.8	5.3	0.0	-	-	15.6	26.2	58.2	0.0	-	-	17.2	73.6	9.2	0.0	-	-	-
Total %	1.1	21.5	4.1	0.0	-	26.7	11.8	23.3	2.0	0.0	-	37.1	4.2	7.1	15.8	0.0	-	27.2	1.5	6.6	0.8	0.0	-	9.0	-
Motorcycles	0	12	1	0	-	13	5	15	3	0	-	23	1	3	2	0	-	6	1	2	1	0	-	4	46
% Motorcycles	0.0	0.4	0.2	0.0	-	0.4	0.3	0.5	1.1	0.0	-	0.4	0.2	0.3	0.1	-	-	0.2	0.5	0.2	0.9	-	-	0.3	0.3
Cars & Light Goods	145	2825	548	2	-	3520	1567	3071	256	2	-	4896	566	961	2110	0	-	3637	209	887	107	0	-	1203	13256
% Cars & Light Goods	95.4	95.6	97.3	100.0	-	95.8	96.2	95.6	94.5	100.0	-	95.8	97.1	98.0	96.7	-	-	97.1	98.6	97.7	93.9	-	-	97.5	96.3
Buses	4	51	4	0	-	59	28	51	2	0	-	81	4	4	26	0	-	34	1	5	4	0	-	10	184
% Buses	2.6	1.7	0.7	0.0	-	1.6	1.7	1.6	0.7	0.0	-	1.6	0.7	0.4	1.2	-	-	0.9	0.5	0.6	3.5	-	-	0.8	1.3
Single-Unit Trucks	3	34	7	0	-	44	21	28	5	0	-	54	10	11	32	0	-	53	1	13	1	0	-	15	166
% Single-Unit Trucks	2.0	1.2	1.2	0.0	-	1.2	1.3	0.9	1.8	0.0	-	1.1	1.7	1.1	1.5	-	-	1.4	0.5	1.4	0.9	-	-	1.2	1.2
Articulated Trucks	0	15	1	0	-	16	5	26	1	0	-	32	2	2	8	0	-	12	0	1	0	0	-	1	61
% Articulated Trucks	0.0	0.5	0.2	0.0	-	0.4	0.3	0.8	0.4	0.0	-	0.6	0.3	0.2	0.4	-	-	0.3	0.0	0.1	0.0	-	-	0.1	0.4
Bicycles on Road	0	19	2	0	-	21	3	20	4	0	-	27	0	0	3	0	-	3	0	0	1	0	-	1	52
% Bicycles on Road	0.0	0.6	0.4	0.0	-	0.6	0.2	0.6	1.5	0.0	-	0.5	0.0	0.0	0.1	-	-	0.1	0.0	0.0	0.9	-	-	0.1	0.4
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	46	-	-	-	-	-	32	-	-
% Bicycles on Crosswalk	-	-	-	-	3.2	-	-	-	-	-	4.2	-	-	-	-	-	13.1	-	-	-	-	-	13.9	-	-
Pedestrians	-	-	-	-	182	-	-	-	-	-	46	-	-	-	-	-	304	-	-	-	-	-	199	-	-
% Pedestrians	-	-	-	-	96.8	-	-	-	-	-	95.8	-	-	-	-	-	86.9	-	-	-	-	-	86.1	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
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: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:00 AM)

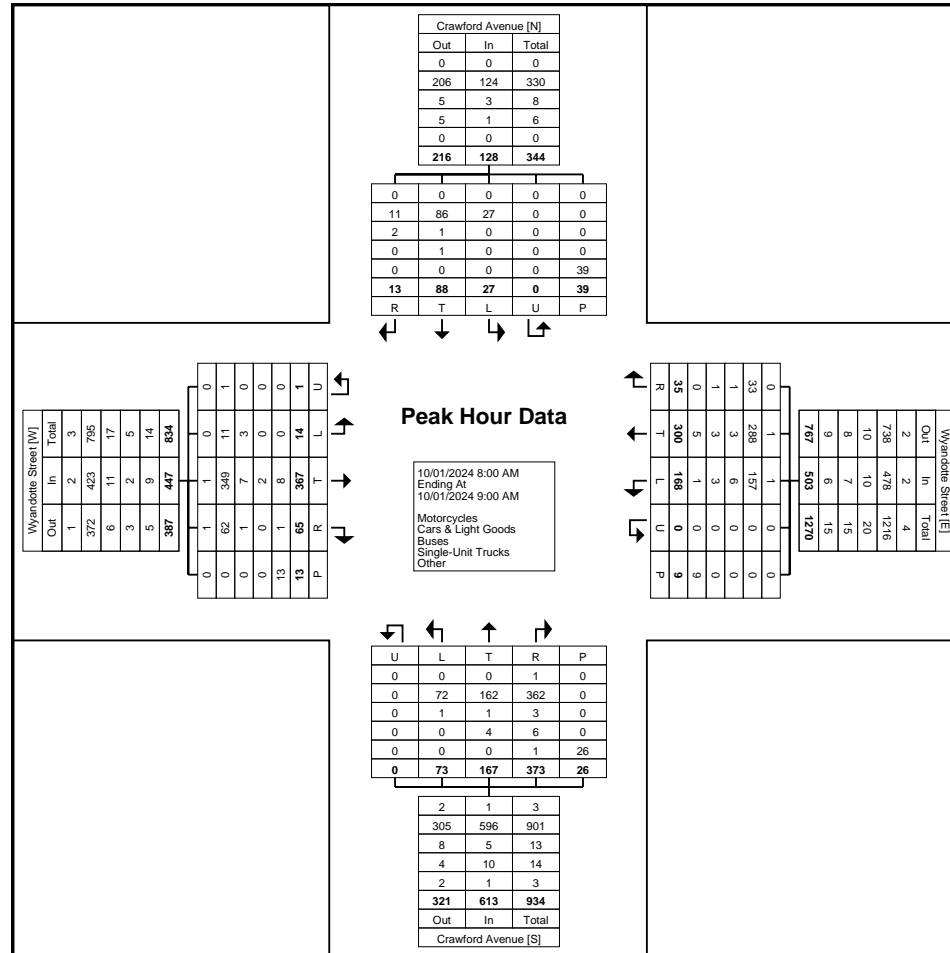
Start Time	Wyandotte Street Eastbound						Wyandotte Street Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	3	62	16	0	0	81	42	65	4	0	2	111	22	41	94	0	5	157	1	16	1	0	7	18	367
8:15 AM	3	93	22	0	1	118	42	74	12	0	6	128	19	36	112	0	4	167	9	21	5	0	12	35	448
8:30 AM	2	108	7	0	8	117	31	81	10	0	0	122	15	45	74	0	8	134	13	29	2	0	12	44	417
8:45 AM	6	104	20	1	4	131	53	80	9	0	1	142	17	45	93	0	9	155	4	22	5	0	8	31	459
Total	14	367	65	1	13	447	168	300	35	0	9	503	73	167	373	0	26	613	27	88	13	0	39	128	1691
Approach %	3.1	82.1	14.5	0.2	-	-	33.4	59.6	7.0	0.0	-	-	11.9	27.2	60.8	0.0	-	-	21.1	68.8	10.2	0.0	-	-	-
Total %	0.8	21.7	3.8	0.1	-	26.4	9.9	17.7	2.1	0.0	-	29.7	4.3	9.9	22.1	0.0	-	36.3	1.6	5.2	0.8	0.0	-	7.6	-
PHF	0.583	0.850	0.739	0.250	-	0.853	0.792	0.926	0.729	0.000	-	0.886	0.830	0.928	0.833	0.000	-	0.918	0.519	0.759	0.650	0.000	-	0.727	0.921
Motorcycles	0	1	1	0	-	2	1	1	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	5
% Motorcycles	0.0	0.3	1.5	0.0	-	0.4	0.6	0.3	0.0	-	-	0.4	0.0	0.0	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	11	349	62	1	-	423	157	288	33	0	-	478	72	162	362	0	-	596	27	86	11	0	-	124	1621
% Cars & Light Goods	78.6	95.1	95.4	100.0	-	94.6	93.5	96.0	94.3	-	-	95.0	98.6	97.0	97.1	-	-	97.2	100.0	97.7	84.6	-	-	96.9	95.9
Buses	3	7	1	0	-	11	6	3	1	0	-	10	1	1	3	0	-	5	0	1	2	0	-	3	29
% Buses	21.4	1.9	1.5	0.0	-	2.5	3.6	1.0	2.9	-	-	2.0	1.4	0.6	0.8	-	-	0.8	0.0	1.1	15.4	-	-	2.3	1.7
Single-Unit Trucks	0	2	0	0	-	2	3	3	1	0	-	7	0	4	6	0	-	10	0	1	0	0	-	1	20
% Single-Unit Trucks	0.0	0.5	0.0	0.0	-	0.4	1.8	1.0	2.9	-	-	1.4	0.0	2.4	1.6	-	-	1.6	0.0	1.1	0.0	-	-	0.8	1.2
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	0.3	0.0	0.0	-	0.2	0.0	1.3	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	7	1	0	-	8	1	1	0	0	-	2	0	0	1	0	-	1	0	0	0	0	-	0	11
% Bicycles on Road	0.0	1.9	1.5	0.0	-	1.8	0.6	0.3	0.0	-	-	0.4	0.0	0.0	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	3.8	-	-	-	-	-	10.3	-	-
Pedestrians	-	-	-	-	13	-	-	-	-	-	9	-	-	-	-	-	25	-	-	-	-	-	35	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	96.2	-	-	-	-	-	89.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
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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: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Peak Hour Data (12:30 PM)

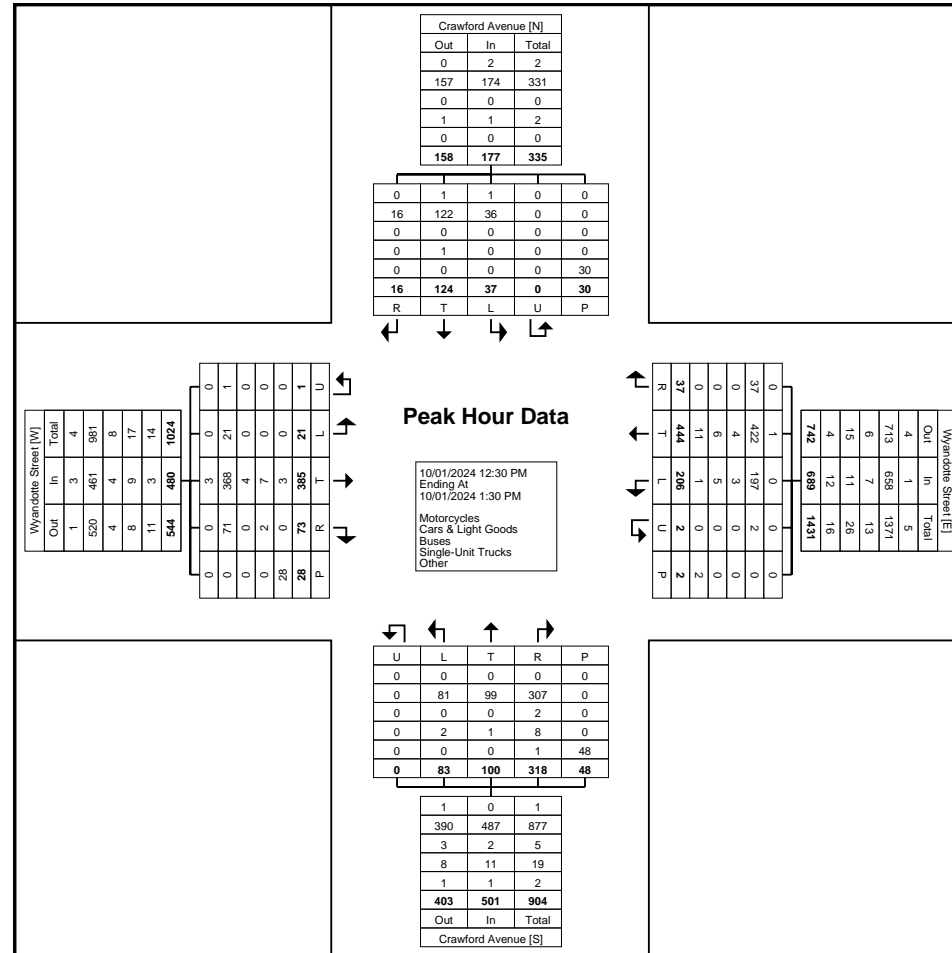
Start Time	Wyandotte Street Eastbound						Wyandotte Street Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	5	78	13	0	8	96	46	113	7	0	2	166	35	31	89	0	9	155	11	38	1	0	8	50	467
12:45 PM	4	91	15	1	5	111	57	133	13	1	0	204	15	15	85	0	13	115	6	33	9	0	6	48	478
1:00 PM	5	121	26	0	9	152	53	100	10	1	0	164	16	28	66	0	14	110	14	25	4	0	11	43	469
1:15 PM	7	95	19	0	6	121	50	98	7	0	0	155	17	26	78	0	12	121	6	28	2	0	5	36	433
Total	21	385	73	1	28	480	206	444	37	2	2	689	83	100	318	0	48	501	37	124	16	0	30	177	1847
Approach %	4.4	80.2	15.2	0.2	-	-	29.9	64.4	5.4	0.3	-	-	16.6	20.0	63.5	0.0	-	-	20.9	70.1	9.0	0.0	-	-	-
Total %	1.1	20.8	4.0	0.1	-	26.0	11.2	24.0	2.0	0.1	-	37.3	4.5	5.4	17.2	0.0	-	27.1	2.0	6.7	0.9	0.0	-	9.6	-
PHF	0.750	0.795	0.702	0.250	-	0.789	0.904	0.835	0.712	0.500	-	0.844	0.593	0.806	0.893	0.000	-	0.808	0.661	0.816	0.444	0.000	-	0.885	0.966
Motorcycles	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	6
% Motorcycles	0.0	0.8	0.0	0.0	-	0.6	0.0	0.2	0.0	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	2.7	0.8	0.0	-	-	1.1	0.3
Cars & Light Goods	21	368	71	1	-	461	197	422	37	2	-	658	81	99	307	0	-	487	36	122	16	0	-	174	1780
% Cars & Light Goods	100.0	95.6	97.3	100.0	-	96.0	95.6	95.0	100.0	100.0	-	95.5	97.6	99.0	96.5	-	-	97.2	97.3	98.4	100.0	-	-	98.3	96.4
Buses	0	4	0	0	-	4	3	4	0	0	-	7	0	0	2	0	-	2	0	0	0	0	-	0	13
% Buses	0.0	1.0	0.0	0.0	-	0.8	1.5	0.9	0.0	0.0	-	1.0	0.0	0.0	0.6	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.7
Single-Unit Trucks	0	7	2	0	-	9	5	6	0	0	-	11	2	1	8	0	-	11	0	1	0	0	-	1	32
% Single-Unit Trucks	0.0	1.8	2.7	0.0	-	1.9	2.4	1.4	0.0	0.0	-	1.6	2.4	1.0	2.5	-	-	2.2	0.0	0.8	0.0	-	-	0.6	1.7
Articulated Trucks	0	1	0	0	-	1	1	10	0	0	-	11	0	0	0	0	-	0	0	0	0	0	-	0	12
% Articulated Trucks	0.0	0.3	0.0	0.0	-	0.2	0.5	2.3	0.0	0.0	-	1.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Bicycles on Road	0	2	0	0	-	2	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	4
% Bicycles on Road	0.0	0.5	0.0	0.0	-	0.4	0.0	0.2	0.0	0.0	-	0.1	0.0	0.0	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	7	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-	-	-	-	23.3	-	-
Pedestrians	-	-	-	-	28	-	-	-	-	-	2	-	-	-	-	-	42	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-	-	-	-	76.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:45 PM)

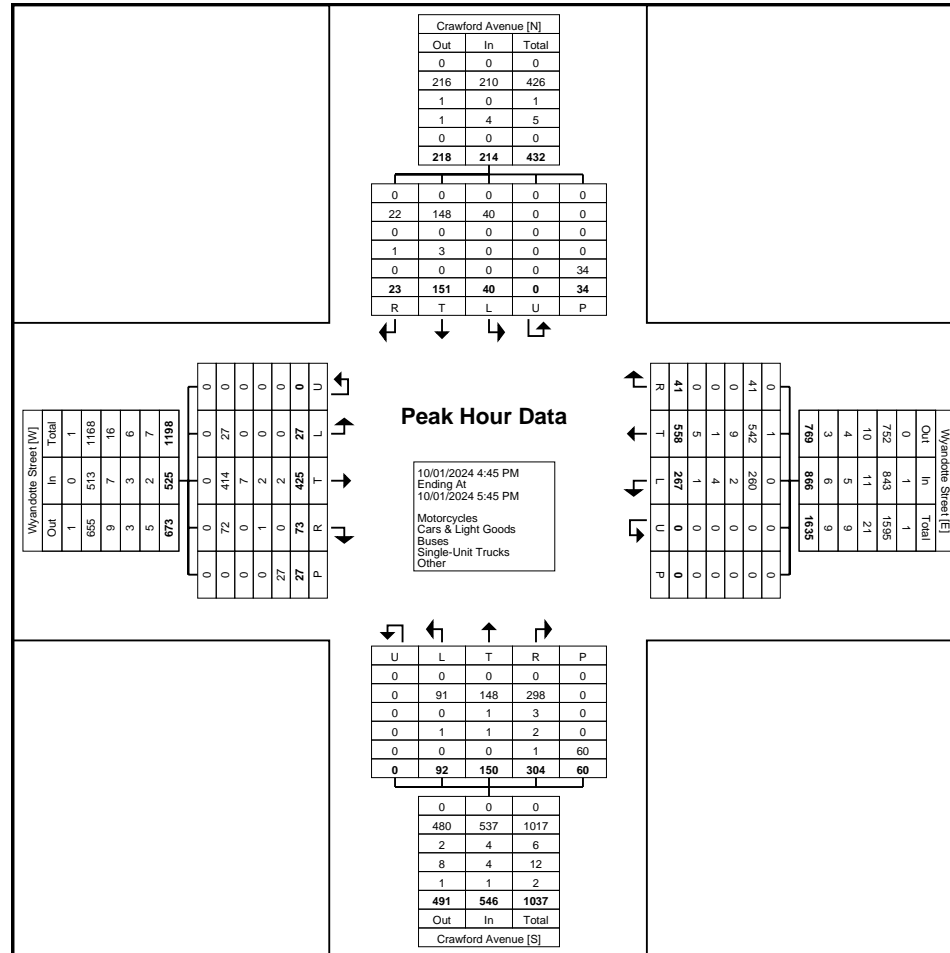
Start Time	Wyandotte Street Eastbound						Wyandotte Street Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	4	123	23	0	19	150	70	148	14	0	0	232	22	37	64	0	19	123	6	33	3	0	19	42	547
5:00 PM	10	110	16	0	6	136	71	145	7	0	0	223	24	39	90	0	21	153	14	38	5	0	9	57	569
5:15 PM	4	85	16	0	1	105	67	129	10	0	0	206	22	38	73	0	9	133	6	39	8	0	3	53	497
5:30 PM	9	107	18	0	1	134	59	136	10	0	0	205	24	36	77	0	11	137	14	41	7	0	3	62	538
Total	27	425	73	0	27	525	267	558	41	0	0	866	92	150	304	0	60	546	40	151	23	0	34	214	2151
Approach %	5.1	81.0	13.9	0.0	-	-	30.8	64.4	4.7	0.0	-	-	16.8	27.5	55.7	0.0	-	-	18.7	70.6	10.7	0.0	-	-	-
Total %	1.3	19.8	3.4	0.0	-	24.4	12.4	25.9	1.9	0.0	-	40.3	4.3	7.0	14.1	0.0	-	25.4	1.9	7.0	1.1	0.0	-	9.9	-
PHF	0.675	0.864	0.793	0.000	-	0.875	0.940	0.943	0.732	0.000	-	0.933	0.958	0.962	0.844	0.000	-	0.892	0.714	0.921	0.719	0.000	-	0.863	0.945
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	0.0
Cars & Light Goods	27	414	72	0	-	513	260	542	41	0	-	843	91	148	298	0	-	537	40	148	22	0	-	210	2103
% Cars & Light Goods	100.0	97.4	98.6	-	-	97.7	97.4	97.1	100.0	-	-	97.3	98.9	98.7	98.0	-	-	98.4	100.0	98.0	95.7	-	-	98.1	97.8
Buses	0	7	0	0	-	7	2	9	0	0	-	11	0	1	3	0	-	4	0	0	0	0	-	0	22
% Buses	0.0	1.6	0.0	-	-	1.3	0.7	1.6	0.0	-	-	1.3	0.0	0.7	1.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	1.0
Single-Unit Trucks	0	2	1	0	-	3	4	1	0	0	-	5	1	1	2	0	-	4	0	3	1	0	-	4	16
% Single-Unit Trucks	0.0	0.5	1.4	-	-	0.6	1.5	0.2	0.0	-	-	0.6	1.1	0.7	0.7	-	-	0.7	0.0	2.0	4.3	-	-	1.9	0.7
Articulated Trucks	0	1	0	0	-	1	0	3	0	0	-	3	0	0	1	0	-	1	0	0	0	0	-	0	5
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.5	0.0	-	-	0.3	0.0	0.0	0.3	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	1	0	0	-	1	1	2	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	4
% Bicycles on Road	0.0	0.2	0.0	-	-	0.2	0.4	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 Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	8	-	-
% Bicycles on Crosswalk	-	-	-	-	3.7	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	-	-	23.5	-	-
Pedestrians	-	-	-	-	26	-	-	-	-	-	0	-	-	-	-	-	48	-	-	-	-	-	26	-	-
% Pedestrians	-	-	-	-	96.3	-	-	-	-	-	-	-	-	-	-	-	80.0	-	-	-	-	-	76.5	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Crawford Ave & Wyandotte Street
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Peak Hour Data Plot (4:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Riverside Drive W & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	Riverside Drive Eastbound					Riverside Drive Westbound					Bruce Avenue 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	44	0	0	0	44	0	52	0	0	52	11	7	0	1	18	114
7:15 AM	61	0	0	0	61	0	57	0	1	57	5	4	0	1	9	127
7:30 AM	76	0	0	0	76	0	77	0	2	77	4	7	0	1	11	164
7:45 AM	100	0	0	0	100	0	149	0	0	149	4	8	0	0	12	261
Hourly Total	281	0	0	0	281	0	335	0	3	335	24	26	0	3	50	666
8:00 AM	85	0	0	2	85	0	169	0	0	169	2	10	0	4	12	266
8:15 AM	95	0	0	0	95	0	165	0	0	165	2	8	0	3	10	270
8:30 AM	100	0	0	0	100	0	144	0	0	144	2	6	0	3	8	252
8:45 AM	110	0	0	3	110	0	105	0	0	105	3	5	0	3	8	223
Hourly Total	390	0	0	5	390	0	583	0	0	583	9	29	0	13	38	1011
9:00 AM	78	0	0	1	78	0	114	0	0	114	6	4	0	2	10	202
9:15 AM	66	0	0	2	66	0	94	0	1	94	2	13	0	1	15	175
9:30 AM	75	0	0	1	75	0	112	0	2	112	1	8	0	3	9	196
9:45 AM	81	0	0	3	81	0	107	0	1	107	0	7	0	1	7	195
Hourly Total	300	0	0	7	300	0	427	0	4	427	9	32	0	7	41	768
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	96	0	0	1	96	0	84	0	3	84	6	8	0	2	14	194
11:45 AM	71	0	0	1	71	0	74	0	0	74	2	5	0	1	7	152
Hourly Total	167	0	0	2	167	0	158	0	3	158	8	13	0	3	21	346
12:00 PM	65	0	0	2	65	0	84	0	5	84	5	5	0	3	10	159
12:15 PM	83	0	0	10	83	0	117	0	0	117	4	10	0	3	14	214
12:30 PM	98	0	0	3	98	0	127	0	3	127	6	9	0	2	15	240
12:45 PM	117	0	0	4	117	0	122	0	2	122	5	14	0	1	19	258
Hourly Total	363	0	0	19	363	0	450	0	10	450	20	38	0	9	58	871
1:00 PM	134	0	0	3	134	0	85	0	1	85	9	17	0	3	26	245
1:15 PM	108	0	0	0	108	0	105	0	3	105	6	12	0	3	18	231
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	242	0	0	3	242	0	190	0	4	190	15	29	0	6	44	476
3:00 PM	136	0	0	1	136	0	153	0	1	153	5	13	0	5	18	307
3:15 PM	129	0	0	3	129	0	139	0	1	139	7	13	0	3	20	288
3:30 PM	126	0	0	1	126	0	137	0	3	137	4	14	0	0	18	281
3:45 PM	119	0	0	2	119	0	150	0	7	150	7	17	0	3	24	293
Hourly Total	510	0	0	7	510	0	579	0	12	579	23	57	0	11	80	1169
4:00 PM	172	0	0	0	172	0	155	0	1	155	10	10	0	5	20	347
4:15 PM	137	0	0	0	137	0	167	0	4	167	5	11	0	4	16	320
4:30 PM	144	0	0	4	144	0	158	0	2	158	6	22	0	7	28	330

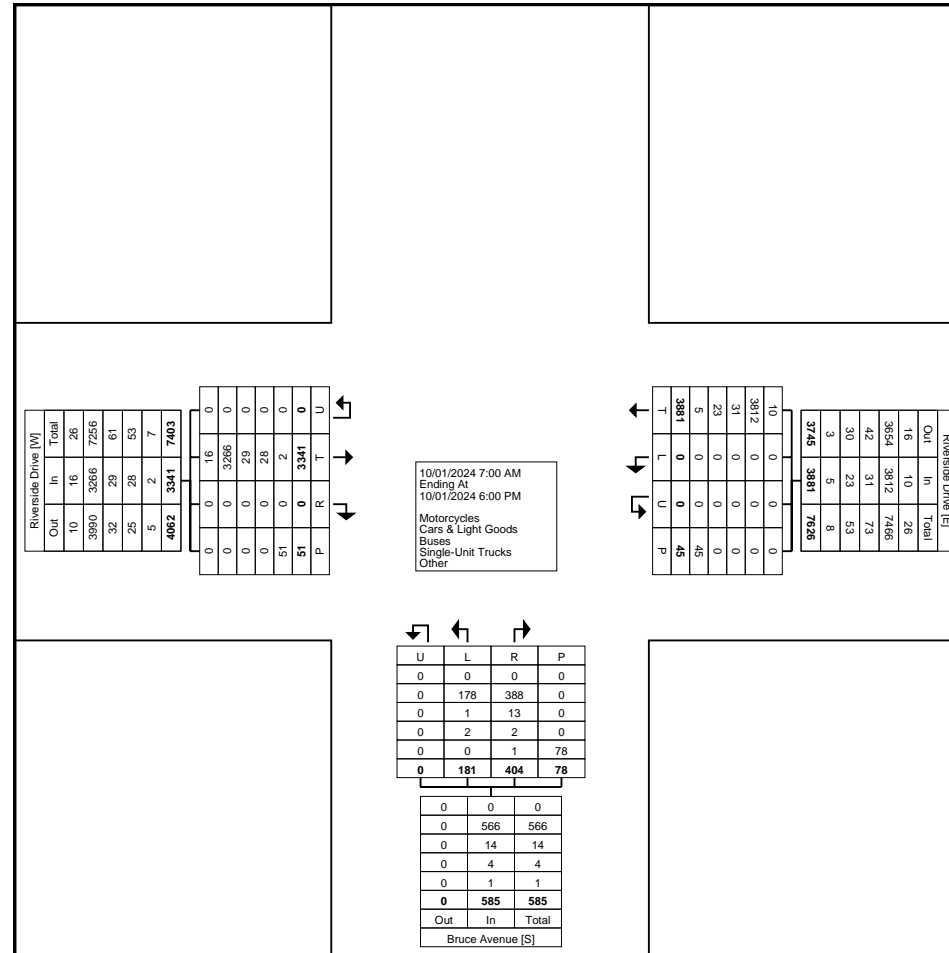
4:45 PM	137	0	0	2	137	0	146	0	1	146	8	38	0	3	46	329
Hourly Total	590	0	0	6	590	0	626	0	8	626	29	81	0	19	110	1326
5:00 PM	136	0	0	0	136	0	168	0	1	168	16	36	0	4	52	356
5:15 PM	111	0	0	2	111	0	148	0	0	148	8	18	0	1	26	285
5:30 PM	145	0	0	0	145	0	97	0	0	97	11	29	0	0	40	282
5:45 PM	106	0	0	0	106	0	120	0	0	120	9	16	0	2	25	251
Hourly Total	498	0	0	2	498	0	533	0	1	533	44	99	0	7	143	1174
Grand Total	3341	0	0	51	3341	0	3881	0	45	3881	181	404	0	78	585	7807
Approach %	100.0	0.0	0.0	-	-	0.0	100.0	0.0	-	-	30.9	69.1	0.0	-	-	-
Total %	42.8	0.0	0.0	-	42.8	0.0	49.7	0.0	-	49.7	2.3	5.2	0.0	-	7.5	-
Motorcycles	16	0	0	-	16	0	10	0	-	10	0	0	0	-	0	26
% Motorcycles	0.5	-	-	-	0.5	-	0.3	-	-	0.3	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	3266	0	0	-	3266	0	3812	0	-	3812	178	388	0	-	566	7644
% Cars & Light Goods	97.8	-	-	-	97.8	-	98.2	-	-	98.2	98.3	96.0	-	-	96.8	97.9
Buses	29	0	0	-	29	0	31	0	-	31	1	13	0	-	14	74
% Buses	0.9	-	-	-	0.9	-	0.8	-	-	0.8	0.6	3.2	-	-	2.4	0.9
Single-Unit Trucks	28	0	0	-	28	0	23	0	-	23	2	2	0	-	4	55
% Single-Unit Trucks	0.8	-	-	-	0.8	-	0.6	-	-	0.6	1.1	0.5	-	-	0.7	0.7
Articulated Trucks	2	0	0	-	2	0	4	0	-	4	0	0	0	-	0	6
% Articulated Trucks	0.1	-	-	-	0.1	-	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	1	0	-	1	2
% Bicycles on Road	0.0	-	-	-	0.0	-	0.0	-	-	0.0	0.0	0.2	-	-	0.2	0.0
Bicycles on Crosswalk	-	-	-	5	-	-	-	-	7	-	-	-	-	11	-	-
% Bicycles on Crosswalk	-	-	-	9.8	-	-	-	-	15.6	-	-	-	-	14.1	-	-
Pedestrians	-	-	-	46	-	-	-	-	38	-	-	-	-	67	-	-
% Pedestrians	-	-	-	90.2	-	-	-	-	84.4	-	-	-	-	85.9	-	-



Paradigm Transportation Solutions Limited
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Count Name: Riverside Drive W & Bruce Ave
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Page No: 3



Turning Movement Data Plot



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Count Name: Riverside Drive W & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (7:45 AM)

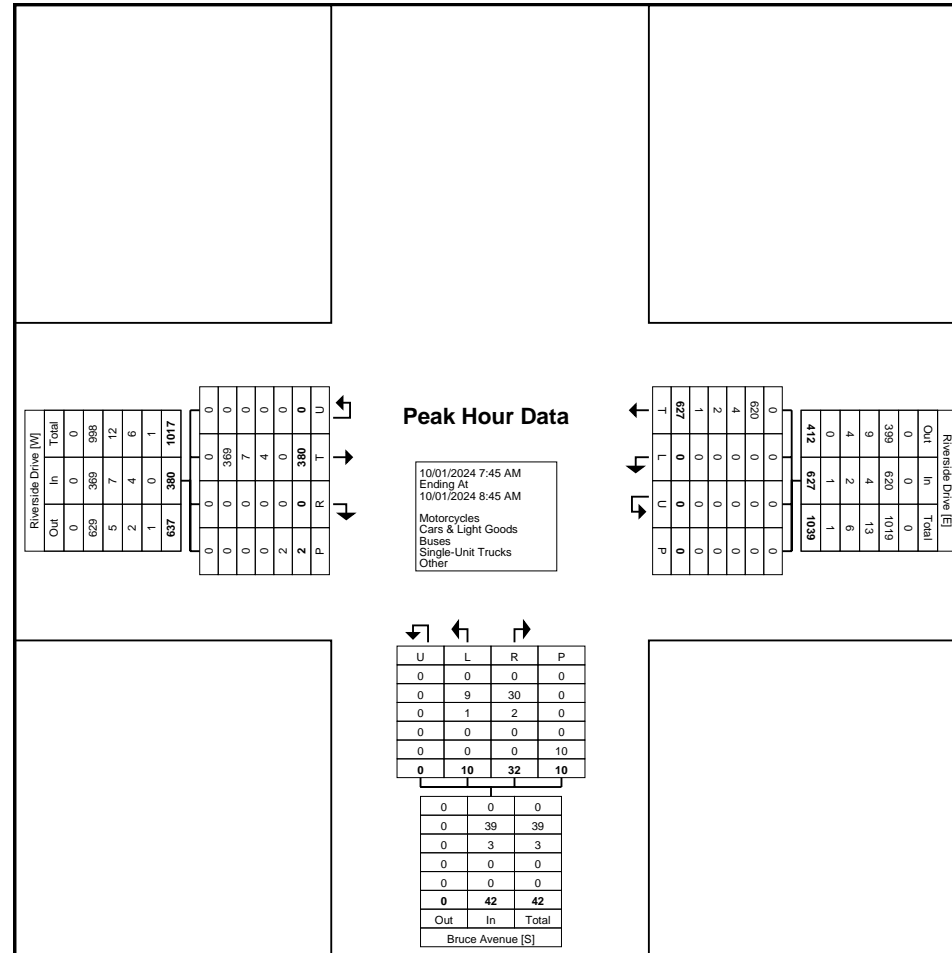
Start Time	Riverside Drive Eastbound					Riverside Drive Westbound					Bruce Avenue Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:45 AM	100	0	0	0	100	0	149	0	0	149	4	8	0	0	12	261
8:00 AM	85	0	0	2	85	0	169	0	0	169	2	10	0	4	12	266
8:15 AM	95	0	0	0	95	0	165	0	0	165	2	8	0	3	10	270
8:30 AM	100	0	0	0	100	0	144	0	0	144	2	6	0	3	8	252
Total	380	0	0	2	380	0	627	0	0	627	10	32	0	10	42	1049
Approach %	100.0	0.0	0.0	-	-	0.0	100.0	0.0	-	-	23.8	76.2	0.0	-	-	-
Total %	36.2	0.0	0.0	-	36.2	0.0	59.8	0.0	-	59.8	1.0	3.1	0.0	-	4.0	-
PHF	0.950	0.000	0.000	-	0.950	0.000	0.928	0.000	-	0.928	0.625	0.800	0.000	-	0.875	0.971
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	-	-	-	0.0	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	369	0	0	-	369	0	620	0	-	620	9	30	0	-	39	1028
% Cars & Light Goods	97.1	-	-	-	97.1	-	98.9	-	-	98.9	90.0	93.8	-	-	92.9	98.0
Buses	7	0	0	-	7	0	4	0	-	4	1	2	0	-	3	14
% Buses	1.8	-	-	-	1.8	-	0.6	-	-	0.6	10.0	6.3	-	-	7.1	1.3
Single-Unit Trucks	4	0	0	-	4	0	2	0	-	2	0	0	0	-	0	6
% Single-Unit Trucks	1.1	-	-	-	1.1	-	0.3	-	-	0.3	0.0	0.0	-	-	0.0	0.6
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	-	-	-	0.0	-	0.2	-	-	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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	10.0	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	9	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	90.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Riverside Drive W & Bruce Ave
Site Code: 240453
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Turning Movement Peak Hour Data Plot (7:45 AM)



Paradigm Transportation Solutions Limited
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Count Name: Riverside Drive W & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

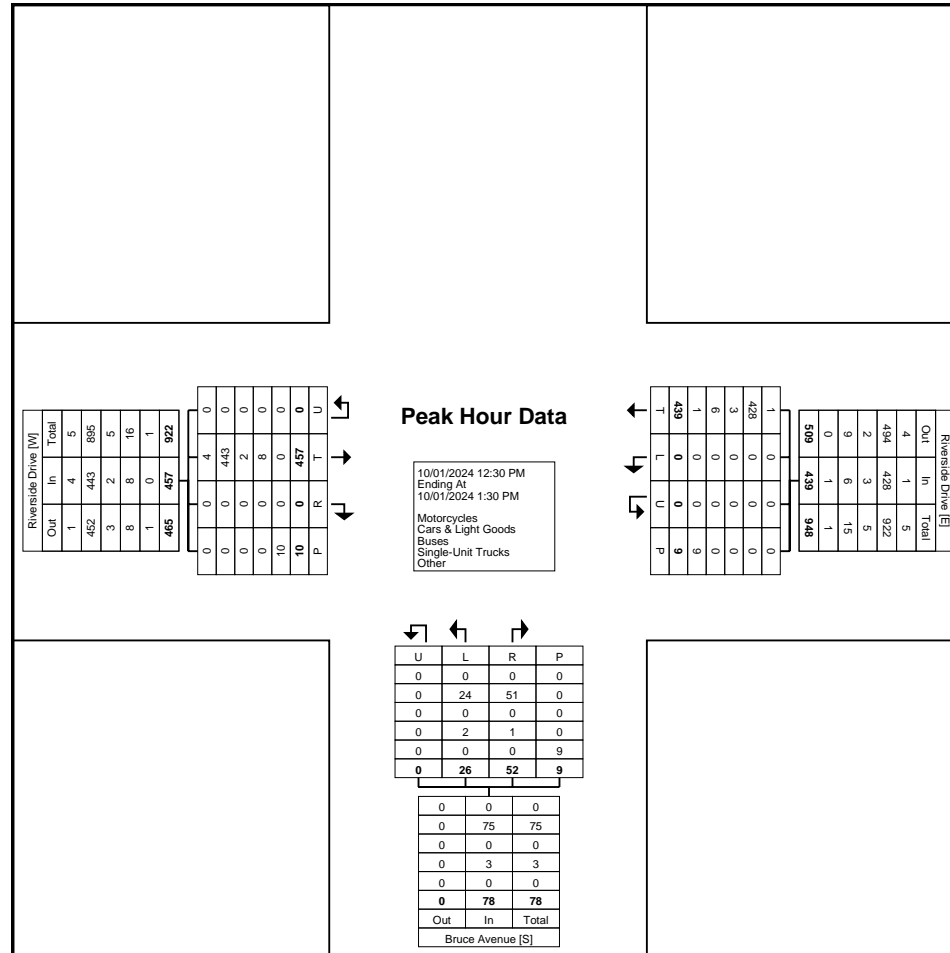
Start Time	Riverside Drive Eastbound					Riverside Drive Westbound					Bruce Avenue Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
12:30 PM	98	0	0	3	98	0	127	0	3	127	6	9	0	2	15	240
12:45 PM	117	0	0	4	117	0	122	0	2	122	5	14	0	1	19	258
1:00 PM	134	0	0	3	134	0	85	0	1	85	9	17	0	3	26	245
1:15 PM	108	0	0	0	108	0	105	0	3	105	6	12	0	3	18	231
Total	457	0	0	10	457	0	439	0	9	439	26	52	0	9	78	974
Approach %	100.0	0.0	0.0	-	-	0.0	100.0	0.0	-	-	33.3	66.7	0.0	-	-	-
Total %	46.9	0.0	0.0	-	46.9	0.0	45.1	0.0	-	45.1	2.7	5.3	0.0	-	8.0	-
PHF	0.853	0.000	0.000	-	0.853	0.000	0.864	0.000	-	0.864	0.722	0.765	0.000	-	0.750	0.944
Motorcycles	4	0	0	-	4	0	1	0	-	1	0	0	0	-	0	5
% Motorcycles	0.9	-	-	-	0.9	-	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.5
Cars & Light Goods	443	0	0	-	443	0	428	0	-	428	24	51	0	-	75	946
% Cars & Light Goods	96.9	-	-	-	96.9	-	97.5	-	-	97.5	92.3	98.1	-	-	96.2	97.1
Buses	2	0	0	-	2	0	3	0	-	3	0	0	0	-	0	5
% Buses	0.4	-	-	-	0.4	-	0.7	-	-	0.7	0.0	0.0	-	-	0.0	0.5
Single-Unit Trucks	8	0	0	-	8	0	6	0	-	6	2	1	0	-	3	17
% Single-Unit Trucks	1.8	-	-	-	1.8	-	1.4	-	-	1.4	7.7	1.9	-	-	3.8	1.7
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	10	-	-	-	-	9	-	-	-	-	8	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	88.9	-	-



Paradigm Transportation Solutions Limited
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Count Name: Riverside Drive W & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
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Count Name: Riverside Drive W & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Peak Hour Data (4:15 PM)

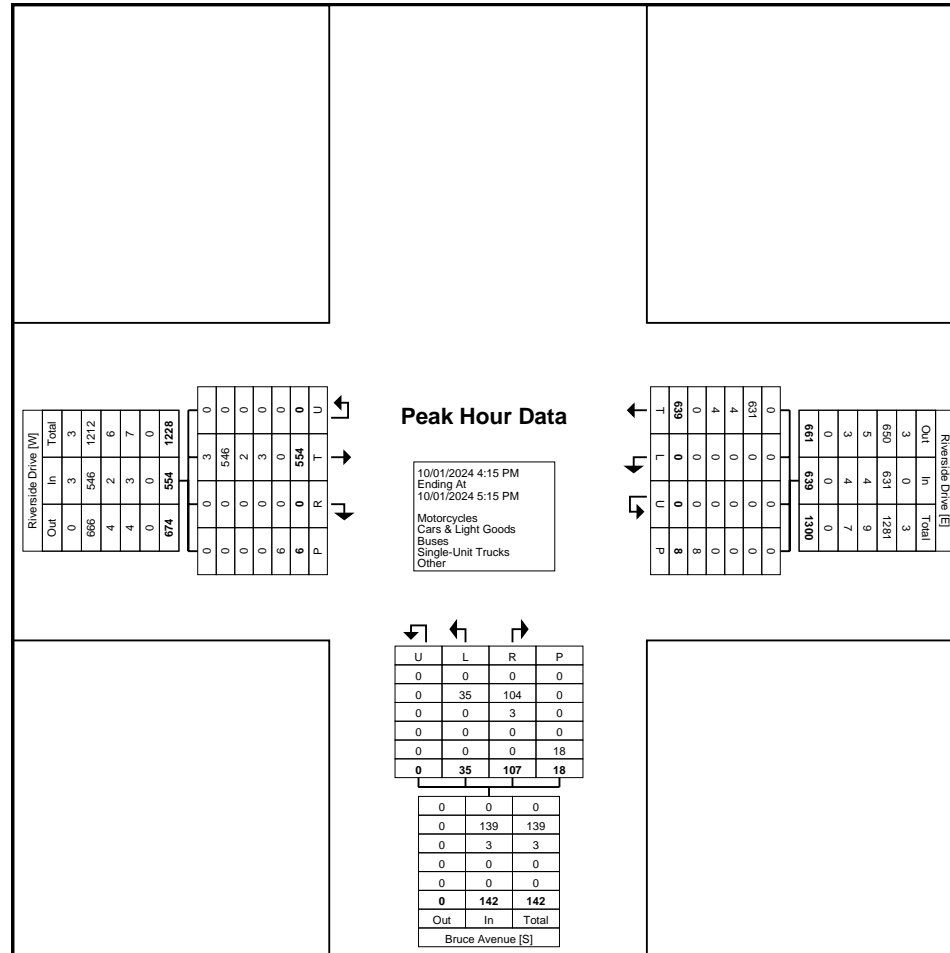
Start Time	Riverside Drive Eastbound					Riverside Drive Westbound					Bruce Avenue Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:15 PM	137	0	0	0	137	0	167	0	4	167	5	11	0	4	16	320
4:30 PM	144	0	0	4	144	0	158	0	2	158	6	22	0	7	28	330
4:45 PM	137	0	0	2	137	0	146	0	1	146	8	38	0	3	46	329
5:00 PM	136	0	0	0	136	0	168	0	1	168	16	36	0	4	52	356
Total	554	0	0	6	554	0	639	0	8	639	35	107	0	18	142	1335
Approach %	100.0	0.0	0.0	-	-	0.0	100.0	0.0	-	-	24.6	75.4	0.0	-	-	-
Total %	41.5	0.0	0.0	-	41.5	0.0	47.9	0.0	-	47.9	2.6	8.0	0.0	-	10.6	-
PHF	0.962	0.000	0.000	-	0.962	0.000	0.951	0.000	-	0.951	0.547	0.704	0.000	-	0.683	0.938
Motorcycles	3	0	0	-	3	0	0	0	-	0	0	0	0	-	0	3
% Motorcycles	0.5	-	-	-	0.5	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	546	0	0	-	546	0	631	0	-	631	35	104	0	-	139	1316
% Cars & Light Goods	98.6	-	-	-	98.6	-	98.7	-	-	98.7	100.0	97.2	-	-	97.9	98.6
Buses	2	0	0	-	2	0	4	0	-	4	0	3	0	-	3	9
% Buses	0.4	-	-	-	0.4	-	0.6	-	-	0.6	0.0	2.8	-	-	2.1	0.7
Single-Unit Trucks	3	0	0	-	3	0	4	0	-	4	0	0	0	-	0	7
% Single-Unit Trucks	0.5	-	-	-	0.5	-	0.6	-	-	0.6	0.0	0.0	-	-	0.0	0.5
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
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
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	25.0	-	-	-	-	-	11.1	-
Pedestrians	-	-	-	6	-	-	-	-	6	-	-	-	-	-	16	-
% Pedestrians	-	-	-	100.0	-	-	-	-	75.0	-	-	-	-	-	88.9	-



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Count Name: Riverside Drive W & Bruce Ave
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Turning Movement Peak Hour Data Plot (4:15 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Data

Start Time	Riverside Drive W Eastbound					Riverside Drive W Westbound					Crawford Avenue 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	3	0	0	41	1	52	0	0	53	2	7	0	2	9	103
7:15 AM	62	1	0	2	63	5	52	0	0	57	2	7	0	2	9	129
7:30 AM	69	1	0	1	70	4	70	0	0	74	1	5	0	1	6	150
7:45 AM	93	1	0	1	94	19	131	0	2	150	4	8	0	0	12	256
Hourly Total	262	6	0	4	268	29	305	0	2	334	9	27	0	5	36	638
8:00 AM	76	2	0	0	78	13	147	0	0	160	2	9	0	4	11	249
8:15 AM	86	5	0	0	91	11	143	0	0	154	4	15	0	4	19	264
8:30 AM	93	7	0	2	100	9	124	0	0	133	2	12	0	4	14	247
8:45 AM	105	7	0	1	112	8	98	0	0	106	2	10	0	3	12	230
Hourly Total	360	21	0	3	381	41	512	0	0	553	10	46	0	15	56	990
9:00 AM	67	6	0	4	73	11	89	0	0	100	3	14	0	3	17	190
9:15 AM	64	8	0	2	72	12	88	0	0	100	5	7	0	2	12	184
9:30 AM	65	4	0	2	69	6	105	0	0	111	2	13	0	6	15	195
9:45 AM	71	4	0	0	75	17	91	0	0	108	3	8	0	2	11	194
Hourly Total	267	22	0	8	289	46	373	0	0	419	13	42	0	13	55	763
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	89	7	0	0	96	8	67	0	0	75	1	3	1	7	5	176
11:45 AM	61	5	0	0	66	7	69	0	0	76	6	12	0	2	18	160
Hourly Total	150	12	0	0	162	15	136	0	0	151	7	15	1	9	23	336
12:00 PM	50	2	0	0	52	7	76	0	1	83	2	16	0	3	18	153
12:15 PM	66	4	0	1	70	11	98	0	0	109	2	21	0	2	23	202
12:30 PM	83	9	0	1	92	6	128	0	0	134	4	10	0	5	14	240
12:45 PM	111	6	0	0	117	7	104	0	0	111	4	6	0	3	10	238
Hourly Total	310	21	0	2	331	31	406	0	1	437	12	53	0	13	65	833
1:00 PM	107	6	0	4	113	5	73	0	0	78	4	25	0	3	29	220
1:15 PM	95	5	0	5	100	10	86	0	0	96	4	8	0	2	12	208
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	202	11	0	9	213	15	159	0	0	174	8	33	0	5	41	428
3:00 PM	112	2	0	5	114	11	133	0	0	144	2	31	0	4	33	291
3:15 PM	110	7	0	0	117	8	116	0	0	124	3	15	0	1	18	259
3:30 PM	103	5	0	2	108	15	115	0	0	130	5	13	0	4	18	256
3:45 PM	113	4	0	2	117	12	123	0	0	135	2	22	0	2	24	276
Hourly Total	438	18	0	9	456	46	487	0	0	533	12	81	0	11	93	1082
4:00 PM	145	3	0	8	148	8	132	0	0	140	4	24	0	7	28	316
4:15 PM	115	8	0	3	123	10	134	0	0	144	2	14	0	8	16	283
4:30 PM	118	4	0	5	122	18	131	0	0	149	4	19	0	3	23	294

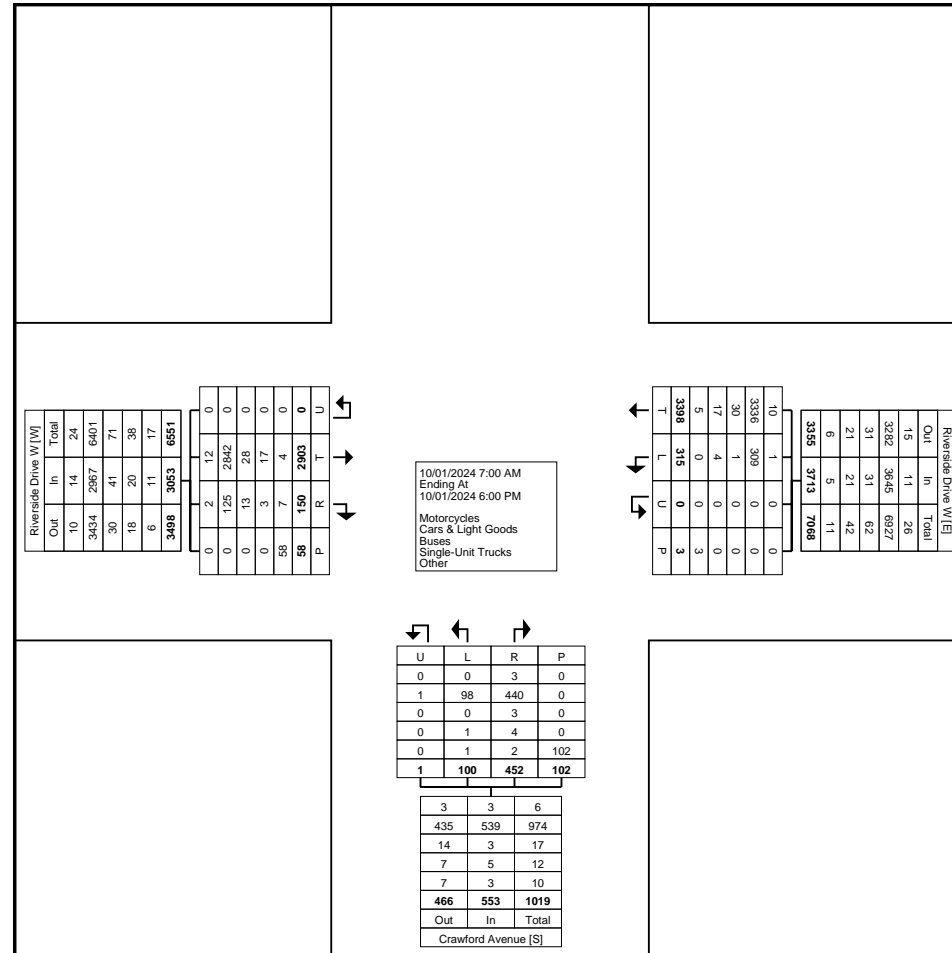
4:45 PM	113	7	0	5	120	10	144	0	0	154	2	22	0	3	24	298
Hourly Total	491	22	0	21	513	46	541	0	0	587	12	79	0	21	91	1191
5:00 PM	120	4	0	0	124	13	154	0	0	167	5	21	0	3	26	317
5:15 PM	99	3	0	2	102	10	135	0	0	145	4	19	0	2	23	270
5:30 PM	117	5	0	0	122	12	94	0	0	106	4	24	0	0	28	256
5:45 PM	87	5	0	0	92	11	96	0	0	107	4	12	0	5	16	215
Hourly Total	423	17	0	2	440	46	479	0	0	525	17	76	0	10	93	1058
Grand Total	2903	150	0	58	3053	315	3398	0	3	3713	100	452	1	102	553	7319
Approach %	95.1	4.9	0.0	-	-	8.5	91.5	0.0	-	-	18.1	81.7	0.2	-	-	-
Total %	39.7	2.0	0.0	-	41.7	4.3	46.4	0.0	-	50.7	1.4	6.2	0.0	-	7.6	-
Motorcycles	12	2	0	-	14	1	10	0	-	11	0	3	0	-	3	28
% Motorcycles	0.4	1.3	-	-	0.5	0.3	0.3	-	-	0.3	0.0	0.7	0.0	-	0.5	0.4
Cars & Light Goods	2842	125	0	-	2967	309	3336	0	-	3645	98	440	1	-	539	7151
% Cars & Light Goods	97.9	83.3	-	-	97.2	98.1	98.2	-	-	98.2	98.0	97.3	100.0	-	97.5	97.7
Buses	28	13	0	-	41	1	30	0	-	31	0	3	0	-	3	75
% Buses	1.0	8.7	-	-	1.3	0.3	0.9	-	-	0.8	0.0	0.7	0.0	-	0.5	1.0
Single-Unit Trucks	17	3	0	-	20	4	17	0	-	21	1	4	0	-	5	46
% Single-Unit Trucks	0.6	2.0	-	-	0.7	1.3	0.5	-	-	0.6	1.0	0.9	0.0	-	0.9	0.6
Articulated Trucks	2	0	0	-	2	0	4	0	-	4	0	2	0	-	2	8
% Articulated Trucks	0.1	0.0	-	-	0.1	0.0	0.1	-	-	0.1	0.0	0.4	0.0	-	0.4	0.1
Bicycles on Road	2	7	0	-	9	0	1	0	-	1	1	0	0	-	1	11
% Bicycles on Road	0.1	4.7	-	-	0.3	0.0	0.0	-	-	0.0	1.0	0.0	0.0	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	0	-	-	-	-	15	-	-
% Bicycles on Crosswalk	-	-	-	3.4	-	-	-	-	0.0	-	-	-	-	14.7	-	-
Pedestrians	-	-	-	56	-	-	-	-	3	-	-	-	-	87	-	-
% Pedestrians	-	-	-	96.6	-	-	-	-	100.0	-	-	-	-	85.3	-	-



