Final Report

Transportation Impact Study Marz Homes – 'Thrive' 25 Acre, Township of West Lincoln (Smithville), Niagara Region

Prepared for Marz Homes (Smithville West) Inc.
by IBI Group

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1 Introduction

IBI Group was retained by Marz Homes (Smithville West) Inc. (the "Client") to undertake a transportation impact study (TIS) for a proposed 25 acre subdivision development (the "proposed development") located in the Township of West Lincoln (the "Township").

The purpose of this TIS is to analyze potential traffic impacts generated by the proposed development on the surrounding road network. This TIS takes into consideration background growth, future road network changes, and other developments in the area.

1.1 Project Understanding

This section provides a detailed description of the site and the extents of the study area.

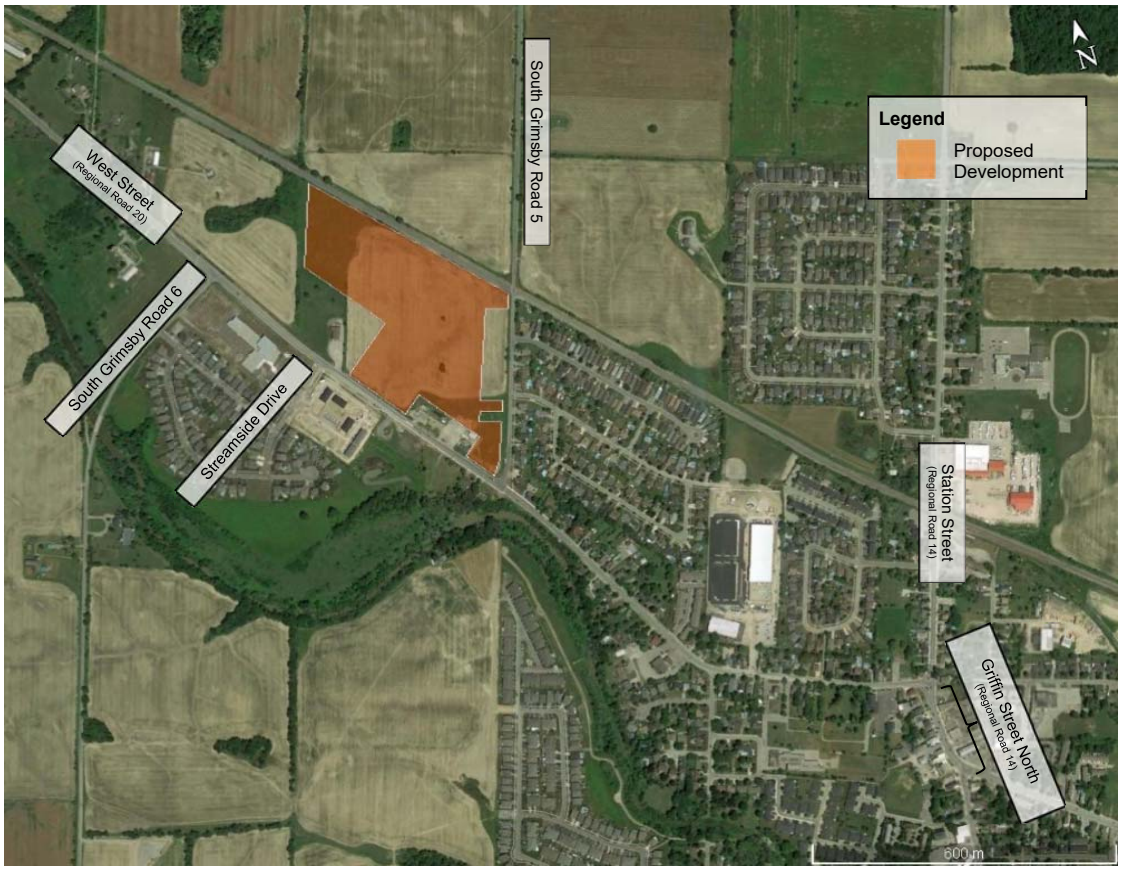
1.1.1 Site Description

The proposed development is located in the community of Smithville, within the Regional Municipality of Niagara (Niagara Region). The lands of the proposed development are located north of West Street (Regional Road 20), south of the Canadian Pacific Rail (CPR) tracks, and west of South Grimsby Road 5.

The land just north of the proposed development is currently farmland, with plans for a 14 acre residential subdivision, as described in **Section 3.3**. To the east are single detached residences abutting South Grimsby Road 5. The St. Martin Elementary School is located southwest of the proposed development, situated at the southwest corner of the West Street & Streamside Drive intersection. Further south on Streamside Drive are single detached residences. The areas west of the proposed development contain a Greek Community Centre and undeveloped lands.

An aerial view of the proposed development within the context of the study area is provided below in **Exhibit 1-1**.

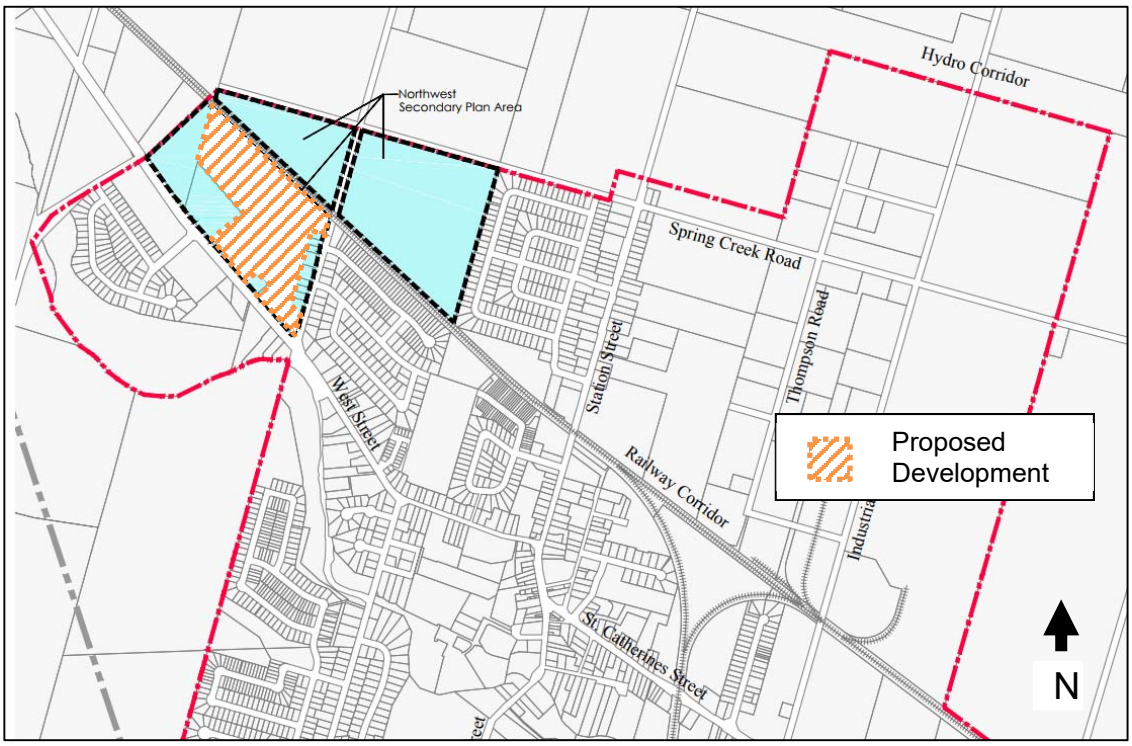
Exhibit 1-1: Proposed Development Location Map



Base Map Source: *Google Maps. Retrieved January 19, 2020 from https://www.google.ca/maps/@43.1045518,-79.5549657,1753m/data=!3m1!1e3*

The proposed development is located within the areas known as the Northwest Quadrant, as illustrated in **Exhibit 1-2**. A secondary plan for the Northwest Quadrant was approved by the Township Council in June 2017, which identifies areas for low, medium, and high density development, commercial development, parks/trails, and road networks. According to the Township's ***Official Plan*** (October 2018), the implementation of the secondary plan is planned to occur over the next 20 years.

Exhibit 1-2: Northwest Quadrant Secondary Plan Area

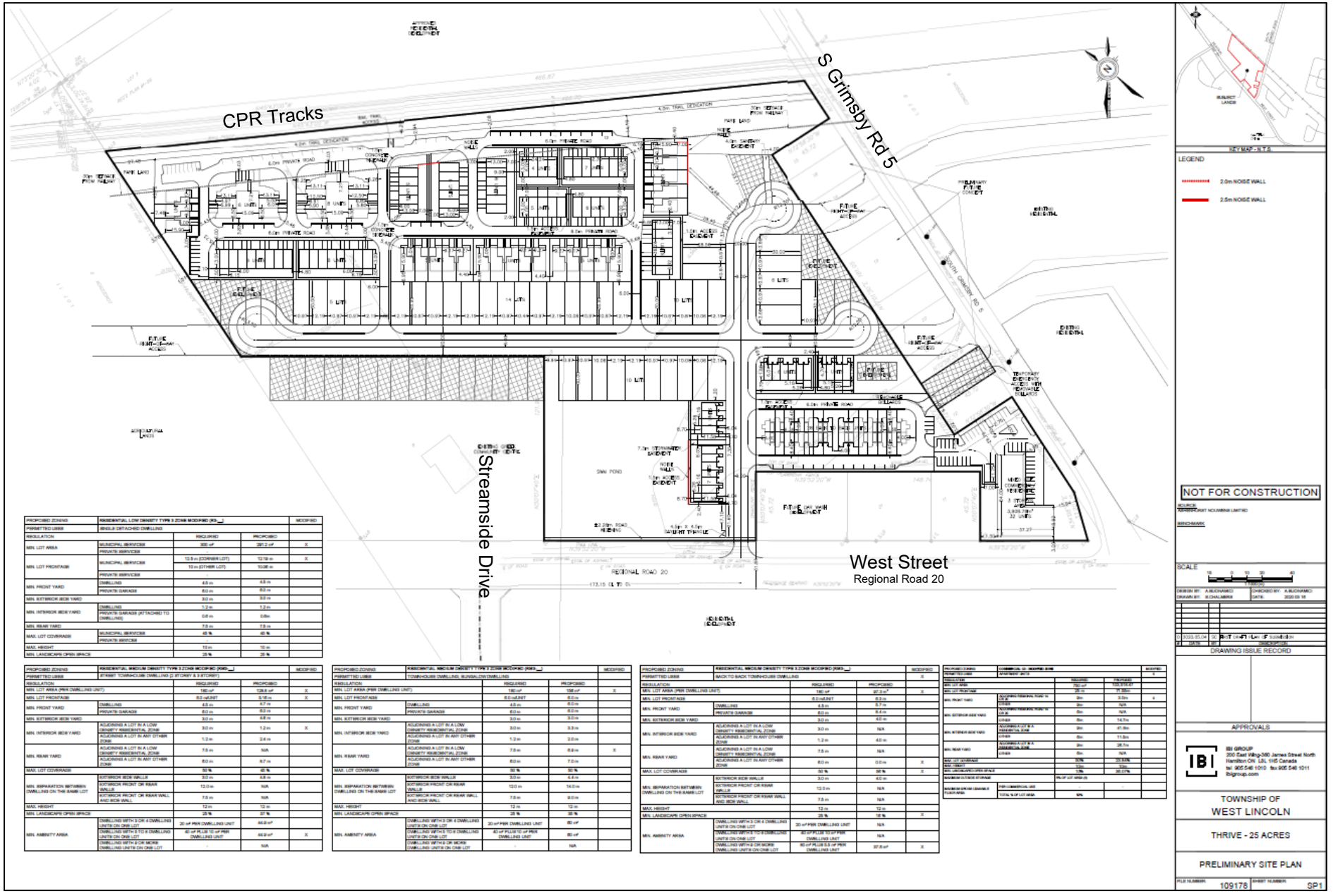


Source: *Township of West Lincoln Northwest Quadrant Secondary Plan Background Report (March 2016).*

1.1.2 Development Proposal

The proposed development will consist of approximately 224 residential units and approximately 1,303 m^2 (14,025 ft^2) of gross floor area (GFA) of mixed use commercial space located at the southeast corner of the development land. The proposed site plan is presented in **Exhibit 1-3**.

Exhibit 1-3: Proposed Site Plan



1.1.3 Study Period

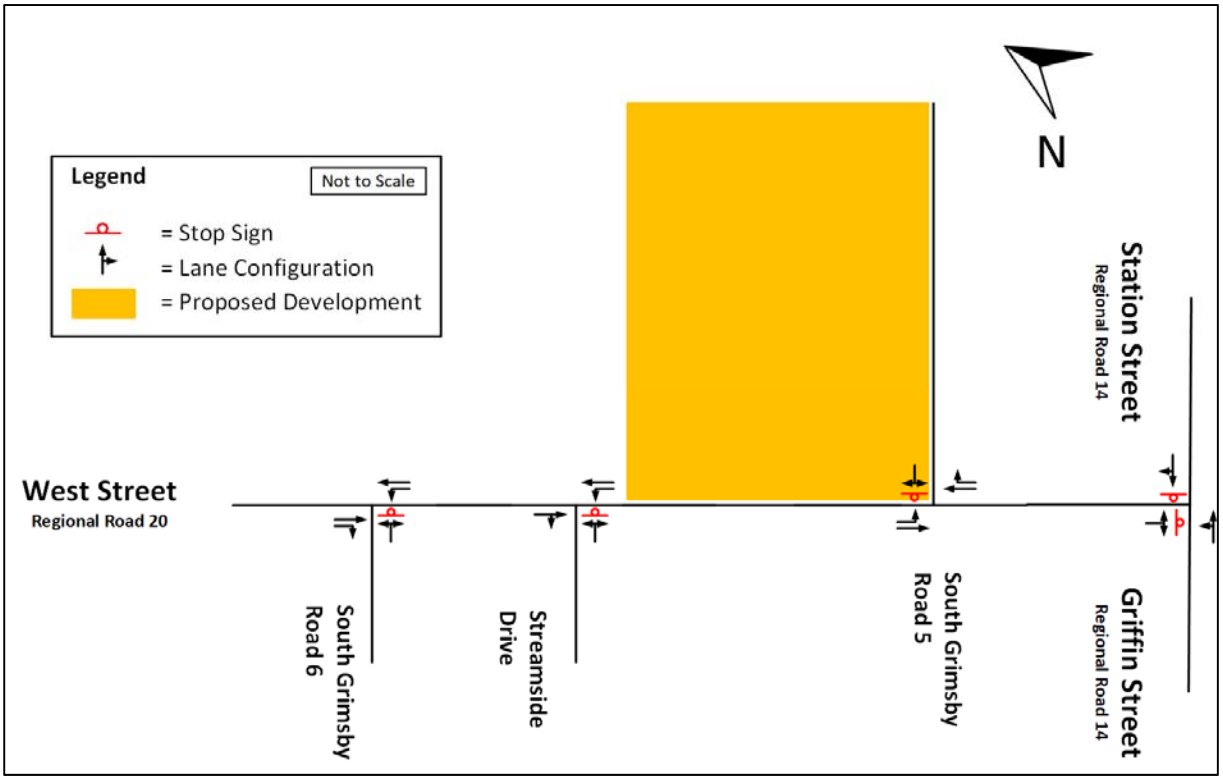
Based on the proposed development's land uses and size, the weekday AM peak period (7:00 AM – 9:00 AM) and weekday PM peak period (4:00 PM – 6:00 PM) were analyzed.

1.1.4 Study Area

The study area intersections which are most likely to be impacted by development site traffic consist of the following locations, as shown in **Exhibit 1-4**:

- West Street (Regional Road 20) & South Grimsby Road 6 (unsignalized);
- West Street (Regional Road 20) & South Grimsby Road 5 (unsignalized);
- West Street (Regional Road 20) & Streamside Drive (unsignalized); and
- West Street (Regional Road 20) & Station Street / Griffin Street North (Regional Road 14) (unsignalized).

Exhibit 1-4: Existing Study Area Lane Configuration



2 2020 Existing Traffic Conditions

This section documents the existing road network, facilities, and weekday peak hour operations at the studied intersections.

2.1 Existing Road Network

Exhibit 2-1 below summarizes the characteristics of the study area roadways.

Exhibit 2-1: Study Roadway Characteristics

Street Name*	Type	Orientation	No of Lanes	Traffic Direction	From	To	On-Street parking	Speed Limit (km/h)
West Street (RR 20)	Regional	East – West	2	Two-way	Station Street (RR 14)	South Grimsby Road 6	Prohibited	50
South Grimsby Road 6	Local	North – South	2	Two-way	West Street (RR 20)	Smithville Road (RR 14)	Restricted	50
Streamside Drive	Local	North – South	2	Two-way	West Street (RR 20)	Creek View Drive	Permitted	50
South Grimsby Road 5	Local	North – South	2	Two-way	Young Street	West Street (RR 20)	Restricted	50
Station Street (RR 14)	Regional	North – South	2	Two-way	Spring Creek Road	West Street (RR 20)	East Side Only	50
Griffin Street North (RR 14)	Regional	North – South	2	Two-way	West Street (RR 20)	Mill Street	Permitted with Restrictions	50

**RR = Regional Road*

2.2 Public Transit

The Town of Lincoln operates a public transit service, uLinc. However, based on a review of the existing transit service map, the routes in operation do not extend to the proposed development or in acceptable walking proximity of the study area. Therefore, transportation modes in the study area are expected to remain largely automobile dependent.

2.3 Pedestrian and Cyclist Facilities

There have been several improvements to pedestrian and cycling infrastructure implemented in proximity to the proposed development in recent years.

In 2017, a pedestrian crossover was installed at the westbound approach of the West Street (Regional Road 20) and South Grimsby Road 5 intersection. This installation is complemented with new sidewalks that run along the south side of West Street between Streamside Drive and South Grimsby Road 5. West of Streamside Drive, the sidewalks are discontinued. There are also new sidewalks along both sides of Streamside Drive. There is a sidewalk along South Grimsby

Road 5 along its eastern side. Conversely, South Grimsby Road 6 does not have any pedestrian nor cyclist facilities within the study area.

Moreover, bicycle lanes have been installed along West Street (for both directions). These bicycle lanes extend from east of Streamside Drive to Smithville's downtown core, and provide connections to Niagara Region's West Lincoln and Wainfleet Bicycle Route.

