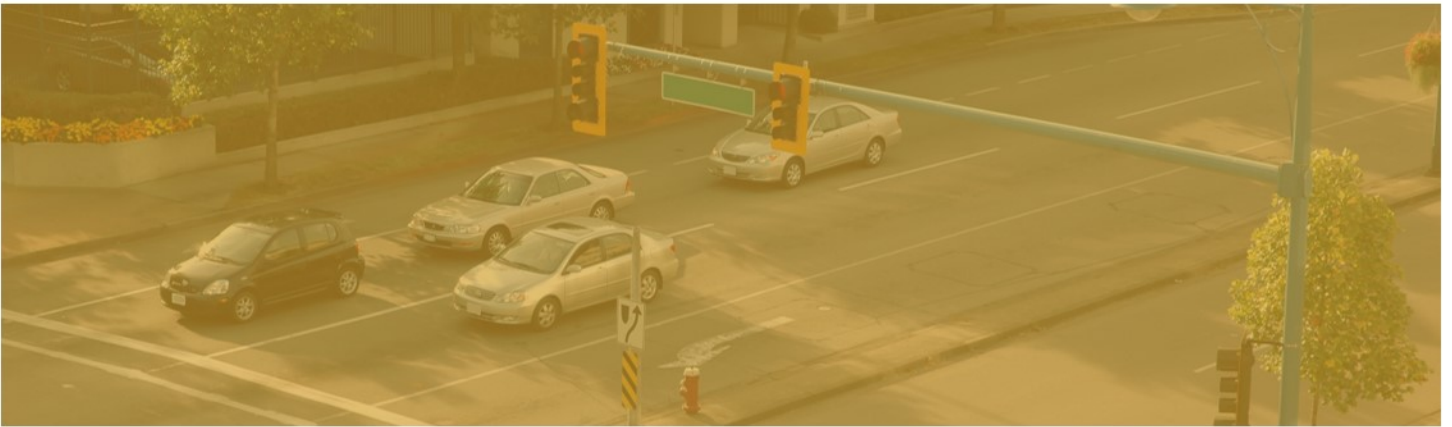




Enhancing our communities





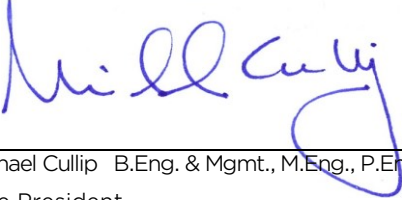
Rosseau Springs Subdivision

TRAFFIC IMPACT BRIEF

Kenozha Bay Company

Document Control

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Date:		
September 14, 2022		

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Issue	Date	Description
1	September 14, 2022	Final Report

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1 Introduction

Tatham Engineering Limited was retained by Kenozha Bay Company to prepare a Traffic Impact Brief in support of the proposed residential development to be located at 219 Highway 632 near the community of Rosseau, Township of Seguin. The location of the development is illustrated in Figure 1.

The purpose of this study is to review the proposed development from a transportation perspective. Recognizing that the trip generation associated with this development will not be significant, the scope of this study has been reduced to a traffic brief with a focus on the following:

- existing conditions, including a description of the study area road network, traffic volumes, operations and planned/proposed improvements;
- details of the proposed development and anticipated trip generation; and
- transportation impacts associated with the proposed development.



2 Existing Conditions

This chapter will discuss the road network, traffic volumes, and operations for the existing conditions.

2.1 ROAD NETWORK

The road network to be addressed by this study consists of Highway 632 and Maplehurst Road, and their respective intersection. Aerial imagery and photographs of the road system are provided in Figure 2.

Highway 632 is a 2-lane (i.e. 1 lane per direction) secondary provincial highway under the jurisdiction of the Ontario Ministry of Transportation (MTO). The road runs in a generally north-south alignment between its northern terminus at Highway 141 in the community of Rosseau and its southern terminus at the Seguin Township/Muskoka District border (where it meets Muskoka District Road 7). Through the immediate study area, the road is oriented generally east-west however, it realigns to a north-south orientation south of its intersection with Maplehurst Road. The posted speed limit is 50 km/h through most of the study area, increasing to 80km/h near the west limit of the study area.

Maplehurst Road is a 2-lane local road providing access to approximately 80 detached homes located along the shores of Lake Rosseau. It is oriented generally northwest-southeast between Highway 632 and Little Morgan Bay Road, and north-south between Little Morgan Bay Road and Summit Drive. For the purposes of this study, the road is assumed to be oriented north-south. At its intersection with Highway 632, Maplehurst Road realigns to an east-west orientation. The road has a posted speed limit of 50km/h through the study area.

The intersection of Highway 632 and Maplehurst Road is a 3-leg unsignalized intersection with Maplehurst Road serving as the minor leg operating under stop control and having the following configuration:

- the north approach (Highway 632) consists of a single combined through/left turn lane;
- the south approach (Highway 632) consists of a single combined through/right turn lane; and
- the east approach (Maplehurst Road) consists of a single combined left/right turn lane.



2.2 TRAFFIC VOLUMES

2.2.1 Traffic Counts

To determine existing traffic volumes, traffic counts were conducted at the intersection of Highway 632 and Maplehurst Road on April 27, 2022, from 07:00 to 10:00 and 15:00 to 18:00. The observed volumes are illustrated in Figure 3 with detailed count sheets provided in Appendix A.

2.2.2 Seasonal Adjustments

MTO publishes annual average daily traffic (AADT), summer average daily traffic (SADT) and winter average daily traffic (WADT) volumes for all provincial highways¹. The variation between these values allows for a *traffic pattern type* to be assigned to each road section which describes the typical variation in traffic volumes over the course of a year (i.e. January to December). The sections of Highway 632 bordering the study area are identified as:

- *Low Recreation* traffic pattern (south of the study area) – this is indicative of large variations in volumes over the course of the year with peak volumes occurring during the summer due to increased recreational activity; and
- *Low Tourism* traffic pattern (north of the study area, within the community of Rosseau) – this is indicative of moderate variations in volumes over the course of the year with peak volumes occurring during the summer due to increased tourism activity.

Further to the published MTO data (which extends only to 2016), 2018 traffic counts were provided by MTO corresponding to the spring (mid-June), summer (early July), and fall (mid-September) seasons. The data is summarized in Table 1 with detailed count sheets provided in Appendix A. Additional information pertaining to the count locations in context of the subject intersection is also provided in Table 1 and illustrated in Figure 4.

Table 1: MTO Highway 632 ATR Data

LOCATION OF COUNT	DISTANCE FROM MAPLEHURST ROAD	DAILY TRAFFIC			% DHV ¹
		Spring	Summer	Fall	
Hwy 632 at Ash Street	2.8 km north	1,393	1,738	1,167	11%
Hwy 632 at Ashfield Road	3.0 km south	1,067	1,366	844	19%
Average		1,230	1,552	1,006	15%

¹ % DHV (Design Hour Volume) is the proportion of daily volume that occurs during the busiest peak hour

¹ *Provincial Highways Traffic Volumes 1988-2016*. Ministry of Transportation of Ontario.



Based on the count data, the summer volumes are in the order of 25 to 28% greater than the spring volumes (which are typically considered representative of typical conditions) and 48 to 62% greater than the fall volumes. It is noted the spring MTO counts were conducted very late in the spring (mid-June) and thus are likely higher than what would be observed if the counts were conducted in earlier spring, such as April or May (and hence the spring:summer factor is likely to be greater than the noted 25 to 28%).

2.2.3 Adjusted Volumes

To reflect the peak summer 2022 traffic conditions, the April 2022 traffic volumes were increased by a factor of 1.40, which ensures a conservative approach. The 2022 adjusted volumes are illustrated in Figure 5.

2.3 TRAFFIC OPERATIONS

The capacity, and hence operations, of a road system is effectively governed by its intersections. To provide a baseline from which the future traffic operations can be assessed, the existing intersection operations were reviewed based on the following:

- the 2022 adjusted traffic volumes;
- the existing intersection configuration and control;
- and procedures outlined in the *2000 Highway Capacity Manual*² (using Synchro v.11 software).

For unsignalized intersections, the analysis considers:

- the average delay (measured in seconds);
- level of service (LOS); and
- volume to capacity (v/c) for critical movements (i.e. those operating under stop control).

With respect to the noted metrics:

- level of service 'A' corresponds to the best operating condition with minimal delays whereas level of service 'F' corresponds to poor operations resulting from high intersection delays (additional details regarding Level of Service definitions are provided in Appendix B); and
- a v/c ratio of less than 1.0 indicates the intersection movement/approach is operating at less than capacity while v/c of 1.0 indicates capacity has been reached.

² *Highway Capacity Manual*. Transportation Research Board, Washington DC, 2000.



A summary of the analysis is provided in Table 2 with the corresponding detailed worksheets provided in Appendix C.

Table 2: Intersection Operations - 2022 Conditions

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 632 & Maplehurst Road	WB LR	stop	11	B	0.04	9	A	0.04
	SB L	free	1	A	0.02	1	A	0.00

As indicated, the intersection of Highway 632 and Maplehurst Road is currently providing excellent operations (LOS B or better) with minimal delays. Therefore, no improvements are required to accommodate the existing traffic volumes.



3 Proposed Development

This section will provide additional details regarding the proposed development, including its location, projected site-generated traffic volumes, and the assignment of said volumes to the adjacent road network.

3.1 SITE LOCATION

The subject site is located at 219 Highway 632 in the Township of Seguin (per Figure 1). The development is generally bound by Highway 632 to the north, and private properties along the shores of Lake Rosseau to the south, east, and west.

3.2 PROPOSED LAND-USE

The proposed development consists of 50 single family detached houses to be built within the bounds of Township of Seguin Concession 4, Lot 7, and Concession 5, Lots 6 to 8. The site plan is illustrated in Figure 6.

3.3 SITE ACCESS

Access to the site will be provided by two new intersections. The first intersection will be constructed on Highway 632 (the west access) and is to be located approximately 400 metres west of Maplehurst Road. This satisfies MTO requirements for minimum intersection spacing per MTO's *Highway Access Management Guideline*³. The second intersection will be constructed on Maplehurst Road (the east access) approximately 250 metres south of Highway 632.

Per National Fire Prevention Association (NFPA) Standard 1141⁴, residential areas containing between 100 and 600 households are required to provide at least 2 access roads into the development. While the proposed development consists of only 40 units (i.e. requiring a single access only), approximately 80 existing households are already serviced by Maplehurst Road. Providing only a single connection to Highway 632 via Maplehurst Road would bring the total number of households serviced by Maplehurst Road beyond the 100-unit threshold for a second access. Therefore, a second access to Highway 632 is justified from a fire safety perspective.

³ *Highway Access Management Guideline*. Ontario Ministry of Transportation. December 2013.

⁴ *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*. National Fire Prevention Association. 2017.



Internal access to the development will be provided by a new local road network which will provide access to most of the proposed houses (as illustrated in Figure 6). Any houses not constructed adjacent to the new roads will be serviced by the existing road network. The new roads will be constructed to appropriate municipal standards allowing for safe and efficient two-way operations. Each new intersection will be configured to allow for full traffic movements through the intersection.

3.4 SITE TRAFFIC

3.4.1 Trip Generation

The number of vehicle trips to be generated by the proposed development for the weekday AM and weekday PM peak hours has been determined based on type of use, development size, and trip generation rates per the *ITE Trip Generation Manual*⁵. Based on the proposed development, trip rates for the *single-family detached* (ITE land-use code 210) land-use have been applied. Trip rates and trip generation for the site are summarized in Table 3 .

Table 3: Site Trip Estimates

LAND USE	VARIABLE/ SIZE	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		In	Out	Total	In	Out	Total
single-family detached (ITE 210)	per unit	0.18	0.52	0.70	0.59	0.35	0.94
	50 units	9	26	35	30	17	47

As indicated, the proposed development is expected to generate 35 trips during the weekday AM peak hour, and 47 trips during the weekday PM peak hour.

3.4.2 Trip Distribution & Assignment

The distribution of new trips generated by the site has been developed based on the proximity of the site to existing built-up areas and expected origins/destinations of site-generated trips. The following distribution has been assumed:

- to/from the north - 80%; and
- to/from the south - 20%.

⁵ *Trip Generation Manual, 11th Edition*. Institute of Transportation Engineers.



Trips were further divided based on the amount of site traffic expected to use the local road system and means of access to Highway 632. This distribution was based on the location of the proposed housing within the site – houses built along Maplehurst Road are expected to use that road to reach Highway 632 whereas houses built along the new internal network are expected to use the west access to reach Highway 632. The following distribution was realized:

- to/from the west access – 66%; and
- to/from the east access – 34%.

The resulting site-generated volumes assigned to the adjacent road network are illustrated in Figure 7.



4 Future Conditions

This chapter will address the resulting impacts of the proposed development on the adjacent road system. The following areas will be addressed:

- intersection operations;
- available sight lines along Highway 632 and Maplehurst Road at the proposed new intersections; and
- potential improvements to the study area road network, if necessary.

4.1 TRAFFIC VOLUMES

For the purposes of this study, a 5-year horizon (2027) has been considered to assess the impact of the development on the road network. Given the limited traffic to be generated by the development, a 5-year horizon is considered sufficient in establishing the potential impacts to the surrounding road network.

4.1.1 Background Growth

Based on data from the 2016 and 2021 Canadian Censuses, the population of the Township of Seguin grew from 3,988 persons to 4,304 persons between 2011 and 2016 (growth rate of approximately 1.5% per annum) and from 4,304 persons to 5,280 persons between 2016 and 2021 (growth rate of approximately 4.5% per annum). This results in an overall growth rate of approximately 2.8% per annum from 2011 to 2021.

The District of Parry Sound experienced much lower overall growth over the same periods, with the population growing by approximately 0.3% per annum between 2011 and 2016 (42,162 persons to 42,824 persons) and 1.8% per annum between 2016 and 2021 (42,824 persons to 46,909 persons).

Based on the growth rates observed in the noted census data, a yearly growth rate of 3% has been applied to traffic volumes on Highway 632. This is somewhat lower than the maximum yearly growth rate observed within the Township of Seguin however, it is higher than the 10-year average growth rate within the Township and significantly higher than any of the District of Parry Sound's growth rates. As such, a 3% yearly growth rate is considered conservative. No growth has been applied to Maplehurst Road recognizing that it is a local road which is not expected to experience significant year-over-year growth.



4.1.2 Future Traffic Volumes

The resulting 2027 traffic volumes are illustrated in Figure 8. The volumes are based on the 2022 traffic volumes adjusted to reflect the noted background growth rate and the additional traffic volume generated by the subject development.

4.2 TRAFFIC OPERATIONS

The intersection of Highway 632 & Maplehurst Road was analyzed again under future conditions. In addition, the west access on Highway 632 was also analyzed under future conditions. Results of the operational analysis are summarized in Table 4 with detailed worksheets provided in Appendix C.

Table 4: Intersection Operations – 2027 Conditions

INTERSECTION, MOVEMENTS & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	v/c	Delay	LOS	v/c
Highway 632 & Maplehurst Road	WB LR	stop	13	B	0.15	11	B	0.10
	SB L	free	2	A	0.03	3	A	0.03
Highway 632 & new local road (west access)	WB L	free	1	A	0.01	2	A	0.02
	NB LR	stop	10	B	0.04	9	A	0.02

As indicated, both intersections will provide excellent operations (LOS B or better) with minimal delays under the future conditions. Therefore, no improvements are required to accommodate the existing traffic volumes.

4.3 TURN LANE REQUIREMENTS

Despite the otherwise good operations anticipated at the noted intersections along Highway 632 under future conditions, the need for exclusive left and right turning lanes at each intersection has been reviewed based on MTO warrants. The review is based on the following:

- MTO guidelines⁶ for auxiliary turn lanes at unsignalized intersections; and
- a design speed of 60 km/h (reflective of the 50km/h posted speed on each road).

⁶ *Geometric Design Standards for Ontario Highways*. Ontario Ministry of Transportation, undated.