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Count Name: Riverside Drive W & Crawford Ave
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (7:45 AM)

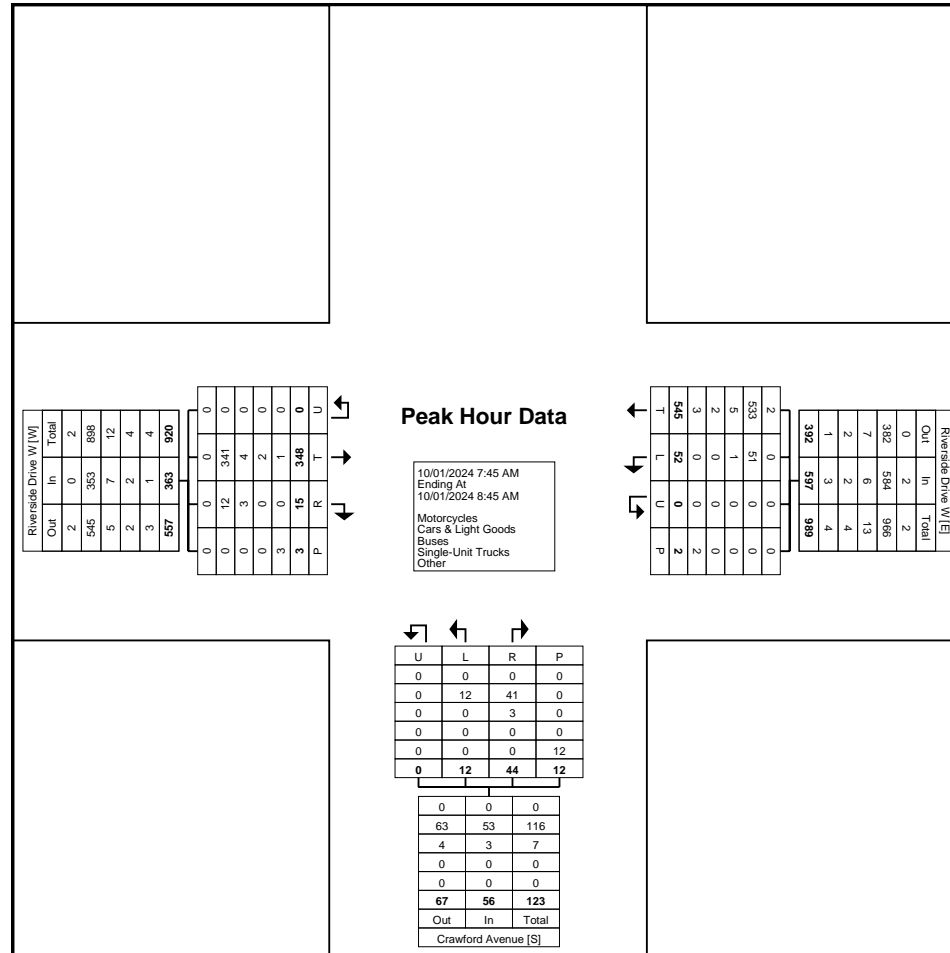
Start Time	Riverside Drive W Eastbound					Riverside Drive W Westbound					Crawford Avenue Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:45 AM	93	1	0	1	94	19	131	0	2	150	4	8	0	0	12	256
8:00 AM	76	2	0	0	78	13	147	0	0	160	2	9	0	4	11	249
8:15 AM	86	5	0	0	91	11	143	0	0	154	4	15	0	4	19	264
8:30 AM	93	7	0	2	100	9	124	0	0	133	2	12	0	4	14	247
Total	348	15	0	3	363	52	545	0	2	597	12	44	0	12	56	1016
Approach %	95.9	4.1	0.0	-	-	8.7	91.3	0.0	-	-	21.4	78.6	0.0	-	-	-
Total %	34.3	1.5	0.0	-	35.7	5.1	53.6	0.0	-	58.8	1.2	4.3	0.0	-	5.5	-
PHF	0.935	0.536	0.000	-	0.908	0.684	0.927	0.000	-	0.933	0.750	0.733	0.000	-	0.737	0.962
Motorcycles	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.4	-	-	0.3	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	341	12	0	-	353	51	533	0	-	584	12	41	0	-	53	990
% Cars & Light Goods	98.0	80.0	-	-	97.2	98.1	97.8	-	-	97.8	100.0	93.2	-	-	94.6	97.4
Buses	4	3	0	-	7	1	5	0	-	6	0	3	0	-	3	16
% Buses	1.1	20.0	-	-	1.9	1.9	0.9	-	-	1.0	0.0	6.8	-	-	5.4	1.6
Single-Unit Trucks	2	0	0	-	2	0	2	0	-	2	0	0	0	-	0	4
% Single-Unit Trucks	0.6	0.0	-	-	0.6	0.0	0.4	-	-	0.3	0.0	0.0	-	-	0.0	0.4
Articulated Trucks	1	0	0	-	1	0	2	0	-	2	0	0	0	-	0	3
% Articulated Trucks	0.3	0.0	-	-	0.3	0.0	0.4	-	-	0.3	0.0	0.0	-	-	0.0	0.3
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	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	33.3	-	-	-	-	0.0	-	-	-	-	8.3	-	-
Pedestrians	-	-	-	2	-	-	-	-	2	-	-	-	-	11	-	-
% Pedestrians	-	-	-	66.7	-	-	-	-	100.0	-	-	-	-	91.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
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: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

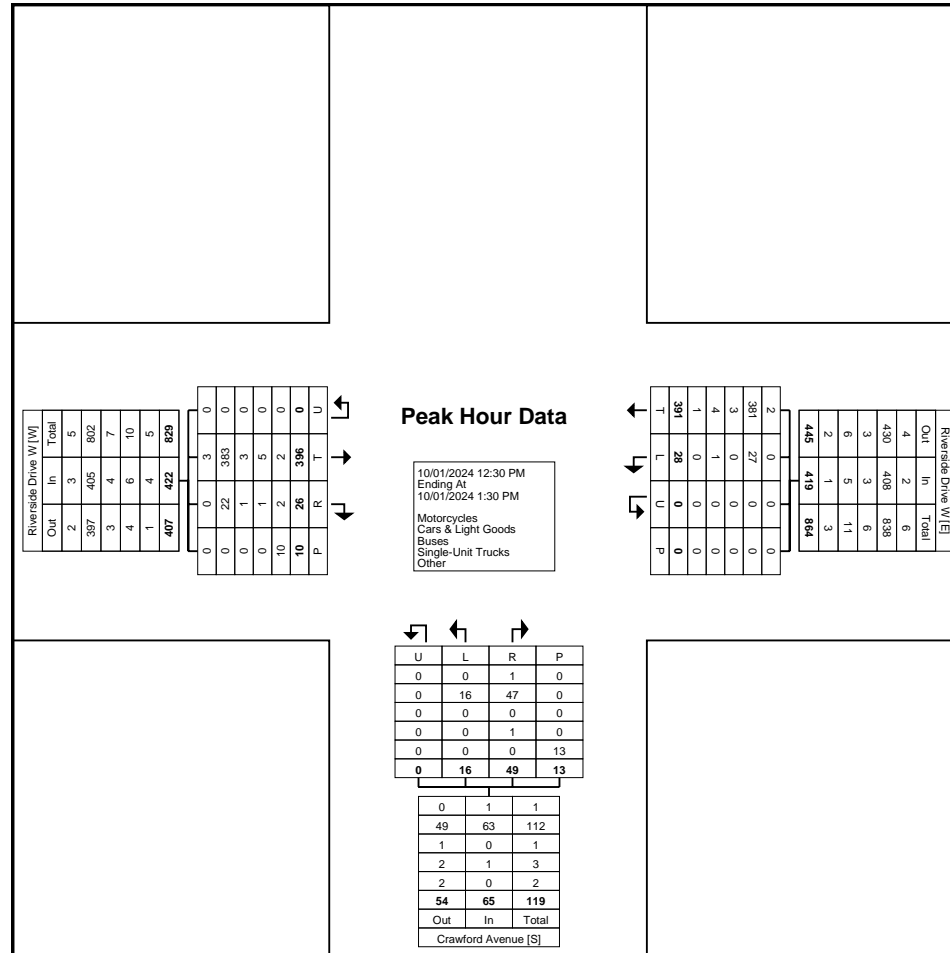
Start Time	Riverside Drive W Eastbound					Riverside Drive W Westbound					Crawford Avenue Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
12:30 PM	83	9	0	1	92	6	128	0	0	134	4	10	0	5	14	240
12:45 PM	111	6	0	0	117	7	104	0	0	111	4	6	0	3	10	238
1:00 PM	107	6	0	4	113	5	73	0	0	78	4	25	0	3	29	220
1:15 PM	95	5	0	5	100	10	86	0	0	96	4	8	0	2	12	208
Total	396	26	0	10	422	28	391	0	0	419	16	49	0	13	65	906
Approach %	93.8	6.2	0.0	-	-	6.7	93.3	0.0	-	-	24.6	75.4	0.0	-	-	-
Total %	43.7	2.9	0.0	-	46.6	3.1	43.2	0.0	-	46.2	1.8	5.4	0.0	-	7.2	-
PHF	0.892	0.722	0.000	-	0.902	0.700	0.764	0.000	-	0.782	1.000	0.490	0.000	-	0.560	0.944
Motorcycles	3	0	0	-	3	0	2	0	-	2	0	1	0	-	1	6
% Motorcycles	0.8	0.0	-	-	0.7	0.0	0.5	-	-	0.5	0.0	2.0	-	-	1.5	0.7
Cars & Light Goods	383	22	0	-	405	27	381	0	-	408	16	47	0	-	63	876
% Cars & Light Goods	96.7	84.6	-	-	96.0	96.4	97.4	-	-	97.4	100.0	95.9	-	-	96.9	96.7
Buses	3	1	0	-	4	0	3	0	-	3	0	0	0	-	0	7
% Buses	0.8	3.8	-	-	0.9	0.0	0.8	-	-	0.7	0.0	0.0	-	-	0.0	0.8
Single-Unit Trucks	5	1	0	-	6	1	4	0	-	5	0	1	0	-	1	12
% Single-Unit Trucks	1.3	3.8	-	-	1.4	3.6	1.0	-	-	1.2	0.0	2.0	-	-	1.5	1.3
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	0.3	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	2	2	0	-	4	0	0	0	-	0	0	0	0	-	0	4
% Bicycles on Road	0.5	7.7	-	-	0.9	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	30.8	-	-
Pedestrians	-	-	-	10	-	-	-	-	0	-	-	-	-	9	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	69.2	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:15 PM)

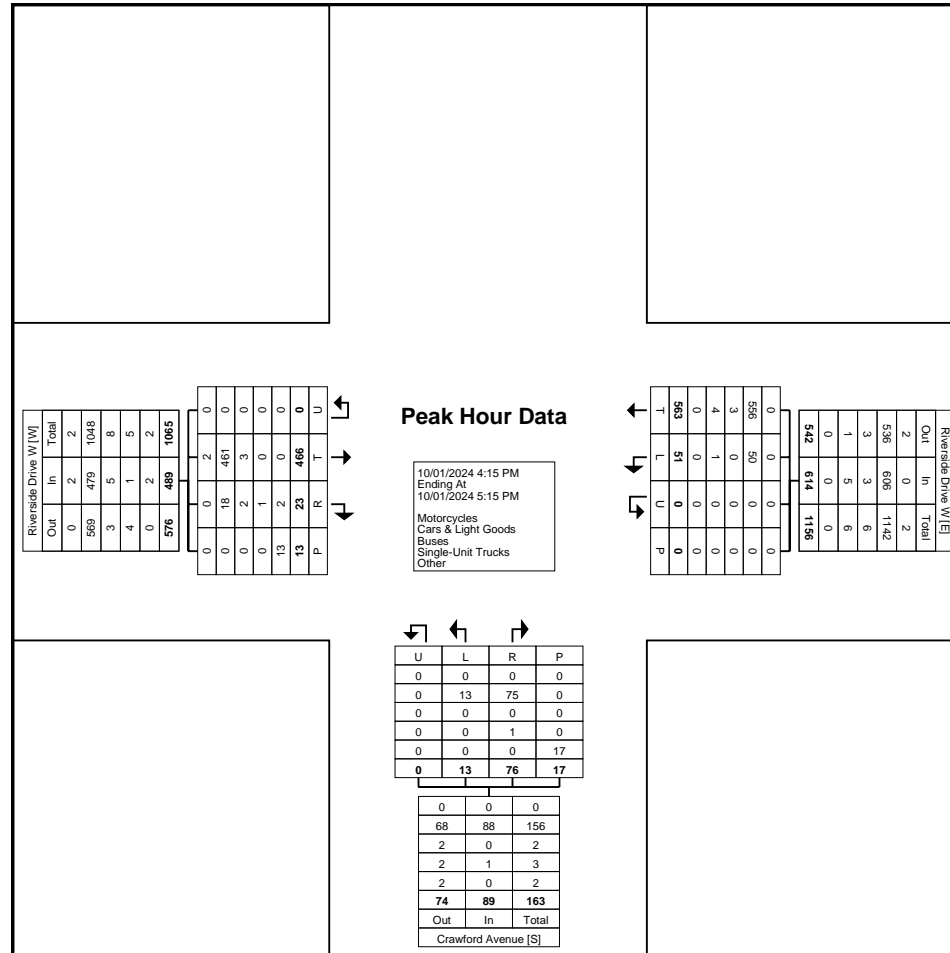
Start Time	Riverside Drive W Eastbound					Riverside Drive W Westbound					Crawford Avenue Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:15 PM	115	8	0	3	123	10	134	0	0	144	2	14	0	8	16	283
4:30 PM	118	4	0	5	122	18	131	0	0	149	4	19	0	3	23	294
4:45 PM	113	7	0	5	120	10	144	0	0	154	2	22	0	3	24	298
5:00 PM	120	4	0	0	124	13	154	0	0	167	5	21	0	3	26	317
Total	466	23	0	13	489	51	563	0	0	614	13	76	0	17	89	1192
Approach %	95.3	4.7	0.0	-	-	8.3	91.7	0.0	-	-	14.6	85.4	0.0	-	-	-
Total %	39.1	1.9	0.0	-	41.0	4.3	47.2	0.0	-	51.5	1.1	6.4	0.0	-	7.5	-
PHF	0.971	0.719	0.000	-	0.986	0.708	0.914	0.000	-	0.919	0.650	0.864	0.000	-	0.856	0.940
Motorcycles	2	0	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Motorcycles	0.4	0.0	-	-	0.4	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	461	18	0	-	479	50	556	0	-	606	13	75	0	-	88	1173
% Cars & Light Goods	98.9	78.3	-	-	98.0	98.0	98.8	-	-	98.7	100.0	98.7	-	-	98.9	98.4
Buses	3	2	0	-	5	0	3	0	-	3	0	0	0	-	0	8
% Buses	0.6	8.7	-	-	1.0	0.0	0.5	-	-	0.5	0.0	0.0	-	-	0.0	0.7
Single-Unit Trucks	0	1	0	-	1	1	4	0	-	5	0	1	0	-	1	7
% Single-Unit Trucks	0.0	4.3	-	-	0.2	2.0	0.7	-	-	0.8	0.0	1.3	-	-	1.1	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	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	0.0	8.7	-	-	0.4	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	23.5	-	-
Pedestrians	-	-	-	13	-	-	-	-	0	-	-	-	-	13	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	76.5	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: Riverside Drive W & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
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@ptsI.com

Count Name: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	University Avenue Eastbound						University Avenue Westbound						Bruce Avenue Northbound						Bruce 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	4	30	0	0	1	34	0	22	4	0	2	26	0	3	2	0	6	5	0	0	0	0	3	0	65
7:15 AM	8	46	0	0	8	54	0	20	3	0	7	23	3	4	2	0	6	9	0	0	0	0	8	0	86
7:30 AM	3	50	0	0	2	53	0	25	1	0	9	26	4	8	1	0	20	13	0	0	0	0	4	0	92
7:45 AM	0	76	0	0	3	76	0	34	1	0	4	35	9	9	3	0	18	21	0	0	0	0	10	0	132
Hourly Total	15	202	0	0	14	217	0	101	9	0	22	110	16	24	8	0	50	48	0	0	0	0	25	0	375
8:00 AM	3	79	0	0	11	82	0	40	7	0	10	47	5	14	5	0	11	24	0	0	0	0	7	0	153
8:15 AM	6	91	0	0	4	97	0	45	3	0	1	48	7	3	10	0	8	20	0	0	0	0	7	0	165
8:30 AM	5	77	0	0	5	82	0	32	6	0	8	38	15	11	5	0	23	31	0	0	0	0	4	0	151
8:45 AM	7	93	0	0	10	100	0	41	8	0	10	49	9	6	11	0	22	26	0	0	0	0	9	0	175
Hourly Total	21	340	0	0	30	361	0	158	24	0	29	182	36	34	31	0	64	101	0	0	0	0	27	0	644
9:00 AM	11	60	0	0	4	71	0	46	5	0	10	51	6	8	5	0	12	19	0	0	0	0	15	0	141
9:15 AM	2	63	0	0	17	65	0	29	3	0	8	32	6	9	2	0	23	17	0	0	0	0	5	0	114
9:30 AM	3	62	0	0	14	65	0	34	3	0	4	37	5	2	2	0	25	9	0	0	0	0	11	0	111
9:45 AM	5	64	0	0	8	69	0	47	4	0	10	51	13	5	8	0	22	26	0	0	0	0	10	0	146
Hourly Total	21	249	0	0	43	270	0	156	15	0	32	171	30	24	17	0	82	71	0	0	0	0	41	0	512
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	3	90	0	0	8	93	0	42	1	0	3	43	12	6	6	0	11	24	0	0	0	0	13	0	160
11:45 AM	4	76	0	0	10	80	0	51	2	0	11	53	6	11	7	0	25	24	0	0	0	0	22	0	157
Hourly Total	7	166	0	0	18	173	0	93	3	0	14	96	18	17	13	0	36	48	0	0	0	0	35	0	317
12:00 PM	3	63	0	1	9	67	0	40	5	0	20	45	14	13	7	0	32	34	0	0	0	0	8	0	146
12:15 PM	2	58	0	0	11	60	0	55	1	0	9	56	13	13	10	0	30	36	0	0	0	0	16	0	152
12:30 PM	3	64	1	0	19	68	0	64	4	0	12	68	15	10	12	0	18	37	0	0	0	0	12	0	173
12:45 PM	5	69	0	0	12	74	0	53	9	0	11	62	15	9	6	0	30	30	0	0	0	0	13	0	166
Hourly Total	13	254	1	1	51	269	0	212	19	0	52	231	57	45	35	0	110	137	0	0	0	0	49	0	637
1:00 PM	4	68	0	0	13	72	1	48	6	0	4	55	14	15	4	0	19	33	0	0	0	0	13	0	160
1:15 PM	3	78	0	0	21	81	0	46	5	0	6	51	17	7	6	0	19	30	0	0	0	0	13	0	162
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	7	146	0	0	34	153	1	94	11	0	10	106	31	22	10	0	38	63	0	0	0	0	26	0	322
3:00 PM	6	59	0	0	6	65	0	63	2	0	5	65	4	6	8	0	22	18	0	0	1	0	13	1	149
3:15 PM	7	59	0	0	5	66	0	61	4	0	8	65	15	10	5	0	14	30	0	0	0	0	13	0	161
3:30 PM	10	55	0	0	12	65	0	80	5	0	10	85	13	11	7	0	16	31	0	0	0	0	8	0	181
3:45 PM	10	81	0	0	8	91	0	62	14	0	12	76	14	13	8	0	15	35	0	0	0	0	8	0	202
Hourly Total	33	254	0	0	31	287	0	266	25	0	35	291	46	40	28	0	67	114	0	0	1	0	42	1	693
4:00 PM	8	82	0	0	18	90	0	88	8	0	13	96	15	9	4	0	25	28	0	0	0	0	23	0	214
4:15 PM	9	89	0	0	10	98	0	86	8	0	8	94	11	9	5	0	11	25	0	0	1	0	14	1	218

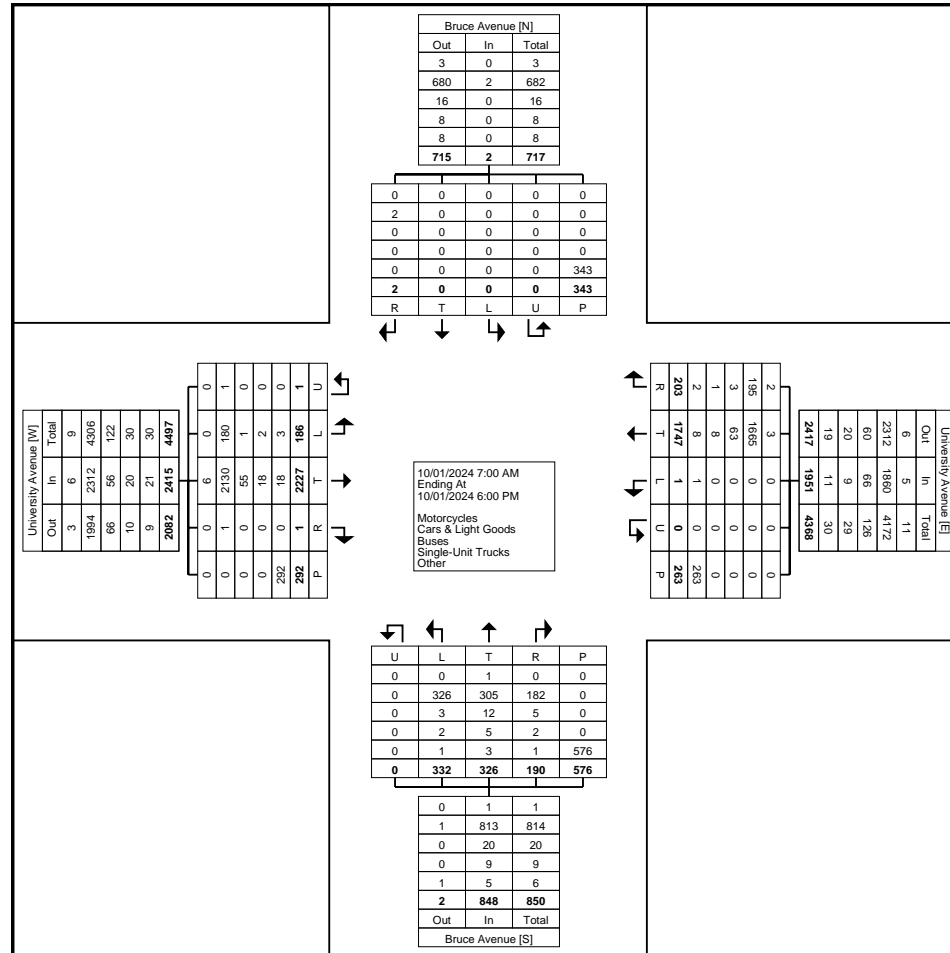
4:30 PM	6	61	0	0	11	67	0	106	15	0	12	121	11	11	5	0	21	27	0	0	0	0	13	0	215
4:45 PM	11	79	0	0	13	90	0	82	12	0	12	94	16	20	8	0	31	44	0	0	0	0	22	0	228
Hourly Total	34	311	0	0	52	345	0	362	43	0	45	405	53	49	22	0	88	124	0	0	1	0	72	1	875
5:00 PM	10	65	0	0	9	75	0	89	11	0	13	100	14	24	6	0	20	44	0	0	0	0	13	0	219
5:15 PM	8	77	0	0	4	85	0	80	18	0	0	98	10	12	8	0	7	30	0	0	0	0	5	0	213
5:30 PM	13	89	0	0	2	102	0	69	17	0	6	86	10	18	8	0	8	36	0	0	0	0	3	0	224
5:45 PM	4	74	0	0	4	78	0	67	8	0	5	75	11	17	4	0	6	32	0	0	0	0	5	0	185
Hourly Total	35	305	0	0	19	340	0	305	54	0	24	359	45	71	26	0	41	142	0	0	0	0	26	0	841
Grand Total	186	2227	1	1	292	2415	1	1747	203	0	263	1951	332	326	190	0	576	848	0	0	2	0	343	2	5216
Approach %	7.7	92.2	0.0	0.0	-	-	0.1	89.5	10.4	0.0	-	-	39.2	38.4	22.4	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	3.6	42.7	0.0	0.0	-	46.3	0.0	33.5	3.9	0.0	-	37.4	6.4	6.3	3.6	0.0	-	16.3	0.0	0.0	0.0	0.0	-	0.0	-
Motorcycles	0	6	0	0	-	6	0	3	2	0	-	5	0	1	0	0	-	1	0	0	0	0	-	0	12
% Motorcycles	0.0	0.3	0.0	0.0	-	0.2	0.0	0.2	1.0	-	-	0.3	0.0	0.3	0.0	-	-	0.1	-	-	0.0	-	-	0.0	0.2
Cars & Light Goods	180	2130	1	1	-	2312	0	1665	195	0	-	1860	326	305	182	0	-	813	0	0	2	0	-	2	4987
% Cars & Light Goods	96.8	95.6	100.0	100.0	-	95.7	0.0	95.3	96.1	-	-	95.3	98.2	93.6	95.8	-	-	95.9	-	-	100.0	-	-	100.0	95.6
Buses	1	55	0	0	-	56	0	63	3	0	-	66	3	12	5	0	-	20	0	0	0	0	-	0	142
% Buses	0.5	2.5	0.0	0.0	-	2.3	0.0	3.6	1.5	-	-	3.4	0.9	3.7	2.6	-	-	2.4	-	-	0.0	-	-	0.0	2.7
Single-Unit Trucks	2	18	0	0	-	20	0	8	1	0	-	9	2	5	2	0	-	9	0	0	0	0	-	0	38
% Single-Unit Trucks	1.1	0.8	0.0	0.0	-	0.8	0.0	0.5	0.5	-	-	0.5	0.6	1.5	1.1	-	-	1.1	-	-	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
Bicycles on Road	3	18	0	0	-	21	1	8	2	0	-	11	1	3	1	0	-	5	0	0	0	0	-	0	37
% Bicycles on Road	1.6	0.8	0.0	0.0	-	0.9	100.0	0.5	1.0	-	-	0.6	0.3	0.9	0.5	-	-	0.6	-	-	0.0	-	-	0.0	0.7
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	11	-	-	-	-	-	18	-	-
% Bicycles on Crosswalk	-	-	-	-	0.7	-	-	-	-	-	1.9	-	-	-	-	-	1.9	-	-	-	-	-	5.2	-	-
Pedestrians	-	-	-	-	290	-	-	-	-	-	258	-	-	-	-	-	565	-	-	-	-	-	325	-	-
% Pedestrians	-	-	-	-	99.3	-	-	-	-	-	98.1	-	-	-	-	-	98.1	-	-	-	-	-	94.8	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
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: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:00 AM)

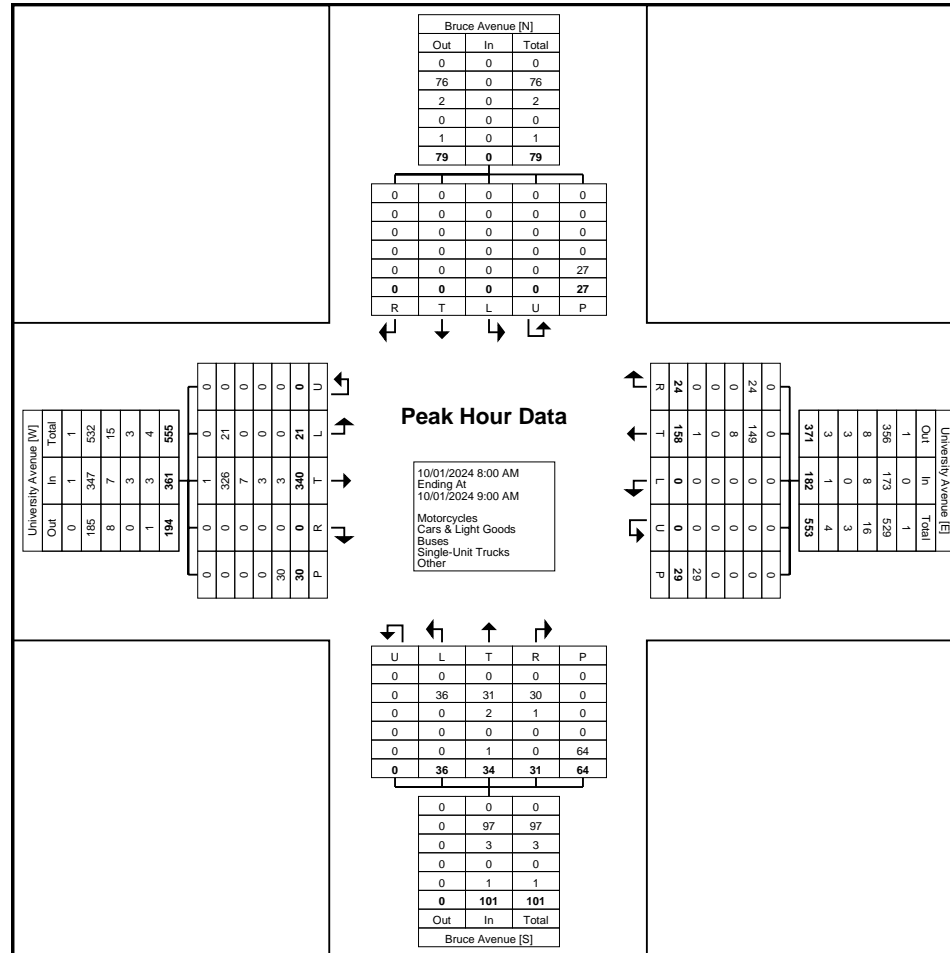
Start Time	University Avenue Eastbound						University Avenue Westbound						Bruce Avenue Northbound						Bruce Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	3	79	0	0	11	82	0	40	7	0	10	47	5	14	5	0	11	24	0	0	0	0	7	0	153
8:15 AM	6	91	0	0	4	97	0	45	3	0	1	48	7	3	10	0	8	20	0	0	0	0	7	0	165
8:30 AM	5	77	0	0	5	82	0	32	6	0	8	38	15	11	5	0	23	31	0	0	0	0	4	0	151
8:45 AM	7	93	0	0	10	100	0	41	8	0	10	49	9	6	11	0	22	26	0	0	0	0	9	0	175
Total	21	340	0	0	30	361	0	158	24	0	29	182	36	34	31	0	64	101	0	0	0	0	27	0	644
Approach %	5.8	94.2	0.0	0.0	-	-	0.0	86.8	13.2	0.0	-	-	35.6	33.7	30.7	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	3.3	52.8	0.0	0.0	-	56.1	0.0	24.5	3.7	0.0	-	28.3	5.6	5.3	4.8	0.0	-	15.7	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.750	0.914	0.000	0.000	-	0.903	0.000	0.878	0.750	0.000	-	0.929	0.600	0.607	0.705	0.000	-	0.815	0.000	0.000	0.000	0.000	-	0.000	0.920
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	-	-	-	0.3	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.2
Cars & Light Goods	21	326	0	0	-	347	0	149	24	0	-	173	36	31	30	0	-	97	0	0	0	0	-	0	617
% Cars & Light Goods	100.0	95.9	-	-	-	96.1	-	94.3	100.0	-	-	95.1	100.0	91.2	96.8	-	-	96.0	-	-	-	-	-	-	95.8
Buses	0	7	0	0	-	7	0	8	0	0	-	8	0	2	1	0	-	3	0	0	0	0	-	0	18
% Buses	0.0	2.1	-	-	-	1.9	-	5.1	0.0	-	-	4.4	0.0	5.9	3.2	-	-	3.0	-	-	-	-	-	-	2.8
Single-Unit Trucks	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.9	-	-	-	0.8	-	0.0	0.0	-	-	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
Bicycles on Road	0	3	0	0	-	3	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	5
% Bicycles on Road	0.0	0.9	-	-	-	0.8	-	0.6	0.0	-	-	0.5	0.0	2.9	0.0	-	-	1.0	-	-	-	-	-	-	0.8
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	3.4	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	30	-	-	-	-	-	28	-	-	-	-	-	64	-	-	-	-	-	27	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	96.6	-	-	-	-	-	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: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
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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: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Peak Hour Data (12:30 PM)

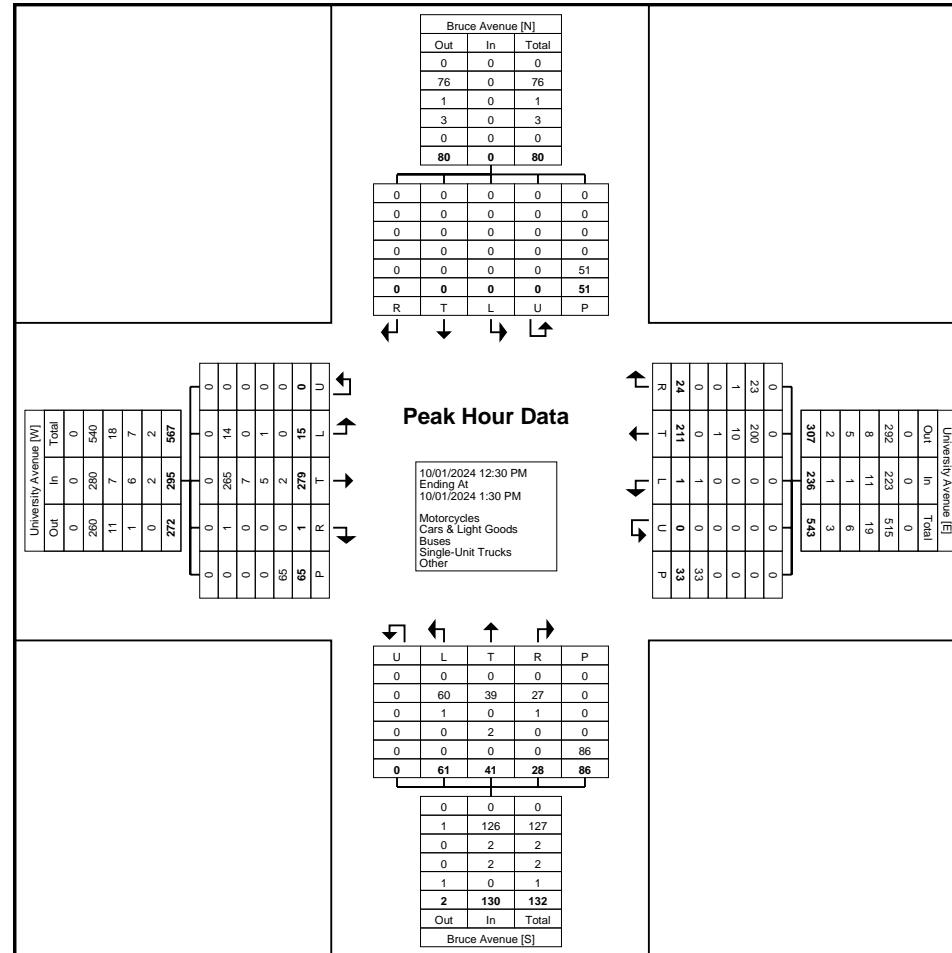
Start Time	University Avenue Eastbound						University Avenue Westbound						Bruce Avenue Northbound						Bruce Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	3	64	1	0	19	68	0	64	4	0	12	68	15	10	12	0	18	37	0	0	0	0	12	0	173
12:45 PM	5	69	0	0	12	74	0	53	9	0	11	62	15	9	6	0	30	30	0	0	0	0	13	0	166
1:00 PM	4	68	0	0	13	72	1	48	6	0	4	55	14	15	4	0	19	33	0	0	0	0	13	0	160
1:15 PM	3	78	0	0	21	81	0	46	5	0	6	51	17	7	6	0	19	30	0	0	0	0	13	0	162
Total	15	279	1	0	65	295	1	211	24	0	33	236	61	41	28	0	86	130	0	0	0	0	51	0	661
Approach %	5.1	94.6	0.3	0.0	-	-	0.4	89.4	10.2	0.0	-	-	46.9	31.5	21.5	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	2.3	42.2	0.2	0.0	-	44.6	0.2	31.9	3.6	0.0	-	35.7	9.2	6.2	4.2	0.0	-	19.7	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.750	0.894	0.250	0.000	-	0.910	0.250	0.824	0.667	0.000	-	0.868	0.897	0.683	0.583	0.000	-	0.878	0.000	0.000	0.000	0.000	-	0.000	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
Cars & Light Goods	14	265	1	0	-	280	0	200	23	0	-	223	60	39	27	0	-	126	0	0	0	0	-	0	629
% Cars & Light Goods	93.3	95.0	100.0	-	-	94.9	0.0	94.8	95.8	-	-	94.5	98.4	95.1	96.4	-	-	96.9	-	-	-	-	-	-	95.2
Buses	0	7	0	0	-	7	0	10	1	0	-	11	1	0	1	0	-	2	0	0	0	0	-	0	20
% Buses	0.0	2.5	0.0	-	-	2.4	0.0	4.7	4.2	-	-	4.7	1.6	0.0	3.6	-	-	1.5	-	-	-	-	-	-	3.0
Single-Unit Trucks	1	5	0	0	-	6	0	1	0	0	-	1	0	2	0	0	-	2	0	0	0	0	-	0	9
% Single-Unit Trucks	6.7	1.8	0.0	-	-	2.0	0.0	0.5	0.0	-	-	0.4	0.0	4.9	0.0	-	-	1.5	-	-	-	-	-	-	1.4
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
Bicycles on Road	0	2	0	0	-	2	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.7	0.0	-	-	0.7	100.0	0.0	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	-	-	-	-	-	-	0.5
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	9	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	3.5	-	-	-	-	-	17.6	-	-
Pedestrians	-	-	-	-	65	-	-	-	-	-	33	-	-	-	-	-	83	-	-	-	-	-	42	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	96.5	-	-	-	-	-	82.4	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:45 PM)

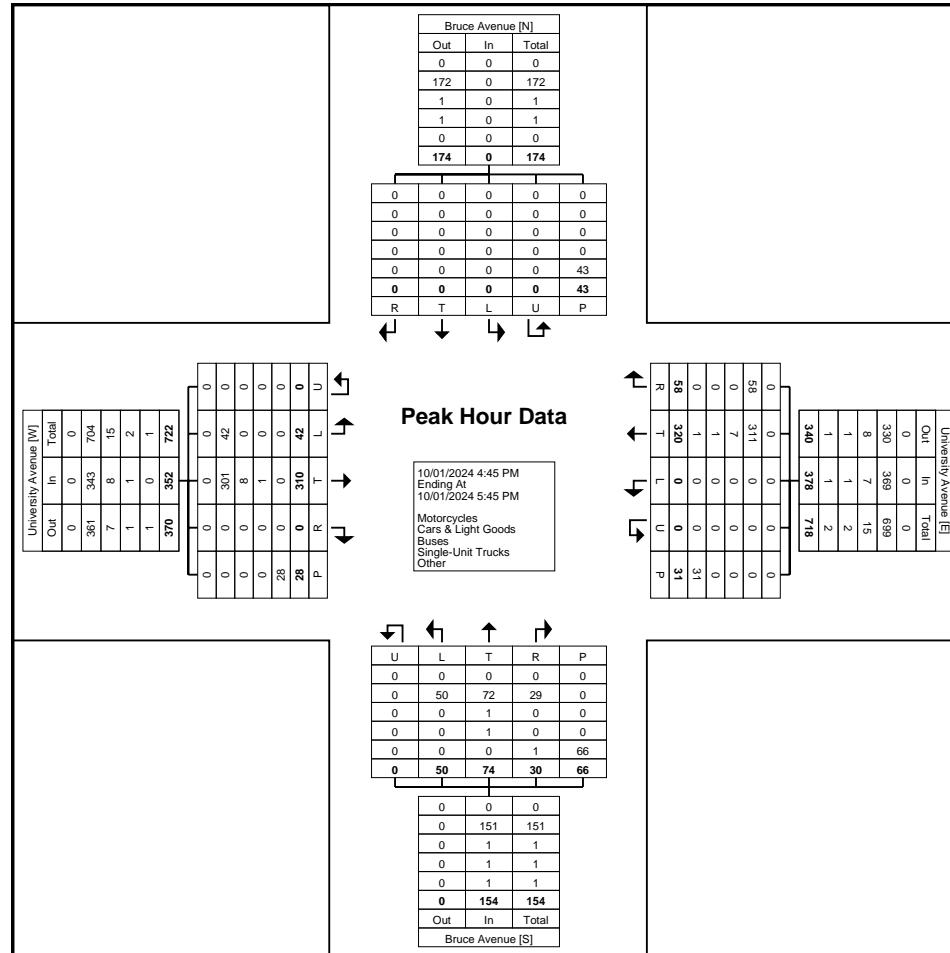
Start Time	University Avenue Eastbound						University Avenue Westbound						Bruce Avenue Northbound						Bruce Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	11	79	0	0	13	90	0	82	12	0	12	94	16	20	8	0	31	44	0	0	0	0	22	0	228
5:00 PM	10	65	0	0	9	75	0	89	11	0	13	100	14	24	6	0	20	44	0	0	0	0	13	0	219
5:15 PM	8	77	0	0	4	85	0	80	18	0	0	98	10	12	8	0	7	30	0	0	0	0	5	0	213
5:30 PM	13	89	0	0	2	102	0	69	17	0	6	86	10	18	8	0	8	36	0	0	0	0	3	0	224
Total	42	310	0	0	28	352	0	320	58	0	31	378	50	74	30	0	66	154	0	0	0	0	43	0	884
Approach %	11.9	88.1	0.0	0.0	-	-	0.0	84.7	15.3	0.0	-	-	32.5	48.1	19.5	0.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	4.8	35.1	0.0	0.0	-	39.8	0.0	36.2	6.6	0.0	-	42.8	5.7	8.4	3.4	0.0	-	17.4	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.808	0.871	0.000	0.000	-	0.863	0.000	0.899	0.806	0.000	-	0.945	0.781	0.771	0.938	0.000	-	0.875	0.000	0.000	0.000	0.000	-	0.000	0.969
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	42	301	0	0	-	343	0	311	58	0	-	369	50	72	29	0	-	151	0	0	0	0	-	0	863
% Cars & Light Goods	100.0	97.1	-	-	-	97.4	-	97.2	100.0	-	-	97.6	100.0	97.3	96.7	-	-	98.1	-	-	-	-	-	-	97.6
Buses	0	8	0	0	-	8	0	7	0	0	-	7	0	1	0	0	-	1	0	0	0	0	-	0	16
% Buses	0.0	2.6	-	-	-	2.3	-	2.2	0.0	-	-	1.9	0.0	1.4	0.0	-	-	0.6	-	-	-	-	-	-	1.8
Single-Unit Trucks	0	1	0	0	-	1	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.3	-	-	-	0.3	-	0.3	0.0	-	-	0.3	0.0	1.4	0.0	-	-	0.6	-	-	-	-	-	-	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
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	2
% Bicycles on Road	0.0	0.0	-	-	-	0.0	-	0.3	0.0	-	-	0.3	0.0	0.0	3.3	-	-	0.6	-	-	-	-	-	-	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	6.5	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	28	-	-	-	-	-	29	-	-	-	-	-	66	-	-	-	-	-	43	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	93.5	-	-	-	-	-	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: University Ave & Bruce Ave
Site Code: 240453
Start Date: 10/01/2024
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Turning Movement Peak Hour Data Plot (4:45 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Caron Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	University Avenue Eastbound						University Avenue Westbound						Caron Avenue Northbound						Caron 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	33	0	0	0	34	0	21	0	0	1	21	0	2	3	0	1	5	0	1	0	0	2	1	61
7:15 AM	0	59	1	0	0	60	0	23	0	0	0	23	2	1	0	0	0	3	0	1	0	0	2	1	87
7:30 AM	1	52	3	0	0	56	1	24	2	0	0	27	2	1	1	0	6	4	2	1	0	0	1	3	90
7:45 AM	3	77	1	0	0	81	0	43	0	1	1	44	2	2	2	0	5	6	1	1	2	0	5	4	135
Hourly Total	5	221	5	0	0	231	1	111	2	1	2	115	6	6	6	0	12	18	3	4	2	0	10	9	373
8:00 AM	4	91	2	0	0	97	1	40	1	0	1	42	1	1	1	0	3	3	0	1	1	0	4	2	144
8:15 AM	2	104	1	0	0	107	1	52	2	0	6	55	2	1	4	0	8	7	0	1	1	0	4	2	171
8:30 AM	5	94	1	0	0	100	0	42	1	0	5	43	1	3	2	0	7	6	3	0	3	0	6	6	155
8:45 AM	3	99	2	0	0	104	3	45	2	0	2	50	2	1	3	0	8	6	2	3	3	0	8	8	168
Hourly Total	14	388	6	0	0	408	5	179	6	0	14	190	6	6	10	0	26	22	5	5	8	0	22	18	638
9:00 AM	7	71	0	0	0	78	1	51	1	0	0	53	1	4	7	0	4	12	0	1	3	0	6	4	147
9:15 AM	3	65	1	0	0	69	1	38	0	0	0	39	6	2	1	0	7	9	2	1	3	0	3	6	123
9:30 AM	6	75	2	0	2	83	0	34	2	0	2	36	3	3	2	0	7	8	0	2	2	0	12	4	131
9:45 AM	2	76	3	0	0	81	3	64	3	0	1	70	0	5	2	0	9	7	0	0	3	0	4	3	161
Hourly Total	18	287	6	0	2	311	5	187	6	0	3	198	10	14	12	0	27	36	2	4	11	0	25	17	562
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	2	85	2	0	0	89	2	47	2	0	1	51	2	1	4	0	5	7	1	2	4	0	18	7	154
11:45 AM	4	75	3	0	2	82	1	55	3	0	0	59	4	0	4	0	6	8	2	0	4	0	14	6	155
Hourly Total	6	160	5	0	2	171	3	102	5	0	1	110	6	1	8	0	11	15	3	2	8	0	32	13	309
12:00 PM	3	63	1	0	0	67	0	60	1	0	2	61	1	0	2	0	7	3	2	1	4	0	5	7	138
12:15 PM	3	66	1	0	0	70	2	64	3	0	2	69	1	2	0	0	16	3	1	1	4	0	8	6	148
12:30 PM	1	75	1	0	1	77	0	73	3	0	3	76	4	6	6	0	12	16	3	1	4	0	7	8	177
12:45 PM	1	87	7	0	0	95	3	67	2	0	1	72	2	2	4	0	10	8	1	3	2	0	8	6	181
Hourly Total	8	291	10	0	1	309	5	264	9	0	8	278	8	10	12	0	45	30	7	6	14	0	28	27	644
1:00 PM	1	75	9	0	0	85	1	65	2	0	3	68	1	3	3	0	11	7	5	0	4	0	7	9	169
1:15 PM	5	81	1	0	1	87	1	66	3	0	2	70	7	3	8	0	13	18	1	1	4	0	6	6	181
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	156	10	0	1	172	2	131	5	0	5	138	8	6	11	0	24	25	6	1	8	0	13	15	350
3:00 PM	4	72	2	0	0	78	4	61	1	0	2	66	2	4	5	0	15	11	0	0	6	0	10	6	161
3:15 PM	3	72	6	0	0	81	1	73	6	0	0	80	3	3	1	0	9	7	2	0	4	0	5	6	174
3:30 PM	5	72	3	0	1	80	2	91	4	0	0	97	6	3	7	0	16	16	1	3	4	0	3	8	201
3:45 PM	2	93	1	0	0	96	2	74	2	0	4	78	1	2	3	0	6	6	1	3	2	0	1	6	186
Hourly Total	14	309	12	0	1	335	9	299	13	0	6	321	12	12	16	0	46	40	4	6	16	0	19	26	722
4:00 PM	3	102	1	0	2	106	0	107	4	0	1	111	1	3	3	0	15	7	0	2	6	0	5	8	232
4:15 PM	4	103	2	0	1	109	1	97	2	0	0	100	0	5	1	0	7	6	2	2	2	0	9	6	221

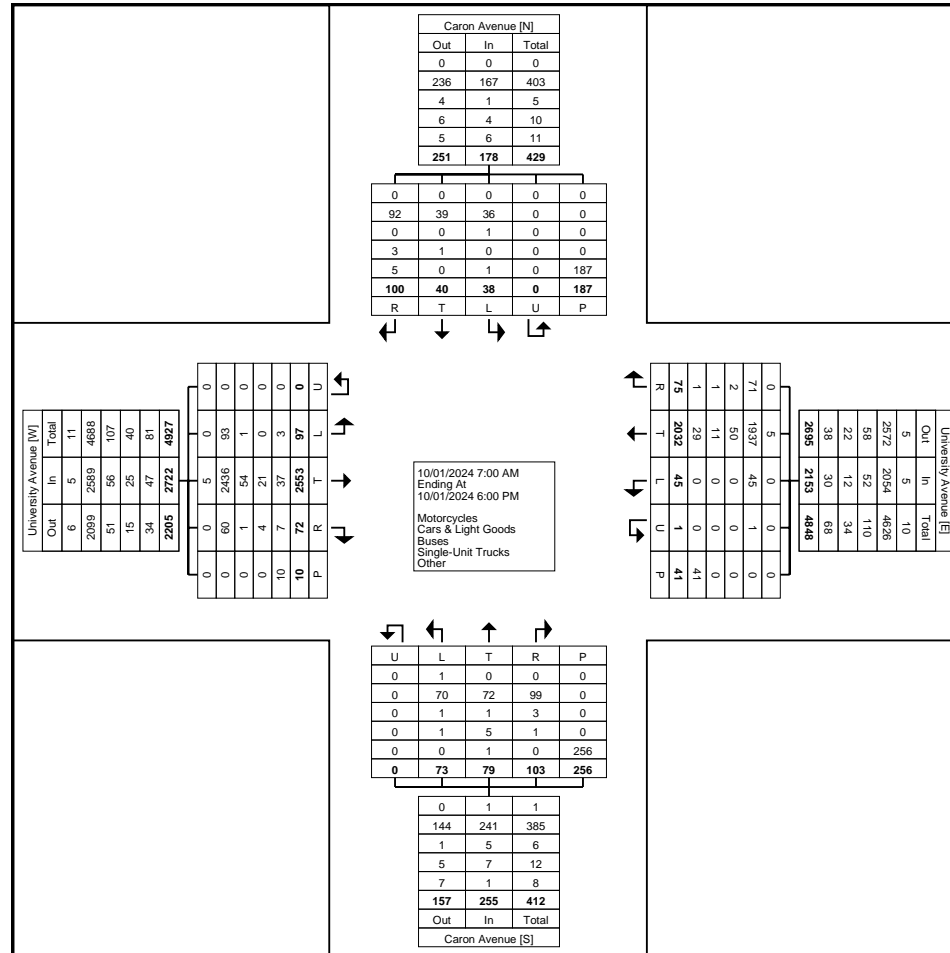
4:30 PM	0	83	0	0	0	83	2	115	4	0	0	121	4	5	4	0	9	13	2	0	3	0	7	5	222
4:45 PM	5	99	4	0	0	108	4	91	6	0	0	101	1	2	3	0	9	6	0	1	3	0	7	4	219
Hourly Total	12	387	7	0	3	406	7	410	16	0	1	433	6	15	11	0	40	32	4	5	14	0	28	23	894
5:00 PM	4	86	2	0	0	92	1	103	3	0	0	107	10	1	6	0	17	17	0	3	5	0	6	8	224
5:15 PM	5	90	3	0	0	98	5	91	3	0	0	99	1	1	6	0	3	8	2	0	4	0	1	6	211
5:30 PM	2	97	4	0	0	103	2	72	6	0	0	80	0	7	4	0	3	11	0	1	4	0	1	5	199
5:45 PM	3	81	2	0	0	86	0	83	1	0	1	84	0	0	1	0	2	1	2	3	6	0	2	11	182
Hourly Total	14	354	11	0	0	379	8	349	13	0	1	370	11	9	17	0	25	37	4	7	19	0	10	30	816
Grand Total	97	2553	72	0	10	2722	45	2032	75	1	41	2153	73	79	103	0	256	255	38	40	100	0	187	178	5308
Approach %	3.6	93.8	2.6	0.0	-	-	2.1	94.4	3.5	0.0	-	-	28.6	31.0	40.4	0.0	-	-	21.3	22.5	56.2	0.0	-	-	-
Total %	1.8	48.1	1.4	0.0	-	51.3	0.8	38.3	1.4	0.0	-	40.6	1.4	1.5	1.9	0.0	-	4.8	0.7	0.8	1.9	0.0	-	3.4	-
Motorcycles	0	5	0	0	-	5	0	5	0	0	-	5	1	0	0	0	-	1	0	0	0	0	-	0	11
% Motorcycles	0.0	0.2	0.0	-	-	0.2	0.0	0.2	0.0	0.0	-	0.2	1.4	0.0	0.0	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	93	2436	60	0	-	2589	45	1937	71	1	-	2054	70	72	99	0	-	241	36	39	92	0	-	167	5051
% Cars & Light Goods	95.9	95.4	83.3	-	-	95.1	100.0	95.3	94.7	100.0	-	95.4	95.9	91.1	96.1	-	-	94.5	94.7	97.5	92.0	-	-	93.8	95.2
Buses	1	54	1	0	-	56	0	50	2	0	-	52	1	1	3	0	-	5	1	0	0	0	-	1	114
% Buses	1.0	2.1	1.4	-	-	2.1	0.0	2.5	2.7	0.0	-	2.4	1.4	1.3	2.9	-	-	2.0	2.6	0.0	0.0	-	-	0.6	2.1
Single-Unit Trucks	0	21	4	0	-	25	0	11	1	0	-	12	1	5	1	0	-	7	0	1	3	0	-	4	48
% Single-Unit Trucks	0.0	0.8	5.6	-	-	0.9	0.0	0.5	1.3	0.0	-	0.6	1.4	6.3	1.0	-	-	2.7	0.0	2.5	3.0	-	-	2.2	0.9
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	0.0	0.0	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	3	37	7	0	-	47	0	28	1	0	-	29	0	1	0	0	-	1	1	0	5	0	-	6	83
% Bicycles on Road	3.1	1.4	9.7	-	-	1.7	0.0	1.4	1.3	0.0	-	1.3	0.0	1.3	0.0	-	-	0.4	2.6	0.0	5.0	-	-	3.4	1.6
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	11	-	-	-	-	-	11	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	12.2	-	-	-	-	-	4.3	-	-	-	-	-	5.9	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	36	-	-	-	-	-	245	-	-	-	-	-	176	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	87.8	-	-	-	-	-	95.7	-	-	-	-	-	94.1	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: University Ave & Caron Ave
Site Code: 240453
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Turning Movement Data Plot