2.4 Turning Movement Counts

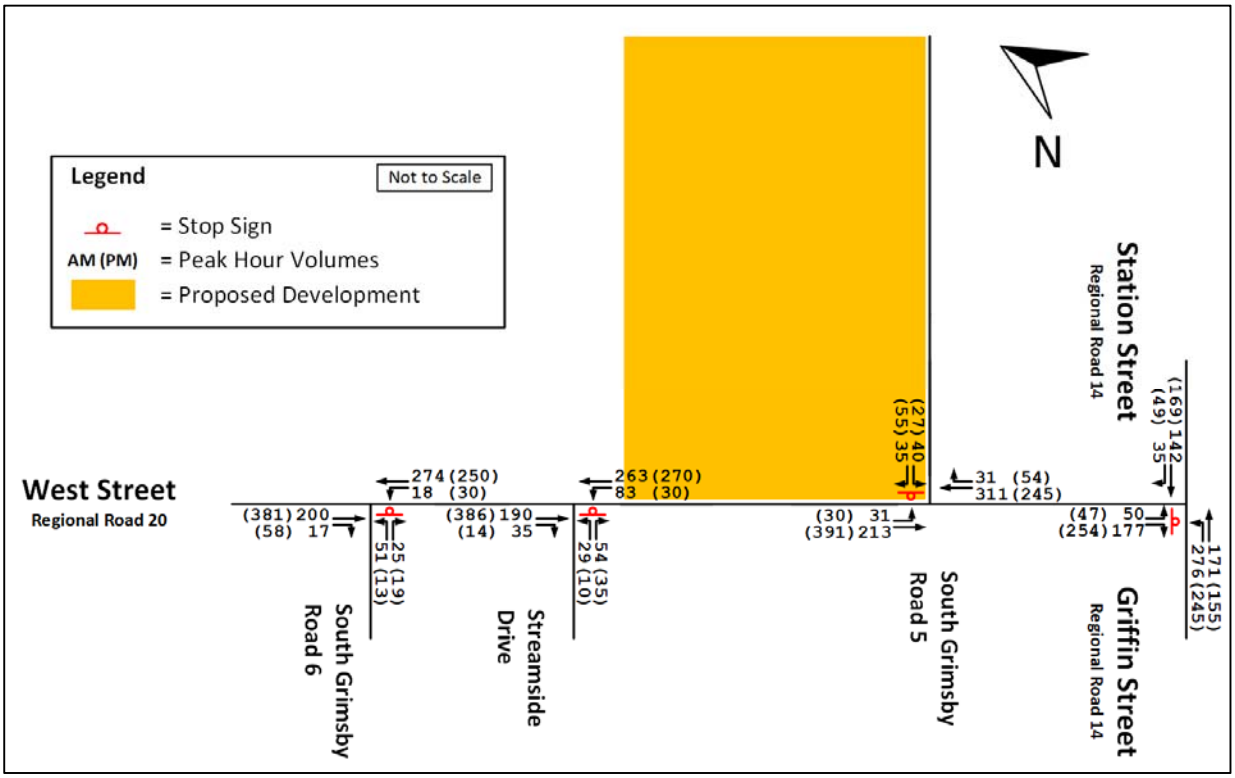
Ontario Traffic Inc. (OTI) was previously commissioned by IBI Group to undertake turning movement count (TMCs) surveys on Wednesday, October 17, 2017 as part of the planned nearby 14 acre development (discussed further in **Section 3.3 - Background Developments**). The surveys performed on this date were conducted at all of this proposed development's study area intersections, except for the West Street & Streamside Drive intersection.

Consequently, the TMC survey for this intersection was also commissioned by IBI Group for OTI to undertake on Monday November 25, 2019. The TMCs were conducted from 7:00 AM to 9:00 AM (AM peak period) and from 4:00 PM to 6:00 PM (PM peak period).

To establish a base for comparison among all TMC data, traffic volumes from the corresponding surveys were subjected to growth to the existing year (2020), using a growth factor of 0.4% per annum. This growth factor was derived from West Lincoln Township population forecast data from Niagara Region's Official Plan, and is described in further detail in **Section 3.1**.

The original turning movement count data can be found in **Appendix A**. The 2020 existing volumes used for the traffic analysis are presented in **Exhibit 2-2**.

Exhibit 2-2: 2020 Existing Conditions Traffic Volumes



Note: *The arrows in this diagram do not represent the lane configuration and are meant to represent turning movements.*

2.5 Analysis of Traffic Conditions

Using the TMCs described in **Section 2.4**, study area intersections were analyzed using the Synchro 9.1 analysis software, which is based on the ***Highway Capacity Manual*** (HCM) methodology. Based on the ***Niagara Region Guidelines for Traffic Impact Studies*** (May 2012), the following criteria were used for identifying critical movements at unsignalized intersections:

- Level of service (LOS) "D" or worse; and/or
- 95th percentile queue lengths exceed available storage.

Exhibit 2-3 details existing traffic operations at the study area intersections for the weekday AM and PM peak hours. Synchro output reports are found in **Appendix B**.

Exhibit 2-3: 2020 Existing Traffic Conditions - Analysis Summary

Intersection	Intersection		Lane					
	LOS	Delay (s)	Mvmt	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	Storage Capacity (m)
AM Peak Hour								
West Street (RR 20) & South Grimsby Road 6	A	1.9	WBL	A	7.9	0.02	0	100
			NBL/R	B	12.5	0.15	4	-
West Street (RR 20) & Streamside Drive	A	2.7	WBL	A	8.1	0.07	2	80
			NBL/R	B	13.0	0.17	5	-
West Street (RR 20) & South Grimsby Road 5	A	1.9	EBL	A	8.1	0.03	1	65
			SBL/R	B	13.3	0.16	4	-
PM Peak Hour								
West Street (RR 20) & South Grimsby Road 6	A	0.9	WBL	A	8.4	0.03	1	100
			NBL/R	B	13.0	0.07	2	-
West Street (RR 20) & Streamside Drive	A	1.1	WBL	A	8.3	0.03	1	80
			NBL/R	B	12.4	0.09	2	-
West Street (RR 20) & South Grimsby Road 5	A	1.7	EBL	A	8.0	0.03	1	65
			SBL/R	B	13.5	0.17	5	-

Note: *LOS denotes level of service, while v/c represents the volume-to-capacity ratio.*

Based on the Synchro analysis, the following observations were made for the weekday AM and PM peak hours:

- All study area intersections are presently operating well within capacity limits (volume/capacity ratios < 1.00); and
- Queues for all movements do not exceed their respective lane storage capacities.

It should be noted that the HCM methodology does not provide guidance for instances at three-legged intersections in which both of the following circumstances are met:

- The side street approach is STOP controlled; and
- On the major street, only the southbound direction is STOP controlled.

Both of these criteria are met at the West Street & Station Street / Griffin Street North intersection, whereby West Street acts as the side street and Station Street / Griffin Street North is referred to as the major street. The movements most likely to experience operational constraints at this intersection consist of the eastbound left turn and northbound left turn movements.

To address this HCM methodology limitation, a sensitivity analysis was undertaken, whereby STOP control was both implemented and removed at both major street approaches. As the existing intersection's control configuration features only one major street approach subjected to stop control (i.e. the southbound approach), the operational performance of this intersection is likely to fall somewhere between a situation in which the major street approaches are uncontrolled and a situation whereby stop control is implemented at both major street approaches.

The results of the sensitivity analysis, under 2020 existing conditions, are summarized below in **Exhibit 2-4**. Full Synchro reports pertaining to the sensitivity analysis are provided in **Appendix C**.

Exhibit 2-4: Sensitivity Analysis Summary for Station Street / Griffin Street Traffic Control – Existing Conditions

Control Scenario at Station / Griffin Street Approaches	Critical Movement							
	EBL				NBL			
	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	LOS	Delay (s)	v/c Ratio	95th % Queue (m)
AM Peak Hour								
All-way STOP-control	B	11.6	-	-	C	19.7	-	-
Uncontrolled	C	18.7	0.49	20	A	6.0	0.22	7
PM Peak Hour								
All-way STOP-control	B	13.7	-	-	C	18.6	-	-
Uncontrolled	C	19.3	0.57	27	A	5.8	0.20	6

Note: *Under the all-way STOP-control scenario, 95th percentile queue lengths and lane v/c ratios are not provided by the HCM methodology.*

From **Exhibit 2-4**, it can be seen that, under the two theoretical control scenarios, the eastbound left turn movement at the West Street & Station Street / Griffin Street North intersection would operate within capacity, with levels of service ranging from LOS 'B' to 'C'. Similarly, the northbound left turn movement at the intersection would operate at a LOS 'C' under an all-way-STOP condition.

Therefore, it can be concluded that operations associated with the eastbound left turn and northbound left turn movements at the West Street & Station Street / Griffin Street North intersection, under its current control configuration, are also operating within capacity limits and acceptable levels of service.

In general, under existing conditions, the study area intersections operate with sufficient reserve capacity during the weekday AM and PM peak hours. There are no intersections or movements that are considered to be operating at critical levels.

3 2025 Future Background Conditions

3.1 Horizon Year

As per the ***Niagara Region Guidelines for Transportation Impact Studies*** (May 2012), a five year horizon from the date of this TIS (i.e. year 2025) was utilized, which also correlates with the proposed development generating less than 500 peak hour direction trips upon completion, as discussed in **Section 4.2**.

3.2 Growth Rate

Based on the ***Niagara Region Official Plan*** (August 2014), the Township of West Lincoln's population is forecasted to increase from 16,000 (2016) to 16,900 (2031), which translates to a 0.4% annual growth rate. This rate was used as the future background traffic growth rate for the study area corridors (i.e. West Street (Regional Road 20) and Station Street / Griffin Street North), and is regarded as conservative, as every new resident is not expected to drive. Side street traffic volumes, such as on South Grimsby Road 6, Streamside Drive, and South Grimsby Road 5, were not subjected to the background traffic growth rate under the assumption that volumes on these roadways will not experience appreciable changes.

3.3 Background Developments

On October 2, 2018, IBI Group submitted a Transportation Impact Study for a proposed 14 acre residential subdivision development, also located in the Northwest Quadrant (as discussed in **Section 1.1**). This proposed 14 acre subdivision is slated to be located north of the proposed development and consists of 136 dwelling units (22 single detached units, 24 semi-detached units, and 90 standard townhouse units).

The trips generated by the proposed 14 acre subdivision are considered in the present analysis as background traffic, given that the generated volumes are likely to impact daily traffic patterns, as demonstrated in **Exhibit 3-1**.

Exhibit 3-1: Background Development Trip Generation (14 Acre Subdivision)

Land Use	Weekday AM Peak Hour			Weekday PM Peak Hour		
	In	Out	Total	In	Out	Total
Single Family Detached, 22 units (ITE LUC 210)	7	21	28	18	10	28
Semi-Detached, Townhomes, 114 units (ITE LUC 230)	11	45	56	48	27	75
Total Trips	**18**	**66**	**84**	**66**	**37**	**103**

Note: *ITE LUC – Institute of Transportation Engineers Land Use Code.*

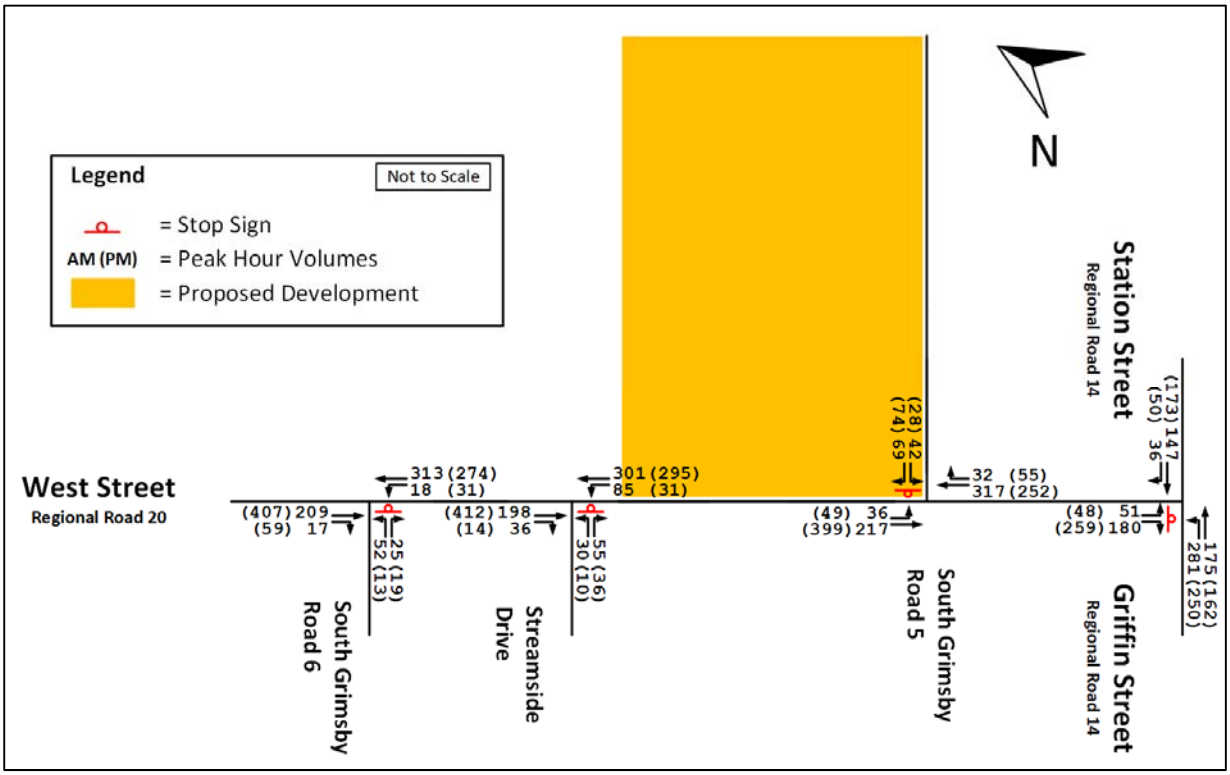
From the above exhibit, 84 (18 inbound and 66 outbound) and 103 (66 inbound and 37 outbound) trips are estimated to be generated by the proposed 14 acre residential subdivision during the weekday AM and PM peak hours, respectively.

Aside from the aforementioned proposed subdivision, there are no other notable background developments within the study area with the potential for generating additional traffic.

3.4 Analysis of Traffic Conditions

To establish the future background condition traffic volumes, the existing traffic volumes were grown to 2025 using a 0.4% annual growth rate and the trips generated by the background development were added. **Exhibit 3-2** illustrates 2025 future background traffic volumes during the weekday AM and PM peak hours.

Exhibit 3-2: 2025 Future Background Conditions Traffic Volumes



Note: *The arrows in this diagram do not represent the lane configuration and are meant to represent turning movements.*

Operations of the study area intersections by peak hour are summarized in **Exhibit 3-3**. Full 2025 future background Synchro reports are provided in **Appendix D**.

Exhibit 3-3: 2025 Future Background Conditions - Analysis Summary

Intersection	Intersection		Lane					
	LOS	Delay (s)	Mvmt	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	Storage Capacity (m)
AM Peak Hour								
West Street (RR 20) & South Grimsby Road 6	A	1.8	WBL	A	7.9	0.02	0	100
			NBL/R	B	13.1	0.16	4	-
West Street (RR 20) & Streamside Drive	A	2.6	WBL	A	8.1	0.07	2	80
			NBL/R	B	13.5	0.18	5	-
West Street (RR 20) & South Grimsby Road 5	A	2.5	EBL	A	8.1	0.03	1	65
			SBL/R	B	13.5	0.22	6	-
PM Peak Hour								
West Street (RR 20) & South Grimsby Road 6	A	0.9	WBL	A	8.5	0.03	1	100
			NBL/R	B	13.5	0.08	2	-
West Street (RR 20) & Streamside Drive	A	1.1	WBL	A	8.4	0.03	1	80
			NBL/R	B	12.8	0.10	3	-
West Street (RR 20) & South Grimsby Road 5	A	2.1	EBL	A	8.1	0.08	1	65
			SBL/R	B	14.0	0.04	6	-

Note: *LOS denotes level of service, while v/c represents the volume-to-capacity ratio.*

During the weekday AM and PM peak hours, the following traffic operations are anticipated:

- All study area intersections are expected to continue operating well within capacity limits (volume/capacity ratios < 1.00); and
- Queues are expected to not exceed their respective lane storage capacities.

As previously noted in **Section 2.5**, a sensitivity analysis was undertaken for the West Street & Station Street / Griffin Street North intersection to address the HCM methodology's inability of analyzing three-legged intersections whereby the side street and only one major street approach is subject to STOP control. This sensitivity analysis has been repeated for 2025 future background conditions to discern whether operations at this intersection are acceptable. **Exhibit 3-4** provides a summary of the results from the sensitivity analysis.

Exhibit 3-4: Sensitivity Analysis Summary for Station Street / Griffin Street Traffic Control – Future Background Conditions

Control Scenario at Station / Griffin Street Approaches	Critical Movement							
	EBL				NBL			
	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	LOS	Delay (s)	v/c Ratio	95th % Queue (m)
AM Peak Hour								
All-way STOP-control	B	11.8	-	-	C	20.7	-	-
Uncontrolled	C	19.6	0.51	22	A	6.0	0.23	7
PM Peak Hour								
All-way STOP-control	B	14.1	-	-	C	19.9	-	-
Uncontrolled	C	20.3	0.59	29	A	5.8	0.20	6

Note: *Under the all-way STOP-control scenario, 95th percentile queue lengths and lane v/c ratios are not provided by the HCM methodology.*

Based on **Exhibit 3-4**, the eastbound left turn movement at the West Street & Station Street / Griffin Street North intersection is expected to operate without any significant capacity constraints or delays during the weekday AM or PM peak hours under any of the theoretical control scenarios, as this movement's LOS ranges from LOS 'B' to 'C'. Similarly, the northbound left turn movement at this intersection is anticipated to operate at a LOS 'C' under all-way STOP conditions.

As there are no movements considered critical under any of these theoretical traffic control scenarios, it is expected that, under 2025 future background operations, this intersection will operate within capacity and at acceptable levels of service.

4 2025 Future Total Conditions

This section of the reports analyzes the impact of the proposed development on the future background conditions in 2025.

4.1 Proposed Development

The client is proposing to develop a 25 acre subdivision, consisting of 224 residential units and 1,303 m^2 (14,025 ft^2) of GFA of commercial space. This commercial space is concentrated at the southeast corner of the proposed development. The various types of residential units are tabulated in **Exhibit 4-1**.

