



# 576 Ridge Road Residential Development

Traffic Impact Study  
FINAL

September 23, 2022



Prepared for:  
2846300 Ontario Inc.

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**RVA 226344**

**September 23, 2022**

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## 1.0 INTRODUCTION

### 1.1 Study Objective

R.V. Anderson Associates Inc. (RVA) was retained by 2846300 Ontario Inc. to complete a Traffic Impact Study (TIS) for the proposed residential development on the east side of Ridge Road North, between Nigh Road and Hazel Street, in the Town of Fort Erie. The residential development is expected to be built in a single phase, with an anticipated opening year of 2023.

### 1.2 Site Location

The proposed residential development is to be situated at 576 Ridge Road North, which is a parcel of land bounded by Ridge Road North to the west, Hazel Street to the south, Prospect Point Road North to the east, and Nigh Road to the north. The lands were formerly occupied by Ridgeway-Crystal Beach High School and its associated amenities (i.e., sports fields, tracks, etc.), with the school permanently closing in 2017. The facade of the existing high school was built in 1927, and has thus been declared historically significant.

The surrounding road network is comprised primarily of local roads, with connections to various higher order roads such as Provincial Highway 3 to the north of the site and Gorham Road (Regional Road 116) to the west of the site

The project site location and the surrounding area roadway network is shown in **Figure 1**.

### 1.3 Study Area

Based on consultation with Town staff, the study intersections considered for traffic impact analysis are listed below:

- Ridge Road North & Garrison Road;
- Gorham Road (Regional Road 116) & Nigh Road;
- Ridge Road North & Nigh Road;
- Prospect Point Road North & Nigh Road; and
- All of the proposed access intersections along Ridge Road North and Prospect Point Road North.



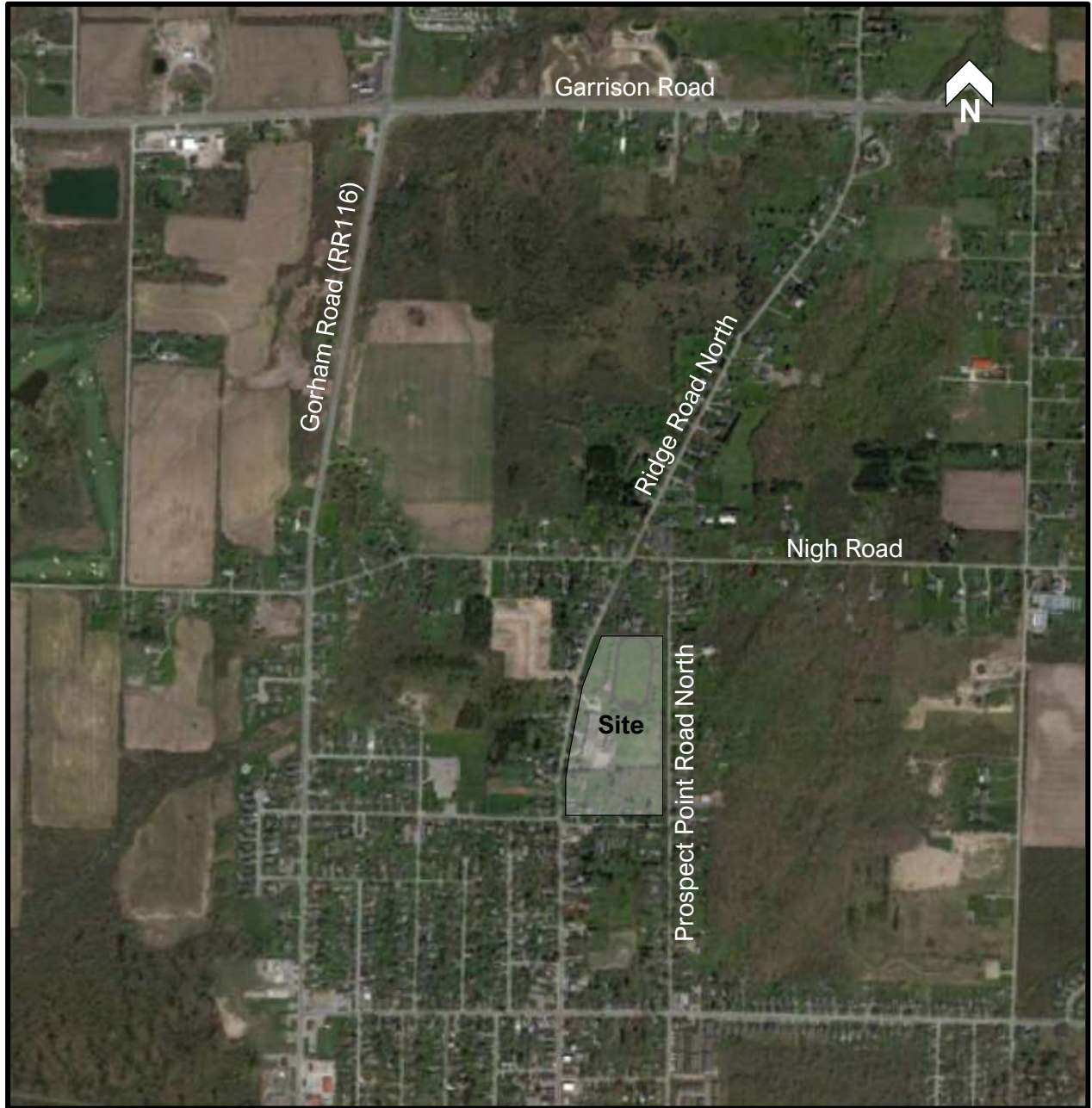


Figure 1: Site Location

## 2.0 EXISTING CONDITIONS

### 2.1 Existing Road Network

The study area road network primarily consists of rural corridors, with roadways under the jurisdiction of the Region of Niagara, the Ministry of Transportation of Ontario (MTO), and the Town of Fort Erie.

**Gorham Road (Regional Road 116)** is a north-south rural road under the jurisdiction of the Region of Niagara. In the vicinity of the proposed development, the corridor is a two-lane cross-section posted at 60km/hr. The road is generally surrounded by residential land uses and small commercial establishments, with several connections to local road networks throughout. Although signed bike routes have not been denoted, there is a paved shoulder on either side of the roadway which creates the opportunity for shared cycling facilities.

**Garrison Road (Provincial Highway 3)** is an east-west rural road that is under the jurisdiction of the MTO near the study area. The corridor is a four-lane cross-section posted at 80km/hr, with no pedestrian or cycling facilities on either side of the road. Near the study area, the roadway is intercepted by numerous private accesses leading to detached dwellings, as well as connections to local road networks. The horizontal and vertical alignments are very consistent, with only minor changes in the roadway throughout.

**Ridge Road North** is a north-south local road under the jurisdiction of the Town of Fort Erie. The roadway is a two-lane cross-section that is largely posted at 50km/hr, barring the Community Safety Zone (CSZ) that exists north of Hazel Street and south of Nigh Road, in which the posted speed limit is 40km/hr. In the vicinity of the proposed development, the corridor generally becomes less urbanized as you travel north; there are sidewalks and raised curbs on both sides of the roadway south of the high school access, transitioning to only one sidewalk on the west side of the roadway and no raised curbs north of the high school access. There are no immediately apparent issues pertaining to horizontal or vertical alignment, however, the pavement quality is poor in many areas throughout the corridor.

**Nigh Road** is an east-west local road under the jurisdiction of the Town of Fort Erie. The roadway is a two-lane rural cross-section that is posted at 50km/hr. In close proximity to the subject development, there are numerous detached dwellings imposing driveway accesses onto the corridor. The corridor is only 5.5-metres in width, and provides no pedestrian or cyclist accommodation. The vertical alignment is flat throughout, with a minor curve as you travel west towards Gorham Road.

**Prospect Point Road North** is a north-south local road under the jurisdiction of the Town of Fort Erie. The corridor consists of a narrow two-lane cross-section posted at 50km/hr towards the southerly limit of the study area and 40km/hr towards the northerly limit of the study area.

Throughout its entirety, the corridor services numerous private driveway accesses and provides no active transportation facilities. There are no immediately apparent issues pertaining to the horizontal or vertical alignment.

## 2.2 Transit

The Fort Erie transit service discontinued their fixed-route service and replaced it with an on-demand service in 2021. This change allows for more flexibility and accessibility for transit users within the Town and is inclusive of the study area. There are no Niagara Region Transit routes within close proximity to the proposed development.

## 2.3 Active Transportation

In the immediate vicinity of the site, sidewalks are only available along certain segments of Ridge Road North, and no facilities along the other corridors fronting the subject development.

At the time of this study, there are no approved improvements to provide enhanced active transportation facilities along the study corridors.

## 2.4 Existing Traffic Data

Intersection turning movement count (TMC) data was collected for all of the study area intersections on Tuesday August 9<sup>th</sup>, 2022.

An analysis of the data determined that the overall peak hours for the study area road network generally occurred between 8:00 a.m. and 9:00 a.m. during the weekday a.m. peak period and between 4:00 p.m. and 5:00 p.m. during the weekday p.m. peak period. Given all of the counts were completed on the same day, during the same periods, any volume imbalances between intersections have been attributed to private driveway accesses.

The existing 2022 intersection volumes for the weekday a.m. and p.m. peak hours are presented in **Figure 2**, with the raw counts provided in **Appendix A**.



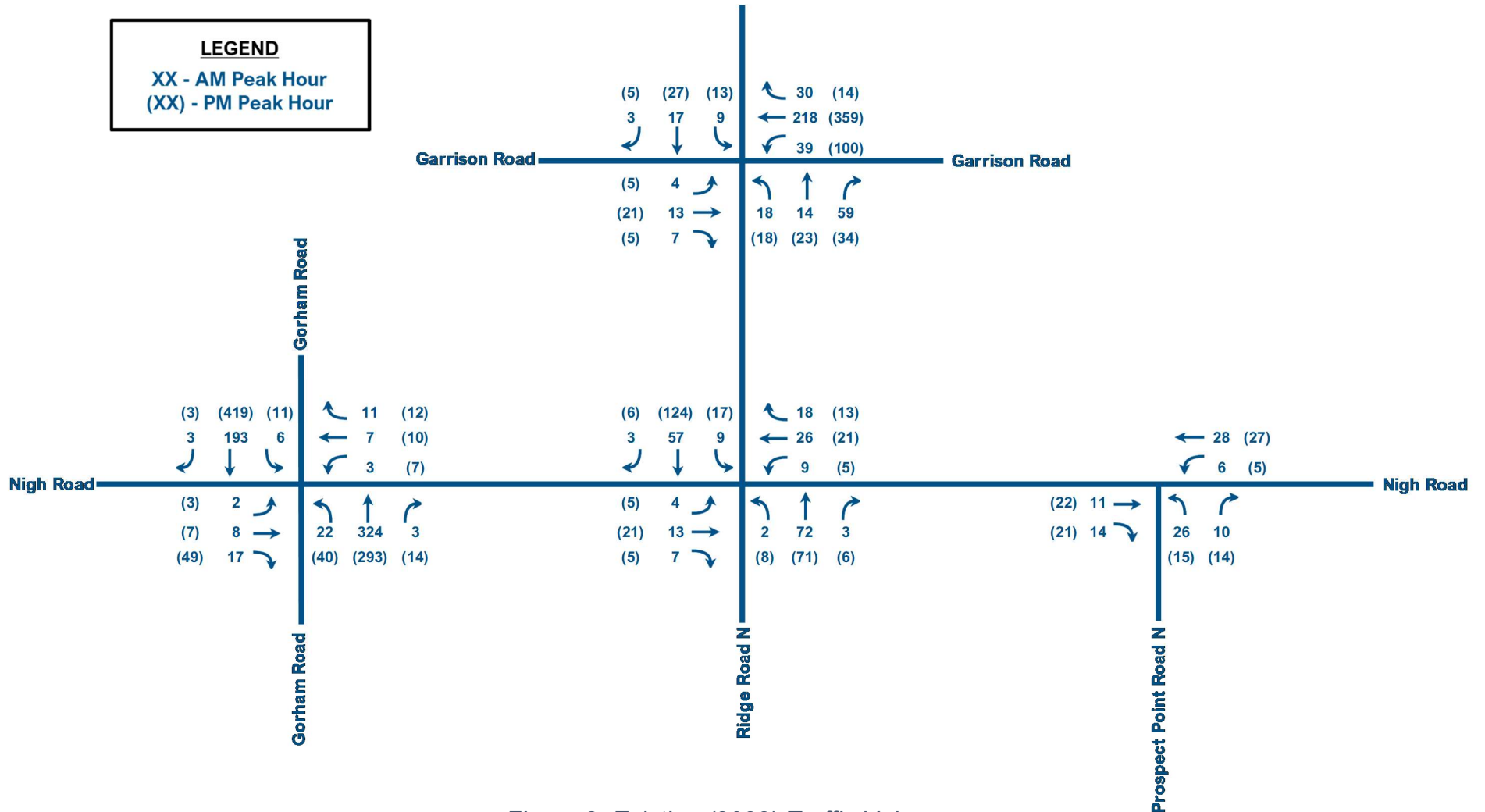


Figure 2: Existing (2022) Traffic Volumes

## 3.0 FUTURE BACKGROUND TRAFFIC

### 3.1 Study Horizon Years

As per our review of Regional and MTO TIS Guidelines, the analysis adopted future planning horizons of 2023 for expected full build-out of the development, with 2028 for five (5) years post full build-out.

### 3.2 Study Area Transportation Network Improvements

At the time of this study, there are no planned roadway network improvements expected to be implemented by the ultimate 2028 horizon year of this study.

### 3.3 Future Background Development Traffic

As per consultation with Town staff, there are no approved developments within the study area or immediate transportation network at the time of this study. As a result, no future background development traffic has been added to the network for analysis within the study. The future background traffic volumes will solely be a product of applying an annualized growth rate to the existing 2022 traffic volumes .

### 3.4 Future Background Traffic Volumes

As confirmed with Town staff, a 2% per annum growth rate has been applied to all intersection turning movements. The resulting 2023 and 2028 future background traffic volumes for the weekday a.m. and p.m. peak hours are displayed in **Figure 3** and **Figure 4** respectively.