Paradigm Transportation Solutions Limited
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Count Name: University Ave & Caron Ave
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Page No: 4

Turning Movement Peak Hour Data (8:15 AM)

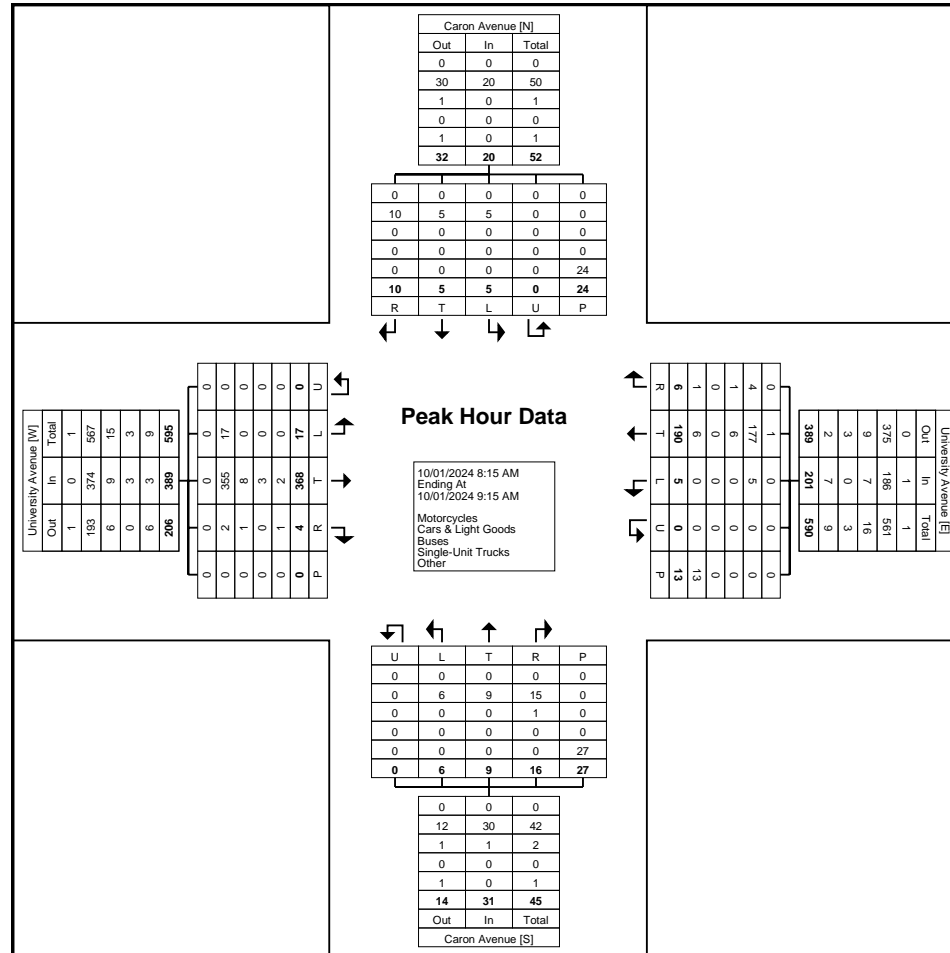
Start Time	University Avenue Eastbound						University Avenue Westbound						Caron Avenue Northbound						Caron Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:15 AM	2	104	1	0	0	107	1	52	2	0	6	55	2	1	4	0	8	7	0	1	1	0	4	2	171
8:30 AM	5	94	1	0	0	100	0	42	1	0	5	43	1	3	2	0	7	6	3	0	3	0	6	6	155
8:45 AM	3	99	2	0	0	104	3	45	2	0	2	50	2	1	3	0	8	6	2	3	3	0	8	8	168
9:00 AM	7	71	0	0	0	78	1	51	1	0	0	53	1	4	7	0	4	12	0	1	3	0	6	4	147
Total	17	368	4	0	0	389	5	190	6	0	13	201	6	9	16	0	27	31	5	5	10	0	24	20	641
Approach %	4.4	94.6	1.0	0.0	-	-	2.5	94.5	3.0	0.0	-	-	19.4	29.0	51.6	0.0	-	-	25.0	25.0	50.0	0.0	-	-	-
Total %	2.7	57.4	0.6	0.0	-	60.7	0.8	29.6	0.9	0.0	-	31.4	0.9	1.4	2.5	0.0	-	4.8	0.8	0.8	1.6	0.0	-	3.1	-
PHF	0.607	0.885	0.500	0.000	-	0.909	0.417	0.913	0.750	0.000	-	0.914	0.750	0.563	0.571	0.000	-	0.646	0.417	0.417	0.833	0.000	-	0.625	0.937
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	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	17	355	2	0	-	374	5	177	4	0	-	186	6	9	15	0	-	30	5	5	10	0	-	20	610
% Cars & Light Goods	100.0	96.5	50.0	-	-	96.1	100.0	93.2	66.7	-	-	92.5	100.0	100.0	93.8	-	-	96.8	100.0	100.0	100.0	-	-	100.0	95.2
Buses	0	8	1	0	-	9	0	6	1	0	-	7	0	0	1	0	-	1	0	0	0	0	-	0	17
% Buses	0.0	2.2	25.0	-	-	2.3	0.0	3.2	16.7	-	-	3.5	0.0	0.0	6.3	-	-	3.2	0.0	0.0	0.0	-	-	0.0	2.7
Single-Unit Trucks	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.8	0.0	-	-	0.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	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	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	2	1	0	-	3	0	6	1	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	10
% Bicycles on Road	0.0	0.5	25.0	-	-	0.8	0.0	3.2	16.7	-	-	3.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.6
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	38.5	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	27	-	-	-	-	-	24	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	61.5	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
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Count Name: University Ave & Caron Ave
Site Code: 240453
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Turning Movement Peak Hour Data Plot (8:15 AM)



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Count Name: University Ave & Caron Ave
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Turning Movement Peak Hour Data (12:30 PM)

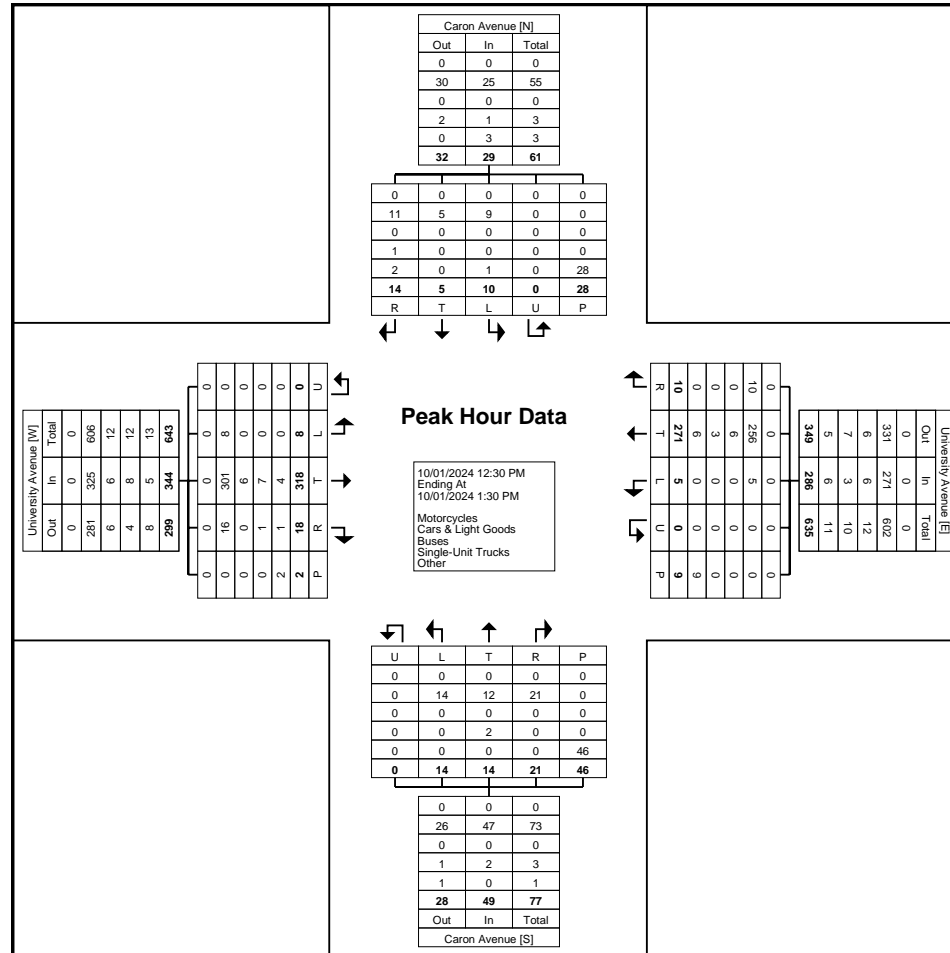
Start Time	University Avenue Eastbound						University Avenue Westbound						Caron Avenue Northbound						Caron Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	1	75	1	0	1	77	0	73	3	0	3	76	4	6	6	0	12	16	3	1	4	0	7	8	177
12:45 PM	1	87	7	0	0	95	3	67	2	0	1	72	2	2	4	0	10	8	1	3	2	0	8	6	181
1:00 PM	1	75	9	0	0	85	1	65	2	0	3	68	1	3	3	0	11	7	5	0	4	0	7	9	169
1:15 PM	5	81	1	0	1	87	1	66	3	0	2	70	7	3	8	0	13	18	1	1	4	0	6	6	181
Total	8	318	18	0	2	344	5	271	10	0	9	286	14	14	21	0	46	49	10	5	14	0	28	29	708
Approach %	2.3	92.4	5.2	0.0	-	-	1.7	94.8	3.5	0.0	-	-	28.6	28.6	42.9	0.0	-	-	34.5	17.2	48.3	0.0	-	-	-
Total %	1.1	44.9	2.5	0.0	-	48.6	0.7	38.3	1.4	0.0	-	40.4	2.0	2.0	3.0	0.0	-	6.9	1.4	0.7	2.0	0.0	-	4.1	-
PHF	0.400	0.914	0.500	0.000	-	0.905	0.417	0.928	0.833	0.000	-	0.941	0.500	0.583	0.656	0.000	-	0.681	0.500	0.417	0.875	0.000	-	0.806	0.978
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	8	301	16	0	-	325	5	256	10	0	-	271	14	12	21	0	-	47	9	5	11	0	-	25	668
% Cars & Light Goods	100.0	94.7	88.9	-	-	94.5	100.0	94.5	100.0	-	-	94.8	100.0	85.7	100.0	-	-	95.9	90.0	100.0	78.6	-	-	86.2	94.4
Buses	0	6	0	0	-	6	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	12
% Buses	0.0	1.9	0.0	-	-	1.7	0.0	2.2	0.0	-	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.7
Single-Unit Trucks	0	7	1	0	-	8	0	3	0	0	-	3	0	2	0	0	-	2	0	0	1	0	-	1	14
% Single-Unit Trucks	0.0	2.2	5.6	-	-	2.3	0.0	1.1	0.0	-	-	1.0	0.0	14.3	0.0	-	-	4.1	0.0	0.0	7.1	-	-	3.4	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	0.4	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	4	1	0	-	5	0	5	0	0	-	5	0	0	0	0	-	0	1	0	2	0	-	3	13
% Bicycles on Road	0.0	1.3	5.6	-	-	1.5	0.0	1.8	0.0	-	-	1.7	0.0	0.0	0.0	-	-	0.0	10.0	0.0	14.3	-	-	10.3	1.8
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	5	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	13.0	-	-	-	-	-	17.9	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	9	-	-	-	-	-	40	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.0	-	-	-	-	-	82.1	-	-



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Turning Movement Peak Hour Data Plot (12:30 PM)



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Count Name: University Ave & Caron Ave
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Turning Movement Peak Hour Data (4:00 PM)

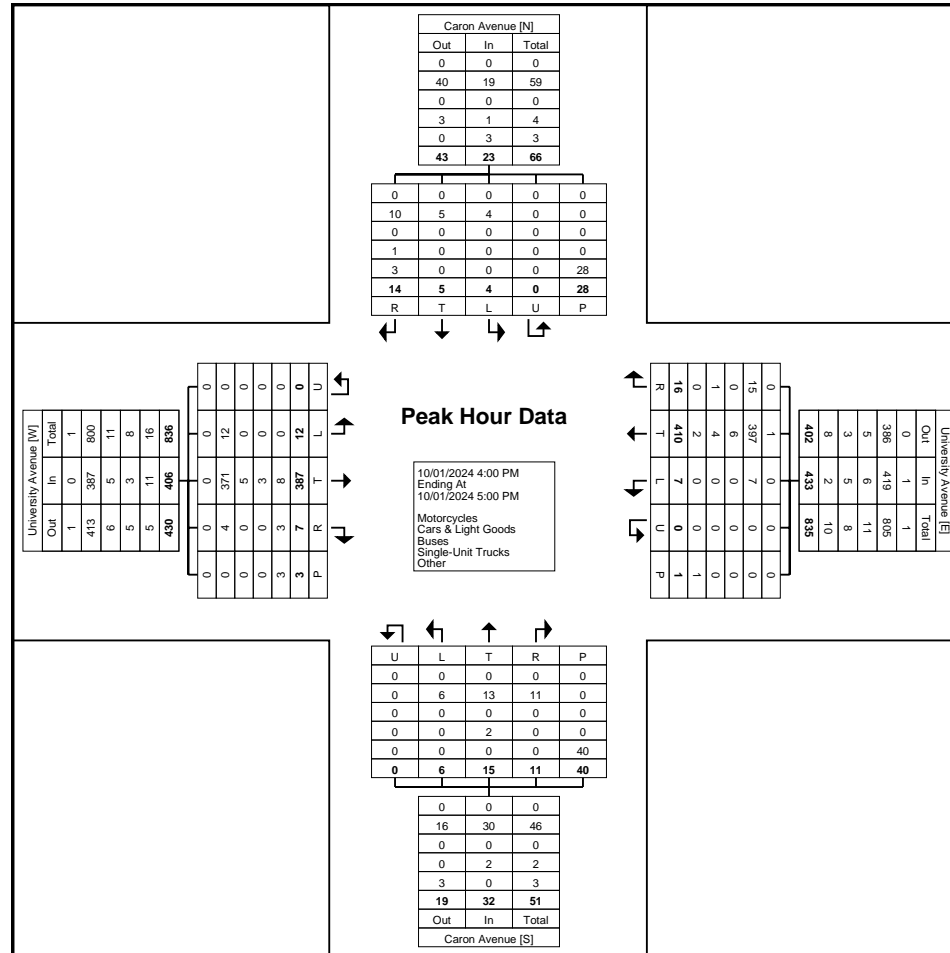
Start Time	University Avenue Eastbound						University Avenue Westbound						Caron Avenue Northbound						Caron Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	3	102	1	0	2	106	0	107	4	0	1	111	1	3	3	0	15	7	0	2	6	0	5	8	232
4:15 PM	4	103	2	0	1	109	1	97	2	0	0	100	0	5	1	0	7	6	2	2	2	0	9	6	221
4:30 PM	0	83	0	0	0	83	2	115	4	0	0	121	4	5	4	0	9	13	2	0	3	0	7	5	222
4:45 PM	5	99	4	0	0	108	4	91	6	0	0	101	1	2	3	0	9	6	0	1	3	0	7	4	219
Total	12	387	7	0	3	406	7	410	16	0	1	433	6	15	11	0	40	32	4	5	14	0	28	23	894
Approach %	3.0	95.3	1.7	0.0	-	-	1.6	94.7	3.7	0.0	-	-	18.8	46.9	34.4	0.0	-	-	17.4	21.7	60.9	0.0	-	-	-
Total %	1.3	43.3	0.8	0.0	-	45.4	0.8	45.9	1.8	0.0	-	48.4	0.7	1.7	1.2	0.0	-	3.6	0.4	0.6	1.6	0.0	-	2.6	-
PHF	0.600	0.939	0.438	0.000	-	0.931	0.438	0.891	0.667	0.000	-	0.895	0.375	0.750	0.688	0.000	-	0.615	0.500	0.625	0.583	0.000	-	0.719	0.963
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	12	371	4	0	-	387	7	397	15	0	-	419	6	13	11	0	-	30	4	5	10	0	-	19	855
% Cars & Light Goods	100.0	95.9	57.1	-	-	95.3	100.0	96.8	93.8	-	-	96.8	100.0	86.7	100.0	-	-	93.8	100.0	100.0	71.4	-	-	82.6	95.6
Buses	0	5	0	0	-	5	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	11
% Buses	0.0	1.3	0.0	-	-	1.2	0.0	1.5	0.0	-	-	1.4	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.2
Single-Unit Trucks	0	3	0	0	-	3	0	4	1	0	-	5	0	2	0	0	-	2	0	0	1	0	-	1	11
% Single-Unit Trucks	0.0	0.8	0.0	-	-	0.7	0.0	1.0	6.3	-	-	1.2	0.0	13.3	0.0	-	-	6.3	0.0	0.0	7.1	-	-	4.3	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	0.0
Bicycles on Road	0	8	3	0	-	11	0	2	0	0	-	2	0	0	0	0	-	0	0	0	3	0	-	3	16
% Bicycles on Road	0.0	2.1	42.9	-	-	2.7	0.0	0.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	21.4	-	-	13.0	1.8
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	2.5	-	-	-	-	-	7.1	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	39	-	-	-	-	-	26	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	97.5	-	-	-	-	-	92.9	-	-



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



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Count Name: University Ave & Crawford Ave
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Turning Movement Data

Start Time	University Avenue W Eastbound						University Avenue W Westbound						Crawford Avenue Northbound						Crawford 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	2	28	0	0	2	30	4	10	2	0	0	16	0	5	9	0	1	14	1	1	0	0	5	2	62
7:15 AM	2	38	5	0	2	45	5	19	1	0	0	25	2	6	13	0	4	21	3	4	1	0	3	8	99
7:30 AM	0	45	16	0	5	61	1	24	0	0	1	25	3	13	19	0	7	35	1	4	0	0	0	5	126
7:45 AM	1	59	11	0	3	71	3	39	1	0	2	43	11	13	18	0	5	42	2	14	4	0	4	20	176
Hourly Total	5	170	32	0	12	207	13	92	4	0	3	109	16	37	59	0	17	112	7	23	5	0	12	35	463
8:00 AM	2	69	4	0	1	75	4	37	1	0	2	42	4	10	30	0	6	44	2	8	4	0	5	14	175
8:15 AM	4	91	15	0	0	110	5	48	3	0	0	56	28	14	15	0	9	57	3	12	3	0	7	18	241
8:30 AM	4	77	11	0	4	92	12	29	2	0	1	43	26	10	19	0	8	55	4	6	6	0	5	16	206
8:45 AM	2	72	14	0	3	88	5	42	1	0	2	48	15	16	25	0	9	56	0	9	7	0	13	16	208
Hourly Total	12	309	44	0	8	365	26	156	7	0	5	189	73	50	89	0	32	212	9	35	20	0	30	64	830
9:00 AM	1	55	12	0	4	68	10	37	1	0	2	48	9	11	19	0	5	39	3	7	4	0	4	14	169
9:15 AM	2	48	13	0	2	63	5	41	0	0	4	46	8	12	17	0	10	37	2	12	3	0	3	17	163
9:30 AM	1	68	14	0	5	83	1	42	0	0	1	43	15	14	11	0	5	40	3	6	3	0	8	12	178
9:45 AM	4	62	11	0	3	77	4	56	2	0	2	62	18	11	15	0	9	44	4	13	3	0	6	20	203
Hourly Total	8	233	50	0	14	291	20	176	3	0	9	199	50	48	62	0	29	160	12	38	13	0	21	63	713
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	5	77	23	0	1	105	8	45	1	0	5	54	8	4	7	0	9	19	2	8	4	0	13	14	192
11:45 AM	5	65	13	0	1	83	8	56	1	0	0	65	7	18	14	0	14	39	2	7	6	0	10	15	202
Hourly Total	10	142	36	0	2	188	16	101	2	0	5	119	15	22	21	0	23	58	4	15	10	0	23	29	394
12:00 PM	2	51	10	0	7	63	14	44	3	0	0	61	9	17	13	0	6	39	3	18	0	0	12	21	184
12:15 PM	5	53	17	0	1	75	8	46	5	0	2	59	13	12	11	0	15	36	1	9	4	0	5	14	184
12:30 PM	2	58	20	0	5	80	13	68	3	0	0	84	12	13	13	0	9	38	6	9	3	0	1	18	220
12:45 PM	7	67	21	0	2	95	12	54	4	0	0	70	6	7	16	0	11	29	2	9	4	0	7	15	209
Hourly Total	16	229	68	0	15	313	47	212	15	0	2	274	40	49	53	0	41	142	12	45	11	0	25	68	797
1:00 PM	7	72	14	0	1	93	8	56	1	0	1	65	12	18	12	0	8	42	1	8	5	0	10	14	214
1:15 PM	4	68	22	0	0	94	8	56	6	1	0	71	9	10	12	0	13	31	4	12	5	0	7	21	217
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	11	140	36	0	1	187	16	112	7	1	1	136	21	28	24	0	21	73	5	20	10	0	17	35	431
3:00 PM	10	66	13	0	6	89	8	55	2	0	3	65	12	18	13	0	16	43	2	16	1	0	10	19	216
3:15 PM	6	57	18	1	2	82	12	54	5	0	1	71	13	16	17	0	8	46	2	9	7	0	4	18	217
3:30 PM	10	68	25	0	11	103	14	79	1	0	0	94	16	17	18	0	18	51	3	14	8	0	4	25	273
3:45 PM	8	74	11	0	1	93	16	54	3	0	1	73	12	20	13	0	9	45	5	12	7	0	0	24	235
Hourly Total	34	265	67	1	20	367	50	242	11	0	5	303	53	71	61	0	51	185	12	51	23	0	18	86	941
4:00 PM	10	88	25	0	1	123	18	85	4	0	3	107	15	12	14	0	15	41	4	10	1	0	10	15	286
4:15 PM	5	77	21	0	3	103	14	78	1	0	4	93	17	11	17	0	8	45	5	10	7	0	8	22	263

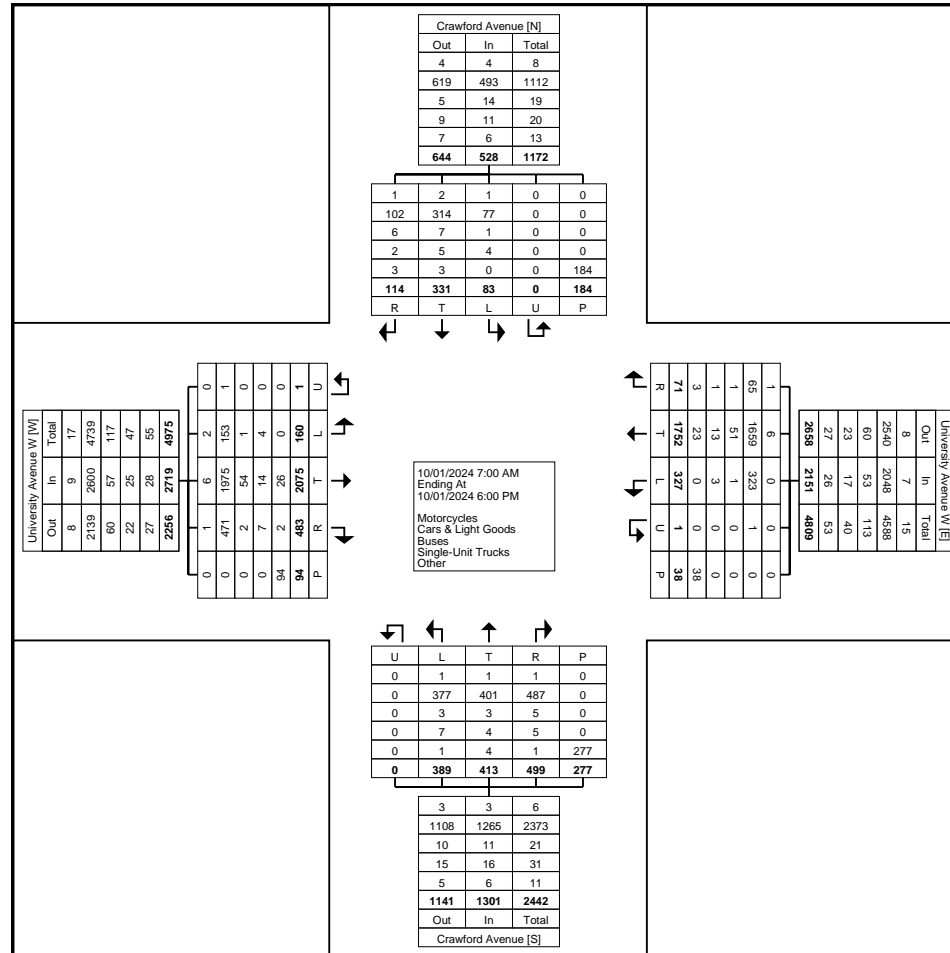
4:30 PM	7	63	19	0	5	89	21	96	6	0	0	123	16	12	12	0	9	40	2	23	1	0	5	26	278
4:45 PM	11	70	22	0	7	103	21	74	3	0	0	98	15	13	19	0	12	47	6	7	4	0	7	17	265
Hourly Total	33	298	87	0	16	418	74	333	14	0	7	421	63	48	62	0	44	173	17	50	13	0	30	80	1092
5:00 PM	8	76	23	0	4	107	23	102	1	0	1	126	11	18	16	0	13	45	3	10	5	0	5	18	296
5:15 PM	10	82	12	0	0	104	13	88	1	0	0	102	10	15	21	0	2	46	0	16	0	0	1	16	268
5:30 PM	10	66	20	0	1	96	16	64	5	0	0	85	11	14	16	0	4	41	2	18	1	0	2	21	243
5:45 PM	3	65	8	0	1	76	13	74	1	0	0	88	26	13	15	0	0	54	0	10	3	0	0	13	231
Hourly Total	31	289	63	0	6	383	65	328	8	0	1	401	58	60	68	0	19	186	5	54	9	0	8	68	1038
Grand Total	160	2075	483	1	94	2719	327	1752	71	1	38	2151	389	413	499	0	277	1301	83	331	114	0	184	528	6699
Approach %	5.9	76.3	17.8	0.0	-	-	15.2	81.5	3.3	0.0	-	-	29.9	31.7	38.4	0.0	-	-	15.7	62.7	21.6	0.0	-	-	-
Total %	2.4	31.0	7.2	0.0	-	40.6	4.9	26.2	1.1	0.0	-	32.1	5.8	6.2	7.4	0.0	-	19.4	1.2	4.9	1.7	0.0	-	7.9	-
Motorcycles	2	6	1	0	-	9	0	6	1	0	-	7	1	1	1	0	-	3	1	2	1	0	-	4	23
% Motorcycles	1.3	0.3	0.2	0.0	-	0.3	0.0	0.3	1.4	0.0	-	0.3	0.3	0.2	0.2	-	-	0.2	1.2	0.6	0.9	-	-	0.8	0.3
Cars & Light Goods	153	1975	471	1	-	2600	323	1659	65	1	-	2048	377	401	487	0	-	1265	77	314	102	0	-	493	6406
% Cars & Light Goods	95.6	95.2	97.5	100.0	-	95.6	98.8	94.7	91.5	100.0	-	95.2	96.9	97.1	97.6	-	-	97.2	92.8	94.9	89.5	-	-	93.4	95.6
Buses	1	54	2	0	-	57	1	51	1	0	-	53	3	3	5	0	-	11	1	7	6	0	-	14	135
% Buses	0.6	2.6	0.4	0.0	-	2.1	0.3	2.9	1.4	0.0	-	2.5	0.8	0.7	1.0	-	-	0.8	1.2	2.1	5.3	-	-	2.7	2.0
Single-Unit Trucks	4	14	7	0	-	25	3	13	1	0	-	17	7	4	5	0	-	16	4	5	2	0	-	11	69
% Single-Unit Trucks	2.5	0.7	1.4	0.0	-	0.9	0.9	0.7	1.4	0.0	-	0.8	1.8	1.0	1.0	-	-	1.2	4.8	1.5	1.8	-	-	2.1	1.0
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	3	1	0	-	4	0	1	0	0	-	1	6
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	0.0	-	0.0	0.0	0.7	0.2	-	-	0.3	0.0	0.3	0.0	-	-	0.2	0.1
Bicycles on Road	0	26	2	0	-	28	0	22	3	0	-	25	1	1	0	0	-	2	0	2	3	0	-	5	60
% Bicycles on Road	0.0	1.3	0.4	0.0	-	1.0	0.0	1.3	4.2	0.0	-	1.2	0.3	0.2	0.0	-	-	0.2	0.0	0.6	2.6	-	-	0.9	0.9
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	19	-	-	-	-	-	14	-	-
% Bicycles on Crosswalk	-	-	-	-	6.4	-	-	-	-	-	2.6	-	-	-	-	-	6.9	-	-	-	-	-	7.6	-	-
Pedestrians	-	-	-	-	88	-	-	-	-	-	37	-	-	-	-	-	258	-	-	-	-	-	170	-	-
% Pedestrians	-	-	-	-	93.6	-	-	-	-	-	97.4	-	-	-	-	-	93.1	-	-	-	-	-	92.4	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
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: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:00 AM)

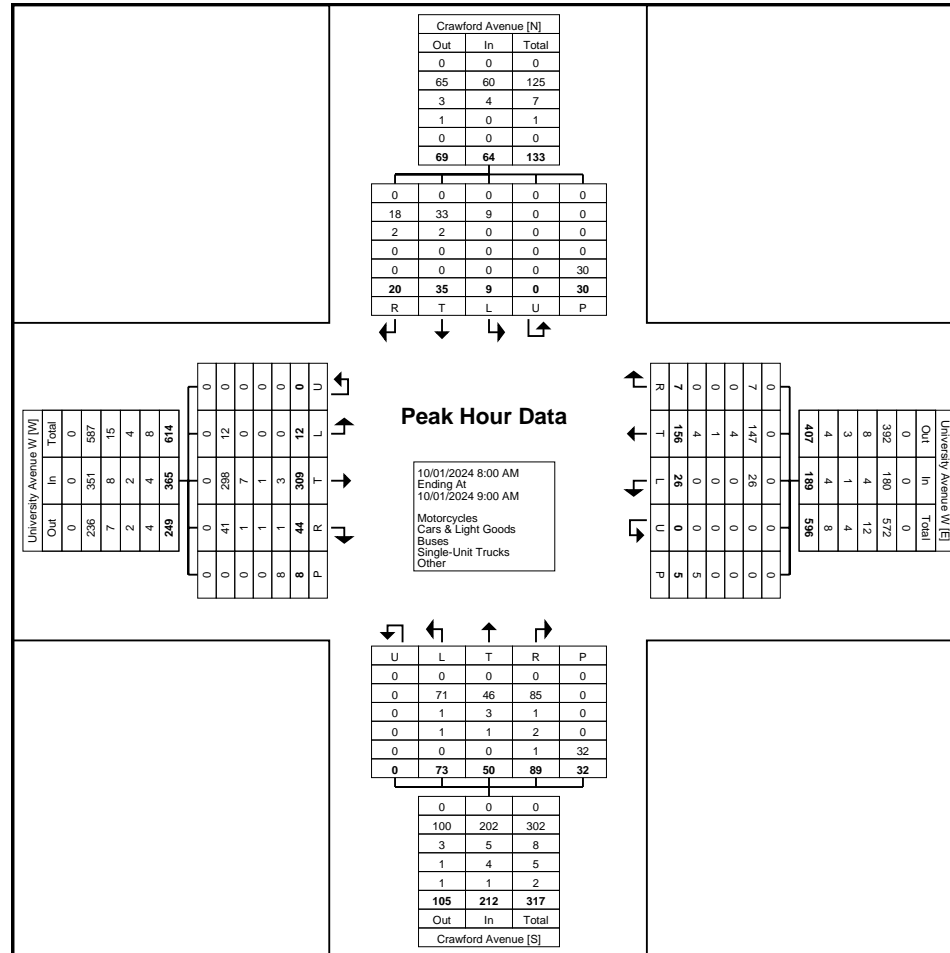
Start Time	University Avenue W Eastbound						University Avenue W Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	2	69	4	0	1	75	4	37	1	0	2	42	4	10	30	0	6	44	2	8	4	0	5	14	175
8:15 AM	4	91	15	0	0	110	5	48	3	0	0	56	28	14	15	0	9	57	3	12	3	0	7	18	241
8:30 AM	4	77	11	0	4	92	12	29	2	0	1	43	26	10	19	0	8	55	4	6	6	0	5	16	206
8:45 AM	2	72	14	0	3	88	5	42	1	0	2	48	15	16	25	0	9	56	0	9	7	0	13	16	208
Total	12	309	44	0	8	365	26	156	7	0	5	189	73	50	89	0	32	212	9	35	20	0	30	64	830
Approach %	3.3	84.7	12.1	0.0	-	-	13.8	82.5	3.7	0.0	-	-	34.4	23.6	42.0	0.0	-	-	14.1	54.7	31.3	0.0	-	-	-
Total %	1.4	37.2	5.3	0.0	-	44.0	3.1	18.8	0.8	0.0	-	22.8	8.8	6.0	10.7	0.0	-	25.5	1.1	4.2	2.4	0.0	-	7.7	-
PHF	0.750	0.849	0.733	0.000	-	0.830	0.542	0.813	0.583	0.000	-	0.844	0.652	0.781	0.742	0.000	-	0.930	0.563	0.729	0.714	0.000	-	0.889	0.861
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	298	41	0	-	351	26	147	7	0	-	180	71	46	85	0	-	202	9	33	18	0	-	60	793
% Cars & Light Goods	100.0	96.4	93.2	-	-	96.2	100.0	94.2	100.0	-	-	95.2	97.3	92.0	95.5	-	-	95.3	100.0	94.3	90.0	-	-	93.8	95.5
Buses	0	7	1	0	-	8	0	4	0	0	-	4	1	3	1	0	-	5	0	2	2	0	-	4	21
% Buses	0.0	2.3	2.3	-	-	2.2	0.0	2.6	0.0	-	-	2.1	1.4	6.0	1.1	-	-	2.4	0.0	5.7	10.0	-	-	6.3	2.5
Single-Unit Trucks	0	1	1	0	-	2	0	1	0	0	-	1	1	1	2	0	-	4	0	0	0	0	-	0	7
% Single-Unit Trucks	0.0	0.3	2.3	-	-	0.5	0.0	0.6	0.0	-	-	0.5	1.4	2.0	2.2	-	-	1.9	0.0	0.0	0.0	-	-	0.0	0.8
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	1.1	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	3	1	0	-	4	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	8
% Bicycles on Road	0.0	1.0	2.3	-	-	1.1	0.0	2.6	0.0	-	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	12.5	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-	-	-	-	10.0	-	-
Pedestrians	-	-	-	-	7	-	-	-	-	-	5	-	-	-	-	-	28	-	-	-	-	-	27	-	-
% Pedestrians	-	-	-	-	87.5	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-	-	-	-	90.0	-	-



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Count Name: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
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@ptsl.com

Count Name: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

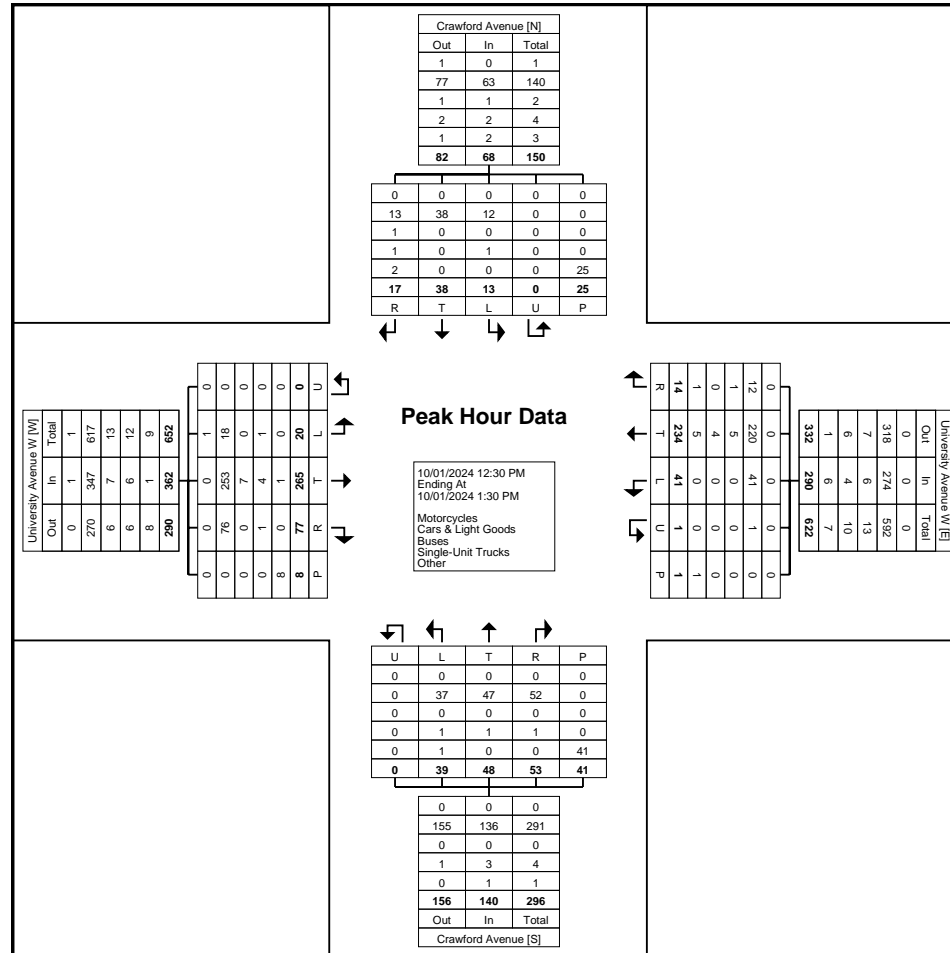
Start Time	University Avenue W Eastbound						University Avenue W Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	2	58	20	0	5	80	13	68	3	0	0	84	12	13	13	0	9	38	6	9	3	0	1	18	220
12:45 PM	7	67	21	0	2	95	12	54	4	0	0	70	6	7	16	0	11	29	2	9	4	0	7	15	209
1:00 PM	7	72	14	0	1	93	8	56	1	0	1	65	12	18	12	0	8	42	1	8	5	0	10	14	214
1:15 PM	4	68	22	0	0	94	8	56	6	1	0	71	9	10	12	0	13	31	4	12	5	0	7	21	217
Total	20	265	77	0	8	362	41	234	14	1	1	290	39	48	53	0	41	140	13	38	17	0	25	68	860
Approach %	5.5	73.2	21.3	0.0	-	-	14.1	80.7	4.8	0.3	-	-	27.9	34.3	37.9	0.0	-	-	19.1	55.9	25.0	0.0	-	-	-
Total %	2.3	30.8	9.0	0.0	-	42.1	4.8	27.2	1.6	0.1	-	33.7	4.5	5.6	6.2	0.0	-	16.3	1.5	4.4	2.0	0.0	-	7.9	-
PHF	0.714	0.920	0.875	0.000	-	0.953	0.788	0.860	0.583	0.250	-	0.863	0.813	0.667	0.828	0.000	-	0.833	0.542	0.792	0.850	0.000	-	0.810	0.977
Motorcycles	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	5.0	0.0	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	-	-	0.0	0.1
Cars & Light Goods	18	253	76	0	-	347	41	220	12	1	-	274	37	47	52	0	-	136	12	38	13	0	-	63	820
% Cars & Light Goods	90.0	95.5	98.7	-	-	95.9	100.0	94.0	85.7	100.0	-	94.5	94.9	97.9	98.1	-	-	97.1	92.3	100.0	76.5	-	-	92.6	95.3
Buses	0	7	0	0	-	7	0	5	1	0	-	6	0	0	0	0	-	0	0	0	1	0	-	1	14
% Buses	0.0	2.6	0.0	-	-	1.9	0.0	2.1	7.1	0.0	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	5.9	-	-	1.5	1.6
Single-Unit Trucks	1	4	1	0	-	6	0	4	0	0	-	4	1	1	1	0	-	3	1	0	1	0	-	2	15
% Single-Unit Trucks	5.0	1.5	1.3	-	-	1.7	0.0	1.7	0.0	0.0	-	1.4	2.6	2.1	1.9	-	-	2.1	7.7	0.0	5.9	-	-	2.9	1.7
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	0.0
Bicycles on Road	0	1	0	0	-	1	0	5	1	0	-	6	1	0	0	0	-	1	0	0	2	0	-	2	10
% Bicycles on Road	0.0	0.4	0.0	-	-	0.3	0.0	2.1	7.1	0.0	-	2.1	2.6	0.0	0.0	-	-	0.7	0.0	0.0	11.8	-	-	2.9	1.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	12.2	-	-	-	-	-	8.0	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	1	-	-	-	-	-	36	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	87.8	-	-	-	-	-	92.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:30 PM)

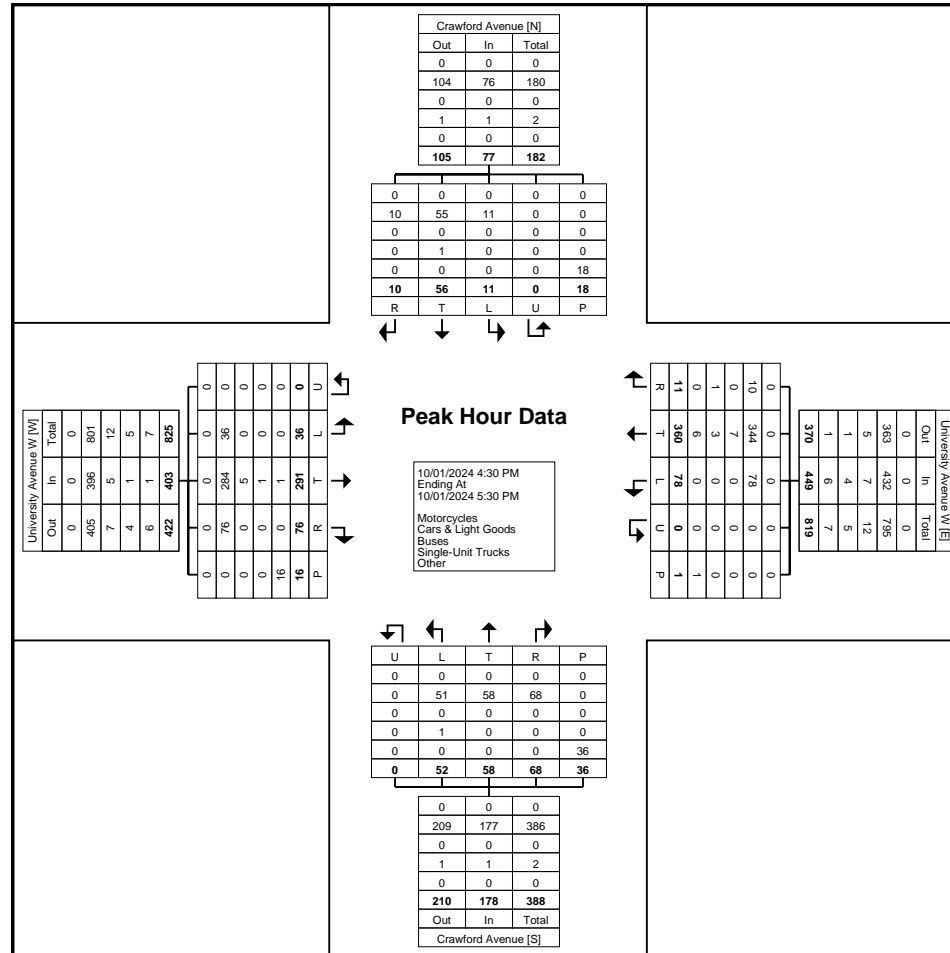
Start Time	University Avenue W Eastbound						University Avenue W Westbound						Crawford Avenue Northbound						Crawford Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:30 PM	7	63	19	0	5	89	21	96	6	0	0	123	16	12	12	0	9	40	2	23	1	0	5	26	278
4:45 PM	11	70	22	0	7	103	21	74	3	0	0	98	15	13	19	0	12	47	6	7	4	0	7	17	265
5:00 PM	8	76	23	0	4	107	23	102	1	0	1	126	11	18	16	0	13	45	3	10	5	0	5	18	296
5:15 PM	10	82	12	0	0	104	13	88	1	0	0	102	10	15	21	0	2	46	0	16	0	0	1	16	268
Total	36	291	76	0	16	403	78	360	11	0	1	449	52	58	68	0	36	178	11	56	10	0	18	77	1107
Approach %	8.9	72.2	18.9	0.0	-	-	17.4	80.2	2.4	0.0	-	-	29.2	32.6	38.2	0.0	-	-	14.3	72.7	13.0	0.0	-	-	-
Total %	3.3	26.3	6.9	0.0	-	36.4	7.0	32.5	1.0	0.0	-	40.6	4.7	5.2	6.1	0.0	-	16.1	1.0	5.1	0.9	0.0	-	7.0	-
PHF	0.818	0.887	0.826	0.000	-	0.942	0.848	0.882	0.458	0.000	-	0.891	0.813	0.806	0.810	0.000	-	0.947	0.458	0.609	0.500	0.000	-	0.740	0.935
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	284	76	0	-	396	78	344	10	0	-	432	51	58	68	0	-	177	11	55	10	0	-	76	1081
% Cars & Light Goods	100.0	97.6	100.0	-	-	98.3	100.0	95.6	90.9	-	-	96.2	98.1	100.0	100.0	-	-	99.4	100.0	98.2	100.0	-	-	98.7	97.7
Buses	0	5	0	0	-	5	0	7	0	0	-	7	0	0	0	0	-	0	0	0	0	0	-	0	12
% Buses	0.0	1.7	0.0	-	-	1.2	0.0	1.9	0.0	-	-	1.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.1
Single-Unit Trucks	0	1	0	0	-	1	0	3	1	0	-	4	1	0	0	0	-	1	0	1	0	0	-	1	7
% Single-Unit Trucks	0.0	0.3	0.0	-	-	0.2	0.0	0.8	9.1	-	-	0.9	1.9	0.0	0.0	-	-	0.6	0.0	1.8	0.0	-	-	1.3	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	1	0	0	-	1	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	7
% Bicycles on Road	0.0	0.3	0.0	-	-	0.2	0.0	1.7	0.0	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	6.3	-	-	-	-	-	0.0	-	-	-	-	-	2.8	-	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	-	1	-	-	-	-	-	35	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	93.8	-	-	-	-	-	100.0	-	-	-	-	-	97.2	-	-	-	-	-	88.9	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
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Count Name: University Ave & Crawford Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 9



Turning Movement Peak Hour Data Plot (4:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	University Avenue Eastbound						University Avenue Westbound						Ouellette Avenue Northbound						Ouellette 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	2	13	8	0	3	23	1	4	2	0	5	7	10	21	6	0	2	37	1	15	2	0	3	18	85
7:15 AM	1	25	14	0	1	40	4	8	0	0	4	12	7	29	7	0	1	43	1	20	0	0	1	21	116
7:30 AM	4	28	12	0	2	44	2	10	1	0	6	13	7	35	10	1	4	53	3	25	0	0	0	28	138
7:45 AM	7	44	15	0	10	66	5	11	1	0	9	17	16	48	12	1	4	77	3	25	2	0	1	30	190
Hourly Total	14	110	49	0	16	173	12	33	4	0	24	49	40	133	35	2	11	210	8	85	4	0	5	97	529
8:00 AM	8	50	13	0	10	71	9	14	1	0	17	24	13	39	13	0	4	65	1	25	4	0	9	30	190
8:15 AM	8	72	15	0	14	95	1	17	2	0	25	20	23	55	16	1	14	95	4	30	3	0	11	37	247
8:30 AM	10	45	18	0	11	73	7	17	3	0	18	27	10	61	19	0	11	90	2	34	2	0	7	38	228
8:45 AM	6	45	13	0	16	64	10	25	5	1	14	41	21	55	20	0	12	96	2	43	1	0	6	46	247
Hourly Total	32	212	59	0	51	303	27	73	11	1	74	112	67	210	68	1	41	346	9	132	10	0	33	151	912
9:00 AM	8	39	16	0	18	63	5	28	7	0	35	40	20	33	17	0	13	70	0	37	3	0	6	40	213
9:15 AM	12	37	16	0	23	65	3	6	3	0	19	12	17	51	17	0	16	85	2	39	2	1	4	44	206
9:30 AM	3	41	21	0	29	65	5	14	4	0	52	23	23	48	18	0	20	89	2	35	2	0	9	39	216
9:45 AM	8	48	17	0	23	73	2	18	2	0	46	22	19	50	22	0	8	91	5	33	4	0	6	42	228
Hourly Total	31	165	70	0	93	266	15	66	16	0	152	97	79	182	74	0	57	335	9	144	11	1	25	165	863
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	11	56	27	0	38	94	5	21	5	0	69	31	10	43	5	0	22	58	4	34	5	0	17	43	226
11:45 AM	9	40	23	0	43	72	6	27	7	0	56	40	14	48	14	0	42	76	6	47	4	0	18	57	245
Hourly Total	20	96	50	0	81	166	11	48	12	0	125	71	24	91	19	0	64	134	10	81	9	0	35	100	471
12:00 PM	10	37	13	0	62	60	7	21	7	0	56	35	16	58	15	0	33	89	3	41	5	0	14	49	233
12:15 PM	7	30	21	0	44	58	2	28	6	0	86	36	17	56	20	0	22	93	3	46	7	0	18	56	243
12:30 PM	16	40	11	0	44	67	6	28	6	2	56	42	17	61	19	0	33	97	5	53	4	0	22	62	268
12:45 PM	11	44	24	0	51	79	9	26	6	0	62	41	17	51	15	0	43	83	5	49	1	0	20	55	258
Hourly Total	44	151	69	0	201	264	24	103	25	2	260	154	67	226	69	0	131	362	16	189	17	0	74	222	1002
1:00 PM	7	32	24	0	63	63	3	23	6	0	66	32	15	42	14	0	41	71	5	54	4	0	20	63	229
1:15 PM	10	50	24	0	34	84	5	20	24	0	63	49	26	53	14	0	35	93	9	60	3	0	17	72	298
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	17	82	48	0	97	147	8	43	30	0	129	81	41	95	28	0	76	164	14	114	7	0	37	135	527
3:00 PM	14	44	22	0	45	80	1	33	3	0	50	37	20	60	12	0	23	92	3	75	4	0	32	82	291
3:15 PM	10	30	20	0	41	60	8	37	8	0	46	53	15	61	12	0	22	88	3	41	2	0	14	46	247
3:30 PM	14	36	21	0	34	71	11	33	5	0	58	49	21	50	11	0	18	82	5	57	6	0	6	68	270
3:45 PM	12	50	18	0	42	80	2	23	2	0	58	27	25	62	13	0	17	100	6	41	3	0	11	50	257
Hourly Total	50	160	81	0	162	291	22	126	18	0	212	166	81	233	48	0	80	362	17	214	15	0	63	246	1065
4:00 PM	16	49	20	0	39	85	5	46	8	0	29	59	23	66	15	0	9	104	4	55	4	0	10	63	311
4:15 PM	14	42	25	0	30	81	9	39	2	0	42	50	28	59	11	1	19	99	7	40	3	0	10	50	280