4.3.1 Left Turn Lanes

For unsignalized intersections on two-lane undivided highways, MTO warrants are based on design speed, the volume of left turning traffic, advancing volume (i.e. traffic travelling in the same direction as the left-turning traffic) and opposing volume (i.e. traffic travelling in the opposite direction as the left-turning traffic). Given the relatively low turning, advancing, and opposing volumes (in the order of 200 vehicles per hour or fewer, per direction) at each intersection, dedicated left turn lanes are not warranted at either intersection on Highway 632. The completed left turn warrants are provided in Appendix D.

4.3.2 Right Turn Lanes

MTO guidelines suggest that an exclusive right turn lane be considered where right turning volumes exceed 60 vehicles per hour (vph) and/or impede the operations of through traffic. As per the volume projections of Figure 8, the right turning volumes from Highway 632 to Maplehurst Road and from Highway 632 to the west access road are both well below the 60 vph threshold. Therefore, right turn lanes are not warranted at either intersection on Highway 632.

4.4 SIGHT LINE ASSESSMENT

The sight line assessment has considered both minimum stopping sight distance and intersection sight distance requirements as per the relevant regulatory body for each road.

- Minimum stopping sight distance provides sufficient distance for an approaching motorist to observe a hazard in the road and bring their vehicle to a complete stop prior to the hazard.
- Intersection sight distance allows a vehicle to enter a main road from a side street (or site access) and attain the appropriate operating speed without significantly impacting the operating speed of an approaching vehicle.

Measured sight lines are illustrated in Figure 9.

4.4.1 Maplehurst Road

As Maplehurst Road is a local road under the jurisdiction of the Township of Seguin, sight distance standards per Transportation Association of Canada's (TAC) *Geometric Design Guide for Canadian Roads*⁷ have been considered in the analysis of the proposed access (the east access) on Maplehurst Road. The stopping sight and intersection sight distance requirements for the road are summarized in Table 5.

⁷ *Geometric Design Guide for Canadian Roads, Chapter 9*. Transportation Association of Canada. June 2017.



Table 5: TAC Sight Distance Requirements

POSTED SPEED	DESIGN SPEED	STOPPING SIGHT DISTANCE	INTERSECTION SIGHT DISTANCE	
			Left Turn	Right Turn
50 km/h	60 km/h	85 m	130 m	110 m

The available sight lines to and from the east access are summarized in Table 6 and are illustrated in Figure 10.

Table 6: Available Sight Distances – East Access

STOPPING SIGHT DISTANCE		INTERSECTION SIGHT DISTANCE	
From North	From South	To North	To South
100 m	105 m	105 m	95 m

As indicated, the sight lines to and from each direction surpass the requirements for stopping sight distance along Maplehurst Road but do not meet the requirements for intersection sight distance in either direction. This is not expected to be problematic, however, as it simply means that approaching vehicles may have to adjust their approach speeds in response to a vehicle entering Maplehurst Road (as the stopping sight distance is satisfied, there will be sufficient distance for vehicles to come to a complete stop as needed). Moreover, while the posted speed limit along Maplehurst Road is 50 km/h, the road alignment (frequent vertical/horizontal alignment changes) and surface type (unpaved, treated surface) encourage slower travel speeds while navigating the road. In this regard, the available sight lines at the east access are considered sufficient.

4.4.2 Highway 632

As Highway 632 is under the jurisdiction of MTO, sight distance standards per MTO's *Highway Access Management Guideline* were considered in the analysis of the proposed access (the west access) on Highway 632. It is noted that the west access is located approximately 30 metres east of a posted speed limit change – west of that point the posted speed limit is 80 km/h whereas east of that point the posted speed limit is 50 km/h. Therefore, the site access is located within the 50 km/h speed zone. Regardless, for the purposes of this analysis it has been assumed that vehicles approaching from west of the access (i.e. eastbound) are travelling at 80 km/h, whereas vehicles approaching from the east (i.e. westbound) are travelling at 50 km/h. The stopping sight



and intersection sight distance requirements for the noted speeds (pertaining to a public access) are summarized in Table 7.

Table 7: MTO Sight Distance Requirements

POSTED SPEED	DESIGN SPEED	STOPPING SIGHT DISTANCE	INTERSECTION SIGHT DISTANCE
50 km/h	70 km/h	105 m	225 m
80 km/h	100 km/h	185 m	340 m

The available sight lines to and from the west access are summarized in Table 8 and are illustrated in Figure 11.

Table 8: Available Sight Distances at West Access

STOPPING SIGHT DISTANCE		INTERSECTION SIGHT DISTANCE	
From East	From West	To East	To West
180 m	>400 m	200 m	>400 m

As indicated, the sight lines to and from the west are excellent with sight lines exceeding 400 metres. Sight lines from the east (towards the west access) are sufficient for stopping sight distance requirements however, the sight lines to the east (from the west access) are deficient by approximately 25 metres regarding intersection sight distance. As with the Maplehurst access, approaching vehicles may be required to adjust their travel speeds as necessary should a vehicle enter the road from the site access. Regardless, the stopping sight distance (considered the critical condition) is satisfied. It is further noted that the available intersection sight distance satisfies the TAC requirement of the same condition for a design speed of approximately 95 km/h.



5 Summary

Proposed Development

This study has addressed the transportation impacts associated with the proposed residential development to be located at 219 Highway 632 in the Township of Seguin. The proposed development consists of 50 single-detached houses built within Township of Seguin Concession 4 (Lot 7) and Concession 5 (Lots 6 to 8). Upon completion, the site is expected to generate 35 trips during the weekday AM peak hour and 47 trips during the weekday PM peak hour.

Transportation Impacts

To assess the impacts of the proposed development, the operations of the intersection of Highway 632 and Maplehurst Road were analyzed under existing conditions (2022) and future horizon (2027) period.

The results of the operational analyses indicate that the intersection currently provides excellent operations (LOS B or better) with minimal delays and is expected to continue to provide excellent operations (LOS B or better) with minimal delays through the 2027 horizon. No improvements are required to accommodate the proposed development.

Operations of the future west access intersection on Highway 632 were also assessed under the 2027 horizon. Results of the operational analysis indicate that the intersection is expected to provide excellent operations (LOS B or better) through the 2027 horizon.

Overall, the proposed development is not expected to have a significant impact on the study area road network.

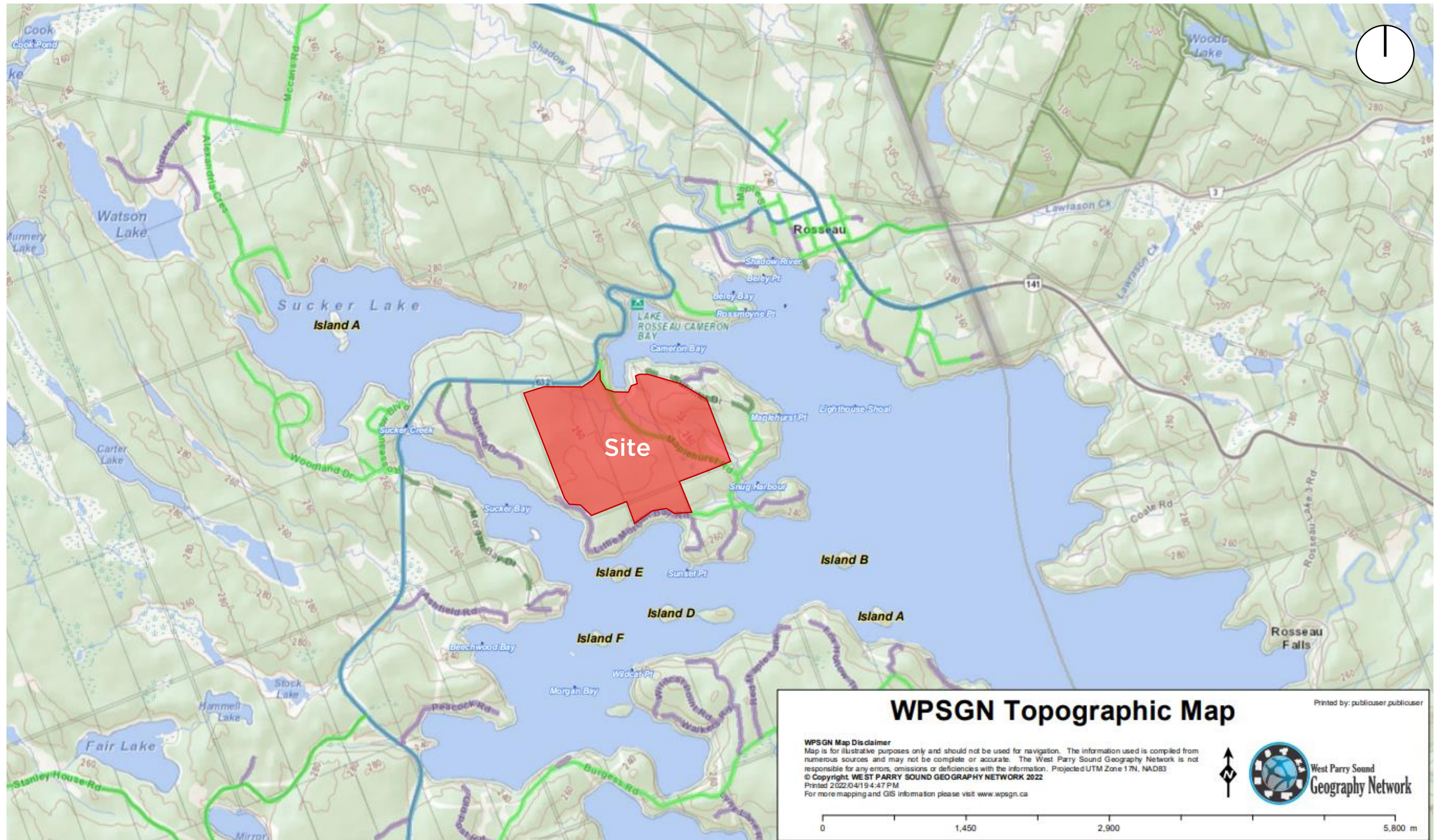
Turn Lane Requirements

The need for exclusive left and right turn lanes at the two intersections along Highway 632 were reviewed in context of MTO warrant criteria. Based on this review, exclusive turn lanes are not considered necessary to accommodate future traffic volumes.

Sight Line Assessment

Sight lines at each of the proposed site access points were reviewed in context of TAC and MTO requirements for minimum stopping and intersection sight distances as appropriate. Based on the review, sight lines were found to be adequate at each access.