**LEGEND**  
 XX - AM Peak Hour  
 (XX) - PM Peak Hour

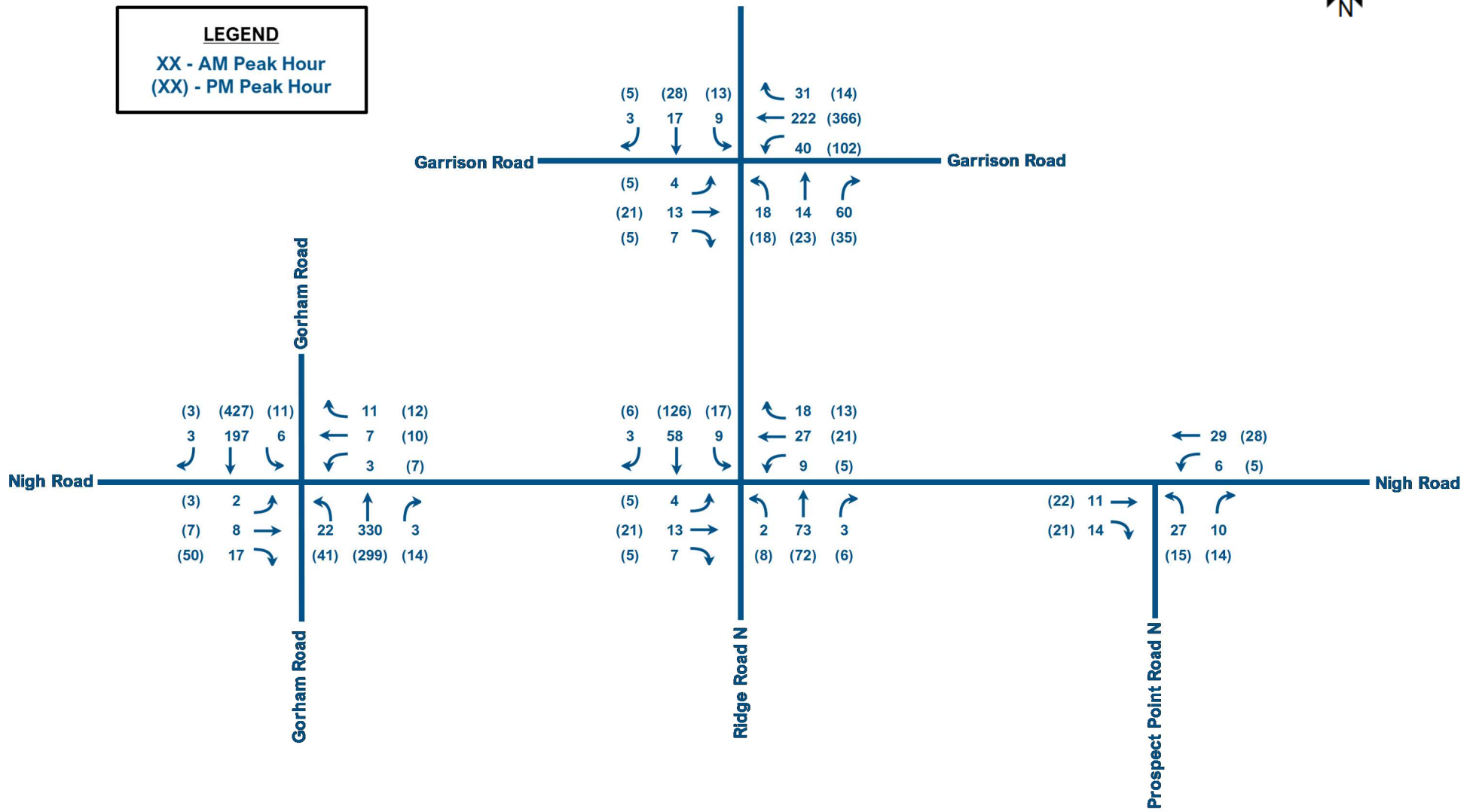


Figure 3: Future (2023) Background Traffic Volumes



**LEGEND**  
 XX - AM Peak Hour  
 (XX) - PM Peak Hour

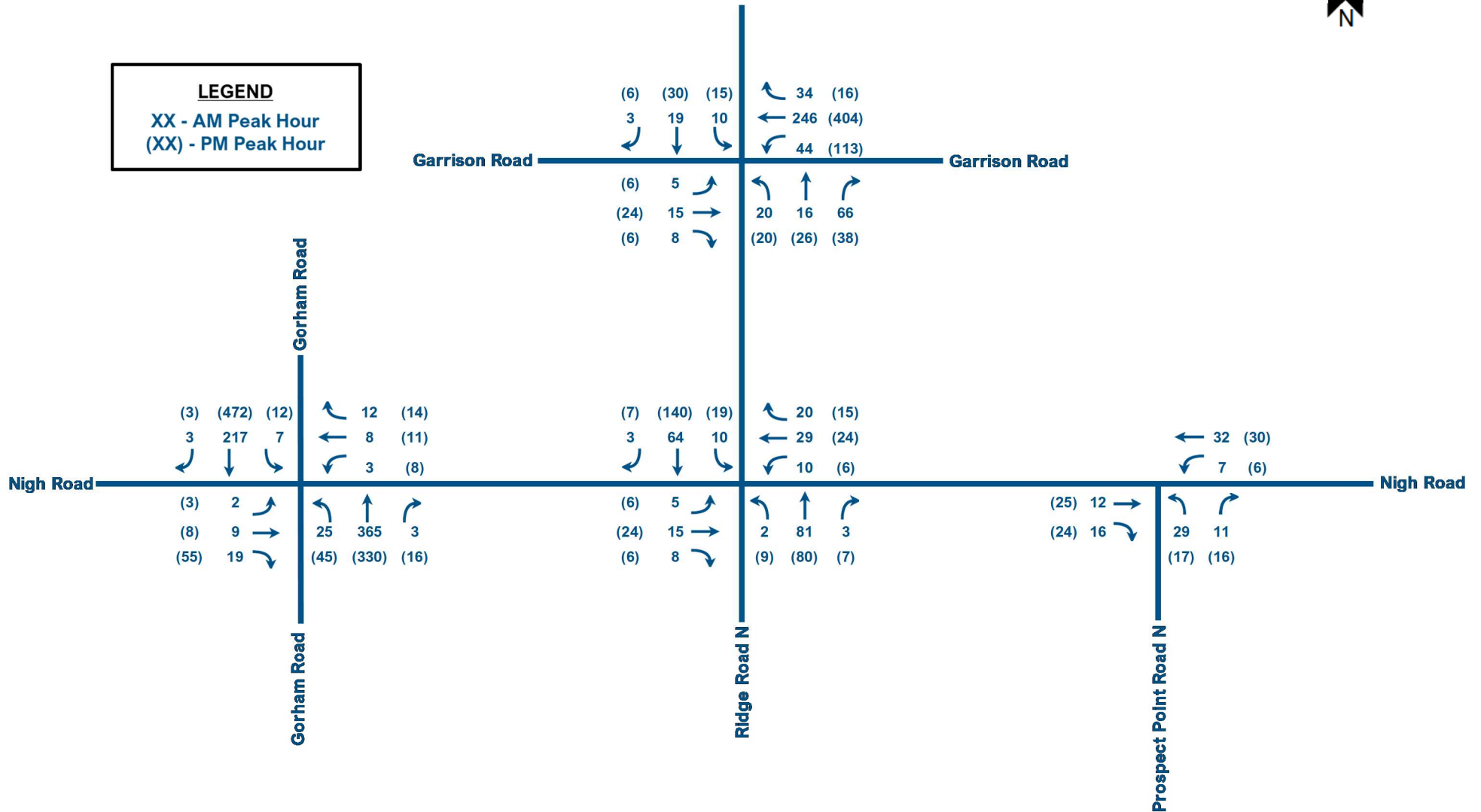


Figure 4: Future (2028) Background Traffic Volumes

## 4.0 SITE GENERATED TRAFFIC

### 4.1 Site Plan Layout

The proposed site plan, as shown in **Figure 5**, prepared by Upper Canada Consultants and dated July 2021, consists of the following key features relevant to this study:

- 49 single-family detached dwellings;
- 43 two-storey townhome units;
- 27 bungalow townhome units; and
- A four-storey apartment building consisting of 70 dwelling units.

Each of the residential land use types are sectioned off within the parcel. The detached dwellings are to reside on the southeast section of the parcel, serviced by a new public crescent off of Prospect Point Road North. The two-storey and bungalow townhomes are situated at the north section of the parcel (Block 50), and can be accessed by a 6-metre-wide private crescent off of Ridge Road North. Lastly, the four-storey apartment building is situated on the southwest section of the lot (Block 51), and is serviced by a full-moves parking lot access and one-way drop-off area.

Based on the layout of the proposed public crescent and townhome service roads, it is expected that the site generated traffic for each of the residential land uses will be evenly distributed throughout their respective accesses. For the apartment building, all of the site generated traffic will be applied to the parking lot access, as site generated trips are based on permanent residents, not visitors.

For the single-family detached dwellings, each unit is accommodated by its respective driveway and garage parking provision, with opportunity for temporary on-street parking if required. It is important to note however, that the Town of Fort Erie has adopted winter on-street parking restrictions, and overnight parking on Town roads is prohibited from November 1<sup>st</sup> to March 31<sup>st</sup> each year. Similarly, the townhome units are accommodated by driveway and garage parking spaces, with 22 overflow parking spaces (three (3) of which are accessible) shared between all of the townhome residents. The apartment building is accommodated by an above-ground parking lot that provides a provision of 105 spaces (four (4) of which are accessible).

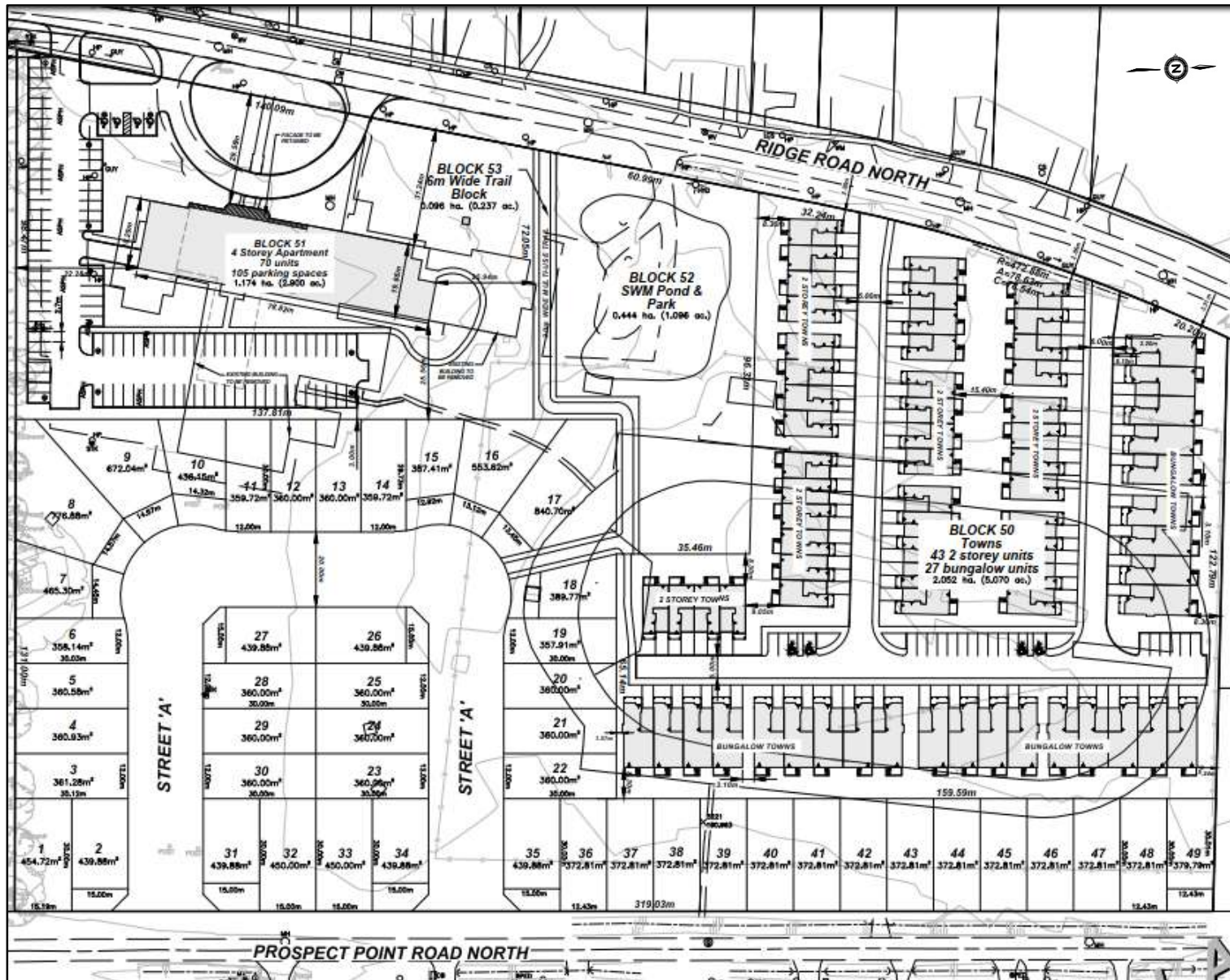


Figure 5: Site Plan Layout



## 4.2 Site Trip Generation

Site generated traffic for each phase of the proposed residential development during peak periods of the adjacent street traffic were estimated using the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (11<sup>th</sup> edition)* methodology, referencing ITE Land Use Codes (LUC) for Single Family Detached (LUC 210), Single-Family Attached Housing (LUC 215), and Multifamily Housing Mid-Rise (LUC 221).

As presented in **Table 1**, the estimated vehicular trip generation for the subject site is approximately 24 inbound and 65 outbound trips during the weekday a.m. peak hour, and 71 inbound and 46 outbound trips during the weekday p.m. peak hour.

Table 1: Trip Generation

Land Use Code (LUC)	Peak Hour	Units	Trip Equation	Total Trips	Inbound % / Outbound %	Inbound / Outbound
Single Family Detached (LUC 210)	Weekday a.m.	49	$\text{Ln}(\text{Trips}) = 0.91 \text{Ln}(\text{Units}) + 0.12$	39	26 / 74	10 / 29
	Weekday p.m.		$\text{Ln}(\text{Trips}) = 0.94 \text{Ln}(\text{Units}) + 0.27$	51	63 / 37	32 / 19
Single Family Attached (LUC 215)	Weekday a.m.	70	$\text{Trips} = 0.52 (\text{Units}) - 5.70$	31	31 / 69	10 / 21
	Weekday p.m.		$\text{Trips} = 0.60 (\text{Units}) - 3.93$	38	57 / 43	22 / 16
Multifamily Housing (Mid-Rise) (LUC 221)	Weekday a.m.	70	$\text{Trips} = 0.44 (\text{Units}) - 11.61$	19	23 / 77	4 / 15
	Weekday p.m.		$\text{Trips} = 0.39 (\text{Units}) + 0.34$	28	61 / 39	17 / 11

### 4.3 Site Trip Distribution

Given the residential nature of the development, it can be reasonably assumed that the majority of the trips generated by the site during the weekday a.m. and p.m. peak hours will be commuter trips. Therefore, 2016 Transportation Tomorrow Survey (TTS) commuter data was reviewed to estimate the distribution of the site generated traffic to the surrounding road network. Given that the Town of Fort Erie exhibits a generally low population density, commuter patterns were reviewed for the municipality as a whole.

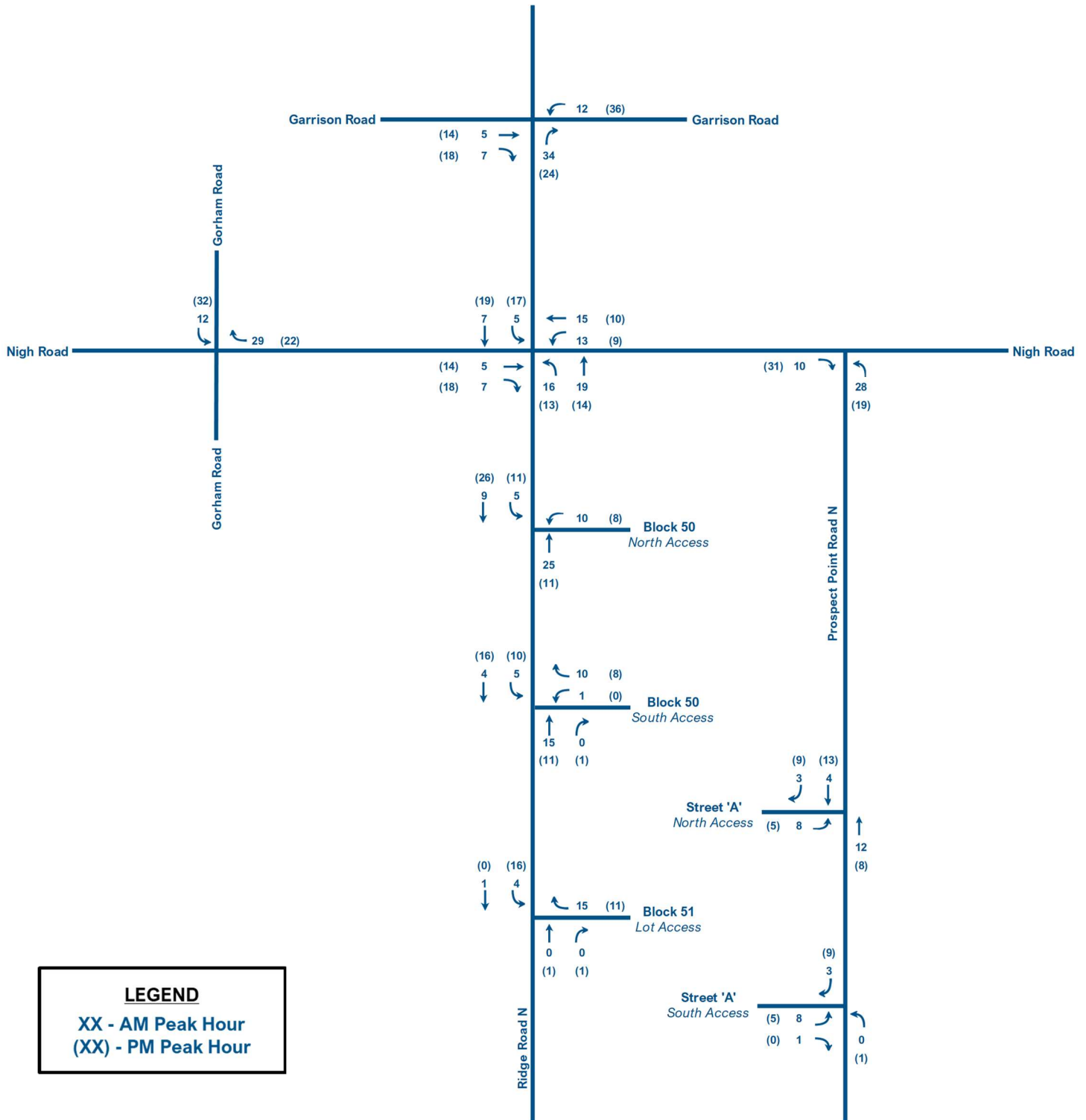
**Table 2** outlines the estimated trip distribution assumptions for the site generated trips, which is based on the analyzed TTS data provided in **Appendix B**.