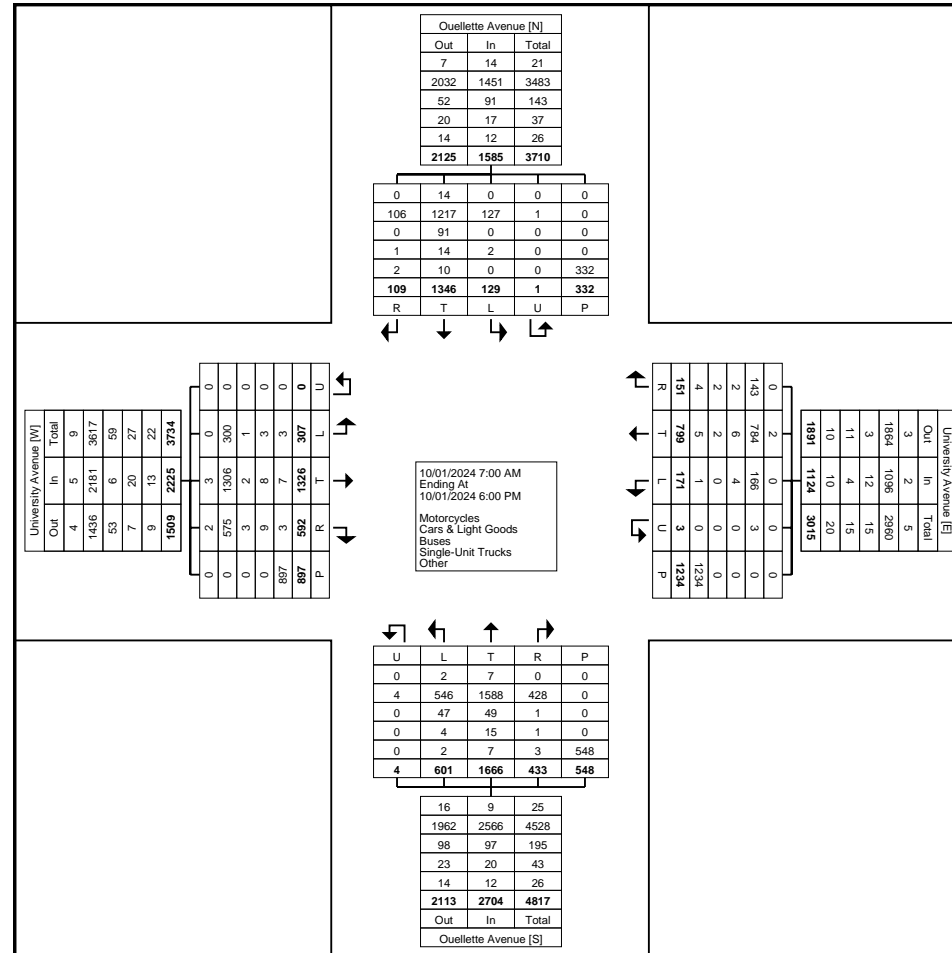
4:30 PM	14	49	16	0	28	79	6	59	6	0	44	71	24	65	16	0	25	105	2	54	5	0	9	61	316
4:45 PM	9	42	22	0	35	73	5	39	1	0	52	45	22	66	6	0	7	94	6	51	6	0	10	63	275
Hourly Total	53	182	83	0	132	318	25	183	17	0	167	225	97	256	48	1	60	402	19	200	18	0	39	237	1182
5:00 PM	13	38	21	0	28	72	10	35	3	0	48	48	22	72	7	0	9	101	11	55	5	0	10	71	292
5:15 PM	17	31	27	0	18	75	4	36	7	0	16	47	25	63	10	0	6	98	2	40	3	0	5	45	265
5:30 PM	12	48	18	0	11	78	2	33	2	0	19	37	28	65	13	0	12	106	7	42	6	0	3	55	276
5:45 PM	4	51	17	0	7	72	11	20	6	0	8	37	30	40	14	0	1	84	7	50	4	0	3	61	254
Hourly Total	46	168	83	0	64	297	27	124	18	0	91	169	105	240	44	0	28	389	27	187	18	0	21	232	1087
Grand Total	307	1326	592	0	897	2225	171	799	151	3	1234	1124	601	1666	433	4	548	2704	129	1346	109	1	332	1585	7638
Approach %	13.8	59.6	26.6	0.0	-	-	15.2	71.1	13.4	0.3	-	-	22.2	61.6	16.0	0.1	-	-	8.1	84.9	6.9	0.1	-	-	-
Total %	4.0	17.4	7.8	0.0	-	29.1	2.2	10.5	2.0	0.0	-	14.7	7.9	21.8	5.7	0.1	-	35.4	1.7	17.6	1.4	0.0	-	20.8	-
Motorcycles	0	3	2	0	-	5	0	2	0	0	-	2	2	7	0	0	-	9	0	14	0	0	-	14	30
% Motorcycles	0.0	0.2	0.3	-	-	0.2	0.0	0.3	0.0	0.0	-	0.2	0.3	0.4	0.0	0.0	-	0.3	0.0	1.0	0.0	0.0	-	0.9	0.4
Cars & Light Goods	300	1306	575	0	-	2181	166	784	143	3	-	1096	546	1588	428	4	-	2566	127	1217	106	1	-	1451	7294
% Cars & Light Goods	97.7	98.5	97.1	-	-	98.0	97.1	98.1	94.7	100.0	-	97.5	90.8	95.3	98.8	100.0	-	94.9	98.4	90.4	97.2	100.0	-	91.5	95.5
Buses	1	2	3	0	-	6	4	6	2	0	-	12	47	49	1	0	-	97	0	91	0	0	-	91	206
% Buses	0.3	0.2	0.5	-	-	0.3	2.3	0.8	1.3	0.0	-	1.1	7.8	2.9	0.2	0.0	-	3.6	0.0	6.8	0.0	0.0	-	5.7	2.7
Single-Unit Trucks	3	8	9	0	-	20	0	2	2	0	-	4	4	15	1	0	-	20	2	14	1	0	-	17	61
% Single-Unit Trucks	1.0	0.6	1.5	-	-	0.9	0.0	0.3	1.3	0.0	-	0.4	0.7	0.9	0.2	0.0	-	0.7	1.6	1.0	0.9	0.0	-	1.1	0.8
Articulated Trucks	1	0	0	0	-	1	0	1	0	0	-	1	0	1	1	0	-	2	0	3	0	0	-	3	7
% Articulated Trucks	0.3	0.0	0.0	-	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0	0.1	0.2	0.0	-	0.1	0.0	0.2	0.0	0.0	-	0.2	0.1
Bicycles on Road	2	7	3	0	-	12	1	4	4	0	-	9	2	6	2	0	-	10	0	7	2	0	-	9	40
% Bicycles on Road	0.7	0.5	0.5	-	-	0.5	0.6	0.5	2.6	0.0	-	0.8	0.3	0.4	0.5	0.0	-	0.4	0.0	0.5	1.8	0.0	-	0.6	0.5
Bicycles on Crosswalk	-	-	-	-	34	-	-	-	-	-	44	-	-	-	-	-	19	-	-	-	-	-	9	-	-
% Bicycles on Crosswalk	-	-	-	-	3.8	-	-	-	-	-	3.6	-	-	-	-	-	3.5	-	-	-	-	-	2.7	-	-
Pedestrians	-	-	-	-	863	-	-	-	-	-	1190	-	-	-	-	-	529	-	-	-	-	-	323	-	-
% Pedestrians	-	-	-	-	96.2	-	-	-	-	-	96.4	-	-	-	-	-	96.5	-	-	-	-	-	97.3	-	-



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5A-150 Pinebush Rd

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Count Name: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
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: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:15 AM)

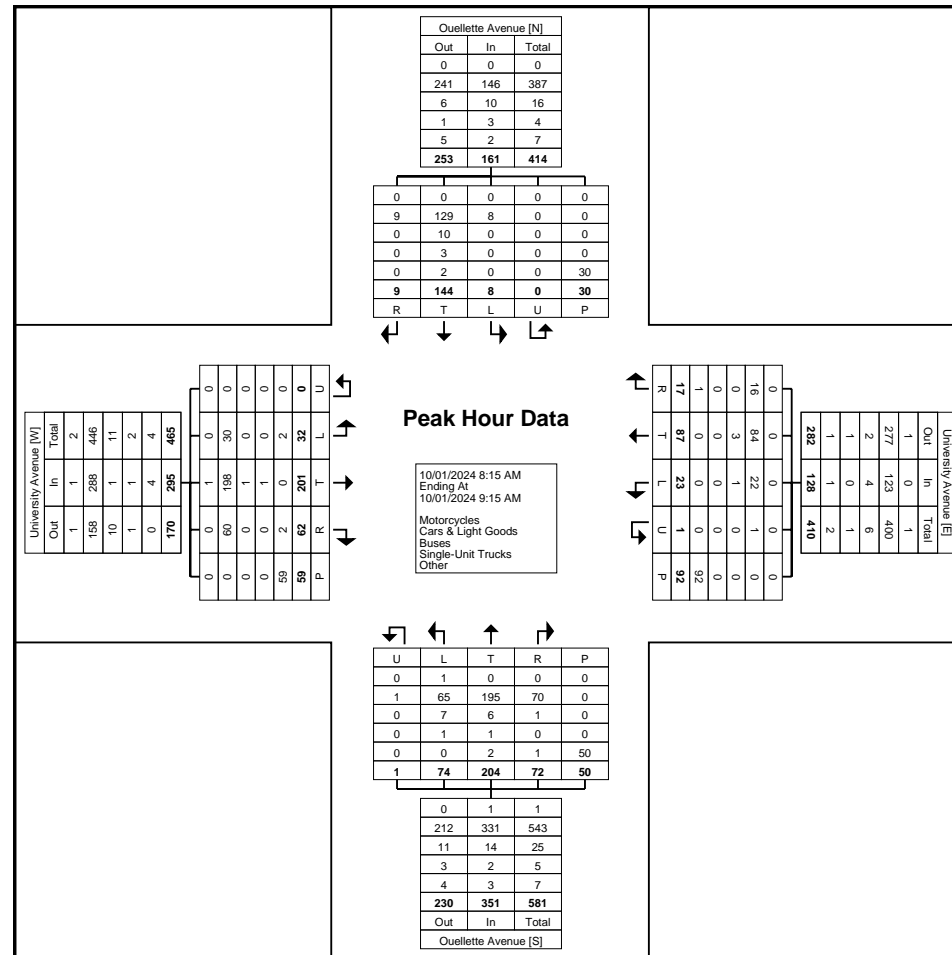
Start Time	University Avenue Eastbound						University Avenue Westbound						Ouellette Avenue Northbound						Ouellette Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:15 AM	8	72	15	0	14	95	1	17	2	0	25	20	23	55	16	1	14	95	4	30	3	0	11	37	247
8:30 AM	10	45	18	0	11	73	7	17	3	0	18	27	10	61	19	0	11	90	2	34	2	0	7	38	228
8:45 AM	6	45	13	0	16	64	10	25	5	1	14	41	21	55	20	0	12	96	2	43	1	0	6	46	247
9:00 AM	8	39	16	0	18	63	5	28	7	0	35	40	20	33	17	0	13	70	0	37	3	0	6	40	213
Total	32	201	62	0	59	295	23	87	17	1	92	128	74	204	72	1	50	351	8	144	9	0	30	161	935
Approach %	10.8	68.1	21.0	0.0	-	-	18.0	68.0	13.3	0.8	-	-	21.1	58.1	20.5	0.3	-	-	5.0	89.4	5.6	0.0	-	-	-
Total %	3.4	21.5	6.6	0.0	-	31.6	2.5	9.3	1.8	0.1	-	13.7	7.9	21.8	7.7	0.1	-	37.5	0.9	15.4	1.0	0.0	-	17.2	-
PHF	0.800	0.698	0.861	0.000	-	0.776	0.575	0.777	0.607	0.250	-	0.780	0.804	0.836	0.900	0.250	-	0.914	0.500	0.837	0.750	0.000	-	0.875	0.946
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	1	0	0	0	-	1	0	0	0	0	-	0	2
% Motorcycles	0.0	0.5	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	1.4	0.0	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.2
Cars & Light Goods	30	198	60	0	-	288	22	84	16	1	-	123	65	195	70	1	-	331	8	129	9	0	-	146	888
% Cars & Light Goods	93.8	98.5	96.8	-	-	97.6	95.7	96.6	94.1	100.0	-	96.1	87.8	95.6	97.2	100.0	-	94.3	100.0	89.6	100.0	-	-	90.7	95.0
Buses	0	1	0	0	-	1	1	3	0	0	-	4	7	6	1	0	-	14	0	10	0	0	-	10	29
% Buses	0.0	0.5	0.0	-	-	0.3	4.3	3.4	0.0	0.0	-	3.1	9.5	2.9	1.4	0.0	-	4.0	0.0	6.9	0.0	-	-	6.2	3.1
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	0	-	0	1	1	0	0	-	2	0	3	0	0	-	3	6
% Single-Unit Trucks	0.0	0.5	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	0.0	1.4	0.5	0.0	0.0	-	0.6	0.0	2.1	0.0	-	-	1.9	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	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	0.0	0.0	1.4	0.0	-	0.3	0.0	0.7	0.0	-	-	0.6	0.2
Bicycles on Road	2	0	2	0	-	4	0	0	1	0	-	1	0	2	0	0	-	2	0	1	0	0	-	1	8
% Bicycles on Road	6.3	0.0	3.2	-	-	1.4	0.0	0.0	5.9	0.0	-	0.8	0.0	1.0	0.0	0.0	-	0.6	0.0	0.7	0.0	-	-	0.6	0.9
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	6	-	-	-	-	-	-	4	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	3.4	-	-	-	-	6.5	-	-	-	-	-	-	8.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	57	-	-	-	-	86	-	-	-	-	-	-	46	-	-	-	-	-	30	-	-
% Pedestrians	-	-	-	-	96.6	-	-	-	-	93.5	-	-	-	-	-	-	92.0	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
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: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

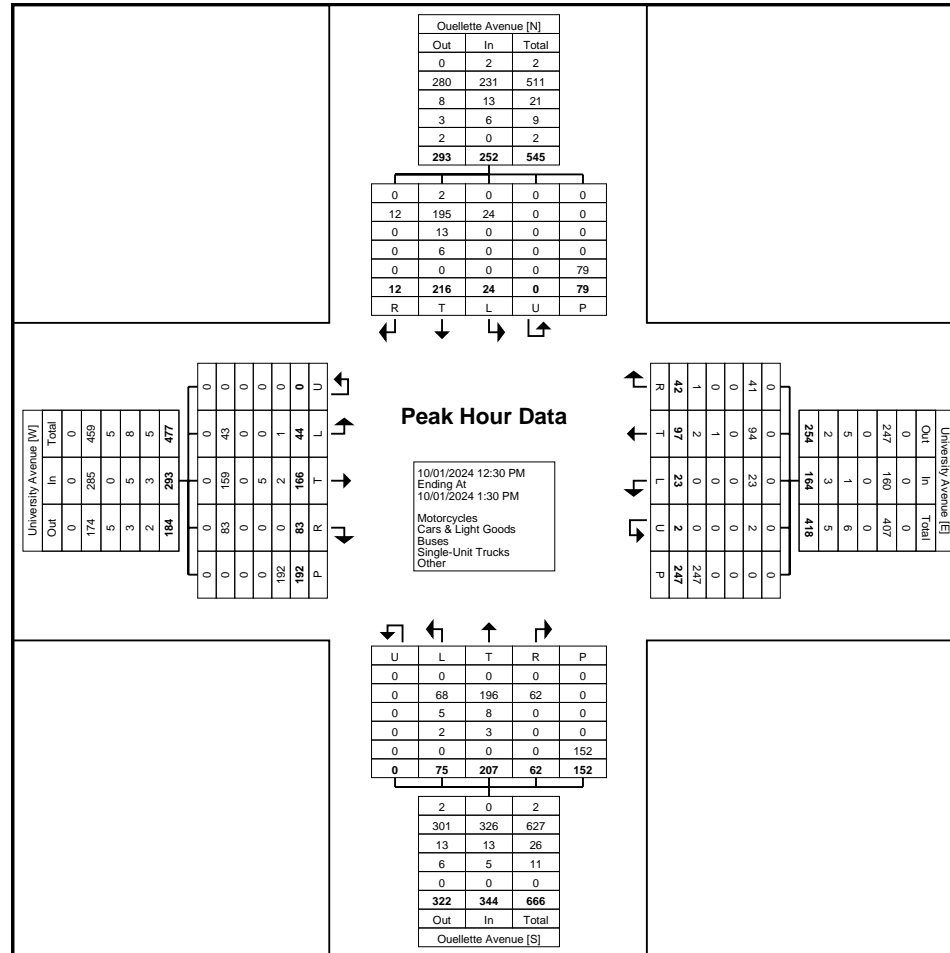
Start Time	University Avenue Eastbound						University Avenue Westbound						Ouellette Avenue Northbound						Ouellette Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	16	40	11	0	44	67	6	28	6	2	56	42	17	61	19	0	33	97	5	53	4	0	22	62	268
12:45 PM	11	44	24	0	51	79	9	26	6	0	62	41	17	51	15	0	43	83	5	49	1	0	20	55	258
1:00 PM	7	32	24	0	63	63	3	23	6	0	66	32	15	42	14	0	41	71	5	54	4	0	20	63	229
1:15 PM	10	50	24	0	34	84	5	20	24	0	63	49	26	53	14	0	35	93	9	60	3	0	17	72	298
Total	44	166	83	0	192	293	23	97	42	2	247	164	75	207	62	0	152	344	24	216	12	0	79	252	1053
Approach %	15.0	56.7	28.3	0.0	-	-	14.0	59.1	25.6	1.2	-	-	21.8	60.2	18.0	0.0	-	-	9.5	85.7	4.8	0.0	-	-	-
Total %	4.2	15.8	7.9	0.0	-	27.8	2.2	9.2	4.0	0.2	-	15.6	7.1	19.7	5.9	0.0	-	32.7	2.3	20.5	1.1	0.0	-	23.9	-
PHF	0.688	0.830	0.865	0.000	-	0.872	0.639	0.866	0.438	0.250	-	0.837	0.721	0.848	0.816	0.000	-	0.887	0.667	0.900	0.750	0.000	-	0.875	0.883
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	0.0	0.0	-	-	0.0	0.0	0.9	0.0	-	-	0.8	0.2
Cars & Light Goods	43	159	83	0	-	285	23	94	41	2	-	160	68	196	62	0	-	326	24	195	12	0	-	231	1002
% Cars & Light Goods	97.7	95.8	100.0	-	-	97.3	100.0	96.9	97.6	100.0	-	97.6	90.7	94.7	100.0	-	-	94.8	100.0	90.3	100.0	-	-	91.7	95.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	5	8	0	0	-	13	0	13	0	0	-	13	26
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	6.7	3.9	0.0	-	-	3.8	0.0	6.0	0.0	-	-	5.2	2.5
Single-Unit Trucks	0	5	0	0	-	5	0	1	0	0	-	1	2	3	0	0	-	5	0	6	0	0	-	6	17
% Single-Unit Trucks	0.0	3.0	0.0	-	-	1.7	0.0	1.0	0.0	0.0	-	0.6	2.7	1.4	0.0	-	-	1.5	0.0	2.8	0.0	-	-	2.4	1.6
Articulated Trucks	1	0	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	2.3	0.0	0.0	-	-	0.3	0.0	1.0	0.0	0.0	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Road	0	2	0	0	-	2	0	1	1	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	4
% Bicycles on Road	0.0	1.2	0.0	-	-	0.7	0.0	1.0	2.4	0.0	-	1.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.4
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	8	-	-	-	-	-	7	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	1.6	-	-	-	-	-	3.2	-	-	-	-	-	4.6	-	-	-	-	-	5.1	-	-
Pedestrians	-	-	-	-	189	-	-	-	-	-	239	-	-	-	-	-	145	-	-	-	-	-	75	-	-
% Pedestrians	-	-	-	-	98.4	-	-	-	-	-	96.8	-	-	-	-	-	95.4	-	-	-	-	-	94.9	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Ouellette Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:00 PM)

Start Time	University Avenue Eastbound						University Avenue Westbound						Ouellette Avenue Northbound						Ouellette 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	
4:00 PM	16	49	20	0	39	85	5	46	8	0	29	59	23	66	15	0	9	104	4	55	4	0	10	63	311
4:15 PM	14	42	25	0	30	81	9	39	2	0	42	50	28	59	11	1	19	99	7	40	3	0	10	50	280
4:30 PM	14	49	16	0	28	79	6	59	6	0	44	71	24	65	16	0	25	105	2	54	5	0	9	61	316
4:45 PM	9	42	22	0	35	73	5	39	1	0	52	45	22	66	6	0	7	94	6	51	6	0	10	63	275
Total	53	182	83	0	132	318	25	183	17	0	167	225	97	256	48	1	60	402	19	200	18	0	39	237	1182
Approach %	16.7	57.2	26.1	0.0	-	-	11.1	81.3	7.6	0.0	-	-	24.1	63.7	11.9	0.2	-	-	8.0	84.4	7.6	0.0	-	-	-
Total %	4.5	15.4	7.0	0.0	-	26.9	2.1	15.5	1.4	0.0	-	19.0	8.2	21.7	4.1	0.1	-	34.0	1.6	16.9	1.5	0.0	-	20.1	-
PHF	0.828	0.929	0.830	0.000	-	0.935	0.694	0.775	0.531	0.000	-	0.792	0.866	0.970	0.750	0.250	-	0.957	0.679	0.909	0.750	0.000	-	0.940	0.935
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	4	0	0	-	4	6
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.8	0.0	0.0	-	0.5	0.0	2.0	0.0	-	-	1.7	0.5
Cars & Light Goods	52	181	83	0	-	316	24	181	15	0	-	220	90	246	48	1	-	385	18	184	18	0	-	220	1141
% Cars & Light Goods	98.1	99.5	100.0	-	-	99.4	96.0	98.9	88.2	-	-	97.8	92.8	96.1	100.0	100.0	-	95.8	94.7	92.0	100.0	-	-	92.8	96.5
Buses	0	0	0	0	-	0	0	1	1	0	-	2	5	6	0	0	-	11	0	12	0	0	-	12	25
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.5	5.9	-	-	0.9	5.2	2.3	0.0	0.0	-	2.7	0.0	6.0	0.0	-	-	5.1	2.1
Single-Unit Trucks	1	1	0	0	-	2	0	1	1	0	-	2	1	1	0	0	-	2	1	0	0	0	-	1	7
% Single-Unit Trucks	1.9	0.5	0.0	-	-	0.6	0.0	0.5	5.9	-	-	0.9	1.0	0.4	0.0	0.0	-	0.5	5.3	0.0	0.0	-	-	0.4	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	0.0
Bicycles on Road	0	0	0	0	-	0	1	0	0	0	-	1	1	1	0	0	-	2	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	4.0	0.0	0.0	-	-	0.4	1.0	0.4	0.0	0.0	-	0.5	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	-	10	-	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	7.6	-	-	-	-	-	6.0	-	-	-	-	-	1.7	-	-	-	-	-	2.6	-	-
Pedestrians	-	-	-	-	122	-	-	-	-	-	157	-	-	-	-	-	59	-	-	-	-	-	38	-	-
% Pedestrians	-	-	-	-	92.4	-	-	-	-	-	94.0	-	-	-	-	-	98.3	-	-	-	-	-	97.4	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 1

Turning Movement Data

Start Time	University Avenue W Eastbound						University Avenue W Westbound						Salter Avenue Northbound						Salter 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	0	36	0	0	0	36	1	16	0	0	0	17	0	0	0	0	0	0	0	0	0	0	4	0	53	
7:15 AM	0	57	0	0	0	57	0	27	0	0	0	27	2	0	2	0	0	0	4	0	0	0	0	1	0	88
7:30 AM	1	62	1	0	0	64	0	26	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	90
7:45 AM	0	74	0	1	0	75	0	47	1	0	0	48	0	0	4	0	0	0	4	1	0	1	0	3	2	129
Hourly Total	1	229	1	1	0	232	1	116	1	0	0	118	2	0	6	0	0	8	1	0	1	0	8	2	360	
8:00 AM	5	98	4	0	0	107	0	41	2	0	0	43	1	0	1	0	0	2	0	0	0	0	4	0	152	
8:15 AM	1	107	1	0	0	109	0	57	1	0	0	58	0	0	1	0	0	1	0	0	1	0	3	1	169	
8:30 AM	1	101	1	0	0	103	1	46	0	0	0	47	0	0	0	0	0	0	0	0	1	0	4	1	151	
8:45 AM	1	97	1	0	0	99	2	48	1	0	0	51	0	0	0	0	0	0	0	1	1	0	6	2	152	
Hourly Total	8	403	7	0	0	418	3	192	4	0	0	199	1	0	2	0	0	3	0	1	3	0	17	4	624	
9:00 AM	3	74	0	0	0	77	1	53	2	0	0	56	0	0	1	0	1	1	1	1	0	0	0	6	1	135
9:15 AM	1	65	0	0	0	66	2	45	0	0	0	47	2	0	4	0	1	6	0	1	0	0	0	0	1	120
9:30 AM	2	77	0	0	0	79	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	10	0	119	
9:45 AM	1	77	1	0	1	79	0	65	0	0	0	65	0	0	1	0	2	1	0	0	1	0	2	1	146	
Hourly Total	7	293	1	0	1	301	3	203	2	0	0	208	2	0	6	0	4	8	1	1	1	0	18	3	520	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:30 AM	0	87	2	0	0	89	0	53	0	0	0	53	1	0	0	0	2	1	0	0	0	0	11	0	143	
11:45 AM	0	82	1	0	1	83	0	63	2	0	0	65	2	0	1	0	3	3	0	0	0	0	13	0	151	
Hourly Total	0	169	3	0	1	172	0	116	2	0	0	118	3	0	1	0	5	4	0	0	0	0	24	0	294	
12:00 PM	0	64	0	0	0	64	1	62	0	0	0	63	0	0	0	0	0	0	0	0	7	0	4	7	134	
12:15 PM	0	68	0	0	0	68	1	69	0	0	0	70	1	0	1	0	1	2	0	0	2	0	4	2	142	
12:30 PM	0	74	0	0	0	74	0	82	1	0	0	83	0	0	0	0	5	0	0	0	2	0	3	2	159	
12:45 PM	0	89	1	0	0	90	0	70	1	0	0	71	1	0	2	0	2	3	0	0	0	0	5	0	164	
Hourly Total	0	295	1	0	0	296	2	283	2	0	0	287	2	0	3	0	8	5	0	0	11	0	16	11	599	
1:00 PM	0	78	3	0	3	81	2	66	1	0	0	69	1	0	1	0	1	2	2	0	0	0	3	2	154	
1:15 PM	1	86	1	0	0	88	3	73	0	0	0	76	1	0	0	0	1	1	0	0	0	0	5	0	165	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	1	164	4	0	3	169	5	139	1	0	0	145	2	0	1	0	2	3	2	0	0	0	8	2	319	
3:00 PM	0	77	4	0	0	81	0	69	0	0	0	69	1	0	1	0	1	2	1	0	1	0	4	2	154	
3:15 PM	0	75	1	0	0	76	0	78	1	0	1	79	0	1	0	0	0	1	2	0	0	0	3	2	158	
3:30 PM	2	85	0	2	0	89	1	98	0	0	0	99	2	0	1	0	2	3	0	0	0	0	2	0	191	
3:45 PM	0	91	1	1	0	93	0	78	0	0	0	78	1	0	0	0	0	1	0	0	2	0	0	2	174	
Hourly Total	2	328	6	3	0	339	1	323	1	0	1	325	4	1	2	0	3	7	3	0	3	0	9	6	677	
4:00 PM	1	95	2	0	0	98	1	113	1	0	0	115	0	0	0	0	1	0	0	0	2	0	7	2	215	
4:15 PM	2	95	1	1	0	99	1	97	0	0	0	98	2	0	0	0	1	2	2	0	0	0	6	2	201	

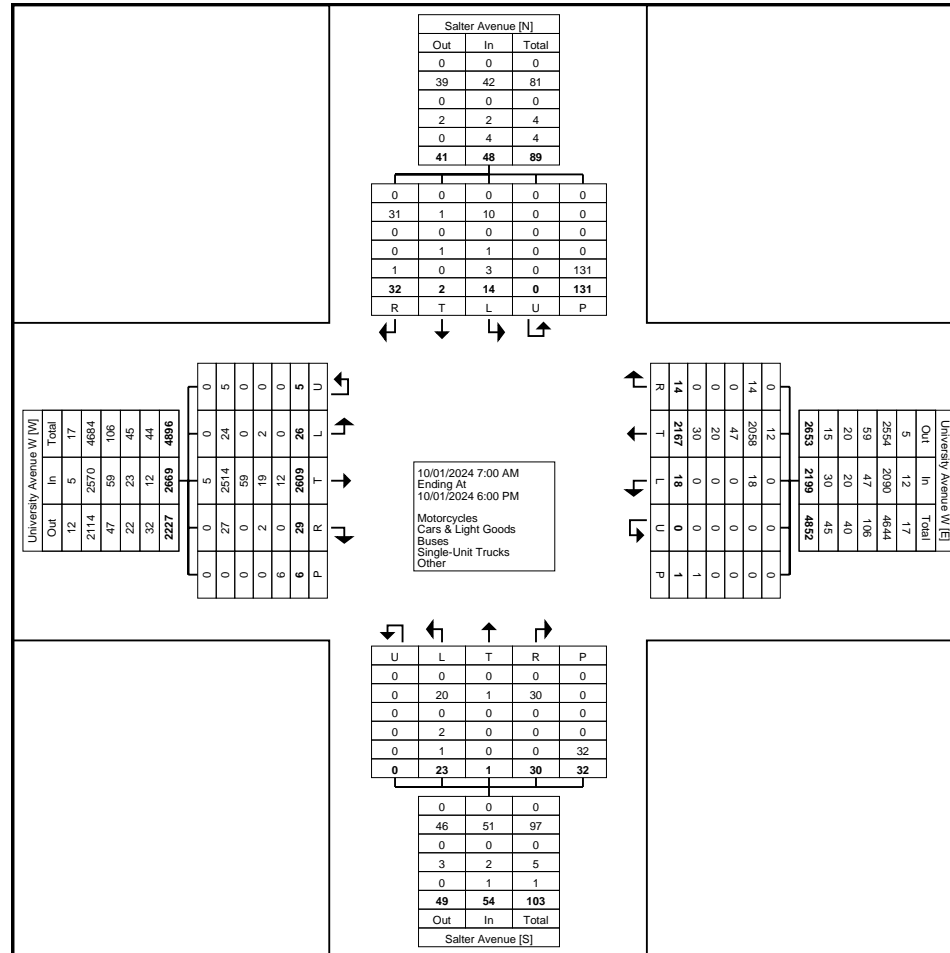
4:30 PM	1	76	0	0	1	77	0	118	0	0	0	118	2	0	4	0	1	6	0	0	2	0	8	2	203
4:45 PM	1	98	0	0	0	99	0	93	0	0	0	93	0	0	1	0	0	1	2	0	2	0	4	4	197
Hourly Total	5	364	3	1	1	373	2	421	1	0	0	424	4	0	5	0	3	9	4	0	6	0	25	10	816
5:00 PM	0	95	3	0	0	98	0	114	0	0	0	114	1	0	1	0	4	2	1	0	3	0	3	4	218
5:15 PM	1	96	0	0	0	97	1	97	0	0	0	98	1	0	1	0	0	2	0	0	1	0	1	1	198
5:30 PM	1	93	0	0	0	94	0	76	0	0	0	76	1	0	1	0	2	2	2	0	3	0	1	5	177
5:45 PM	0	80	0	0	0	80	0	87	0	0	0	87	0	0	1	0	1	1	0	0	0	0	1	0	168
Hourly Total	2	364	3	0	0	369	1	374	0	0	0	375	3	0	4	0	7	7	3	0	7	0	6	10	761
Grand Total	26	2609	29	5	6	2669	18	2167	14	0	1	2199	23	1	30	0	32	54	14	2	32	0	131	48	4970
Approach %	1.0	97.8	1.1	0.2	-	-	0.8	98.5	0.6	0.0	-	-	42.6	1.9	55.6	0.0	-	-	29.2	4.2	66.7	0.0	-	-	-
Total %	0.5	52.5	0.6	0.1	-	53.7	0.4	43.6	0.3	0.0	-	44.2	0.5	0.0	0.6	0.0	-	1.1	0.3	0.0	0.6	0.0	-	1.0	-
Motorcycles	0	5	0	0	-	5	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	17
% Motorcycles	0.0	0.2	0.0	0.0	-	0.2	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
Cars & Light Goods	24	2514	27	5	-	2570	18	2058	14	0	-	2090	20	1	30	0	-	51	10	1	31	0	-	42	4753
% Cars & Light Goods	92.3	96.4	93.1	100.0	-	96.3	100.0	95.0	100.0	-	-	95.0	87.0	100.0	100.0	-	-	94.4	71.4	50.0	96.9	-	-	87.5	95.6
Buses	0	59	0	0	-	59	0	47	0	0	-	47	0	0	0	0	-	0	0	0	0	0	-	0	106
% Buses	0.0	2.3	0.0	0.0	-	2.2	0.0	2.2	0.0	-	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	2.1
Single-Unit Trucks	2	19	2	0	-	23	0	20	0	0	-	20	2	0	0	0	-	2	1	1	0	0	-	2	47
% Single-Unit Trucks	7.7	0.7	6.9	0.0	-	0.9	0.0	0.9	0.0	-	-	0.9	8.7	0.0	0.0	-	-	3.7	7.1	50.0	0.0	-	-	4.2	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	0.0
Bicycles on Road	0	12	0	0	-	12	0	30	0	0	-	30	1	0	0	0	-	1	3	0	1	0	-	4	47
% Bicycles on Road	0.0	0.5	0.0	0.0	-	0.4	0.0	1.4	0.0	-	-	1.4	4.3	0.0	0.0	-	-	1.9	21.4	0.0	3.1	-	-	8.3	0.9
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	2.3	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	32	-	-	-	-	-	128	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-	-	-	-	97.7	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
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: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 4

Turning Movement Peak Hour Data (8:00 AM)

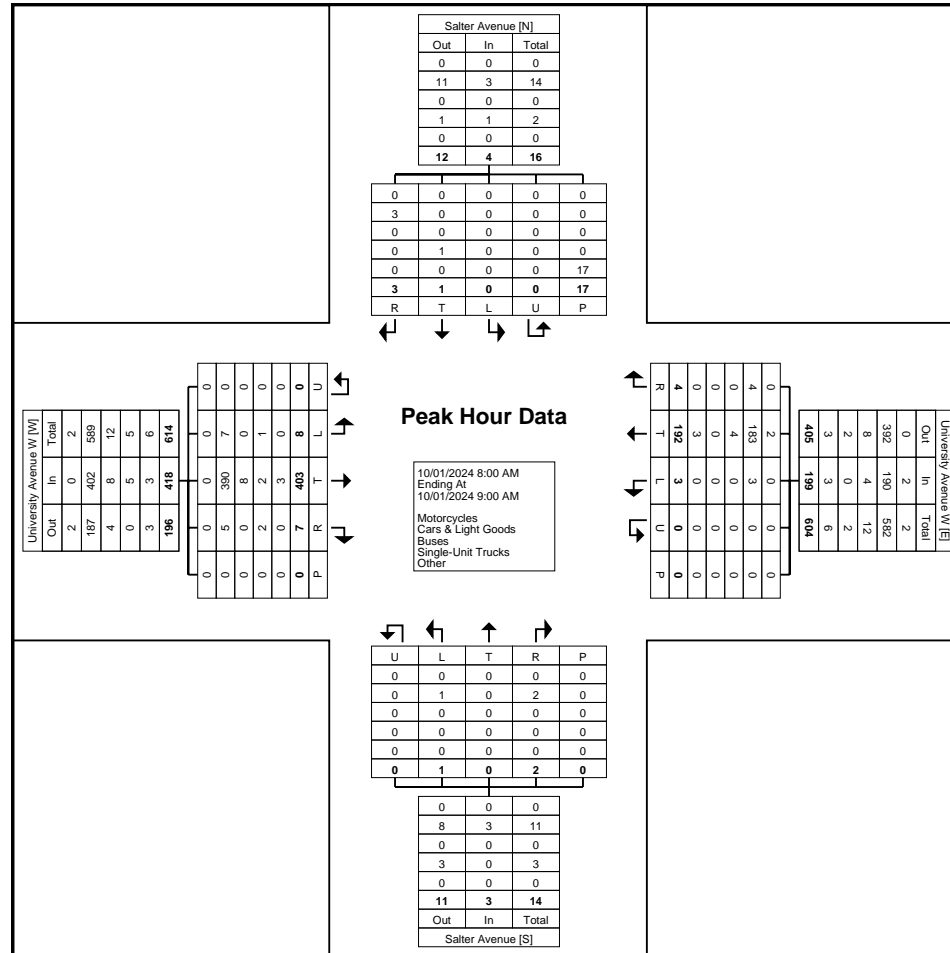
Start Time	University Avenue W Eastbound						University Avenue W Westbound						Salter Avenue Northbound						Salter Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	5	98	4	0	0	107	0	41	2	0	0	43	1	0	1	0	0	2	0	0	0	0	4	0	152
8:15 AM	1	107	1	0	0	109	0	57	1	0	0	58	0	0	1	0	0	1	0	0	1	0	3	1	169
8:30 AM	1	101	1	0	0	103	1	46	0	0	0	47	0	0	0	0	0	0	0	0	1	0	4	1	151
8:45 AM	1	97	1	0	0	99	2	48	1	0	0	51	0	0	0	0	0	0	0	1	1	0	6	2	152
Total	8	403	7	0	0	418	3	192	4	0	0	199	1	0	2	0	0	3	0	1	3	0	17	4	624
Approach %	1.9	96.4	1.7	0.0	-	-	1.5	96.5	2.0	0.0	-	-	33.3	0.0	66.7	0.0	-	-	0.0	25.0	75.0	0.0	-	-	-
Total %	1.3	64.6	1.1	0.0	-	67.0	0.5	30.8	0.6	0.0	-	31.9	0.2	0.0	0.3	0.0	-	0.5	0.0	0.2	0.5	0.0	-	0.6	-
PHF	0.400	0.942	0.438	0.000	-	0.959	0.375	0.842	0.500	0.000	-	0.858	0.250	0.000	0.500	0.000	-	0.375	0.000	0.250	0.750	0.000	-	0.500	0.923
Motorcycles	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	1.0	0.0	-	-	1.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	0.3
Cars & Light Goods	7	390	5	0	-	402	3	183	4	0	-	190	1	0	2	0	-	3	0	0	3	0	-	3	598
% Cars & Light Goods	87.5	96.8	71.4	-	-	96.2	100.0	95.3	100.0	-	-	95.5	100.0	-	100.0	-	-	100.0	-	0.0	100.0	-	-	75.0	95.8
Buses	0	8	0	0	-	8	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	12
% Buses	0.0	2.0	0.0	-	-	1.9	0.0	2.1	0.0	-	-	2.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	1.9
Single-Unit Trucks	1	2	2	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	6
% Single-Unit Trucks	12.5	0.5	28.6	-	-	1.2	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	100.0	0.0	-	-	25.0	1.0
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
Bicycles on Road	0	3	0	0	-	3	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	6
% Bicycles on Road	0.0	0.7	0.0	-	-	0.7	0.0	1.6	0.0	-	-	1.5	0.0	-	0.0	-	-	0.0	-	0.0	0.0	-	-	0.0	1.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 5



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



Paradigm Transportation Solutions Limited
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Count Name: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 6

Turning Movement Peak Hour Data (12:30 PM)

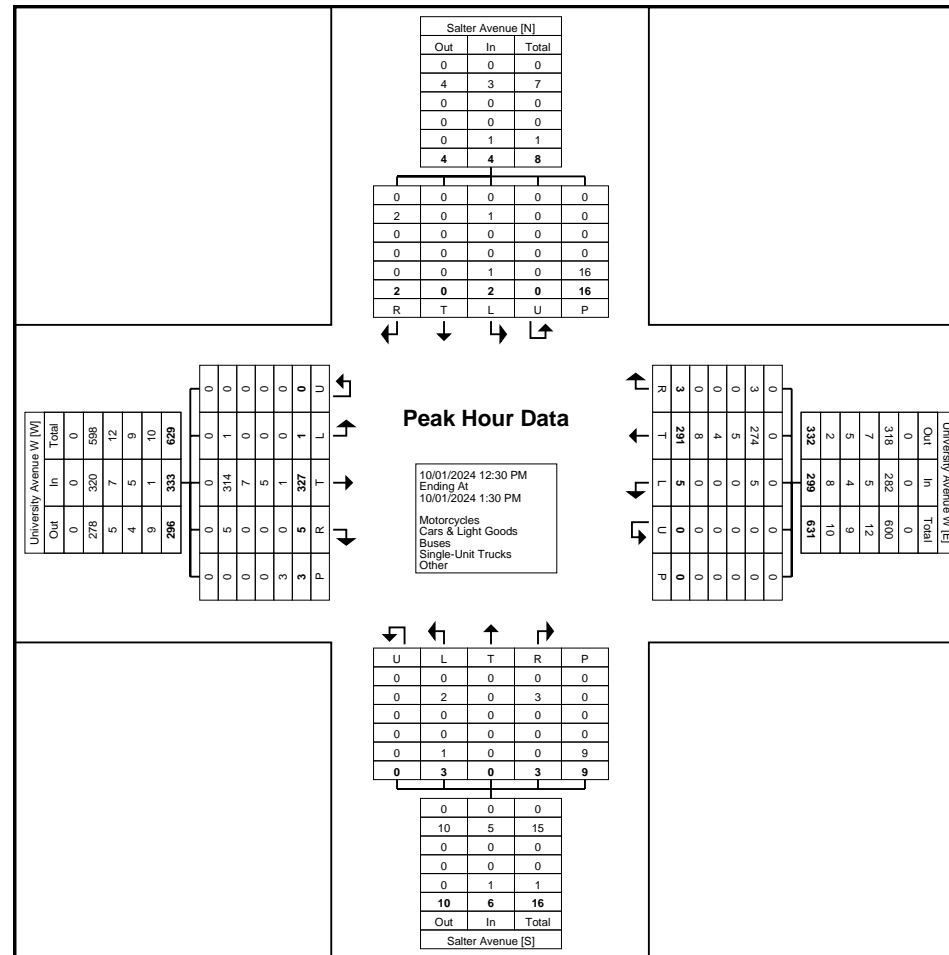
Start Time	University Avenue W Eastbound						University Avenue W Westbound						Salter Avenue Northbound						Salter Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:30 PM	0	74	0	0	0	74	0	82	1	0	0	83	0	0	0	0	5	0	0	0	2	0	3	2	159
12:45 PM	0	89	1	0	0	90	0	70	1	0	0	71	1	0	2	0	2	3	0	0	0	0	5	0	164
1:00 PM	0	78	3	0	3	81	2	66	1	0	0	69	1	0	1	0	1	2	2	0	0	0	3	2	154
1:15 PM	1	86	1	0	0	88	3	73	0	0	0	76	1	0	0	0	1	1	0	0	0	0	5	0	165
Total	1	327	5	0	3	333	5	291	3	0	0	299	3	0	3	0	9	6	2	0	2	0	16	4	642
Approach %	0.3	98.2	1.5	0.0	-	-	1.7	97.3	1.0	0.0	-	-	50.0	0.0	50.0	0.0	-	-	50.0	0.0	50.0	0.0	-	-	-
Total %	0.2	50.9	0.8	0.0	-	51.9	0.8	45.3	0.5	0.0	-	46.6	0.5	0.0	0.5	0.0	-	0.9	0.3	0.0	0.3	0.0	-	0.6	-
PHF	0.250	0.919	0.417	0.000	-	0.925	0.417	0.887	0.750	0.000	-	0.901	0.750	0.000	0.375	0.000	-	0.500	0.250	0.000	0.250	0.000	-	0.500	0.973
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	1	314	5	0	-	320	5	274	3	0	-	282	2	0	3	0	-	5	1	0	2	0	-	3	610
% Cars & Light Goods	100.0	96.0	100.0	-	-	96.1	100.0	94.2	100.0	-	-	94.3	66.7	-	100.0	-	-	83.3	50.0	-	100.0	-	-	75.0	95.0
Buses	0	7	0	0	-	7	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	12
% Buses	0.0	2.1	0.0	-	-	2.1	0.0	1.7	0.0	-	-	1.7	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.9
Single-Unit Trucks	0	5	0	0	-	5	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	9
% Single-Unit Trucks	0.0	1.5	0.0	-	-	1.5	0.0	1.4	0.0	-	-	1.3	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.4
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
Bicycles on Road	0	1	0	0	-	1	0	8	0	0	-	8	1	0	0	0	-	1	1	0	0	0	-	1	11
% Bicycles on Road	0.0	0.3	0.0	-	-	0.3	0.0	2.7	0.0	-	-	2.7	33.3	-	0.0	-	-	16.7	50.0	-	0.0	-	-	25.0	1.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	6.3	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	93.8	-	-



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 7



Turning Movement Peak Hour Data Plot (12:30 PM)



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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

Count Name: University Ave & Salter Ave
Site Code: 240453
Start Date: 10/01/2024
Page No: 8

Turning Movement Peak Hour Data (4:15 PM)

Start Time	University Avenue W Eastbound						University Avenue W Westbound						Salter Avenue Northbound						Salter 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	
4:15 PM	2	95	1	1	0	99	1	97	0	0	0	98	2	0	0	0	1	2	2	0	0	0	6	2	201
4:30 PM	1	76	0	0	1	77	0	118	0	0	0	118	2	0	4	0	1	6	0	0	2	0	8	2	203
4:45 PM	1	98	0	0	0	99	0	93	0	0	0	93	0	0	1	0	0	1	2	0	2	0	4	4	197
5:00 PM	0	95	3	0	0	98	0	114	0	0	0	114	1	0	1	0	4	2	1	0	3	0	3	4	218
Total	4	364	4	1	1	373	1	422	0	0	0	423	5	0	6	0	6	11	5	0	7	0	21	12	819
Approach %	1.1	97.6	1.1	0.3	-	-	0.2	99.8	0.0	0.0	-	-	45.5	0.0	54.5	0.0	-	-	41.7	0.0	58.3	0.0	-	-	-
Total %	0.5	44.4	0.5	0.1	-	45.5	0.1	51.5	0.0	0.0	-	51.6	0.6	0.0	0.7	0.0	-	1.3	0.6	0.0	0.9	0.0	-	1.5	-
PHF	0.500	0.929	0.333	0.250	-	0.942	0.250	0.894	0.000	0.000	-	0.896	0.625	0.000	0.375	0.000	-	0.458	0.625	0.000	0.583	0.000	-	0.750	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
Cars & Light Goods	3	359	4	1	-	367	1	408	0	0	-	409	4	0	6	0	-	10	3	0	6	0	-	9	795
% Cars & Light Goods	75.0	98.6	100.0	100.0	-	98.4	100.0	96.7	-	-	-	96.7	80.0	-	100.0	-	-	90.9	60.0	-	85.7	-	-	75.0	97.1
Buses	0	4	0	0	-	4	0	6	0	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	10
% Buses	0.0	1.1	0.0	0.0	-	1.1	0.0	1.4	-	-	-	1.4	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.2
Single-Unit Trucks	1	1	0	0	-	2	0	3	0	0	-	3	1	0	0	0	-	1	1	0	0	0	-	1	7
% Single-Unit Trucks	25.0	0.3	0.0	0.0	-	0.5	0.0	0.7	-	-	-	0.7	20.0	-	0.0	-	-	9.1	20.0	-	0.0	-	-	8.3	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
Bicycles on Road	0	0	0	0	-	0	0	5	0	0	-	5	0	0	0	0	-	0	1	0	1	0	-	2	7
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	1.2	-	-	-	1.2	0.0	-	0.0	-	-	0.0	20.0	-	14.3	-	-	16.7	0.9
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-
Pedestrians	-	-	-	-	1	-	-	-	-	0	-	-	-	-	-	-	6	-	-	-	-	-	21	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1743

Intersection Name: D4-WYANDOTTE-CRAWFORD

IP Address: 10.0.4.143 Port: 3000

Phases:

1	WBL	9
2	EBT	10
3		11
4	NS	12
5		13
6	WBT	14
7		15
8		16

Comment:

Date: 2024-09-10

By: signals.tech2

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset	
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8				
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
2	6:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	21	1
3	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
4	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	23	1
5	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
6	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
7	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
8	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1822

Intersection Name: D4-OUELLETTE-UNIVERSITY

IP Address: 10.0.5.22 Port: 3000

Phases:

1		9
2	NS	10
3		11
4	EW	12
5		13
6		14
7		15
8		16

Comment:

Date: 2024-09-10

By: signals.tech2

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset	
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8				
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
2	6:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	21	1
3	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
4	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	23	1
5	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
6	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
7	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
8	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1828

Intersection Name: D4-RIVERSIDE-BRUCE

IP Address: 10.0.5.28 Port: 3000

Phases:

1		9
2	EW	10
3		11
4	NS	12
5		13
6		14
7		15
8		16

Comment:

Date: 2024-09-10

By: signals.tech2

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset	
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8				
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
2	6:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	21	1
3	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
4	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	23	1
5	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
6	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
7	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
8	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1829

Intersection Name: D4-RIVERSIDE-CRAWFORD

IP Address: 10.0.5.29 Port: 3000

Phases:

1		9
2	EW	10
3		11
4	NS	12
5		13
6		14
7		15
8		16

Comment:

Date: 2024-09-10

By: signals.tech2

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset	
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8				
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
2	6:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	21	1
3	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
4	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	23	1
5	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
6	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
7	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
8	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1844

Intersection Name: D4-UNIVERSITY-BRUCE

IP Address: 10.0.5.44 Port: 3000

Phases:

1		9
2	EW	10
3		11
4	NBT	12
5		13
6		14
7		15
8		16

Comment:

Date: 2024-09-10

By: signals.tech2

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset	
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8				
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
2	6:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	21	1
3	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
4	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	23	1
5	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	Scheduler	22	1
6	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
7	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
8	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

D4 2070 Controller

Traffic Signal Program Sheet

Intersection No: 1845

Intersection Name: D4-UNIVERSITY-CRAWFORD

IP Address: 10.0.5.45 Port: 3000

Phases:

1		9
2	EW	10
3		11
4	NS	12
5		13
6		14
7		15
8		16

Comment:

Date: 2024-09-10

By: signals.tech2

(5-1) TOD Pattern Events

Event	Time	DOW							Holiday								Mode	Pattern	Offset
		S	M	T	W	T	F	S	1	2	3	4	5	6	7	8			
1	12:00 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
2	6:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	21	1
3	9:30 AM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
4	4:00 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	23	1
5	6:30 PM	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	Scheduler	22	1
6	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
7	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
8	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
9	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
10	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
11	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
12	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
13	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
14	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
15	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
16	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
17	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
18	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
19	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
20	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
21	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
22	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
23	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
24	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
25	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
26	10:15 PM	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	Scheduler	30	1
27	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
28	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
29	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
30	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
31	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
32	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
33	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
34	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
35	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
36	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
37	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
38	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
39	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
40	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
41	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
42	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0
43	12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Scheduler	0	0

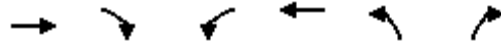
Appendix C

Existing Traffic Operations Reports



Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

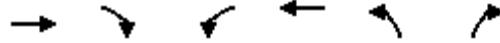
Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	348	15	52	545	12	44
Future Volume (vph)	348	15	52	545	12	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	0.99	
Frt	0.994				0.895	
Flt Protected				0.996	0.989	
Satd. Flow (prot)	1834	0	0	1855	1576	0
Flt Permitted				0.944	0.989	
Satd. Flow (perm)	1834	0	0	1756	1573	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	5				46	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		12	12		3	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	20%	2%	2%	0%	7%
Adj. Flow (vph)	363	16	54	568	13	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	379	0	0	622	59	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Maximum Green (s)	40.0		40.0	40.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	58.0			58.0	10.0	
Actuated g/C Ratio	0.83			0.83	0.14	
v/c Ratio	0.25			0.43	0.22	
Control Delay	3.2			7.4	19.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	3.2			7.4	19.4	
LOS	A			A	B	
Approach Delay	3.2			7.4	19.4	
Approach LOS	A			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 6.6
 Intersection LOS: A
 Intersection Capacity Utilization 71.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues
1: Crawford Avenue & Riverside Drive West