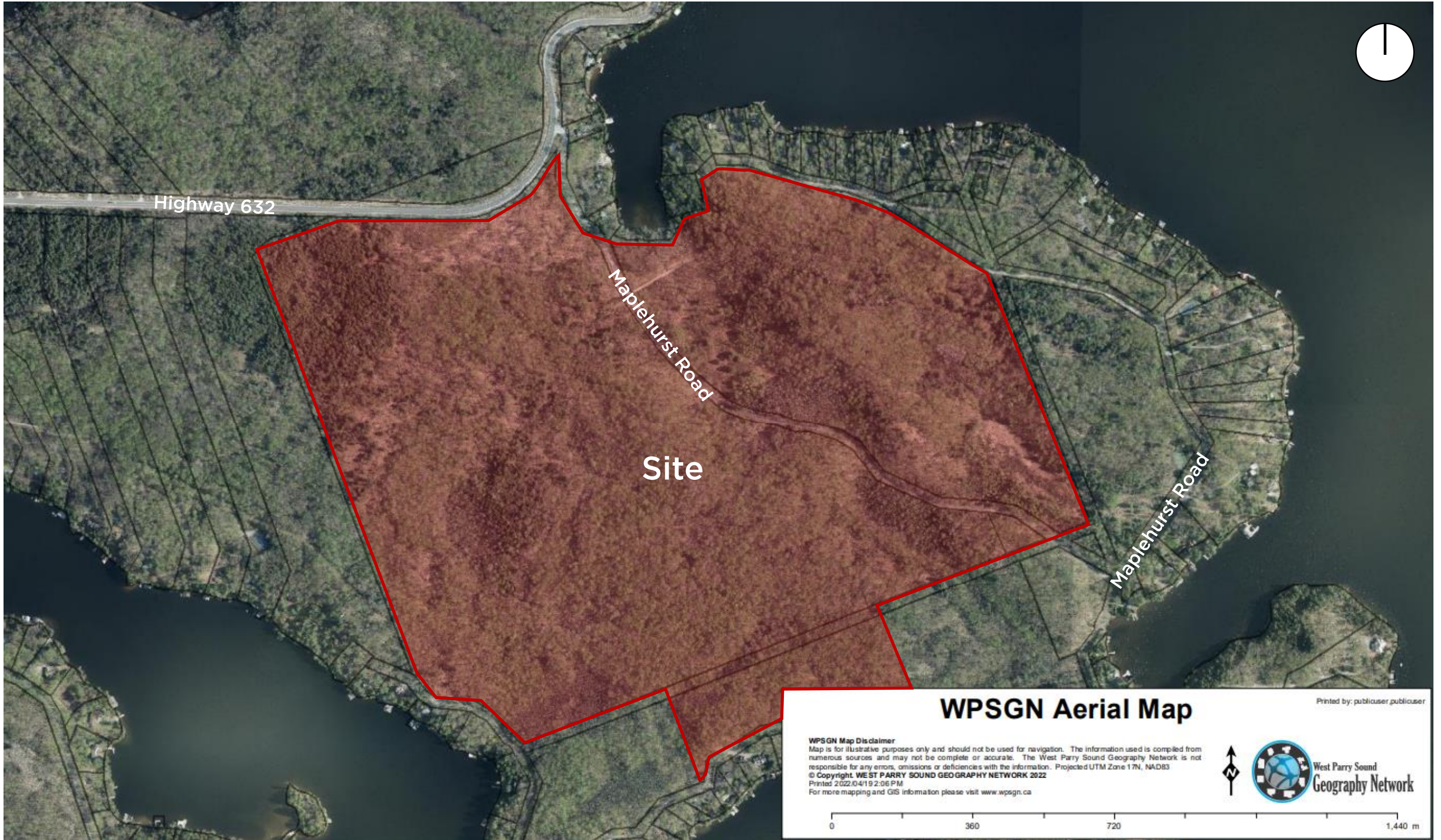




ROSSEAU SPRINGS SUBDIVISION

Figure 1: Site Location





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 Figure 2A: Road Network





Intersection of Highway 632 & Maplehurst Road, looking north



Intersection of Highway 632 & Maplehurst Road, looking south

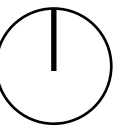


Intersection of Highway 632 & Maplehurst Road, looking east

ROSSEAU SPRINGS SUBDIVISION

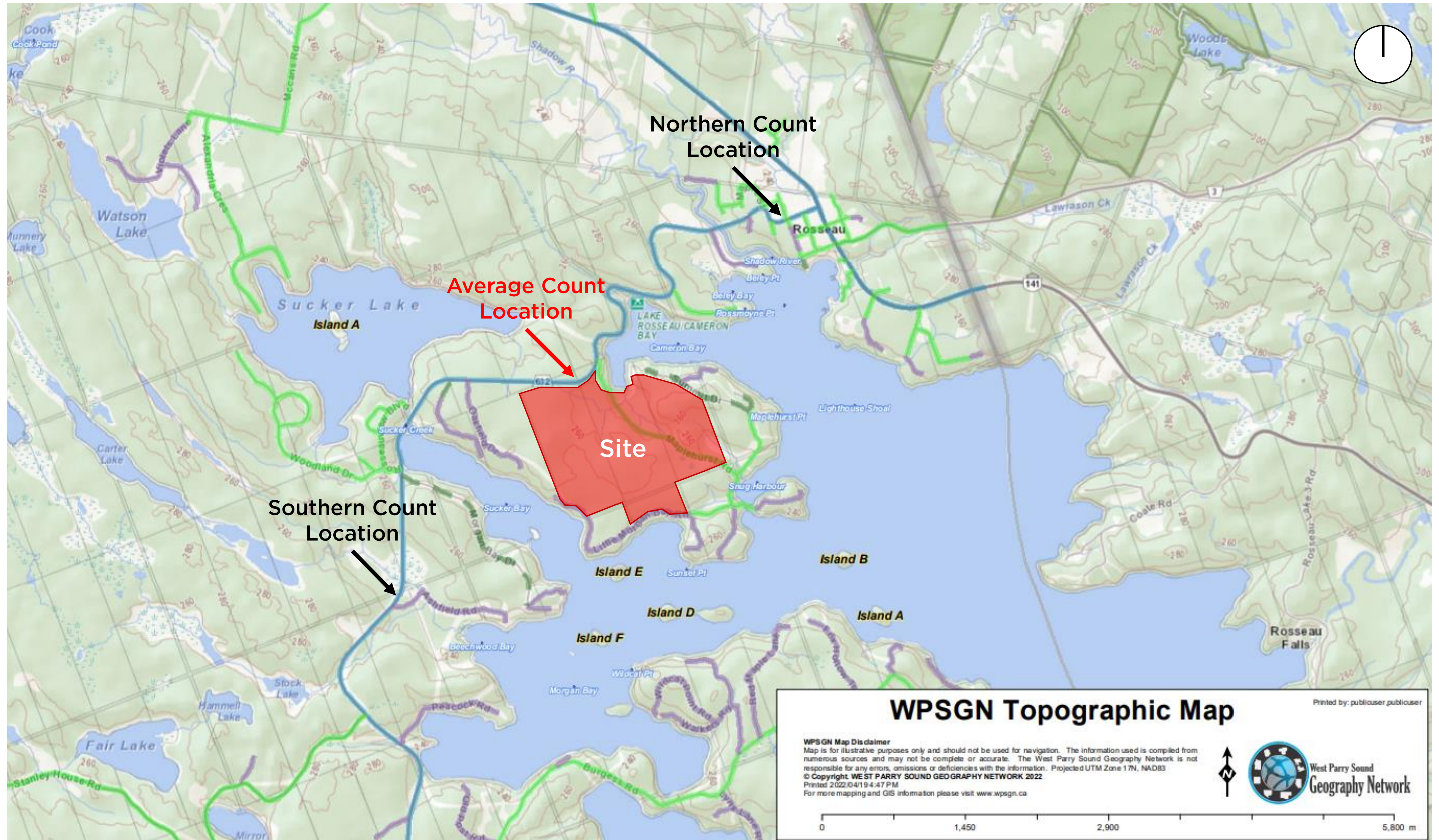
Figure 2B: Road Network





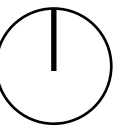
100 Weekday AM Peak Hour
(100) Weekday PM Peak Hour





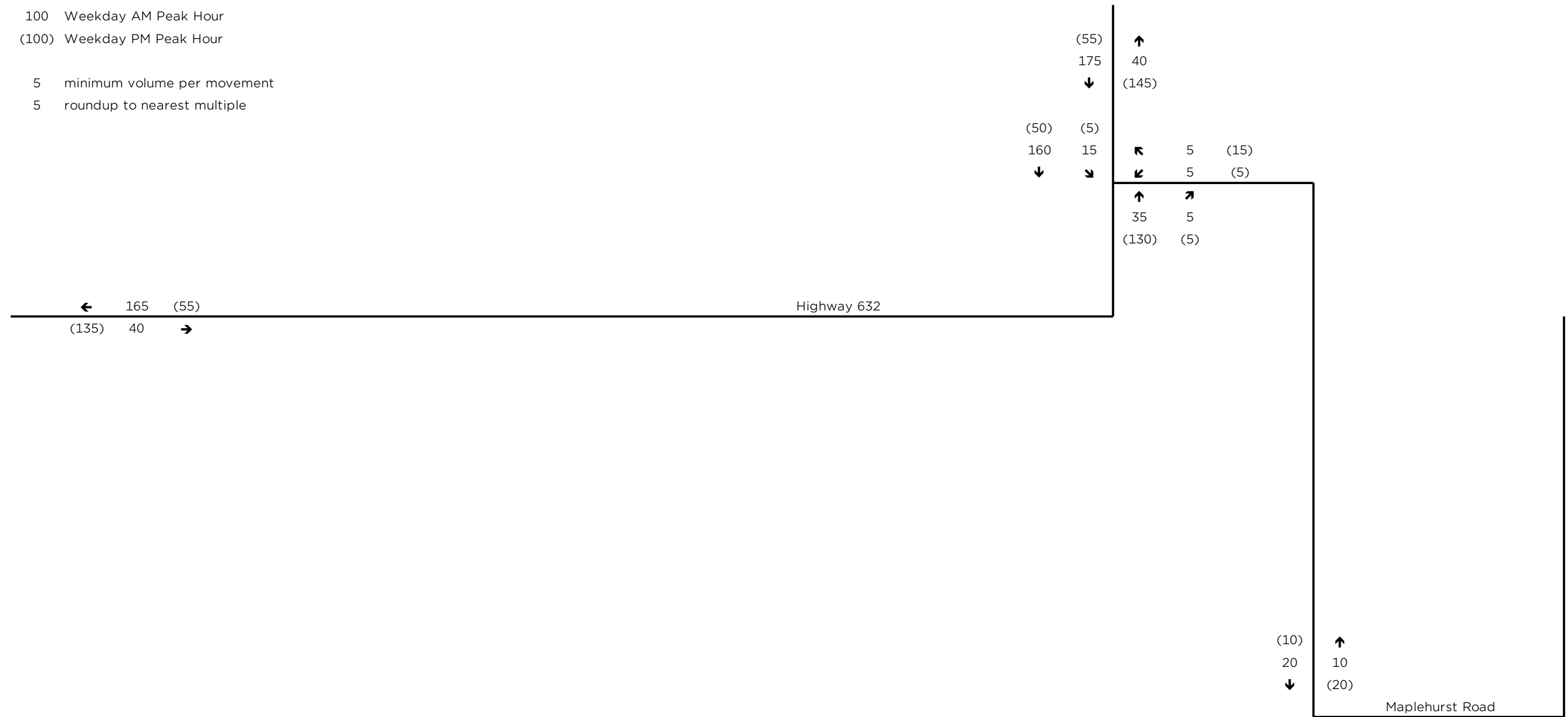
ROSSEAU SPRINGS SUBDIVISION
 Figure 4: MTO 2018 Traffic Count Locations

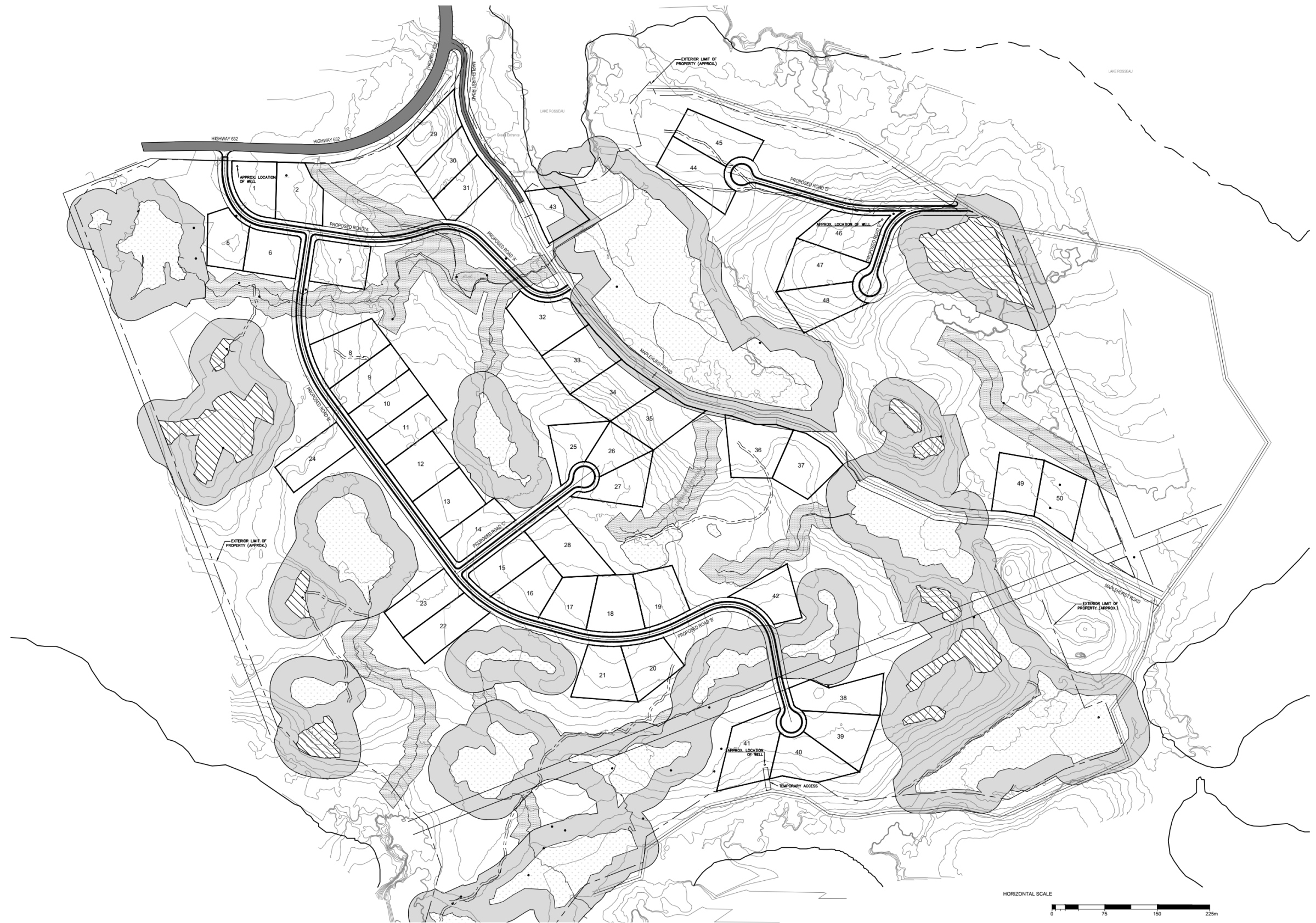




100 Weekday AM Peak Hour
(100) Weekday PM Peak Hour

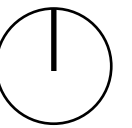
5 minimum volume per movement
5 roundup to nearest multiple



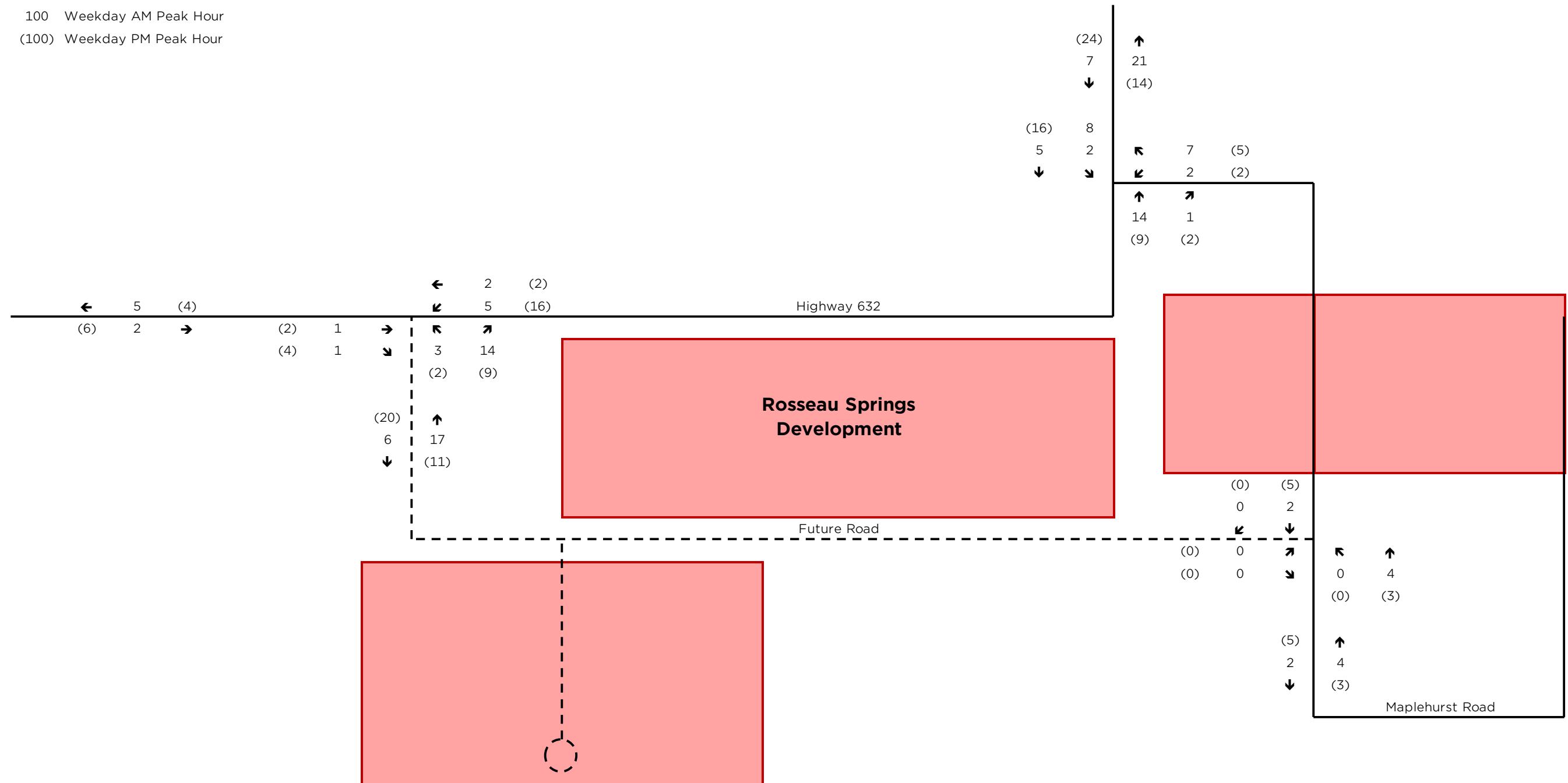


ROSSEAU SPRINGS SUBDIVISION
 Figure 6: Site Plan



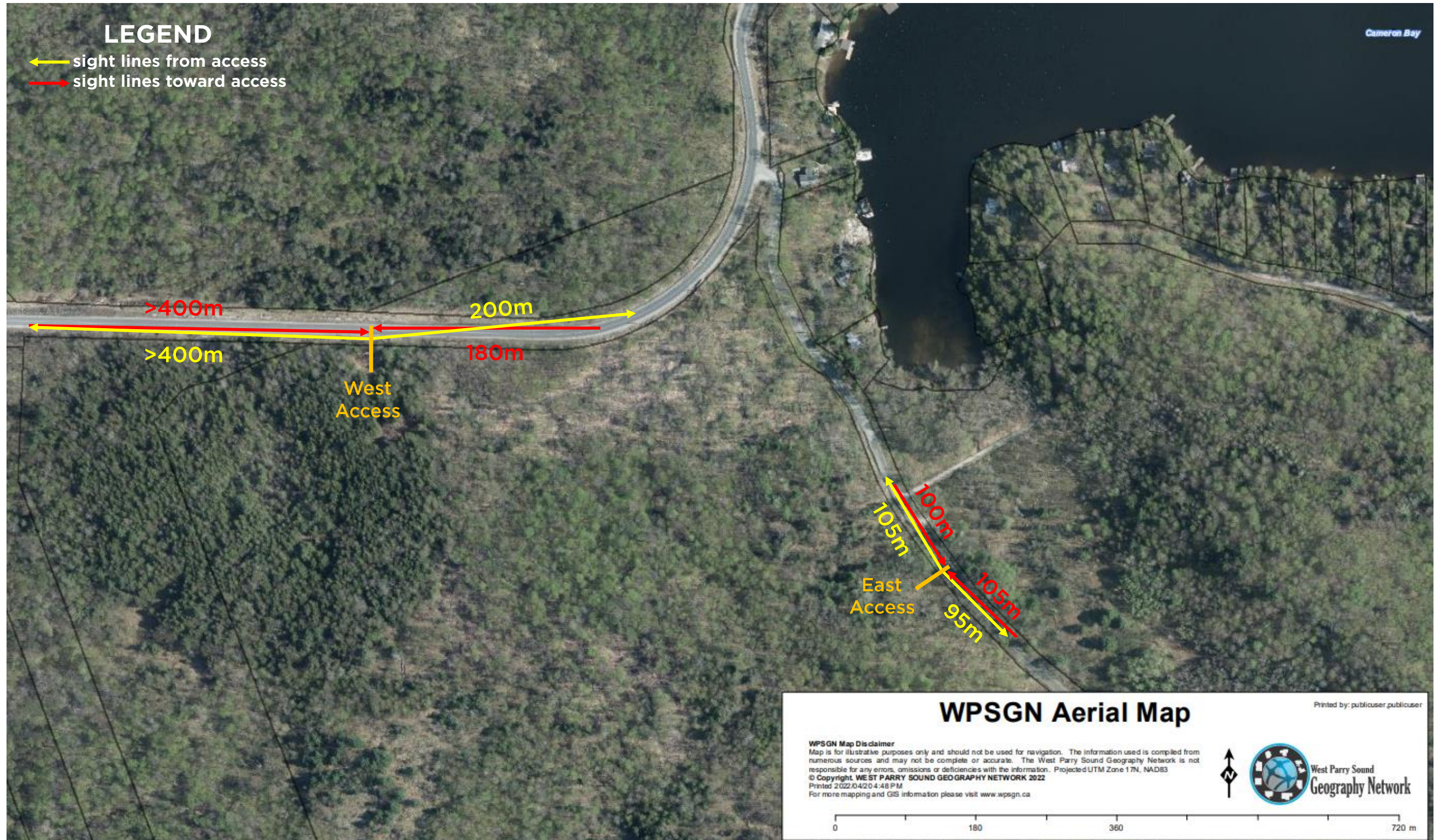


100 Weekday AM Peak Hour
 (100) Weekday PM Peak Hour



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 Figure 7: Site-Generated Traffic Volumes