*Table 2: Trip Distribution Assumptions*

Direction	Distribution Percentages
Gorham Road (North)	38%
Ridge Road (South)	3%
Nigh Road (West)	7%
Ridge Road North (East)	52%
<b>Total</b>	<b>100%</b>

### 4.4 Site Trip Assignment

The site generated traffic has been assigned to the study area intersections based on the trip generation estimates and the trip distribution assumptions discussed in the previous sections. The resulting site trip assignment for each block is shown in **Figure 6**.

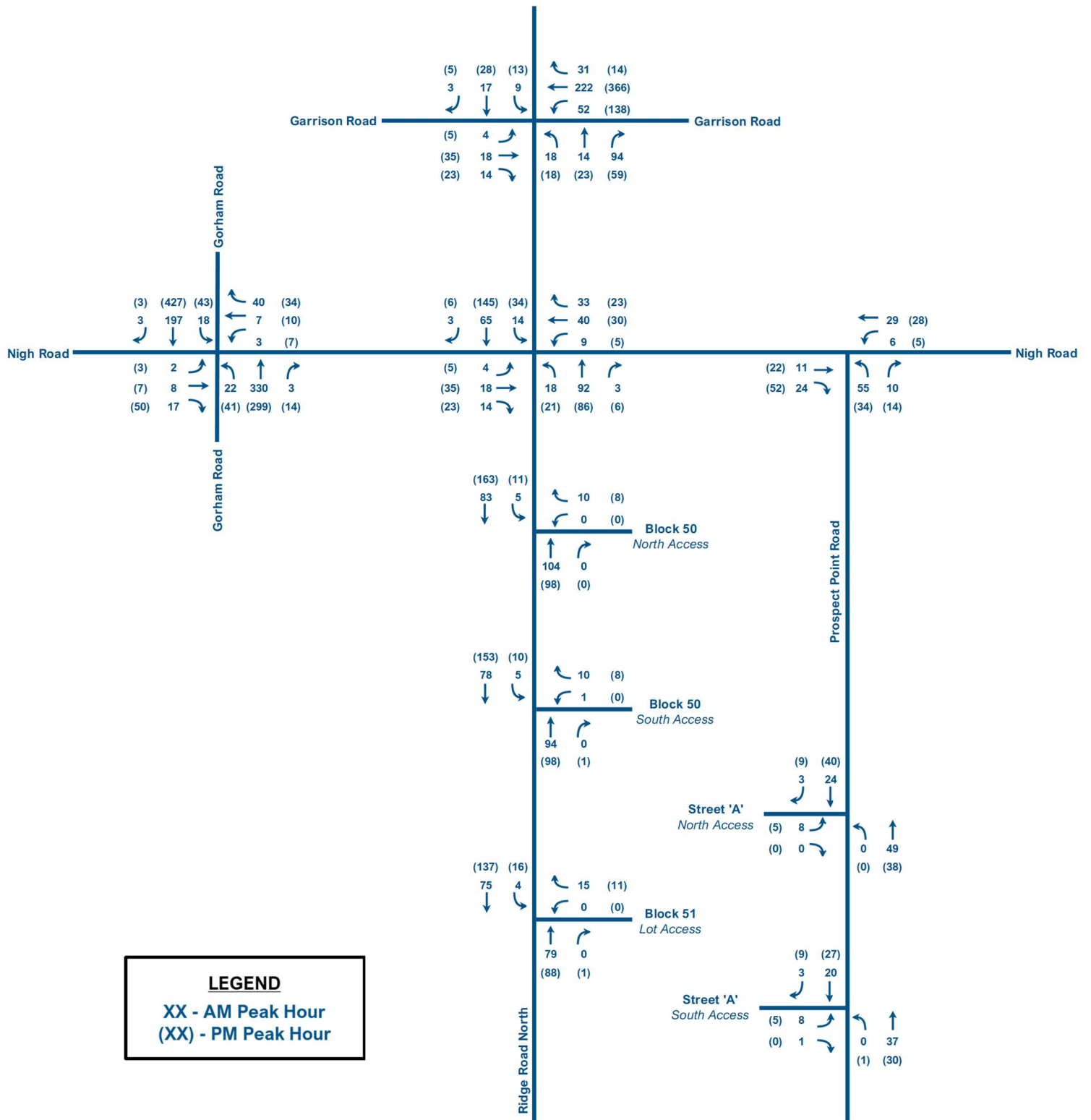


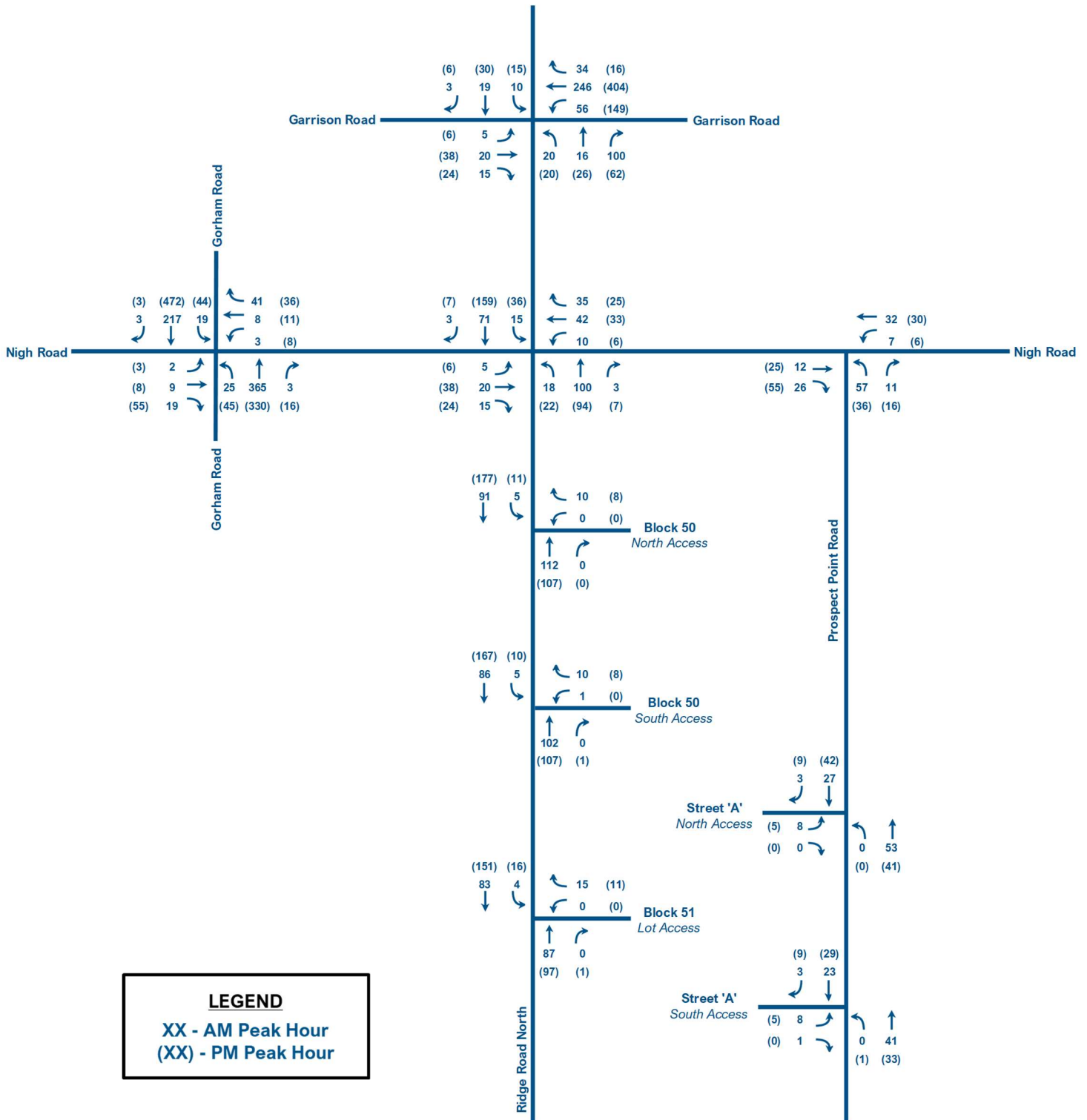
**LEGEND**  
 XX - AM Peak Hour  
 (XX) - PM Peak Hour

Figure 6: Site Trip Assignment

## 5.0 FUTURE TOTAL TRAFFIC

The future total intersection volumes for each future horizon year were projected by combining the estimated site generated traffic from the subject development with the future background traffic projections for each horizon year. The resulting 2023 and 2028 future total intersection volumes for the weekday a.m. and p.m. peak hours are shown in **Figure 7** and **Figure 8** respectively.







## 6.0 CAPACITY ANALYSIS

### 6.1 Intersection Capacity Analysis

The industry standard Synchro macroscopic traffic analysis software was utilized to analyse the study intersections. Key performance measures such as Level of Service (LOS), volume-to-capacity ratio (v/c ratio), and 95<sup>th</sup> percentile queuing were reported, and are defined below:

- **Average vehicle control delay** is used to characterize LOS for the entire intersection, an approach, or movement. Delay quantifies the variations in travel time and is also a surrogate measure of driver discomfort and fuel consumption.
- **V/c ratio** quantifies the degree to which the capacity of each signal phase is utilized by a defined lane group.
- **95<sup>th</sup> percentile queue** is the queue length which is expected to be exceeded only 5% of the time; it is common practice to identify preferred storage length requirements for auxiliary turn lanes at signalized intersections based on estimated peak hour 95<sup>th</sup> percentile queueing.

**Table 3** identifies the control delay thresholds (seconds of delay per vehicle) for each LOS based on Highway Capacity Manual (HCM) methodology.

*Table 3: Characteristics of Level of Service at Intersections*

LEVEL OF SERVICE (LOS)	CONTROL DELAY (seconds / vehicle)	
	SIGNALIZED INTERSECTION	UNSIGNALIZED INTERSECTION
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

The active signal timing plans obtained from the Niagara Region at the time of this study are provided in **Appendix C**. Detailed Highway Capacity Manual (HCM) output reports from the capacity analysis are provided in **Appendix D**.

The following sections present the results of the intersection capacity analysis at each study area intersection, with Synchro software parameters in accordance with the *Niagara Region Guidelines for Transportation Impact Studies*.

## 6.2 Ridge Road North & Garrison Road

Table 4: Capacity Analysis Results – Ridge Road North & Garrison Road (PH3)

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Existing 2022	EBL	0.02	B	<1 veh	0.06	B	<1 veh
	EBTTR	0.42	B	19	0.47	B	23
	WBL	0.20	B	9	0.49	B	19
	WBTTR	0.37	B	16	0.49	B	25
	NBL	0.03	A	<1 veh	0.04	A	<1 veh
	NBTR	0.06	A	<1 veh	0.06	A	1 veh
	SBL	0.02	A	<1 veh	0.03	A	<1 veh
	SBTR	0.02	A	<1 veh	0.04	A	<1 veh
Future Background 2023	EBL	0.02	B	<1 veh	0.06	B	<1 veh
	EBTTR	0.42	B	19	0.47	B	24
	WBL	0.21	B	9	0.50	B	19
	WBTTR	0.37	B	16	0.50	B	25
	NBL	0.03	A	<1 veh	0.04	A	<1 veh
	NBTR	0.06	A	<1 veh	0.06	A	1 veh
	SBL	0.02	A	<1 veh	0.03	A	<1 veh
	SBTR	0.02	A	<1 veh	0.04	A	<1 veh
Future Total 2023	EBL	0.02	B	<1 veh	0.05	B	<1 veh
	EBTTR	0.43	B	19	0.42	B	23
	WBL	0.28	B	11	0.60	B	26
	WBTTR	0.37	B	16	0.44	B	25
	NBL	0.03	A	<1 veh	0.04	A	<1 veh
	NBTR	0.09	A	1 veh	0.08	A	9
	SBL	0.02	A	<1 veh	0.03	A	<1 veh
	SBTR	0.02	A	<1 veh	0.05	A	1 veh
Future Background 2028	EBL	0.03	B	<1 veh	0.07	B	<1 veh
	EBTTR	0.46	B	21	0.49	B	26
	WBL	0.23	B	10	0.53	B	22
	WBTTR	0.40	B	18	0.51	B	27
	NBL	0.04	A	<1 veh	0.04	A	<1 veh
	NBTR	0.07	A	<1 veh	0.07	A	8
	SBL	0.02	A	<1 veh	0.03	A	<1 veh
	SBTR	0.03	A	<1 veh	0.05	A	1 veh
Future Total 2028	EBL	0.03	B	<1 veh	0.06	B	<1 veh
	EBTTR	0.46	B	21	0.44	B	25
	WBL	0.30	B	12	0.63	B	28
	WBTTR	0.40	B	18	0.46	B	27
	NBL	0.04	A	<1 veh	0.04	A	<1 veh
	NBTR	0.10	A	8	0.09	A	10
	SBL	0.02	A	<1 veh	0.03	A	<1 veh
	SBTR	0.03	A	<1 veh	0.05	A	8

The intersection of Ridge Road North and Garrison Road (RR3) is currently operating with reserve capacity, nominal delay, and no queueing concerns for all movements as presented in **Table 4**. With the addition of background growth in the 2023 and 2028 horizon years, the intersection continues to operate with similar performance measures, with only marginal increases to the v/c

ratios, delays, and queueing for all movements. With the addition of site generated traffic, all movements are expected to operate with ample reserve capacity, delays not exceeding LOS “B” (10 to 20 seconds of delay), and no queueing concerns. Therefore, there are no recommendations to provide physical capacity improvements or signal timing adjustments to this intersection at the result of site generated traffic.

### 6.3 Gorham Road (Regional Road 116) & Nigh Road

Table 5: Capacity Analysis Results – Gorham Road (RR116) & Nigh Road

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Existing 2022	EBLTR	0.05	B	<1 veh	0.13	B	<1 veh
	WBLTR	0.05	B	<1 veh	0.10	C	<1 veh
	NBLTR	0.02	A	<1 veh	0.04	A	<1 veh
	SBLTR	0.01	A	<1 veh	0.01	A	<1 veh
Future Background 2023	EBLTR	0.05	B	<1 veh	0.13	B	<1 veh
	WBLTR	0.05	B	<1 veh	0.10	C	<1 veh
	NBLTR	0.02	A	<1 veh	0.04	A	<1 veh
	SBLTR	0.01	A	<1 veh	0.01	A	<1 veh
Future Total 2023	EBLTR	0.05	B	<1 veh	0.14	B	<1 veh
	WBLTR	0.09	B	<1 veh	0.15	C	<1 veh
	NBLTR	0.02	A	<1 veh	0.04	A	<1 veh
	SBLTR	0.02	A	<1 veh	0.04	A	<1 veh
Future Background 2028	EBLTR	0.06	B	<1 veh	0.16	B	<1 veh
	WBLTR	0.06	B	<1 veh	0.13	C	<1 veh
	NBLTR	0.02	A	<1 veh	0.05	A	<1 veh
	SBLTR	0.01	A	<1 veh	0.01	A	<1 veh
Future Total 2028	EBLTR	0.06	B	<1 veh	0.17	C	<1 veh
	WBLTR	0.11	B	<1 veh	0.18	C	<1 veh
	NBLTR	0.02	A	<1 veh	0.05	A	<1 veh
	SBLTR	0.02	A	<1 veh	0.04	A	<1 veh

The intersection of Gorham Road (RR 116) and Nigh Road is currently operating with significant reserve capacity and no queuing concerns for all movements as presented in **Table 5**. Most movements are currently operating with delays not exceeding LOS “B” (10-15 seconds of delay), with only the westbound left-turn reaching LOS “C” (15-25 seconds of delay). With the addition of background corridor growth, the performance measures are only nominally impacted, with no changes to levels of service or queueing. Similarly, the addition of site generated traffic only has a minor impact on the performance of this intersection, with all movements operating with substantial reserve capacity, delays not exceeding LOS “C” (15-25 seconds of delay), and no queuing concerns. There are no mitigation measures recommended for this intersection at the result of site generated traffic.