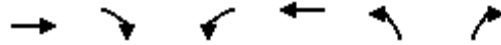
Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	379	622	59
v/c Ratio	0.25	0.43	0.22
Control Delay	3.2	7.4	19.4
Queue Delay	0.0	0.0	0.0
Total Delay	3.2	7.4	19.4
Queue Length 50th (m)	13.9	43.9	0.9
Queue Length 95th (m)	23.0	61.2	13.1
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1520	1454	483
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.25	0.43	0.12
Intersection Summary			

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	380	0	0	627	10	32
Future Volume (vph)	380	0	0	627	10	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3505	0	0	3574	1641	1524
Flt Permitted					0.950	
Satd. Flow (perm)	3505	0	0	3574	1637	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						33
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		10	10		2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	1%	10%	6%
Adj. Flow (vph)	392	0	0	646	10	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	0	0	646	10	33
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
 2: Bruce Avenue & Riverside Drive West

Existing AM
 825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	41.0			41.0	29.0	29.0
Total Split (%)	58.6%			58.6%	41.4%	41.4%
Maximum Green (s)	36.0			36.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	22.2			22.2	37.8	37.8
Actuated g/C Ratio	0.32			0.32	0.54	0.54
v/c Ratio	0.35			0.57	0.01	0.04
Control Delay	19.3			21.3	9.0	4.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	19.3			21.3	9.0	4.2
LOS	B			C	A	A
Approach Delay	19.3			21.3	5.4	
Approach LOS	B			C	A	

Intersection Summary

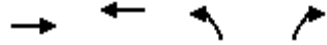
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 52 (74%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 19.9 Intersection LOS: B
 Intersection Capacity Utilization 33.2% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	392	646	10	33
v/c Ratio	0.35	0.57	0.01	0.04
Control Delay	19.3	21.3	9.0	4.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.3	21.3	9.0	4.2
Queue Length 50th (m)	22.3	36.5	0.6	0.2
Queue Length 95th (m)	30.6	42.8	2.9	4.0
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1802	1838	886	838
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.35	0.01	0.04
Intersection Summary				

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Existing AM
825 Riverside Dr W, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	0	0	0	2	0	2	0	61	1	2	58	2		
Future Volume (vph)	0	0	0	2	0	2	0	61	1	2	58	2		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor														
Frt					0.932					0.998				
Flt Protected					0.976									
Satd. Flow (prot)	0	1900	0	0	1728	0	0	1807	0	0	1728	0		
Flt Permitted					0.976									
Satd. Flow (perm)	0	1900	0	0	1728	0	0	1807	0	0	1728	0		
Link Speed (k/h)					50					50				
Link Distance (m)					51.8					188.3				
Travel Time (s)					3.7					13.6				
Confl. Peds. (#/hr)	2			2	2			2	11			3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	10%	0%		
Adj. Flow (vph)	0	0	0	2	0	2	0	66	1	2	63	2		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	4	0	0	67	0	0	67	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right		
Median Width(m)			0.0			0.0			0.0			0.0		
Link Offset(m)			0.0			0.0			0.0			0.0		
Crosswalk Width(m)			4.8			4.8			4.8			4.8		
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (k/h)	25			15	25			15	25			15		
Sign Control	Stop			Stop			Free			Free				
Intersection Summary														
Area Type:	Other													
Control Type:	Unsignalized													
Intersection Capacity Utilization	18.1%					ICU Level of Service A								
Analysis Period (min)	15													

HCM 6th TWSC
3: Crawford Avenue & Site Driveway

Existing AM
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	2	0	2	0	61	1	2	58	2
Future Vol, veh/h	0	0	0	2	0	2	0	61	1	2	58	2
Conflicting Peds, #/hr	2	0	2	2	0	2	11	0	3	3	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	10	0
Mvmt Flow	0	0	0	2	0	2	0	66	1	2	63	2

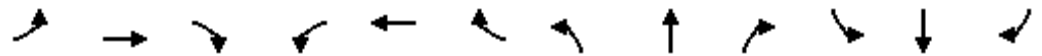
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	149	149	77	140	150	72	76	0	0	70	0	0
Stage 1	79	79	-	70	70	-	-	-	-	-	-	-
Stage 2	70	70	-	70	80	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	824	746	990	835	745	996	1536	-	-	1544	-	-
Stage 1	935	833	-	945	841	-	-	-	-	-	-	-
Stage 2	945	841	-	945	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	812	736	979	831	735	992	1522	-	-	1540	-	-
Mov Cap-2 Maneuver	812	736	-	831	735	-	-	-	-	-	-	-
Stage 1	927	825	-	942	838	-	-	-	-	-	-	-
Stage 2	941	838	-	942	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9	0	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	-	904	1540	-	-
HCM Lane V/C Ratio	-	-	-	-	0.005	0.001	-	-
HCM Control Delay (s)	0	-	-	0	9	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	309	44	26	156	7	73	50	89	9	35	20
Future Volume (vph)	12	309	44	26	156	7	73	50	89	9	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.91	0.96	1.00			0.99			0.99	
Frt			0.850		0.994			0.943			0.958	
Flt Protected	0.950			0.950				0.983			0.993	
Satd. Flow (prot)	1805	1845	1538	1805	3475	0	0	1665	0	0	1688	0
Flt Permitted	0.633			0.483				0.872			0.956	
Satd. Flow (perm)	1138	1845	1395	882	3475	0	0	1474	0	0	1625	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51		8			59			23	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			110.6			517.2			188.3	
Travel Time (s)		9.2			8.0			37.2			13.6	
Confl. Peds. (#/hr)	30		32	32		30	8		5	5		8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	3%	5%	0%	3%	0%	3%	8%	4%	0%	6%	10%
Adj. Flow (vph)	14	359	51	30	181	8	85	58	103	10	41	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	359	51	30	189	0	0	246	0	0	74	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS

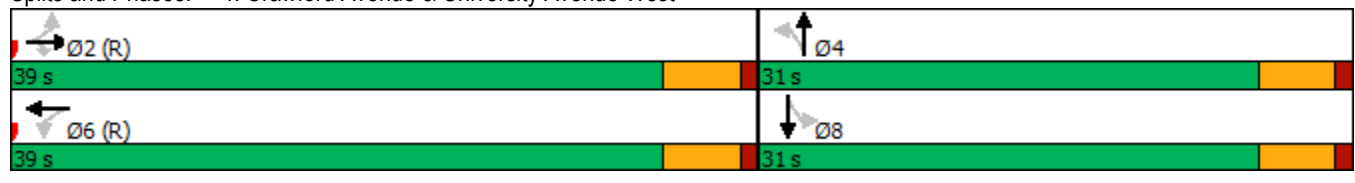


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		30.0	30.0		30.0	30.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	55.7%	55.7%	55.7%	55.7%	55.7%		44.3%	44.3%		44.3%	44.3%	
Maximum Green (s)	34.0	34.0	34.0	34.0	34.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.49		0.37	0.37		0.37	0.37	
v/c Ratio	0.03	0.40	0.07	0.07	0.11		0.42	0.42		0.12	0.12	
Control Delay	9.7	13.2	3.5	8.2	7.6		10.3	10.3		8.2	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.7	13.2	3.5	8.2	7.6		10.3	10.3		8.2	8.2	
LOS	A	B	A	A	A		B	B		A	A	
Approach Delay		11.9			7.7		10.3	10.3			8.2	
Approach LOS		B			A		B	B			A	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	10 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	10.3
Intersection LOS:	B
Intersection Capacity Utilization	52.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues
4: Crawford Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS



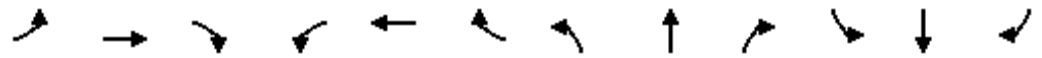
Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	14	359	51	30	189	246	74
v/c Ratio	0.03	0.40	0.07	0.07	0.11	0.42	0.12
Control Delay	9.7	13.2	3.5	8.2	7.6	10.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	13.2	3.5	8.2	7.6	10.3	8.2
Queue Length 50th (m)	0.9	28.2	0.0	1.7	5.1	16.9	3.4
Queue Length 95th (m)	3.3	43.6	4.3	4.5	8.6	m20.9	10.9
Internal Link Dist (m)		104.3			86.6	493.2	164.3
Turn Bay Length (m)	35.0			25.0			
Base Capacity (vph)	552	896	703	428	1691	584	618
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.40	0.07	0.07	0.11	0.42	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	403	7	3	192	4	1	0	2	0	1	3
Future Volume (vph)	8	403	7	3	192	4	1	0	2	0	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.997			0.910			0.899	
Flt Protected	0.950			0.950				0.984				
Satd. Flow (prot)	1597	1831	0	1805	1858	0	0	1701	0	0	1366	0
Flt Permitted	0.950			0.950				0.984				
Satd. Flow (perm)	1597	1831	0	1805	1858	0	0	1701	0	0	1366	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	17						17					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	13%	3%	29%	0%	2%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	9	438	8	3	209	4	1	0	2	0	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	446	0	3	213	0	0	3	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
 Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 31.6% ICU Level of Service A
 Analysis Period (min) 15

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↗	
Traffic Vol, veh/h	8	403	7	3	192	4	1	0	2	0	1	3
Future Vol, veh/h	8	403	7	3	192	4	1	0	2	0	1	3
Conflicting Peds, #/hr	17	0	0	0	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	3	29	0	2	0	0	0	0	0	100	0
Mvmt Flow	9	438	8	3	209	4	1	0	2	0	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	446	0	0	679	696	442	-	698	228
Stage 1	-	-	-	-	-	-	460	460	-	-	234	-
Stage 2	-	-	-	-	-	-	219	236	-	-	464	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	-	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	-	4.9	3.3
Pot Cap-1 Maneuver	1276	-	-	1125	-	-	368	368	620	0	266	816
Stage 1	-	-	-	-	-	-	585	569	-	0	562	-
Stage 2	-	-	-	-	-	-	788	713	-	0	429	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1258	-	-	1125	-	-	362	359	620	-	260	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	362	359	-	-	260	-
Stage 1	-	-	-	-	-	-	581	565	-	-	552	-
Stage 2	-	-	-	-	-	-	781	701	-	-	426	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			12.2			11.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	501	1258	-	-	1125	-	-	528
HCM Lane V/C Ratio	0.007	0.007	-	-	0.003	-	-	0.008
HCM Control Delay (s)	12.2	7.9	-	-	8.2	-	-	11.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	368	4	5	190	6	6	9	16	5	5	10
Future Volume (vph)	17	368	4	5	190	6	6	9	16	5	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.996			0.930				0.929
Flt Protected	0.950			0.950				0.991				0.988
Satd. Flow (prot)	1805	1837	0	1805	1830	0	0	1699	0	0	1744	0
Flt Permitted	0.950			0.950				0.991				0.988
Satd. Flow (perm)	1805	1837	0	1805	1830	0	0	1699	0	0	1744	0
Link Speed (k/h)		50			50			50				50
Link Distance (m)		107.0			196.1			97.6				133.5
Travel Time (s)		7.7			14.1			7.0				9.6
Confl. Peds. (#/hr)	24		27	27		24			13	13		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	25%	0%	3%	17%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	18	391	4	5	202	6	6	10	17	5	5	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	395	0	5	208	0	0	33	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.2% ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	17	368	4	5	190	6	6	9	16	5	5	10
Future Vol, veh/h	17	368	4	5	190	6	6	9	16	5	5	10
Conflicting Peds, #/hr	24	0	27	27	0	24	0	0	13	13	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	3	25	0	3	17	0	0	6	0	0	0
Mvmt Flow	18	391	4	5	202	6	6	10	17	5	5	11

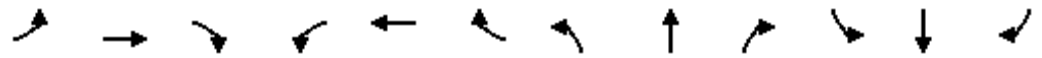
Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	232	0	0	422	0	0	679	698	433	695	697	229
Stage 1	-	-	-	-	-	-	456	456	-	239	239	-
Stage 2	-	-	-	-	-	-	223	242	-	456	458	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	1348	-	-	1148	-	-	368	367	614	359	367	815
Stage 1	-	-	-	-	-	-	588	572	-	769	711	-
Stage 2	-	-	-	-	-	-	784	709	-	588	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1321	-	-	1122	-	-	346	345	593	326	345	798
Mov Cap-2 Maneuver	-	-	-	-	-	-	346	345	-	326	345	-
Stage 1	-	-	-	-	-	-	567	551	-	743	694	-
Stage 2	-	-	-	-	-	-	764	692	-	547	549	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.3		0.2		13.8		13	
HCM LOS					B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	440	1321	-	-	1122	-	-	472
HCM Lane V/C Ratio	0.075	0.014	-	-	0.005	-	-	0.045
HCM Control Delay (s)	13.8	7.8	-	-	8.2	-	-	13
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

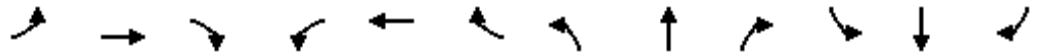
Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	340	0	0	158	24	36	34	31	0	0	0
Future Volume (vph)	21	340	0	0	158	24	36	34	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97				0.99			0.95				
Frt					0.982			0.958				
Flt Protected	0.950							0.983				
Satd. Flow (prot)	1805	1845	0	0	1775	0	0	1694	0	0	0	0
Flt Permitted	0.633							0.983				
Satd. Flow (perm)	1163	1845	0	0	1775	0	0	1655	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					16			34				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	27		64	64		27	30		29	29		30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	6%	3%	0%	0%	0%
Adj. Flow (vph)	23	370	0	0	172	26	39	37	34	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	370	0	0	198	0	0	110	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	41.0	41.0			41.0		29.0	29.0				
Total Split (%)	58.6%	58.6%			58.6%		41.4%	41.4%				
Maximum Green (s)	36.0	36.0			36.0		24.0	24.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.5	53.5			53.5			10.1				
Actuated g/C Ratio	0.76	0.76			0.76			0.14				
v/c Ratio	0.03	0.26			0.15			0.41				
Control Delay	2.0	2.0			1.9			23.8				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	2.0	2.0			1.9			23.8				
LOS	A	A			A			C				
Approach Delay		2.0			1.9			23.8				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 49 (70%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 5.4
 Intersection Capacity Utilization 39.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	23	370	198	110
v/c Ratio	0.03	0.26	0.15	0.41
Control Delay	2.0	2.0	1.9	23.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.0	2.0	1.9	23.8
Queue Length 50th (m)	0.2	4.1	3.1	9.2
Queue Length 95th (m)	m1.1	11.0	7.0	21.1
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	889	1410	1360	589
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.26	0.15	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

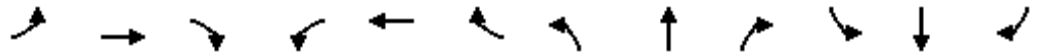
Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	201	62	23	87	17	74	204	72	8	144	9
Future Volume (vph)	32	201	62	23	87	17	74	204	72	8	144	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.97			0.97		0.90	0.94		0.88	0.99	
Frt		0.965			0.982			0.961			0.992	
Flt Protected	0.950				0.991		0.950			0.950		
Satd. Flow (prot)	1805	1759	0	0	1776	0	1626	1672	0	1805	1708	0
Flt Permitted	0.690				0.908		0.655			0.578		
Satd. Flow (perm)	1231	1759	0	0	1605	0	1005	1672	0	963	1708	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			14			32				5
Link Speed (k/h)		50			50			50				50
Link Distance (m)		81.9			178.2			144.6				82.1
Travel Time (s)		5.9			12.8			10.4				5.9
Confl. Peds. (#/hr)	30		50	50		30	59		92	92		59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	4%	3%	0%	11%	3%	3%	0%	10%	0%
Adj. Flow (vph)	34	212	65	24	92	18	78	215	76	8	152	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	277	0	0	134	0	78	291	0	8	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Existing AM
825 Riverside Dr W, Windsor TIS

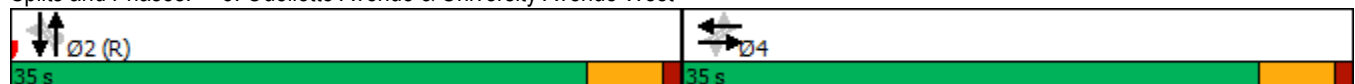


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0	22.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	17.3	17.3			17.3		42.7	42.7		42.7	42.7	
Actuated g/C Ratio	0.25	0.25			0.25		0.61	0.61		0.61	0.61	
v/c Ratio	0.11	0.61			0.33		0.13	0.28		0.01	0.15	
Control Delay	11.9	19.2			20.2		7.9	7.5		7.4	7.2	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	11.9	19.2			20.2		7.9	7.5		7.4	7.2	
LOS	B	B			C		A	A		A	A	
Approach Delay		18.4			20.2			7.6			7.2	
Approach LOS		B			C			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	47 (67%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	12.7
Intersection LOS:	B
Intersection Capacity Utilization:	61.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

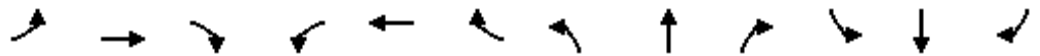
Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	277	134	78	291	8	161
v/c Ratio	0.11	0.61	0.33	0.13	0.28	0.01	0.15
Control Delay	11.9	19.2	20.2	7.9	7.5	7.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	19.2	20.2	7.9	7.5	7.4	7.2
Queue Length 50th (m)	2.2	29.2	13.1	3.6	13.2	0.4	7.4
Queue Length 95th (m)	4.5	42.3	22.8	11.5	32.5	2.3	19.3
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	527	769	695	613	1032	587	1043
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.36	0.19	0.13	0.28	0.01	0.15
Intersection Summary							

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

Existing AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	367	65	168	300	35	73	167	373	27	88	13
Future Volume (vph)	14	367	65	168	300	35	73	167	373	27	88	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.98	0.99		0.99	0.99				1.00
Frt		0.977			0.984			0.897				0.986
Flt Protected	0.950			0.950			0.950					0.990
Satd. Flow (prot)	1492	3392	0	1719	3403	0	1787	1643	0	0	1798	0
Flt Permitted	0.535			0.386			0.702					0.554
Satd. Flow (perm)	799	3392	0	682	3403	0	1308	1643	0	0	1006	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			26			174				9
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	39		26	26		39	13		9	9		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	21%	3%	2%	5%	3%	6%	1%	3%	2%	0%	2%	15%
Adj. Flow (vph)	15	399	71	183	326	38	79	182	405	29	96	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	470	0	183	364	0	79	587	0	0	139	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Existing AM
 825 Riverside Dr W, Windsor TIS

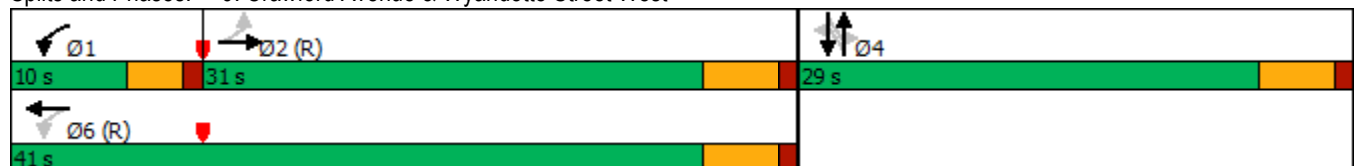


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4		4
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0		10.0
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0		28.0
Total Split (s)	31.0	31.0		10.0	41.0		29.0	29.0		29.0		29.0
Total Split (%)	44.3%	44.3%		14.3%	58.6%		41.4%	41.4%		41.4%		41.4%
Maximum Green (s)	26.0	26.0		6.0	36.0		24.0	24.0		24.0		24.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0				5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	26.0	26.0		37.0	36.0		24.0	24.0				24.0
Actuated g/C Ratio	0.37	0.37		0.53	0.51		0.34	0.34				0.34
v/c Ratio	0.05	0.37		0.41	0.21		0.18	0.87				0.40
Control Delay	14.9	15.8		11.7	8.9		17.5	30.9				17.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	14.9	15.8		11.7	8.9		17.5	30.9				17.7
LOS	B	B		B	A		B	C				B
Approach Delay		15.8			9.8			29.3				17.7
Approach LOS		B			A			C				B

Intersection Summary

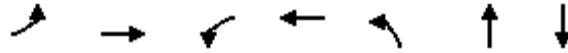
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 38 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 19.0
 Intersection LOS: B
 Intersection Capacity Utilization 67.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Existing AM
825 Riverside Dr W, Windsor TIS



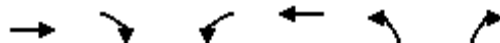
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	15	470	183	364	79	587	139
v/c Ratio	0.05	0.37	0.41	0.21	0.18	0.87	0.40
Control Delay	14.9	15.8	11.7	8.9	17.5	30.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	15.8	11.7	8.9	17.5	30.9	17.7
Queue Length 50th (m)	1.2	21.2	11.7	11.6	7.1	50.8	10.8
Queue Length 95th (m)	4.8	32.1	21.5	18.4	16.0	#108.7	22.9
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	296	1280	449	1762	448	677	350
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.37	0.41	0.21	0.18	0.87	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

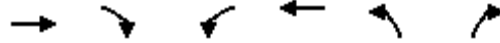
Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	466	23	51	563	13	76
Future Volume (vph)	466	23	51	563	13	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	0.99	
Frt	0.994				0.885	
Flt Protected				0.996	0.993	
Satd. Flow (prot)	1855	0	0	1872	1656	0
Flt Permitted				0.931	0.993	
Satd. Flow (perm)	1855	0	0	1748	1646	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6				81	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		17	17		13	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	13%	2%	1%	0%	1%
Adj. Flow (vph)	496	24	54	599	14	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	520	0	0	653	95	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	51.0		51.0	51.0	25.0	
Total Split (%)	67.1%		67.1%	67.1%	32.9%	
Maximum Green (s)	46.0		46.0	46.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	59.8			59.8	10.2	
Actuated g/C Ratio	0.79			0.79	0.13	
v/c Ratio	0.36			0.47	0.32	
Control Delay	4.2			17.6	18.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.2			17.6	18.3	
LOS	A			B	B	
Approach Delay	4.2			17.6	18.3	
Approach LOS	A			B	B	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	12.2
Intersection LOS:	B
Intersection Capacity Utilization:	79.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues
1: Crawford Avenue & Riverside Drive West

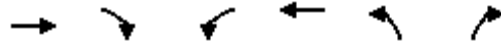
Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	520	653	95
v/c Ratio	0.36	0.47	0.32
Control Delay	4.2	17.6	18.3
Queue Delay	0.0	0.0	0.0
Total Delay	4.2	17.6	18.3
Queue Length 50th (m)	21.1	102.6	0.0
Queue Length 95th (m)	35.4	133.7	16.4
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1460	1375	495
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.36	0.47	0.19
Intersection Summary			

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	554	0	0	639	35	107
Future Volume (vph)	554	0	0	639	35	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					0.99	0.98
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3574	0	0	3574	1805	1568
Flt Permitted					0.950	
Satd. Flow (perm)	3574	0	0	3574	1790	1532
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						114
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		18	18		6	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	0%	1%	0%	3%
Adj. Flow (vph)	589	0	0	680	37	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	589	0	0	680	37	114
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	47.0			47.0	29.0	29.0
Total Split (%)	61.8%			61.8%	38.2%	38.2%
Maximum Green (s)	42.0			42.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	26.1			26.1	39.9	39.9
Actuated g/C Ratio	0.34			0.34	0.52	0.52
v/c Ratio	0.48			0.56	0.04	0.13
Control Delay	17.4			21.3	9.8	2.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.4			21.3	9.8	2.8
LOS	B			C	A	A
Approach Delay	17.4			21.3	4.5	
Approach LOS	B			C	A	

Intersection Summary

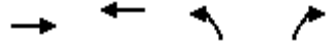
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 22 (29%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 17.9
 Intersection LOS: B
 Intersection Capacity Utilization 39.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	589	680	37	114
v/c Ratio	0.48	0.56	0.04	0.13
Control Delay	17.4	21.3	9.8	2.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.4	21.3	9.8	2.8
Queue Length 50th (m)	24.6	41.0	1.7	0.3
Queue Length 95th (m)	22.7	45.6	8.4	6.8
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1975	1975	948	859
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.34	0.04	0.13
Intersection Summary				

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	0	1	1	0	4	3	92	3	2	59	1
Future Volume (vph)	1	0	1	1	0	4	3	92	3	2	59	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.892			0.996			0.998	
Flt Protected		0.976			0.990			0.999			0.999	
Satd. Flow (prot)	0	1728	0	0	1678	0	0	1855	0	0	1841	0
Flt Permitted		0.976			0.990			0.999			0.999	
Satd. Flow (perm)	0	1728	0	0	1678	0	0	1855	0	0	1841	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		51.8			52.9			188.3			122.0	
Travel Time (s)		3.7			3.8			13.6			8.8	
Confl. Peds. (#/hr)	1		1	1		1	10		4	4		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	3%	0%
Adj. Flow (vph)	1	0	1	1	0	4	3	102	3	2	66	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	5	0	0	108	0	0	69	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	1	0	4	3	92	3	2	59	1
Future Vol, veh/h	1	0	1	1	0	4	3	92	3	2	59	1
Conflicting Peds, #/hr	1	0	1	1	0	1	10	0	4	4	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	3	0
Mvmt Flow	1	0	1	1	0	4	3	102	3	2	66	1

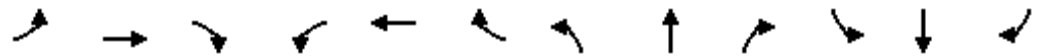
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	194	196	78	186	195	109	77	0	0	109	0	0
Stage 1	81	81	-	114	114	-	-	-	-	-	-	-
Stage 2	113	115	-	72	81	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	770	703	988	779	704	950	1535	-	-	1494	-	-
Stage 1	932	832	-	896	805	-	-	-	-	-	-	-
Stage 2	897	804	-	943	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	758	693	979	773	694	946	1522	-	-	1489	-	-
Mov Cap-2 Maneuver	758	693	-	773	694	-	-	-	-	-	-	-
Stage 1	923	825	-	892	801	-	-	-	-	-	-	-
Stage 2	890	800	-	940	825	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9	0.2	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	854	905	1489	-	-
HCM Lane V/C Ratio	0.002	-	-	0.003	0.006	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.2	9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

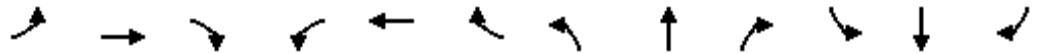
Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	291	76	78	360	11	52	58	68	11	56	10
Future Volume (vph)	36	291	76	78	360	11	52	58	68	11	56	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.89	0.95	1.00			0.99			1.00	
Frt			0.850		0.995			0.949			0.982	
Flt Protected	0.950			0.950				0.986			0.993	
Satd. Flow (prot)	1805	1863	1615	1805	3474	0	0	1753	0	0	1820	0
Flt Permitted	0.514			0.514				0.901			0.958	
Satd. Flow (perm)	951	1863	1438	926	3474	0	0	1596	0	0	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			81		5			49			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			110.6			517.2			188.3	
Travel Time (s)		9.2			8.0			37.2			13.6	
Confl. Peds. (#/hr)	18		36	36		18	16		1	1		16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	3%	9%	2%	0%	0%	0%	2%	0%
Adj. Flow (vph)	38	310	81	83	383	12	55	62	72	12	60	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	310	81	83	395	0	0	189	0	0	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS

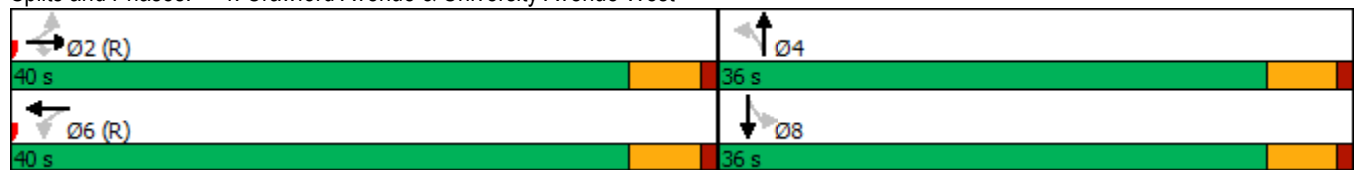


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		10.0	10.0		10.0		10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		30.0	30.0		30.0		30.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0		36.0	36.0		36.0		36.0
Total Split (%)	52.6%	52.6%	52.6%	52.6%	52.6%		47.4%	47.4%		47.4%		47.4%
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0		31.0	31.0		31.0		31.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		18.0		18.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0		0
Act Effct Green (s)	35.0	35.0	35.0	35.0	35.0		31.0	31.0		31.0		31.0
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.46		0.41	0.41		0.41		0.41
v/c Ratio	0.09	0.36	0.11	0.19	0.25		0.28	0.28		0.28		0.11
Control Delay	12.3	14.8	3.5	10.0	9.5		20.5	20.5		20.5		18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	12.3	14.8	3.5	10.0	9.5		20.5	20.5		20.5		18.3
LOS	B	B	A	B	A		C	C		C		B
Approach Delay		12.5			9.6		20.5	20.5		20.5		18.3
Approach LOS		B			A		C	C		C		B

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.36
Intersection Signal Delay:	13.0
Intersection LOS:	B
Intersection Capacity Utilization:	55.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues
4: Crawford Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS






















Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	38	310	81	83	395	189	83
v/c Ratio	0.09	0.36	0.11	0.19	0.25	0.28	0.11
Control Delay	12.3	14.8	3.5	10.0	9.5	20.5	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	14.8	3.5	10.0	9.5	20.5	18.3
Queue Length 50th (m)	2.9	27.5	0.0	6.1	15.1	18.5	10.0
Queue Length 95th (m)	8.0	44.9	6.6	9.3	14.7	m30.4	20.5
Internal Link Dist (m)		104.3			86.6	493.2	164.3
Turn Bay Length (m)	35.0			25.0			
Base Capacity (vph)	437	857	705	426	1602	680	722
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.36	0.11	0.19	0.25	0.28	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	364	4	1	422	0	5	0	6	5	0	7
Future Volume (vph)	4	364	4	1	422	0	5	0	6	5	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998						0.926			0.921	
Flt Protected	0.950			0.950				0.978			0.980	
Satd. Flow (prot)	1444	1878	0	1805	1863	0	0	1577	0	0	1583	0
Flt Permitted	0.950			0.950				0.978			0.980	
Satd. Flow (perm)	1444	1878	0	1805	1863	0	0	1577	0	0	1583	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	21		6	6		21	1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	25%	1%	0%	0%	2%	0%	20%	0%	0%	20%	0%	0%
Adj. Flow (vph)	4	387	4	1	449	0	5	0	6	5	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	391	0	1	449	0	0	11	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.5%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	4	364	4	1	422	0	5	0	6	5	0	7
Future Vol, veh/h	4	364	4	1	422	0	5	0	6	5	0	7
Conflicting Peds, #/hr	21	0	6	6	0	21	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	25	1	0	0	2	0	20	0	0	20	0	0
Mvmt Flow	4	387	4	1	449	0	5	0	6	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	397	0	0	859	875	395	872	877	471
Stage 1	-	-	-	-	-	-	403	403	-	472	472	-
Stage 2	-	-	-	-	-	-	456	472	-	400	405	-
Critical Hdwy	4.35	-	-	4.1	-	-	7.3	6.5	6.2	7.3	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	6.3	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	6.3	5.5	-
Follow-up Hdwy	2.425	-	-	2.2	-	-	3.68	4	3.3	3.68	4	3.3
Pot Cap-1 Maneuver	981	-	-	1173	-	-	258	290	659	252	289	597
Stage 1	-	-	-	-	-	-	590	603	-	540	562	-
Stage 2	-	-	-	-	-	-	551	562	-	592	602	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	964	-	-	1167	-	-	252	282	656	244	281	586
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	282	-	244	281	-
Stage 1	-	-	-	-	-	-	585	598	-	528	551	-
Stage 2	-	-	-	-	-	-	543	551	-	584	597	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			14.8			15.1		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	379	964	-	-	1167	-	-	370
HCM Lane V/C Ratio	0.031	0.004	-	-	0.001	-	-	0.035
HCM Control Delay (s)	14.8	8.8	-	-	8.1	-	-	15.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	387	7	7	410	16	6	15	11	4	5	14
Future Volume (vph)	12	387	7	7	410	16	6	15	11	4	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.994			0.955			0.916	
Flt Protected	0.950			0.950				0.991			0.992	
Satd. Flow (prot)	1805	1858	0	1805	1832	0	0	1692	0	0	1654	0
Flt Permitted	0.950			0.950				0.991			0.992	
Satd. Flow (perm)	1805	1858	0	1805	1832	0	0	1692	0	0	1654	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	28		40	40		28	3		1	1		3
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	6%	0%	13%	0%	0%	0%	7%
Adj. Flow (vph)	13	403	7	7	427	17	6	16	11	4	5	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	410	0	7	444	0	0	33	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.6%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	12	387	7	7	410	16	6	15	11	4	5	14
Future Vol, veh/h	12	387	7	7	410	16	6	15	11	4	5	14
Conflicting Peds, #/hr	28	0	40	40	0	28	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	0	0	3	6	0	13	0	0	0	7
Mvmt Flow	13	403	7	7	427	17	6	16	11	4	5	15

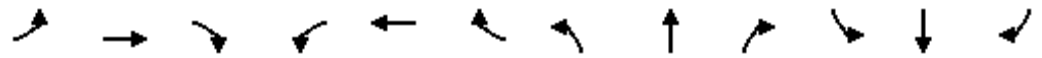
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	472	0	0	450	0	0	936	959	448	925	954	467
Stage 1	-	-	-	-	-	-	473	473	-	478	478	-
Stage 2	-	-	-	-	-	-	463	486	-	447	476	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.63	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.117	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	1100	-	-	1121	-	-	247	246	615	252	261	586
Stage 1	-	-	-	-	-	-	576	540	-	572	559	-
Stage 2	-	-	-	-	-	-	583	533	-	595	560	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1074	-	-	1083	-	-	225	228	594	225	242	571
Mov Cap-2 Maneuver	-	-	-	-	-	-	225	228	-	225	242	-
Stage 1	-	-	-	-	-	-	550	515	-	551	542	-
Stage 2	-	-	-	-	-	-	558	517	-	558	534	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			19.1			15.6		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	288	1074	-	-	1083	-	-	365
HCM Lane V/C Ratio	0.116	0.012	-	-	0.007	-	-	0.066
HCM Control Delay (s)	19.1	8.4	-	-	8.3	-	-	15.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

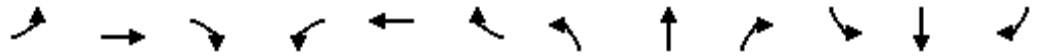
Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	310	0	0	320	58	50	74	30	0	0	0
Future Volume (vph)	42	310	0	0	320	58	50	74	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96				0.99			0.96				
Fr _t					0.979			0.974				
Fl _t Protected	0.950							0.984				
Satd. Flow (prot)	1805	1845	0	0	1790	0	0	1771	0	0	0	0
Fl _t Permitted	0.519							0.984				
Satd. Flow (perm)	950	1845	0	0	1790	0	0	1733	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20			16				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	43		66	66		43	28		31	31		28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	43	320	0	0	330	60	52	76	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	320	0	0	390	0	0	159	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	48.0	48.0			48.0		28.0	28.0				
Total Split (%)	63.2%	63.2%			63.2%		36.8%	36.8%				
Maximum Green (s)	43.0	43.0			43.0		23.0	23.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.4	53.4			53.4			12.6				
Actuated g/C Ratio	0.70	0.70			0.70			0.17				
v/c Ratio	0.06	0.25			0.31			0.53				
Control Delay	4.7	6.1			4.4			31.8				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	4.7	6.1			4.4			31.8				
LOS	A	A			A			C				
Approach Delay		6.0			4.4			31.8				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 58 (76%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 55.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	43	320	390	159
v/c Ratio	0.06	0.25	0.31	0.53
Control Delay	4.7	6.1	4.4	31.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.7	6.1	4.4	31.8
Queue Length 50th (m)	1.7	26.8	10.9	18.9
Queue Length 95th (m)	8.1	47.5	27.4	33.5
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	667	1296	1264	535
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.25	0.31	0.30
Intersection Summary				

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

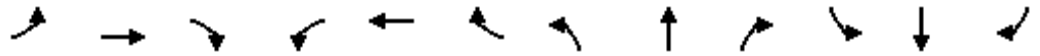
Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	182	83	25	183	17	97	256	48	19	200	18
Future Volume (vph)	53	182	83	25	183	17	97	256	48	19	200	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.94			0.98		0.78	0.94		0.78	0.97	
Frt		0.953			0.990			0.976			0.988	
Flt Protected	0.950				0.994		0.950			0.950		
Satd. Flow (prot)	1770	1698	0	0	1821	0	1703	1692	0	1719	1732	0
Flt Permitted	0.488				0.920		0.614			0.549		
Satd. Flow (perm)	852	1698	0	0	1667	0	858	1692	0	771	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			6			17			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.9			178.2			144.6			82.1	
Travel Time (s)		5.9			12.8			10.4			5.9	
Confl. Peds. (#/hr)	39		60	60		39	132		167	167		132
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	1%	0%	0%	1%	12%	6%	3%	0%	5%	6%	0%
Adj. Flow (vph)	56	194	88	27	195	18	103	272	51	20	213	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	282	0	0	240	0	103	323	0	20	232	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0	22.0	
Total Split (s)	35.0	35.0		35.0	35.0		41.0	41.0		41.0	41.0	
Total Split (%)	46.1%	46.1%		46.1%	46.1%		53.9%	53.9%		53.9%	53.9%	
Maximum Green (s)	30.0	30.0		30.0	30.0		36.0	36.0		36.0	36.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	18.8	18.8		18.8	18.8		47.2	47.2		47.2	47.2	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.62	0.62		0.62	0.62	
v/c Ratio	0.27	0.63		0.58	0.58		0.19	0.31		0.04	0.22	
Control Delay	25.4	29.8		29.1	29.1		9.0	8.4		7.9	7.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.4	29.8		29.1	29.1		9.0	8.4		7.9	7.8	
LOS	C	C		C	C		A	A		A	A	
Approach Delay		29.1		29.1	29.1			8.6			7.8	
Approach LOS		C		C	C			A			A	

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 74 (97%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 17.9
 Intersection LOS: B
 Intersection Capacity Utilization 68.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

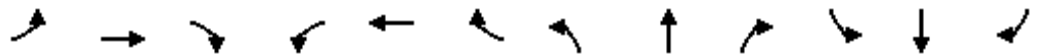
Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	56	282	240	103	323	20	232
v/c Ratio	0.27	0.63	0.58	0.19	0.31	0.04	0.22
Control Delay	25.4	29.8	29.1	9.0	8.4	7.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	29.8	29.1	9.0	8.4	7.9	7.8
Queue Length 50th (m)	7.6	38.5	29.7	5.5	17.7	1.0	12.2
Queue Length 95th (m)	17.9	62.5	43.8	16.3	40.1	4.5	28.6
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	336	691	661	532	1056	478	1077
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.41	0.36	0.19	0.31	0.04	0.22
Intersection Summary							

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Existing PM
 825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	425	73	267	558	41	92	150	304	40	151	23
Future Volume (vph)	27	425	73	267	558	41	92	150	304	40	151	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98		0.95	0.99		0.98					1.00
Frt		0.978			0.990			0.900				0.986
Flt Protected	0.950			0.950			0.950					0.991
Satd. Flow (prot)	1805	3389	0	1770	3486	0	1787	1682	0	0	1816	0
Flt Permitted	0.413			0.369			0.568					0.587
Satd. Flow (perm)	760	3389	0	652	3486	0	1050	1682	0	0	1075	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			16			140				8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	34		60	60		34	27					27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	2%	0%	2%	4%
Adj. Flow (vph)	28	447	77	281	587	43	97	158	320	42	159	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	524	0	281	630	0	97	478	0	0	225	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Existing PM
 825 Riverside Dr W, Windsor TIS

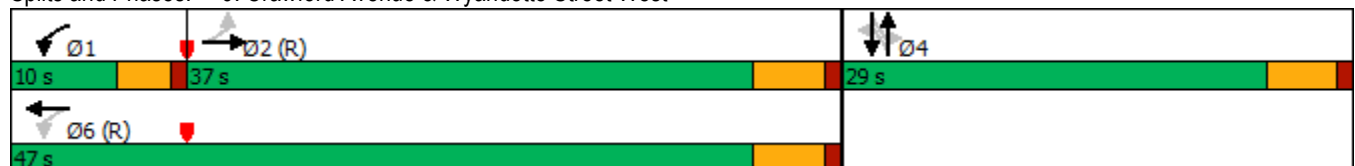


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0	28.0	
Total Split (s)	37.0	37.0		10.0	47.0		29.0	29.0		29.0	29.0	
Total Split (%)	48.7%	48.7%		13.2%	61.8%		38.2%	38.2%		38.2%	38.2%	
Maximum Green (s)	32.0	32.0		6.0	42.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	32.0	32.0		43.0	42.0		24.0	24.0			24.0	
Actuated g/C Ratio	0.42	0.42		0.57	0.55		0.32	0.32			0.32	
v/c Ratio	0.09	0.36		0.61	0.33		0.29	0.76			0.65	
Control Delay	14.3	14.9		15.6	9.6		22.7	26.0			33.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	14.3	14.9		15.6	9.6		22.7	26.0			33.0	
LOS	B	B		B	A		C	C			C	
Approach Delay		14.9			11.4			25.4			33.0	
Approach LOS		B			B			C			C	

Intersection Summary

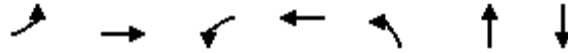
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 4 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 18.0 Intersection LOS: B
 Intersection Capacity Utilization 85.7% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Existing PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	28	524	281	630	97	478	225
v/c Ratio	0.09	0.36	0.61	0.33	0.29	0.76	0.65
Control Delay	14.3	14.9	15.6	9.6	22.7	26.0	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	14.9	15.6	9.6	22.7	26.0	33.0
Queue Length 50th (m)	2.3	24.3	19.1	23.2	10.4	43.4	23.4
Queue Length 95th (m)	7.1	35.6	31.8	32.8	22.3	#88.2	#56.8
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	320	1445	457	1933	331	626	344
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.36	0.61	0.33	0.29	0.76	0.65

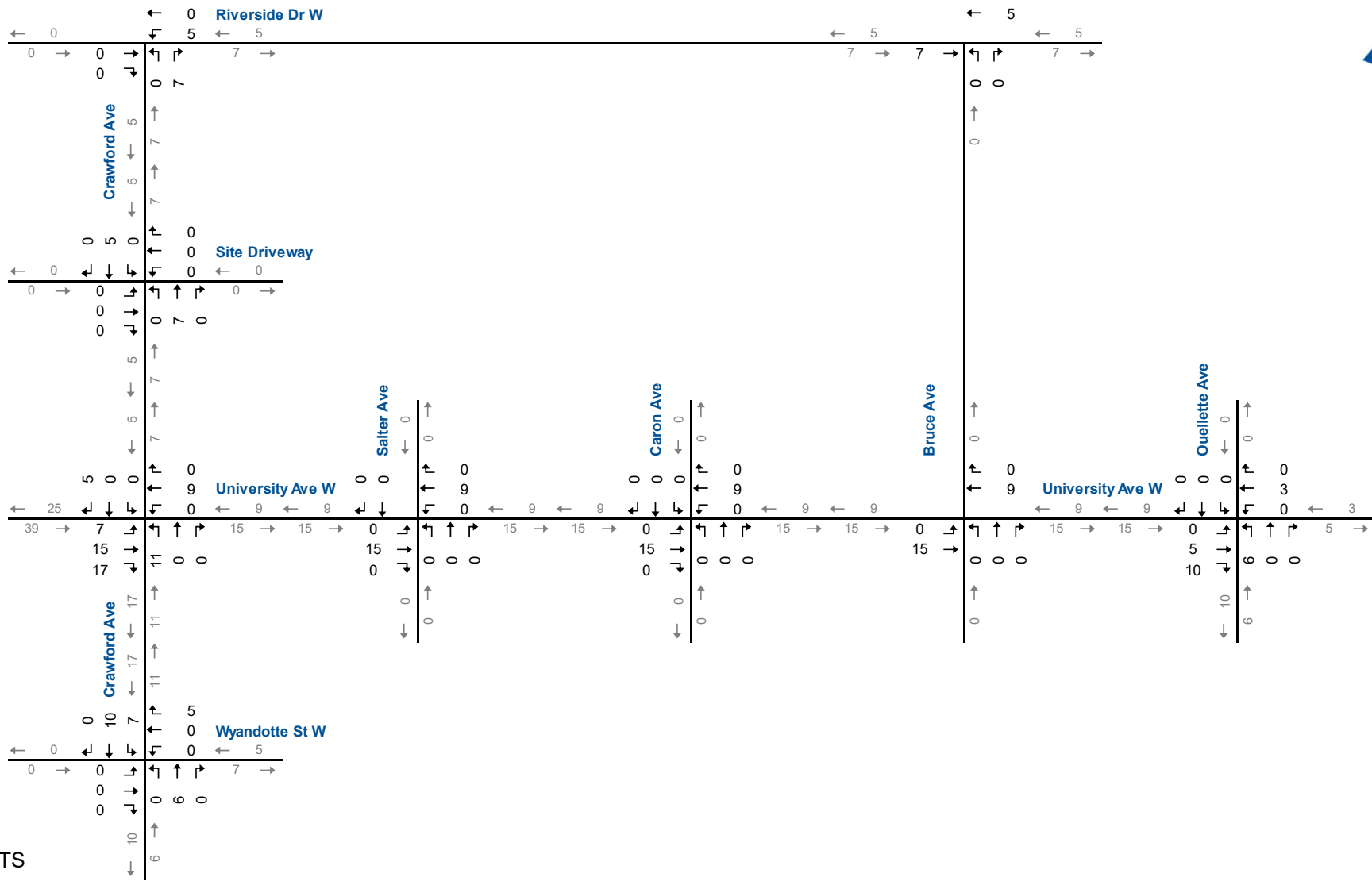
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix D