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 Figure 9: Sight Lines





Sight lines towards the north along Maplehurst Road from the east site access



Sight lines towards the south along Maplehurst Road from the east site access



Sight lines from the north along Maplehurst Road towards the east site access



Sight lines from the south along Maplehurst Road towards the east site access

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Figure 10: East Access Sight Lines





Sight lines towards the east along Highway 632 from the west site access



Sight lines towards the west along Highway 632 from the west site access



Sight lines from the east along Highway 632 towards the west site access



Sight lines from the west along Highway 632 towards the west site access

ROSSEAU SPRINGS SUBDIVISION

Figure 11: West Access Sight Lines



Appendix A: Traffic Counts



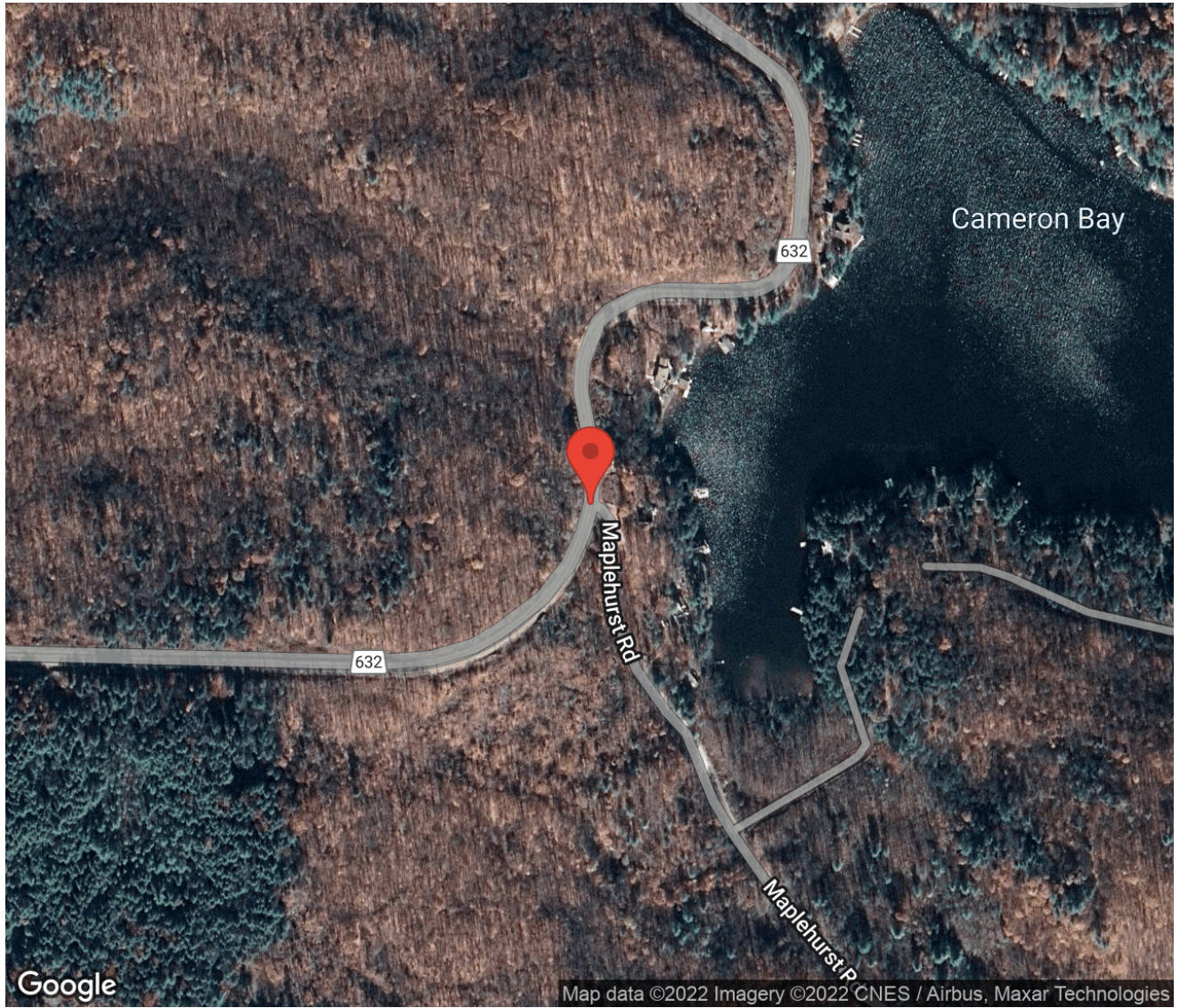
Project #22-136 - Tatham Engineering Ltd

Intersection Count Report

Intersection:	Hwy 632 & Maplehurst Rd
Municipality:	Rosseau
Count Date:	Apr 27, 2022
Site Code:	2213600001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 15:00-18:00
Weather:	Clear

Traffic Count Map

Intersection: Hwy 632 & Maplehurst Rd
Site Code: 221360001
Municipality: Rosseau
Count Date: Apr 27, 2022



Traffic Count Summary

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Municipality: Rosseau
 Count Date: Apr 27, 2022

Hwy 632 - Traffic Summary

Hour	North Approach Totals						South Approach Totals						Total
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	5	93	0	0	98	0	0	17	0	0	17	0	115
08:00 - 09:00	19	71	0	0	90	0	0	21	1	0	22	0	112
09:00 - 10:00	7	35	0	0	42	0	0	24	6	0	30	0	72
BREAK													
15:00 - 16:00	0	35	0	0	35	0	0	41	2	0	43	0	78
16:00 - 17:00	2	40	0	0	42	0	0	79	0	0	79	0	121
17:00 - 18:00	0	17	0	0	17	0	0	55	0	0	55	0	72
GRAND TOTAL	33	291	0	0	324	0	0	237	9	0	246	0	570



Traffic Count Data

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Municipality: Rosseau
 Count Date: Apr 27, 2022

North Approach - Hwy 632

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
07:00	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
07:15	2	18	0	0	20	0	3	0	0	3	0	0	0	0	0	0
07:30	1	18	0	0	19	0	0	0	0	0	0	0	0	0	0	0
07:45	2	40	0	0	42	0	3	0	0	3	0	0	0	0	0	0
08:00	4	29	0	0	33	0	2	0	0	2	0	0	0	0	0	0
08:15	6	16	0	0	22	0	0	0	0	0	0	0	0	0	0	0
08:30	5	12	0	0	17	0	2	0	0	2	0	0	0	0	0	0
08:45	3	9	0	0	12	1	1	0	0	2	0	0	0	0	0	0
09:00	1	11	0	0	12	0	2	0	0	2	0	0	0	0	0	0
09:15	3	5	0	0	8	1	0	0	0	1	0	0	0	0	0	0
09:30	1	11	0	0	12	0	0	0	0	0	0	0	0	0	0	0
09:45	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	29	186	0	0	215	2	13	0	0	15	0	0	0	0	0	0



Traffic Count Data

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Municipality: Rosseau
 Count Date: Apr 27, 2022

North Approach - Hwy 632

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0
15:15	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	0
15:30	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	0
15:45	0	7	0	0	7	0	1	0	0	1	0	0	0	0	0	0
16:00	2	14	0	0	16	0	0	0	0	0	0	0	0	0	0	0
16:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
16:30	0	5	0	0	5	0	1	0	0	1	0	4	0	0	4	0
16:45	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
17:00	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
17:15	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0
17:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
17:45	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	2	82	0	0	84	0	6	0	0	6	0	4	0	0	4	0
GRAND TOTAL	31	268	0	0	299	2	19	0	0	21	0	4	0	0	4	0



Traffic Count Data

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Municipality: Rosseau
 Count Date: Apr 27, 2022

South Approach - Hwy 632

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↺	Total	←	↑	→	↺	Total	←	↑	→	↺	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0
07:30	0	8	0	0	8	0	3	0	0	3	0	0	0	0	0	0
07:45	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0
08:00	0	5	1	0	6	0	0	0	0	0	0	0	0	0	0	0
08:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
08:30	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	0
08:45	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	0
09:00	0	4	3	0	7	0	1	0	0	1	0	0	0	0	0	0
09:15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
09:30	0	9	1	0	10	0	1	0	0	1	0	0	0	0	0	0
09:45	0	4	2	0	6	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	0	49	7	0	56	0	13	0	0	13	0	0	0	0	0	0



Traffic Count Data

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Municipality: Rosseau
 Count Date: Apr 27, 2022

South Approach - Hwy 632

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	0	7	2	0	9	0	1	0	0	1	0	0	0	0	0	0
15:15	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0
15:30	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
15:45	0	10	0	0	10	0	1	0	0	1	0	0	0	0	0	0
16:00	0	11	0	0	11	0	1	0	0	1	0	0	0	0	0	0
16:15	0	18	0	0	18	0	2	0	0	2	0	0	0	0	0	0
16:30	0	27	0	0	27	0	0	0	0	0	0	0	0	0	0	0
16:45	0	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0
17:00	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	0
17:15	0	18	0	0	18	0	0	0	0	0	0	0	0	0	0	0
17:30	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0
17:45	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	169	2	0	171	0	6	0	0	6	0	0	0	0	0	0
GRAND TOTAL	0	218	9	0	227	0	19	0	0	19	0	0	0	0	0	0



Traffic Count Data

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Municipality: Rosseau
 Count Date: Apr 27, 2022

East Approach - Maplehurst Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	←	↑	→	↻	Total	←	↑	→	↻	Total	←	↑	→	↻	Total	
15:00	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0
15:15	3	0	4	0	7	0	0	0	0	0	0	0	0	0	0	0
15:30	1	0	4	0	5	1	0	0	0	1	0	0	0	0	0	0
15:45	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	7	0	29	0	36	1	0	0	0	1	0	0	0	0	0	0
GRAND TOTAL	8	0	37	0	45	1	0	0	0	1	0	0	0	0	0	0

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 07:15:00
To: 08:15:00




Intersection: Hwy 632 & Maplehurst Rd
Site Code: 2213600001
Count Date: Apr 27, 2022

Weather conditions: Clear




**** Unsignalized Intersection ****

Major Road: Hwy 632 runs N/S

North Approach

	Out	In	Total
	114	20	134
	8	5	13
	0	0	0
Totals	122	25	147

Hwy 632




	0	0	0
	8	0	0
	105	9	0
Totals	113	9	0



Peds: 0






Peds: 0




	Out	In	Total
Totals	22	1	0
	17	1	0
	5	0	0
	0	0	0

Hwy 632




East Approach

	Out	In	Total
	4	10	14
	0	0	0
	0	0	0
Totals	4	10	14


Maplehurst Rd

	Out	In	Total
Totals	0	3	0
	0	3	0
	0	0	0
	0	0	0

South Approach

	Out	In	Total
	18	106	124
	5	8	13
	0	0	0
Totals	23	114	137

 - Cars

 - Trucks

 - Bicycles

Comments



Peak Hour Summary

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Count Date: Apr 27, 2022
 Period: 07:00 - 10:00

Peak Hour Data (07:15 - 08:15)

Start Time	North Approach Hwy 632						South Approach Hwy 632						East Approach Maplehurst Rd						West Approach						Total Vehicles
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	
07:15	2	21		0	0	23		2	0	0	0	2	0		1	0	0	1					0		26
07:30	1	18		0	0	19		11	0	0	0	11	0		0	0	0	0					0		30
07:45	2	43		0	0	45		4	0	0	0	4	1		1	0	0	2					0		51
08:00	4	31		0	0	35		5	1	0	0	6	0		1	0	0	1					0		42
Grand Total	9	113		0	0	122		22	1	0	0	23	1		3	0	0	4					0	0	149
Approach %	7.4	92.6		0	-		95.7	4.3	0	-			25	75	0	-							0		
Totals %	6	75.8		0	81.9		14.8	0.7	0	15.4			0.7	2	0	2.7							0		
PHF	0.56	0.66		0	0.68		0.5	0.25	0	0.52			0.25	0.75	0	0.5							0	0.73	
Cars	9	105		0	114		17	1	0	18			1	3	0	4							0		136
% Cars	100	92.9		0	93.4		77.3	100	0	78.3			100	100	0	100							0		91.3
Trucks	0	8		0	8		5	0	0	5			0	0	0	0							0		13
% Trucks	0	7.1		0	6.6		22.7	0	0	21.7			0	0	0	0							0		8.7
Bicycles	0	0		0	0		0	0	0	0			0	0	0	0							0		0
% Bicycles	0	0		0	0		0	0	0	0			0	0	0	0							0		0
Peds				0	-					0	-					0	-						0	-	0
% Peds				0	-					0	-					0	-						0	-	0

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 16:30:00
To: 17:30:00

Intersection: Hwy 632 & Maplehurst Rd
Site Code: 2213600001
Count Date: Apr 27, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Hwy 632 runs N/S