Exhibit 4-1: Proposed Residential Unit Type Summary

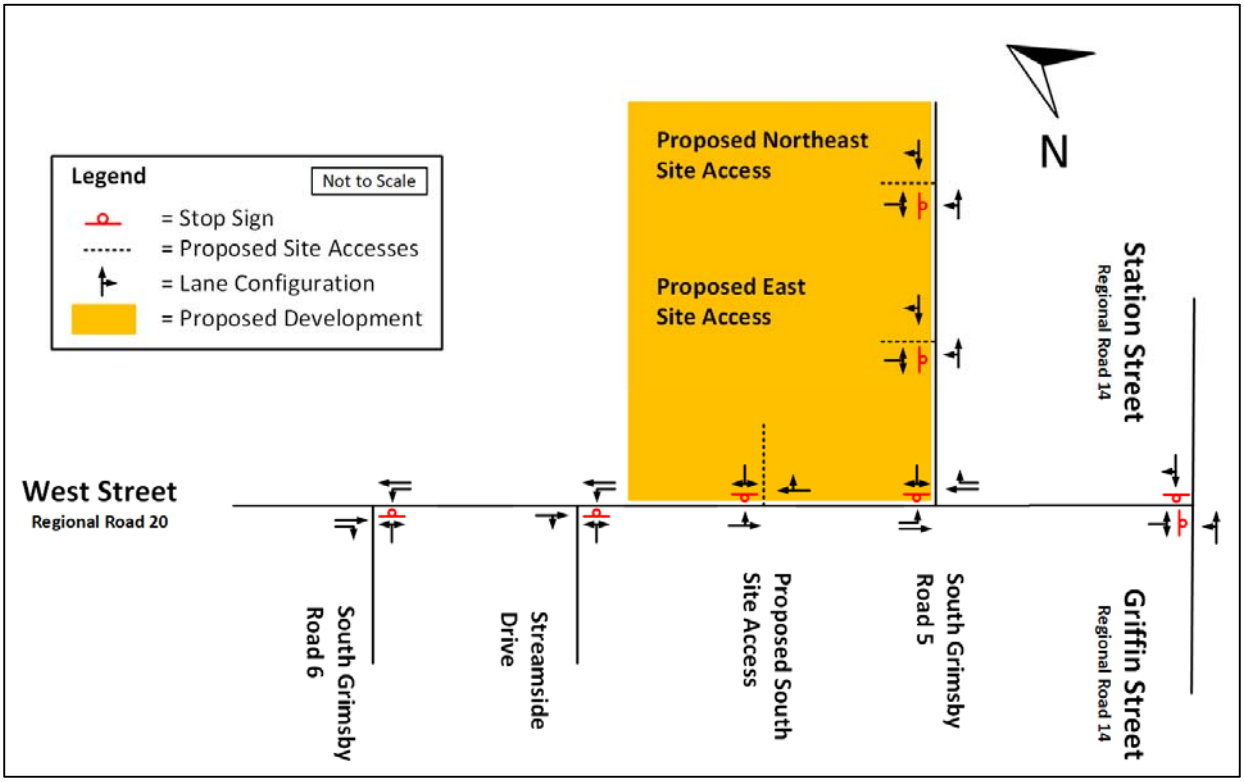
Unit Type	Unit Count
Bungalow Units	26
Back to Back Units	28
Townhouse Units	97
Single-Family Detached	41
Mixed-use Units (Ground Floor Commercial)	32
Total	**224**

As shown on the provided site plan (**Exhibit 1-3**), three full-movement accesses are proposed. One access will be provided at the south end of the proposed development, connecting to West Street. Two accesses will be provided on the southeast side of the proposed development to connect to South Grimsby Road 5.

There are also additional two potential accesses considered for the east side of the proposed development to connect to South Grimsby Road 5 from where cul-de-sacs are depicted on the site plan. These additional two accesses may be considered for construction at a future date. Due to the uncertain implementation timeframe, this TIS assumes that they will not be operational within the study's horizon timeframe and have therefore been excluded in the analysis presented herein.

The future lane configuration, with the proposed development, is illustrated in **Exhibit 4-2**.

Exhibit 4-2: Future Study Area Lane Configuration



4.2 Trip Generation

The gross trips anticipated to be generated by the proposed development are examined in this section.

4.2.1 Gross Trip Generation

Based on 41 single-family detached units, 183 multifamily housing units, and 14,025 ft^2 GFA of commercial space, as illustrated in **Exhibit 1-3**, trip generation rates were obtained from the Institute of Transportation Engineers (ITE) **Trip Generation Manual** (10^{th} edition). Land Use Codes 210 (Single Family Detached), 220 (Multifamily Housing (Low-Rise)), and 820 (Shopping Center) were utilized.

4.2.2 Trip Reductions

From the gross trips, 5 two-way trips (2 inbound and 3 outbound) have been subtracted in the weekday PM peak hour to account for internal trips (i.e. non-automotive trips made by residents to/from on-site retail).

A second reduction of 60% was applied in the weekday PM peak hour to account for pass-by retail trips. Pass-by trips arise from existing traffic on the roadway network that enter the proposed development as an intermediate stop on the way to another ultimate destination along the same travel route (i.e. the proposed development is not the destination for these drivers but rather a stop on the way to their destination). It should be noted that the retail space is assumed to be closed during the weekday AM peak hour, according to typical retail business hours, and so it will not generate any trips at this time.

As mentioned in **Section 2.2**, the transportation mode choice of residents is expected to remain automobile-dependent. Consequently, no trip reductions have been applied to account for other modes of transportation.

4.2.3 Trip Generation Summary

The estimated net new inbound and outbound vehicle trips for the proposed development are presented in **Exhibit 4-3**.

Exhibit 4-3: Trip Generation Summary

Land Use	Unit	Weekday AM Peak Hour			Weekday PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single Family Detached, 41 units (ITE LUC 210)	Trips/Unit	0.21	0.62	**0.83**	0.66	0.39	**1.05**
	%	25%	75%	**100%**	63%	37%	**100%**
	New Trips	**8**	**26**	**34**	**27**	**16**	**43**
Multifamily Housing (Low-Rise), 183 units (ITE LUC 220)	Trips/Unit	0.11	0.35	**0.46**	0.35	0.20	**0.55**
	%	23%	77%	**100%**	63%	37%	**100%**
	New Trips	**20**	**65**	**85**	**64**	**37**	**101**
Shopping Centre, 14,025 ft² (ITE LUC 820)	Trips/1000 ft²	-	-	**-**	4.34	4.71	**9.05**
	%	-	-	**-**	48%	52%	**100%**
	Gross Trips	-	-	**-**	61	66	**127**
	Internal Trips	-	-	**-**	*-2*	*-3*	***-5***
	Pass-by Trips (0% AM, 60% PM)	-	-	**-**	*-37*	*-40*	***-77***
	New Trips	**-**	**-**	**-**	**22**	**23**	**45**
Net New Trips		**28**	**91**	**119**	**113**	**76**	**189**

Based on **Exhibit 4-3**, the net new trips generated by the proposed development are estimated to be 119 vehicle trips during the weekday AM peak hour (28 inbound and 91 outbound) and 189 vehicle trips during the weekday PM peak hour (113 inbound and 76 outbound).

4.2.4 Trip Distribution and Assignment

According to the 2016 Transportation Tomorrow Survey (TTS), the study area falls within TTS zone 6360, which also includes the existing residential neighborhoods located east and southwest of the proposed development. As the proposed development is also planned for residential uses, travel data obtained from this TTS zone is deemed to be relevant and so inbound and outbound travel patterns were obtained for this TTS zone.

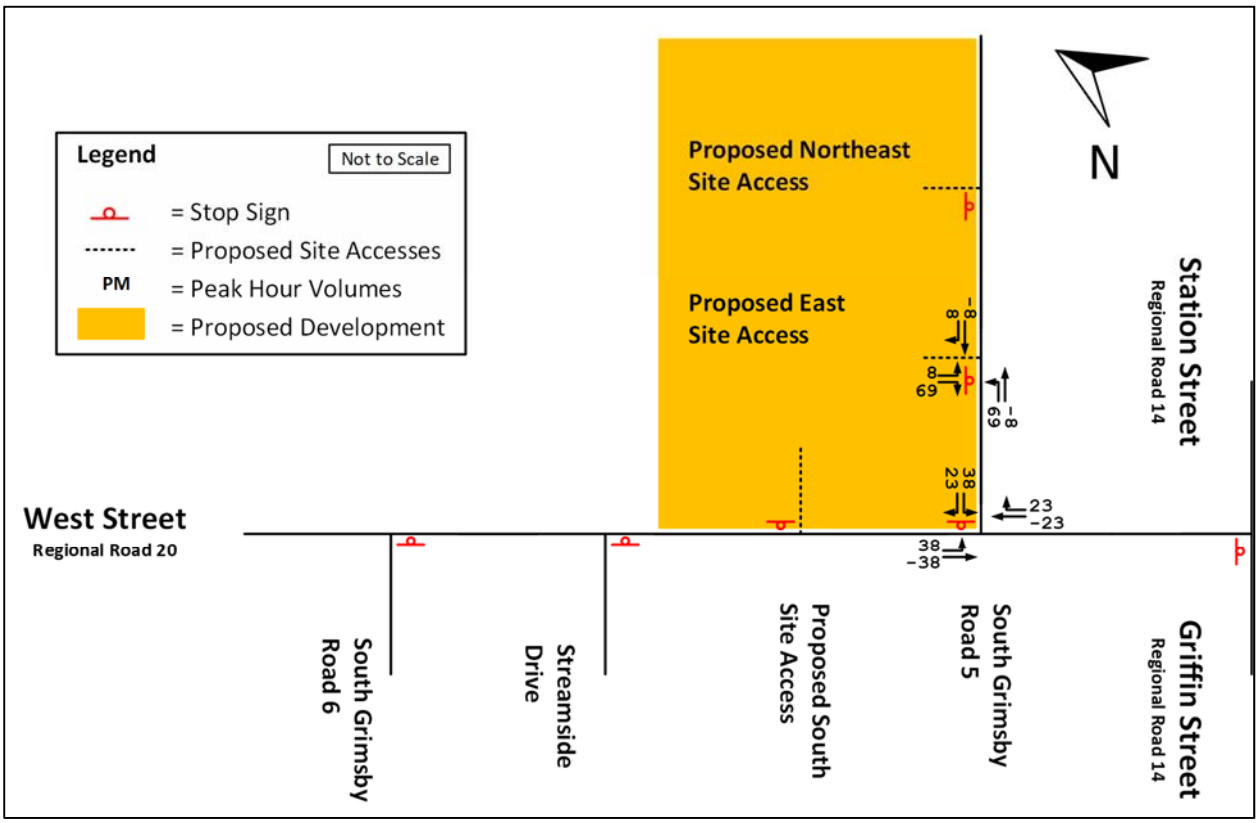
Exhibit 4-4 presents the distribution of inbound and outbound auto trips applicable to the study area. These distributions were applied to the weekday AM and PM peak hour trip generation estimates associated with the proposed development.

Exhibit 4-4: Trip Distribution for Proposed Development

Direction (To/From)	Inbound	Outbound
North	53%	35%
South	7%	3%
East	10%	10%
West	30%	52%
Total	**100%**	**100%**

By incorporating the above trip distribution, the pass-by trip assignment of weekday PM peak hour retail activity onto the study area road network is presented in **Exhibit 4-5**.

Exhibit 4-5: Weekday PM Peak Hour Retail Pass-by Trip Adjustment

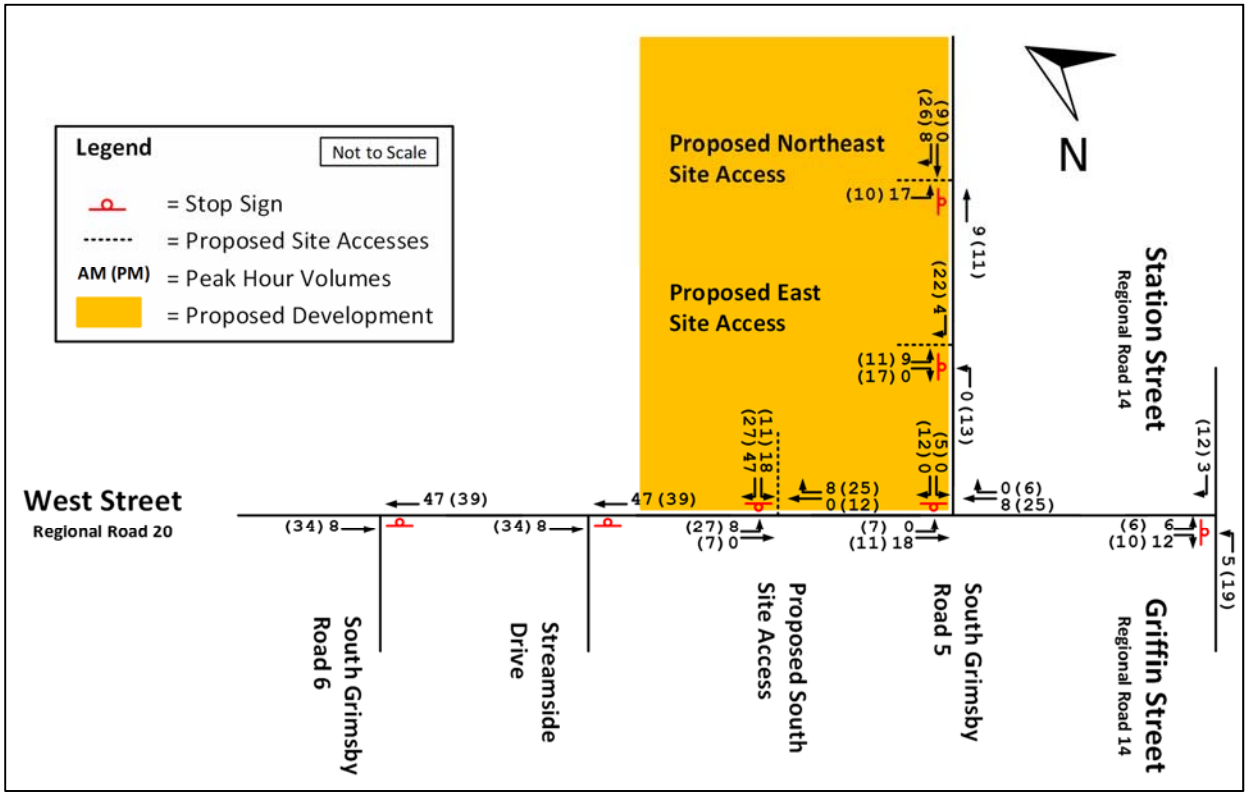


Note: *The arrows in this diagram do not represent the lane configuration and are meant to represent turning movements.*

The assignment of the net new site traffic volumes (i.e. gross trips subtracted by internal and pass-by traffic activity) is presented in **Exhibit 4-6.**

With regards to traffic movements to/from the north, there are two possible roads near the proposed development, namely South Grimsby Road 5 and Station Street. Based on the proximity of these roads to the proposed development accesses and surrounding road network, a preference split of 80% and 20% was assumed for drivers going to / arriving from the north.

Exhibit 4-6: Net New Site Traffic Volumes

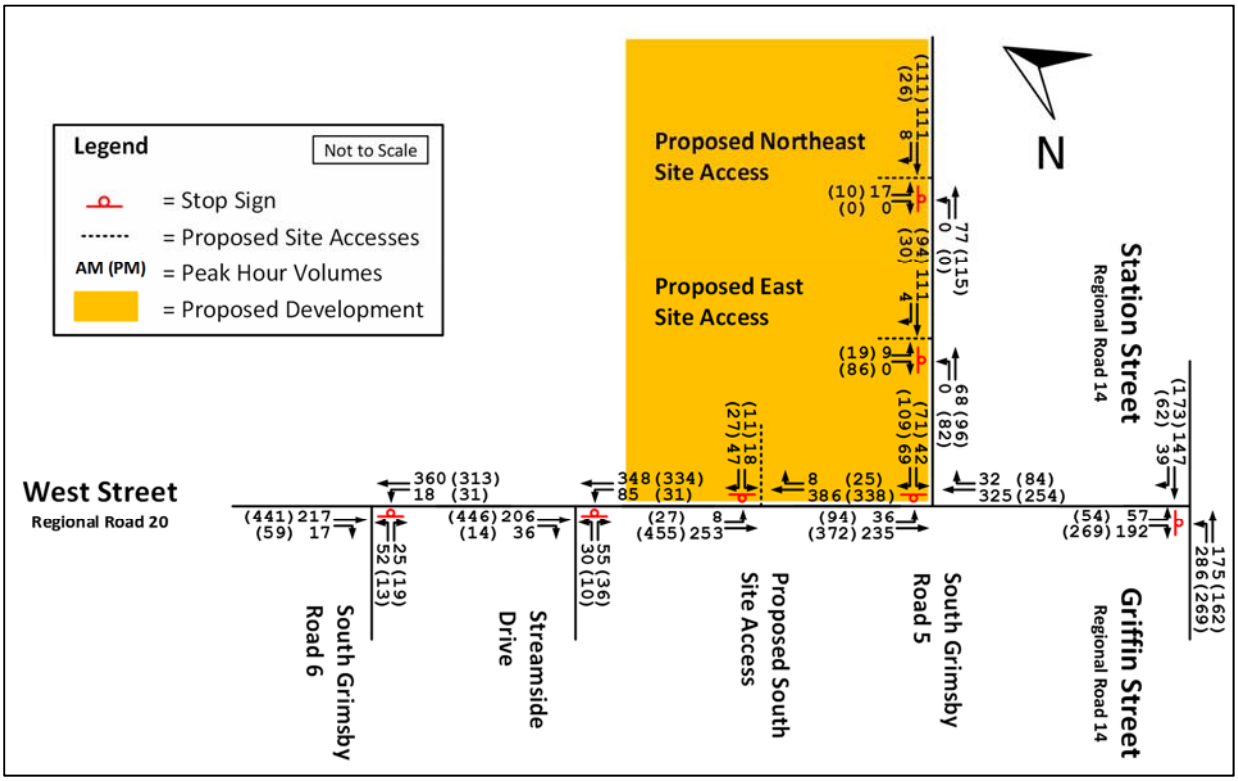


Note: *The arrows in this diagram do not represent the lane configuration and are meant to represent turning movements.*

4.3 Analysis of Traffic Conditions

Net new trips and pass-by trips resulting from the proposed development were added to the future background conditions scenario, producing the 2025 future total traffic volumes illustrated in **Exhibit 4-7**.