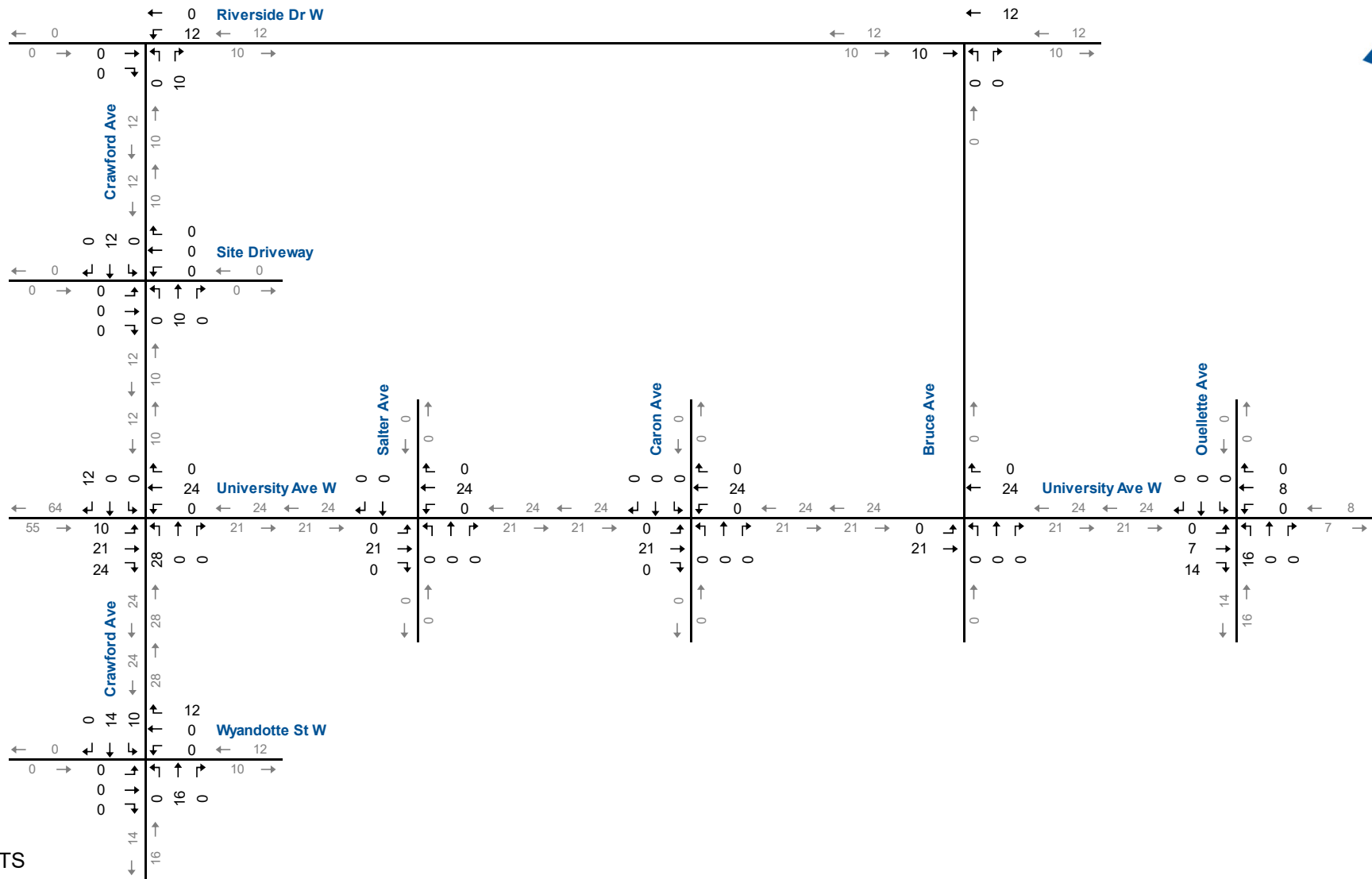
Other Area Development Traffic Volumes



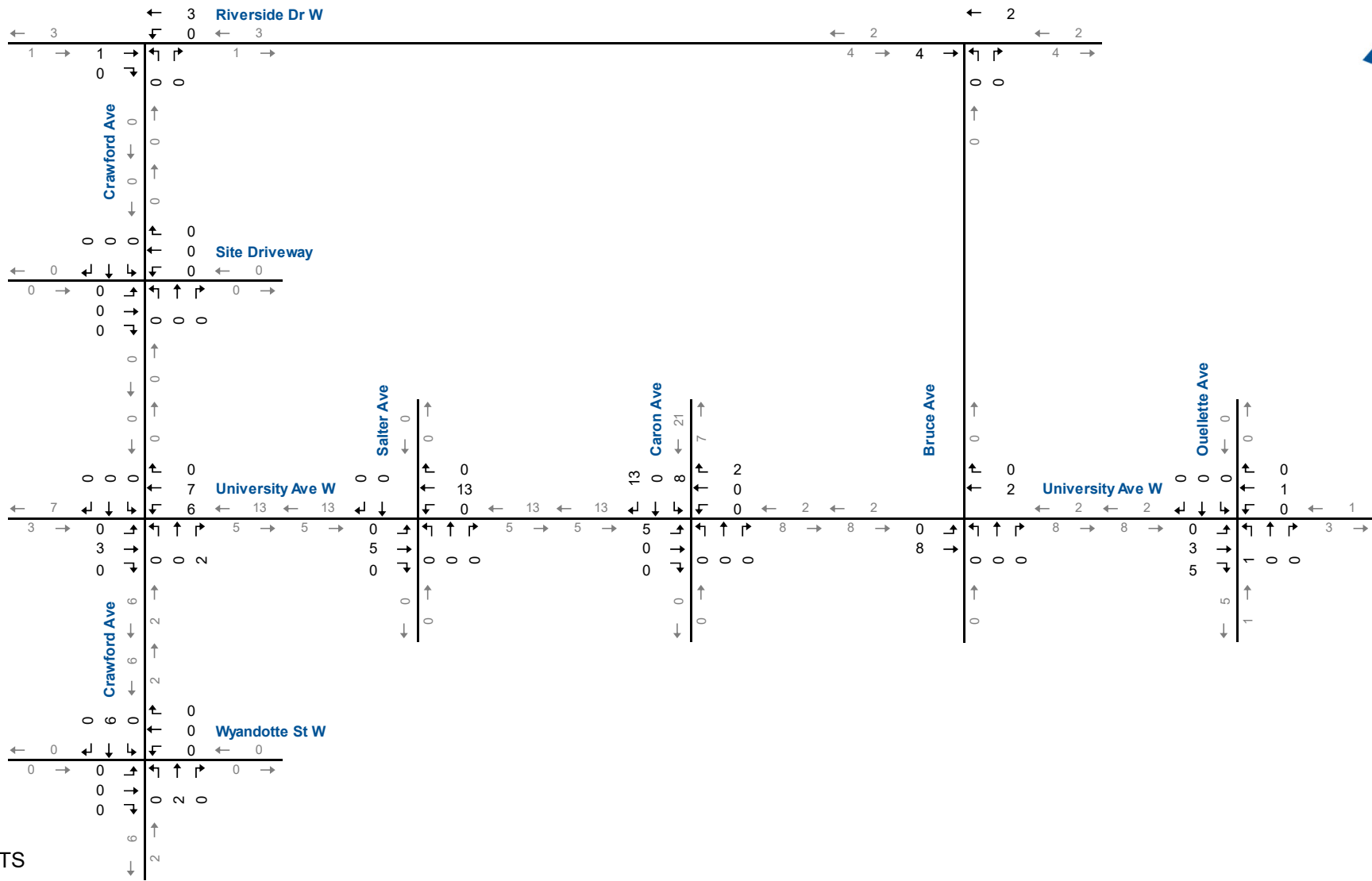


Other Area Development Traffic Volumes 1220 University Ave W AM Peak Hour



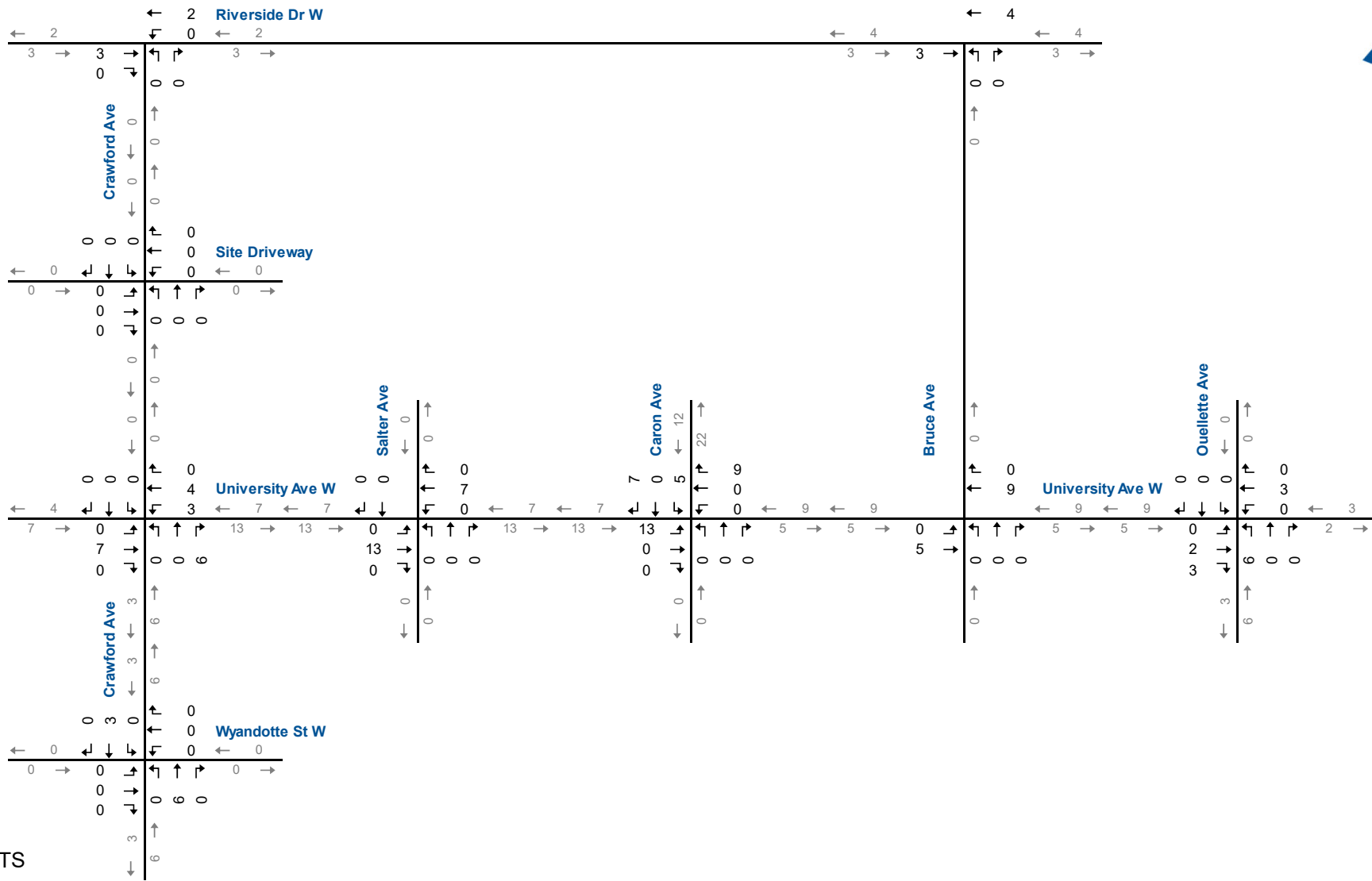


Other Area Development Traffic Volumes 1220 University Ave W PM Peak Hour



Other Area Development Traffic Volumes 666 Chatham St W AM Peak Hour

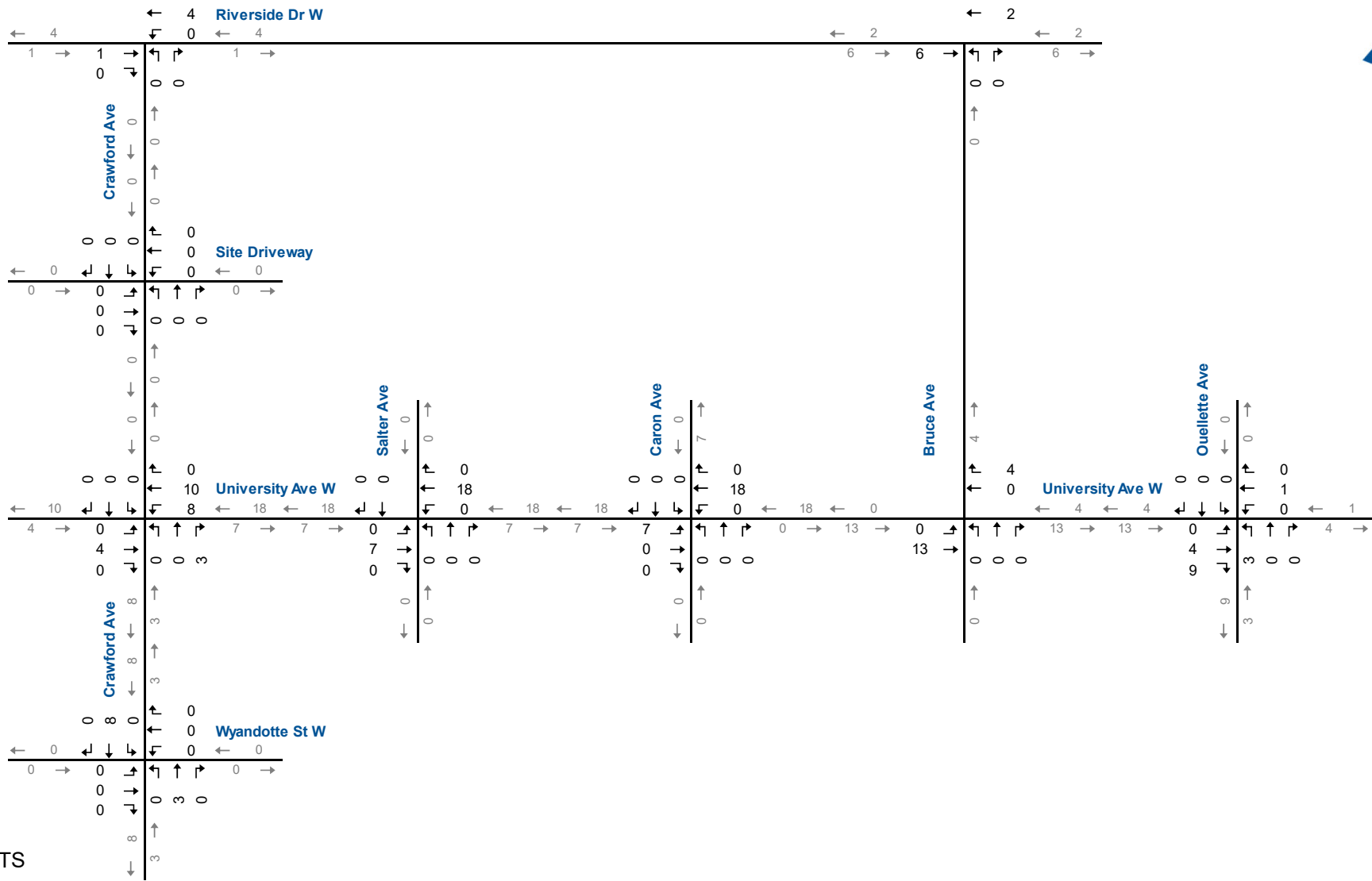




NTS



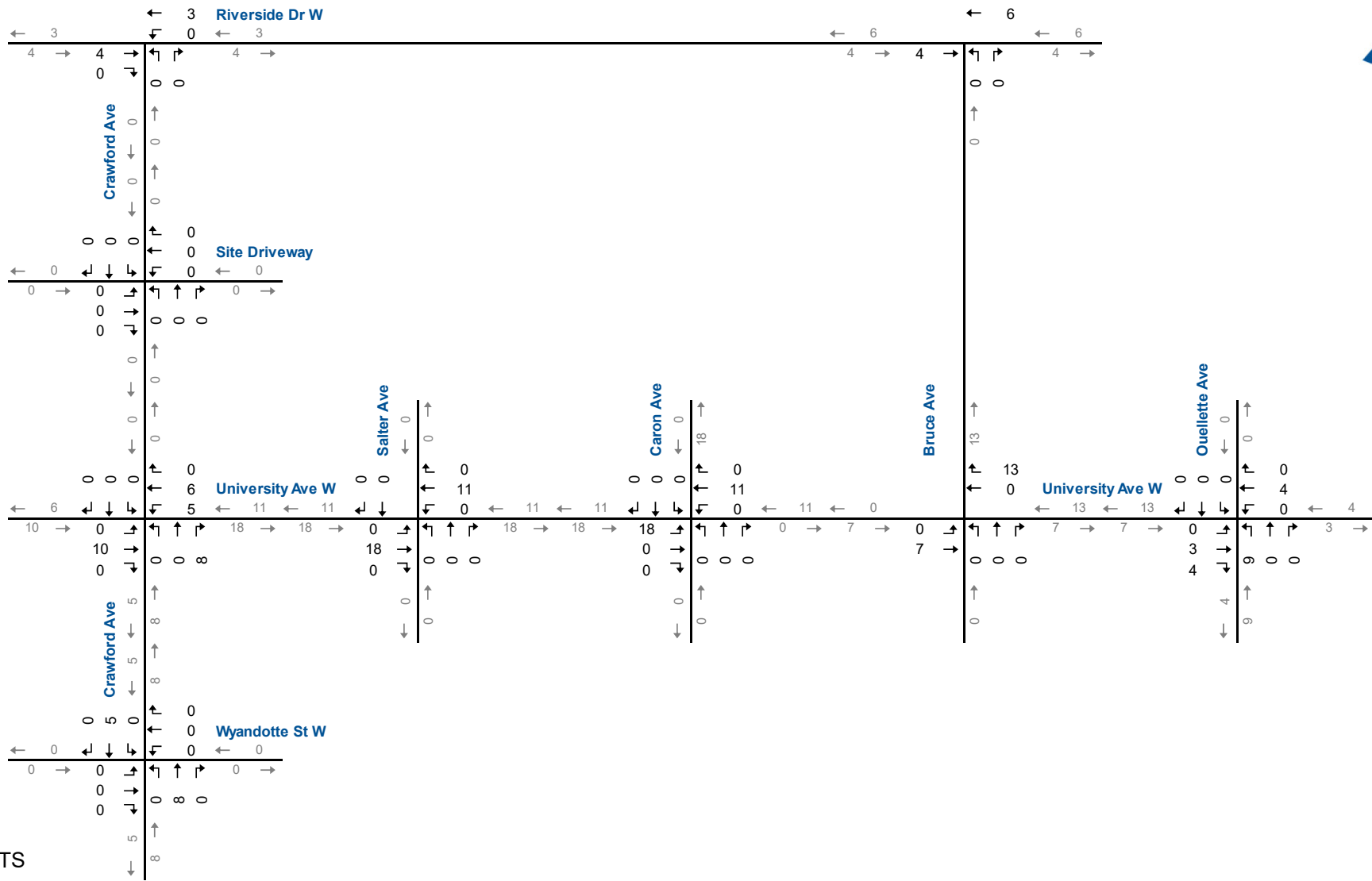
Other Area Development Traffic Volumes 666 Chatham St W PM Peak Hour



NTS



Other Area Development Traffic Volumes Riverside Dr W & Janette Ave AM Peak Hour



NTS



Other Area Development Traffic Volumes Riverside Dr W & Janette Ave PM Peak Hour

1220 University

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
221 - Multifamily Housing (Mid-Rise)	133	Eq ¹	11	36	47	Eq ²	32	20	52
822 - Strip Retail Plaza	14.56	2.36	21	13	34	6.59	48	48	96
Net Trip Generation			32	49	81		80	68	148

$$^1 T = 0.44(X) - 11.61$$

$$^2 T = 0.39(X) + 0.34$$

Riverside & Janette

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 222 - Multifamily Housing (High-Rise)	166	Eq ¹	14	41	55	Eq ²	41	25	66
Total Trip Generation			14	41	55		41	25	66

$$^1 T = 0.22(X) + 18.85$$

$$^2 T = 0.26(X) + 23.12$$

666 Chatham

Land Use	Number of Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
LUC 222 - Multifamily Housing (High-Rise)	88	Eq ¹	10	28	38	Eq ²	29	17	46
Total Trip Generation			10	28	38		29	17	46

$$^1 T = 0.22(X) + 18.85$$

$$^2 T = 0.26(X) + 23.12$$

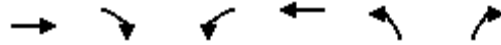
Appendix E

Background Traffic Operations Reports



Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

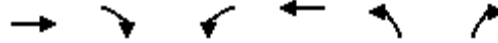
Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	371	16	60	586	13	54
Future Volume (vph)	371	16	60	586	13	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	0.99	
Frt	0.994				0.892	
Flt Protected				0.995	0.990	
Satd. Flow (prot)	1834	0	0	1853	1569	0
Flt Permitted				0.934	0.990	
Satd. Flow (perm)	1834	0	0	1738	1567	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	5				56	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		12	12		3	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	20%	2%	2%	0%	7%
Adj. Flow (vph)	386	17	63	610	14	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	403	0	0	673	70	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Maximum Green (s)	40.0		40.0	40.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	57.9			57.9	10.1	
Actuated g/C Ratio	0.83			0.83	0.14	
v/c Ratio	0.27			0.47	0.26	
Control Delay	3.3			8.8	17.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	3.3			8.8	17.7	
LOS	A			A	B	
Approach Delay	3.3			8.8	17.7	
Approach LOS	A			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 7.4
 Intersection LOS: A
 Intersection Capacity Utilization 75.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues
1: Crawford Avenue & Riverside Drive West

Background AM
825 Riverside Dr W, Windsor TIS



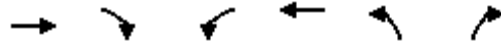
Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	403	673	70
v/c Ratio	0.27	0.47	0.26
Control Delay	3.3	8.8	17.7
Queue Delay	0.0	0.0	0.0
Total Delay	3.3	8.8	17.7
Queue Length 50th (m)	15.1	50.9	3.8
Queue Length 95th (m)	25.3	68.0	m13.8
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1518	1438	488
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.27	0.47	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

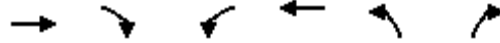
Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	420	0	0	675	11	34
Future Volume (vph)	420	0	0	675	11	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3505	0	0	3574	1641	1524
Flt Permitted					0.950	
Satd. Flow (perm)	3505	0	0	3574	1637	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						35
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		10	10		2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	1%	10%	6%
Adj. Flow (vph)	433	0	0	696	11	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	0	0	696	11	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	41.0			41.0	29.0	29.0
Total Split (%)	58.6%			58.6%	41.4%	41.4%
Maximum Green (s)	36.0			36.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	23.7			23.7	36.3	36.3
Actuated g/C Ratio	0.34			0.34	0.52	0.52
v/c Ratio	0.37			0.58	0.01	0.04
Control Delay	18.8			20.3	10.1	4.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	18.8			20.3	10.1	4.9
LOS	B			C	B	A
Approach Delay	18.8			20.3	6.1	
Approach LOS	B			C	A	

Intersection Summary

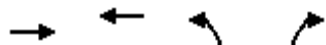
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 52 (74%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 19.2
 Intersection LOS: B
 Intersection Capacity Utilization 34.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

















Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	433	696	11	35
v/c Ratio	0.37	0.58	0.01	0.04
Control Delay	18.8	20.3	10.1	4.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.8	20.3	10.1	4.9
Queue Length 50th (m)	24.8	39.1	0.7	0.3
Queue Length 95th (m)	33.0	43.4	3.3	4.6
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1802	1838	851	807
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.38	0.01	0.04
Intersection Summary				

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Background AM
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	72	0	0	67	2
Future Volume (vph)	0	0	0	0	0	0	0	72	0	0	67	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												0.996
Flt Protected												
Satd. Flow (prot)	0	1900	0	0	1900	0	0	1810	0	0	1725	0
Flt Permitted												
Satd. Flow (perm)	0	1900	0	0	1900	0	0	1810	0	0	1725	0
Link Speed (k/h)	50		50		50		50		50		50	
Link Distance (m)	51.8		52.9		188.3		122.0					
Travel Time (s)	3.7		3.8		13.6		8.8					
Confl. Peds. (#/hr)	2		2	2		2	11		3	3		11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	10%	0%
Adj. Flow (vph)	0	0	0	0	0	0	0	78	0	0	73	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	78	0	0	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0		0.0		0.0		0.0		0.0		0.0	
Link Offset(m)	0.0		0.0		0.0		0.0		0.0		0.0	
Crosswalk Width(m)	4.8		4.8		4.8		4.8		4.8		4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control	Stop		Stop		Free		Free					
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	17.3%					ICU Level of Service A						
Analysis Period (min)	15											

HCM 6th TWSC
3: Crawford Avenue & Site Driveway

Background AM
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	72	0	0	67	2
Future Vol, veh/h	0	0	0	0	0	0	0	72	0	0	67	2
Conflicting Peds, #/hr	2	0	2	2	0	2	11	0	3	3	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	10	0
Mvmt Flow	0	0	0	0	0	0	0	78	0	0	73	2

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	165	166	87	157	167	83	86	0	0	81	0	0
Stage 1	85	85	-	81	81	-	-	-	-	-	-	-
Stage 2	80	81	-	76	86	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	804	730	977	814	729	982	1523	-	-	1529	-	-
Stage 1	928	828	-	932	832	-	-	-	-	-	-	-
Stage 2	934	832	-	938	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	795	721	966	811	720	978	1509	-	-	1525	-	-
Mov Cap-2 Maneuver	795	721	-	811	720	-	-	-	-	-	-	-
Stage 1	920	821	-	929	830	-	-	-	-	-	-	-
Stage 2	932	830	-	936	820	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1509	-	-	-	-	1525	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

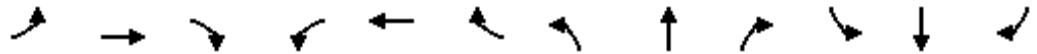
Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	350	64	42	192	7	88	53	99	10	37	26
Future Volume (vph)	20	350	64	42	192	7	88	53	99	10	37	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.97	1.00			0.99			0.99	
Frt		0.977			0.995			0.944			0.952	
Flt Protected	0.950			0.950				0.982			0.993	
Satd. Flow (prot)	1805	1771	0	1805	1832	0	0	1666	0	0	1667	0
Flt Permitted	0.609			0.372				0.856			0.949	
Satd. Flow (perm)	1099	1771	0	687	1832	0	0	1447	0	0	1592	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			4			57			30	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			110.6			517.2			188.3	
Travel Time (s)		9.2			8.0			37.2			13.6	
Confl. Peds. (#/hr)	30		32	32		30	8		5	5		8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	3%	5%	0%	3%	0%	3%	8%	4%	0%	6%	10%
Adj. Flow (vph)	23	407	74	49	223	8	102	62	115	12	43	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	481	0	49	231	0	0	279	0	0	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS

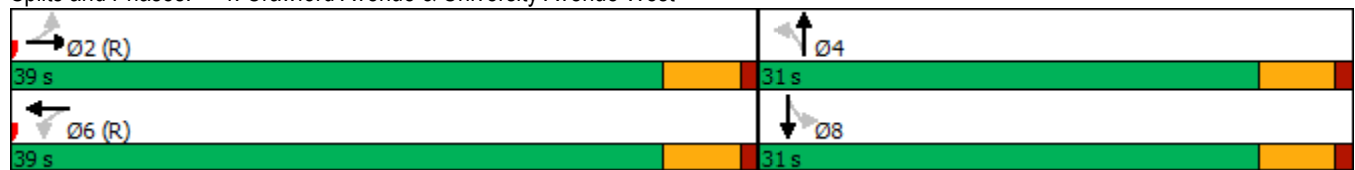


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		30.0	30.0		30.0	30.0	
Total Split (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	55.7%	55.7%		55.7%	55.7%		44.3%	44.3%		44.3%	44.3%	
Maximum Green (s)	34.0	34.0		34.0	34.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.0	34.0		34.0	34.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.37	0.37		0.37	0.37	
v/c Ratio	0.04	0.55		0.15	0.26		0.49	0.49		0.49	0.14	
Control Delay	9.8	15.2		10.2	10.1		14.6	14.6		14.6	8.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.8	15.2		10.2	10.1		14.6	14.6		14.6	8.7	
LOS	A	B		B	B		B	B		B	A	
Approach Delay		14.9			10.1			14.6			8.7	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	10 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	13.2
Intersection LOS:	B
Intersection Capacity Utilization:	62.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues
4: Crawford Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



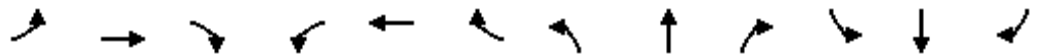
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	23	481	49	231	279	85
v/c Ratio	0.04	0.55	0.15	0.26	0.49	0.14
Control Delay	9.8	15.2	10.2	10.1	14.6	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	15.2	10.2	10.1	14.6	8.7
Queue Length 50th (m)	1.5	40.0	2.8	12.9	24.9	3.2
Queue Length 95th (m)	4.7	60.9	8.7	29.0	m36.3	13.0
Internal Link Dist (m)		104.3		86.6	493.2	164.3
Turn Bay Length (m)	35.0		25.0			
Base Capacity (vph)	533	869	333	891	573	610
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.55	0.15	0.26	0.49	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	455	7	3	244	4	1	0	2	0	1	3
Future Volume (vph)	8	455	7	3	244	4	1	0	2	0	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.998			0.910			0.899	
Flt Protected	0.950			0.950				0.984				
Satd. Flow (prot)	1597	1834	0	1805	1860	0	0	1701	0	0	1366	0
Flt Permitted	0.950			0.950				0.984				
Satd. Flow (perm)	1597	1834	0	1805	1860	0	0	1701	0	0	1366	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	17						17					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	13%	3%	29%	0%	2%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	9	495	8	3	265	4	1	0	2	0	1	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	503	0	3	269	0	0	3	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.4% ICU Level of Service A
Analysis Period (min) 15

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↗	
Traffic Vol, veh/h	8	455	7	3	244	4	1	0	2	0	1	3
Future Vol, veh/h	8	455	7	3	244	4	1	0	2	0	1	3
Conflicting Peds, #/hr	17	0	0	0	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	3	29	0	2	0	0	0	0	0	100	0
Mvmt Flow	9	495	8	3	265	4	1	0	2	0	1	3

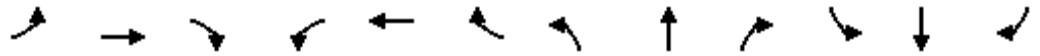
Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	286	0	0	503	0	0	792	809	499	-	811	284
Stage 1	-	-	-	-	-	-	517	517	-	-	290	-
Stage 2	-	-	-	-	-	-	275	292	-	-	521	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	-	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	-	4.9	3.3
Pot Cap-1 Maneuver	1216	-	-	1072	-	-	309	317	576	0	224	760
Stage 1	-	-	-	-	-	-	545	537	-	0	527	-
Stage 2	-	-	-	-	-	-	736	675	-	0	400	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1198	-	-	1072	-	-	304	309	576	-	218	749
Mov Cap-2 Maneuver	-	-	-	-	-	-	304	309	-	-	218	-
Stage 1	-	-	-	-	-	-	541	533	-	-	518	-
Stage 2	-	-	-	-	-	-	729	664	-	-	397	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.1		0.1		13.2		12.8	
HCM LOS					B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	444	1198	-	-	1072	-	-	466
HCM Lane V/C Ratio	0.007	0.007	-	-	0.003	-	-	0.009
HCM Control Delay (s)	13.2	8	-	-	8.4	-	-	12.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	406	4	5	229	8	6	10	17	13	5	24
Future Volume (vph)	30	406	4	5	229	8	6	10	17	13	5	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.995			0.931			0.922	
Flt Protected	0.950			0.950				0.992			0.985	
Satd. Flow (prot)	1805	1839	0	1805	1827	0	0	1702	0	0	1726	0
Flt Permitted	0.950			0.950				0.992			0.985	
Satd. Flow (perm)	1805	1839	0	1805	1827	0	0	1702	0	0	1726	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	24		27	27		24			13	13		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	25%	0%	3%	17%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	32	432	4	5	244	9	6	11	18	14	5	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	436	0	5	253	0	0	35	0	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	30	406	4	5	229	8	6	10	17	13	5	24
Future Vol, veh/h	30	406	4	5	229	8	6	10	17	13	5	24
Conflicting Peds, #/hr	24	0	27	27	0	24	0	0	13	13	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	3	25	0	3	17	0	0	6	0	0	0
Mvmt Flow	32	432	4	5	244	9	6	11	18	14	5	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	277	0	0	463	0	0	799	812	474	809	810	273
Stage 1	-	-	-	-	-	-	525	525	-	283	283	-
Stage 2	-	-	-	-	-	-	274	287	-	526	527	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	1298	-	-	1109	-	-	306	315	582	301	316	771
Stage 1	-	-	-	-	-	-	540	533	-	728	681	-
Stage 2	-	-	-	-	-	-	736	678	-	539	532	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1272	-	-	1084	-	-	278	293	562	268	294	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	293	-	268	294	-
Stage 1	-	-	-	-	-	-	515	508	-	695	664	-
Stage 2	-	-	-	-	-	-	702	661	-	492	507	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.2			15.3			14.3		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	384	1272	-	-	1084	-	-	432
HCM Lane V/C Ratio	0.091	0.025	-	-	0.005	-	-	0.103
HCM Control Delay (s)	15.3	7.9	-	-	8.3	-	-	14.3
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	397	0	0	179	29	38	36	33	0	0	0
Future Volume (vph)	22	397	0	0	179	29	38	36	33	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97				0.99			0.95				
Frt					0.981			0.958				
Flt Protected	0.950							0.983				
Satd. Flow (prot)	1805	1845	0	0	1773	0	0	1694	0	0	0	0
Flt Permitted	0.617							0.983				
Satd. Flow (perm)	1135	1845	0	0	1773	0	0	1654	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					17			35				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	27		64	64		27	30		29	29		30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	6%	3%	0%	0%	0%
Adj. Flow (vph)	24	432	0	0	195	32	41	39	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	432	0	0	227	0	0	116	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	41.0	41.0			41.0		29.0	29.0				
Total Split (%)	58.6%	58.6%			58.6%		41.4%	41.4%				
Maximum Green (s)	36.0	36.0			36.0		24.0	24.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.3	53.3			53.3			10.3				
Actuated g/C Ratio	0.76	0.76			0.76			0.15				
v/c Ratio	0.03	0.31			0.17			0.43				
Control Delay	2.2	2.4			2.8			23.9				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	2.2	2.4			2.8			23.9				
LOS	A	A			A			C				
Approach Delay		2.4			2.8			23.9				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 49 (70%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 42.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	24	432	227	116
v/c Ratio	0.03	0.31	0.17	0.43
Control Delay	2.2	2.4	2.8	23.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.2	2.4	2.8	23.9
Queue Length 50th (m)	0.4	6.6	3.7	9.7
Queue Length 95th (m)	m1.1	14.1	14.0	21.9
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	864	1405	1354	590
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.31	0.17	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	225	90	24	97	18	89	217	76	8	153	10
Future Volume (vph)	34	225	90	24	97	18	89	217	76	8	153	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.96			0.98		0.90	0.94		0.88	0.99	
Frt		0.957			0.982			0.961			0.990	
Flt Protected	0.950				0.992		0.950			0.950		
Satd. Flow (prot)	1805	1732	0	0	1779	0	1626	1673	0	1805	1704	0
Flt Permitted	0.675				0.885		0.649			0.559		
Satd. Flow (perm)	1207	1732	0	0	1569	0	998	1673	0	937	1704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			13			32				6
Link Speed (k/h)		50			50			50				50
Link Distance (m)		81.9			178.2			144.6				82.1
Travel Time (s)		5.9			12.8			10.4				5.9
Confl. Peds. (#/hr)	30		50	50		30	59		92	92		59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	4%	3%	0%	11%	3%	3%	0%	10%	0%
Adj. Flow (vph)	36	237	95	25	102	19	94	228	80	8	161	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	332	0	0	146	0	94	308	0	8	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS

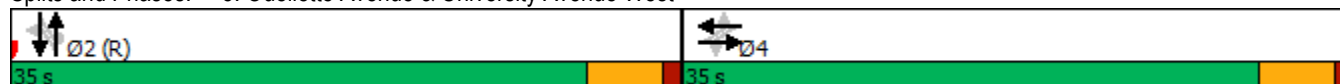


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0	22.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	19.1	19.1			19.1		40.9	40.9		40.9	40.9	
Actuated g/C Ratio	0.27	0.27			0.27		0.58	0.58		0.58	0.58	
v/c Ratio	0.11	0.67			0.33		0.16	0.31		0.01	0.17	
Control Delay	10.0	18.6			19.1		9.4	8.8		8.6	8.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.0	18.6			19.1		9.4	8.8		8.6	8.4	
LOS	A	B			B		A	A		A	A	
Approach Delay		17.7			19.1			9.0			8.4	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	47 (67%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	13.2
Intersection LOS:	B
Intersection Capacity Utilization	64.2%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	332	146	94	308	8	172
v/c Ratio	0.11	0.67	0.33	0.16	0.31	0.01	0.17
Control Delay	10.0	18.6	19.1	9.4	8.8	8.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.6	19.1	9.4	8.8	8.6	8.4
Queue Length 50th (m)	2.3	30.0	14.0	4.9	15.7	0.4	8.8
Queue Length 95th (m)	3.5	40.2	23.3	14.8	38.0	2.5	22.4
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	517	762	679	582	989	547	997
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.44	0.22	0.16	0.31	0.01	0.17
Intersection Summary							

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

Background AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	390	69	178	318	42	77	188	396	36	117	14
Future Volume (vph)	15	390	69	178	318	42	77	188	396	36	117	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.98	0.99		0.99	0.99				1.00
Frt		0.977			0.982			0.898				0.989
Flt Protected	0.950			0.950			0.950					0.989
Satd. Flow (prot)	1492	3392	0	1719	3390	0	1787	1645	0	0	1807	0
Flt Permitted	0.520			0.301			0.667					0.678
Satd. Flow (perm)	778	3392	0	533	3390	0	1244	1645	0	0	1238	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			25			195				8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	39		26	26		39	13		9	9		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	21%	3%	2%	5%	3%	6%	1%	3%	2%	0%	2%	15%
Adj. Flow (vph)	16	424	75	193	346	46	84	204	430	39	127	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	499	0	193	392	0	84	634	0	0	181	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Background AM
 825 Riverside Dr W, Windsor TIS

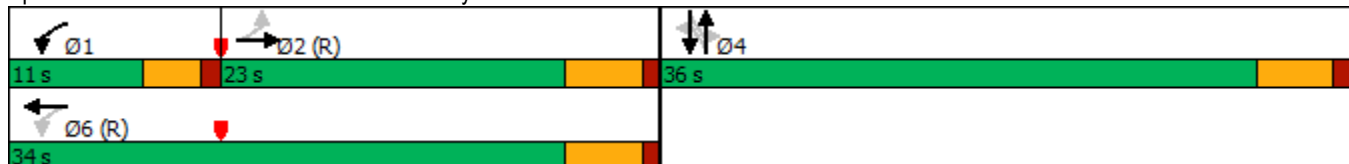


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4		4
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0		10.0
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0		28.0
Total Split (s)	23.0	23.0		11.0	34.0		36.0	36.0		36.0		36.0
Total Split (%)	32.9%	32.9%		15.7%	48.6%		51.4%	51.4%		51.4%		51.4%
Maximum Green (s)	18.0	18.0		7.0	29.0		31.0	31.0		31.0		31.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0				5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	18.0	18.0		30.0	29.0		31.0	31.0				31.0
Actuated g/C Ratio	0.26	0.26		0.43	0.41		0.44	0.44				0.44
v/c Ratio	0.08	0.56		0.56	0.28		0.15	0.76				0.33
Control Delay	21.1	24.1		19.8	13.3		12.6	18.2				10.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	21.1	24.1		19.8	13.3		12.6	18.2				10.3
LOS	C	C		B	B		B	B				B
Approach Delay		24.0			15.4			17.6				10.3
Approach LOS		C			B			B				B

Intersection Summary

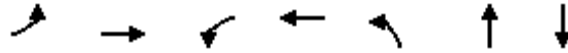
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 38 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 17.9 Intersection LOS: B
 Intersection Capacity Utilization 74.4% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Background AM
825 Riverside Dr W, Windsor TIS



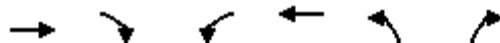
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	16	499	193	392	84	634	181
v/c Ratio	0.08	0.56	0.56	0.28	0.15	0.76	0.33
Control Delay	21.1	24.1	19.8	13.3	12.6	18.2	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	24.1	19.8	13.3	12.6	18.2	10.3
Queue Length 50th (m)	1.6	28.0	15.6	16.0	6.3	45.9	15.5
Queue Length 95th (m)	6.0	42.0	28.4	24.9	14.0	#86.8	26.8
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	200	893	347	1419	550	837	552
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.56	0.56	0.28	0.15	0.76	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

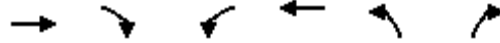
Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	502	24	66	603	14	91
Future Volume (vph)	502	24	66	603	14	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	0.99	
Frt	0.994				0.883	
Flt Protected				0.995	0.993	
Satd. Flow (prot)	1855	0	0	1870	1652	0
Flt Permitted				0.906	0.993	
Satd. Flow (perm)	1855	0	0	1701	1643	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6				97	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		17	17		13	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	13%	2%	1%	0%	1%
Adj. Flow (vph)	534	26	70	641	15	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	560	0	0	711	112	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	51.0		51.0	51.0	25.0	
Total Split (%)	67.1%		67.1%	67.1%	32.9%	
Maximum Green (s)	46.0		46.0	46.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	59.7			59.7	10.3	
Actuated g/C Ratio	0.79			0.79	0.14	
v/c Ratio	0.38			0.53	0.36	
Control Delay	4.4			18.7	15.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.4			18.7	15.3	
LOS	A			B	B	
Approach Delay	4.4			18.7	15.3	
Approach LOS	A			B	B	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	12.7
Intersection LOS:	B
Intersection Capacity Utilization:	84.2%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues
1: Crawford Avenue & Riverside Drive West

Background PM
825 Riverside Dr W, Windsor TIS



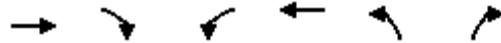
Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	560	711	112
v/c Ratio	0.38	0.53	0.36
Control Delay	4.4	18.7	15.3
Queue Delay	0.0	0.0	0.0
Total Delay	4.4	18.7	15.3
Queue Length 50th (m)	23.5	112.2	4.7
Queue Length 95th (m)	40.4	144.0	m18.0
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1458	1336	506
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.38	0.53	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	605	0	0	700	37	114
Future Volume (vph)	605	0	0	700	37	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					0.99	0.98
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3574	0	0	3574	1805	1568
Flt Permitted					0.950	
Satd. Flow (perm)	3574	0	0	3574	1790	1532
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						121
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		18	18		6	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	0%	1%	0%	3%
Adj. Flow (vph)	644	0	0	745	39	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	644	0	0	745	39	121
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	47.0			47.0	29.0	29.0
Total Split (%)	61.8%			61.8%	38.2%	38.2%
Maximum Green (s)	42.0			42.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	28.5			28.5	37.5	37.5
Actuated g/C Ratio	0.38			0.38	0.49	0.49
v/c Ratio	0.48			0.56	0.04	0.15
Control Delay	16.0			19.7	11.2	3.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	16.0			19.7	11.2	3.2
LOS	B			B	B	A
Approach Delay	16.0			19.7	5.2	
Approach LOS	B			B	A	

Intersection Summary

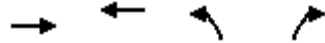
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 22 (29%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 16.7
 Intersection LOS: B
 Intersection Capacity Utilization 41.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	644	745	39	121
v/c Ratio	0.48	0.56	0.04	0.15
Control Delay	16.0	19.7	11.2	3.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.0	19.7	11.2	3.2
Queue Length 50th (m)	26.3	43.8	1.6	0.5
Queue Length 95th (m)	22.2	46.1	9.5	6.6
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1975	1975	891	817
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.38	0.04	0.15
Intersection Summary				

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↕			↕			↕			↕			
Traffic Volume (vph)	1	0	1	5	0	0	3	108	0	0	75	1		
Future Volume (vph)	1	0	1	5	0	0	3	108	0	0	75	1		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor														
Frt	0.932								0.998					
Flt Protected	0.976					0.950			0.999					
Satd. Flow (prot)	0	1728	0	0	1805	0	0	1862	0	0	1842	0		
Flt Permitted	0.976					0.950			0.999					
Satd. Flow (perm)	0	1728	0	0	1805	0	0	1862	0	0	1842	0		
Link Speed (k/h)	50					50			50					
Link Distance (m)	51.8					52.9			188.3					
Travel Time (s)	3.7					3.8			13.6					
Confl. Peds. (#/hr)	1			1	1			1	10			4	4	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	3%	0%		
Adj. Flow (vph)	1	0	1	6	0	0	3	120	0	0	83	1		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	2	0	0	6	0	0	123	0	0	84	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right		
Median Width(m)	0.0					0.0			0.0					
Link Offset(m)	0.0					0.0			0.0					
Crosswalk Width(m)	4.8					4.8			4.8					
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (k/h)	25		15		25		15		25		15			
Sign Control	Stop					Stop			Free					

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.1%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	5	0	0	3	108	0	0	75	1
Future Vol, veh/h	1	0	1	5	0	0	3	108	0	0	75	1
Conflicting Peds, #/hr	1	0	1	1	0	1	10	0	4	4	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	3	0
Mvmt Flow	1	0	1	6	0	0	3	120	0	0	83	1

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	221	224	95	215	224	125	94	0	0	124	0	0
Stage 1	94	94	-	130	130	-	-	-	-	-	-	-
Stage 2	127	130	-	85	94	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	739	678	967	746	678	931	1513	-	-	1475	-	-
Stage 1	918	821	-	878	792	-	-	-	-	-	-	-
Stage 2	882	792	-	928	821	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	731	669	958	741	669	927	1500	-	-	1470	-	-
Mov Cap-2 Maneuver	731	669	-	741	669	-	-	-	-	-	-	-
Stage 1	909	814	-	874	788	-	-	-	-	-	-	-
Stage 2	879	788	-	926	814	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	9.4		9.9			0.2		0		
HCM LOS	A		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1500	-	-	829	741	1470	-	-
HCM Lane V/C Ratio	0.002	-	-	0.003	0.007	-	-	-
HCM Control Delay (s)	7.4	0	-	9.4	9.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

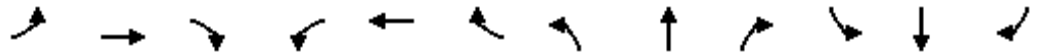
Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	347	105	91	416	12	83	62	86	17	59	23
Future Volume (vph)	48	347	105	91	416	12	83	62	86	17	59	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.97		0.97	1.00			0.98				0.99
Fr _t		0.965			0.996			0.950				0.969
Fl _t Protected	0.950			0.950				0.982				0.992
Satd. Flow (prot)	1805	1760	0	1805	1831	0	0	1746	0	0	1787	0
Fl _t Permitted	0.373			0.350				0.857				0.937
Satd. Flow (perm)	697	1760	0	644	1831	0	0	1512	0	0	1687	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			3			47				24
Link Speed (k/h)		50			50			50				50
Link Distance (m)		128.3			110.6			517.2				188.3
Travel Time (s)		9.2			8.0			37.2				13.6
Confl. Peds. (#/hr)	18		36	36		18	16		1	1		16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	3%	9%	2%	0%	0%	0%	2%	0%
Adj. Flow (vph)	51	369	112	97	443	13	88	66	91	18	63	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	481	0	97	456	0	0	245	0	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS

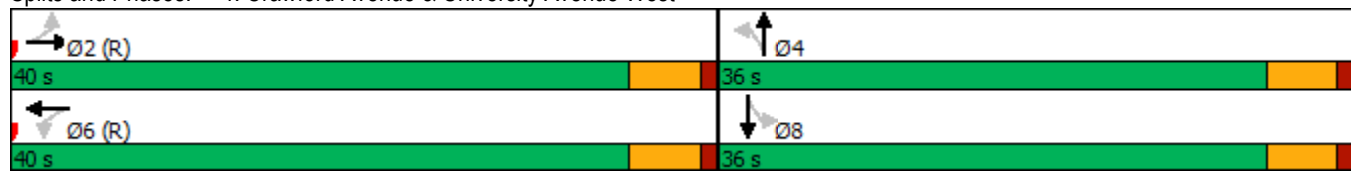


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		30.0	30.0		30.0	30.0	
Total Split (s)	40.0	40.0		40.0	40.0		36.0	36.0		36.0	36.0	
Total Split (%)	52.6%	52.6%		52.6%	52.6%		47.4%	47.4%		47.4%	47.4%	
Maximum Green (s)	35.0	35.0		35.0	35.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	35.0	35.0		35.0	35.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.41	0.41		0.41	0.41	
v/c Ratio	0.16	0.58		0.33	0.54		0.38	0.38		0.15	0.15	
Control Delay	13.6	17.7		12.9	13.5		13.5	13.5		16.3	16.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.6	17.7		12.9	13.5		13.5	13.5		16.3	16.3	
LOS	B	B		B	B		B	B		B	B	
Approach Delay		17.3			13.4		13.5	13.5			16.3	
Approach LOS		B			B		B	B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	15.1
Intersection LOS:	B
Intersection Capacity Utilization:	65.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues
4: Crawford Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



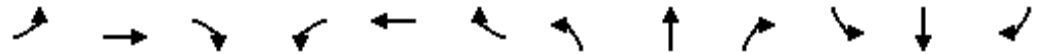
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	51	481	97	456	245	105
v/c Ratio	0.16	0.58	0.33	0.54	0.38	0.15
Control Delay	13.6	17.7	12.9	13.5	13.5	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	17.7	12.9	13.5	13.5	16.3
Queue Length 50th (m)	4.1	45.8	7.7	38.3	14.8	12.1
Queue Length 95th (m)	10.6	73.6	15.4	63.9	m32.0	m22.2
Internal Link Dist (m)		104.3		86.6	493.2	164.3
Turn Bay Length (m)	35.0		25.0			
Base Capacity (vph)	320	825	296	844	644	702
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.58	0.33	0.54	0.38	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	443	4	1	490	0	5	0	6	0	0	7
Future Volume (vph)	4	443	4	1	490	0	5	0	6	0	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999						0.926			0.865	
Flt Protected	0.950			0.950				0.978				
Satd. Flow (prot)	1444	1879	0	1805	1863	0	0	1577	0	0	1644	0
Flt Permitted	0.950			0.950				0.978				
Satd. Flow (perm)	1444	1879	0	1805	1863	0	0	1577	0	0	1644	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	21		6	6		21	1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	25%	1%	0%	0%	2%	0%	20%	0%	0%	0%	0%	0%
Adj. Flow (vph)	4	471	4	1	521	0	5	0	6	0	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	475	0	1	521	0	0	11	0	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	443	4	1	490	0	5	0	6	0	0	7
Future Vol, veh/h	4	443	4	1	490	0	5	0	6	0	0	7
Conflicting Peds, #/hr	21	0	6	6	0	21	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	25	1	0	0	2	0	20	0	0	0	0	0
Mvmt Flow	4	471	4	1	521	0	5	0	6	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	481	0	0	1015	1031	479	-	1033	543
Stage 1	-	-	-	-	-	-	487	487	-	-	544	-
Stage 2	-	-	-	-	-	-	528	544	-	-	489	-
Critical Hdwy	4.35	-	-	4.1	-	-	7.3	6.5	6.2	-	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	-	5.5	-
Follow-up Hdwy	2.425	-	-	2.2	-	-	3.68	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	921	-	-	1092	-	-	201	235	591	0	234	544
Stage 1	-	-	-	-	-	-	530	554	-	0	522	-
Stage 2	-	-	-	-	-	-	502	522	-	0	553	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	905	-	-	1086	-	-	196	228	588	-	227	534
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	228	-	-	227	-
Stage 1	-	-	-	-	-	-	525	549	-	-	512	-
Stage 2	-	-	-	-	-	-	494	512	-	-	548	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			17.1			11.8		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	308	905	-	-	1086	-	-	534
HCM Lane V/C Ratio	0.038	0.005	-	-	0.001	-	-	0.014
HCM Control Delay (s)	17.1	9	-	-	8.3	-	-	11.8
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	432	7	7	470	26	6	16	12	9	5	22
Future Volume (vph)	44	432	7	7	470	26	6	16	12	9	5	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.992			0.951			0.916	
Flt Protected	0.950			0.950				0.992			0.988	
Satd. Flow (prot)	1805	1860	0	1805	1827	0	0	1689	0	0	1648	0
Flt Permitted	0.950			0.950				0.992			0.988	
Satd. Flow (perm)	1805	1860	0	1805	1827	0	0	1689	0	0	1648	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	28		40	40		28	3		1	1		3
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	6%	0%	13%	0%	0%	0%	7%
Adj. Flow (vph)	46	450	7	7	490	27	6	17	13	9	5	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	457	0	7	517	0	0	36	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	44	432	7	7	470	26	6	16	12	9	5	22
Future Vol, veh/h	44	432	7	7	470	26	6	16	12	9	5	22
Conflicting Peds, #/hr	28	0	40	40	0	28	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	0	0	3	6	0	13	0	0	0	7
Mvmt Flow	46	450	7	7	490	27	6	17	13	9	5	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	545	0	0	497	0	0	1121	1145	495	1108	1135	535
Stage 1	-	-	-	-	-	-	586	586	-	546	546	-
Stage 2	-	-	-	-	-	-	535	559	-	562	589	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.63	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.117	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	1034	-	-	1077	-	-	185	190	579	189	204	536
Stage 1	-	-	-	-	-	-	500	480	-	526	521	-
Stage 2	-	-	-	-	-	-	533	494	-	515	499	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1009	-	-	1041	-	-	160	170	559	160	182	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	170	-	160	182	-
Stage 1	-	-	-	-	-	-	461	443	-	490	505	-
Stage 2	-	-	-	-	-	-	500	479	-	462	460	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			24.3			19.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	222	1009	-	-	1041	-	-	286
HCM Lane V/C Ratio	0.16	0.045	-	-	0.007	-	-	0.131
HCM Control Delay (s)	24.3	8.7	-	-	8.5	-	-	19.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.4

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	362	0	0	373	75	53	79	32	0	0	0
Future Volume (vph)	45	362	0	0	373	75	53	79	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97				0.99			0.96				
Frt					0.977			0.974				
Flt Protected	0.950							0.984				
Satd. Flow (prot)	1805	1845	0	0	1785	0	0	1771	0	0	0	0
Flt Permitted	0.470							0.984				
Satd. Flow (perm)	866	1845	0	0	1785	0	0	1733	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					22			16				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	43		66	66		43	28		31	31		28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	46	373	0	0	385	77	55	81	33	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	373	0	0	462	0	0	169	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	48.0	48.0			48.0		28.0	28.0				
Total Split (%)	63.2%	63.2%			63.2%		36.8%	36.8%				
Maximum Green (s)	43.0	43.0			43.0		23.0	23.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.0	53.0			53.0			13.0				
Actuated g/C Ratio	0.70	0.70			0.70			0.17				
v/c Ratio	0.08	0.29			0.37			0.55				
Control Delay	4.3	6.0			5.3			32.0				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	4.3	6.0			5.3			32.0				
LOS	A	A			A			C				
Approach Delay		5.8			5.3			32.0				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 58 (76%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 60.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	46	373	462	169
v/c Ratio	0.08	0.29	0.37	0.55
Control Delay	4.3	6.0	5.3	32.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.3	6.0	5.3	32.0
Queue Length 50th (m)	1.6	24.3	21.1	20.2
Queue Length 95th (m)	m4.7	51.4	38.3	35.0
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	604	1287	1251	535
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.08	0.29	0.37	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	205	109	27	209	18	134	272	51	20	212	19
Future Volume (vph)	56	205	109	27	209	18	134	272	51	20	212	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.94			0.98		0.79	0.94		0.79	0.97	
Frt		0.948			0.990			0.976			0.988	
Flt Protected	0.950				0.995		0.950			0.950		
Satd. Flow (prot)	1770	1678	0	0	1825	0	1703	1692	0	1719	1732	0
Flt Permitted	0.471				0.868		0.606			0.527		
Satd. Flow (perm)	827	1678	0	0	1578	0	854	1692	0	751	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			6			17			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.9			178.2			144.6			82.1	
Travel Time (s)		5.9			12.8			10.4			5.9	
Confl. Peds. (#/hr)	39		60	60		39	132		167	167		132
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	1%	0%	0%	1%	12%	6%	3%	0%	5%	6%	0%
Adj. Flow (vph)	60	218	116	29	222	19	143	289	54	21	226	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	334	0	0	270	0	143	343	0	21	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0	22.0	
Total Split (s)	35.0	35.0		35.0	35.0		41.0	41.0		41.0	41.0	
Total Split (%)	46.1%	46.1%		46.1%	46.1%		53.9%	53.9%		53.9%	53.9%	
Maximum Green (s)	30.0	30.0		30.0	30.0		36.0	36.0		36.0	36.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	20.8	20.8		20.8	20.8		45.2	45.2		45.2	45.2	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.59	0.59		0.59	0.59	
v/c Ratio	0.27	0.68		0.62	0.62		0.28	0.34		0.05	0.24	
Control Delay	24.3	30.6		28.8	28.8		11.4	10.0		9.4	9.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.3	30.6		28.8	28.8		11.4	10.0		9.4	9.2	
LOS	C	C		C	C		B	A		A	A	
Approach Delay		29.7		28.8	28.8		10.4	10.4		9.2	9.2	
Approach LOS		C		C	C		B	B		A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	74 (97%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	19.1
Intersection LOS:	B
Intersection Capacity Utilization:	72.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

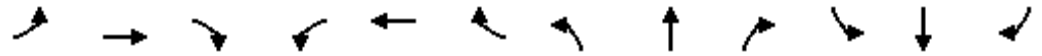
Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	334	270	143	343	21	246
v/c Ratio	0.27	0.68	0.62	0.28	0.34	0.05	0.24
Control Delay	24.3	30.6	28.8	11.4	10.0	9.4	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	30.6	28.8	11.4	10.0	9.4	9.2
Queue Length 50th (m)	8.1	45.9	33.1	8.9	21.0	1.1	14.3
Queue Length 95th (m)	18.4	70.3	46.7	24.9	47.8	5.1	33.7
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	326	687	626	507	1012	446	1032
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.49	0.43	0.28	0.34	0.05	0.24
Intersection Summary							

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

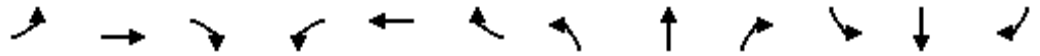
Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	451	77	283	592	56	98	189	323	52	182	24
Future Volume (vph)	29	451	77	283	592	56	98	189	323	52	182	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98		0.96	0.99		0.98					1.00
Frt		0.978			0.987			0.905				0.988
Flt Protected	0.950			0.950			0.950					0.990
Satd. Flow (prot)	1805	3390	0	1770	3471	0	1787	1692	0	0	1820	0
Flt Permitted	0.392			0.262			0.556					0.621
Satd. Flow (perm)	723	3390	0	467	3471	0	1029	1692	0	0	1141	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			18			134				8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	34		60	60		34	27					27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	2%	0%	2%	4%
Adj. Flow (vph)	31	475	81	298	623	59	103	199	340	55	192	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	556	0	298	682	0	103	539	0	0	272	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