North Approach

	Out	In	Total
	28	100	128
	2	0	2
	4	0	4
Totals	34	100	134

Hwy 632

	4	0	0
	2	0	0
	28	0	0
Totals	34	0	0



Peds: 0



Peds: 0

Peds: 0

Peds: 0

Totals	91	0	0
	91	0	0
	0	0	0
	0	0	0

Hwy 632

East Approach

	Out	In	Total
	11	0	11
	0	0	0
	0	0	0
Totals	11	0	11

Maplehurst Rd

Totals			
0	0	0	0
9	9	0	0
2	2	0	0

South Approach

	Out	In	Total
	91	30	121
	0	2	2
	0	4	4
Totals	91	36	127

- Cars

- Trucks

- Bicycles

Comments



Peak Hour Summary

Intersection: Hwy 632 & Maplehurst Rd
 Site Code: 2213600001
 Count Date: Apr 27, 2022
 Period: 15:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Hwy 632						South Approach Hwy 632						East Approach Maplehurst Rd						West Approach						Total Vehicles	
	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total	←	↑	→	↻	Peds	Total		
16:30	0	10		0	0	10		27	0	0	0	27	1		3	0	0	4					0			41
16:45	0	12		0	0	12		20	0	0	0	20	1		2	0	0	3					0			35
17:00	0	5		0	0	5		26	0	0	0	26	0		4	0	0	4					0			35
17:15	0	7		0	0	7		18	0	0	0	18	0		0	0	0	0					0			25
Grand Total	0	34		0	0	34		91	0	0	0	91	2		9	0	0	11					0	0		136
Approach %	0	100		0	-	-	100	0	0	-	-	-	18.2		81.8	0	-	-					-			-
Totals %	0	25		0	25	25	66.9	0	0	66.9	66.9	1.5		6.6	0	8.1	8.1					0			0	
PHF	0	0.71		0	0.71	0.71	0.84	0	0	0.84	0.84	0.5		0.56	0	0.69	0.69					0	0		0.83	
Cars	0	28		0	28	28	91	0	0	91	91	2		9	0	11	11					0			130	
% Cars	0	82.4		0	82.4	82.4	100	0	0	100	100	100		100	0	100	100					0			95.6	
Trucks	0	2		0	2	2	0	0	0	0	0	0		0	0	0	0					0			2	
% Trucks	0	5.9		0	5.9	5.9	0	0	0	0	0	0		0	0	0	0					0			1.5	
Bicycles	0	4		0	4	4	0	0	0	0	0	0		0	0	0	0					0			4	
% Bicycles	0	11.8		0	11.8	11.8	0	0	0	0	0	0		0	0	0	0					0			2.9	
Peds					0	-					0	-					0	-					0	-	0	
% Peds					0	-					0	-					0	-					0	-	-	

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 0.6**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: N **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Jun-2018 to 26-Jun-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	06/19	06/20	06/21	06/22	06/23	06/24	06/25	06/26
00:00-01:00		1	1					
01:00-02:00		1	1					
02:00-03:00		1	0					
03:00-04:00		1	0					
04:00-05:00		1	0					
05:00-06:00		2	1					
06:00-07:00		4	2					
07:00-08:00		24	21					
08:00-09:00		31	23					
09:00-10:00		26	22					
10:00-11:00		22	36					
11:00-12:00		42	43					
AM Total		156	150					
12:00-13:00	44	32						
13:00-14:00	30	42						
14:00-15:00	47	46						
15:00-16:00	38	48						
16:00-17:00	75	62						
17:00-18:00	68	73						
18:00-19:00	35	40						
19:00-20:00	21	20						
20:00-21:00	10	15						
21:00-22:00	3	10						
22:00-23:00	2	3						
23:00-00:00	1	2						
PM Total	374	393						
24h. Total	374	549	150					
Noon - Noon	530	543	0	0	0	0	0	0

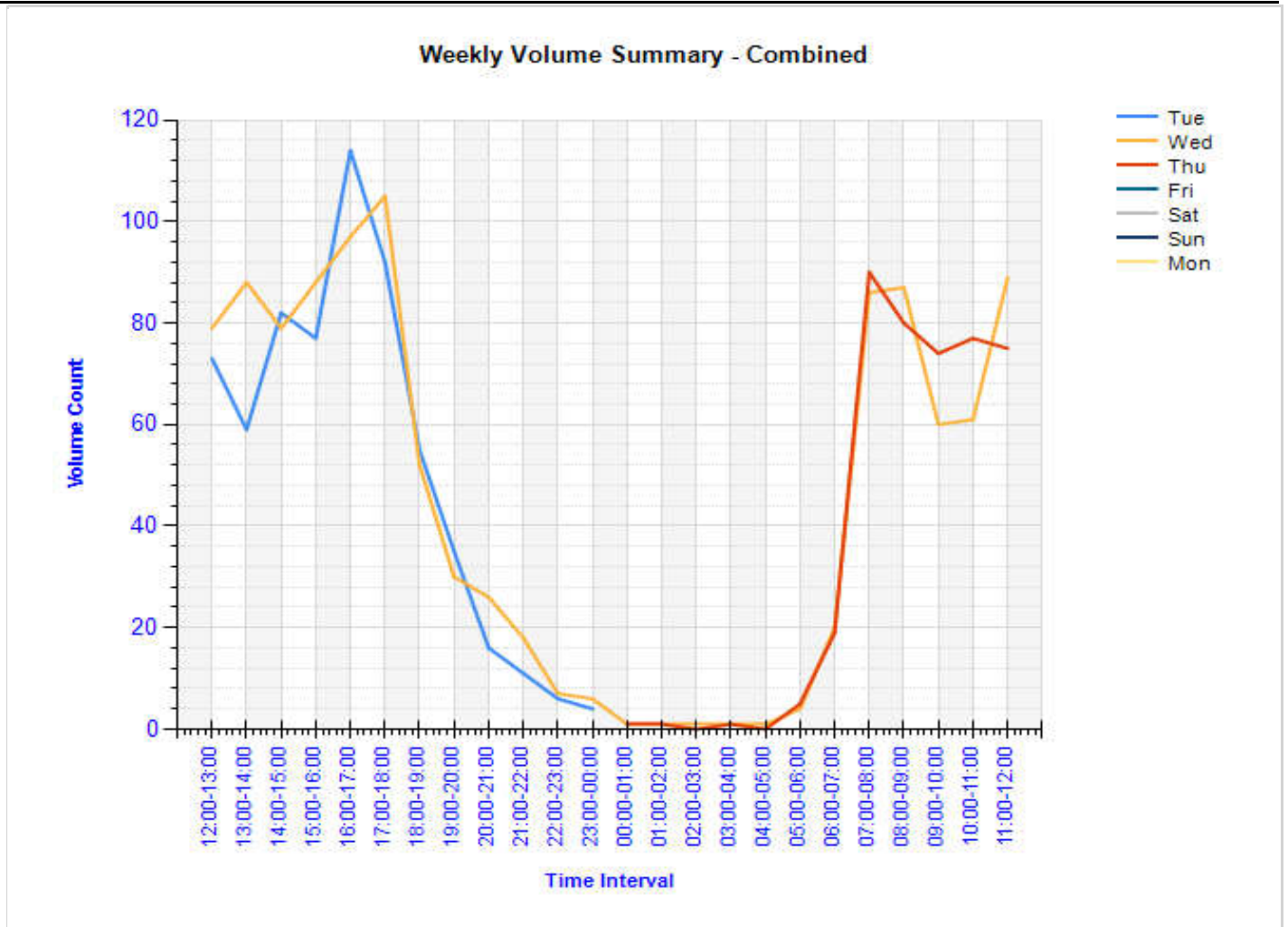
TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 0.6**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: S **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Jun-2018 to 26-Jun-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	06/19	06/20	06/21	06/22	06/23	06/24	06/25	06/26
00:00-01:00		0	0					
01:00-02:00		0	0					
02:00-03:00		0	0					
03:00-04:00		0	1					
04:00-05:00		0	0					
05:00-06:00		2	4					
06:00-07:00		16	17					
07:00-08:00		62	69					
08:00-09:00		56	57					
09:00-10:00		34	52					
10:00-11:00		39	41					
11:00-12:00		47	32					
AM Total		256	273					
12:00-13:00	29	47						
13:00-14:00	29	46						
14:00-15:00	35	33						
15:00-16:00	39	40						
16:00-17:00	39	35						
17:00-18:00	24	32						
18:00-19:00	20	12						
19:00-20:00	14	10						
20:00-21:00	6	11						
21:00-22:00	8	8						
22:00-23:00	4	4						
23:00-00:00	3	4						
PM Total	250	282						
24h. Total	250	538	273					
Noon - Noon	506	555	0	0	0	0	0	0

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 0.6**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: COMBINED **Lanes: 2** **Speed: 80 km/h** **Dates: 19-Jun-2018 to 26-Jun-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	06/19	06/20	06/21	06/22	06/23	06/24	06/25	06/26
00:00-01:00		1	1					
01:00-02:00		1	1					
02:00-03:00		1	0					
03:00-04:00		1	1					
04:00-05:00		1	0					
05:00-06:00		4	5					
06:00-07:00		20	19					
07:00-08:00		86	90	◀				
08:00-09:00		87	80	◀				
09:00-10:00		60	74					
10:00-11:00		61	77					
11:00-12:00		89	75	◀				
AM Total		412	423					
12:00-13:00	73	79						
13:00-14:00	59	88						
14:00-15:00	82	79						
15:00-16:00	77	88						
16:00-17:00	114	97						
17:00-18:00	92	105	◀					
18:00-19:00	55	52						
19:00-20:00	35	30						
20:00-21:00	16	26						
21:00-22:00	11	18						
22:00-23:00	6	7						
23:00-00:00	4	6						
PM Total	624	675						
24h. Total	624	1087	423					
Noon - Noon	1036	1098	0	0	0	0	0	0
ADT	1067	1067	640	1600	1600	730	200	
AWD								
AADT								
SADT								
SAWDT								
WADT								
DHV								



Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 0.65**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: N **Lanes: 1** **Speed: 80 km/h** **Dates: 03-Jul-2018 to 10-Jul-2018**

H. Interval	Tue 07/03	Wed 07/04	Thu 07/05	Fri 07/06	Sat 07/07	Sun 07/08	Mon 07/09	Tue 07/10
00:00-01:00		0	1					
01:00-02:00		1	2					
02:00-03:00		1	1					
03:00-04:00		0	1					
04:00-05:00		0	0					
05:00-06:00		1	1					
06:00-07:00		5	5					
07:00-08:00		27	19					
08:00-09:00		31	32					
09:00-10:00		46	54					
10:00-11:00		58	50					
11:00-12:00		57	52					
AM Total		227	218					
12:00-13:00	76	51						
13:00-14:00	67	56						
14:00-15:00	63	52						
15:00-16:00	60	61						
16:00-17:00	66	59						
17:00-18:00	72	62						
18:00-19:00	35	36						
19:00-20:00	24	12						
20:00-21:00	16	14						
21:00-22:00	14	9						
22:00-23:00	9	5						
23:00-00:00	3	1						
PM Total	505	418						
24h. Total	505	645	218					
Noon - Noon	732	636	0	0	0	0	0	0

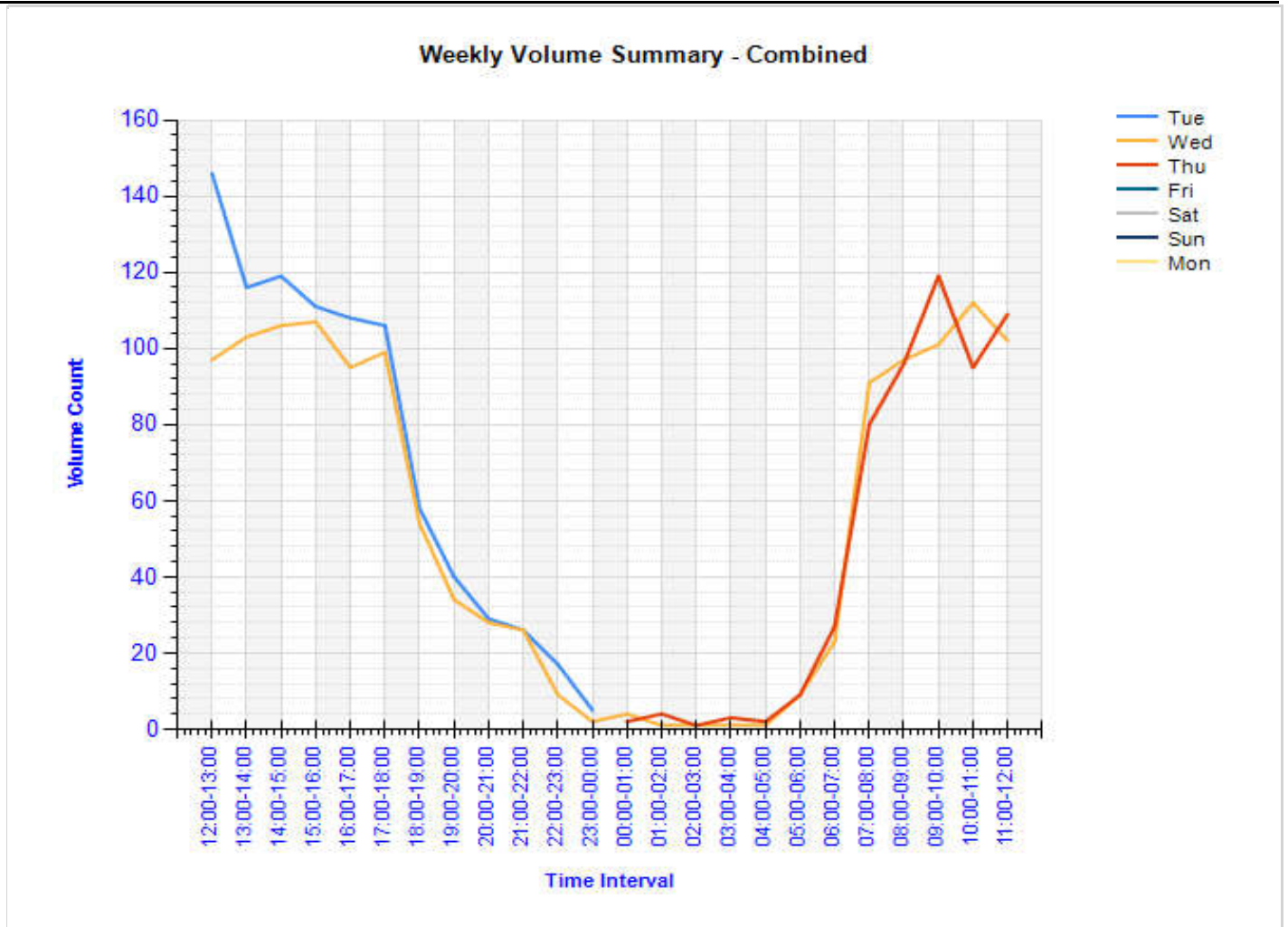
TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 0.65**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: S **Lanes: 1** **Speed: 80 km/h** **Dates: 03-Jul-2018 to 10-Jul-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	07/03	07/04	07/05	07/06	07/07	07/08	07/09	07/10
00:00-01:00		4	1					
01:00-02:00		0	2					
02:00-03:00		0	0					
03:00-04:00		1	2					
04:00-05:00		1	2					
05:00-06:00		8	8					
06:00-07:00		18	22					
07:00-08:00		64	61					
08:00-09:00		66	64					
09:00-10:00		55	65					
10:00-11:00		54	45					
11:00-12:00		45	57					
AM Total		316	329					
12:00-13:00	70	46						
13:00-14:00	49	47						
14:00-15:00	56	54						
15:00-16:00	51	46						
16:00-17:00	42	36						
17:00-18:00	34	37						
18:00-19:00	23	18						
19:00-20:00	16	22						
20:00-21:00	13	14						
21:00-22:00	12	17						
22:00-23:00	8	4						
23:00-00:00	2	1						
PM Total	376	342						
24h. Total	376	658	329					
Noon - Noon	692	671	0	0	0	0	0	0

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 0.65**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: COMBINED **Lanes: 2** **Speed: 80 km/h** **Dates: 03-Jul-2018 to 10-Jul-2018**

	Tue		Wed		Thu		Fri		Sat		Sun		Mon		Tue	
H. Interval	07/03		07/04	Pk.	07/05	Pk.	07/06	Pk.	07/07	Pk.	07/08	Pk.	07/09	Pk.	07/10	Pk.
00:00-01:00			4		2											
01:00-02:00			1		4											
02:00-03:00			1		1											
03:00-04:00			1		3											
04:00-05:00			1		2											
05:00-06:00			9		9											
06:00-07:00			23		27											
07:00-08:00			91		80											
08:00-09:00			97	◀	96	◀										
09:00-10:00			101		119											
10:00-11:00			112		95											
11:00-12:00			102		109	◀										
AM Total			543		547											
12:00-13:00	146	◀	97													
13:00-14:00	116		103	◀												
14:00-15:00	119		106													
15:00-16:00	111	◀	107	◀												
16:00-17:00	108		95													
17:00-18:00	106		99													
18:00-19:00	58		54													
19:00-20:00	40		34													
20:00-21:00	29		28													
21:00-22:00	26		26													
22:00-23:00	17		9													
23:00-00:00	5		2													
PM Total	881		760													
24h. Total	881		1303		547											
Noon - Noon	1424		1307		0		0		0		0		0		0	
ADT	1366		1366		890		2050		2100		930		250			



Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 1.04**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: N **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Sep-2018 to 26-Sep-2018**

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
H. Interval	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26
00:00-01:00		0	0					
01:00-02:00		1	3					
02:00-03:00		0	1					
03:00-04:00		0	0					
04:00-05:00		0	0					
05:00-06:00		1	2					
06:00-07:00		6	3					
07:00-08:00		15	20					
08:00-09:00		19	24					
09:00-10:00		26	26					
10:00-11:00		25	26					
11:00-12:00		30	36					
AM Total		123	141					
12:00-13:00	31	31						
13:00-14:00	50	30						
14:00-15:00	30	38						
15:00-16:00	42	29						
16:00-17:00	64	67						
17:00-18:00	59	39						
18:00-19:00	16	9						
19:00-20:00	10	12						
20:00-21:00	9	4						
21:00-22:00	4	3						
22:00-23:00	4	1						
23:00-00:00	1	3						
PM Total	320	266						
24h. Total	320	389	141					
Noon - Noon	443	407	0	0	0	0	0	0

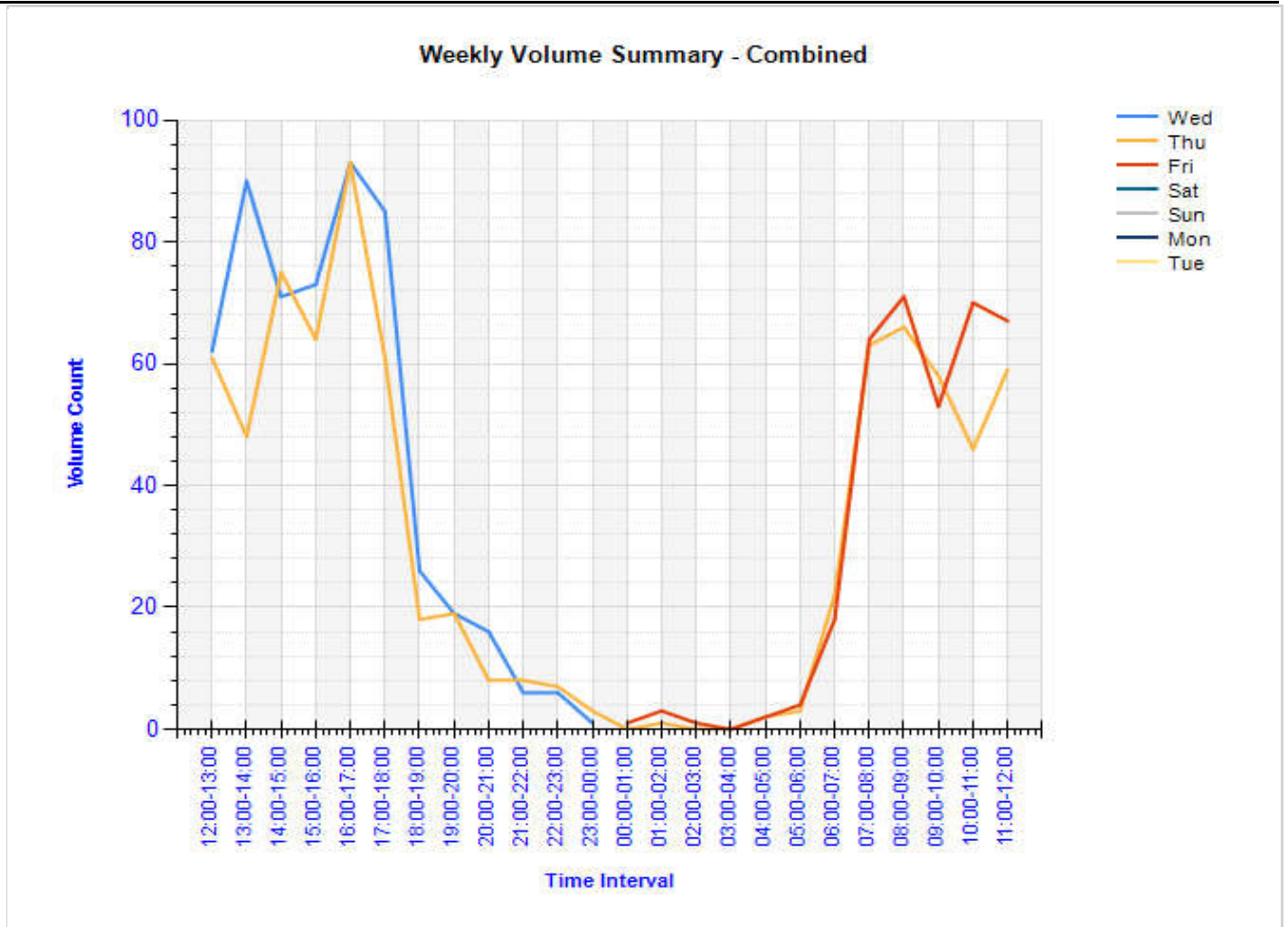
TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 1.04**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: S **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Sep-2018 to 26-Sep-2018**

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
H. Interval	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26
00:00-01:00		0	1					
01:00-02:00		0	0					
02:00-03:00		0	0					
03:00-04:00		0	0					
04:00-05:00		2	2					
05:00-06:00		2	2					
06:00-07:00		16	15					
07:00-08:00		48	44					
08:00-09:00		47	47					
09:00-10:00		32	27					
10:00-11:00		21	44					
11:00-12:00		29	31					
AM Total		197	213					
12:00-13:00	31	30						
13:00-14:00	40	18						
14:00-15:00	41	37						
15:00-16:00	31	35						
16:00-17:00	29	26						
17:00-18:00	26	22						
18:00-19:00	10	9						
19:00-20:00	9	7						
20:00-21:00	7	4						
21:00-22:00	2	5						
22:00-23:00	2	6						
23:00-00:00	0	0						
PM Total	228	199						
24h. Total	228	396	213					
Noon - Noon	425	412	0	0	0	0	0	0

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 120 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LR** **PDCS: 86** **Factor: 1.04**
LHRS: 68200 **Offset: 5.000** **Locn: 5.000 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: COMBINED **Lanes: 2** **Speed: 80 km/h** **Dates: 19-Sep-2018 to 26-Sep-2018**

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
H. Interval	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26
00:00-01:00		0	1					
01:00-02:00		1	3					
02:00-03:00		0	1					
03:00-04:00		0	0					
04:00-05:00		2	2					
05:00-06:00		3	4					
06:00-07:00		22	18					
07:00-08:00		63	64					
08:00-09:00		66	71					
09:00-10:00		58	53					
10:00-11:00		46	70					
11:00-12:00		59	67					
AM Total		320	354					
12:00-13:00	62	61						
13:00-14:00	90	48						
14:00-15:00	71	75						
15:00-16:00	73	64						
16:00-17:00	93	93						
17:00-18:00	85	61						
18:00-19:00	26	18						
19:00-20:00	19	19						
20:00-21:00	16	8						
21:00-22:00	6	8						
22:00-23:00	6	7						
23:00-00:00	1	3						
PM Total	548	465						
24h. Total	548	785	354					
Noon - Noon	868	819	0	0	0	0	0	0
ADT	844	844	880	1250	1300	570	160	
AWD								
AADT								
SADT								
SAWDT								
WADT								
DHV								



Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.73**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: N **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Jun-2018 to 26-Jun-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	06/19	06/20	06/21	06/22	06/23	06/24	06/25	06/26
00:00-01:00		0	1					
01:00-02:00		0	0					
02:00-03:00		0	0					
03:00-04:00		0	1					
04:00-05:00		0	0					
05:00-06:00		3	6					
06:00-07:00		19	19					
07:00-08:00		80	91					
08:00-09:00		68	67					
09:00-10:00		40	60					
10:00-11:00		51	57					
11:00-12:00		55	43					
AM Total		316	345					
12:00-13:00	36	64						
13:00-14:00	39	47						
14:00-15:00	38	41						
15:00-16:00	52	46						
16:00-17:00	49	41						
17:00-18:00	42	27						
18:00-19:00	22	28						
19:00-20:00	24	21						
20:00-21:00	19	19						
21:00-22:00	12	16						
22:00-23:00	14	9						
23:00-00:00	4	4						
PM Total	351	363						
24h. Total	351	679	345					
Noon - Noon	667	708	0	0	0	0	0	0

TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

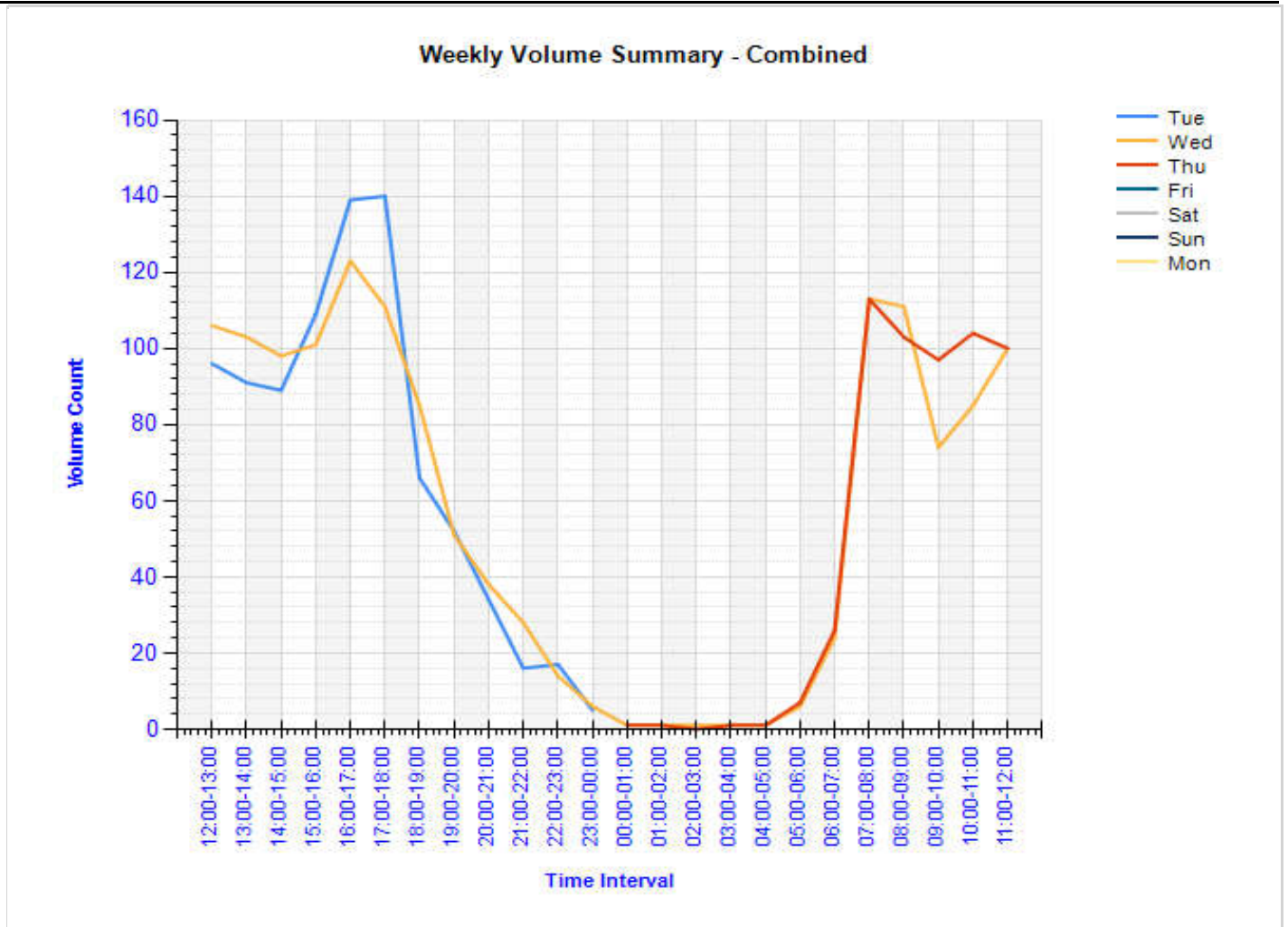
Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.73**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: S **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Jun-2018 to 26-Jun-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	06/19	06/20	06/21	06/22	06/23	06/24	06/25	06/26
00:00-01:00		1	0					
01:00-02:00		1	1					
02:00-03:00		1	0					
03:00-04:00		1	0					
04:00-05:00		1	1					
05:00-06:00		3	1					
06:00-07:00		5	7					
07:00-08:00		33	22					
08:00-09:00		43	36					
09:00-10:00		34	37					
10:00-11:00		34	47					
11:00-12:00		45	57					
AM Total		202	209					
12:00-13:00	60	42						
13:00-14:00	52	56						
14:00-15:00	51	57						
15:00-16:00	57	55						
16:00-17:00	90	82						
17:00-18:00	98	84						
18:00-19:00	44	57						
19:00-20:00	28	30						
20:00-21:00	15	19						
21:00-22:00	4	12						
22:00-23:00	3	5						
23:00-00:00	1	2						
PM Total	503	501						
24h. Total	503	703	209					
Noon - Noon	705	710	0	0	0	0	0	

TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.73**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: COMBINED **Lanes: 2** **Speed: 80 km/h** **Dates: 19-Jun-2018 to 26-Jun-2018**

	Tue		Wed		Thu		Fri		Sat		Sun		Mon		Tue	
H. Interval	06/19		06/20	PK.	06/21	PK.	06/22	PK.	06/23	PK.	06/24	PK.	06/25	PK.	06/26	PK.
00:00-01:00			1		1											
01:00-02:00			1		1											
02:00-03:00			1		0											
03:00-04:00			1		1											
04:00-05:00			1		1											
05:00-06:00			6		7											
06:00-07:00			24		26											
07:00-08:00			113	◀	113	◀										
08:00-09:00			111		103											
09:00-10:00			74		97											
10:00-11:00			85		104											
11:00-12:00			100		100	◀										
AM Total			518		554											
12:00-13:00	96	◀	106	◀												
13:00-14:00	91		103													
14:00-15:00	89		98													
15:00-16:00	109		101													
16:00-17:00	139		123	◀												
17:00-18:00	140	◀	111													
18:00-19:00	66		85													
19:00-20:00	52		51													
20:00-21:00	34		38													
21:00-22:00	16		28													
22:00-23:00	17		14													
23:00-00:00	5		6													
PM Total	854		864													
24h. Total	854		1382		554											
Noon - Noon	1372		1418		0		0		0		0		0		0	
ADT	1395		1395		1000		1850		1900		1050		160			

TVIS II - Traffic Volume information System
ICS Weekly Volume Summary


Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.69**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: N **Lanes: 1** **Speed: 80 km/h** **Dates: 17-Jul-2018 to 24-Jul-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	07/17	07/18	07/19	07/20	07/21	07/22	07/23	07/24
00:00-01:00		2	1					
01:00-02:00		1	0					
02:00-03:00		1	0					
03:00-04:00		0	1					
04:00-05:00		3	2					
05:00-06:00		5	4					
06:00-07:00		20	18					
07:00-08:00		71	82					
08:00-09:00		64	72					
09:00-10:00		73	64					
10:00-11:00		67	44					
11:00-12:00		79	63					
AM Total		386	351					
12:00-13:00	65	79						
13:00-14:00	52	56						
14:00-15:00	72	55						
15:00-16:00	62	55						
16:00-17:00	46	59						
17:00-18:00	40	70						
18:00-19:00	42	40						
19:00-20:00	21	39						
20:00-21:00	33	22						
21:00-22:00	27	19						
22:00-23:00	9	21						
23:00-00:00	6	4						
PM Total	475	519						
24h. Total	475	905	351					
Noon - Noon	861	870	0	0	0	0	0	0