## 6.4 Ridge Road North & Nigh Road

Table 6: Capacity Analysis Results – Ridge Road North & Nigh Road

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE	V/C	LOS	95TH % QUEUE
Existing 2022	EBLTR	0.10	A	<1 veh	0.11	A	<1 veh
	WBLTR	0.03	A	<1 veh	0.04	A	<1 veh
	NBLTR	0.07	A	<1 veh	0.05	A	<1 veh
	SBLTR	0.09	A	<1 veh	0.19	A	<1 veh
Future Background 2023	EBLTR	0.10	A	<1 veh	0.11	A	<1 veh
	WBLTR	0.03	A	<1 veh	0.04	A	<1 veh
	NBLTR	0.07	A	<1 veh	0.05	A	<1 veh
	SBLTR	0.09	A	<1 veh	0.19	A	<1 veh
Future Total 2023	EBLTR	0.15	A	<1 veh	0.15	A	<1 veh
	WBLTR	0.05	A	<1 veh	0.09	A	<1 veh
	NBLTR	0.11	A	<1 veh	0.08	A	<1 veh
	SBLTR	0.11	A	<1 veh	0.25	A	<1 veh
Future Background 2028	EBLTR	0.11	A	<1 veh	0.12	A	<1 veh
	WBLTR	0.04	A	<1 veh	0.05	A	<1 veh
	NBLTR	0.07	A	<1 veh	0.06	A	<1 veh
	SBLTR	0.10	A	<1 veh	0.21	A	<1 veh
Future Total 2028	EBLTR	0.16	A	<1 veh	0.17	A	<1 veh
	WBLTR	0.05	A	<1 veh	0.10	A	<1 veh
	NBLTR	0.11	A	<1 veh	0.09	A	<1 veh
	SBLTR	0.12	A	<1 veh	0.27	A	<1 veh

The all-way stop-controlled intersection of Ridge Road North and Nigh Road is currently operating with ample reserve capacity for all movements, delays less than 10 seconds, and no queueing concerns as illustrated in **Table 6**. With the addition of future background growth and site generated traffic, all movements are still operating with substantial reserve capacity, negligible delays, and no queueing. Therefore, there are no mitigation measures required at this intersection with the implementation of the proposed development.

## 6.5 Prospect Point Road North & Nigh Road

Table 7: Capacity Analysis Results – Prospect Point Road North & Nigh Road

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Existing 2022	EBTR	0.02	A	<1 veh	0.03	A	<1 veh
	WBTL	0.00	A	<1 veh	0.00	A	<1 veh
	NBLR	0.04	A	<1 veh	0.03	A	<1 veh

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Future Background 2023	EBTR	0.02	A	<1 veh	0.02	A	<1 veh
	WBTL	0.00	A	<1 veh	0.00	A	<1 veh
	NBLR	0.04	A	<1 veh	0.04	A	<1 veh
Future Total 2023	EBTR	0.02	A	<1 veh	0.05	A	<1 veh
	WBTL	0.00	A	<1 veh	0.00	A	<1 veh
	NBLR	0.08	A	<1 veh	0.06	A	<1 veh
Future Background 2028	EBTR	0.02	A	<1 veh	0.03	A	<1 veh
	WBTL	0.01	A	<1 veh	0.00	A	<1 veh
	NBLR	0.05	A	<1 veh	0.04	A	<1 veh
Future Total 2028	EBTR	0.02	A	<1 veh	0.05	A	<1 veh
	WBTL	0.01	A	<1 veh	0.00	A	<1 veh
	NBLR	0.08	A	<1 veh	0.06	A	<1 veh

As shown in **Table 7**, under existing conditions, the intersection of Prospect Point Road North and Nigh Road has ample reserve capacity for all movements, negligible delays, and no queueing. With the addition of background corridor growth and site generated traffic, the intersection will continue to operate efficiently, with no approaches exhibiting delays exceeding 10 seconds out to the ultimate 2028 horizon year. Therefore, the background corridor growth and site generated traffic is not expected to result in any mitigation requirements at this intersection.

## 6.6 Ridge Road North at Block 50 (Townhomes) North Access

Table 8: Capacity Analysis Results – Ridge Road North at Block 50 (Townhomes) North Access

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Future Total 2023	WBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTR	0.07	A	<1 veh	0.06	A	<1 veh
	SBTL	0.00	A	<1 veh	0.01	A	<1 veh
Future Total 2028	WBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTR	0.07	A	<1 veh	0.07	A	<1 veh
	SBTL	0.00	A	<1 veh	0.01	A	<1 veh

As presented in **Table 8**, the northern access to Block 50 is expected to operate with significant reserve capacity through the 2028 horizon year, with delays not exceeding 10 seconds, and no queueing issues. There are no recommendations to provide additional capacity for any approach at this access.

## 6.7 Ridge Road North at Block 50 (Townhomes) South Access

Table 9: Capacity Analysis Results – Ridge Road North at Block 50 (Townhomes) South Access

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Future Total 2023	WBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTR	0.06	A	<1 veh	0.06	A	<1 veh
	SBTL	0.00	A	<1 veh	0.01	A	<1 veh
Future Total 2028	WBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTR	0.07	A	<1 veh	0.07	A	<1 veh
	SBTL	0.00	A	<1 veh	0.01	A	<1 veh

As illustrated in **Table 9**, the southern access to Block 50 is expected to operate with substantial reserve capacity, nominal delays, and no queueing through the 2028 horizon year. There are no recommendations for the proposed access.

## 6.8 Ridge Road North at Block 51 (Apartment) Access

Table 10: Capacity Analysis Results – Ridge Road North at Block 51 (Apartment) Access

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Future Total 2023	WBLR	0.02	A	<1 veh	0.01	A	<1 veh
	NBTR	0.05	A	<1 veh	0.06	A	<1 veh
	SBTL	0.00	A	<1 veh	0.01	A	<1 veh
Future Total 2028	WBLR	0.02	A	<1 veh	0.01	A	<1 veh
	NBTR	0.06	A	<1 veh	0.06	A	<1 veh
	SBTL	0.00	A	<1 veh	0.01	A	<1 veh

The access to Block 51 (apartment) is expected to operate with no capacity issues, negligible delays, and no queuing concerns through the 2028 horizon year as presented in **Table 10**. Based on the nominal delay at this access, in addition to the pick-up/drop-off area, there are no recommendations for this access.



## 6.9 Prospect Point Road North at Street ‘A’ North Access

Table 11: Capacity Analysis Results – Prospect Point Road North at Street ‘A’ North Access

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Future Total 2023	EBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTL	0.00	A	<1 veh	0.00	A	<1 veh
	SBTR	0.02	A	<1 veh	0.03	A	<1 veh
Future Total 2028	EBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTL	0.00	A	<1 veh	0.00	A	<1 veh
	SBTR	0.02	A	<1 veh	0.03	A	<1 veh

As presented in **Table 11**, the proposed intersection of Prospect Point Road at Street ‘A’ (north access) is expected to operate with no capacity, delay, or queueing issues through the 2028 horizon year.

## 6.10 Prospect Point Road North at Street ‘A’ South Access

Table 12: Capacity Analysis Results – Prospect Point Road North at Street ‘A’ South Access

SCENARIO	MOVE.	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)
Future Total 2023	EBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTL	0.00	A	<1 veh	0.00	A	<1 veh
	SBTR	0.01	A	<1 veh	0.02	A	<1 veh
Future Total 2028	EBLR	0.01	A	<1 veh	0.01	A	<1 veh
	NBTL	0.00	A	<1 veh	0.00	A	<1 veh
	SBTR	0.02	A	<1 veh	0.02	A	<1 veh

As presented in **Table 12**, the proposed intersection of Prospect Point Road at Street ‘A’ (south access) is expected to operate extremely well through the 2028 horizon year, with no issues pertaining to capacity, delay, or queueing.

## 7.0 ACCESS MANAGEMENT

### 7.1 Block 50 (Townhomes)

The site plan includes two (2) full-moves unsignalized accesses to the townhomes. These two (2) accesses both intersect with Ridge Road North, approximately 50 metres apart, and provide a 6-metre-wide private crescent that services the townhomes.

As per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, the recommended maximum number of driveways for a property frontage between 51 and

150 metres is three (3) driveways. Given the proposed site plan includes two (2) driveways, the proposed number of driveways falls within the recommended limits set by TAC.

As per the results of the intersection capacity analysis, both accesses are expected to operate with substantial reserve capacity, negligible delays, and no queuing concerns. Therefore, it is expected that the two (2) proposed accesses will sufficiently accommodate the townhome residents, with no recommendations to change their mode of control or location.

## 7.2 Block 51 (Apartment)

The apartment land use is planned to include a full-moves unsignalized access to the above-ground parking lot, in addition to a one-way pick-up/drop-off area with an unsignalized entry and exit access. The three (3) driveways associated with the apartment building are off of Ridge Road North.

As per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, the recommended maximum number of driveways for a property frontage between 51 and 150 metres is three (3) driveways. Given the proposed site plan includes three (3) driveways, with only one (1) being full-moves, the proposed number of driveways falls within the recommended limits set by TAC.

As per the results of the intersection capacity analysis, the parking lot access, which will accommodate all permanent residents and visitors, is expected to operate with ample reserve capacity, negligible delays, and no queuing concerns. It can therefore be concluded that the single full-moves access off of Ridge Road North can accommodate the entering/exiting volumes for the development, with the pick-up/drop-off area providing additional convenience for residents.

## 8.0 ACTIVE TRANSPORTATION

The proposed site plan includes a 3.0-metre-wide multi-use trail that provides internal connectivity between the three residential land use types. The trail travels from Ridge Road North to Street 'A', with a pedestrian sidewalk connection to Block 50 (townhome units). All proposed walkways are compliant with the Accessibility for Ontarians with Disabilities Act (AODA), with the pedestrian sidewalks actually exceeding the minimum requirement by 0.5 metres.

As per the Town of Fort Erie Active Transportation Master Plan (ATMP), there is interest to eventually implement bike lanes on Ridge Road North, which would intersect with the proposed multi-use trail within the site. This new cycling infrastructure would integrate the proposed residential land uses with the cycling network within Fort Erie, and further support active transportation as a viable mode of transportation for residents in the area.

## 9.0 SUMMARY OF FINDINGS AND CONCLUSIONS

The results of the traffic impact study can be summarized as follows:


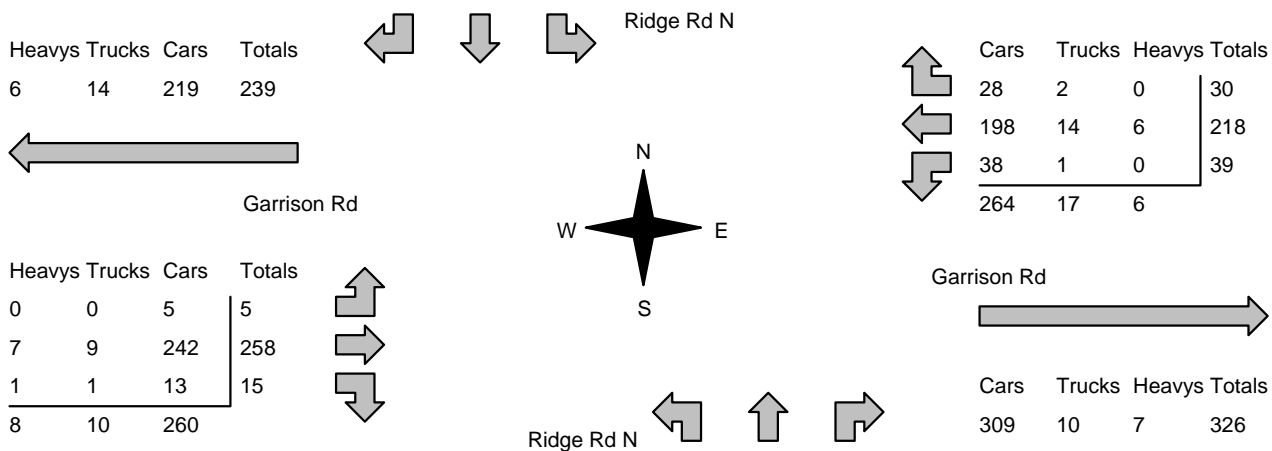

- The proposed residential development is estimated to generate approximately 24 inbound and 65 outbound trips during the weekday a.m. peak hour, and 71 inbound and 46 outbound trips during the weekday p.m. peak hour
- As per the results of the intersection capacity analysis, the site generated traffic is not expected to result in any new delay or queuing concerns at the study area intersections through the ultimate horizon year of 2028 (5 years beyond full build-out of the site).
- There are no geometric, signal timing, or traffic control improvements recommended at any of the existing study area intersections as a result of the site generated traffic.
- The proposed access locations are compliant with TAC standards and are not expected to exhibit any capacity concerns through the ultimate 2028 horizon year.
- The site plan provides internal connectivity for active transportation users and creates the opportunity for further cycling network connections, as per the recommendations in the Town of Fort Erie ATMP (2020).
- The existing roadway system has significant surplus capacity to accommodate the background corridor growth and site generated traffic through the 2028 horizon year.