Background PM
825 Riverside Dr W, Windsor TIS

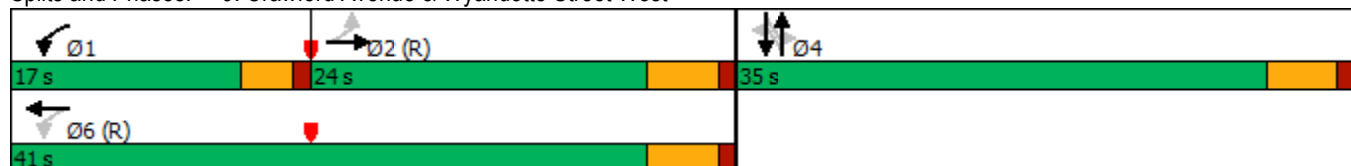


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4		4
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0		10.0
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0		28.0
Total Split (s)	24.0	24.0		17.0	41.0		35.0	35.0		35.0		35.0
Total Split (%)	31.6%	31.6%		22.4%	53.9%		46.1%	46.1%		46.1%		46.1%
Maximum Green (s)	19.0	19.0		13.0	36.0		30.0	30.0		30.0		30.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0				5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	20.1	20.1		37.0	36.0		30.0	30.0				30.0
Actuated g/C Ratio	0.26	0.26		0.49	0.47		0.39	0.39				0.39
v/c Ratio	0.16	0.61		0.69	0.41		0.25	0.72				0.60
Control Delay	25.0	27.1		21.2	13.6		17.7	20.8				23.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	25.0	27.1		21.2	13.6		17.7	20.8				23.4
LOS	C	C		C	B		B	C				C
Approach Delay		27.0			16.0			20.3				23.4
Approach LOS		C			B			C				C

Intersection Summary

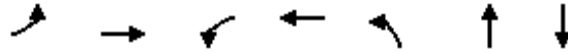
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 4 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 20.5
 Intersection LOS: C
 Intersection Capacity Utilization 96.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Background PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	31	556	298	682	103	539	272
v/c Ratio	0.16	0.61	0.69	0.41	0.25	0.72	0.60
Control Delay	25.0	27.1	21.2	13.6	17.7	20.8	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	27.1	21.2	13.6	17.7	20.8	23.4
Queue Length 50th (m)	3.5	35.8	24.9	31.0	9.7	47.7	22.6
Queue Length 95th (m)	10.4	51.8	41.4	43.5	20.5	83.7	41.0
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	191	914	450	1653	406	749	455
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.61	0.66	0.41	0.25	0.72	0.60
Intersection Summary							

Appendix F

Total Traffic Operations Reports



Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	371	26	74	586	41	95
Future Volume (vph)	371	26	74	586	41	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	0.99	
Frt	0.991				0.906	
Flt Protected				0.994	0.985	
Satd. Flow (prot)	1820	0	0	1852	1599	0
Flt Permitted				0.915	0.985	
Satd. Flow (perm)	1820	0	0	1702	1595	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				99	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		12	12		3	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	20%	2%	2%	0%	7%
Adj. Flow (vph)	386	27	77	610	43	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	413	0	0	687	142	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Maximum Green (s)	40.0		40.0	40.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	53.3			53.3	10.7	
Actuated g/C Ratio	0.76			0.76	0.15	
v/c Ratio	0.30			0.53	0.43	
Control Delay	4.4			10.2	15.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.4			10.2	15.7	
LOS	A			B	B	
Approach Delay	4.4			10.2	15.7	
Approach LOS	A			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 8.9
 Intersection LOS: A
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West

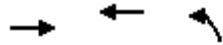


Queues

Total AM

1: Crawford Avenue & Riverside Drive West

825 Riverside Dr W, Windsor TIS



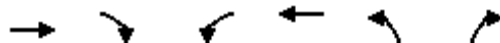
Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	413	687	142
v/c Ratio	0.30	0.53	0.43
Control Delay	4.4	10.2	15.7
Queue Delay	0.0	0.0	0.0
Total Delay	4.4	10.2	15.7
Queue Length 50th (m)	15.4	53.8	6.3
Queue Length 95th (m)	31.2	72.6	m20.7
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1387	1295	527
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.30	0.53	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	461	0	0	689	11	34
Future Volume (vph)	461	0	0	689	11	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3505	0	0	3574	1641	1524
Flt Permitted					0.950	
Satd. Flow (perm)	3505	0	0	3574	1637	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						35
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		10	10		2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	1%	10%	6%
Adj. Flow (vph)	475	0	0	710	11	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	475	0	0	710	11	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
 2: Bruce Avenue & Riverside Drive West

Total AM
 825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	41.0			41.0	29.0	29.0
Total Split (%)	58.6%			58.6%	41.4%	41.4%
Maximum Green (s)	36.0			36.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	24.5			24.5	35.5	35.5
Actuated g/C Ratio	0.35			0.35	0.51	0.51
v/c Ratio	0.39			0.57	0.01	0.04
Control Delay	18.0			19.6	11.8	6.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	18.0			19.6	11.8	6.0
LOS	B			B	B	A
Approach Delay	18.0			19.6	7.4	
Approach LOS	B			B	A	

Intersection Summary

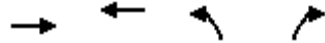
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 52 (74%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 34.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

















Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	475	710	11	35
v/c Ratio	0.39	0.57	0.01	0.04
Control Delay	18.0	19.6	11.8	6.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	19.6	11.8	6.0
Queue Length 50th (m)	27.1	39.1	0.7	0.0
Queue Length 95th (m)	33.8	43.1	3.6	5.3
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1802	1838	831	789
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.39	0.01	0.04
Intersection Summary				

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Total AM
825 Riverside Dr W, Windsor TIS

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	0	0	0	133	0	69	0	72	29	24	67	2		
Future Volume (vph)	0	0	0	133	0	69	0	72	29	24	67	2		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor														
Frt					0.954					0.961				
Flt Protected					0.968									
Satd. Flow (prot)	0	1900	0	0	1755	0	0	1763	0	0	1744	0		
Flt Permitted					0.968									
Satd. Flow (perm)	0	1900	0	0	1755	0	0	1763	0	0	1744	0		
Link Speed (k/h)					50					50				
Link Distance (m)					51.8					188.3				
Travel Time (s)					3.7					13.6				
Confl. Peds. (#/hr)	2			2	2			2	11			3	3	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	10%	0%		
Adj. Flow (vph)	0	0	0	145	0	75	0	78	32	26	73	2		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	220	0	0	110	0	0	101	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right		
Median Width(m)			0.0			0.0			0.0			0.0		
Link Offset(m)			0.0			0.0			0.0			0.0		
Crosswalk Width(m)			4.8			4.8			4.8			4.8		
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (k/h)			25			15			25			15	25	
Sign Control				Stop				Stop				Free	Free	
Intersection Summary														
Area Type:	Other													
Control Type:	Unsignalized													
Intersection Capacity Utilization	35.2%						ICU Level of Service A							
Analysis Period (min)	15													

HCM 6th TWSC
3: Crawford Avenue & Site Driveway

Total AM
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	133	0	69	0	72	29	24	67	2
Future Vol, veh/h	0	0	0	133	0	69	0	72	29	24	67	2
Conflicting Peds, #/hr	2	0	2	2	0	2	11	0	3	3	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	10	0
Mvmt Flow	0	0	0	145	0	75	0	78	32	26	73	2

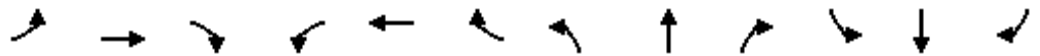
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	271	250	87	225	235	99	86	0	0	113	0	0
Stage 1	137	137	-	97	97	-	-	-	-	-	-	-
Stage 2	134	113	-	128	138	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	686	656	977	735	669	962	1523	-	-	1489	-	-
Stage 1	871	787	-	914	819	-	-	-	-	-	-	-
Stage 2	874	806	-	881	786	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	617	636	966	722	649	958	1509	-	-	1485	-	-
Mov Cap-2 Maneuver	617	636	-	722	649	-	-	-	-	-	-	-
Stage 1	863	766	-	911	817	-	-	-	-	-	-	-
Stage 2	804	804	-	864	765	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	0		11.3		0		1.9			
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1509	-	-	-	788	1485	-	-
HCM Lane V/C Ratio	-	-	-	-	0.279	0.018	-	-
HCM Control Delay (s)	0	-	-	0	11.3	7.5	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.1	0.1	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	353	64	107	200	19	88	68	122	93	81	32
Future Volume (vph)	22	353	64	107	200	19	88	68	122	93	81	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.97	0.99			0.99			0.99	
Frt		0.977			0.987			0.941			0.979	
Flt Protected	0.950			0.950				0.984			0.978	
Satd. Flow (prot)	1805	1771	0	1805	1811	0	0	1661	0	0	1742	0
Flt Permitted	0.585			0.369				0.832			0.716	
Satd. Flow (perm)	1059	1771	0	682	1811	0	0	1401	0	0	1273	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			9			64			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			110.6			517.2			188.3	
Travel Time (s)		9.2			8.0			37.2			13.6	
Confl. Peds. (#/hr)	30		32	32		30	8		5	5		8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	3%	5%	0%	3%	0%	3%	8%	4%	0%	6%	10%
Adj. Flow (vph)	26	410	74	124	233	22	102	79	142	108	94	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	484	0	124	255	0	0	323	0	0	239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		30.0	30.0		30.0	30.0	
Total Split (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	55.7%	55.7%		55.7%	55.7%		44.3%	44.3%		44.3%	44.3%	
Maximum Green (s)	34.0	34.0		34.0	34.0		26.0	26.0		26.0	26.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	34.0	34.0		34.0	34.0		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.37	0.37		0.37	0.37	
v/c Ratio	0.05	0.56		0.37	0.29		0.58	0.58		0.50	0.50	
Control Delay	9.9	15.2		15.3	10.8		16.6	16.6		19.4	19.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.9	15.2		15.3	10.8		16.6	16.6		19.4	19.4	
LOS	A	B		B	B		B	B		B	B	
Approach Delay		15.0			12.3		16.6	16.6			19.4	
Approach LOS		B			B		B	B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	10 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	15.4
Intersection LOS:	B
Intersection Capacity Utilization:	62.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues

Total AM

4: Crawford Avenue & University Avenue West

825 Riverside Dr W, Windsor TIS



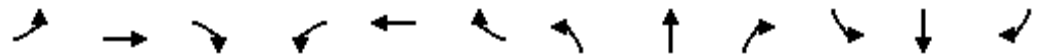
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	26	484	124	255	323	239
v/c Ratio	0.05	0.56	0.37	0.29	0.58	0.50
Control Delay	9.9	15.2	15.3	10.8	16.6	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	15.2	15.3	10.8	16.6	19.4
Queue Length 50th (m)	1.7	40.4	8.4	14.5	29.5	21.9
Queue Length 95th (m)	5.1	61.4	25.8	37.0	m43.7	41.9
Internal Link Dist (m)		104.3		86.6	493.2	164.3
Turn Bay Length (m)	35.0		25.0			
Base Capacity (vph)	514	869	331	884	560	482
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.56	0.37	0.29	0.58	0.50

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	538	7	3	256	21	1	0	2	0	1	76
Future Volume (vph)	34	538	7	3	256	21	1	0	2	0	1	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.989			0.910			0.867	
Flt Protected	0.950			0.950				0.984				
Satd. Flow (prot)	1597	1835	0	1805	1845	0	0	1701	0	0	1628	0
Flt Permitted	0.950			0.950				0.984				
Satd. Flow (perm)	1597	1835	0	1805	1845	0	0	1701	0	0	1628	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	17						17					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	13%	3%	29%	0%	2%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	37	585	8	3	278	23	1	0	2	0	1	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	593	0	3	301	0	0	3	0	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
 Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 40.2% ICU Level of Service A
 Analysis Period (min) 15

HCM 6th TWSC
5: Salter Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↗	
Traffic Vol, veh/h	34	538	7	3	256	21	1	0	2	0	1	76
Future Vol, veh/h	34	538	7	3	256	21	1	0	2	0	1	76
Conflicting Peds, #/hr	17	0	0	0	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	3	29	0	2	0	0	0	0	0	100	0
Mvmt Flow	37	585	8	3	278	23	1	0	2	0	1	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	593	0	0	1001	987	589	-	980	307
Stage 1	-	-	-	-	-	-	663	663	-	-	313	-
Stage 2	-	-	-	-	-	-	338	324	-	-	667	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	-	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	-	4.9	3.3
Pot Cap-1 Maneuver	1182	-	-	993	-	-	223	249	512	0	173	738
Stage 1	-	-	-	-	-	-	454	462	-	0	513	-
Stage 2	-	-	-	-	-	-	681	653	-	0	335	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1165	-	-	993	-	-	192	237	512	-	165	727
Mov Cap-2 Maneuver	-	-	-	-	-	-	192	237	-	-	165	-
Stage 1	-	-	-	-	-	-	439	447	-	-	504	-
Stage 2	-	-	-	-	-	-	600	642	-	-	324	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			16.1			10.9		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	329	1165	-	-	993	-	-	696
HCM Lane V/C Ratio	0.01	0.032	-	-	0.003	-	-	0.12
HCM Control Delay (s)	16.1	8.2	-	-	8.6	-	-	10.9
HCM Lane LOS		C	A	-	-	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.4

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	489	4	5	258	8	6	10	17	13	5	24
Future Volume (vph)	30	489	4	5	258	8	6	10	17	13	5	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.995			0.931			0.922	
Flt Protected	0.950			0.950				0.992			0.985	
Satd. Flow (prot)	1805	1840	0	1805	1828	0	0	1702	0	0	1726	0
Flt Permitted	0.950			0.950				0.992			0.985	
Satd. Flow (perm)	1805	1840	0	1805	1828	0	0	1702	0	0	1726	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	24		27	27		24			13	13		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	25%	0%	3%	17%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	32	520	4	5	274	9	6	11	18	14	5	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	524	0	5	283	0	0	35	0	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
 Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 39.5% ICU Level of Service A
 Analysis Period (min) 15

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	30	489	4	5	258	8	6	10	17	13	5	24
Future Vol, veh/h	30	489	4	5	258	8	6	10	17	13	5	24
Conflicting Peds, #/hr	24	0	27	27	0	24	0	0	13	13	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	3	25	0	3	17	0	0	6	0	0	0
Mvmt Flow	32	520	4	5	274	9	6	11	18	14	5	26



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	551	0	0	917	930	562	927	928	303
Stage 1	-	-	-	-	-	-	613	613	-	313	313	-
Stage 2	-	-	-	-	-	-	304	317	-	614	615	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	1265	-	-	1029	-	-	255	269	519	251	270	741
Stage 1	-	-	-	-	-	-	483	486	-	702	661	-
Stage 2	-	-	-	-	-	-	710	658	-	483	485	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1239	-	-	1005	-	-	231	250	502	222	251	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	250	-	222	251	-
Stage 1	-	-	-	-	-	-	460	463	-	670	644	-
Stage 2	-	-	-	-	-	-	676	642	-	438	462	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.2			17.2			15.8		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	1239	-	-	1005	-	-	377
HCM Lane V/C Ratio	0.106	0.026	-	-	0.005	-	-	0.119
HCM Control Delay (s)	17.2	8	-	-	8.6	-	-	15.8
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.4

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	22	480	0	0	208	29	38	36	33	0	0	0	
Future Volume (vph)	22	480	0	0	208	29	38	36	33	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (m)	7.5			7.5			7.5			7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.97				0.99			0.95					
Frt					0.983			0.958					
Flt Protected	0.950							0.983					
Satd. Flow (prot)	1805	1845	0	0	1777	0	0	1694	0	0	0	0	
Flt Permitted	0.600							0.983					
Satd. Flow (perm)	1106	1845	0	0	1777	0	0	1654	0	0	0	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)					15			35					
Link Speed (k/h)		50			50			50				50	
Link Distance (m)		196.1			425.8			84.9				271.5	
Travel Time (s)		14.1			30.7			6.1				19.5	
Confl. Peds. (#/hr)	27		64	64		27	30		29	29		30	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	6%	3%	0%	0%	0%	
Adj. Flow (vph)	24	522	0	0	226	32	41	39	36	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	24	522	0	0	258	0	0	116	0	0	0	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(m)		3.6			3.6			0.0				0.0	
Link Offset(m)		0.0			0.0			0.0				0.0	
Crosswalk Width(m)		4.8			4.8			4.8				4.8	
Two way Left Turn Lane		Yes											
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (k/h)	25		15	25		15	25		15	25		15	
Number of Detectors	1	2			2		1	2					
Detector Template	Left	Thru			Thru		Left	Thru					
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0					
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0					
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0					
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6					
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex					
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0					
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0					
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0					
Detector 2 Position(m)		9.4			9.4			9.4					
Detector 2 Size(m)		0.6			0.6			0.6					
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex					
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0					

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	41.0	41.0			41.0		29.0	29.0				
Total Split (%)	58.6%	58.6%			58.6%		41.4%	41.4%				
Maximum Green (s)	36.0	36.0			36.0		24.0	24.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.3	53.3			53.3			10.3				
Actuated g/C Ratio	0.76	0.76			0.76			0.15				
v/c Ratio	0.03	0.37			0.19			0.43				
Control Delay	3.8	4.4			4.3			23.9				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	3.8	4.4			4.3			23.9				
LOS	A	A			A			C				
Approach Delay		4.3			4.3			23.9				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 49 (70%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 6.8
 Intersection Capacity Utilization 47.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	24	522	258	116
v/c Ratio	0.03	0.37	0.19	0.43
Control Delay	3.8	4.4	4.3	23.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.8	4.4	4.3	23.9
Queue Length 50th (m)	0.6	14.5	4.5	9.7
Queue Length 95th (m)	m1.7	31.5	25.7	21.9
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	842	1405	1357	590
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.37	0.19	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

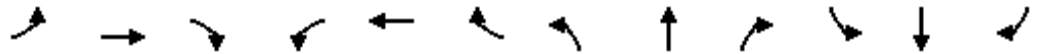
Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	253	145	24	107	18	108	217	76	8	153	10
Future Volume (vph)	34	253	145	24	107	18	108	217	76	8	153	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.95			0.98		0.90	0.94		0.88	0.99	
Frt		0.945			0.984			0.961			0.990	
Flt Protected	0.950				0.992		0.950			0.950		
Satd. Flow (prot)	1805	1691	0	0	1784	0	1626	1673	0	1805	1704	0
Flt Permitted	0.670				0.843		0.649			0.547		
Satd. Flow (perm)	1200	1691	0	0	1503	0	998	1673	0	917	1704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			12			32				6
Link Speed (k/h)		50			50			50				50
Link Distance (m)		81.9			178.2			144.6				82.1
Travel Time (s)		5.9			12.8			10.4				5.9
Confl. Peds. (#/hr)	30		50	50		30	59		92	92		59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	4%	3%	0%	11%	3%	3%	0%	10%	0%
Adj. Flow (vph)	36	266	153	25	113	19	114	228	80	8	161	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	419	0	0	157	0	114	308	0	8	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 8: Ouellette Avenue & University Avenue West

Total AM
 825 Riverside Dr W, Windsor TIS

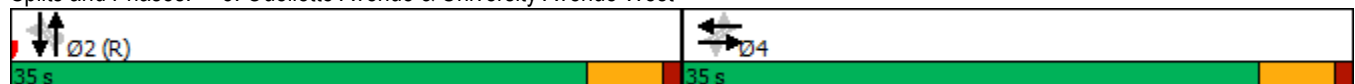


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0	22.0	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	22.3	22.3			22.3		37.7	37.7		37.7	37.7	
Actuated g/C Ratio	0.32	0.32			0.32		0.54	0.54		0.54	0.54	
v/c Ratio	0.09	0.73			0.32		0.21	0.34		0.02	0.19	
Control Delay	8.9	20.2			16.8		12.0	10.9		10.6	10.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	8.9	20.2			16.8		12.0	10.9		10.6	10.4	
LOS	A	C			B		B	B		B	B	
Approach Delay		19.3			16.8			11.2			10.5	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	47 (67%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	14.9
Intersection LOS:	B
Intersection Capacity Utilization	64.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	419	157	114	308	8	172
v/c Ratio	0.09	0.73	0.32	0.21	0.34	0.02	0.19
Control Delay	8.9	20.2	16.8	12.0	10.9	10.6	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	20.2	16.8	12.0	10.9	10.6	10.4
Queue Length 50th (m)	2.6	47.6	14.0	7.3	18.7	0.5	10.4
Queue Length 95th (m)	3.1	66.0	22.9	19.8	42.3	2.8	24.9
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	514	754	651	537	915	494	920
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.56	0.24	0.21	0.34	0.02	0.19
Intersection Summary							

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	390	69	178	318	56	77	207	396	77	171	28
Future Volume (vph)	20	390	69	178	318	56	77	207	396	77	171	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.98	0.99		0.99	0.99				1.00
Frt		0.977			0.978			0.902				0.986
Flt Protected	0.950			0.950			0.950					0.986
Satd. Flow (prot)	1492	3392	0	1719	3362	0	1787	1653	0	0	1794	0
Flt Permitted	0.513			0.301			0.566					0.478
Satd. Flow (perm)	769	3392	0	533	3362	0	1057	1653	0	0	869	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			34			181				11
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	39		26	26		39	13		9	9		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	21%	3%	2%	5%	3%	6%	1%	3%	2%	0%	2%	15%
Adj. Flow (vph)	22	424	75	193	346	61	84	225	430	84	186	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	499	0	193	407	0	84	655	0	0	300	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Total AM
 825 Riverside Dr W, Windsor TIS

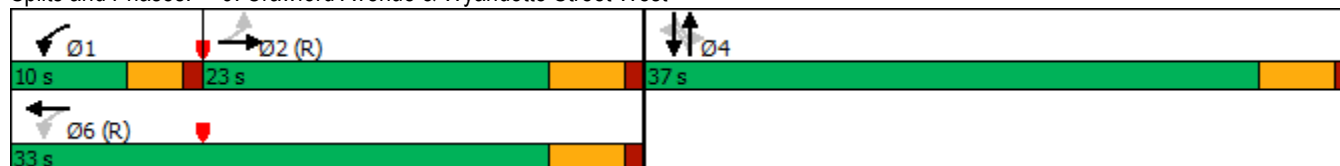


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4		4
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0		10.0
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0		28.0
Total Split (s)	23.0	23.0		10.0	33.0		37.0	37.0		37.0		37.0
Total Split (%)	32.9%	32.9%		14.3%	47.1%		52.9%	52.9%		52.9%		52.9%
Maximum Green (s)	18.0	18.0		6.0	28.0		32.0	32.0		32.0		32.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0		5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	18.0	18.0		29.0	28.0		32.0	32.0				32.0
Actuated g/C Ratio	0.26	0.26		0.41	0.40		0.46	0.46				0.46
v/c Ratio	0.11	0.56		0.60	0.30		0.17	0.77				0.74
Control Delay	21.8	24.1		22.6	13.8		12.5	18.8				27.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	21.8	24.1		22.6	13.8		12.5	18.8				27.7
LOS	C	C		C	B		B	B				C
Approach Delay		24.0			16.6			18.1				27.7
Approach LOS		C			B			B				C

Intersection Summary

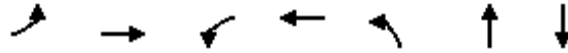
Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	38 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	65
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	20.4
Intersection LOS:	C
Intersection Capacity Utilization	94.8%
ICU Level of Service	F
Analysis Period (min)	15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Total AM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	22	499	193	407	84	655	300
v/c Ratio	0.11	0.56	0.60	0.30	0.17	0.77	0.74
Control Delay	21.8	24.1	22.6	13.8	12.5	18.8	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	24.1	22.6	13.8	12.5	18.8	27.7
Queue Length 50th (m)	2.2	28.0	16.1	16.7	6.2	49.3	30.5
Queue Length 95th (m)	7.4	42.0	29.2	26.2	14.0	#93.5	#57.9
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	197	893	322	1365	483	853	403
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.56	0.60	0.30	0.17	0.77	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

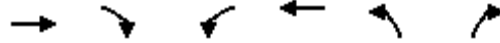
Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	502	51	107	603	31	116
Future Volume (vph)	502	51	107	603	31	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	0.99	
Frt	0.988				0.894	
Flt Protected				0.993	0.990	
Satd. Flow (prot)	1829	0	0	1865	1668	0
Flt Permitted				0.839	0.990	
Satd. Flow (perm)	1829	0	0	1573	1654	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	12				123	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		17	17		13	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	13%	2%	1%	0%	1%
Adj. Flow (vph)	534	54	114	641	33	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	588	0	0	755	156	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	51.0		51.0	51.0	25.0	
Total Split (%)	67.1%		67.1%	67.1%	32.9%	
Maximum Green (s)	46.0		46.0	46.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	55.3			55.3	10.7	
Actuated g/C Ratio	0.73			0.73	0.14	
v/c Ratio	0.44			0.66	0.46	
Control Delay	5.4			24.1	15.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.4			24.1	15.0	
LOS	A			C	B	
Approach Delay	5.4			24.1	15.0	
Approach LOS	A			C	B	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	15.8
Intersection LOS:	B
Intersection Capacity Utilization:	88.7%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues

Total PM

1: Crawford Avenue & Riverside Drive West

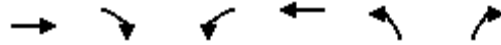
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	588	755	156
v/c Ratio	0.44	0.66	0.46
Control Delay	5.4	24.1	15.0
Queue Delay	0.0	0.0	0.0
Total Delay	5.4	24.1	15.0
Queue Length 50th (m)	24.9	119.3	6.1
Queue Length 95th (m)	48.1	153.2	21.0
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1334	1145	529
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.44	0.66	0.29
Intersection Summary			

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

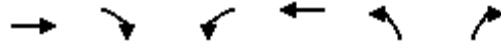
Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	630	0	0	741	37	114
Future Volume (vph)	630	0	0	741	37	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					0.99	0.98
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3574	0	0	3574	1805	1568
Flt Permitted					0.950	
Satd. Flow (perm)	3574	0	0	3574	1790	1532
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						121
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		18	18		6	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	0%	1%	0%	3%
Adj. Flow (vph)	670	0	0	788	39	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	670	0	0	788	39	121
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
 2: Bruce Avenue & Riverside Drive West

Total PM
 825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	47.0			47.0	29.0	29.0
Total Split (%)	61.8%			61.8%	38.2%	38.2%
Maximum Green (s)	42.0			42.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	30.0			30.0	36.0	36.0
Actuated g/C Ratio	0.39			0.39	0.47	0.47
v/c Ratio	0.48			0.56	0.05	0.15
Control Delay	14.6			18.7	12.5	3.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.6			18.7	12.5	3.6
LOS	B			B	B	A
Approach Delay	14.6			18.7	5.8	
Approach LOS	B			B	A	

Intersection Summary

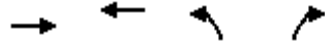
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 22 (29%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 15.7
 Intersection LOS: B
 Intersection Capacity Utilization 42.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

Total PM
825 Riverside Dr W, Windsor TIS



















Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	670	788	39	121
v/c Ratio	0.48	0.56	0.05	0.15
Control Delay	14.6	18.7	12.5	3.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	18.7	12.5	3.6
Queue Length 50th (m)	27.5	45.4	2.3	0.2
Queue Length 95th (m)	22.5	46.1	m9.6	7.1
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1975	1975	855	789
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.40	0.05	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Total PM
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	1	85	0	42	3	108	83	68	75	1
Future Volume (vph)	1	0	1	85	0	42	3	108	83	68	75	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.955			0.942			0.999	
Flt Protected		0.976			0.968			0.999			0.977	
Satd. Flow (prot)	0	1728	0	0	1756	0	0	1768	0	0	1826	0
Flt Permitted		0.976			0.968			0.999			0.977	
Satd. Flow (perm)	0	1728	0	0	1756	0	0	1768	0	0	1826	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		51.8			52.9			188.3			122.0	
Travel Time (s)		3.7			3.8			13.6			8.8	
Confl. Peds. (#/hr)	1		1	1		1	10		4	4		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	3%	0%
Adj. Flow (vph)	1	0	1	94	0	47	3	120	92	76	83	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	141	0	0	215	0	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.2%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 6th TWSC
3: Crawford Avenue & Site Driveway

Total PM
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	85	0	42	3	108	83	68	75	1
Future Vol, veh/h	1	0	1	85	0	42	3	108	83	68	75	1
Conflicting Peds, #/hr	1	0	1	1	0	1	10	0	4	4	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	3	0
Mvmt Flow	1	0	1	94	0	47	3	120	92	76	83	1

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	443	468	95	413	422	171	94	0	0	216	0	0
Stage 1	246	246	-	176	176	-	-	-	-	-	-	-
Stage 2	197	222	-	237	246	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	528	496	967	553	526	878	1513	-	-	1366	-	-
Stage 1	762	706	-	831	757	-	-	-	-	-	-	-
Stage 2	809	723	-	771	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	472	461	958	524	489	874	1500	-	-	1361	-	-
Mov Cap-2 Maneuver	472	461	-	524	489	-	-	-	-	-	-	-
Stage 1	754	659	-	827	753	-	-	-	-	-	-	-
Stage 2	764	719	-	724	659	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	10.7		12.8			0.1			3.7		
HCM LOS	B		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1500	-	-	632	604	1361	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.234	0.056	-	-
HCM Control Delay (s)	7.4	0	-	10.7	12.8	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.9	0.2	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

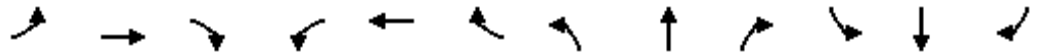
Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	355	105	131	421	45	83	106	151	68	85	26
Future Volume (vph)	54	355	105	131	421	45	83	106	151	68	85	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.97		0.97	0.99			0.99				0.99
Frt		0.966			0.985			0.940				0.980
Flt Protected	0.950			0.950				0.988				0.981
Satd. Flow (prot)	1805	1762	0	1805	1795	0	0	1739	0	0	1798	0
Flt Permitted	0.354			0.359				0.879				0.770
Satd. Flow (perm)	662	1762	0	661	1795	0	0	1541	0	0	1411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			10			61				13
Link Speed (k/h)		50			50			50				50
Link Distance (m)		128.3			110.6			517.2				188.3
Travel Time (s)		9.2			8.0			37.2				13.6
Confl. Peds. (#/hr)	18		36	36		18	16		1	1		16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	3%	9%	2%	0%	0%	0%	2%	0%
Adj. Flow (vph)	57	378	112	139	448	48	88	113	161	72	90	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	490	0	139	496	0	0	362	0	0	190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS

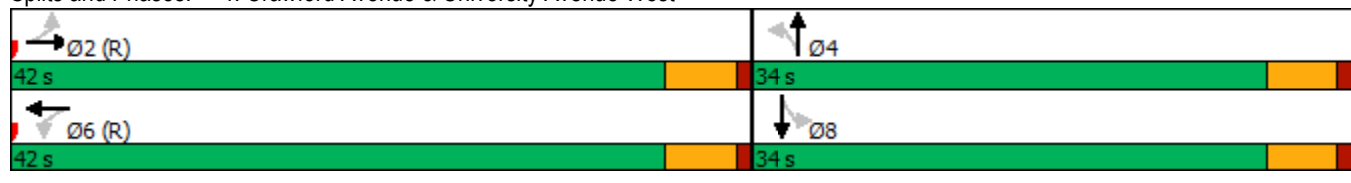


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		30.0	30.0		30.0	30.0	
Total Split (s)	42.0	42.0		42.0	42.0		34.0	34.0		34.0	34.0	
Total Split (%)	55.3%	55.3%		55.3%	55.3%		44.7%	44.7%		44.7%	44.7%	
Maximum Green (s)	37.0	37.0		37.0	37.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		37.0	37.0		29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.38	0.38		0.38	0.38	
v/c Ratio	0.18	0.56		0.43	0.56		0.58	0.58		0.58	0.35	
Control Delay	12.8	16.0		13.7	12.5		17.4	17.4		17.4	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.8	16.0		13.7	12.5		17.4	17.4		17.4	20.3	
LOS	B	B		B	B		B	B		B	C	
Approach Delay		15.7			12.8			17.4			20.3	
Approach LOS		B			B			B			C	

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 15.5
 Intersection LOS: B
 Intersection Capacity Utilization 67.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues

Total PM

4: Crawford Avenue & University Avenue West

825 Riverside Dr W, Windsor TIS





















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	57	490	139	496	362	190
v/c Ratio	0.18	0.56	0.43	0.56	0.58	0.35
Control Delay	12.8	16.0	13.7	12.5	17.4	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	16.0	13.7	12.5	17.4	20.3
Queue Length 50th (m)	4.4	44.2	11.6	42.3	27.4	22.1
Queue Length 95th (m)	11.1	71.2	23.3	63.0	m52.6	m36.2
Internal Link Dist (m)		104.3		86.6	493.2	164.3
Turn Bay Length (m)	35.0		25.0			
Base Capacity (vph)	322	871	321	879	625	546
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.56	0.43	0.56	0.58	0.35

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	494	4	1	523	49	5	0	6	0	0	52
Future Volume (vph)	77	494	4	1	523	49	5	0	6	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr _t		0.999			0.987			0.926			0.865	
Fl _t Protected	0.950			0.950				0.978				
Satd. Flow (prot)	1444	1879	0	1805	1842	0	0	1577	0	0	1644	0
Fl _t Permitted	0.950			0.950				0.978				
Satd. Flow (perm)	1444	1879	0	1805	1842	0	0	1577	0	0	1644	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	21		6	6		21	1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	25%	1%	0%	0%	2%	0%	20%	0%	0%	20%	0%	0%
Adj. Flow (vph)	82	526	4	1	556	52	5	0	6	0	0	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	530	0	1	608	0	0	11	0	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
5: Salter Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↗	
Traffic Vol, veh/h	77	494	4	1	523	49	5	0	6	0	0	52
Future Vol, veh/h	77	494	4	1	523	49	5	0	6	0	0	52
Conflicting Peds, #/hr	21	0	6	6	0	21	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	25	1	0	0	2	0	20	0	0	20	0	0
Mvmt Flow	82	526	4	1	556	52	5	0	6	0	0	55




















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	629	0	0	536	0	0	1311	1329	534	-	1305	604
Stage 1	-	-	-	-	-	-	698	698	-	-	605	-
Stage 2	-	-	-	-	-	-	613	631	-	-	700	-
Critical Hdwy	4.35	-	-	4.1	-	-	7.3	6.5	6.2	-	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	-	5.5	-
Follow-up Hdwy	2.425	-	-	2.2	-	-	3.68	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	852	-	-	1042	-	-	124	156	550	0	162	502
Stage 1	-	-	-	-	-	-	403	445	-	0	491	-
Stage 2	-	-	-	-	-	-	450	477	-	0	444	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	837	-	-	1037	-	-	101	137	547	-	143	493
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	137	-	-	143	-
Stage 1	-	-	-	-	-	-	361	399	-	-	482	-
Stage 2	-	-	-	-	-	-	399	468	-	-	398	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	26.1	13.2
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	182	837	-	-	1037	-	-	493
HCM Lane V/C Ratio	0.064	0.098	-	-	0.001	-	-	0.112
HCM Control Delay (s)	26.1	9.8	-	-	8.5	-	-	13.2
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0.4

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	483	7	7	552	26	6	16	12	9	5	22
Future Volume (vph)	44	483	7	7	552	26	6	16	12	9	5	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.993			0.951			0.916	
Flt Protected	0.950			0.950				0.992			0.988	
Satd. Flow (prot)	1805	1860	0	1805	1829	0	0	1689	0	0	1648	0
Flt Permitted	0.950			0.950				0.992			0.988	
Satd. Flow (perm)	1805	1860	0	1805	1829	0	0	1689	0	0	1648	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	28		40	40		28	3		1	1		3
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	6%	0%	13%	0%	0%	0%	7%
Adj. Flow (vph)	46	503	7	7	575	27	6	17	13	9	5	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	510	0	7	602	0	0	36	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.6%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	44	483	7	7	552	26	6	16	12	9	5	22
Future Vol, veh/h	44	483	7	7	552	26	6	16	12	9	5	22
Conflicting Peds, #/hr	28	0	40	40	0	28	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	0	0	3	6	0	13	0	0	0	7
Mvmt Flow	46	503	7	7	575	27	6	17	13	9	5	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	630	0	0	550	0	0	1259	1283	548	1246	1273	620
Stage 1	-	-	-	-	-	-	639	639	-	631	631	-
Stage 2	-	-	-	-	-	-	620	644	-	615	642	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.63	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.117	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	962	-	-	1030	-	-	149	157	540	152	169	479
Stage 1	-	-	-	-	-	-	468	454	-	472	477	-
Stage 2	-	-	-	-	-	-	479	451	-	482	472	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	939	-	-	995	-	-	127	140	521	126	150	466
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	140	-	126	150	-
Stage 1	-	-	-	-	-	-	430	417	-	438	462	-
Stage 2	-	-	-	-	-	-	446	437	-	429	434	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			29.2			23		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	184	939	-	-	995	-	-	237
HCM Lane V/C Ratio	0.192	0.049	-	-	0.007	-	-	0.158
HCM Control Delay (s)	29.2	9	-	-	8.6	-	-	23
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0	-	-	0.6

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	413	0	0	455	75	53	79	32	0	0	0
Future Volume (vph)	45	413	0	0	455	75	53	79	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.99			0.96				
Frt					0.981			0.974				
Flt Protected	0.950							0.984				
Satd. Flow (prot)	1805	1845	0	0	1795	0	0	1771	0	0	0	0
Flt Permitted	0.417							0.984				
Satd. Flow (perm)	774	1845	0	0	1795	0	0	1733	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					18			16				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	43		66	66		43	28		31	31		28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	46	426	0	0	469	77	55	81	33	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	426	0	0	546	0	0	169	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	48.0	48.0			48.0		28.0	28.0				
Total Split (%)	63.2%	63.2%			63.2%		36.8%	36.8%				
Maximum Green (s)	43.0	43.0			43.0		23.0	23.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.0	53.0			53.0			13.0				
Actuated g/C Ratio	0.70	0.70			0.70			0.17				
v/c Ratio	0.09	0.33			0.43			0.55				
Control Delay	4.0	5.4			6.2			32.0				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	4.0	5.4			6.2			32.0				
LOS	A	A			A			C				
Approach Delay		5.3			6.2			32.0				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 58 (76%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 9.5
 Intersection Capacity Utilization 62.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Total PM
825 Riverside Dr W, Windsor TIS



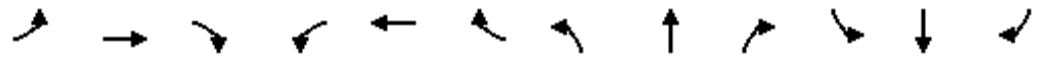
Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	46	426	546	169
v/c Ratio	0.09	0.33	0.43	0.55
Control Delay	4.0	5.4	6.2	32.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.0	5.4	6.2	32.0
Queue Length 50th (m)	1.5	24.1	28.9	20.2
Queue Length 95th (m)	m4.0	45.0	50.9	35.0
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	539	1287	1257	535
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.33	0.43	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

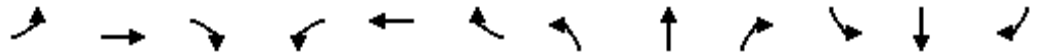
Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	222	143	27	236	18	189	272	51	20	212	19
Future Volume (vph)	56	222	143	27	236	18	189	272	51	20	212	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.93			0.99		0.79	0.94		0.79	0.97	
Frt		0.941			0.991			0.976			0.988	
Flt Protected	0.950				0.995		0.950			0.950		
Satd. Flow (prot)	1770	1652	0	0	1829	0	1703	1692	0	1719	1732	0
Flt Permitted	0.460				0.841		0.603			0.519		
Satd. Flow (perm)	812	1652	0	0	1536	0	850	1692	0	740	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50			5			17				8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		81.9			178.2			144.6				82.1
Travel Time (s)		5.9			12.8			10.4				5.9
Confl. Peds. (#/hr)	39		60	60		39	132		167	167		132
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	1%	0%	0%	1%	12%	6%	3%	0%	5%	6%	0%
Adj. Flow (vph)	60	236	152	29	251	19	201	289	54	21	226	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	388	0	0	299	0	201	343	0	21	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 8: Ouellette Avenue & University Avenue West

Total PM
 825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0	22.0	
Total Split (s)	35.0	35.0		35.0	35.0		41.0	41.0		41.0	41.0	
Total Split (%)	46.1%	46.1%		46.1%	46.1%		53.9%	53.9%		53.9%	53.9%	
Maximum Green (s)	30.0	30.0		30.0	30.0		36.0	36.0		36.0	36.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	22.9	22.9			22.9		43.1	43.1		43.1	43.1	
Actuated g/C Ratio	0.30	0.30			0.30		0.57	0.57		0.57	0.57	
v/c Ratio	0.24	0.73			0.64		0.42	0.36		0.05	0.25	
Control Delay	20.1	28.5			28.1		14.8	11.2		10.3	10.3	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	20.1	28.5			28.1		14.8	11.2		10.3	10.3	
LOS	C	C			C		B	B		B	B	
Approach Delay		27.4			28.1			12.5			10.3	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	74 (97%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	19.4
Intersection LOS:	B
Intersection Capacity Utilization:	74.2%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

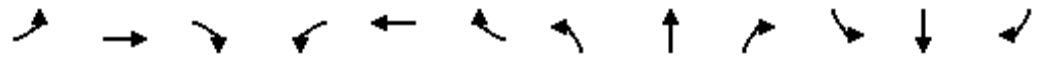
Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	388	299	201	343	21	246
v/c Ratio	0.24	0.73	0.64	0.42	0.36	0.05	0.25
Control Delay	20.1	28.5	28.1	14.8	11.2	10.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	28.5	28.1	14.8	11.2	10.3	10.3
Queue Length 50th (m)	6.9	48.3	35.7	15.4	23.7	1.3	16.1
Queue Length 95th (m)	15.0	74.8	52.5	38.0	48.7	5.2	34.3
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	320	682	609	481	966	419	984
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.57	0.49	0.42	0.36	0.05	0.25
Intersection Summary							

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Total PM
 825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	451	77	283	592	97	98	243	323	77	215	32
Future Volume (vph)	43	451	77	283	592	97	98	243	323	77	215	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98		0.96	0.99		0.99					1.00
Frt		0.978			0.979			0.914				0.987
Flt Protected	0.950			0.950			0.950					0.988
Satd. Flow (prot)	1805	3390	0	1770	3428	0	1787	1710	0	0	1814	0
Flt Permitted	0.376			0.237			0.523					0.546
Satd. Flow (perm)	695	3390	0	422	3428	0	970	1710	0	0	1003	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			30			114				9
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	34		60	60		34	27					27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	2%	0%	2%	4%
Adj. Flow (vph)	45	475	81	298	623	102	103	256	340	81	226	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	556	0	298	725	0	103	596	0	0	341	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Total PM
 825 Riverside Dr W, Windsor TIS

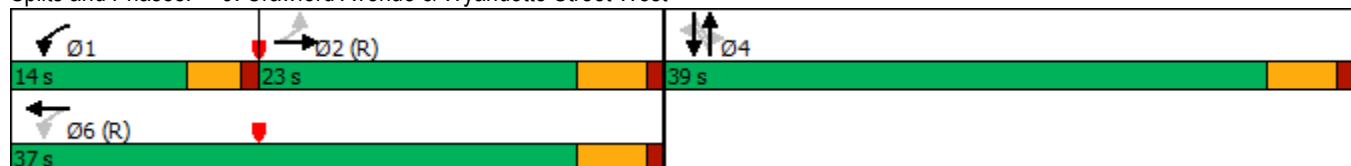


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0	28.0	
Total Split (s)	23.0	23.0		14.0	37.0		39.0	39.0		39.0	39.0	
Total Split (%)	30.3%	30.3%		18.4%	48.7%		51.3%	51.3%		51.3%	51.3%	
Maximum Green (s)	18.0	18.0		10.0	32.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	18.0	18.0		33.0	32.0		34.0	34.0			34.0	
Actuated g/C Ratio	0.24	0.24		0.43	0.42		0.45	0.45			0.45	
v/c Ratio	0.27	0.68		0.83	0.50		0.24	0.72			0.75	
Control Delay	29.0	30.0		37.0	16.8		14.9	19.6			26.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	29.0	30.0		37.0	16.8		14.9	19.6			26.3	
LOS	C	C		D	B		B	B			C	
Approach Delay		29.9			22.7			18.9			26.3	
Approach LOS		C			C			B			C	

Intersection Summary

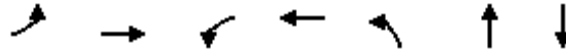
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 4 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 23.8
 Intersection LOS: C
 Intersection Capacity Utilization 98.8%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Total PM
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	45	556	298	725	103	596	341
v/c Ratio	0.27	0.68	0.83	0.50	0.24	0.72	0.75
Control Delay	29.0	30.0	37.0	16.8	14.9	19.6	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	30.0	37.0	16.8	14.9	19.6	26.3
Queue Length 50th (m)	5.3	36.5	28.0	37.0	8.8	54.1	26.6
Queue Length 95th (m)	14.2	52.8	#60.4	51.6	18.7	91.7	#77.4
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	164	821	360	1460	433	828	453
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.68	0.83	0.50	0.24	0.72	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

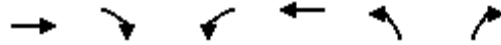
Appendix G

Total Traffic Operations Reports – Alternative Development Concept



Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

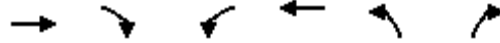
Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	371	27	77	586	41	96
Future Volume (vph)	371	27	77	586	41	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	0.99	
Frt	0.991				0.906	
Flt Protected				0.994	0.985	
Satd. Flow (prot)	1819	0	0	1852	1599	0
Flt Permitted				0.911	0.985	
Satd. Flow (perm)	1819	0	0	1695	1595	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9				100	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		12	12		3	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	20%	2%	2%	0%	7%
Adj. Flow (vph)	386	28	80	610	43	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	414	0	0	690	143	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	45.0		45.0	45.0	25.0	
Total Split (%)	64.3%		64.3%	64.3%	35.7%	
Maximum Green (s)	40.0		40.0	40.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	53.3			53.3	10.7	
Actuated g/C Ratio	0.76			0.76	0.15	
v/c Ratio	0.30			0.53	0.43	
Control Delay	4.4			10.4	15.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.4			10.4	15.7	
LOS	A			B	B	
Approach Delay	4.4			10.4	15.7	
Approach LOS	A			B	B	

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	9.0
Intersection LOS:	A
Intersection Capacity Utilization:	77.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues
1: Crawford Avenue & Riverside Drive West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



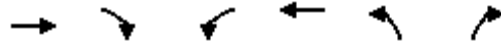
Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	414	690	143
v/c Ratio	0.30	0.53	0.43
Control Delay	4.4	10.4	15.7
Queue Delay	0.0	0.0	0.0
Total Delay	4.4	10.4	15.7
Queue Length 50th (m)	15.5	54.5	6.4
Queue Length 95th (m)	31.2	74.5	m20.6
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1386	1290	528
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.30	0.53	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

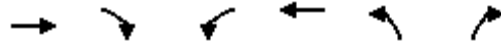
Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	462	0	0	692	11	34
Future Volume (vph)	462	0	0	692	11	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3505	0	0	3574	1641	1524
Flt Permitted					0.950	
Satd. Flow (perm)	3505	0	0	3574	1637	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						35
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		10	10		2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	0%	0%	1%	10%	6%
Adj. Flow (vph)	476	0	0	713	11	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	476	0	0	713	11	35
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	41.0			41.0	29.0	29.0
Total Split (%)	58.6%			58.6%	41.4%	41.4%
Maximum Green (s)	36.0			36.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	24.6			24.6	35.4	35.4
Actuated g/C Ratio	0.35			0.35	0.51	0.51
v/c Ratio	0.39			0.57	0.01	0.04
Control Delay	18.0			19.5	11.9	6.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	18.0			19.5	11.9	6.0
LOS	B			B	B	A
Approach Delay	18.0			19.5	7.4	
Approach LOS	B			B	A	

Intersection Summary

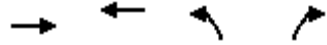
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 52 (74%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 35.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	476	713	11	35
v/c Ratio	0.39	0.57	0.01	0.04
Control Delay	18.0	19.5	11.9	6.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	19.5	11.9	6.0
Queue Length 50th (m)	27.0	39.1	0.7	0.0
Queue Length 95th (m)	33.8	43.4	3.6	5.2
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1802	1838	829	788
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.39	0.01	0.04
Intersection Summary				

HCM 6th TWSC
3: Crawford Avenue & Site Driveway

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	136	0	70	0	72	33	28	67	2
Future Vol, veh/h	0	0	0	136	0	70	0	72	33	28	67	2
Conflicting Peds, #/hr	2	0	2	2	0	2	11	0	3	3	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	5	0	0	10	0
Mvmt Flow	0	0	0	148	0	76	0	78	36	30	73	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	281	262	87	235	245	101	86	0	0	117	0	0
Stage 1	145	145	-	99	99	-	-	-	-	-	-	-
Stage 2	136	117	-	136	146	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	675	646	977	724	661	960	1523	-	-	1484	-	-
Stage 1	863	781	-	912	817	-	-	-	-	-	-	-
Stage 2	872	803	-	872	780	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	605	625	966	710	639	956	1509	-	-	1480	-	-
Mov Cap-2 Maneuver	605	625	-	710	639	-	-	-	-	-	-	-
Stage 1	855	758	-	909	815	-	-	-	-	-	-	-
Stage 2	801	801	-	852	757	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	11.5	0	2.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1509	-	-	-	778	1480	-	-
HCM Lane V/C Ratio	-	-	-	-	0.288	0.021	-	-
HCM Control Delay (s)	0	-	-	0	11.5	7.5	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.2	0.1	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	354	64	110	200	20	88	71	125	95	82	32
Future Volume (vph)	22	354	64	110	200	20	88	71	125	95	82	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.97	0.99			0.99			0.99	
Frt		0.977			0.987			0.941			0.979	
Flt Protected	0.950			0.950				0.985			0.978	
Satd. Flow (prot)	1805	1771	0	1805	1811	0	0	1662	0	0	1743	0
Flt Permitted	0.584			0.367				0.834			0.707	
Satd. Flow (perm)	1057	1771	0	678	1811	0	0	1404	0	0	1258	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			10			64			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			110.6			517.2			188.3	
Travel Time (s)		9.2			8.0			37.2			13.6	
Confl. Peds. (#/hr)	30		32	32		30	8		5	5		8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	3%	5%	0%	3%	0%	3%	8%	4%	0%	6%	10%
Adj. Flow (vph)	26	412	74	128	233	23	102	83	145	110	95	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	486	0	128	256	0	0	330	0	0	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Queues
4: Crawford Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS





















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	26	486	128	256	330	242
v/c Ratio	0.05	0.56	0.39	0.29	0.59	0.51
Control Delay	10.0	15.3	15.6	10.8	16.9	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	15.3	15.6	10.8	16.9	19.9
Queue Length 50th (m)	1.7	40.6	9.1	14.5	30.4	22.5
Queue Length 95th (m)	5.1	61.6	26.4	37.0	m45.2	43.1
Internal Link Dist (m)		104.3		86.6	493.2	164.3
Turn Bay Length (m)	35.0		25.0			
Base Capacity (vph)	513	869	329	884	561	476
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.56	0.39	0.29	0.59	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	540	7	3	257	23	1	0	2	0	1	79
Future Volume (vph)	38	540	7	3	257	23	1	0	2	0	1	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.988			0.910				0.867
Flt Protected	0.950			0.950				0.984				
Satd. Flow (prot)	1597	1835	0	1805	1843	0	0	1701	0	0	1629	0
Flt Permitted	0.950			0.950				0.984				
Satd. Flow (perm)	1597	1835	0	1805	1843	0	0	1701	0	0	1629	0
Link Speed (k/h)		50			50			50				50
Link Distance (m)		110.6			107.0			88.2				122.6
Travel Time (s)		8.0			7.7			6.4				8.8
Confl. Peds. (#/hr)	17						17					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	13%	3%	29%	0%	2%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	41	587	8	3	279	25	1	0	2	0	1	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	595	0	3	304	0	0	3	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↗	
Traffic Vol, veh/h	38	540	7	3	257	23	1	0	2	0	1	79
Future Vol, veh/h	38	540	7	3	257	23	1	0	2	0	1	79
Conflicting Peds, #/hr	17	0	0	0	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	3	29	0	2	0	0	0	0	0	100	0
Mvmt Flow	41	587	8	3	279	25	1	0	2	0	1	86

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	321	0	0	595	0	0	1014	1000	591	-	992	309
Stage 1	-	-	-	-	-	-	673	673	-	-	315	-
Stage 2	-	-	-	-	-	-	341	327	-	-	677	-
Critical Hdwy	4.23	-	-	4.1	-	-	7.1	6.5	6.2	-	7.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.5	-
Follow-up Hdwy	2.317	-	-	2.2	-	-	3.5	4	3.3	-	4.9	3.3
Pot Cap-1 Maneuver	1179	-	-	991	-	-	219	245	511	0	170	736
Stage 1	-	-	-	-	-	-	448	457	-	0	512	-
Stage 2	-	-	-	-	-	-	678	651	-	0	331	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1162	-	-	991	-	-	186	233	511	-	161	725
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	233	-	-	161	-
Stage 1	-	-	-	-	-	-	432	441	-	-	503	-
Stage 2	-	-	-	-	-	-	595	640	-	-	319	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.5		0.1		16.3		10.9	
HCM LOS					C		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	323	1162	-	-	991	-	-	695
HCM Lane V/C Ratio	0.01	0.036	-	-	0.003	-	-	0.125
HCM Control Delay (s)	16.3	8.2	-	-	8.6	-	-	10.9
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.4