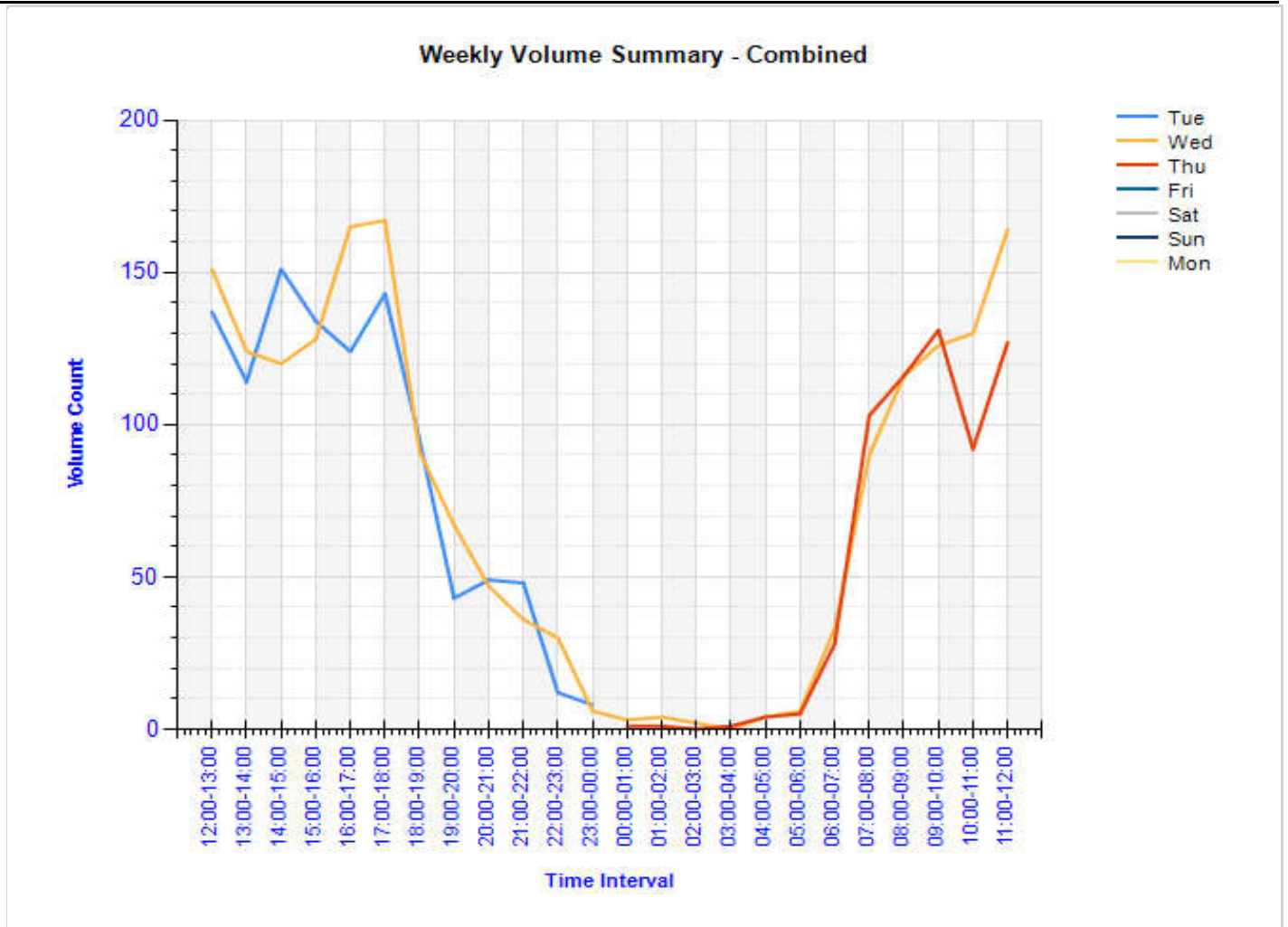
TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.69**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: S **Lanes: 1** **Speed: 80 km/h** **Dates: 17-Jul-2018 to 24-Jul-2018**

	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue
H. Interval	07/17	07/18	07/19	07/20	07/21	07/22	07/23	07/24
00:00-01:00		1	0					
01:00-02:00		3	1					
02:00-03:00		1	0					
03:00-04:00		0	0					
04:00-05:00		1	2					
05:00-06:00		1	1					
06:00-07:00		13	10					
07:00-08:00		19	21					
08:00-09:00		52	44					
09:00-10:00		53	67					
10:00-11:00		63	48					
11:00-12:00		85	64					
AM Total		292	258					
12:00-13:00	72	72						
13:00-14:00	62	68						
14:00-15:00	79	65						
15:00-16:00	72	73						
16:00-17:00	78	106						
17:00-18:00	103	97						
18:00-19:00	53	51						
19:00-20:00	22	28						
20:00-21:00	16	25						
21:00-22:00	21	17						
22:00-23:00	3	9						
23:00-00:00	2	2						
PM Total	583	613						
24h. Total	583	905	258					
Noon - Noon	875	871	0	0	0	0	0	0

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.69**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: COMBINED **Lanes: 2** **Speed: 80 km/h** **Dates: 17-Jul-2018 to 24-Jul-2018**

	Tue		Wed		Thu		Fri		Sat		Sun		Mon		Tue	
H. Interval	07/17		07/18	Pk.	07/19	Pk.	07/20	Pk.	07/21	Pk.	07/22	Pk.	07/23	Pk.	07/24	Pk.
00:00-01:00			3		1											
01:00-02:00			4		1											
02:00-03:00			2		0											
03:00-04:00			0		1											
04:00-05:00			4		4											
05:00-06:00			6		5											
06:00-07:00			33		28											
07:00-08:00			90		103											
08:00-09:00			116	◀	116	◀										
09:00-10:00			126		131											
10:00-11:00			130		92											
11:00-12:00			164	◀	127	◀										
AM Total			678		609											
12:00-13:00	137	◀	151													
13:00-14:00	114		124													
14:00-15:00	151		120													
15:00-16:00	134		128													
16:00-17:00	124		165													
17:00-18:00	143	◀	167	◀												
18:00-19:00	95		91													
19:00-20:00	43		67													
20:00-21:00	49		47													
21:00-22:00	48		36													
22:00-23:00	12		30													
23:00-00:00	8		6													
PM Total	1058		1132													
24h. Total	1058		1810		609											
Noon - Noon	1736		1741		0		0		0		0		0		0	
ADT	1738		1738		1200		2350		2350		1300		200			
AWD																
AADT																
SADT																
SAWDT																
WADT																
DHV																



Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.92**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: N **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Sep-2018 to 26-Sep-2018**

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
H. Interval	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26
00:00-01:00		0	0					
01:00-02:00		1	4					
02:00-03:00		0	1					
03:00-04:00		0	0					
04:00-05:00		1	0					
05:00-06:00		2	2					
06:00-07:00		7	6					
07:00-08:00		26	32					
08:00-09:00		36	31					
09:00-10:00		30	42					
10:00-11:00		40	44					
11:00-12:00		43	46					
AM Total		186	208					
12:00-13:00	49	56						
13:00-14:00	51	39						
14:00-15:00	50	39						
15:00-16:00	44	37						
16:00-17:00	79	94						
17:00-18:00	80	54						
18:00-19:00	23	16						
19:00-20:00	23	16						
20:00-21:00	10	11						
21:00-22:00	7	6						
22:00-23:00	3	3						
23:00-00:00	1	3						
PM Total	420	374						
24h. Total	420	560	208					
Noon - Noon	606	582	0	0	0	0	0	0

TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

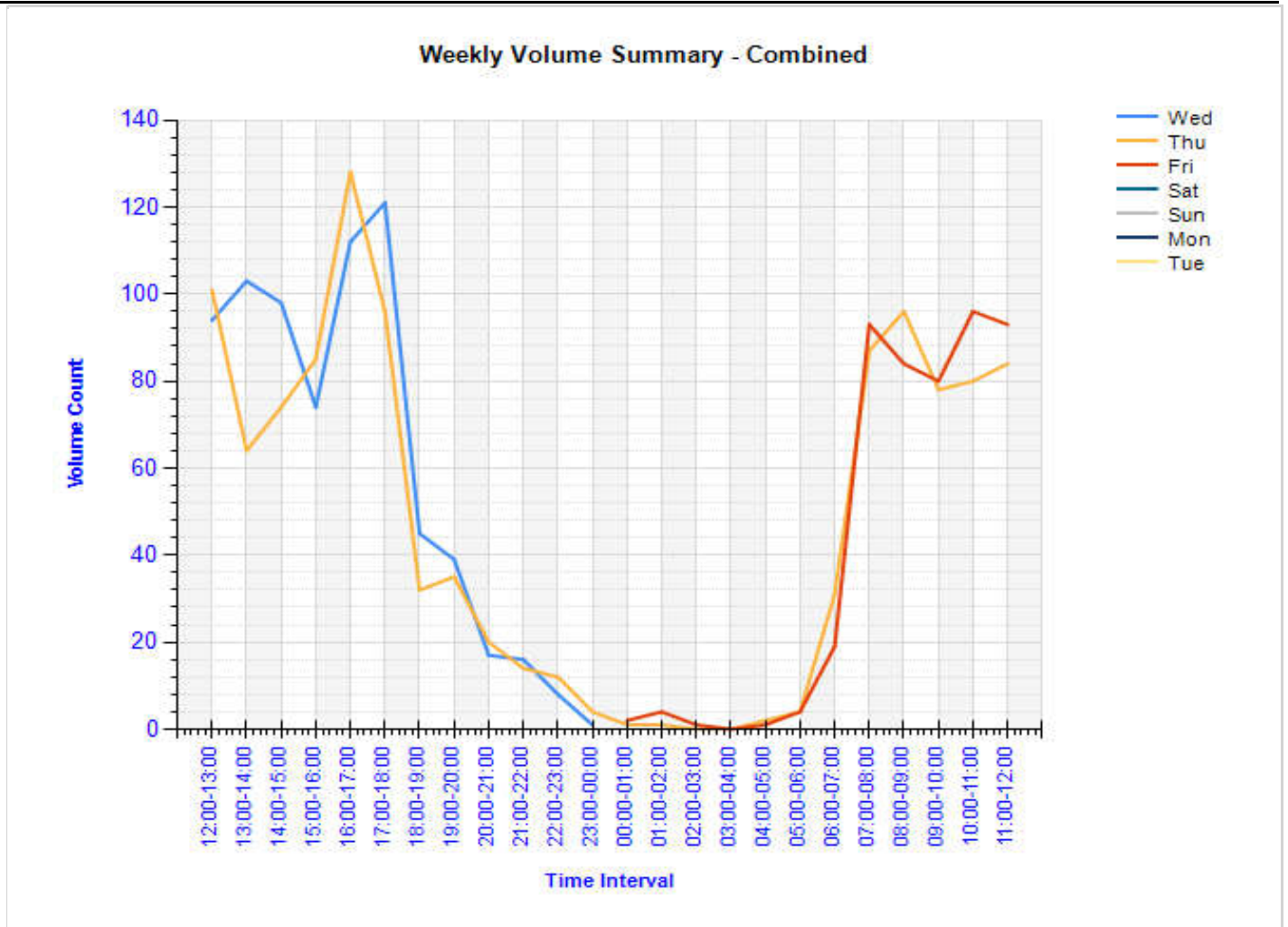
Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.92**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: S **Lanes: 1** **Speed: 80 km/h** **Dates: 19-Sep-2018 to 26-Sep-2018**

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
H. Interval	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26
00:00-01:00		1	2					
01:00-02:00		0	0					
02:00-03:00		0	0					
03:00-04:00		0	0					
04:00-05:00		1	1					
05:00-06:00		2	2					
06:00-07:00		24	13					
07:00-08:00		61	61					
08:00-09:00		60	53					
09:00-10:00		48	38					
10:00-11:00		40	52					
11:00-12:00		41	47					
AM Total		278	269					
12:00-13:00	45	45						
13:00-14:00	52	25						
14:00-15:00	48	35						
15:00-16:00	30	48						
16:00-17:00	33	34						
17:00-18:00	41	42						
18:00-19:00	22	16						
19:00-20:00	16	19						
20:00-21:00	7	9						
21:00-22:00	9	8						
22:00-23:00	5	9						
23:00-00:00	0	1						
PM Total	308	291						
24h. Total	308	569	269					
Noon - Noon	586	560	0	0	0	0	0	

TVIS II - Traffic Volume information System
ICS Weekly Volume Summary

Hwy: 632 **Between: MUSKOKA REG-PARRY SOUND DIST BDY**
TS: 125 **and: HWY 141-PARRY SOUND RD-ROSSEAU(END OF HWY)**
Regn: NORTHEAS **Pattern: LT** **PDCS: 47** **Factor: 0.92**
LHRS: 68200 **Offset: 10.600** **Locn: 10.600 KM N OF MUSKOKA REG-PARRY SOUND DIST BDY**
Dir: COMBINED **Lanes: 2** **Speed: 80 km/h** **Dates: 19-Sep-2018 to 26-Sep-2018**

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
H. Interval	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26
00:00-01:00		1	2					
01:00-02:00		1	4					
02:00-03:00		0	1					
03:00-04:00		0	0					
04:00-05:00		2	1					
05:00-06:00		4	4					
06:00-07:00		31	19					
07:00-08:00		87	93					
08:00-09:00		96	84					
09:00-10:00		78	80					
10:00-11:00		80	96					
11:00-12:00		84	93					
AM Total		464	477					
12:00-13:00	94	101						
13:00-14:00	103	64						
14:00-15:00	98	74						
15:00-16:00	74	85						
16:00-17:00	112	128						
17:00-18:00	121	96						
18:00-19:00	45	32						
19:00-20:00	39	35						
20:00-21:00	17	20						
21:00-22:00	16	14						
22:00-23:00	8	12						
23:00-00:00	1	4						
PM Total	728	665						
24h. Total	728	1129	477					
Noon - Noon	1192	1142	0	0	0	0	0	0
ADT	AWD	AADT	SADT	SAWDT	WADT	DHV		
1167	1167	1050	1550	1600	860	130		



Appendix B: LOS Definitions

CAPACITY ANALYSIS AT UNSIGNALIZED INTERSECTIONS

Highway Capacity Manual Methodology

The level of service at an unsignalized intersection is determined on the basis of control delay for each critical lane. This method of analysis is taken from the Highway Capacity Manual, Special Report 209, by the Transportation Research Board, 1997.

The average control delay for any particular critical movement (control delay includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay) is a function of the service rate or capacity of the approach and degree of saturation. The level of service criteria for unsignalized intersections is outlined below and is related to ranges in vehicle delay.