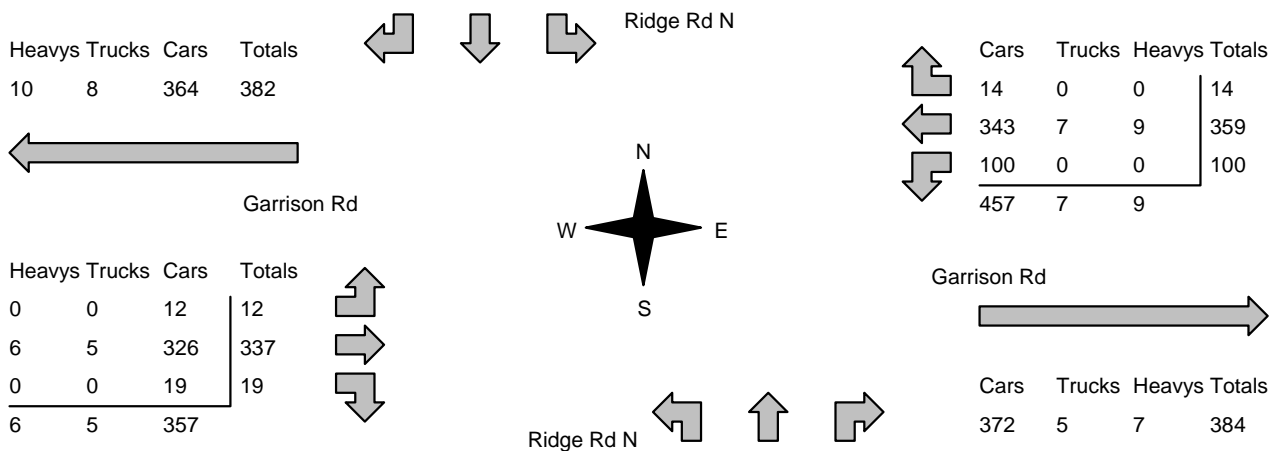
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## **APPENDIX A**

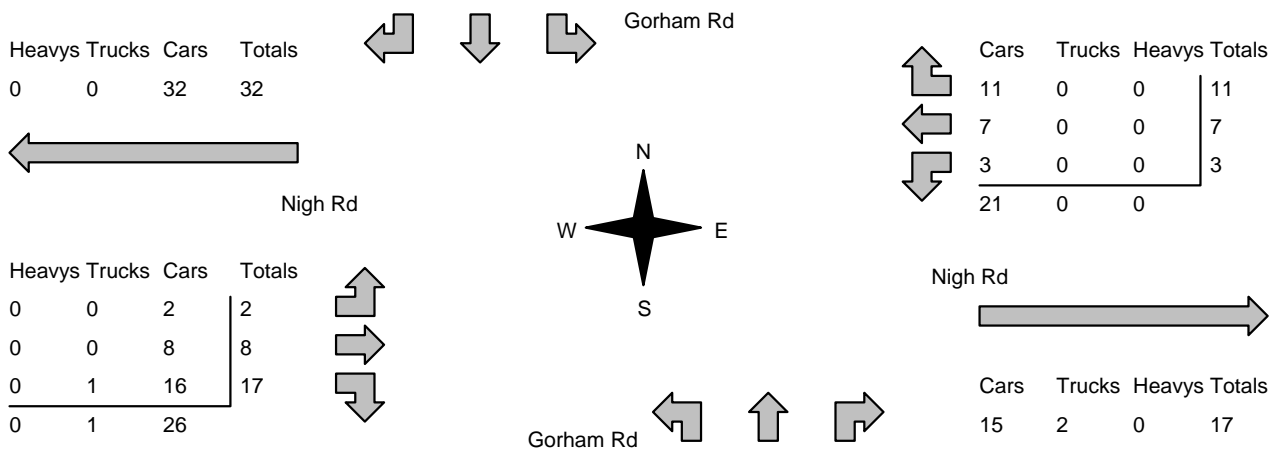
### **Turning Movement Count (TMC) Data**

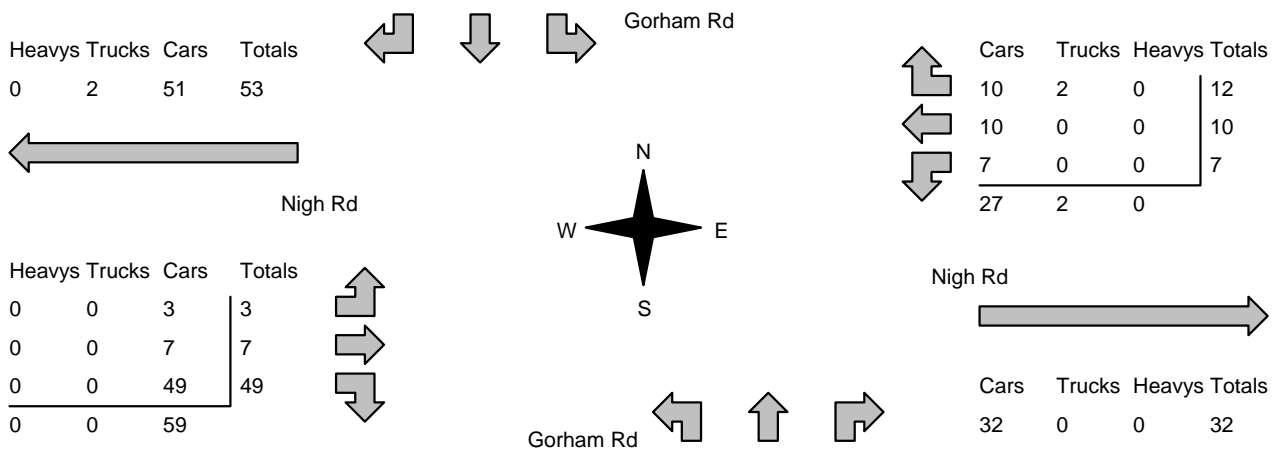
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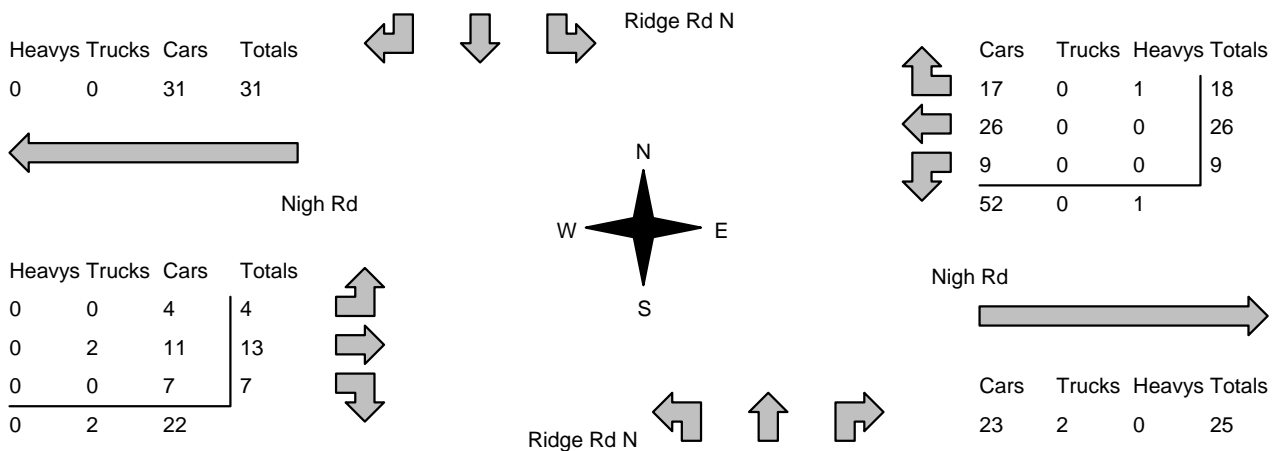
<b>Morning Peak Diagram</b>		<b>Specified Period</b> <b>From:</b> 7:00:00 <b>To:</b> 9:00:00	<b>One Hour Peak</b> <b>From:</b> 8:00:00 <b>To:</b> 9:00:00																													
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900001 <b>Intersection:</b> Garrison Rd & Ridge Rd N <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22		<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																														
<b>** Signalized Intersection **</b>		<b>Major Road:</b> Garrison Rd runs W/E																														
North Leg Total: 78 North Entering: 29 North Peds: 0 Peds Cross: ☒	<table style="border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>3</td><td>17</td><td>9</td><td>29</td></tr> <tr><td>Totals</td><td>3</td><td>17</td><td>9</td><td></td></tr> </table>	Heavys	0	0	0	0	Trucks	0	0	0	0	Cars	3	17	9	29	Totals	3	17	9			<table style="border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Cars</td><td>47</td></tr> <tr><td>Totals</td><td>49</td></tr> </table>	Heavys	0	Trucks	2	Cars	47	Totals	49	East Leg Total: 613 East Entering: 287 East Peds: 0 Peds Cross: ☒
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<table style="border-collapse: collapse;"> <tr><td>Heavys</td><td>Trucks</td><td>Cars</td><td>Totals</td></tr> <tr><td>6</td><td>14</td><td>219</td><td>239</td></tr> </table>	Heavys	Trucks	Cars	Totals	6	14	219	239			<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>Trucks</td><td>Heavys</td><td>Totals</td></tr> <tr><td>28</td><td>2</td><td>0</td><td>30</td></tr> <tr><td>198</td><td>14</td><td>6</td><td>218</td></tr> <tr><td>38</td><td>1</td><td>0</td><td>39</td></tr> <tr><td>264</td><td>17</td><td>6</td><td></td></tr> </table>	Cars	Trucks	Heavys	Totals	28	2	0	30	198	14	6	218	38	1	0	39	264	17	6		
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Cars	Trucks	Heavys	Totals																													
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1	1	13	15																													
8	10	260																														
Cars	Trucks	Heavys	Totals																													
309	10	7	326																													
Peds Cross: ☒ West Peds: 0 West Entering: 278 West Leg Total: 517	<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>68</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Totals</td><td>71</td></tr> </table>	Cars	68	Trucks	2	Heavys	1	Totals	71		<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>18</td><td>14</td><td>58</td><td>90</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>1</td><td>1</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>18</td><td>14</td><td>59</td><td></td></tr> </table>	Cars	18	14	58	90	Trucks	0	0	1	1	Heavys	0	0	0	0	Totals	18	14	59		Peds Cross: ☒ South Peds: 0 South Entering: 91 South Leg Total: 162
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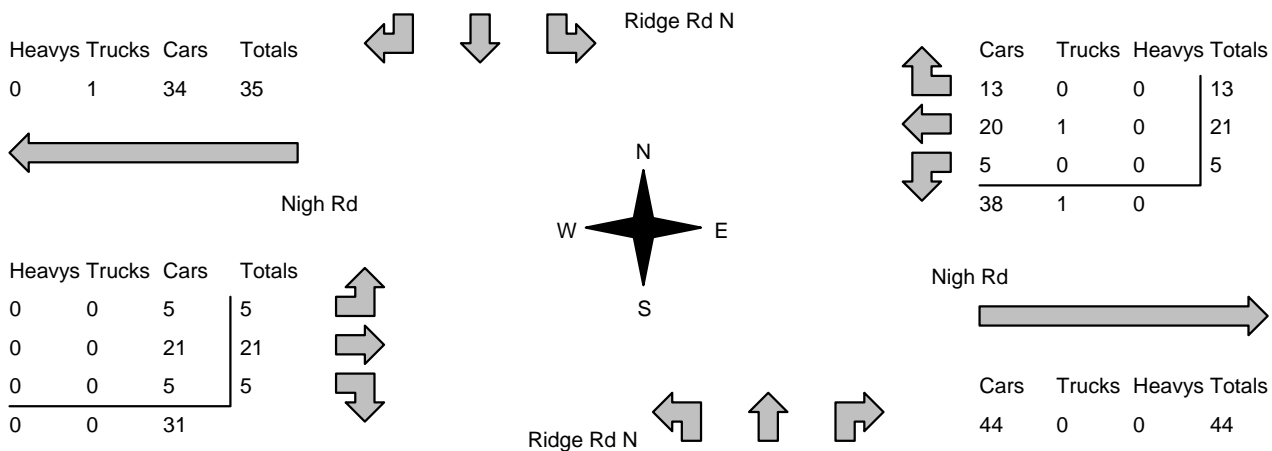
<b>Afternoon Peak Diagram</b>		<b>Specified Period</b> <b>From:</b> 16:00:00 <b>To:</b> 18:00:00	<b>One Hour Peak</b> <b>From:</b> 16:00:00 <b>To:</b> 17:00:00																												
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900001 <b>Intersection:</b> Garrison Rd & Ridge Rd N <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22		<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																													
<b>** Signalized Intersection **</b>		<b>Major Road:</b> Garrison Rd runs W/E																													
North Leg Total: 94 North Entering: 45 North Peds: 0 Peds Cross: ☒	<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>1</td><td>1</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>5</td><td>27</td><td>12</td><td>44</td></tr> <tr><td>Totals</td><td>5</td><td>27</td><td>13</td><td></td></tr> </table>	Heavys	0	0	1	1	Trucks	0	0	0	0	Cars	5	27	12	44	Totals	5	27	13		<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Cars</td><td>49</td></tr> <tr><td>Totals</td><td>49</td></tr> </table>	Heavys	0	Trucks	0	Cars	49	Totals	49	East Leg Total: 857 East Entering: 473 East Peds: 0 Peds Cross: ☒
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Trucks	0	0	0	0																											
Cars	5	27	12	44																											
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<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>Trucks</td><td>Cars</td><td>Totals</td></tr> <tr><td>10</td><td>8</td><td>364</td><td>382</td></tr> </table>	Heavys	Trucks	Cars	Totals	10	8	364	382		<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>Trucks</td><td>Heavys</td><td>Totals</td></tr> <tr><td>14</td><td>0</td><td>0</td><td>14</td></tr> <tr><td>343</td><td>7</td><td>9</td><td>359</td></tr> <tr><td>100</td><td>0</td><td>0</td><td>100</td></tr> <tr><td>457</td><td>7</td><td>9</td><td></td></tr> </table>	Cars	Trucks	Heavys	Totals	14	0	0	14	343	7	9	359	100	0	0	100	457	7	9		
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Cars	Trucks	Heavys	Totals																												
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<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>Trucks</td><td>Cars</td><td>Totals</td></tr> <tr><td>0</td><td>0</td><td>12</td><td>12</td></tr> <tr><td>6</td><td>5</td><td>326</td><td>337</td></tr> <tr><td>0</td><td>0</td><td>19</td><td>19</td></tr> <tr><td>6</td><td>5</td><td>357</td><td></td></tr> </table>	Heavys	Trucks	Cars	Totals	0	0	12	12	6	5	326	337	0	0	19	19	6	5	357				<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>Trucks</td><td>Heavys</td><td>Totals</td></tr> <tr><td>372</td><td>5</td><td>7</td><td>384</td></tr> </table>	Cars	Trucks	Heavys	Totals	372	5	7	384
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0	0	12	12																												
6	5	326	337																												
0	0	19	19																												
6	5	357																													
Cars	Trucks	Heavys	Totals																												
372	5	7	384																												
Peds Cross: ☒ West Peds: 0 West Entering: 368 West Leg Total: 750	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>146</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Totals</td><td>146</td></tr> </table>	Cars	146	Trucks	0	Heavys	0	Totals	146	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>16</td><td>23</td><td>34</td><td>73</td></tr> <tr><td>Trucks</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Heavys</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Totals</td><td>18</td><td>23</td><td>34</td><td></td></tr> </table>	Cars	16	23	34	73	Trucks	1	0	0	1	Heavys	1	0	0	1	Totals	18	23	34		Peds Cross: ☒ South Peds: 0 South Entering: 75 South Leg Total: 221
Cars	146																														
Trucks	0																														
Heavys	0																														
Totals	146																														
Cars	16	23	34	73																											
Trucks	1	0	0	1																											
Heavys	1	0	0	1																											
Totals	18	23	34																												
<b>Comments</b>																															


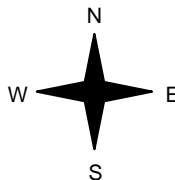






<b>Morning Peak Diagram</b>		<b>Specified Period</b> <b>From:</b> 7:00:00 <b>To:</b> 9:00:00	<b>One Hour Peak</b> <b>From:</b> 7:45:00 <b>To:</b> 8:45:00																												
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900002 <b>Intersection:</b> Gorham Rd & Nigh Rd <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22		<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																													
<b>** Non-Signalized Intersection **</b>		<b>Major Road:</b> Gorham Rd runs N/S																													
North Leg Total: 539 North Entering: 202 North Peds: 0 Peds Cross: ☒	<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>10</td><td>0</td><td>10</td></tr> <tr><td>Trucks</td><td>0</td><td>13</td><td>0</td><td>13</td></tr> <tr><td>Cars</td><td>3</td><td>170</td><td>6</td><td>179</td></tr> <tr><td>Totals</td><td>3</td><td>193</td><td>6</td><td></td></tr> </table>	Heavys	0	10	0	10	Trucks	0	13	0	13	Cars	3	170	6	179	Totals	3	193	6		<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>4</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Cars</td><td>331</td></tr> <tr><td>Totals</td><td>337</td></tr> </table>	Heavys	4	Trucks	2	Cars	331	Totals	337	East Leg Total: 38 East Entering: 21 East Peds: 0 Peds Cross: ☒
Heavys	0	10	0	10																											
Trucks	0	13	0	13																											
Cars	3	170	6	179																											
Totals	3	193	6																												
Heavys	4																														
Trucks	2																														
Cars	331																														
Totals	337																														
 <p style="text-align: center;">Gorham Rd</p> <p style="text-align: center;">Nigh Rd</p> <p style="text-align: center;">N S W E</p> <p style="text-align: center;">Gorham Rd</p> <p style="text-align: center;">Nigh Rd</p>																															
Peds Cross: ☒ West Peds: 0 West Entering: 27 West Leg Total: 59	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>189</td></tr> <tr><td>Trucks</td><td>14</td></tr> <tr><td>Heavys</td><td>10</td></tr> <tr><td>Totals</td><td>213</td></tr> </table>	Cars	189	Trucks	14	Heavys	10	Totals	213	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>22</td><td>318</td><td>1</td><td>341</td></tr> <tr><td>Trucks</td><td>0</td><td>2</td><td>2</td><td>4</td></tr> <tr><td>Heavys</td><td>0</td><td>4</td><td>0</td><td>4</td></tr> <tr><td>Totals</td><td>22</td><td>324</td><td>3</td><td></td></tr> </table>	Cars	22	318	1	341	Trucks	0	2	2	4	Heavys	0	4	0	4	Totals	22	324	3		Peds Cross: ☒ South Peds: 0 South Entering: 349 South Leg Total: 562
Cars	189																														
Trucks	14																														
Heavys	10																														
Totals	213																														
Cars	22	318	1	341																											
Trucks	0	2	2	4																											
Heavys	0	4	0	4																											
Totals	22	324	3																												
<b>Comments</b>																															