Exhibit 4-7: 2025 Future Total Traffic Volumes



Note: *The arrows in this diagram do not represent the lane configuration and are meant to represent turning movements.*

Traffic conditions associated with 2025 future total traffic volumes at the study area intersections (excluding the West Street & Station Street / Griffin Street North intersection, along with the accesses to the proposed development) were analyzed in Synchro, with the results summarized in **Exhibit 4-8.** Future total Synchro reports are provided in **Appendix E**.

Exhibit 4-8: 2025 Future Total Traffic Conditions - Analysis Summary

Intersection	Intersection		Lane					
	LOS	Delay (s)	Mvmt	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	Storage Capacity (m)
AM Peak Hour								
West Street (RR 20) & South Grimsby Road 6	A	1.8	WBL	A	7.9	0.02	0	100
			NBL/R	B	13.8	0.17	5	-
West Street (RR 20) & Streamside Drive	A	2.5	WBL	A	8.1	0.07	2	80
			NBL/R	B	14.1	0.19	5	-
West Street (RR 20) & South Grimsby Road 5	A	2.5	EBL	A	8.2	0.03	1	65
			SBL/R	B	13.7	0.13	3	-
PM Peak Hour								
West Street (RR 20) & South Grimsby Road 6	A	0.8	WBL	A	8.5	0.03	1	100
			NBL/R	B	13.4	0.10	2	-
West Street (RR 20) & Streamside Drive	A	1.0	WBL	A	8.5	0.03	1	80
			NBL/R	B	13.4	0.10	3	-
West Street (RR 20) & South Grimsby Road 5	A	4.7	EBL	A	8.4	0.09	2	65
			SBL/R	C	21.2	0.47	19	-

Note: *LOS denotes level of service, while v/c represents the volume-to-capacity ratio.*

During the weekday AM and PM peak hours, the following operations are anticipated:

- All study area intersections are expected to continue operating well within capacity limits (volume/capacity ratios < 1.00); and
- Queues are expected to be contained within their respective lane storage capacities.

Moreover, the sensitivity analysis for the West Street & Station Street / Griffin Street North intersection (as noted in **Section 2.5**) has been repeated for 2025 future total conditions to assess the operational performance of this intersection in consideration of site-generated traffic. The results of the 2025 future total sensitivity analysis are presented in **Exhibit 4-9**.

Exhibit 4-9: Sensitivity Analysis Summary for Station Street / Griffin Street Traffic Control – Future Total Conditions

Control Scenario at Station / Griffin Street Approaches	Critical Movement							
	EBL				NBL			
	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	LOS	Delay (s)	v/c Ratio	95th % Queue (m)
AM Peak Hour								
All-way STOP-control	B	12.4	-	-	C	22.1	-	-
Uncontrolled	C	22.0	0.57	26	A	6.1	0.23	7
PM Peak Hour								
All-way STOP-control	C	15.3	-	-	C	22.7	-	-
Uncontrolled	C	24.0	0.67	37	A	6.0	0.22	6

Note: *Under the all-way STOP-control scenario, 95th percentile queue lengths and lane v/c ratios are not provided by the HCM methodology.*

Under both theoretical control scenarios, the eastbound left turn movement at the West Street & Station Street / Griffin Street North intersection LOS ranges from LOS 'B' to 'C' during the weekday AM and PM peak hours under 2025 future total conditions. Thus, it is expected that under the existing control configuration, operations at this intersection will remain acceptable.

Furthermore, the northbound left turn movement is also expected to operate within acceptable conditions, based on the reported LOS 'C' under the theoretical all-way STOP-control scenario.

4.4 Proposed Development Access Operations

Exhibit 4-10 summarizes proposed development access operations under future total traffic operations.

Exhibit 4-10: Proposed Development Access Traffic Conditions - Analysis Summary

Intersection	Intersection		Lane					
	LOS	Delay (s)	Mvmt	LOS	Delay (s)	v/c Ratio	95th % Queue (m)	Storage Capacity (m)
AM Peak Hour								
West Street (RR 20) & Proposed South Site Access	A	1.3	EBL	A	0.3	0.01	0	-
			SBL/R	B		0.13	3	-
South Grimsby Road 5 & Proposed East Site Access	A	0.5	EBL/R	A	9.6	0.01	0	-
			NBL	A	0.0	0.00	0	-
South Grimsby Road 5 & Proposed Northeast Site Access	A	0.8	EBL/R	A	9.6	0.02	1	-
			NBL	A	0.0	0.00	0	-
PM Peak Hour								
West Street (RR 20) & Proposed South Site Access	A	1.0	EBL	A	0.7	0.02	1	-
			SBL/R	B	13.2	0.09	2	-
South Grimsby Road 5 & Proposed East Site Access	A	4.2	EBL/R	A	10.0	0.14	4	-
			NBL	A	3.8	0.06		-
South Grimsby Road 5 & Proposed Northeast Site Access	A	0.4	EBL/R	B	10.0	0.01	0	-
			NBL	A	0.0	0.00	0	-

Overall, all proposed accesses are expected to operate within capacity with acceptable levels of service during the weekday AM and PM peak hours.

5 Study Conclusions and Recommendations

IBI Group undertook a TIS for a 25 acre subdivision forming a part of the Northwest Quadrant Secondary Plan Lands. The proposed development, located west of South Grimsby Road 5, and north of West Street (Regional Road 20), consists of 224 residential units and approximately 1303 m^2 GFA of commercial space.

The conclusions of the study are summarized below.

- Overall, under 2020 existing conditions, the study area intersections operate within capacity and with acceptable levels of service during the weekday AM and PM peak hours.
- Under 2025 future background conditions with the existing road network maintained, the study area intersections are expected to continue to operate within capacity and with acceptable levels of service during the AM and PM peak hours.
- The proposed development is expected to generate a total of 119 (28 inbound and 91 outbound) and 189 (113 inbound and 76 outbound) net new trips during the weekday AM and PM peak hours, respectively. This is based on the full build-out of all proposed units at the proposed development.
- Transportation mode choice within the study area is expected to remain automobile dependent due to the absence of public transit service operating in the study area.
- Under 2025 future total traffic conditions, traffic operations are expected to be comparable to 2025 future background and 2020 existing operations. Traffic operations at the proposed development accesses are also anticipated to operate within capacity with acceptable levels of service.
- Therefore, no recommendations are necessary with regards to improving traffic operations and increasing road traffic capacity.

Appendix A

Turning Movement Counts

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Smithville
Site #: 1730100001
Intersection: West St (RR 20) & Grimsby Rd 6
TFR File #: 1
Count date: 18-Oct-17

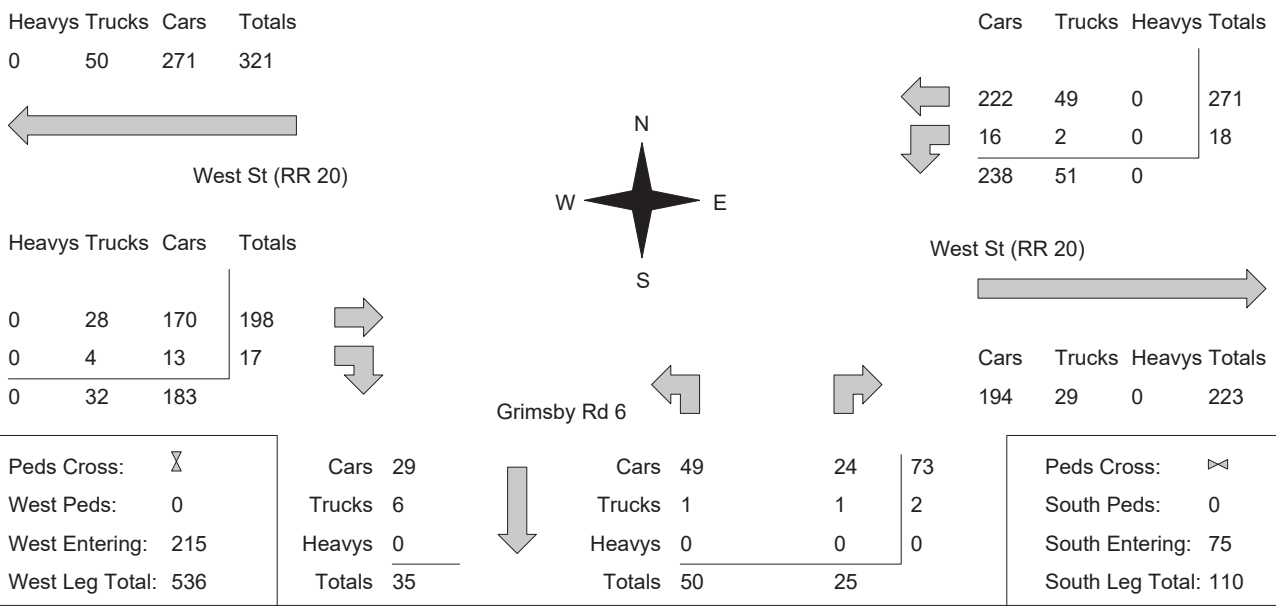
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: West St (RR 20) runs W/E

East Leg Total: 512
East Entering: 289
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 215
West Leg Total: 536

Peds Cross:
South Peds: 0
South Entering: 75
South Leg Total: 110

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

Municipality: Smithville
Site #: 1730100001
Intersection: West St (RR 20) & Grimsby Rd 6
TFR File #: 1
Count date: 18-Oct-17

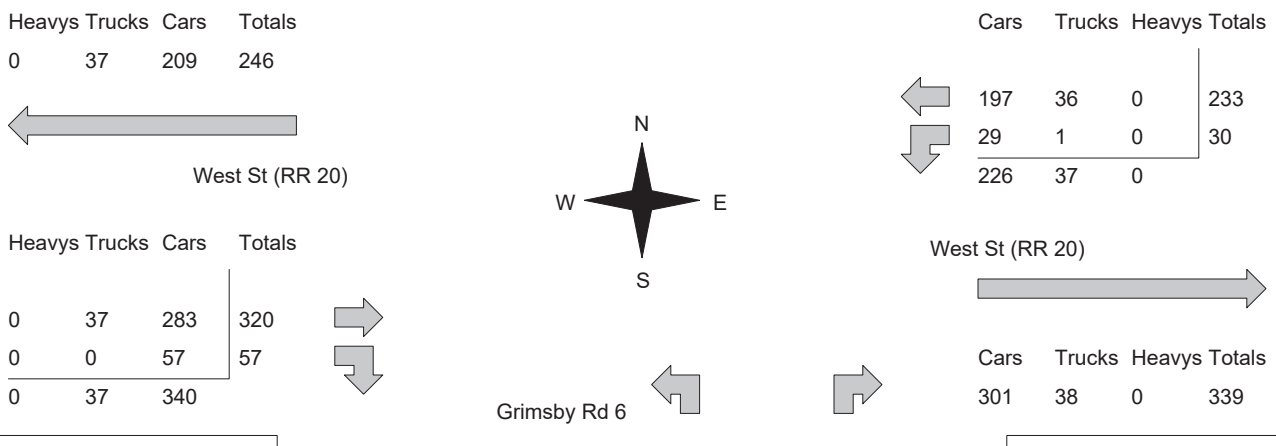
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: West St (RR 20) runs W/E

East Leg Total: 602
East Entering: 263
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 377
West Leg Total: 623

Cars 86
Trucks 1
Heavys 0
Totals 87

Cars 12 18 30
Trucks 1 1 2
Heavys 0 0 0
Totals 13 19

Peds Cross:
South Peds: 0
South Entering: 32
South Leg Total: 119

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Smithville
Site #: 1730100001
Intersection: West St (RR 20) & Grimsby Rd 6
TFR File #: 1
Count date: 18-Oct-17

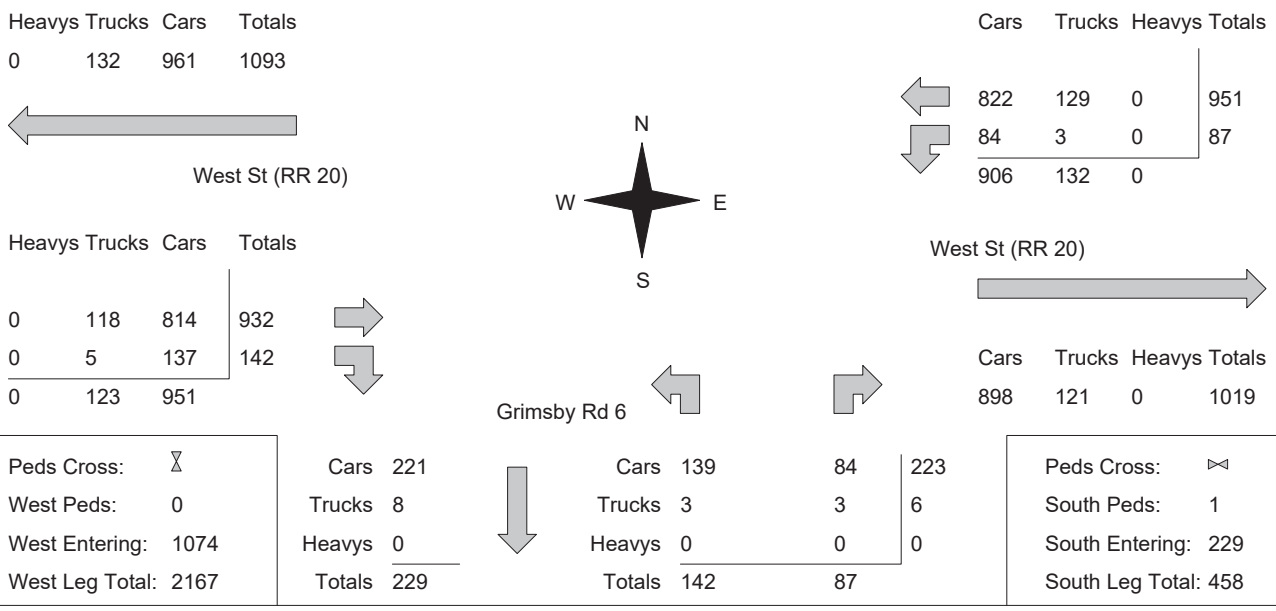
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: West St (RR 20) runs W/E

East Leg Total: 2057
East Entering: 1038
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 1074
West Leg Total: 2167

Cars 221
Trucks 8
Heavys 0
Totals 229

Cars 139 84 223
Trucks 3 3 6
Heavys 0 0 0
Totals 142 87

Peds Cross: ⋈
South Peds: 1
South Entering: 229
South Leg Total: 458

Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: West St (RR 20) & Grimsby Rd 6 | **Count Date:** 18-Oct-17 | **Municipality:** Smithville

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	0	0	0	0	0	80
9:00:00	0	0	0	0	0	75
16:00:00	0	0	0	0	0	3
17:00:00	0	0	0	0	0	34
18:00:00	0	0	0	0	0	37
Totals:	0	0	0	0	0	229

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	61	0	19	80	0
9:00:00	50	0	25	75	0
16:00:00	2	0	1	3	1
17:00:00	12	0	22	34	0
18:00:00	17	0	20	37	0
Totals:	142	0	87	229	1

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	3	0	3	0	5
8:00:00	9	290	0	299	0	437
9:00:00	18	271	0	289	0	504
16:00:00	2	4	0	6	0	15
17:00:00	29	231	0	260	0	630
18:00:00	29	150	0	179	0	519
Totals:	87	949	0	1036	0	2110

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	2	0	2	0
8:00:00	0	136	2	138	0
9:00:00	0	198	17	215	0
16:00:00	0	6	3	9	0
17:00:00	0	309	61	370	0
18:00:00	0	281	59	340	0
Totals:	0	932	142	1074	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	0:00	0:00	7:00	8:00	9:00	16:00	17:00	18:00
Crossing Values:	0	0	0	61	50	2	12	17

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	64	64	0	0	0	0	10	7	0	0	0	0	0	0	0	0	0	0
7:30:00	3	1	129	65	0	0	0	0	16	6	0	0	0	0	0	0	0	0	0	0
7:45:00	6	3	204	75	0	0	0	0	20	4	0	0	0	0	0	0	0	0	0	0
8:00:00	9	3	263	59	0	0	0	0	30	10	0	0	0	0	0	0	0	0	0	0
8:15:00	11	2	321	58	0	0	2	2	46	16	0	0	0	0	0	0	0	0	0	0
8:30:00	15	4	376	55	0	0	2	0	55	9	0	0	0	0	0	0	0	0	0	0
8:45:00	22	7	432	56	0	0	2	0	65	10	0	0	0	0	0	0	0	0	0	0
9:00:00	25	3	485	53	0	0	2	0	79	14	0	0	0	0	0	0	0	0	0	0
9:00:06	25	0	485	0	0	0	2	0	79	0	0	0	0	0	0	0	0	0	0	0
16:00:00	27	2	488	3	0	0	2	0	80	1	0	0	0	0	0	0	0	0	0	0
16:15:00	36	9	533	45	0	0	2	0	83	3	0	0	0	0	0	0	0	0	0	0
16:30:00	41	5	587	54	0	0	2	0	92	9	0	0	0	0	0	0	0	0	0	0
16:45:00	47	6	645	58	0	0	2	0	102	10	0	0	0	0	0	0	0	0	0	0
17:00:00	55	8	691	46	0	0	3	1	108	6	0	0	0	0	0	0	0	0	0	0
17:15:00	65	10	730	39	0	0	3	0	119	11	0	0	0	0	0	0	0	0	0	0
17:30:00	74	9	759	29	0	0	3	0	126	7	0	0	0	0	0	0	0	0	0	0
17:45:00	77	3	792	33	0	0	3	0	128	2	0	0	0	0	0	0	0	0	0	0
18:00:00	84	7	820	28	0	0	3	0	129	1	0	0	0	0	0	0	0	0	0	0
18:00:04	84	0	822	2	0	0	3	0	129	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	17	17	0	0	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	35	18	0	0	8	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	45	10	0	0	12	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	60	15	0	0	19	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	73	13	0	0	27	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	91	18	0	0	33	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	104	13	0	0	35	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	109	5	0	0	43	8	2	0	0	0	1	1	0	0	0	0	0	0	0	0
9:00:06	109	0	0	0	43	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
16:00:00	111	2	0	0	44	1	2	0	0	0	1	0	0	0	0	0	0	0	1	1
16:15:00	115	4	0	0	50	6	2	0	0	0	1	0	0	0	0	0	0	0	1	0
16:30:00	119	4	0	0	55	5	3	1	0	0	1	0	0	0	0	0	0	0	1	0
16:45:00	121	2	0	0	59	4	3	0	0	0	1	0	0	0	0	0	0	0	1	0
17:00:00	122	1	0	0	66	7	3	0	0	0	1	0	0	0	0	0	0	0	1	0
17:15:00	127	5	0	0	68	2	3	0	0	0	2	1	0	0	0	0	0	0	1	0
17:30:00	131	4	0	0	79	11	3	0	0	0	2	0	0	0	0	0	0	0	1	0
17:45:00	136	5	0	0	80	1	3	0	0	0	2	0	0	0	0	0	0	0	1	0
18:00:00	139	3	0	0	84	4	3	0	0	0	3	1	0	0	0	0	0	0	1	0
18:00:04	139	0	0	0	84	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	24	24	1	1	0	0	5	3	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	49	25	1	0	0	0	10	5	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	75	26	1	0	0	0	14	4	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	116	41	2	1	0	0	22	8	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	139	23	6	4	0	0	29	7	1	1	0	0	0	0	0	0	0	0
8:30:00	0	0	194	55	9	3	0	0	36	7	3	2	0	0	0	0	0	0	0	0
8:45:00	0	0	241	47	11	2	0	0	39	3	3	0	0	0	0	0	0	0	0	0
9:00:00	0	0	286	45	15	4	0	0	50	11	4	1	0	0	0	0	0	0	0	0
9:00:06	0	0	288	2	15	0	0	0	50	0	4	0	0	0	0	0	0	0	0	0
16:00:00	0	0	290	2	18	3	0	0	52	2	4	0	0	0	0	0	0	0	0	0
16:15:00	0	0	350	60	34	16	0	0	64	12	4	0	0	0	0	0	0	0	0	0
16:30:00	0	0	424	74	49	15	0	0	72	8	4	0	0	0	0	0	0	0	0	0
16:45:00	0	0	500	76	61	12	0	0	81	9	4	0	0	0	0	0	0	0	0	0
17:00:00	0	0	561	61	79	18	0	0	90	9	4	0	0	0	0	0	0	0	0	0
17:15:00	0	0	633	72	91	12	0	0	101	11	4	0	0	0	0	0	0	0	0	0
17:30:00	0	0	706	73	105	14	0	0	108	7	4	0	0	0	0	0	0	0	0	0
17:45:00	0	0	772	66	123	18	0	0	113	5	5	1	0	0	0	0	0	0	0	0
18:00:00	0	0	814	42	137	14	0	0	118	5	5	0	0	0	0	0	0	0	0	0
18:00:04	0	0	814	0	137	0	0	0	118	0	5	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Project #19382 - IBI Group