Level of Service	Expected Delay to Minor Street Traffic	Average Control Delay 'd' (sec/veh)
A	Little or no delays	$0 < d \leq 10$
B	Short traffic delays	$10 \leq d \leq 15$
C	Average traffic delays	$15 \leq d \leq 25$
D	Long traffic delays	$25 \leq d \leq 35$
E	Very long traffic delays	$35 \leq d \leq 50$
F	Extreme delays with queuing which may cause congestion affecting other traffic movements in the intersection	$d > 50$

Appendix C: Intersection Operations

HCM Unsignalized Intersection Capacity Analysis
 1: Hwy 632 & Maplehurst Rd

2022 Existing Conditions
 Weekday AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	5	35	5	15	160
Future Volume (Veh/h)	5	5	35	5	15	160
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.25	0.75	0.50	0.25	0.56	0.66
Hourly flow rate (vph)	20	7	70	20	27	242
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	376	80			90	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	80			90	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			98	
cM capacity (veh/h)	614	980			1505	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	27	90	269			
Volume Left	20	0	27			
Volume Right	7	20	0			
cSH	680	1700	1505			
Volume to Capacity	0.04	0.05	0.02			
Queue Length 95th (m)	0.9	0.0	0.4			
Control Delay (s)	10.5	0.0	0.9			
Lane LOS	B		A			
Approach Delay (s)	10.5	0.0	0.9			
Approach LOS	B					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			25.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 1: Hwy 632 & Maplehurst Rd

2022 Existing Conditions
 Weekday PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	15	130	5	5	50
Future Volume (Veh/h)	5	15	130	5	5	50
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.50	0.56	0.84	0.92	0.92	0.71
Hourly flow rate (vph)	10	27	155	5	5	70
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	238	158			160	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	158			160	
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	97			100	
cM capacity (veh/h)	748	888			1419	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	37	160	75			
Volume Left	10	0	5			
Volume Right	27	5	0			
cSH	845	1700	1419			
Volume to Capacity	0.04	0.09	0.00			
Queue Length 95th (m)	1.0	0.0	0.1			
Control Delay (s)	9.5	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	0.5			
Approach LOS	A					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			17.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 1: Hwy 632 & Maplehurst Rd

2027 Future Conditions
 Weekday AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	20	60	15	25	195
Future Volume (Veh/h)	15	20	60	15	25	195
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.25	0.75	0.50	0.25	0.56	0.66
Hourly flow rate (vph)	60	27	120	60	45	295
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	535	150			180	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	535	150			180	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	97			97	
cM capacity (veh/h)	490	896			1396	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	87	180	340			
Volume Left	60	0	45			
Volume Right	27	60	0			
cSH	570	1700	1396			
Volume to Capacity	0.15	0.11	0.03			
Queue Length 95th (m)	4.1	0.0	0.8			
Control Delay (s)	12.4	0.0	1.3			
Lane LOS	B		A			
Approach Delay (s)	12.4	0.0	1.3			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			28.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
2: New Local Road & Hwy 632

2027 Future Conditions
Weekday AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	
Traffic Volume (veh/h)	50	5	5	195	5	15
Future Volume (Veh/h)	50	5	5	195	5	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.52	0.25	0.50	0.52	0.50	0.75
Hourly flow rate (vph)	96	20	10	375	10	20
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			116		501	106
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			116		501	106
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		98	98
cM capacity (veh/h)			1473		526	948
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	116	385	30			
Volume Left	0	10	10			
Volume Right	20	0	20			
cSH	1700	1473	748			
Volume to Capacity	0.07	0.01	0.04			
Queue Length 95th (m)	0.0	0.2	1.0			
Control Delay (s)	0.0	0.3	10.0			
Lane LOS			A			B
Approach Delay (s)	0.0	0.3	10.0			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			24.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Maplehurst Rd & New Local Road

2027 Future Conditions
 Weekday AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	5	20	25	5
Future Volume (Veh/h)	5	5	5	20	25	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	10	10	10	40	50	10
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	115	55	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	115	55	60			
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	99	99			
cM capacity (veh/h)	876	1012	1544			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	50	60			
Volume Left	10	10	0			
Volume Right	10	0	10			
cSH	939	1544	1700			
Volume to Capacity	0.02	0.01	0.04			
Queue Length 95th (m)	0.5	0.1	0.0			
Control Delay (s)	8.9	1.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	1.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			15.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 1: Hwy 632 & Maplehurst Rd

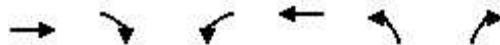
2027 Future Conditions
 Weekday PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	25	165	15	20	80
Future Volume (Veh/h)	15	25	165	15	20	80
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.50	0.60	0.84	0.50	0.50	0.71
Hourly flow rate (vph)	30	42	196	30	40	113
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	404	211			226	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404	211			226	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			97	
cM capacity (veh/h)	585	829			1342	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	72	226	153			
Volume Left	30	0	40			
Volume Right	42	30	0			
cSH	706	1700	1342			
Volume to Capacity	0.10	0.13	0.03			
Queue Length 95th (m)	2.6	0.0	0.7			
Control Delay (s)	10.7	0.0	2.2			
Lane LOS	B		A			
Approach Delay (s)	10.7	0.0	2.2			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			28.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
2: New Local Road & Hwy 632

2027 Future Conditions
Weekday PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	160	5	20	70	5	10
Future Volume (Veh/h)	160	5	20	70	5	10
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)	174	5	22	76	5	11
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			179		296	176
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			179		296	176
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		99	99
cM capacity (veh/h)			1397		684	867
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	179	98	16			
Volume Left	0	22	5			
Volume Right	5	0	11			
cSH	1700	1397	800			
Volume to Capacity	0.11	0.02	0.02			
Queue Length 95th (m)	0.0	0.4	0.5			
Control Delay (s)	0.0	1.8	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.8	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			26.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

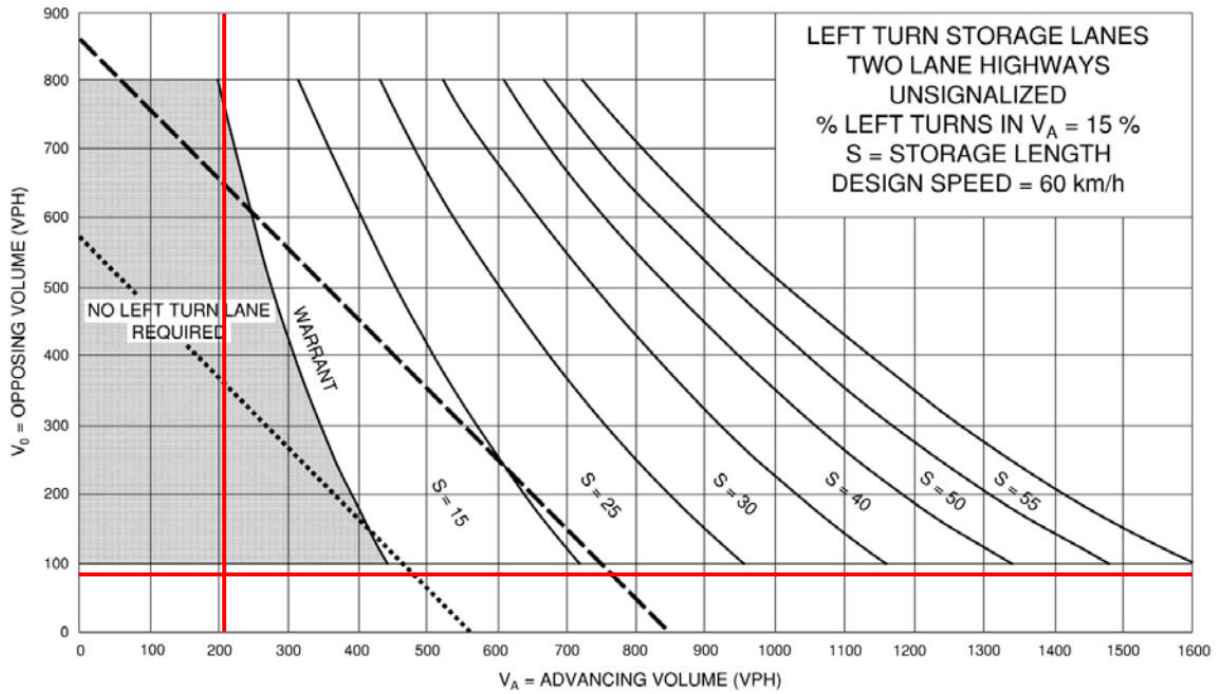
3: Maplehurst Rd & New Local Road

2027 Future Conditions
Weekday PM Peak Hour

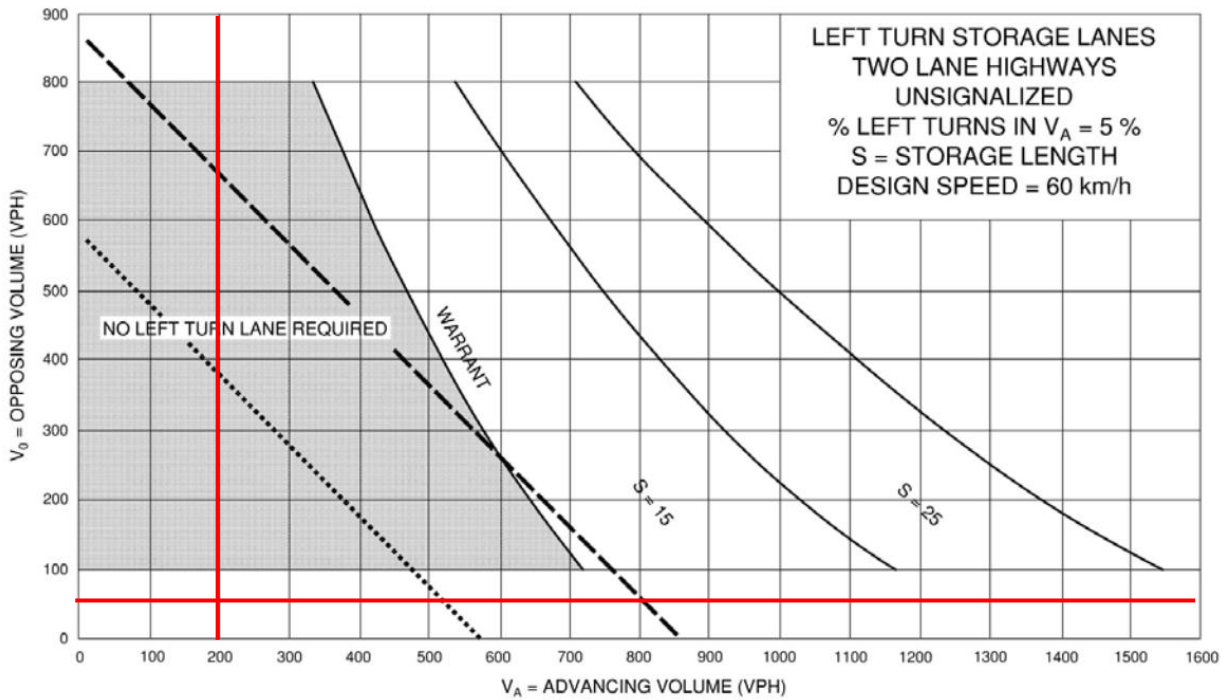


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	5	30	25	5
Future Volume (Veh/h)	5	5	5	30	25	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	10	10	10	60	50	10
Pedestrians						
Lane Width (m)						
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	135	55	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	135	55	60			
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	99	99			
cM capacity (veh/h)	853	1012	1544			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	70	60			
Volume Left	10	10	0			
Volume Right	10	0	10			
cSH	926	1544	1700			
Volume to Capacity	0.02	0.01	0.04			
Queue Length 95th (m)	0.5	0.1	0.0			
Control Delay (s)	9.0	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.0	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			15.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Appendix D: Left Turn Warrants



Highway 632 @ Maplehurst Road

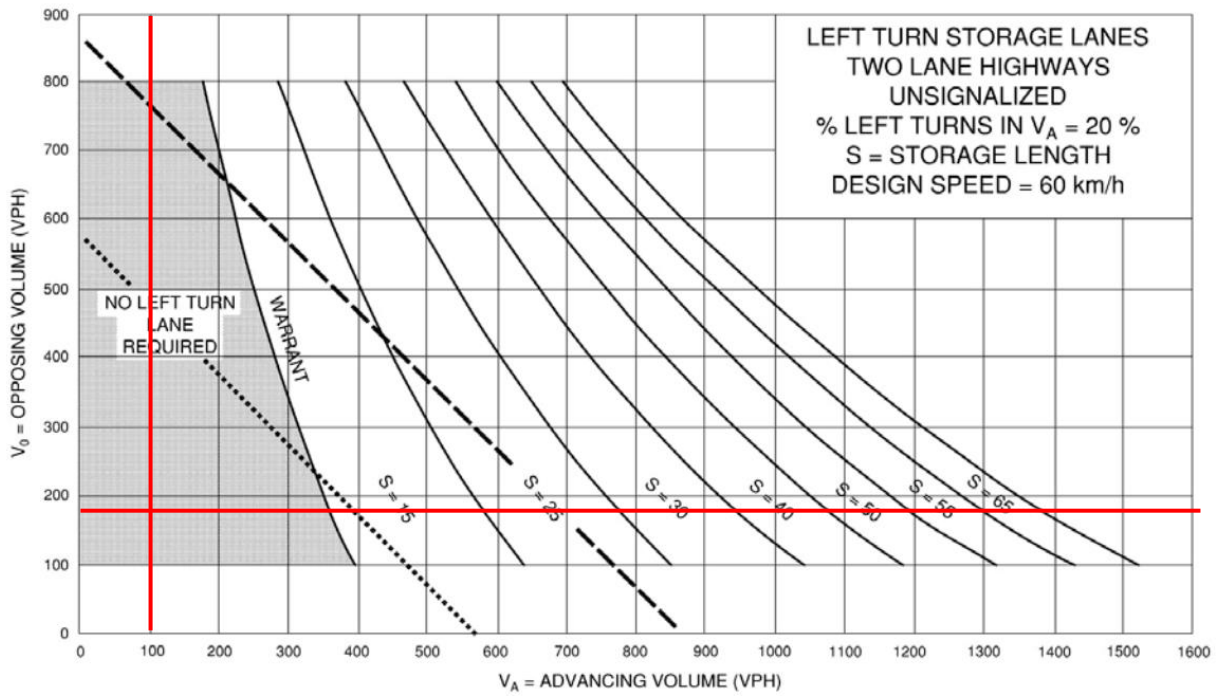


Highway 632 @ West Access

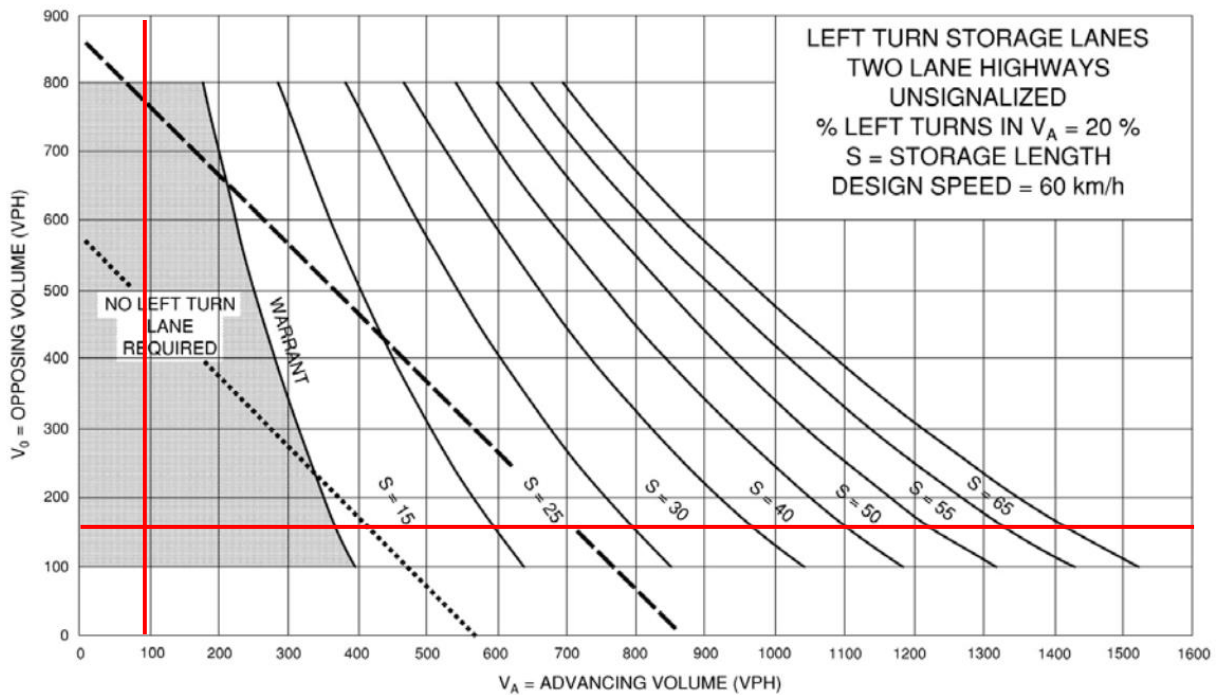
ROSSEAU SPRINGS

Figure D1: Left Turn Warrants - 2027 AM Peak Hour





Highway 632 @ Maplehurst Road



Highway 632 @ West Access

ROSSEAU SPRINGS

Figure D2: Left Turn Warrants - 2027 PM Peak Hour