<b>Afternoon Peak Diagram</b>		<b>Specified Period</b> <b>From:</b> 16:00:00 <b>To:</b> 18:00:00	<b>One Hour Peak</b> <b>From:</b> 16:30:00 <b>To:</b> 17:30:00																																													
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900002 <b>Intersection:</b> Gorham Rd & Nigh Rd <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22		<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																																														
<b>** Non-Signalized Intersection **</b>		<b>Major Road:</b> Gorham Rd runs N/S																																														
North Leg Total: 741 North Entering: 433 North Peds: 0 Peds Cross: ☒	<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>3</td><td>0</td><td>3</td></tr> <tr><td>Trucks</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Cars</td><td>3</td><td>415</td><td>11</td><td>429</td></tr> <tr><td>Totals</td><td>3</td><td>419</td><td>11</td><td></td></tr> </table>	Heavys	0	3	0	3	Trucks	0	1	0	1	Cars	3	415	11	429	Totals	3	419	11		<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Trucks</td><td>7</td></tr> <tr><td>Cars</td><td>301</td></tr> <tr><td>Totals</td><td>308</td></tr> </table>	Heavys	0	Trucks	7	Cars	301	Totals	308	East Leg Total: 61 East Entering: 29 East Peds: 0 Peds Cross: ☒																	
Heavys	0	3	0	3																																												
Trucks	0	1	0	1																																												
Cars	3	415	11	429																																												
Totals	3	419	11																																													
Heavys	0																																															
Trucks	7																																															
Cars	301																																															
Totals	308																																															
																																																
<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>3</td><td>3</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>7</td><td>7</td></tr> <tr><td>Cars</td><td>0</td><td>0</td><td>49</td><td>49</td></tr> <tr><td>Totals</td><td>0</td><td>0</td><td>59</td><td></td></tr> </table>	Heavys	0	0	3	3	Trucks	0	0	7	7	Cars	0	0	49	49	Totals	0	0	59		<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>10</td><td>2</td><td>0</td><td>12</td></tr> <tr><td>Trucks</td><td>10</td><td>0</td><td>0</td><td>10</td></tr> <tr><td>Heavys</td><td>7</td><td>0</td><td>0</td><td>7</td></tr> <tr><td>Totals</td><td>27</td><td>2</td><td>0</td><td></td></tr> </table>	Cars	10	2	0	12	Trucks	10	0	0	10	Heavys	7	0	0	7	Totals	27	2	0		<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>32</td><td>0</td><td>0</td><td>32</td></tr> </table>	Cars	32	0	0	32	West Leg Total: 112 West Entering: 59 West Peds: 0 Peds Cross: ☒
Heavys	0	0	3	3																																												
Trucks	0	0	7	7																																												
Cars	0	0	49	49																																												
Totals	0	0	59																																													
Cars	10	2	0	12																																												
Trucks	10	0	0	10																																												
Heavys	7	0	0	7																																												
Totals	27	2	0																																													
Cars	32	0	0	32																																												
<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>471</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Heavys</td><td>3</td></tr> <tr><td>Totals</td><td>475</td></tr> </table>	Cars	471	Trucks	1	Heavys	3	Totals	475	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>38</td><td>288</td><td>14</td><td>340</td></tr> <tr><td>Trucks</td><td>2</td><td>5</td><td>0</td><td>7</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>40</td><td>293</td><td>14</td><td></td></tr> </table>	Cars	38	288	14	340	Trucks	2	5	0	7	Heavys	0	0	0	0	Totals	40	293	14		South Leg Total: 822 South Entering: 347 South Peds: 0 Peds Cross: ☒																		
Cars	471																																															
Trucks	1																																															
Heavys	3																																															
Totals	475																																															
Cars	38	288	14	340																																												
Trucks	2	5	0	7																																												
Heavys	0	0	0	0																																												
Totals	40	293	14																																													
<b>Comments</b>																																																

<b>Morning Peak Diagram</b>		<b>Specified Period</b> <b>From:</b> 7:00:00 <b>To:</b> 9:00:00	<b>One Hour Peak</b> <b>From:</b> 8:00:00 <b>To:</b> 9:00:00																												
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900003 <b>Intersection:</b> Ridge Rd N & Nigh Rd <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22		<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																													
<b>** Non-Signalized Intersection **</b>		<b>Major Road:</b> Ridge Rd N runs N/S																													
North Leg Total: 163 North Entering: 69 North Peds: 0 Peds Cross: ☒	<table style="border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>1</td><td>0</td><td style="border-left: 1px solid black;">1</td></tr> <tr><td>Trucks</td><td>0</td><td>1</td><td>0</td><td style="border-left: 1px solid black;">1</td></tr> <tr><td>Cars</td><td>3</td><td>55</td><td>9</td><td style="border-left: 1px solid black;">67</td></tr> <tr><td>Totals</td><td>3</td><td>57</td><td>9</td><td style="border-left: 1px solid black;"></td></tr> </table>	Heavys	0	1	0	1	Trucks	0	1	0	1	Cars	3	55	9	67	Totals	3	57	9		<table style="border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Cars</td><td>93</td></tr> <tr><td>Totals</td><td>94</td></tr> </table>	Heavys	1	Trucks	0	Cars	93	Totals	94	East Leg Total: 78 East Entering: 53 East Peds: 0 Peds Cross: ☒
Heavys	0	1	0	1																											
Trucks	0	1	0	1																											
Cars	3	55	9	67																											
Totals	3	57	9																												
Heavys	1																														
Trucks	0																														
Cars	93																														
Totals	94																														
 <p style="text-align: center;">Ridge Rd N</p> <p style="text-align: center;">Nigh Rd</p> <p style="text-align: center;">Nigh Rd</p> <p style="text-align: center;">Ridge Rd N</p>																															
Peds Cross: ☒ West Peds: 0 West Entering: 24 West Leg Total: 55	<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>71</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Totals</td><td>73</td></tr> </table>	Cars	71	Trucks	1	Heavys	1	Totals	73	<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>2</td><td>72</td><td>3</td><td style="border-left: 1px solid black;">77</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td style="border-left: 1px solid black;">0</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td style="border-left: 1px solid black;">0</td></tr> <tr><td>Totals</td><td>2</td><td>72</td><td>3</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cars	2	72	3	77	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	2	72	3		Peds Cross: ☒ South Peds: 2 South Entering: 77 South Leg Total: 150
Cars	71																														
Trucks	1																														
Heavys	1																														
Totals	73																														
Cars	2	72	3	77																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	2	72	3																												
<b>Comments</b>																															

<b>Afternoon Peak Diagram</b>		<b>Specified Period</b> <b>From:</b> 16:00:00 <b>To:</b> 18:00:00	<b>One Hour Peak</b> <b>From:</b> 16:30:00 <b>To:</b> 17:30:00																												
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900003 <b>Intersection:</b> Ridge Rd N & Nigh Rd <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22		<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																													
<b>** Non-Signalized Intersection **</b>		<b>Major Road:</b> Ridge Rd N runs N/S																													
North Leg Total: 236 North Entering: 147 North Peds: 0 Peds Cross: ☒	<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>6</td><td>123</td><td>17</td><td>146</td></tr> <tr><td>Totals</td><td>6</td><td>124</td><td>17</td><td></td></tr> </table>	Heavys	0	1	0	1	Trucks	0	0	0	0	Cars	6	123	17	146	Totals	6	124	17		<table style="width:100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Cars</td><td>88</td></tr> <tr><td>Totals</td><td>89</td></tr> </table>	Heavys	0	Trucks	1	Cars	88	Totals	89	East Leg Total: 83 East Entering: 39 East Peds: 0 Peds Cross: ☒
Heavys	0	1	0	1																											
Trucks	0	0	0	0																											
Cars	6	123	17	146																											
Totals	6	124	17																												
Heavys	0																														
Trucks	1																														
Cars	88																														
Totals	89																														
 <p style="text-align: center;">Ridge Rd N</p> <p style="text-align: center;">Nigh Rd</p> <p style="text-align: center;">Nigh Rd</p> <p style="text-align: center;">Ridge Rd N</p>																															
Peds Cross: ☒ West Peds: 0 West Entering: 31 West Leg Total: 66	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>133</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Totals</td><td>134</td></tr> </table>	Cars	133	Trucks	0	Heavys	1	Totals	134	<table style="width:100%; border-collapse: collapse;"> <tr><td>Cars</td><td>8</td><td>70</td><td>6</td><td>84</td></tr> <tr><td>Trucks</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>8</td><td>71</td><td>6</td><td></td></tr> </table>	Cars	8	70	6	84	Trucks	0	1	0	1	Heavys	0	0	0	0	Totals	8	71	6		Peds Cross: ☒ South Peds: 0 South Entering: 85 South Leg Total: 219
Cars	133																														
Trucks	0																														
Heavys	1																														
Totals	134																														
Cars	8	70	6	84																											
Trucks	0	1	0	1																											
Heavys	0	0	0	0																											
Totals	8	71	6																												
<b>Comments</b>																															

<h2>Morning Peak Diagram</h2>	<b>Specified Period</b> <b>From:</b> 7:00:00 <b>To:</b> 9:00:00	<b>One Hour Peak</b> <b>From:</b> 8:00:00 <b>To:</b> 9:00:00																										
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900004 <b>Intersection:</b> Nigh Rd & Prospect Point Rd N <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22	<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																											
<b>** Non-Signalized Intersection **</b>	<b>Major Road:</b> Nigh Rd runs W/E																											
		East Leg Total: 55 East Entering: 34 East Peds: 0 Peds Cross: X																										
<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Heavys</th> <th style="text-align: left;">Trucks</th> <th style="text-align: left;">Cars</th> <th style="text-align: left;">Totals</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0</td> <td>53</td> <td>54</td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;">  <p>Nigh Rd</p> </div>	Heavys	Trucks	Cars	Totals	1	0	53	54		<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Cars</th> <th style="text-align: left;">Trucks</th> <th style="text-align: left;">Heavys</th> <th style="text-align: left;">Totals</th> </tr> </thead> <tbody> <tr> <td>27</td> <td>0</td> <td>1</td> <td>28</td> </tr> <tr> <td>6</td> <td>0</td> <td>0</td> <td>6</td> </tr> <tr> <td style="border-top: 1px solid black;">33</td> <td style="border-top: 1px solid black;">0</td> <td style="border-top: 1px solid black;">1</td> <td style="border-top: 1px solid black;"></td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;">  <p>Nigh Rd</p> </div>	Cars	Trucks	Heavys	Totals	27	0	1	28	6	0	0	6	33	0	1			
Heavys	Trucks	Cars	Totals																									
1	0	53	54																									
Cars	Trucks	Heavys	Totals																									
27	0	1	28																									
6	0	0	6																									
33	0	1																										
<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Heavys</th> <th style="text-align: left;">Trucks</th> <th style="text-align: left;">Cars</th> <th style="text-align: left;">Totals</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2</td> <td>9</td> <td>11</td> </tr> <tr> <td>0</td> <td>0</td> <td>14</td> <td>14</td> </tr> <tr> <td style="border-top: 1px solid black;">0</td> <td style="border-top: 1px solid black;">2</td> <td style="border-top: 1px solid black;">23</td> <td style="border-top: 1px solid black;"></td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;">  </div>	Heavys	Trucks	Cars	Totals	0	2	9	11	0	0	14	14	0	2	23		<p>Prospect Point Rd N</p> <div style="text-align: center; margin-top: 10px;">  </div>	<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Cars</th> <th style="text-align: left;">Trucks</th> <th style="text-align: left;">Heavys</th> <th style="text-align: left;">Totals</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>2</td> <td>0</td> <td>21</td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;">  </div>	Cars	Trucks	Heavys	Totals	19	2	0	21		
Heavys	Trucks	Cars	Totals																									
0	2	9	11																									
0	0	14	14																									
0	2	23																										
Cars	Trucks	Heavys	Totals																									
19	2	0	21																									
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<h3>Comments</h3>																												

<h2>Afternoon Peak Diagram</h2>	<b>Specified Period</b> <b>From:</b> 16:00:00 <b>To:</b> 18:00:00	<b>One Hour Peak</b> <b>From:</b> 16:00:00 <b>To:</b> 17:00:00																								
<b>Municipality:</b> Fort Erie <b>Site #:</b> 2214900004 <b>Intersection:</b> Nigh Rd & Prospect Point Rd N <b>TFR File #:</b> 1 <b>Count date:</b> 9-Aug-22	<b>Weather conditions:</b>  <b>Person counted:</b> <b>Person prepared:</b> <b>Person checked:</b>																									
<b>** Non-Signalized Intersection **</b>	<b>Major Road:</b> Nigh Rd runs W/E																									
		East Leg Total: 68 East Entering: 32 East Peds: 0 Peds Cross: 8																								
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## **APPENDIX B**

### **Transportation Tomorrow Survey (TTS) Data**

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**2016 Transportation Tomorrow Survey Data**  
**Origin: Fort Erie**

<b>Planning District of Employment</b>	<b>Number of Commuters</b>
PD 9 of Toronto	219
PD 10 of Toronto	15
PD 11 of Toronto	15
Brampton	155
Mississauga	21
Oakville	21
Burlington	321
Glanbrook	19
Stoney Creek	21
Hamilton	72
Grimsby	51
Pelham	305
Niagara-on-the-Lake	888
St. Catharines	3531
Thorold	715
Niagara Falls	6331
Welland	1586
Port Colborne	616
Fort Erie	18529
West Lincoln	195
Wainfleet	24
Waterloo	54
Cambridge	17
Haldimand-Norfolk	146
Brantford	119
<b>Total</b>	<b>33986</b>





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## **APPENDIX C**

### **Signal Timing Plans**

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**Signal Code: HW3RDG****Intersection: RR3 (GARRISON RD.) & RIDGE RD.****Municipality: forterie****Owner: mto****Last Modified: 2016-09-28 10:59:08 AM**

<b>Timing Parameters</b>	<b>EBD &amp; WBD HWY 3</b>	<b>NBD &amp; SBD RIDGE</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
Min Green	20	10	0	0	0	0
Walk	8	8	0	0	0	0
Ped Clearance	12	12	0	0	0	0
Vehicle Ext.	4.5	3	0	0	0	0
Max Green	50	20	0	0	0	0
Yellow	5.9	5	0	0	0	0
All Red	1.2	1.9	0	0	0	0

**Offset**

<b>Minimum Cycle</b>	44	0
<b>Pedestrian Cycle</b>	54	
<b>Maximum Cycle</b>	84	0
<b>Operation</b>	FA	

Installed On: 2009-02-12

Count Date: --/--/----

FA = Fully Actuated

SA = Semi Actuated

FT = Fixed Time

Copyright 2001 © Regional Niagara

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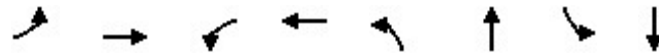
## **APPENDIX D**