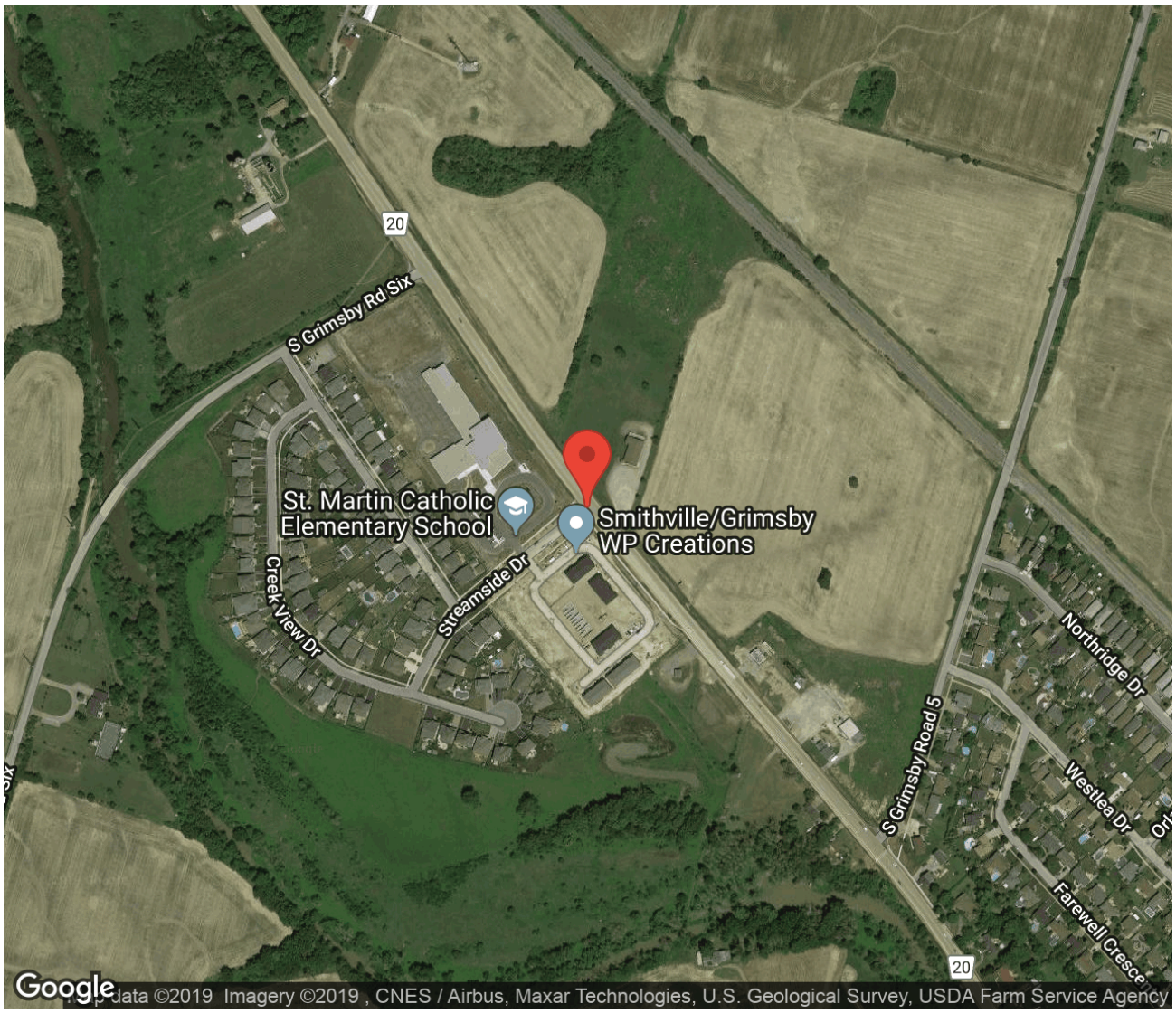
Intersection Count Report

Intersection:	West St (RR 20) & Streamside Dr
Municipality:	Smithville
Count Date:	Nov 25, 2019
Site Code:	1938200001
Count Categories:	Cars, Trucks, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Map

Intersection:	West St (RR 20) & Streamside Dr
Municipality:	Smithville
Count Date:	Nov 25, 2019



Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Summary

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

- Traffic Summary

Hour	North Approach Totals						South Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	170	8	0	178	0	17	321	0	0	338	0
08:00 - 09:00	0	180	31	0	211	0	83	232	0	0	315	0
BREAK												
16:00 - 17:00	0	384	14	0	398	0	30	253	0	0	283	0
17:00 - 18:00	0	360	18	0	378	0	11	216	0	0	227	0
GRAND TOTAL	**0**	**1094**	**71**	**0**	**1165**	**0**	**141**	**1022**	**0**	**0**	**1163**	**0**

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Summary

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

- Traffic Summary

	East Approach Totals						West Approach Totals					
	Includes Cars, Trucks						Includes Cars, Trucks					
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds
07:00 - 08:00	0	0	1	0	1	0	26	1	13	0	40	0
08:00 - 09:00	0	0	1	0	1	0	29	0	54	0	83	6
BREAK												
16:00 - 17:00	0	0	0	0	0	0	10	0	35	0	45	0
17:00 - 18:00	0	0	0	0	0	0	6	0	20	0	26	0
GRAND TOTAL	**0**	**0**	**2**	**0**	**2**	**0**	**71**	**1**	**122**	**0**	**194**	**6**

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

North Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	0	32	0	0	32	0	2	0	0	2	0
07:15	0	36	2	0	38	0	7	0	0	7	0
07:30	0	29	2	0	31	0	8	0	0	8	0
07:45	0	50	3	0	53	0	6	1	0	7	0
08:00	0	37	4	0	41	0	6	0	0	6	0
08:15	0	37	5	0	42	0	4	0	0	4	0
08:30	0	44	5	0	49	0	4	1	0	5	0
08:45	0	42	13	0	55	0	6	3	0	9	0
SUBTOTAL	0	307	34	0	341	0	43	5	0	48	0

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

North Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	0	88	5	0	93	0	12	0	0	12	0
16:15	0	92	4	0	96	0	10	0	0	10	0
16:30	0	93	3	0	96	0	5	0	0	5	0
16:45	0	76	2	0	78	0	8	0	0	8	0
17:00	0	92	5	0	97	0	5	0	0	5	0
17:15	0	86	6	0	92	0	4	0	0	4	0
17:30	0	84	3	0	87	0	2	0	0	2	0
17:45	0	85	4	0	89	0	2	0	0	2	0
SUBTOTAL	0	696	32	0	728	0	48	0	0	48	0
GRAND TOTAL	**0**	**1003**	**66**	**0**	**1069**	**0**	**91**	**5**	**0**	**96**	**0**

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

South Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	4	67	0	0	71	0	4	0	0	4	0
07:15	6	74	0	0	80	0	4	0	0	4	0
07:30	3	87	0	0	90	0	12	0	0	12	0
07:45	3	66	0	0	69	1	7	0	0	8	0
08:00	5	57	0	0	62	0	10	0	0	10	0
08:15	10	44	0	0	54	0	10	0	0	10	0
08:30	19	40	0	0	59	0	10	0	0	10	0
08:45	40	52	0	0	92	9	9	0	0	18	0
SUBTOTAL	90	487	0	0	577	10	66	0	0	76	0

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

South Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
16:00	3	59	0	0	62	1	5	0	0	6	0
16:15	10	49	0	0	59	0	4	0	0	4	0
16:30	9	73	0	0	82	0	4	0	0	4	0
16:45	7	55	0	0	62	0	4	0	0	4	0
17:00	1	60	0	0	61	0	4	0	0	4	0
17:15	4	59	0	0	63	0	2	0	0	2	0
17:30	1	59	0	0	60	0	2	0	0	2	0
17:45	5	29	0	0	34	0	1	0	0	1	0
SUBTOTAL	40	443	0	0	483	1	26	0	0	27	0
GRAND TOTAL	**130**	**930**	**0**	**0**	**1060**	**11**	**92**	**0**	**0**	**103**	**0**

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

East Approach -

Start Time	Cars					Trucks					Total Peds
					Total					Total	
07:00	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	1	0	1	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	1	0	1	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	2	0	2	0	0	0	0	0	0

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

East Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	0	0	2	0	2	0	0	0	0	0	0

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

West Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↻	Total	↰	↑	↱	↻	Total	
07:00	1	0	0	0	1	0	0	0	0	0	0
07:15	8	0	3	0	11	0	0	1	0	1	0
07:30	7	1	3	0	11	0	0	0	0	0	0
07:45	10	0	6	0	16	0	0	0	0	0	0
08:00	1	0	6	0	7	3	0	2	0	5	0
08:15	5	0	6	0	11	0	0	0	0	0	1
08:30	3	0	4	0	7	0	0	0	0	0	1
08:45	13	0	32	0	45	4	0	4	0	8	4
SUBTOTAL	48	1	60	0	109	7	0	7	0	14	6

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Traffic Count Data

Intersection: West St (RR 20) & Streamside Dr
Municipality: Smithville
Count Date: Nov 25, 2019

West Approach -

Start Time	Cars					Trucks					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	4	0	17	0	21	0	0	0	0	0	0
16:15	4	0	7	0	11	0	0	0	0	0	0
16:30	0	0	7	0	7	0	0	0	0	0	0
16:45	2	0	4	0	6	0	0	0	0	0	0
17:00	1	0	4	0	5	0	0	0	0	0	0
17:15	1	0	6	0	7	0	0	0	0	0	0
17:30	4	0	8	0	12	0	0	0	0	0	0
17:45	0	0	2	0	2	0	0	0	0	0	0
SUBTOTAL	16	0	55	0	71	0	0	0	0	0	0
GRAND TOTAL	**64**	**1**	**115**	**0**	**180**	**7**	**0**	**7**	**0**	**14**	**6**

Peak Hour Diagram

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: West St (RR 20) & Streamside Dr
Site ID: 1938200001
Count Date: Nov 25, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: runs N/S

North Approach

	Out	In	Total
Cars	187	216	403
Trucks	24	46	70
	211	**262**	**473**

Trucks	4	20	0	0
Cars	27	160	0	0
Totals	**31**	**180**	**0**	**0**

Peds: 0

Trucks	Cars	Totals	
0	0	**0**	
7	22	**29**	
0	0	**0**	
6	48	**54**	

Peds: 6

Peds: 0

Totals	Cars	Trucks
0	0	0
1	1	0
0	0	0
0	0	0

East Approach

	Out	In	Total
Cars	1	0	1
Trucks	0	0	0
	1	**0**	**1**

Peds: 0

West Approach

	Out	In	Total
Cars	70	101	171
Trucks	13	13	26
	83	**114**	**197**

Totals	**83**	**232**	**0**	**0**
Cars	74	193	0	0
Trucks	9	39	0	0

South Approach

	Out	In	Total
Cars	267	208	475
Trucks	48	26	74
	315	**234**	**549**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: West St (RR 20) & Streamside Dr
Count Date: Nov 25, 2019
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach						South Approach						East Approach						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	43	4	0	0	47	5	67	0	0	0	72	0	0	0	0	0	0	4	0	8	0	0	12	131
08:15	0	41	5	0	0	46	10	54	0	0	0	64	0	0	0	0	0	0	5	0	6	0	1	11	121
08:30	0	48	6	0	0	54	19	50	0	0	0	69	0	0	1	0	0	1	3	0	4	0	1	7	131
08:45	0	48	16	0	0	64	49	61	0	0	0	110	0	0	0	0	0	0	17	0	36	0	4	53	227
Grand Total	**0**	**180**	**31**	**0**	**0**	**211**	**83**	**232**	**0**	**0**	**0**	**315**	**0**	**0**	**1**	**0**	**0**	**1**	**29**	**0**	**54**	**0**	**6**	**83**	**610**
Approach %	0	85.3	14.7	0		-	26.3	73.7	0	0		-	0	0	100	0		-	34.9	0	65.1	0		-	
Totals %	0	29.5	5.1	0		34.6	13.6	38	0	0		51.6	0	0	0.2	0		0.2	4.8	0	8.9	0		13.6	
PHF	**0**	**0.94**	**0.48**	**0**		**0.82**	**0.42**	**0.87**	**0**	**0**		**0.72**	**0**	**0**	**0.25**	**0**		**0.25**	**0.43**	**0**	**0.38**	**0**		**0.39**	**0.67**
Cars	0	160	27	0		187	74	193	0	0		267	0	0	1	0		1	22	0	48	0		70	525
% Cars	0	88.9	87.1	0		88.6	89.2	83.2	0	0		84.8	0	0	100	0		100	75.9	0	88.9	0		84.3	86.1
Trucks	0	20	4	0		24	9	39	0	0		48	0	0	0	0		0	7	0	6	0		13	85
% Trucks	0	11.1	12.9	0		11.4	10.8	16.8	0	0		15.2	0	0	0	0		0	24.1	0	11.1	0		15.7	13.9
Peds					0	-					0	-					0	-					6	-	6
% Peds					0	-					0	-					0	-					100	-	

Peak Hour Diagram

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: West St (RR 20) & Streamside Dr
Site ID: 1938200001
Count Date: Nov 25, 2019

Weather conditions:

**** Unsignalized Intersection ****

Major Road: runs N/S

North Approach

	Out	In	Total
Cars	363	246	609
Trucks	35	17	52
	398	**263**	**661**

East Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

West Approach

	Out	In	Total
Cars	45	43	88
Trucks	0	1	1
	45	**44**	**89**

South Approach

	Out	In	Total
Cars	265	384	649
Trucks	18	35	53
	283	**419**	**702**

Trucks	0	35	0	0
Cars	14	349	0	0
Totals	**14**	**384**	**0**	**0**

Peds: 0

Trucks	Cars	Totals
0	0	**0**
0	10	**10**
0	0	**0**
0	35	**35**

Peds: 0

Peds: 0

Totals	Cars	Trucks
0	0	0
0	0	0
0	0	0
0	0	0

Peds: 0

Totals	**30**	**253**	**0**	**0**
Cars	29	236	0	0
Trucks	1	17	0	0

- Cars

- Trucks

Comments

Ontario Traffic Inc.
TRAFFIC MONITORING SERVICES & PRODUCTS

Peak Hour Summary

Intersection: West St (RR 20) & Streamside Dr
Count Date: Nov 25, 2019
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach						South Approach						East Approach						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	0	100	5	0	0	105	4	64	0	0	0	68	0	0	0	0	0	0	4	0	17	0	0	21	194
16:15	0	102	4	0	0	106	10	53	0	0	0	63	0	0	0	0	0	0	4	0	7	0	0	11	180
16:30	0	98	3	0	0	101	9	77	0	0	0	86	0	0	0	0	0	0	0	0	7	0	0	7	194
16:45	0	84	2	0	0	86	7	59	0	0	0	66	0	0	0	0	0	0	2	0	4	0	0	6	158
Grand Total	**0**	**384**	**14**	**0**	**0**	**398**	**30**	**253**	**0**	**0**	**0**	**283**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**35**	**0**	**0**	**45**	**726**
Approach %	0	96.5	3.5	0		-	10.6	89.4	0	0		-	0	0	0	0		-	22.2	0	77.8	0		-	
Totals %	0	52.9	1.9	0		54.8	4.1	34.8	0	0		39	0	0	0	0		0	1.4	0	4.8	0		6.2	
PHF	**0**	**0.94**	**0.7**	**0**		**0.94**	**0.75**	**0.82**	**0**	**0**		**0.82**	**0**	**0**	**0**	**0**		**0**	**0.63**	**0**	**0.51**	**0**		**0.54**	**0.94**
Cars	0	349	14	0		363	29	236	0	0		265	0	0	0	0		0	10	0	35	0		45	673
% Cars	0	90.9	100	0		91.2	96.7	93.3	0	0		93.6	0	0	0	0		0	100	0	100	0		100	92.7
Trucks	0	35	0	0		35	1	17	0	0		18	0	0	0	0		0	0	0	0	0		0	53
% Trucks	0	9.1	0	0		8.8	3.3	6.7	0	0		6.4	0	0	0	0		0	0	0	0	0		0	7.3
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Smithville
Site #: 1730100002
Intersection: West St (RR 20) & Grimsby Rd 5
TFR File #: 23
Count date: 18-Oct-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: West St (RR 20) runs W/E