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	491	4	5	261	8	6	10	17	13	5	24
Future Volume (vph)	30	491	4	5	261	8	6	10	17	13	5	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.995			0.931			0.922	
Flt Protected	0.950			0.950				0.992			0.985	
Satd. Flow (prot)	1805	1840	0	1805	1828	0	0	1702	0	0	1726	0
Flt Permitted	0.950			0.950				0.992			0.985	
Satd. Flow (perm)	1805	1840	0	1805	1828	0	0	1702	0	0	1726	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	24		27	27		24			13	13		
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	25%	0%	3%	17%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	32	522	4	5	278	9	6	11	18	14	5	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	526	0	5	287	0	0	35	0	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.6%
	ICU Level of Service A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	30	491	4	5	261	8	6	10	17	13	5	24
Future Vol, veh/h	30	491	4	5	261	8	6	10	17	13	5	24
Conflicting Peds, #/hr	24	0	27	27	0	24	0	0	13	13	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	3	25	0	3	17	0	0	6	0	0	0
Mvmt Flow	32	522	4	5	278	9	6	11	18	14	5	26

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	311	0	0	553	0	0	923	936	564	933	934	307
Stage 1	-	-	-	-	-	-	615	615	-	317	317	-
Stage 2	-	-	-	-	-	-	308	321	-	616	617	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.26	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.354	3.5	4	3.3
Pot Cap-1 Maneuver	1261	-	-	1027	-	-	252	267	518	248	268	738
Stage 1	-	-	-	-	-	-	482	485	-	698	658	-
Stage 2	-	-	-	-	-	-	706	655	-	481	484	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1235	-	-	1004	-	-	228	248	501	219	249	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	248	-	219	249	-
Stage 1	-	-	-	-	-	-	459	462	-	666	642	-
Stage 2	-	-	-	-	-	-	672	639	-	436	461	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.5		0.2		17.3		16	
HCM LOS					C		C	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	328	1235	-	-	1004	-	-	373
HCM Lane V/C Ratio	0.107	0.026	-	-	0.005	-	-	0.12
HCM Control Delay (s)	17.3	8	-	-	8.6	-	-	16
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.4

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	482	0	0	211	29	38	36	33	0	0	0
Future Volume (vph)	22	482	0	0	211	29	38	36	33	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97				0.99			0.95				
Frt					0.983			0.958				
Flt Protected	0.950							0.983				
Satd. Flow (prot)	1805	1845	0	0	1777	0	0	1694	0	0	0	0
Flt Permitted	0.598							0.983				
Satd. Flow (perm)	1103	1845	0	0	1777	0	0	1654	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					15			35				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	27		64	64		27	30		29	29		30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	0%	6%	3%	0%	0%	0%
Adj. Flow (vph)	24	524	0	0	229	32	41	39	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	524	0	0	261	0	0	116	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	41.0	41.0			41.0		29.0	29.0				
Total Split (%)	58.6%	58.6%			58.6%		41.4%	41.4%				
Maximum Green (s)	36.0	36.0			36.0		24.0	24.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.3	53.3			53.3			10.3				
Actuated g/C Ratio	0.76	0.76			0.76			0.15				
v/c Ratio	0.03	0.37			0.19			0.43				
Control Delay	3.9	4.5			4.4			23.9				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	3.9	4.5			4.4			23.9				
LOS	A	A			A			C				
Approach Delay		4.4			4.4			23.9				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 49 (70%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 6.9
 Intersection Capacity Utilization 47.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	24	524	261	116
v/c Ratio	0.03	0.37	0.19	0.43
Control Delay	3.9	4.5	4.4	23.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.9	4.5	4.4	23.9
Queue Length 50th (m)	0.6	15.1	4.5	9.7
Queue Length 95th (m)	m1.8	33.1	26.3	21.9
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	840	1405	1357	590
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.37	0.19	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	253	147	24	108	18	110	217	76	8	153	10
Future Volume (vph)	34	253	147	24	108	18	110	217	76	8	153	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.95			0.98		0.90	0.94		0.88	0.99	
Frt		0.945			0.984			0.961			0.990	
Flt Protected	0.950				0.992		0.950			0.950		
Satd. Flow (prot)	1805	1691	0	0	1784	0	1626	1673	0	1805	1704	0
Flt Permitted	0.669				0.843		0.649			0.547		
Satd. Flow (perm)	1198	1691	0	0	1504	0	998	1673	0	917	1704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			12			32				6
Link Speed (k/h)		50			50			50				50
Link Distance (m)		81.9			178.2			144.6				82.1
Travel Time (s)		5.9			12.8			10.4				5.9
Confl. Peds. (#/hr)	30		50	50		30	59		92	92		59
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	4%	3%	0%	11%	3%	3%	0%	10%	0%
Adj. Flow (vph)	36	266	155	25	114	19	116	228	80	8	161	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	421	0	0	158	0	116	308	0	8	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS

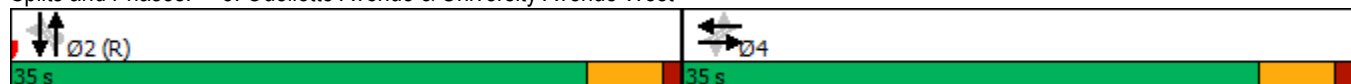


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2				2
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2		2
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0		8.0
Minimum Split (s)	28.0	28.0		28.0	28.0		22.0	22.0		22.0		22.0
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0		35.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%		50.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		30.0	30.0		30.0		30.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0		5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max		C-Max
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		9.0	9.0		9.0		9.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0		0
Act Effct Green (s)	22.4	22.4			22.4		37.6	37.6		37.6		37.6
Actuated g/C Ratio	0.32	0.32			0.32		0.54	0.54		0.54		0.54
v/c Ratio	0.09	0.73			0.32		0.22	0.34		0.02		0.19
Control Delay	8.8	20.2			16.8		12.1	11.0		10.8		10.5
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0		0.0
Total Delay	8.8	20.2			16.8		12.1	11.0		10.8		10.5
LOS	A	C			B		B	B		B		B
Approach Delay		19.3			16.8			11.3				10.5
Approach LOS		B			B			B				B

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	47 (67%), Referenced to phase 2:NBSB, Start of Green
Natural Cycle:	50
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	14.9
Intersection LOS:	B
Intersection Capacity Utilization	64.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 8: Ouellette Avenue & University Avenue West



Queues
8: Ouellette Avenue & University Avenue West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	421	158	116	308	8	172
v/c Ratio	0.09	0.73	0.32	0.22	0.34	0.02	0.19
Control Delay	8.8	20.2	16.8	12.1	11.0	10.8	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	20.2	16.8	12.1	11.0	10.8	10.5
Queue Length 50th (m)	2.6	47.9	14.1	7.4	18.7	0.5	10.4
Queue Length 95th (m)	3.1	66.6	22.9	20.1	42.3	2.8	24.9
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	513	754	651	536	914	492	918
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.56	0.24	0.22	0.34	0.02	0.19
Intersection Summary							

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	390	69	178	318	59	77	209	396	78	174	28
Future Volume (vph)	21	390	69	178	318	59	77	209	396	78	174	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.99		0.98	0.98		0.99	0.99				1.00
Frt		0.977			0.977			0.902				0.987
Flt Protected	0.950			0.950			0.950					0.986
Satd. Flow (prot)	1492	3392	0	1719	3356	0	1787	1653	0	0	1796	0
Flt Permitted	0.511			0.301			0.563					0.473
Satd. Flow (perm)	766	3392	0	533	3356	0	1052	1653	0	0	861	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			36			179				10
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	39		26	26		39	13		9	9		13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	21%	3%	2%	5%	3%	6%	1%	3%	2%	0%	2%	15%
Adj. Flow (vph)	23	424	75	193	346	64	84	227	430	85	189	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	499	0	193	410	0	84	657	0	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Total AM - Sensitivity
 825 Riverside Dr W, Windsor TIS

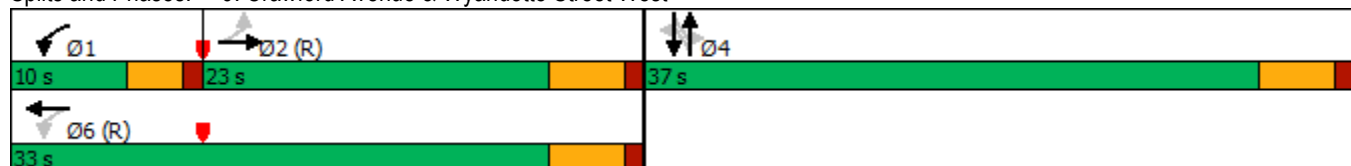


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				4
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4		4
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0		10.0
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0		28.0
Total Split (s)	23.0	23.0		10.0	33.0		37.0	37.0		37.0		37.0
Total Split (%)	32.9%	32.9%		14.3%	47.1%		52.9%	52.9%		52.9%		52.9%
Maximum Green (s)	18.0	18.0		6.0	28.0		32.0	32.0		32.0		32.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0				5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0		4.0
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max		Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0		7.0
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0		16.0
Pedestrian Calls (#/hr)	0	0			0		0	0		0		0
Act Effct Green (s)	18.0	18.0		29.0	28.0		32.0	32.0				32.0
Actuated g/C Ratio	0.26	0.26		0.41	0.40		0.46	0.46				0.46
v/c Ratio	0.12	0.56		0.60	0.30		0.17	0.77				0.76
Control Delay	21.9	24.1		22.6	13.7		12.5	19.0				29.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	21.9	24.1		22.6	13.7		12.5	19.0				29.2
LOS	C	C		C	B		B	B				C
Approach Delay		24.0			16.6			18.3				29.2
Approach LOS		C			B			B				C

Intersection Summary

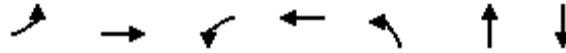
Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 38 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.7
 Intersection LOS: C
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Total AM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	23	499	193	410	84	657	304
v/c Ratio	0.12	0.56	0.60	0.30	0.17	0.77	0.76
Control Delay	21.9	24.1	22.6	13.7	12.5	19.0	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	24.1	22.6	13.7	12.5	19.0	29.2
Queue Length 50th (m)	2.3	28.0	16.1	16.8	6.2	49.9	31.4
Queue Length 95th (m)	7.7	42.0	29.2	26.2	14.0	#95.3	#59.3
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	196	893	322	1364	480	852	399
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.56	0.60	0.30	0.17	0.77	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
1: Crawford Avenue & Riverside Drive West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	502	55	112	603	34	121
Future Volume (vph)	502	55	112	603	34	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99			1.00	0.99	
Frt	0.987				0.894	
Flt Protected				0.992	0.989	
Satd. Flow (prot)	1825	0	0	1863	1667	0
Flt Permitted				0.832	0.989	
Satd. Flow (perm)	1825	0	0	1560	1652	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	13				129	
Link Speed (k/h)	50			50	50	
Link Distance (m)	79.7			220.3	122.0	
Travel Time (s)	5.7			15.9	8.8	
Confl. Peds. (#/hr)		17	17		13	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	13%	2%	1%	0%	1%
Adj. Flow (vph)	534	59	119	641	36	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	593	0	0	760	165	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (m)	10.0		2.0	10.0	2.0	
Trailing Detector (m)	0.0		0.0	0.0	0.0	
Detector 1 Position(m)	0.0		0.0	0.0	0.0	
Detector 1 Size(m)	0.6		2.0	0.6	2.0	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			2	4	
Permitted Phases			2			

Lanes, Volumes, Timings
 1: Crawford Avenue & Riverside Drive West

Total PM - Sensitivity
 825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2		2	2	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	10.0	
Minimum Split (s)	22.0		22.0	22.0	17.0	
Total Split (s)	51.0		51.0	51.0	25.0	
Total Split (%)	67.1%		67.1%	67.1%	32.9%	
Maximum Green (s)	46.0		46.0	46.0	20.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		4.0	4.0	4.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	10.0		10.0	10.0	5.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	55.2			55.2	10.8	
Actuated g/C Ratio	0.73			0.73	0.14	
v/c Ratio	0.45			0.67	0.48	
Control Delay	5.5			24.6	15.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.5			24.6	15.0	
LOS	A			C	B	
Approach Delay	5.5			24.6	15.0	
Approach LOS	A			C	B	

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 16.1
 Intersection LOS: B
 Intersection Capacity Utilization 89.7%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Crawford Avenue & Riverside Drive West



Queues
1: Crawford Avenue & Riverside Drive West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



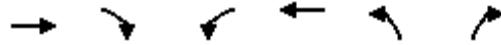
Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	593	760	165
v/c Ratio	0.45	0.67	0.48
Control Delay	5.5	24.6	15.0
Queue Delay	0.0	0.0	0.0
Total Delay	5.5	24.6	15.0
Queue Length 50th (m)	25.3	120.1	6.4
Queue Length 95th (m)	49.6	154.1	m21.9
Internal Link Dist (m)	55.7	196.3	98.0
Turn Bay Length (m)			
Base Capacity (vph)	1330	1133	533
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.45	0.67	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

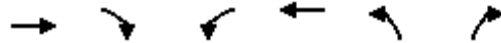
Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	635	0	0	746	37	114
Future Volume (vph)	635	0	0	746	37	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor					0.99	0.98
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3574	0	0	3574	1805	1568
Flt Permitted					0.950	
Satd. Flow (perm)	3574	0	0	3574	1790	1532
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						121
Link Speed (k/h)	50			50	50	
Link Distance (m)	207.4			107.6	271.5	
Travel Time (s)	14.9			7.7	19.5	
Confl. Peds. (#/hr)		18	18		6	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	0%	1%	0%	3%
Adj. Flow (vph)	676	0	0	794	39	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	676	0	0	794	39	121
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	10.0			10.0	2.0	2.0
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	0.6			0.6	2.0	2.0
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4

Lanes, Volumes, Timings
2: Bruce Avenue & Riverside Drive West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	9.0	9.0
Minimum Split (s)	23.0			23.0	21.0	21.0
Total Split (s)	47.0			47.0	29.0	29.0
Total Split (%)	61.8%			61.8%	38.2%	38.2%
Maximum Green (s)	42.0			42.0	24.0	24.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Recall Mode	C-Min			C-Min	Max	Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	9.0	9.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	30.1			30.1	35.9	35.9
Actuated g/C Ratio	0.40			0.40	0.47	0.47
v/c Ratio	0.48			0.56	0.05	0.15
Control Delay	14.5			18.7	12.6	3.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.5			18.7	12.6	3.7
LOS	B			B	B	A
Approach Delay	14.5			18.7	5.8	
Approach LOS	B			B	A	

Intersection Summary

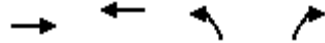
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 22 (29%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 15.7
 Intersection Capacity Utilization 42.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Bruce Avenue & Riverside Drive West



Queues
2: Bruce Avenue & Riverside Drive West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



















Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	676	794	39	121
v/c Ratio	0.48	0.56	0.05	0.15
Control Delay	14.5	18.7	12.6	3.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.5	18.7	12.6	3.7
Queue Length 50th (m)	27.8	45.5	2.4	0.2
Queue Length 95th (m)	23.0	46.5	m9.5	7.2
Internal Link Dist (m)	183.4	83.6	247.5	
Turn Bay Length (m)				
Base Capacity (vph)	1975	1975	852	787
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.40	0.05	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
3: Crawford Avenue & Site Driveway

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	1	101	0	50	3	108	91	77	75	1
Future Volume (vph)	1	0	1	101	0	50	3	108	91	77	75	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.955			0.939			0.999	
Flt Protected		0.976			0.968			0.999			0.975	
Satd. Flow (prot)	0	1728	0	0	1756	0	0	1763	0	0	1824	0
Flt Permitted		0.976			0.968			0.999			0.975	
Satd. Flow (perm)	0	1728	0	0	1756	0	0	1763	0	0	1824	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		51.8			52.9			188.3			122.0	
Travel Time (s)		3.7			3.8			13.6			8.8	
Confl. Peds. (#/hr)	1		1	1		1	10		4	4		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	3%	0%
Adj. Flow (vph)	1	0	1	112	0	56	3	120	101	86	83	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	168	0	0	224	0	0	170	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.8%					ICU Level of Service A						
Analysis Period (min)	15											

HCM 6th TWSC
3: Crawford Avenue & Site Driveway

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	101	0	50	3	108	91	77	75	1
Future Vol, veh/h	1	0	1	101	0	50	3	108	91	77	75	1
Conflicting Peds, #/hr	1	0	1	1	0	1	10	0	4	4	0	10
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	3	0
Mvmt Flow	1	0	1	112	0	56	3	120	101	86	83	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	472	497	95	438	447	176	94	0	0	225	0	0
Stage 1	266	266	-	181	181	-	-	-	-	-	-	-
Stage 2	206	231	-	257	266	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	506	477	967	532	509	872	1513	-	-	1356	-	-
Stage 1	744	692	-	825	754	-	-	-	-	-	-	-
Stage 2	801	717	-	752	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	444	439	958	501	469	868	1500	-	-	1351	-	-
Mov Cap-2 Maneuver	444	439	-	501	469	-	-	-	-	-	-	-
Stage 1	737	641	-	821	750	-	-	-	-	-	-	-
Stage 2	748	713	-	700	641	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11		13.7		0.1		3.9	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1500	-	-	607	583	1351	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.288	0.063	-	-
HCM Control Delay (s)	7.4	0	-	11	13.7	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.2	0.2	-	-

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	356	105	139	422	49	83	110	159	77	91	27
Future Volume (vph)	54	356	105	139	422	49	83	110	159	77	91	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	35.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98		0.97	0.99			0.99				0.99
Frt		0.966			0.984			0.939				0.981
Flt Protected	0.950			0.950				0.988				0.981
Satd. Flow (prot)	1805	1762	0	1805	1792	0	0	1737	0	0	1801	0
Flt Permitted	0.350			0.358				0.881				0.738
Satd. Flow (perm)	655	1762	0	659	1792	0	0	1543	0	0	1354	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			11			63				12
Link Speed (k/h)		50			50			50				50
Link Distance (m)		128.3			110.6			517.2				188.3
Travel Time (s)		9.2			8.0			37.2				13.6
Confl. Peds. (#/hr)	18		36	36		18	16		1	1		16
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	3%	9%	2%	0%	0%	0%	2%	0%
Adj. Flow (vph)	57	379	112	148	449	52	88	117	169	82	97	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	491	0	148	501	0	0	374	0	0	208	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
4: Crawford Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS

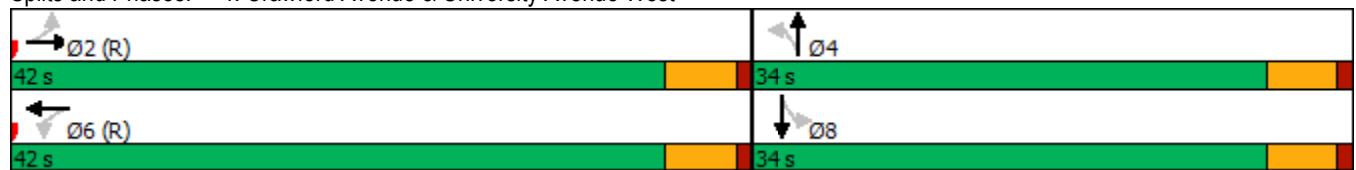


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		30.0	30.0		30.0	30.0	
Total Split (s)	42.0	42.0		42.0	42.0		34.0	34.0		34.0	34.0	
Total Split (%)	55.3%	55.3%		55.3%	55.3%		44.7%	44.7%		44.7%	44.7%	
Maximum Green (s)	37.0	37.0		37.0	37.0		29.0	29.0		29.0	29.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		37.0	37.0		29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.38	0.38		0.38	0.38	
v/c Ratio	0.18	0.56		0.46	0.57		0.60	0.60		0.40	0.40	
Control Delay	12.9	16.1		14.6	12.6		17.9	17.9		21.1	21.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.9	16.1		14.6	12.6		17.9	17.9		21.1	21.1	
LOS	B	B		B	B		B	B		C	C	
Approach Delay		15.7			13.1		17.9	17.9			21.1	
Approach LOS		B			B		B	B			C	

Intersection Summary

Area Type:	Other
Cycle Length:	76
Actuated Cycle Length:	76
Offset:	9 (12%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	15.8
Intersection LOS:	B
Intersection Capacity Utilization:	68.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: Crawford Avenue & University Avenue West



Queues
4: Crawford Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS





















Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	57	491	148	501	374	208
v/c Ratio	0.18	0.56	0.46	0.57	0.60	0.40
Control Delay	12.9	16.1	14.6	12.6	17.9	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	16.1	14.6	12.6	17.9	21.1
Queue Length 50th (m)	4.4	44.4	12.5	42.9	28.8	24.3
Queue Length 95th (m)	11.1	71.5	27.0	64.5	m54.1	m40.2
Internal Link Dist (m)		104.3		86.6	493.2	164.3
Turn Bay Length (m)	35.0		25.0			
Base Capacity (vph)	318	871	320	878	627	524
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.56	0.46	0.57	0.60	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5: Salter Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	503	4	1	527	55	5	0	6	0	0	61
Future Volume (vph)	86	503	4	1	527	55	5	0	6	0	0	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Fr _t		0.999			0.986			0.926			0.865	
Fl _t Protected	0.950			0.950				0.978				
Satd. Flow (prot)	1444	1879	0	1805	1840	0	0	1577	0	0	1644	0
Fl _t Permitted	0.950			0.950				0.978				
Satd. Flow (perm)	1444	1879	0	1805	1840	0	0	1577	0	0	1644	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		110.6			107.0			88.2			122.6	
Travel Time (s)		8.0			7.7			6.4			8.8	
Confl. Peds. (#/hr)	21		6	6		21	1					1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	25%	1%	0%	0%	2%	0%	20%	0%	0%	0%	0%	0%
Adj. Flow (vph)	91	535	4	1	561	59	5	0	6	0	0	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	539	0	1	620	0	0	11	0	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.2%
Analysis Period (min)	15
	ICU Level of Service A

HCM 6th TWSC
5: Salter Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↗	
Traffic Vol, veh/h	86	503	4	1	527	55	5	0	6	0	0	61
Future Vol, veh/h	86	503	4	1	527	55	5	0	6	0	0	61
Conflicting Peds, #/hr	21	0	6	6	0	21	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	25	1	0	0	2	0	20	0	0	0	0	0
Mvmt Flow	91	535	4	1	561	59	5	0	6	0	0	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	641	0	0	545	0	0	1351	1368	543	-	1341	613
Stage 1	-	-	-	-	-	-	725	725	-	-	614	-
Stage 2	-	-	-	-	-	-	626	643	-	-	727	-
Critical Hdwy	4.35	-	-	4.1	-	-	7.3	6.5	6.2	-	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.3	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.3	5.5	-	-	5.5	-
Follow-up Hdwy	2.425	-	-	2.2	-	-	3.68	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	843	-	-	1034	-	-	117	148	544	0	154	496
Stage 1	-	-	-	-	-	-	389	433	-	0	486	-
Stage 2	-	-	-	-	-	-	443	472	-	0	432	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	828	-	-	1029	-	-	92	129	541	-	134	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	129	-	-	134	-
Stage 1	-	-	-	-	-	-	345	384	-	-	477	-
Stage 2	-	-	-	-	-	-	383	463	-	-	383	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0			28			13.5		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	168	828	-	-	1029	-	-	487
HCM Lane V/C Ratio	0.07	0.11	-	-	0.001	-	-	0.133
HCM Control Delay (s)	28	9.9	-	-	8.5	-	-	13.5
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0	-	-	0.5

Lanes, Volumes, Timings
6: Caron Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	492	7	7	562	26	6	16	12	9	5	22
Future Volume (vph)	44	492	7	7	562	26	6	16	12	9	5	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	25.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.993			0.951			0.916	
Flt Protected	0.950			0.950				0.992			0.988	
Satd. Flow (prot)	1805	1860	0	1805	1829	0	0	1689	0	0	1648	0
Flt Permitted	0.950			0.950				0.992			0.988	
Satd. Flow (perm)	1805	1860	0	1805	1829	0	0	1689	0	0	1648	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		107.0			196.1			97.6			133.5	
Travel Time (s)		7.7			14.1			7.0			9.6	
Confl. Peds. (#/hr)	28		40	40		28	3		1	1		3
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	3%	6%	0%	13%	0%	0%	0%	7%
Adj. Flow (vph)	46	513	7	7	585	27	6	17	13	9	5	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	520	0	7	612	0	0	36	0	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	47.6%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	44	492	7	7	562	26	6	16	12	9	5	22
Future Vol, veh/h	44	492	7	7	562	26	6	16	12	9	5	22
Conflicting Peds, #/hr	28	0	40	40	0	28	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	2	0	0	3	6	0	13	0	0	0	7
Mvmt Flow	46	513	7	7	585	27	6	17	13	9	5	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	640	0	0	560	0	0	1279	1303	558	1266	1293	630
Stage 1	-	-	-	-	-	-	649	649	-	641	641	-
Stage 2	-	-	-	-	-	-	630	654	-	625	652	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.63	6.2	7.1	6.5	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.63	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4.117	3.3	3.5	4	3.363
Pot Cap-1 Maneuver	954	-	-	1021	-	-	144	153	533	147	164	473
Stage 1	-	-	-	-	-	-	462	449	-	466	473	-
Stage 2	-	-	-	-	-	-	473	447	-	476	467	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	931	-	-	986	-	-	123	136	515	121	146	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	136	-	121	146	-
Stage 1	-	-	-	-	-	-	424	413	-	432	458	-
Stage 2	-	-	-	-	-	-	440	433	-	423	429	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			30			23.7		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	931	-	-	986	-	-	230
HCM Lane V/C Ratio	0.198	0.049	-	-	0.007	-	-	0.163
HCM Control Delay (s)	30	9.1	-	-	8.7	-	-	23.7
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0	-	-	0.6

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

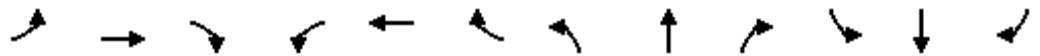
Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	422	0	0	465	75	53	79	32	0	0	0
Future Volume (vph)	45	422	0	0	465	75	53	79	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.99			0.96				
Frt					0.981			0.974				
Flt Protected	0.950							0.984				
Satd. Flow (prot)	1805	1845	0	0	1795	0	0	1771	0	0	0	0
Flt Permitted	0.411							0.984				
Satd. Flow (perm)	764	1845	0	0	1795	0	0	1733	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					18			16				
Link Speed (k/h)		50			50			50				50
Link Distance (m)		196.1			425.8			84.9				271.5
Travel Time (s)		14.1			30.7			6.1				19.5
Confl. Peds. (#/hr)	43		66	66		43	28		31	31		28
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	46	435	0	0	479	77	55	81	33	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	435	0	0	556	0	0	169	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0				0.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2				
Detector Template	Left	Thru			Thru		Left	Thru				
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0				
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6				
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0				
Detector 2 Position(m)		9.4			9.4			9.4				
Detector 2 Size(m)		0.6			0.6			0.6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				

Lanes, Volumes, Timings
7: Bruce Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		2			2			4				
Permitted Phases	2						4					
Detector Phase	2	2			2		4	4				
Switch Phase												
Minimum Initial (s)	8.0	8.0			8.0		8.0	8.0				
Minimum Split (s)	18.0	18.0			18.0		21.0	21.0				
Total Split (s)	48.0	48.0			48.0		28.0	28.0				
Total Split (%)	63.2%	63.2%			63.2%		36.8%	36.8%				
Maximum Green (s)	43.0	43.0			43.0		23.0	23.0				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.0	5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0				
Recall Mode	C-Max	C-Max			C-Max		None	None				
Walk Time (s)	7.0	7.0			7.0		7.0	7.0				
Flash Dont Walk (s)	6.0	6.0			6.0		9.0	9.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)	53.0	53.0			53.0			13.0				
Actuated g/C Ratio	0.70	0.70			0.70			0.17				
v/c Ratio	0.09	0.34			0.44			0.55				
Control Delay	4.0	5.5			6.3			32.0				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	4.0	5.5			6.3			32.0				
LOS	A	A			A			C				
Approach Delay		5.3			6.3			32.0				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 58 (76%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 9.5
 Intersection Capacity Utilization 62.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 7: Bruce Avenue & University Avenue West



Queues
7: Bruce Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



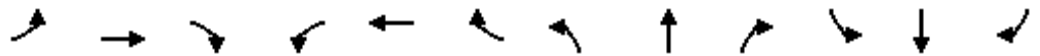
Lane Group	EBL	EBT	WBT	NBT
Lane Group Flow (vph)	46	435	556	169
v/c Ratio	0.09	0.34	0.44	0.55
Control Delay	4.0	5.5	6.3	32.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.0	5.5	6.3	32.0
Queue Length 50th (m)	1.5	24.2	29.7	20.2
Queue Length 95th (m)	m4.0	46.2	52.4	35.0
Internal Link Dist (m)		172.1	401.8	60.9
Turn Bay Length (m)	30.0			
Base Capacity (vph)	532	1287	1257	535
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.34	0.44	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
8: Ouellette Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	225	149	27	240	18	195	272	51	20	212	19
Future Volume (vph)	56	225	149	27	240	18	195	272	51	20	212	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.93			0.99		0.79	0.94		0.79	0.97	
Frt		0.940			0.992			0.976			0.988	
Flt Protected	0.950				0.995		0.950			0.950		
Satd. Flow (prot)	1770	1648	0	0	1832	0	1703	1692	0	1719	1732	0
Flt Permitted	0.460				0.836		0.602			0.518		
Satd. Flow (perm)	812	1648	0	0	1529	0	849	1692	0	738	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			5			17				8
Link Speed (k/h)		50			50			50				50
Link Distance (m)		81.9			178.2			144.6				82.1
Travel Time (s)		5.9			12.8			10.4				5.9
Confl. Peds. (#/hr)	39		60	60		39	132		167	167		132
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	1%	0%	0%	1%	12%	6%	3%	0%	5%	6%	0%
Adj. Flow (vph)	60	239	159	29	255	19	207	289	54	21	226	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	398	0	0	303	0	207	343	0	21	246	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Queues
8: Ouellette Avenue & University Avenue West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	398	303	207	343	21	246
v/c Ratio	0.24	0.74	0.64	0.43	0.36	0.05	0.25
Control Delay	19.7	28.4	28.0	15.3	11.4	10.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	28.4	28.0	15.3	11.4	10.4	10.5
Queue Length 50th (m)	6.7	48.7	36.0	16.2	24.0	1.3	16.4
Queue Length 95th (m)	14.8	76.1	53.1	39.4	48.7	5.2	34.3
Internal Link Dist (m)		57.9	154.2		120.6		58.1
Turn Bay Length (m)				15.0		15.0	
Base Capacity (vph)	320	682	606	477	958	414	977
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.58	0.50	0.43	0.36	0.05	0.25
Intersection Summary							

Lanes, Volumes, Timings
9: Crawford Avenue & Wyandotte Street West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	451	77	283	592	102	98	249	323	82	222	34
Future Volume (vph)	44	451	77	283	592	102	98	249	323	82	222	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		15.0	20.0		0.0	20.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	20.0			20.0			20.0			20.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.98		0.96	0.99		0.99					1.00
Frt		0.978			0.978			0.915				0.986
Flt Protected	0.950			0.950			0.950					0.988
Satd. Flow (prot)	1805	3390	0	1770	3423	0	1787	1712	0	0	1813	0
Flt Permitted	0.374			0.237			0.513					0.522
Satd. Flow (perm)	691	3390	0	422	3423	0	952	1712	0	0	958	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			32			111				10
Link Speed (k/h)		50			50			50				50
Link Distance (m)		176.2			154.4			108.0				517.2
Travel Time (s)		12.7			11.1			7.8				37.2
Confl. Peds. (#/hr)	34		60	60		34	27					27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	1%	2%	2%	0%	1%	1%	2%	0%	2%	4%
Adj. Flow (vph)	46	475	81	298	623	107	103	262	340	86	234	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	556	0	298	730	0	103	602	0	0	356	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6				3.6
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.8			4.8			4.8				4.8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0

Lanes, Volumes, Timings
 9: Crawford Avenue & Wyandotte Street West

Total PM - Sensitivity
 825 Riverside Dr W, Windsor TIS

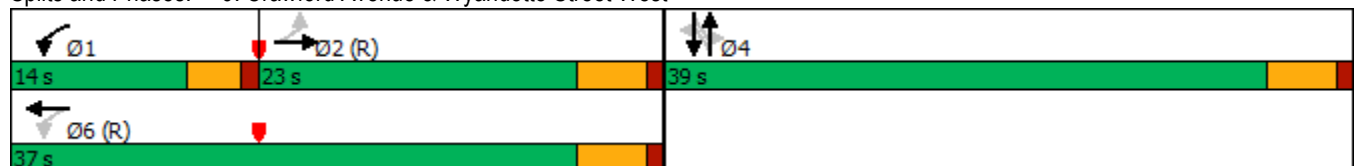


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			4	
Permitted Phases	2			6			4			4		
Detector Phase	2	2		1	6		4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	9.0		6.0	9.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		10.0	22.0		28.0	28.0		28.0	28.0	
Total Split (s)	23.0	23.0		14.0	37.0		39.0	39.0		39.0	39.0	
Total Split (%)	30.3%	30.3%		18.4%	48.7%		51.3%	51.3%		51.3%	51.3%	
Maximum Green (s)	18.0	18.0		10.0	32.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	10.0	10.0			10.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	18.0	18.0		33.0	32.0		34.0	34.0				34.0
Actuated g/C Ratio	0.24	0.24		0.43	0.42		0.45	0.45				0.45
v/c Ratio	0.28	0.68		0.83	0.50		0.24	0.73				0.82
Control Delay	29.2	30.0		37.0	16.8		15.0	20.0				32.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	29.2	30.0		37.0	16.8		15.0	20.0				32.2
LOS	C	C		D	B		B	C				C
Approach Delay		29.9			22.7			19.3				32.2
Approach LOS		C			C			B				C

Intersection Summary

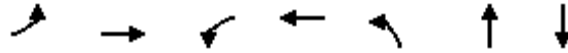
Area Type: Other
 Cycle Length: 76
 Actuated Cycle Length: 76
 Offset: 4 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 24.7
 Intersection LOS: C
 Intersection Capacity Utilization 99.1%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 9: Crawford Avenue & Wyandotte Street West



Queues
9: Crawford Avenue & Wyandotte Street West

Total PM - Sensitivity
825 Riverside Dr W, Windsor TIS



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	46	556	298	730	103	602	356
v/c Ratio	0.28	0.68	0.83	0.50	0.24	0.73	0.82
Control Delay	29.2	30.0	37.0	16.8	15.0	20.0	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	30.0	37.0	16.8	15.0	20.0	32.2
Queue Length 50th (m)	5.4	36.5	28.0	37.2	8.8	55.4	28.2
Queue Length 95th (m)	14.5	52.8	#60.4	51.9	18.8	93.7	#86.2
Internal Link Dist (m)		152.2		130.4		84.0	493.2
Turn Bay Length (m)	20.0		20.0		20.0		
Base Capacity (vph)	163	821	360	1459	425	827	434
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.68	0.83	0.50	0.24	0.73	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix H

Parking Survey Data



Location: 55 William St E, Waterloo
Date:
Surveyor:

Number of Units: 142
Total Number of Spaces: 147
Number of Visitor Spaces: 6

Time	Observed Demand		
	Total	Resident	Visitor
6:00AM	102	101	1
7:00AM	99	98	1
8:00AM	97	96	1
8:00PM	90	88	2
9:00PM	98	98	0
10:00PM	104	104	0

Address: 150 & 180 Greenbrier Road
Surveyor: LC
Date: 2023-08-17
of Units: 153
Available Spaces: Res: 169 Vis: 6

Time	Demand		
	Resident	Visitor	Total
6:10 AM	141	0	141
11:30 AM	91	4	95
8:30 PM	138	0	138

max parking demand 141
 max parking rate 0.92

Initial Counts			
# of Vehicles	Time	Day	DOW
88	6:30	September 9, 2023	Saturday
61	10:41	September 13, 2023	Wednesday
83	6:45	September 16, 2023	Saturday

Site Stats	
Storeys	8
Units	100

Start Date	09/09/2023
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Time	OUT	IN	Lot Count	Rate	Max Rate
12:00 AM	0	1	89	0.89	0.92
12:15 AM	0	0	90	0.9	Avg Rate
12:30 AM	0	0	90	0.9	0.79
12:45 AM	0	0	90	0.9	85th Rate
1:00 AM	1	0	90	0.9	0.90
1:15 AM	0	0	89	0.89	
1:30 AM	0	0	89	0.89	
1:45 AM	0	1	89	0.89	
2:00 AM	0	1	90	0.9	
2:15 AM	0	0	91	0.91	
2:30 AM	0	1	91	0.91	
2:45 AM	0	0	92	0.92	
3:00 AM	2	1	92	0.92	
3:15 AM	0	0	91	0.91	
3:30 AM	1	1	91	0.91	
3:45 AM	0	0	91	0.91	
4:00 AM	0	0	91	0.91	
4:15 AM	0	0	91	0.91	
4:30 AM	0	0	91	0.91	
4:45 AM	0	0	91	0.91	
5:00 AM	0	0	91	0.91	
5:15 AM	1	0	91	0.91	
5:30 AM	1	0	90	0.9	
5:45 AM	1	1	89	0.89	
6:00 AM	1	0	89	0.89	
6:15 AM	2	2	88	0.88	
6:30 AM	2	0	88	0.88	
6:45 AM	0	0	88	0.88	
7:00 AM	3	2	87	0.87	
7:15 AM	4	0	83	0.83	
7:30 AM	2	2	83	0.83	
7:45 AM	2	4	85	0.85	
8:00 AM	2	1	84	0.84	
8:15 AM	6	1	79	0.79	
8:30 AM	1	2	80	0.8	
8:45 AM	3	1	78	0.78	

9:00 AM	5	3	76	0.76
9:15 AM	4	5	77	0.77
9:30 AM	3	2	76	0.76
9:45 AM	5	1	72	0.72
10:00 AM	6	5	71	0.71
10:15 AM	6	1	66	0.66
10:30 AM	4	6	68	0.68
10:45 AM	9	3	62	0.62
11:00 AM	2	6	66	0.66
11:15 AM	7	7	66	0.66
11:30 AM	4	1	63	0.63
11:45 AM	4	5	64	0.64
12:00 PM	6	4	62	0.62
12:15 PM	5	6	63	0.63
12:30 PM	5	1	59	0.59
12:45 PM	4	7	62	0.62
1:00 PM	9	6	59	0.59
1:15 PM	5	2	56	0.56
1:30 PM	2	6	60	0.6
1:45 PM	2	5	63	0.63
2:00 PM	1	1	63	0.63
2:15 PM	4	8	67	0.67
2:30 PM	6	2	63	0.63
2:45 PM	6	2	59	0.59
3:00 PM	0	2	61	0.61
3:15 PM	0	2	63	0.63
3:30 PM	0	3	66	0.66
3:45 PM	2	3	67	0.67
4:00 PM	1	3	69	0.69
4:15 PM	5	8	72	0.72
4:30 PM	4	5	73	0.73
4:45 PM	5	4	72	0.72
5:00 PM	2	4	74	0.74
5:15 PM	1	1	74	0.74
5:30 PM	6	5	73	0.73
5:45 PM	1	4	76	0.76
6:00 PM	3	2	75	0.75
6:15 PM	2	5	78	0.78
6:30 PM	3	2	77	0.77
6:45 PM	2	2	77	0.77
7:00 PM	1	2	78	0.78
7:15 PM	0	2	80	0.8
7:30 PM	1	4	83	0.83
7:45 PM	2	1	82	0.82
8:00 PM	0	2	84	0.84

8:15 PM	0	1	85	0.85
8:30 PM	0	0	85	0.85
8:45 PM	1	1	85	0.85
9:00 PM	2	2	85	0.85
9:15 PM	0	3	88	0.88
9:30 PM	2	1	87	0.87
9:45 PM	2	1	86	0.86
10:00 PM	0	0	86	0.86
10:15 PM	0	0	86	0.86
10:30 PM	1	1	86	0.86
10:45 PM	1	2	87	0.87
11:00 PM	0	0	87	0.87
11:15 PM	0	1	88	0.88
11:30 PM	0	0	88	0.88
11:45 PM	0	0	88	0.88

Initial Counts			
# of Vehicles	Time	Day	DOW
88	6:30	September 9, 2023	Saturday
61	10:41	September 13, 2023	Wednesday
83	6:45	September 16, 2023	Saturday

Site Stats	
Storeys	8
Units	100

Start Date	09/13/2023
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Direction	OUT	IN	Lot Count	Rate	Max Rate
12:00 AM	0	1	82	0.82	0.85
12:15 AM	0	1	83	0.83	Avg Rate
12:30 AM	0	1	84	0.84	0.74
12:45 AM	0	0	85	0.85	85th Rate
1:00 AM	0	0	85	0.85	0.84
1:15 AM	0	0	85	0.85	
1:30 AM	1	0	85	0.85	
1:45 AM	0	0	84	0.84	
2:00 AM	0	0	84	0.84	
2:15 AM	0	1	84	0.84	
2:30 AM	0	0	85	0.85	
2:45 AM	0	0	85	0.85	
3:00 AM	1	1	85	0.85	
3:15 AM	0	0	85	0.85	
3:30 AM	0	0	85	0.85	
3:45 AM	0	0	85	0.85	
4:00 AM	0	0	85	0.85	
4:15 AM	1	0	85	0.85	
4:30 AM	0	0	84	0.84	
4:45 AM	0	0	84	0.84	
5:00 AM	1	0	84	0.84	
5:15 AM	2	2	83	0.83	
5:30 AM	0	0	83	0.83	
5:45 AM	0	0	83	0.83	
6:00 AM	1	0	83	0.83	
6:15 AM	1	2	82	0.82	
6:30 AM	3	0	83	0.83	
6:45 AM	3	2	80	0.8	
7:00 AM	1	3	79	0.79	
7:15 AM	6	0	81	0.81	
7:30 AM	0	2	75	0.75	
7:45 AM	4	2	77	0.77	
8:00 AM	0	1	75	0.75	
8:15 AM	1	2	76	0.76	
8:30 AM	1	3	77	0.77	
8:45 AM	3	1	79	0.79	

9:00 AM	3	1	77	0.77
9:15 AM	9	2	75	0.75
9:30 AM	1	2	68	0.68
9:45 AM	5	2	69	0.69
10:00 AM	3	1	66	0.66
10:15 AM	8	6	64	0.64
10:30 AM	2	1	62	0.62
10:45 AM	6	4	61	0.61
11:00 AM	3	4	62	0.62
11:15 AM	4	4	62	0.62
11:30 AM	4	5	63	0.63
11:45 AM	7	8	64	0.64
12:00 PM	6	4	62	0.62
12:15 PM	6	8	64	0.64
12:30 PM	4	4	64	0.64
12:45 PM	3	7	68	0.68
1:00 PM	3	0	65	0.65
1:15 PM	1	5	69	0.69
1:30 PM	5	5	69	0.69
1:45 PM	7	2	64	0.64
2:00 PM	5	2	61	0.61
2:15 PM	6	3	58	0.58
2:30 PM	1	2	59	0.59
2:45 PM	3	4	60	0.6
3:00 PM	7	6	59	0.59
3:15 PM	5	6	60	0.6
3:30 PM	1	5	64	0.64
3:45 PM	3	4	65	0.65
4:00 PM	2	1	64	0.64
4:15 PM	5	6	65	0.65
4:30 PM	1	0	64	0.64
4:45 PM	1	1	64	0.64
5:00 PM	7	6	63	0.63
5:15 PM	2	4	65	0.65
5:30 PM	1	3	67	0.67
5:45 PM	2	3	68	0.68
6:00 PM	6	3	65	0.65
6:15 PM	3	2	64	0.64
6:30 PM	0	2	66	0.66
6:45 PM	4	4	66	0.66
7:00 PM	1	3	68	0.68
7:15 PM	0	4	72	0.72
7:30 PM	1	0	71	0.71
7:45 PM	1	1	71	0.71
8:00 PM	1	3	73	0.73

8:15 PM	0	2	75	0.75
8:30 PM	0	1	76	0.76
8:45 PM	0	0	76	0.76
9:00 PM	1	1	76	0.76
9:15 PM	1	2	77	0.77
9:30 PM	3	3	77	0.77
9:45 PM	0	0	77	0.77
10:00 PM	0	1	78	0.78
10:15 PM	0	0	78	0.78
10:30 PM	1	2	79	0.79
10:45 PM	1	0	78	0.78
11:00 PM	0	1	79	0.79
11:15 PM	0	2	81	0.81
11:30 PM	0	0	81	0.81
11:45 PM	0	0	81	0.81

Initial Counts			
# of Vehicles	Time	Day	DOW
88	6:30	September 9, 2023	Saturday
61	10:41	September 13, 2023	Wednesday
83	6:45	September 16, 2023	Saturday

Site Stats	
Storeys	8
Units	100

Start Date	09/14/2023
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Direction	OUT	IN	Lot Count	Rate	Max Rate
12:00 AM	0	0	81	0.81	0.83
12:15 AM	0	1	82	0.82	Avg Rate
12:30 AM	0	0	82	0.82	0.64
12:45 AM	0	0	82	0.82	85th Rate
1:00 AM	0	0	82	0.82	0.82
1:15 AM	0	0	82	0.82	
1:30 AM	0	1	83	0.83	
1:45 AM	0	0	83	0.83	
2:00 AM	0	0	83	0.83	
2:15 AM	0	0	83	0.83	
2:30 AM	0	0	83	0.83	
2:45 AM	1	1	83	0.83	
3:00 AM	0	0	83	0.83	
3:15 AM	0	0	83	0.83	
3:30 AM	0	0	83	0.83	
3:45 AM	0	0	83	0.83	
4:00 AM	1	0	82	0.82	
4:15 AM	0	0	82	0.82	
4:30 AM	0	0	82	0.82	
4:45 AM	0	0	82	0.82	
5:00 AM	0	0	82	0.82	
5:15 AM	0	0	82	0.82	
5:30 AM	0	0	82	0.82	
5:45 AM	1	0	81	0.81	
6:00 AM	2	0	79	0.79	
6:15 AM	3	1	77	0.77	
6:30 AM	3	1	75	0.75	
6:45 AM	2	2	75	0.75	
7:00 AM	5	1	71	0.71	
7:15 AM	7	1	65	0.65	
7:30 AM	3	1	63	0.63	
7:45 AM	4	3	62	0.62	
8:00 AM	2	0	60	0.6	
8:15 AM	1	0	59	0.59	
8:30 AM	6	3	56	0.56	
8:45 AM	3	0	53	0.53	

9:00 AM	5	2	50	0.5
9:15 AM	0	5	55	0.55
9:30 AM	4	4	55	0.55
9:45 AM	4	1	52	0.52
10:00 AM	7	3	48	0.48
10:15 AM	4	0	44	0.44
10:30 AM	3	4	45	0.45
10:45 AM	5	3	43	0.43
11:00 AM	3	6	46	0.46
11:15 AM	3	3	46	0.46
11:30 AM	3	1	44	0.44
11:45 AM	1	2	45	0.45
12:00 PM	2	3	46	0.46
12:15 PM	6	3	43	0.43
12:30 PM	4	4	43	0.43
12:45 PM	5	6	44	0.44
1:00 PM	2	5	47	0.47
1:15 PM	4	0	43	0.43
1:30 PM	3	4	44	0.44
1:45 PM	4	3	43	0.43
2:00 PM	6	6	43	0.43
2:15 PM	7	2	38	0.38
2:30 PM	2	4	40	0.4
2:45 PM	4	6	42	0.42
3:00 PM	3	2	41	0.41
3:15 PM	3	1	39	0.39
3:30 PM	2	3	40	0.4
3:45 PM	2	9	47	0.47
4:00 PM	1	4	50	0.5
4:15 PM	1	3	52	0.52
4:30 PM	2	4	54	0.54
4:45 PM	3	4	55	0.55
5:00 PM	2	6	59	0.59
5:15 PM	3	3	59	0.59
5:30 PM	3	5	61	0.61
5:45 PM	3	4	62	0.62
6:00 PM	5	6	63	0.63
6:15 PM	2	5	66	0.66
6:30 PM	7	5	64	0.64
6:45 PM	5	4	63	0.63
7:00 PM	3	3	63	0.63
7:15 PM	1	2	64	0.64
7:30 PM	3	4	65	0.65
7:45 PM	1	2	66	0.66
8:00 PM	2	2	66	0.66

8:15 PM	0	2	68	0.68
8:30 PM	0	1	69	0.69
8:45 PM	0	1	70	0.7
9:00 PM	1	1	70	0.7
9:15 PM	2	0	68	0.68
9:30 PM	0	2	70	0.7
9:45 PM	1	2	71	0.71
10:00 PM	0	1	72	0.72
10:15 PM	1	0	71	0.71
10:30 PM	0	2	73	0.73
10:45 PM	0	3	76	0.76
11:00 PM	1	0	75	0.75
11:15 PM	1	0	74	0.74
11:30 PM	0	1	75	0.75
11:45 PM	0	0	75	0.75

Initial Counts			
# of Vehicles	Time	Day	DOW
88	6:30	September 9, 2023	Saturday
61	10:41	September 13, 2023	Wednesday
83	6:45	September 16, 2023	Saturday

Site Stats	
Storeys	8
Units	100

Start Date	09/16/2023
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Direction	OUT	IN	Lot Count	Rate	Max Rate
12:00 AM	0	1	85	0.85	0.88
12:15 AM	0	1	86	0.86	Avg Rate
12:30 AM	0	1	87	0.87	0.76
12:45 AM	0	0	88	0.88	85th Rate
1:00 AM	0	0	88	0.88	0.87
1:15 AM	0	0	88	0.88	
1:30 AM	1	0	88	0.88	
1:45 AM	0	0	87	0.87	
2:00 AM	0	0	87	0.87	
2:15 AM	0	1	87	0.87	
2:30 AM	0	0	88	0.88	
2:45 AM	0	0	88	0.88	
3:00 AM	1	1	88	0.88	
3:15 AM	0	0	88	0.88	
3:30 AM	0	0	88	0.88	
3:45 AM	0	0	88	0.88	
4:00 AM	0	0	88	0.88	
4:15 AM	1	0	88	0.88	
4:30 AM	0	0	87	0.87	
4:45 AM	0	0	87	0.87	
5:00 AM	1	0	87	0.87	
5:15 AM	2	2	86	0.86	
5:30 AM	0	0	86	0.86	
5:45 AM	0	0	86	0.86	
6:00 AM	1	0	86	0.86	
6:15 AM	1	2	85	0.85	
6:30 AM	3	0	86	0.86	
6:45 AM	3	2	83	0.83	
7:00 AM	1	3	85	0.85	
7:15 AM	6	0	79	0.79	
7:30 AM	0	2	81	0.81	
7:45 AM	4	2	79	0.79	
8:00 AM	0	1	80	0.8	
8:15 AM	1	2	81	0.81	
8:30 AM	1	3	83	0.83	
8:45 AM	3	1	81	0.81	

9:00 AM	3	1	79	0.79
9:15 AM	9	2	72	0.72
9:30 AM	1	2	73	0.73
9:45 AM	5	2	70	0.7
10:00 AM	3	1	68	0.68
10:15 AM	8	6	66	0.66
10:30 AM	2	1	65	0.65
10:45 AM	6	4	63	0.63
11:00 AM	3	4	64	0.64
11:15 AM	4	4	64	0.64
11:30 AM	4	5	65	0.65
11:45 AM	7	8	66	0.66
12:00 PM	6	4	64	0.64
12:15 PM	6	8	66	0.66
12:30 PM	4	4	66	0.66
12:45 PM	3	7	70	0.7
1:00 PM	3	0	67	0.67
1:15 PM	1	5	71	0.71
1:30 PM	5	5	71	0.71
1:45 PM	7	2	66	0.66
2:00 PM	5	2	63	0.63
2:15 PM	6	3	60	0.6
2:30 PM	1	2	61	0.61
2:45 PM	3	4	62	0.62
3:00 PM	7	6	61	0.61
3:15 PM	5	6	62	0.62
3:30 PM	1	5	66	0.66
3:45 PM	3	4	67	0.67
4:00 PM	2	1	66	0.66
4:15 PM	5	6	67	0.67
4:30 PM	1	0	66	0.66
4:45 PM	1	1	66	0.66
5:00 PM	7	6	65	0.65
5:15 PM	2	4	67	0.67
5:30 PM	1	3	69	0.69
5:45 PM	2	3	70	0.7
6:00 PM	6	3	67	0.67
6:15 PM	3	2	66	0.66
6:30 PM	0	2	68	0.68
6:45 PM	4	4	68	0.68
7:00 PM	1	3	70	0.7
7:15 PM	0	4	74	0.74
7:30 PM	1	0	73	0.73
7:45 PM	1	1	73	0.73
8:00 PM	1	3	75	0.75

8:15 PM	0	2	77	0.77
8:30 PM	0	1	78	0.78
8:45 PM	0	0	78	0.78
9:00 PM	1	1	78	0.78
9:15 PM	1	2	79	0.79
9:30 PM	3	3	79	0.79
9:45 PM	0	0	79	0.79
10:00 PM	0	1	80	0.8
10:15 PM	0	0	80	0.8
10:30 PM	1	2	81	0.81
10:45 PM	1	0	80	0.8
11:00 PM	0	1	81	0.81
11:15 PM	0	2	83	0.83
11:30 PM	0	0	83	0.83
11:45 PM	0	0	83	0.83