### **HCM Reports**

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576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Baseline (2022) Traffic Volumes  
 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	296	42	270	20	79	10	21
v/c Ratio	0.02	0.43	0.21	0.39	0.03	0.11	0.02	0.03
Control Delay	13.4	16.2	16.6	14.5	7.1	3.6	7.0	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	16.2	16.6	14.5	7.1	3.6	7.0	6.5
Queue Length 50th (m)	0.3	10.2	2.7	8.4	0.8	0.6	0.4	0.7
Queue Length 95th (m)	2.2	18.5	8.8	16.2	3.5	5.8	2.3	3.4
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	1004	3234	980	3201	593	734	563	783
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.09	0.04	0.08	0.03	0.11	0.02	0.03
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Baseline (2022) Traffic Volumes  
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	258	15	39	218	30	18	14	59	9	17	3
Future Volume (vph)	5	258	15	39	218	30	18	14	59	9	17	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3233		1630	3200		1630	1507		1630	1679	
Flt Permitted	0.59	1.00		0.57	1.00		0.74	1.00		0.71	1.00	
Satd. Flow (perm)	1004	3233		980	3200		1276	1507		1211	1679	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	280	16	42	237	33	20	15	64	10	18	3
RTOR Reduction (vph)	0	9	0	0	25	0	0	34	0	0	2	0
Lane Group Flow (vph)	5	287	0	42	245	0	20	45	0	10	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Effective Green, g (s)	9.0	9.0		9.0	9.0		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.47	0.47		0.47	0.47	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	210	676		205	669		593	700		563	780	
v/s Ratio Prot		c0.09			0.08			c0.03			0.01	
v/s Ratio Perm	0.00			0.04			0.02			0.01		
v/c Ratio	0.02	0.42		0.20	0.37		0.03	0.06		0.02	0.02	
Uniform Delay, d1	13.5	14.8		14.0	14.6		6.2	6.3		6.2	6.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.5	0.3		0.1	0.2		0.1	0.1	
Delay (s)	13.6	15.2		14.5	14.9		6.4	6.5		6.3	6.3	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.2			14.8			6.5			6.3	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			13.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.18									
Actuated Cycle Length (s)			43.0			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			37.8%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Baseline (2022) Traffic Volumes  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	8	17	3	7	11	22	324	3	6	193	3
Future Volume (Veh/h)	2	8	17	3	7	11	22	324	3	6	193	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	18	3	8	12	24	352	3	7	210	3
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	643	628	212	650	628	354	213			355		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	643	628	212	650	628	354	213			355		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	98	99	98	98	98			99		
cM capacity (veh/h)	367	390	829	361	390	690	1357			1204		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	29	23	379	220								
Volume Left	2	3	24	7								
Volume Right	18	12	3	3								
cSH	577	498	1357	1204								
Volume to Capacity	0.05	0.05	0.02	0.01								
Queue Length 95th (m)	1.3	1.2	0.4	0.1								
Control Delay (s)	11.6	12.6	0.6	0.3								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.6	12.6	0.6	0.3								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			37.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	13	7	9	26	18	2	72	3	9	57	3
Future Vol, veh/h	4	13	7	9	26	18	2	72	3	9	57	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	14	8	10	28	20	2	78	3	10	62	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.4	7.6	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	17%	17%	13%
Vol Thru, %	94%	54%	49%	83%
Vol Right, %	4%	29%	34%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	24	53	69
LT Vol	2	4	9	9
Through Vol	72	13	26	57
RT Vol	3	7	18	3
Lane Flow Rate	84	26	58	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.096	0.03	0.065	0.086
Departure Headway (Hd)	4.118	4.111	4.057	4.142
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	857	870	858
Service Time	2.176	2.203	2.142	2.203
HCM Lane V/C Ratio	0.097	0.03	0.067	0.087
HCM Control Delay	7.6	7.3	7.4	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.3

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road

Baseline (2022) Traffic Volumes  
AM Peak Hour

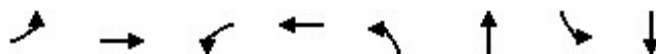


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	11	14	6	28	26	10
Future Volume (Veh/h)	11	14	6	28	26	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	15	7	30	28	11
<b>Pedestrians</b>						
Lane 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			27		64	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27		64	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1587		938	1058
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	27	37	39			
Volume Left	0	7	28			
Volume Right	15	0	11			
cSH	1700	1587	969			
Volume to Capacity	0.02	0.00	0.04			
Queue Length 95th (m)	0.0	0.1	1.0			
Control Delay (s)	0.0	1.4	8.9			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.4	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.9			
Intersection Capacity Utilization			16.6%	ICU Level of Service	A	
Analysis Period (min)			15			



576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Baseline (2022) Traffic Volumes  
 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	387	109	405	20	62	14	34
v/c Ratio	0.06	0.47	0.49	0.50	0.04	0.09	0.03	0.05
Control Delay	13.0	15.8	22.3	16.3	8.8	5.5	8.8	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	15.8	22.3	16.3	8.8	5.5	8.8	7.9
Queue Length 50th (m)	0.8	13.8	7.8	14.8	0.8	1.1	0.6	1.2
Queue Length 95th (m)	3.8	23.2	19.2	24.5	4.3	7.0	3.4	5.8
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	879	3225	894	3231	556	709	542	742
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.12	0.13	0.04	0.09	0.03	0.05
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Baseline (2022) Traffic Volumes  
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	337	19	100	359	14	18	23	34	13	27	5
Future Volume (vph)	12	337	19	100	359	14	18	23	34	13	27	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3233		1630	3242		1630	1562		1630	1678	
Flt Permitted	0.51	1.00		0.52	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	882	3233		897	3242		1261	1562		1229	1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	366	21	109	390	15	20	25	37	14	29	5
RTOR Reduction (vph)	0	9	0	0	6	0	0	21	0	0	3	0
Lane Group Flow (vph)	13	378	0	109	399	0	20	41	0	14	31	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.4	11.4		11.4	11.4		20.1	20.1		20.1	20.1	
Effective Green, g (s)	11.4	11.4		11.4	11.4		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.44	0.44		0.44	0.44	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	810		224	812		557	690		542	741	
v/s Ratio Prot		0.12			c0.12			c0.03			0.02	
v/s Ratio Perm	0.01			0.12			0.02			0.01		
v/c Ratio	0.06	0.47		0.49	0.49		0.04	0.06		0.03	0.04	
Uniform Delay, d1	13.0	14.5		14.6	14.6		7.2	7.3		7.2	7.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.4		1.7	0.5		0.1	0.2		0.1	0.1	
Delay (s)	13.1	14.9		16.2	15.0		7.3	7.4		7.3	7.3	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.8			15.3			7.4			7.3	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.1				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			45.5			Sum of lost time (s)				14.0		
Intersection Capacity Utilization			42.1%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Baseline (2022) Traffic Volumes  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	7	49	7	10	12	40	293	14	11	419	3
Future Volume (Veh/h)	3	7	49	7	10	12	40	293	14	11	419	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	8	53	8	11	13	43	318	15	12	455	3
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	910	900	456	949	894	326	458			333		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	910	900	456	949	894	326	458			333		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	91	96	96	98	96			99		
cM capacity (veh/h)	234	265	604	206	267	716	1103			1226		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	64	32	376	470								
Volume Left	3	8	43	12								
Volume Right	53	13	15	3								
cSH	489	326	1103	1226								
Volume to Capacity	0.13	0.10	0.04	0.01								
Queue Length 95th (m)	3.6	2.6	1.0	0.2								
Control Delay (s)	13.5	17.2	1.3	0.3								
Lane LOS	B	C	A	A								
Approach Delay (s)	13.5	17.2	1.3	0.3								
Approach LOS	B	C										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			47.2%	ICU Level of Service	A							
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Baseline (2022) Traffic Volumes  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	21	5	5	21	13	8	71	6	17	124	6
Future Vol, veh/h	5	21	5	5	21	13	8	71	6	17	124	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	23	5	5	23	14	9	77	7	18	135	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.6	7.8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	16%	13%	12%
Vol Thru, %	84%	68%	54%	84%
Vol Right, %	7%	16%	33%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	31	39	147
LT Vol	8	5	5	17
Through Vol	71	21	21	124
RT Vol	6	5	13	6
Lane Flow Rate	92	34	42	160
Geometry Grp	1	1	1	1
Degree of Util (X)	0.107	0.042	0.051	0.184
Departure Headway (Hd)	4.166	4.475	4.356	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	848	805	827	858
Service Time	2.252	2.476	2.357	2.207
HCM Lane V/C Ratio	0.108	0.042	0.051	0.186
HCM Control Delay	7.8	7.7	7.6	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.2	0.7

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road

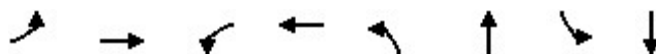
Baseline (2022) Traffic Volumes  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	22	21	5	27	15	10
Future Volume (Veh/h)	22	21	5	27	15	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)	24	23	5	29	16	11
<b>Pedestrians</b>						
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			47		74	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		74	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	99
cM capacity (veh/h)			1560		926	1037
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	47	34	27			
Volume Left	0	5	16			
Volume Right	23	0	11			
cSH	1700	1560	968			
Volume to Capacity	0.03	0.00	0.03			
Queue Length 95th (m)	0.0	0.1	0.7			
Control Delay (s)	0.0	1.1	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.1	8.8			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.6			
Intersection Capacity Utilization			15.7%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2023) Background Traffic Volumes  
 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	302	43	273	20	80	10	21
v/c Ratio	0.02	0.44	0.21	0.39	0.03	0.11	0.02	0.03
Control Delay	13.4	16.2	16.6	14.5	7.1	3.6	7.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	16.2	16.6	14.5	7.1	3.6	7.0	6.6
Queue Length 50th (m)	0.3	10.4	2.8	8.4	0.8	0.6	0.4	0.7
Queue Length 95th (m)	2.2	18.8	8.9	16.3	3.5	5.8	2.2	3.4
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	1002	3234	975	3198	592	733	561	781
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.09	0.04	0.09	0.03	0.11	0.02	0.03
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2023) Background Traffic Volumes  
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	263	15	40	220	31	18	14	60	9	17	3
Future Volume (vph)	5	263	15	40	220	31	18	14	60	9	17	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3234		1630	3199		1630	1507		1630	1679	
Flt Permitted	0.58	1.00		0.57	1.00		0.74	1.00		0.70	1.00	
Satd. Flow (perm)	1002	3234		974	3199		1276	1507		1210	1679	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	286	16	43	239	34	20	15	65	10	18	3
RTOR Reduction (vph)	0	9	0	0	26	0	0	35	0	0	2	0
Lane Group Flow (vph)	5	293	0	43	247	0	20	45	0	10	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.1	9.1		9.1	9.1		20.0	20.0		20.0	20.0	
Effective Green, g (s)	9.1	9.1		9.1	9.1		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.46	0.46		0.46	0.46	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	211	682		205	675		592	699		561	779	
v/s Ratio Prot		c0.09			0.08			c0.03			0.01	
v/s Ratio Perm	0.00			0.04			0.02			0.01		
v/c Ratio	0.02	0.43		0.21	0.37		0.03	0.06		0.02	0.02	
Uniform Delay, d1	13.5	14.7		14.0	14.5		6.3	6.4		6.2	6.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.5	0.3		0.1	0.2		0.1	0.1	
Delay (s)	13.5	15.2		14.5	14.9		6.4	6.6		6.3	6.3	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.2			14.8			6.5			6.3	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			13.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.18									
Actuated Cycle Length (s)			43.1			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			37.9%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2023) Background Traffic Volumes  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	8	17	3	7	11	22	330	3	6	197	3
Future Volume (Veh/h)	2	8	17	3	7	11	22	330	3	6	197	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	18	3	8	12	24	359	3	7	214	3
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	654	640	216	660	640	360	217			362		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	654	640	216	660	640	360	217			362		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	98	99	98	98	98			99		
cM capacity (veh/h)	361	384	824	355	384	684	1353			1197		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	29	23	386	224								
Volume Left	2	3	24	7								
Volume Right	18	12	3	3								
cSH	571	491	1353	1197								
Volume to Capacity	0.05	0.05	0.02	0.01								
Queue Length 95th (m)	1.3	1.2	0.4	0.1								
Control Delay (s)	11.6	12.7	0.6	0.3								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.6	12.7	0.6	0.3								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			37.5%		ICU Level of Service				A			
Analysis Period (min)			15									



576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2023) Background Traffic Volumes  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	13	7	9	27	18	2	73	3	9	58	3
Future Vol, veh/h	4	13	7	9	27	18	2	73	3	9	58	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	14	8	10	29	20	2	79	3	10	63	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.4	7.6	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	17%	17%	13%
Vol Thru, %	94%	54%	50%	83%
Vol Right, %	4%	29%	33%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	24	54	70
LT Vol	2	4	9	9
Through Vol	73	13	27	58
RT Vol	3	7	18	3
Lane Flow Rate	85	26	59	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.097	0.03	0.066	0.088
Departure Headway (Hd)	4.121	4.116	4.064	4.145
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	862	856	868	857
Service Time	2.18	2.209	2.151	2.206
HCM Lane V/C Ratio	0.099	0.03	0.068	0.089
HCM Control Delay	7.6	7.3	7.4	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.3

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road

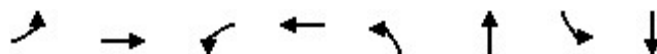
Future (2023) Background Traffic Volumes  
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	11	14	6	29	27	10
Future Volume (Veh/h)	11	14	6	29	27	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)	12	15	7	32	29	11
<b>Pedestrians</b>						
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			27		66	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27		66	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1587		936	1058
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	27	39	40			
Volume Left	0	7	29			
Volume Right	15	0	11			
cSH	1700	1587	967			
Volume to Capacity	0.02	0.00	0.04			
Queue Length 95th (m)	0.0	0.1	1.0			
Control Delay (s)	0.0	1.3	8.9			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.3	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.8			
Intersection Capacity Utilization			16.7%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2023) Background Traffic Volumes  
 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	395	111	413	20	63	14	35
v/c Ratio	0.06	0.48	0.50	0.50	0.04	0.09	0.03	0.05
Control Delay	12.9	15.9	22.5	16.3	8.9	5.6	8.8	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	15.9	22.5	16.3	8.9	5.6	8.8	8.0
Queue Length 50th (m)	0.8	14.2	7.9	15.1	0.8	1.1	0.6	1.3
Queue Length 95th (m)	3.8	23.6	19.4	25.0	4.4	7.1	3.5	5.9
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	871	3221	886	3231	553	707	539	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.13	0.13	0.04	0.09	0.03	0.05
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2023) Background Traffic Volumes  
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	344	19	102	366	14	18	23	35	13	28	5
Future Volume (vph)	12	344	19	102	366	14	18	23	35	13	28	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3234		1630	3242		1630	1560		1630	1679	
Flt Permitted	0.51	1.00		0.52	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	875	3234		890	3242		1260	1560		1228	1679	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	374	21	111	398	15	20	25	38	14	30	5
RTOR Reduction (vph)	0	9	0	0	6	0	0	21	0	0	3	0
Lane Group Flow (vph)	13	386	0	111	407	0	20	42	0	14	32	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.5	11.5		11.5	11.5		20.1	20.1		20.1	20.1	
Effective Green, g (s)	11.5	11.5		11.5	11.5		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.44	0.44		0.44	0.44	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	815		224	817		555	687		541	740	
v/s Ratio Prot		0.12			c0.13			c0.03			0.02	
v/s Ratio Perm	0.01			0.12			0.02			0.01		
v/c Ratio	0.06	0.47		0.50	0.50		0.04	0.06		0.03	0.04	
Uniform Delay, d1	12.9	14.5		14.6	14.6		7.2	7.3		7.2	7.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.4		1.7	0.5		0.1	0.2		0.1	0.1	
Delay (s)	13.1	14.9		16.3	15.1		7.4	7.5		7.3	7.4	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.9			15.3			7.5			7.4	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			45.6			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			42.4%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2023) Background Traffic Volumes  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	7	50	7	10	12	41	299	14	11	427	3
Future Volume (Veh/h)	3	7	50	7	10	12	41	299	14	11	427	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	8	54	8	11	13	45	325	15	12	464	3
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	930	920	466	970	914	332	467			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	930	920	466	970	914	332	467			340		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	91	96	96	98	96			99		
cM capacity (veh/h)	226	257	597	199	259	709	1094			1219		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	65	32	385	479								
Volume Left	3	8	45	12								
Volume Right	54	13	15	3								
cSH	482	317	1094	1219								
Volume to Capacity	0.13	0.10	0.04	0.01								
Queue Length 95th (m)	3.7	2.7	1.0	0.2								
Control Delay (s)	13.6	17.6	1.4	0.3								
Lane LOS	B	C	A	A								
Approach Delay (s)	13.6	17.6	1.4	0.3								
Approach LOS	B	C										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			48.2%		ICU Level of Service				A			
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2023) Background Traffic Volumes  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