North Leg Total: 127
North Entering: 70
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	1	1	2
Cars	30	35	68
Totals	31	36	

Heavys	0
Trucks	5
Cars	52
Totals	57

East Leg Total: 515
East Entering: 297
East Peds: 11
Peds Cross: ⧖

Grimsby Rd 5

Heavys	Trucks	Cars	Totals
0	47	250	297

Cars	Trucks	Heavys	Totals
23	5	0	28
220	46	0	266
246	51	0	

West St (RR 20)

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	29	29
0	25	156	181
0	25	185	

West St (RR 20)

Cars	Trucks	Heavys	Totals
192	26	0	218

Peds Cross: ⧖
West Peds: 0
West Entering: 210
West Leg Total: 507

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

Municipality: Smithville
Site #: 1730100002
Intersection: West St (RR 20) & Grimsby Rd 5
TFR File #: 23
Count date: 18-Oct-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: West St (RR 20) runs W/E

North Leg Total: 69
North Entering: 19
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	4	2	6
Cars	9	4	13
Totals	13	6	

Heavys	0
Trucks	2
Cars	48
Totals	50

East Leg Total: 584
East Entering: 274
East Peds: 0
Peds Cross: ⧖

Grimsby Rd 5

Heavys	Trucks	Cars	Totals
0	37	218	255

Cars	Trucks	Heavys	Totals
31	1	0	32
209	33	0	242
240	34	0	

West St (RR 20)

N
W E
S

Heavys	Trucks	Cars	Totals
0	1	17	18
0	40	264	304
0	41	281	

West St (RR 20)

Cars	Trucks	Heavys	Totals
268	42	0	310

Peds Cross: ⧖
West Peds: 0
West Entering: 322
West Leg Total: 577

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Smithville
Site #: 1730100002
Intersection: West St (RR 20) & Grimsby Rd 5
TFR File #: 23
Count date: 18-Oct-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

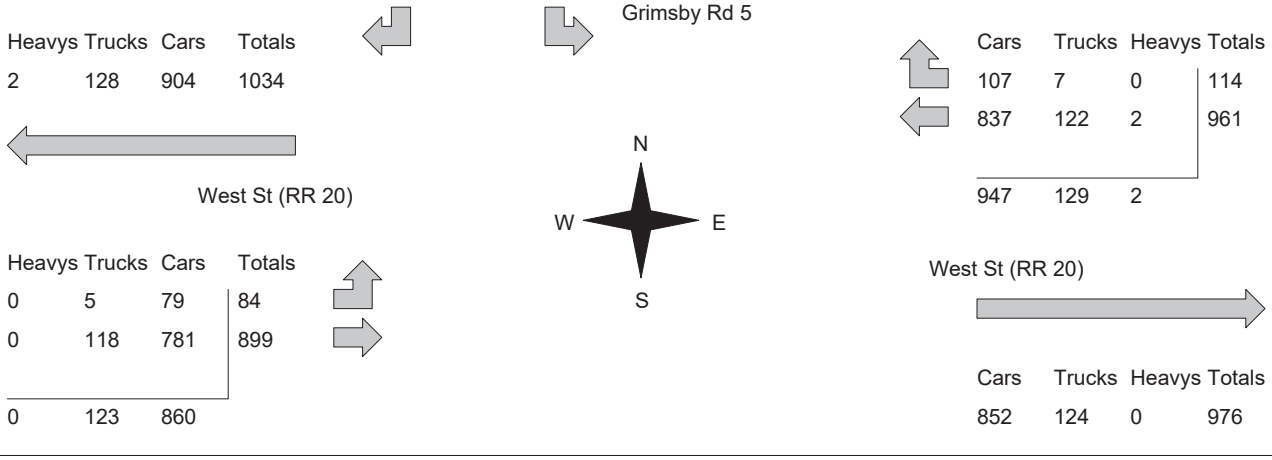
Major Road: West St (RR 20) runs W/E

North Leg Total: 352
North Entering: 153
North Peds: 0
Peds Cross: ⋈

Heavys	0	0	0
Trucks	6	6	12
Cars	67	70	141
Totals	73	76	

Heavys	0
Trucks	13
Cars	186
Totals	199

East Leg Total: 2054
East Entering: 1078
East Peds: 17
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 983
West Leg Total: 2017

Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: West St (RR 20) & Grimsby Rd 5 | **Count Date:** 18-Oct-17 | **Municipality:** Smithville

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	37	2	22	61	0	61
9:00:00	27	2	25	54	0	56
16:00:00	0	0	0	0	0	0
17:00:00	7	0	11	18	0	18
18:00:00	5	0	15	20	0	20
Totals:	76	4	73	153	0	155

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0
9:00:00	0	1	1	2	0
16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0
Totals:	0	1	1	2	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	1	1	0	2
8:00:00	2	275	26	303	0	462
9:00:00	1	276	20	297	15	520
16:00:00	0	4	0	4	0	8
17:00:00	0	249	29	278	2	588
18:00:00	0	157	38	195	0	481
Totals:	3	961	114	1078	17	2061

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	1	0	1	0
8:00:00	20	139	0	159	0
9:00:00	31	192	0	223	0
16:00:00	1	3	0	4	0
17:00:00	16	294	0	310	0
18:00:00	16	270	0	286	0
Totals:	84	899	0	983	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	0:00	0:00	7:00	8:00	9:00	16:00	17:00	18:00
Crossing Values:	0	0	0	39	44	0	9	5

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100002

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	8	8	0	0	3	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0
7:30:00	14	6	0	0	5	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:45:00	22	8	0	0	11	6	1	1	0	0	1	0	0	0	0	0	0	0	0	0
8:00:00	36	14	2	2	21	10	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15:00	40	4	2	0	27	6	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:30:00	51	11	3	1	28	1	1	0	0	0	2	1	0	0	0	0	0	0	0	0
8:45:00	57	6	3	0	41	13	2	1	0	0	2	0	0	0	0	0	0	0	0	0
9:00:00	62	5	4	1	45	4	2	0	0	0	2	0	0	0	0	0	0	0	0	0
9:01:16	62	0	4	0	45	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
16:00:00	62	0	4	0	45	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
16:15:00	63	1	4	0	46	1	3	1	0	0	2	0	0	0	0	0	0	0	0	0
16:30:00	64	1	4	0	48	2	3	0	0	0	2	0	0	0	0	0	0	0	0	0
16:45:00	66	2	4	0	50	2	4	1	0	0	4	2	0	0	0	0	0	0	0	0
17:00:00	67	1	4	0	54	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0
17:15:00	67	0	4	0	55	1	5	1	0	0	6	2	0	0	0	0	0	0	0	0
17:30:00	68	1	4	0	59	4	5	0	0	0	6	0	0	0	0	0	0	0	0	0
17:45:00	70	2	4	0	66	7	5	0	0	0	6	0	0	0	0	0	0	0	0	0
18:00:00	70	0	4	0	67	1	6	1	0	0	6	0	0	0	0	0	0	0	0	0
18:04:56	70	0	4	0	67	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100002

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
7:15:00	0	0	60	60	4	4	0	0	7	7	1	0	0	0	0	0	0	0	0	0
7:30:00	0	0	122	62	11	7	0	0	13	6	1	0	0	0	0	0	0	0	0	0
7:45:00	0	0	195	73	16	5	0	0	17	4	1	0	0	0	0	0	0	0	0	0
8:00:00	2	2	248	53	25	9	0	0	27	10	2	1	0	0	0	0	0	0	0	0
8:15:00	2	0	303	55	31	6	0	0	45	18	2	0	0	0	0	0	0	0	2	2
8:30:00	2	0	364	61	34	3	0	0	53	8	3	1	0	0	0	0	0	0	2	0
8:45:00	3	1	415	51	39	5	0	0	63	10	6	3	0	0	0	0	0	0	11	9
9:00:00	3	0	472	57	41	2	0	0	77	14	6	0	0	0	2	2	0	0	15	4
9:01:16	3	0	476	4	41	0	0	0	77	0	6	0	0	0	2	0	0	0	15	0
16:00:00	3	0	476	0	41	0	0	0	77	0	6	0	0	0	2	0	0	0	15	0
16:15:00	3	0	535	59	46	5	0	0	80	3	6	0	0	0	2	0	0	0	17	2
16:30:00	3	0	589	54	60	14	0	0	89	9	7	1	0	0	2	0	0	0	17	0
16:45:00	3	0	653	64	64	4	0	0	97	8	7	0	0	0	2	0	0	0	17	0
17:00:00	3	0	698	45	69	5	0	0	104	7	7	0	0	0	2	0	0	0	17	0
17:15:00	3	0	744	46	77	8	0	0	113	9	7	0	0	0	2	0	0	0	17	0
17:30:00	3	0	774	30	87	10	0	0	119	6	7	0	0	0	2	0	0	0	17	0
17:45:00	3	0	800	26	103	16	0	0	121	2	7	0	0	0	2	0	0	0	17	0
18:00:00	3	0	837	37	107	4	0	0	122	1	7	0	0	0	2	0	0	0	17	0
18:04:56	3	0	837	0	107	0	0	0	122	0	7	0	0	0	2	0	0	0	17	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100002

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
9:01:16	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
18:04:56	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100002

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:15:00	4	4	23	23	0	0	1	1	3	2	0	0	0	0	0	0	0	0	0	0
7:30:00	8	4	51	28	0	0	2	1	7	4	0	0	0	0	0	0	0	0	0	0
7:45:00	13	5	79	28	0	0	2	0	11	4	0	0	0	0	0	0	0	0	0	0
8:00:00	18	5	121	42	0	0	2	0	19	8	0	0	0	0	0	0	0	0	0	0
8:15:00	30	12	143	22	0	0	2	0	26	7	0	0	0	0	0	0	0	0	0	0
8:30:00	40	10	189	46	0	0	2	0	33	7	0	0	0	0	0	0	0	0	0	0
8:45:00	42	2	235	46	0	0	2	0	36	3	0	0	0	0	0	0	0	0	0	0
9:00:00	49	7	283	48	0	0	2	0	49	13	0	0	0	0	0	0	0	0	0	0
9:01:16	49	0	286	3	0	0	3	1	49	0	0	0	0	0	0	0	0	0	0	0
16:00:00	49	0	286	0	0	0	3	0	49	0	0	0	0	0	0	0	0	0	0	0
16:15:00	51	2	345	59	0	0	4	1	60	11	0	0	0	0	0	0	0	0	0	0
16:30:00	57	6	413	68	0	0	4	0	68	8	0	0	0	0	0	0	0	0	0	0
16:45:00	64	7	482	69	0	0	4	0	78	10	0	0	0	0	0	0	0	0	0	0
17:00:00	64	0	542	60	0	0	4	0	87	9	0	0	0	0	0	0	0	0	0	0
17:15:00	68	4	609	67	0	0	5	1	100	13	0	0	0	0	0	0	0	0	0	0
17:30:00	72	4	685	76	0	0	5	0	107	7	0	0	0	0	0	0	0	0	0	0
17:45:00	77	5	740	55	0	0	5	0	112	5	0	0	0	0	0	0	0	0	0	0
18:00:00	79	2	781	41	0	0	5	0	118	6	0	0	0	0	0	0	0	0	0	0
18:04:56	79	0	781	0	0	0	5	0	118	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

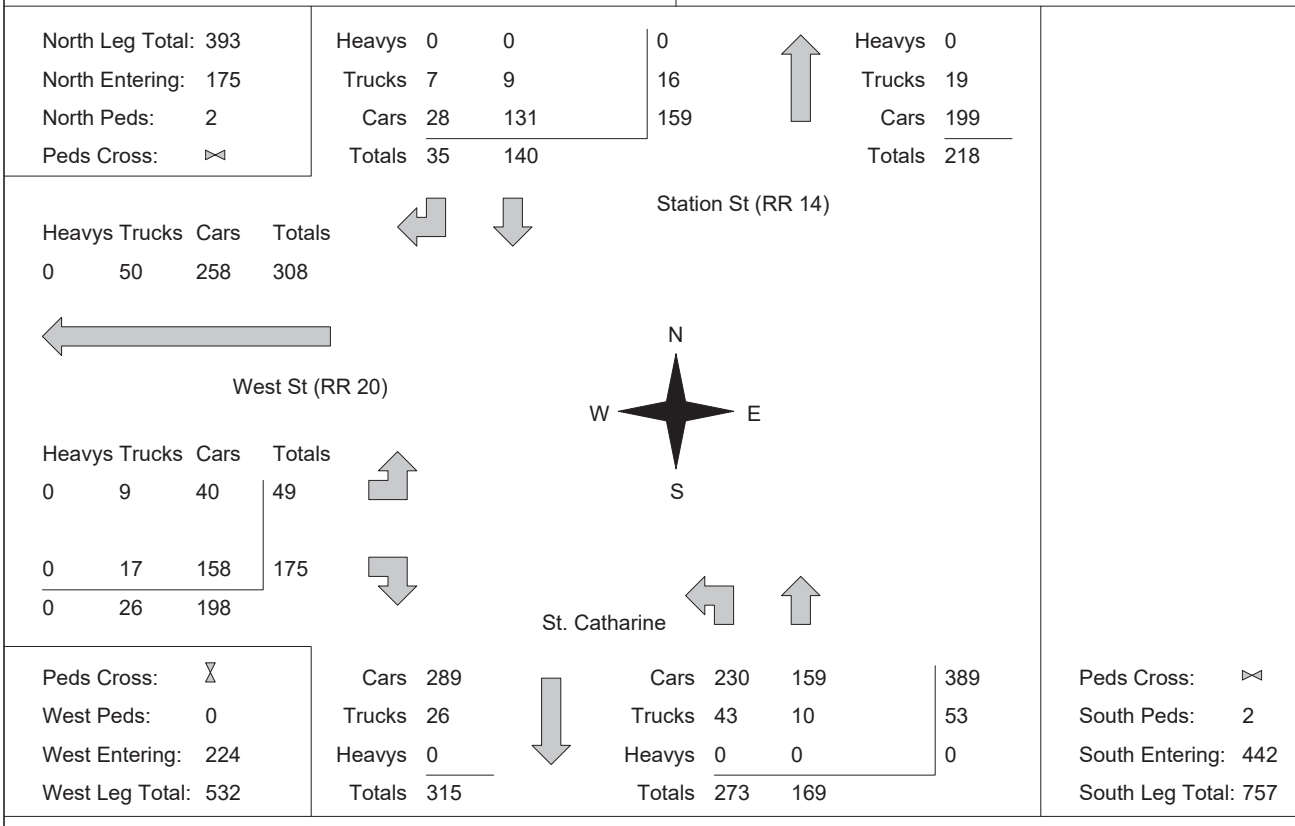
Municipality: Smithville
Site #: 1730100004
Intersection: Station St (RR 14)-St. Catharine & \
TFR File #: 4
Count date: 18-Oct-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Station St (RR 14)-St. Catharine rur



Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:00:00
To: 17:00:00

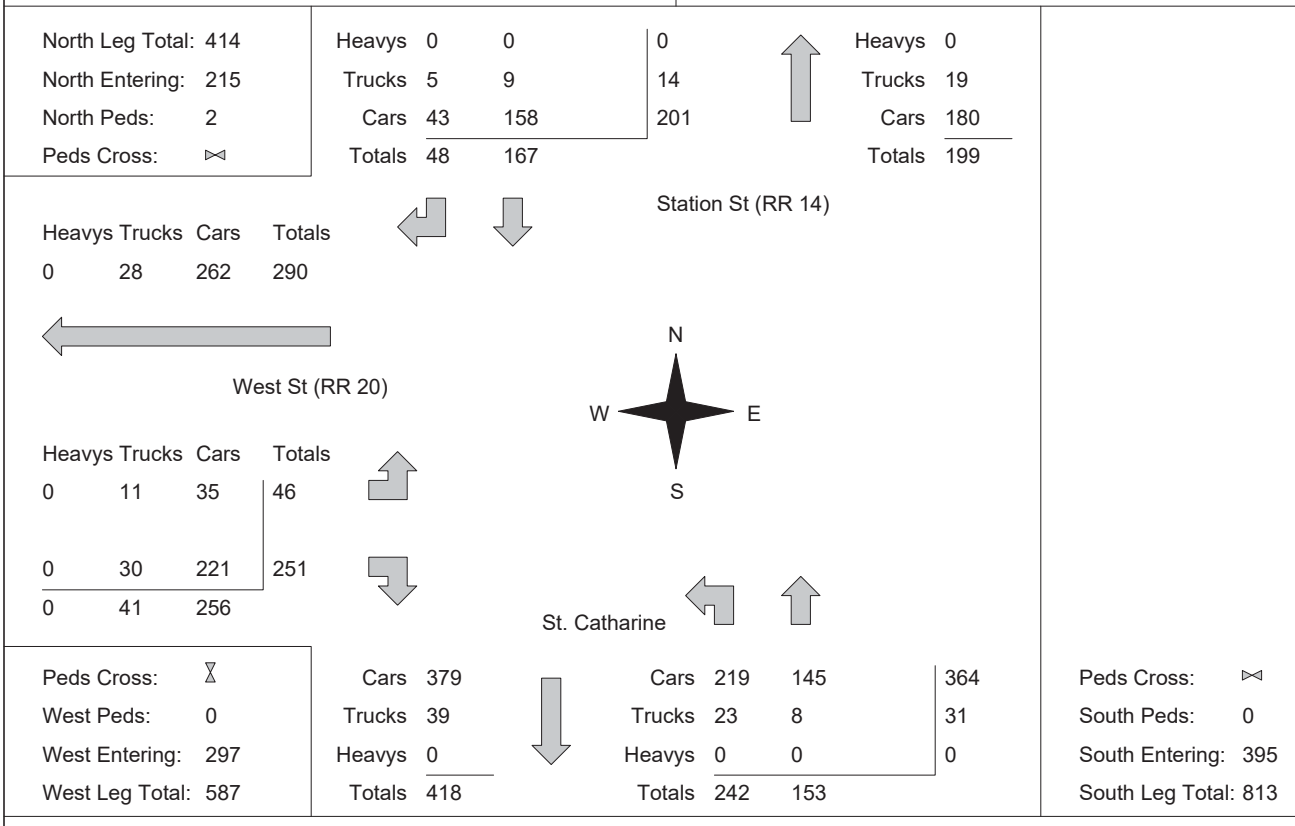
Municipality: Smithville
Site #: 1730100004
Intersection: Station St (RR 14)-St. Catharine & \
TFR File #: 4
Count date: 18-Oct-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Station St (RR 14)-St. Catharine rur



Comments

Ontario Traffic Inc.

Total Count Diagram

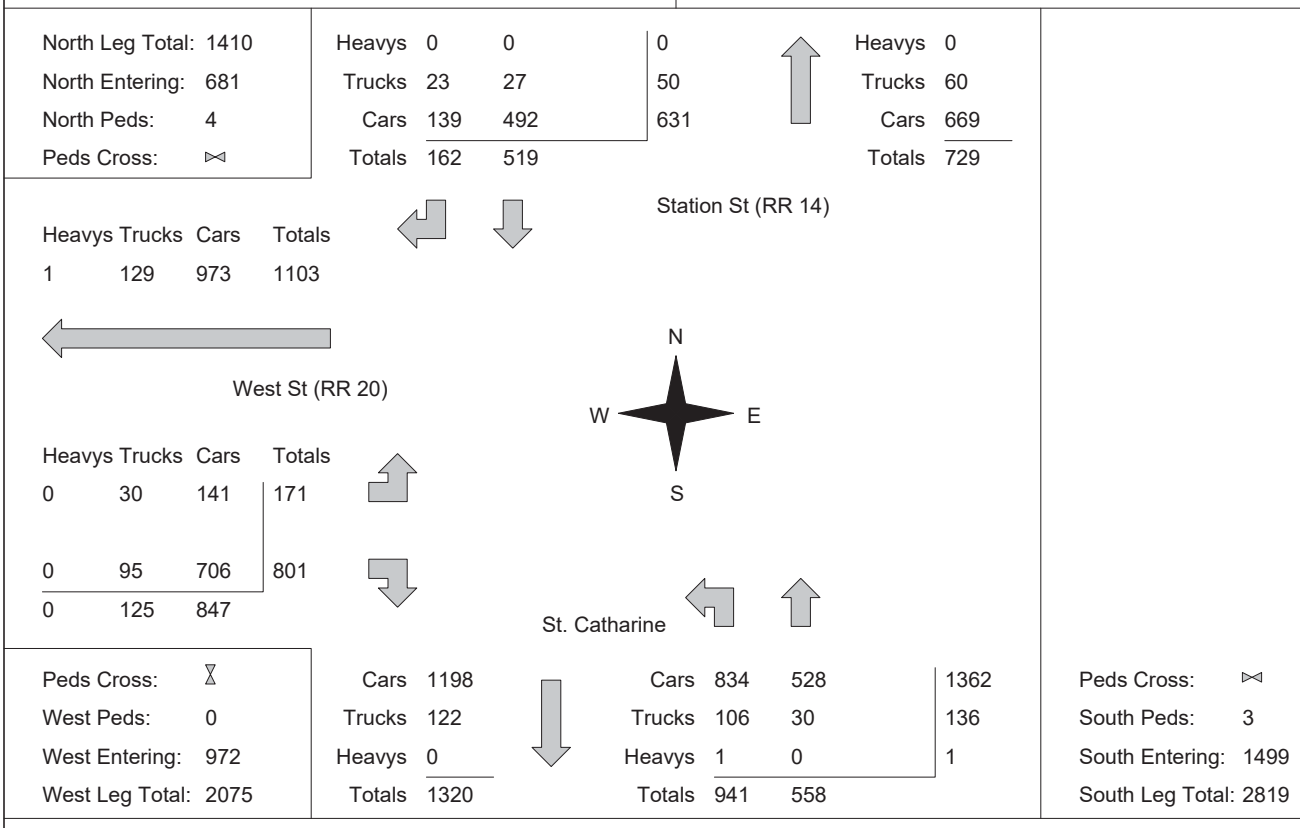
Municipality: Smithville
Site #: 1730100004
Intersection: Station St (RR 14)-St. Catharine & \
TFR File #: 4
Count date: 18-Oct-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Station St (RR 14)-St. Catharine rur



Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: Station St (RR 14)-St. Catharine & | **Count Date:** 18-Oct-17 | **Municipality:** Smithville

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	1
8:00:00	0	101	27	128	0	559
9:00:00	0	131	44	175	2	605
16:00:00	0	0	0	0	0	0
17:00:00	0	167	48	215	2	610
18:00:00	0	120	43	163	0	405
Totals:	0	519	162	681	4	2180

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	1	0	0	1	0
8:00:00	280	151	0	431	0
9:00:00	264	166	0	430	2
16:00:00	0	0	0	0	0
17:00:00	242	153	0	395	0
18:00:00	154	88	0	242	1
Totals:	941	558	0	1499	3

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	0	0	0	1
8:00:00	0	0	0	0	0	186
9:00:00	0	0	0	0	0	211
16:00:00	0	0	0	0	0	0
17:00:00	0	0	0	0	0	297
18:00:00	0	0	0	0	0	277
Totals:	0	0	0	0	0	972

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	1	1	0
8:00:00	44	0	142	186	0
9:00:00	35	0	176	211	0
16:00:00	0	0	0	0	0
17:00:00	46	0	251	297	0
18:00:00	46	0	231	277	0
Totals:	171	0	801	972	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	7:00	8:00	9:00	16:00	17:00	17:00	18:00	18:00
Crossing Values:	0	44	39	0	48	48	47	47

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100004

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	13	13	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	38	25	17	9	0	0	1	1	1	1	0	0	0	0	0	0	0	0
7:45:00	0	0	59	21	23	6	0	0	3	2	1	0	0	0	0	0	0	0	0	0
8:00:00	0	0	95	36	25	2	0	0	6	3	2	1	0	0	0	0	0	0	0	0
8:15:00	0	0	118	23	35	10	0	0	8	2	6	4	0	0	0	0	0	0	0	0
8:30:00	0	0	151	33	41	6	0	0	10	2	7	1	0	0	0	0	0	0	2	2
8:45:00	0	0	190	39	51	10	0	0	12	2	8	1	0	0	0	0	0	0	2	0
9:00:00	0	0	220	30	60	9	0	0	12	0	11	3	0	0	0	0	0	0	2	0
9:00:10	0	0	220	0	60	0	0	0	12	0	11	0	0	0	0	0	0	0	2	0
16:00:00	0	0	220	0	60	0	0	0	12	0	11	0	0	0	0	0	0	0	2	0
16:15:00	0	0	249	29	70	10	0	0	14	2	13	2	0	0	0	0	0	0	2	0
16:30:00	0	0	297	48	81	11	0	0	16	2	13	0	0	0	0	0	0	0	2	0
16:45:00	0	0	329	32	90	9	0	0	19	3	16	3	0	0	0	0	0	0	2	0
17:00:00	0	0	378	49	103	13	0	0	21	2	16	0	0	0	0	0	0	0	4	2
17:15:00	0	0	410	32	113	10	0	0	24	3	22	6	0	0	0	0	0	0	4	0
17:30:00	0	0	436	26	119	6	0	0	25	1	22	0	0	0	0	0	0	0	4	0
17:45:00	0	0	468	32	128	9	0	0	27	2	22	0	0	0	0	0	0	0	4	0
18:00:00	0	0	492	24	139	11	0	0	27	0	23	1	0	0	0	0	0	0	4	0
18:01:00	0	0	492	0	139	0	0	0	27	0	23	0	0	0	0	0	0	0	4	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100004

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100004

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
7:15:00	62	62	34	34	0	0	7	7	0	0	0	0	1	0	0	0	0	0	0	0
7:30:00	123	61	58	24	0	0	12	5	3	3	0	0	1	0	0	0	0	0	0	0
7:45:00	196	73	99	41	0	0	16	4	3	0	0	0	1	0	0	0	0	0	0	0
8:00:00	254	58	144	45	0	0	26	10	7	4	0	0	1	0	0	0	0	0	0	0
8:15:00	317	63	170	26	0	0	40	14	9	2	0	0	1	0	0	0	0	0	1	1
8:30:00	377	60	209	39	0	0	48	8	11	2	0	0	1	0	0	0	0	0	2	1
8:45:00	426	49	258	49	0	0	59	11	13	2	0	0	1	0	0	0	0	0	2	0
9:00:00	474	48	298	40	0	0	70	11	19	6	0	0	1	0	0	0	0	0	2	0
9:00:10	474	0	298	0	0	0	70	0	19	0	0	0	1	0	0	0	0	0	2	0
16:00:00	474	0	298	0	0	0	70	0	19	0	0	0	1	0	0	0	0	0	2	0
16:15:00	535	61	342	44	0	0	72	2	20	1	0	0	1	0	0	0	0	0	2	0
16:30:00	597	62	376	34	0	0	82	10	22	2	0	0	1	0	0	0	0	0	2	0
16:45:00	650	53	405	29	0	0	87	5	25	3	0	0	1	0	0	0	0	0	2	0
17:00:00	693	43	443	38	0	0	93	6	27	2	0	0	1	0	0	0	0	0	2	0
17:15:00	739	46	463	20	0	0	97	4	29	2	0	0	1	0	0	0	0	0	3	1
17:30:00	771	32	490	27	0	0	103	6	29	0	0	0	1	0	0	0	0	0	3	0
17:45:00	800	29	510	20	0	0	106	3	30	1	0	0	1	0	0	0	0	0	3	0
18:00:00	834	34	528	18	0	0	106	0	30	0	0	0	1	0	0	0	0	0	3	0
18:01:00	834	0	528	0	0	0	106	0	30	0	0	0	1	0	0	0	0	0	3	0

Ontario Traffic Inc.

Count Date: 18-Oct-17 Site #: 1730100004

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
7:15:00	5	5	0	0	26	26	1	1	0	0	2	1	0	0	0	0	0	0	0	0
7:30:00	13	8	0	0	49	23	2	1	0	0	5	3	0	0	0	0	0	0	0	0
7:45:00	20	7	0	0	83	34	2	0	0	0	10	5	0	0	0	0	0	0	0	0
8:00:00	40	20	0	0	127	44	4	2	0	0	16	6	0	0	0	0	0	0	0	0
8:15:00	46	6	0	0	148	21	6	2	0	0	21	5	0	0	0	0	0	0	0	0
8:30:00	51	5	0	0	195	47	9	3	0	0	25	4	0	0	0	0	0	0	0	0
8:45:00	60	9	0	0	241	46	11	2	0	0	27	2	0	0	0	0	0	0	0	0
9:00:00	65	5	0	0	282	41	14	3	0	0	37	10	0	0	0	0	0	0	0	0
9:00:10	65	0	0	0	282	0	14	0	0	0	37	0	0	0	0	0	0	0	0	0
16:00:00	65	0	0	0	282	0	14	0	0	0	37	0	0	0	0	0	0	0	0	0
16:15:00	75	10	0	0	334	52	16	2	0	0	47	10	0	0	0	0	0	0	0	0
16:30:00	82	7	0	0	391	57	18	2	0	0	53	6	0	0	0	0	0	0	0	0
16:45:00	94	12	0	0	449	58	21	3	0	0	61	8	0	0	0	0	0	0	0	0
17:00:00	100	6	0	0	503	54	25	4	0	0	67	6	0	0	0	0	0	0	0	0
17:15:00	114	14	0	0	561	58	27	2	0	0	79	12	0	0	0	0	0	0	0	0
17:30:00	125	11	0	0	615	54	27	0	0	0	86	7	0	0	0	0	0	0	0	0
17:45:00	134	9	0	0	667	52	28	1	0	0	90	4	0	0	0	0	0	0	0	0
18:00:00	141	7	0	0	706	39	30	2	0	0	95	5	0	0	0	0	0	0	0	0
18:01:00	141	0	0	0	706	0	30	0	0	0	95	0	0	0	0	0	0	0	0	0

Appendix B

2019 Existing Conditions – Synchro Reports

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	190	35	83	263	29	54
Future Volume (Veh/h)	190	35	83	263	29	54
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	38	90	286	32	59
Pedestrians					6	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			251		698	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		698	232
tC, single (s)			4.2		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.4
p0 queue free %			93		91	92
cM capacity (veh/h)			1262		346	781

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	245	90	286	91
Volume Left	0	90	0	32
Volume Right	38	0	0	59
cSH	1700	1262	1700	542
Volume to Capacity	0.14	0.07	0.17	0.17
Queue Length 95th (m)	0.0	1.7	0.0	4.6
Control Delay (s)	0.0	8.1	0.0	13.0
Lane LOS		A		B
Approach Delay (s)	0.0	1.9		13.0
Approach LOS				B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	200	17	18	274	51	25
Future Volume (Veh/h)	200	17	18	274	51	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	217	18	20	298	55	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			235		555	217
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			235		555	217
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			98		89	97
cM capacity (veh/h)			1281		485	818

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	217	18	20	298	82
Volume Left	0	0	20	0	55
Volume Right	0	18	0	0	27
cSH	1700	1700	1281	1700	560
Volume to Capacity	0.13	0.01	0.02	0.18	0.15
Queue Length 95th (m)	0.0	0.0	0.4	0.0	3.9
Control Delay (s)	0.0	0.0	7.9	0.0	12.5
Lane LOS			A		B
Approach Delay (s)	0.0		0.5		12.5
Approach LOS					B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	213	311	31	40	35
Future Volume (Veh/h)	31	213	311	31	40	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	232	338	34	43	38
Pedestrians			11			
Lane Width (m)			3.7			
Walking Speed (m/s)			1.1			
Percent Blockage			1			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	372				649	338
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	372				649	338
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				90	95
cM capacity (veh/h)	1198				418	702

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	34	232	338	34	81
Volume Left	34	0	0	0	43
Volume Right	0	0	0	34	38
cSH	1198	1700	1700	1700	516
Volume to Capacity	0.03	0.14	0.20	0.02	0.16
Queue Length 95th (m)	0.7	0.0	0.0	0.0	4.2
Control Delay (s)	8.1	0.0	0.0	0.0	13.3
Lane LOS	A				B
Approach Delay (s)	1.0		0.0		13.3
Approach LOS					B

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	386	14	30	270	10	35
Future Volume (Veh/h)	386	14	30	270	10	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	420	15	33	293	11	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			435		786	428
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			435		786	428
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		97	94
cM capacity (veh/h)			1119		353	631

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	435	33	293	49
Volume Left	0	33	0	11
Volume Right	15	0	0	38
cSH	1700	1119	1700	536
Volume to Capacity	0.26	0.03	0.17	0.09
Queue Length 95th (m)	0.0	0.7	0.0	2.3
Control Delay (s)	0.0	8.3	0.0	12.4
Lane LOS		A		B
Approach Delay (s)	0.0	0.8		12.4
Approach LOS				B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	381	58	30	250	13	19
Future Volume (Veh/h)	381	58	30	250	13	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	414	63	33	272	14	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			477		752	414
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			477		752	414
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			97		96	97
cM capacity (veh/h)			1080		359	632

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	414	63	33	272	35
Volume Left	0	0	33	0	14
Volume Right	0	63	0	0	21
cSH	1700	1700	1080	1700	485
Volume to Capacity	0.24	0.04	0.03	0.16	0.07
Queue Length 95th (m)	0.0	0.0	0.7	0.0	1.8
Control Delay (s)	0.0	0.0	8.4	0.0	13.0
Lane LOS			A		B
Approach Delay (s)	0.0		0.9		13.0
Approach LOS					B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

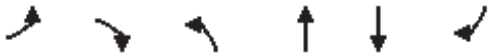
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	391	245	54	27	55
Future Volume (Veh/h)	30	391	245	54	27	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	425	266	59	29	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	325				757	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	325				757	266
tC, single (s)	4.1				6.7	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.6
p0 queue free %	97				91	92
cM capacity (veh/h)	1218				325	710

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	33	425	266	59	89
Volume Left	33	0	0	0	29
Volume Right	0	0	0	59	60
cSH	1218	1700	1700	1700	512
Volume to Capacity	0.03	0.25	0.16	0.03	0.17
Queue Length 95th (m)	0.6	0.0	0.0	0.0	4.7
Control Delay (s)	8.0	0.0	0.0	0.0	13.5
Lane LOS	A				B
Approach Delay (s)	0.6		0.0		13.5
Approach LOS					B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix C

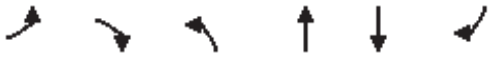
Sensitivity Analysis – Synchro Reports



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	50	177	276	171	142	35
Future Volume (vph)	50	177	276	171	142	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	192	300	186	154	38

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	246	486	192
Volume Left (vph)	54	300	0
Volume Right (vph)	192	0	38
Hadj (s)	-0.24	0.31	0.03
Departure Headway (s)	5.4	5.2	5.4
Degree Utilization, x	0.37	0.70	0.29
Capacity (veh/h)	610	669	634
Control Delay (s)	11.6	19.7	10.5
Approach Delay (s)	11.6	19.7	10.5
Approach LOS	B	C	B

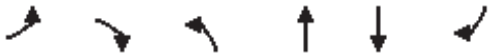
Intersection Summary			
Delay	15.6		
Level of Service	C		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	177	276	171	142	35
Future Volume (Veh/h)	50	177	276	171	142	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	192	300	186	154	38
Pedestrians				2	2	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.1	1.1	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					340	
pX, platoon unblocked						
vC, conflicting volume	961	175	154			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	961	175	154			
tC, single (s)	6.6	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.3			
p0 queue free %	74	77	78			
cM capacity (veh/h)	207	849	1351			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	246	486	192
Volume Left	54	300	0
Volume Right	192	0	38
cSH	504	1351	1700
Volume to Capacity	0.49	0.22	0.11
Queue Length 95th (m)	20.1	6.5	0.0
Control Delay (s)	18.7	6.0	0.0
Lane LOS	C	A	
Approach Delay (s)	18.7	6.0	0.0
Approach LOS	C		

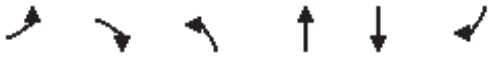
Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	47	254	245	155	169	49
Future Volume (vph)	47	254	245	155	169	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	276	266	168	184	53

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	327	434	237
Volume Left (vph)	51	266	0
Volume Right (vph)	276	0	53
Hadj (s)	-0.26	0.25	-0.03
Departure Headway (s)	5.4	5.5	5.5
Degree Utilization, x	0.49	0.66	0.36
Capacity (veh/h)	617	631	611
Control Delay (s)	13.7	18.6	11.6
Approach Delay (s)	13.7	18.6	11.6
Approach LOS	B	C	B

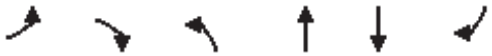
Intersection Summary			
Delay	15.3		
Level of Service	C		
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	47	254	245	155	169	49
Future Volume (Veh/h)	47	254	245	155	169	49
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	276	266	168	184	53
Pedestrians					2	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					340	
pX, platoon unblocked						
vC, conflicting volume	912	210	184			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	912	210	184			
tC, single (s)	6.6	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.3			
p0 queue free %	77	66	80			
cM capacity (veh/h)	224	808	1350			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	327	434	237
Volume Left	51	266	0
Volume Right	276	0	53
cSH	574	1350	1700
Volume to Capacity	0.57	0.20	0.14
Queue Length 95th (m)	27.1	5.6	0.0
Control Delay (s)	19.3	5.8	0.0
Lane LOS	C	A	
Approach Delay (s)	19.3	5.8	0.0
Approach LOS	C		

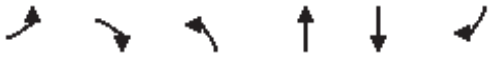
Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	51	180	281	175	147	36
Future Volume (vph)	51	180	281	175	147	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	196	305	190	160	39

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	251	495	199
Volume Left (vph)	55	305	0
Volume Right (vph)	196	0	39
Hadj (s)	-0.24	0.31	0.03
Departure Headway (s)	5.5	5.3	5.4
Degree Utilization, x	0.38	0.72	0.30
Capacity (veh/h)	605	666	629
Control Delay (s)	11.8	20.7	10.7
Approach Delay (s)	11.8	20.7	10.7
Approach LOS	B	C	B

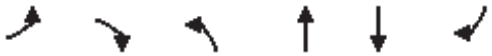
Intersection Summary			
Delay	16.2		
Level of Service	C		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	180	281	175	147	36
Future Volume (Veh/h)	51	180	281	175	147	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	196	305	190	160	39
Pedestrians				2	2	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.1	1.1	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					340	
pX, platoon unblocked						
vC, conflicting volume	982	182	160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	982	182	160			
tC, single (s)	6.6	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.3			
p0 queue free %	72	77	77			
cM capacity (veh/h)	199	842	1344			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	251	495	199
Volume Left	55	305	0
Volume Right	196	0	39
cSH	493	1344	1700
Volume to Capacity	0.51	0.23	0.12
Queue Length 95th (m)	21.6	6.6	0.0
Control Delay (s)	19.6	6.0	0.0
Lane LOS	C	A	
Approach Delay (s)	19.6	6.0	0.0
Approach LOS	C		

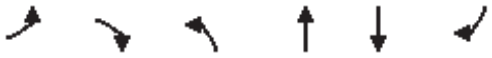
Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	48	259	250	162	173	50
Future Volume (vph)	48	259	250	162	173	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	282	272	176	188	54

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	334	448	242
Volume Left (vph)	52	272	0
Volume Right (vph)	282	0	54
Hadj (s)	-0.26	0.25	-0.03
Departure Headway (s)	5.5	5.5	5.6
Degree Utilization, x	0.51	0.69	0.38
Capacity (veh/h)	611	628	604
Control Delay (s)	14.1	19.9	11.9
Approach Delay (s)	14.1	19.9	11.9
Approach LOS	B	C	B

Intersection Summary			
Delay	16.1		
Level of Service	C		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	259	250	162	173	50
Future Volume (Veh/h)	48	259	250	162	173	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	282	272	176	188	54
Pedestrians					2	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					340	
pX, platoon unblocked						
vC, conflicting volume	937	215	188			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	937	215	188			
tC, single (s)	6.6	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.3			
p0 queue free %	76	65	80			
cM capacity (veh/h)	215	803	1345			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	334	448	242
Volume Left	52	272	0
Volume Right	282	0	54
cSH	563	1345	1700
Volume to Capacity	0.59	0.20	0.14
Queue Length 95th (m)	29.3	5.7	0.0
Control Delay (s)	20.3	5.8	0.0
Lane LOS	C	A	
Approach Delay (s)	20.3	5.8	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	57	192	286	175	147	39
Future Volume (vph)	57	192	286	175	147	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	209	311	190	160	42

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	271	501	202
Volume Left (vph)	62	311	0
Volume Right (vph)	209	0	42
Hadj (s)	-0.23	0.31	0.03
Departure Headway (s)	5.5	5.3	5.5
Degree Utilization, x	0.42	0.74	0.31
Capacity (veh/h)	601	657	615
Control Delay (s)	12.4	22.1	10.9
Approach Delay (s)	12.4	22.1	10.9
Approach LOS	B	C	B

Intersection Summary			
Delay	17.1		
Level of Service	C		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	192	286	175	147	39
Future Volume (Veh/h)	57	192	286	175	147	39
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	209	311	190	160	42
Pedestrians				2	2	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.1	1.1	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					340	
pX, platoon unblocked						
vC, conflicting volume	995	183	160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	995	183	160			
tC, single (s)	6.6	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.3			
p0 queue free %	68	75	77			
cM capacity (veh/h)	195	840	1344			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	271	501	202
Volume Left	62	311	0
Volume Right	209	0	42
cSH	478	1344	1700
Volume to Capacity	0.57	0.23	0.12
Queue Length 95th (m)	26.4	6.8	0.0
Control Delay (s)	22.0	6.1	0.0
Lane LOS	C	A	
Approach Delay (s)	22.0	6.1	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	54	269	269	162	173	62
Future Volume (vph)	54	269	269	162	173	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	292	292	176	188	67

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	351	468	255
Volume Left (vph)	59	292	0
Volume Right (vph)	292	0	67
Hadj (s)	-0.24	0.25	-0.05
Departure Headway (s)	5.6	5.7	5.7
Degree Utilization, x	0.55	0.73	0.40
Capacity (veh/h)	599	618	592
Control Delay (s)	15.3	22.7	12.5
Approach Delay (s)	15.3	22.7	12.5
Approach LOS	C	C	B

Intersection Summary			
Delay	17.8		
Level of Service	C		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	269	269	162	173	62
Future Volume (Veh/h)	54	269	269	162	173	62
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	292	292	176	188	67
Pedestrians					2	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					340	
pX, platoon unblocked						
vC, conflicting volume	984	222	188			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	984	222	188			
tC, single (s)	6.6	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.3			
p0 queue free %	70	63	78			
cM capacity (veh/h)	197	796	1345			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	351	468	255
Volume Left	59	292	0
Volume Right	292	0	67
cSH	527	1345	1700
Volume to Capacity	0.67	0.22	0.15
Queue Length 95th (m)	37.2	6.3	0.0
Control Delay (s)	24.4	6.0	0.0
Lane LOS	C	A	
Approach Delay (s)	24.4	6.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Appendix D

2025 Future Background Conditions – Synchro Reports

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	198	36	85	301	30	55
Future Volume (Veh/h)	198	36	85	301	30	55
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	215	39	92	327	33	60
Pedestrians					6	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			260		752	240
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			260		752	240
tC, single (s)			4.2		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.4
p0 queue free %			93		90	92
cM capacity (veh/h)			1252		321	772

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	254	92	327	93
Volume Left	0	92	0	33
Volume Right	39	0	0	60
cSH	1700	1252	1700	515
Volume to Capacity	0.15	0.07	0.19	0.18
Queue Length 95th (m)	0.0	1.8	0.0	5.0
Control Delay (s)	0.0	8.1	0.0	13.5
Lane LOS		A		B
Approach Delay (s)	0.0	1.8		13.5
Approach LOS				B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	209	17	18	313	52	25
Future Volume (Veh/h)	209	17	18	313	52	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	227	18	20	340	57	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			245		607	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			245		607	227
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			98		87	97
cM capacity (veh/h)			1270		452	807

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	227	18	20	340	84
Volume Left	0	0	20	0	57
Volume Right	0	18	0	0	27
cSH	1700	1700	1270	1700	527
Volume to Capacity	0.13	0.01	0.02	0.20	0.16
Queue Length 95th (m)	0.0	0.0	0.4	0.0	4.3
Control Delay (s)	0.0	0.0	7.9	0.0	13.1
Lane LOS			A		B
Approach Delay (s)	0.0		0.4		13.1
Approach LOS					B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	217	317	32	42	69
Future Volume (Veh/h)	36	217	317	32	42	69
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	236	345	35	46	75
Pedestrians			11			
Lane Width (m)			3.7			
Walking Speed (m/s)			1.1			
Percent Blockage			1			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	380				670	345
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380				670	345
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				89	89
cM capacity (veh/h)	1190				404	696

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	39	236	345	35	121
Volume Left	39	0	0	0	46
Volume Right	0	0	0	35	75
cSH	1190	1700	1700	1700	546
Volume to Capacity	0.03	0.14	0.20	0.02	0.22
Queue Length 95th (m)	0.8	0.0	0.0	0.0	6.4
Control Delay (s)	8.1	0.0	0.0	0.0	13.5
Lane LOS	A				B
Approach Delay (s)	1.2		0.0		13.5
Approach LOS					B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	412	14	31	295	10	36
Future Volume (Veh/h)	412	14	31	295	10	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	448	15	34	321	11	39
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			463		844	456
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			463		844	456
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		97	94
cM capacity (veh/h)			1093		326	609

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	463	34	321	50
Volume Left	0	34	0	11
Volume Right	15	0	0	39
cSH	1700	1093	1700	511
Volume to Capacity	0.27	0.03	0.19	0.10
Queue Length 95th (m)	0.0	0.7	0.0	2.5
Control Delay (s)	0.0	8.4	0.0	12.8
Lane LOS		A		B
Approach Delay (s)	0.0	0.8		12.8
Approach LOS				B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	407	59	31	274	13	19
Future Volume (Veh/h)	407	59	31	274	13	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	442	64	34	298	14	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			506		808	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			506		808	442
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			97		96	97
cM capacity (veh/h)			1054		332	609

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	442	64	34	298	35
Volume Left	0	0	34	0	14
Volume Right	0	64	0	0	21
cSH	1700	1700	1054	1700	457
Volume to Capacity	0.26	0.04	0.03	0.18	0.08
Queue Length 95th (m)	0.0	0.0	0.8	0.0	1.9
Control Delay (s)	0.0	0.0	8.5	0.0	13.5
Lane LOS			A		B
Approach Delay (s)	0.0		0.9		13.5
Approach LOS					B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	49	399	252	55	28	74
Future Volume (Veh/h)	49	399	252	55	28	74
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	434	274	60	30	80
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	334				814	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	334				814	274
tC, single (s)	4.1				6.7	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.6
p0 queue free %	96				90	89
cM capacity (veh/h)	1209				295	702

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	53	434	274	60	110
Volume Left	53	0	0	0	30
Volume Right	0	0	0	60	80
cSH	1209	1700	1700	1700	510
Volume to Capacity	0.04	0.26	0.16	0.04	0.22
Queue Length 95th (m)	1.0	0.0	0.0	0.0	6.2
Control Delay (s)	8.1	0.0	0.0	0.0	14.0
Lane LOS	A				B
Approach Delay (s)	0.9		0.0		14.0
Approach LOS					B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E

2025 Future Total Conditions – Synchro Reports

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	206	36	85	348	30	55
Future Volume (Veh/h)	206	36	85	348	30	55
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	224	39	92	378	33	60
Pedestrians					6	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			269		812	250
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			269		812	250
tC, single (s)			4.2		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.4
p0 queue free %			93		89	92
cM capacity (veh/h)			1243		295	763

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	263	92	378	93
Volume Left	0	92	0	33
Volume Right	39	0	0	60
cSH	1700	1243	1700	488
Volume to Capacity	0.15	0.07	0.22	0.19
Queue Length 95th (m)	0.0	1.8	0.0	5.3
Control Delay (s)	0.0	8.1	0.0	14.1
Lane LOS		A		B
Approach Delay (s)	0.0	1.6		14.1
Approach LOS				B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	217	17	18	360	52	25
Future Volume (Veh/h)	217	17	18	360	52	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	236	18	20	391	57	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			254		667	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			254		667	236
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			98		86	97
cM capacity (veh/h)			1260		417	798

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	236	18	20	391	84
Volume Left	0	0	20	0	57
Volume Right	0	18	0	0	27
cSH	1700	1700	1260	1700	493
Volume to Capacity	0.14	0.01	0.02	0.23	0.17
Queue Length 95th (m)	0.0	0.0	0.4	0.0	4.6
Control Delay (s)	0.0	0.0	7.9	0.0	13.8
Lane LOS			A		B
Approach Delay (s)	0.0		0.4		13.8
Approach LOS					B

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	32.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	235	325	32	42	69
Future Volume (Veh/h)	36	235	325	32	42	69
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	255	353	35	46	75
Pedestrians			11			
Lane Width (m)			3.7			
Walking Speed (m/s)			1.1			
Percent Blockage			1			
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	388				697	353
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388				697	353
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				88	89
cM capacity (veh/h)	1182				390	688

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	39	255	353	35	121
Volume Left	39	0	0	0	46
Volume Right	0	0	0	35	75
cSH	1182	1700	1700	1700	533
Volume to Capacity	0.03	0.15	0.21	0.02	0.23
Queue Length 95th (m)	0.8	0.0	0.0	0.0	6.6
Control Delay (s)	8.2	0.0	0.0	0.0	13.7
Lane LOS	A				B
Approach Delay (s)	1.1		0.0		13.7
Approach LOS					B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	253	386	8	18	47
Future Volume (Veh/h)	8	253	386	8	18	47
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	275	420	9	20	51
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	429				718	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	429				718	424
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	92
cM capacity (veh/h)	1141				393	630

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	284	429	71
Volume Left	9	0	20
Volume Right	0	9	51
cSH	1141	1700	538
Volume to Capacity	0.01	0.25	0.13
Queue Length 95th (m)	0.2	0.0	3.4
Control Delay (s)	0.3	0.0	12.7
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	12.7
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	0	0	68	111	4
Future Volume (Veh/h)	9	0	0	68	111	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	0	74	121	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					335	
pX, platoon unblocked						
vC, conflicting volume	197	123	125			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	197	123	125			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	796	933	1474			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	74	125
Volume Left	10	0	0
Volume Right	0	0	4
cSH	796	1474	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (m)	0.3	0.0	0.0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	0	0	77	111	8
Future Volume (Veh/h)	17	0	0	77	111	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	0	0	84	121	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					297	
pX, platoon unblocked						
vC, conflicting volume	210	126	130			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210	126	130			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	783	930	1468			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	18	84	130
Volume Left	18	0	0
Volume Right	0	0	9
cSH	783	1468	1700
Volume to Capacity	0.02	0.00	0.08
Queue Length 95th (m)	0.5	0.0	0.0
Control Delay (s)	9.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	446	14	31	334	10	36
Future Volume (Veh/h)	446	14	31	334	10	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	485	15	34	363	11	39
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			500		924	492
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			500		924	492
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		96	93
cM capacity (veh/h)			1059		292	580

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	500	34	363	50
Volume Left	0	34	0	11
Volume Right	15	0	0	39
cSH	1700	1059	1700	477
Volume to Capacity	0.29	0.03	0.21	0.10
Queue Length 95th (m)	0.0	0.8	0.0	2.7
Control Delay (s)	0.0	8.5	0.0	13.4
Lane LOS		A		B
Approach Delay (s)	0.0	0.7		13.4
Approach LOS				B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	441	59	31	313	13	19
Future Volume (Veh/h)	441	59	31	313	13	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	479	64	34	340	14	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			543		887	479
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			543		887	479
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			97		95	96
cM capacity (veh/h)			1021		298	581

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	479	64	34	340	35
Volume Left	0	0	34	0	14
Volume Right	0	64	0	0	21
cSH	1700	1700	1021	1700	421
Volume to Capacity	0.28	0.04	0.03	0.20	0.08
Queue Length 95th (m)	0.0	0.0	0.8	0.0	2.1
Control Delay (s)	0.0	0.0	8.6	0.0	14.3
Lane LOS			A		B
Approach Delay (s)	0.0		0.8		14.3
Approach LOS					B

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	38.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	94	372	254	84	71	109
Future Volume (Veh/h)	94	372	254	84	71	109
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	102	404	276	91	77	118
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	367				884	276
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	367				884	276
tC, single (s)	4.1				6.7	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.6
p0 queue free %	91				70	83
cM capacity (veh/h)	1175				255	700

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	102	404	276	91	195
Volume Left	102	0	0	0	77
Volume Right	0	0	0	91	118
cSH	1175	1700	1700	1700	415
Volume to Capacity	0.09	0.24	0.16	0.05	0.47
Queue Length 95th (m)	2.2	0.0	0.0	0.0	18.6
Control Delay (s)	8.4	0.0	0.0	0.0	21.2
Lane LOS	A				C
Approach Delay (s)	1.7		0.0		21.2
Approach LOS					C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	455	338	25	11	27
Future Volume (Veh/h)	27	455	338	25	11	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	495	367	27	12	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	394				934	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	394				934	380
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				96	96
cM capacity (veh/h)	1176				288	667

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	524	394	41
Volume Left	29	0	12
Volume Right	0	27	29
cSH	1176	1700	481
Volume to Capacity	0.02	0.23	0.09
Queue Length 95th (m)	0.6	0.0	2.1
Control Delay (s)	0.7	0.0	13.2
Lane LOS	A		B
Approach Delay (s)	0.7	0.0	13.2
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	86	82	96	94	30
Future Volume (Veh/h)	19	86	82	96	94	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	93	89	104	102	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					335	
pX, platoon unblocked						
vC, conflicting volume	400	118	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	400	118	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	90	94			
cM capacity (veh/h)	572	939	1462			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	114	193	135
Volume Left	21	89	0
Volume Right	93	0	33
cSH	840	1462	1700
Volume to Capacity	0.14	0.06	0.08
Queue Length 95th (m)	3.6	1.5	0.0
Control Delay (s)	10.0	3.8	0.0
Lane LOS	A	A	
Approach Delay (s)	10.0	3.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	0	0	115	111	26
Future Volume (Veh/h)	10	0	0	115	111	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	0	125	121	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					297	
pX, platoon unblocked						
vC, conflicting volume	260	135	149			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	260	135	149			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	733	919	1445			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	125	149
Volume Left	11	0	0
Volume Right	0	0	28
cSH	733	1445	1700
Volume to Capacity	0.02	0.00	0.09
Queue Length 95th (m)	0.3	0.0	0.0
Control Delay (s)	10.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	10.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		