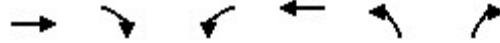
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	21	5	5	21	13	8	72	6	17	126	6
Future Vol, veh/h	5	21	5	5	21	13	8	72	6	17	126	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	23	5	5	23	14	9	78	7	18	137	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.6	7.8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	16%	13%	11%
Vol Thru, %	84%	68%	54%	85%
Vol Right, %	7%	16%	33%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	31	39	149
LT Vol	8	5	5	17
Through Vol	72	21	21	126
RT Vol	6	5	13	6
Lane Flow Rate	93	34	42	162
Geometry Grp	1	1	1	1
Degree of Util (X)	0.108	0.042	0.051	0.186
Departure Headway (Hd)	4.168	4.481	4.361	4.137
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	848	804	826	858
Service Time	2.254	2.482	2.362	2.208
HCM Lane V/C Ratio	0.11	0.042	0.051	0.189
HCM Control Delay	7.8	7.7	7.6	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.2	0.7

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road

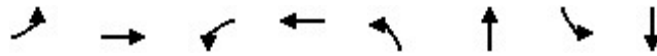
Future (2023) Background Traffic Volumes  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	11	14	6	29	27	10
Future Volume (Veh/h)	11	14	6	29	27	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)	12	15	7	32	29	11
<b>Pedestrians</b>						
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			27		66	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27		66	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1587		936	1058
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	27	39	40			
Volume Left	0	7	29			
Volume Right	15	0	11			
cSH	1700	1587	967			
Volume to Capacity	0.02	0.00	0.04			
Queue Length 95th (m)	0.0	0.1	1.0			
Control Delay (s)	0.0	1.3	8.9			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.3	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.8			
Intersection Capacity Utilization			16.7%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2023) Total Traffic Volumes  
 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	302	57	275	20	117	10	21
v/c Ratio	0.02	0.44	0.28	0.39	0.03	0.16	0.02	0.03
Control Delay	13.4	16.2	18.0	14.6	7.1	3.2	7.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	16.2	18.0	14.6	7.1	3.2	7.0	6.6
Queue Length 50th (m)	0.3	10.4	3.8	8.6	0.8	0.6	0.4	0.7
Queue Length 95th (m)	2.2	18.8	11.1	16.4	3.5	6.9	2.2	3.4
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	1000	3234	975	3198	592	746	542	781
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.09	0.06	0.09	0.03	0.16	0.02	0.03
<b>Intersection Summary</b>								



576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2023) Total Traffic Volumes  
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	263	15	52	222	31	18	14	94	9	17	3
Future Volume (vph)	5	263	15	52	222	31	18	14	94	9	17	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.87		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3234		1630	3199		1630	1491		1630	1679	
Flt Permitted	0.58	1.00		0.57	1.00		0.74	1.00		0.68	1.00	
Satd. Flow (perm)	1000	3234		974	3199		1276	1491		1170	1679	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	286	16	57	241	34	20	15	102	10	18	3
RTOR Reduction (vph)	0	9	0	0	25	0	0	55	0	0	2	0
Lane Group Flow (vph)	5	293	0	57	250	0	20	62	0	10	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.1	9.1		9.1	9.1		20.0	20.0		20.0	20.0	
Effective Green, g (s)	9.1	9.1		9.1	9.1		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.46	0.46		0.46	0.46	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	211	682		205	675		592	691		542	779	
v/s Ratio Prot		c0.09			0.08			c0.04			0.01	
v/s Ratio Perm	0.01			0.06			0.02			0.01		
v/c Ratio	0.02	0.43		0.28	0.37		0.03	0.09		0.02	0.02	
Uniform Delay, d1	13.5	14.7		14.2	14.5		6.3	6.5		6.2	6.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.4		0.7	0.3		0.1	0.3		0.1	0.1	
Delay (s)	13.5	15.2		15.0	14.9		6.4	6.7		6.3	6.3	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.2			14.9			6.7			6.3	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			13.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.20									
Actuated Cycle Length (s)			43.1			Sum of lost time (s)				14.0		
Intersection Capacity Utilization			37.9%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2023) Total Traffic Volumes  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	8	17	3	7	40	22	330	3	18	197	3
Future Volume (Veh/h)	2	8	17	3	7	40	22	330	3	18	197	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	18	3	8	43	24	359	3	20	214	3
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	711	666	216	686	666	360	217			362		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	711	666	216	686	666	360	217			362		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	98	99	98	94	98			98		
cM capacity (veh/h)	312	367	824	338	367	684	1353			1197		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	29	54	386	237								
Volume Left	2	3	24	20								
Volume Right	18	43	3	3								
cSH	550	577	1353	1197								
Volume to Capacity	0.05	0.09	0.02	0.02								
Queue Length 95th (m)	1.3	2.5	0.4	0.4								
Control Delay (s)	11.9	11.9	0.6	0.8								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.9	11.9	0.6	0.8								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			33.4%		ICU Level of Service					A		
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2023) Total Traffic Volumes  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

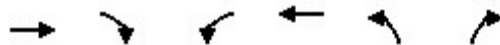
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	18	14	9	40	33	18	92	3	14	65	3
Future Vol, veh/h	4	18	14	9	40	33	18	92	3	14	65	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	20	15	10	43	36	20	100	3	15	71	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	7.7	8.1	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	11%	11%	17%
Vol Thru, %	81%	50%	49%	79%
Vol Right, %	3%	39%	40%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	113	36	82	82
LT Vol	18	4	9	14
Through Vol	92	18	40	65
RT Vol	3	14	33	3
Lane Flow Rate	123	39	89	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.145	0.047	0.105	0.108
Departure Headway (Hd)	4.342	4.301	4.238	4.372
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	832	836	849	824
Service Time	2.342	2.308	2.244	2.372
HCM Lane V/C Ratio	0.148	0.047	0.105	0.108
HCM Control Delay	8.1	7.5	7.7	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.4	0.4

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road










Future (2023) Total Traffic Volumes  
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	11	24	6	29	55	10
Future Volume (Veh/h)	11	24	6	29	55	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)	12	26	7	32	60	11
<b>Pedestrians</b>						
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			38		71	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		71	25
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	99
cM capacity (veh/h)			1572		929	1051
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	38	39	71			
Volume Left	0	7	60			
Volume Right	26	0	11			
cSH	1700	1572	946			
Volume to Capacity	0.02	0.00	0.08			
Queue Length 95th (m)	0.0	0.1	1.9			
Control Delay (s)	0.0	1.3	9.1			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.3	9.1			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			4.7			
Intersection Capacity Utilization			17.0%	ICU Level of Service	A	
Analysis Period (min)			15			










576 Ridge Road TIS  
5: Ridge Road N & Block 50 North Access

Future (2023) Total Traffic Volumes  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	10	104	0	5	83
Future Volume (Veh/h)	0	10	104	0	5	83
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)	0	11	113	0	5	90
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	213	113			113	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	213	113			113	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	773	940			1476	
<b>Direction, Lane #</b>						
	WB 1	NB 1	SB 1			
Volume Total	11	113	95			
Volume Left	0	0	5			
Volume Right	11	0	0			
cSH	940	1700	1476			
Volume to Capacity	0.01	0.07	0.00			
Queue Length 95th (m)	0.3	0.0	0.1			
Control Delay (s)	8.9	0.0	0.4			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	0.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization			18.5%		ICU Level of Service	A
Analysis Period (min)			15			










576 Ridge Road TIS  
6: Ridge Road N & Block 50 South Access

Future (2023) Total Traffic Volumes  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	10	94	0	5	78
Future Volume (Veh/h)	0	10	94	0	5	78
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)	0	11	102	0	5	85
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	197	102			102	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	197	102			102	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	789	953			1490	
<b>Direction, Lane #</b>						
	WB 1	NB 1	SB 1			
Volume Total	11	102	90			
Volume Left	0	0	5			
Volume Right	11	0	0			
cSH	953	1700	1490			
Volume to Capacity	0.01	0.06	0.00			
Queue Length 95th (m)	0.3	0.0	0.1			
Control Delay (s)	8.8	0.0	0.4			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization		18.2%		ICU Level of Service		A
Analysis Period (min)			15			

576 Ridge Road TIS  
7: Ridge Road N & Block 51 Access

Future (2023) Total Traffic Volumes  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	15	79	0	4	75
Future Volume (Veh/h)	0	15	79	0	4	75
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)	0	16	86	0	4	82
<b>Pedestrians</b>						
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	176	86			86	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	86			86	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	812	973			1510	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	16	86	86			
Volume Left	0	0	4			
Volume Right	16	0	0			
cSH	973	1700	1510			
Volume to Capacity	0.02	0.05	0.00			
Queue Length 95th (m)	0.4	0.0	0.1			
Control Delay (s)	8.8	0.0	0.4			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.9			
Intersection Capacity Utilization		17.2%		ICU Level of Service		A
Analysis Period (min)			15			

576 Ridge Road TIS  
 8: Prospect Point Road & Street 'A' North

Future (2023) Total Traffic Volumes  
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	0	0	49	24	3
Future Volume (Veh/h)	8	0	0	49	24	3
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)	9	0	0	53	26	3
<b>Pedestrians</b>						
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	80	28	29			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	80	28	29			
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)	922	1048	1584			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	9	53	29			
Volume Left	9	0	0			
Volume Right	0	0	3			
cSH	922	1584	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	8.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.9	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.9					
Intersection Capacity Utilization	13.3%			ICU Level of Service	A	
Analysis Period (min)	15					



576 Ridge Road TIS  
 9: Prospect Point Road & Street 'A' South

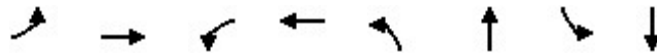
Future (2023) Total Traffic Volumes  
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	1	0	37	20	3
Future Volume (Veh/h)	8	1	0	37	20	3
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)	9	1	0	40	22	3
<b>Pedestrians</b>						
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	64	24	25			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64	24	25			
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)	942	1053	1589			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	10	40	25			
Volume Left	9	0	0			
Volume Right	1	0	3			
cSH	952	1589	1700			
Volume to Capacity	0.01	0.00	0.01			
Queue Length 95th (m)	0.3	0.0	0.0			
Control Delay (s)	8.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.8	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			1.2			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2023) Total Traffic Volumes  
 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	395	150	413	20	89	14	35
v/c Ratio	0.05	0.43	0.60	0.45	0.04	0.13	0.03	0.05
Control Delay	12.0	14.6	25.0	15.0	10.5	5.5	10.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	14.6	25.0	15.0	10.5	5.5	10.5	9.4
Queue Length 50th (m)	0.8	14.2	11.2	15.1	0.9	1.2	0.7	1.4
Queue Length 95th (m)	3.7	23.2	25.7	24.5	4.9	9.1	3.9	6.7
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	857	3170	872	3180	531	682	505	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.12	0.17	0.13	0.04	0.13	0.03	0.05
Intersection Summary								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2023) Total Traffic Volumes  
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	344	19	138	366	14	18	23	59	13	28	5
Future Volume (vph)	12	344	19	138	366	14	18	23	59	13	28	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3234		1630	3242		1630	1531		1630	1679	
Flt Permitted	0.51	1.00		0.52	1.00		0.73	1.00		0.70	1.00	
Satd. Flow (perm)	875	3234		890	3242		1260	1531		1200	1679	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	374	21	150	398	15	20	25	64	14	30	5
RTOR Reduction (vph)	0	9	0	0	6	0	0	37	0	0	3	0
Lane Group Flow (vph)	13	386	0	150	407	0	20	52	0	14	32	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.5	13.5		13.5	13.5		20.2	20.2		20.2	20.2	
Effective Green, g (s)	13.5	13.5		13.5	13.5		20.2	20.2		20.2	20.2	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.42	0.42		0.42	0.42	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	247	915		251	917		533	648		508	711	
v/s Ratio Prot		0.12			0.13			c0.03			0.02	
v/s Ratio Perm	0.01			c0.17			0.02			0.01		
v/c Ratio	0.05	0.42		0.60	0.44		0.04	0.08		0.03	0.05	
Uniform Delay, d1	12.4	13.9		14.8	14.0		8.1	8.2		8.0	8.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3		3.8	0.3		0.1	0.2		0.1	0.1	
Delay (s)	12.5	14.2		18.6	14.4		8.2	8.4		8.1	8.2	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.2			15.5			8.4			8.2	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.29									
Actuated Cycle Length (s)			47.7			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			44.6%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2023) Total Traffic Volumes  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	7	50	7	10	34	41	299	14	43	427	3
Future Volume (Veh/h)	3	7	50	7	10	34	41	299	14	43	427	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	8	54	8	11	37	45	325	15	47	464	3
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	1024	990	466	1040	984	332	467			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1024	990	466	1040	984	332	467			340		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	96	91	95	95	95	96			96		
cM capacity (veh/h)	183	227	597	173	229	709	1094			1219		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	65	56	385	514								
Volume Left	3	8	45	47								
Volume Right	54	37	15	3								
cSH	458	383	1094	1219								
Volume to Capacity	0.14	0.15	0.04	0.04								
Queue Length 95th (m)	3.9	4.1	1.0	1.0								
Control Delay (s)	14.2	16.0	1.4	1.1								
Lane LOS	B	C	A	A								
Approach Delay (s)	14.2	16.0	1.4	1.1								
Approach LOS	B	C										
Intersection Summary												
Average Delay			2.9									
Intersection Capacity Utilization			43.4%	ICU Level of Service						A		
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2023) Total Traffic Volumes  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

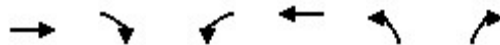
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	35	23	5	30	23	21	86	6	34	145	6
Future Vol, veh/h	5	35	23	5	30	23	21	86	6	34	145	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	38	25	5	33	25	23	93	7	37	158	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.9	8.3	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	8%	9%	18%
Vol Thru, %	76%	56%	52%	78%
Vol Right, %	5%	37%	40%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	113	63	58	185
LT Vol	21	5	5	34
Through Vol	86	35	30	145
RT Vol	6	23	23	6
Lane Flow Rate	123	68	63	201
Geometry Grp	1	1	1	1
Degree of Util (X)	0.152	0.086	0.079	0.245
Departure Headway (Hd)	4.462	4.542	4.531	4.391
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	806	790	791	820
Service Time	2.481	2.564	2.554	2.409
HCM Lane V/C Ratio	0.153	0.086	0.08	0.245
HCM Control Delay	8.3	8	7.9	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.3	1

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road










Future (2023) Total Traffic Volumes  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	22	52	5	28	34	14
Future Volume (Veh/h)	22	52	5	28	34	14
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)	24	57	5	30	37	15
<b>Pedestrians</b>						
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			81		92	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			81		92	52
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1517		905	1015
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	81	35	52			
Volume Left	0	5	37			
Volume Right	57	0	15			
cSH	1700	1517	934			
Volume to Capacity	0.05	0.00	0.06			
Queue Length 95th (m)	0.0	0.1	1.4			
Control Delay (s)	0.0	1.1	9.1			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.1	9.1			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.0			
Intersection Capacity Utilization			15.7%	ICU Level of Service	A	
Analysis Period (min)			15			










576 Ridge Road TIS  
5: Ridge Road N & Block 50 North Access

Future (2023) Total Traffic Volumes  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	8	98	0	11	163
Future Volume (Veh/h)	0	8	98	0	11	163
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)	0	9	107	0	12	177
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	308	107			107	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	107			107	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	679	947			1484	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	9	107	189			
Volume Left	0	0	12			
Volume Right	9	0	0			
cSH	947	1700	1484			
Volume to Capacity	0.01	0.06	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	8.8	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.5			
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			25.9%		ICU Level of Service	A
Analysis Period (min)			15			

576 Ridge Road TIS  
6: Ridge Road N & Block 50 South Access










Future (2023) Total Traffic Volumes  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	8	98	1	10	153
Future Volume (Veh/h)	0	8	98	1	10	153
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)	0	9	107	1	11	166
<b>Pedestrians</b>						
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	296	108			108	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	296	108			108	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	690	946			1483	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	9	108	177			
Volume Left	0	0	11			
Volume Right	9	1	0			
cSH	946	1700	1483			
Volume to Capacity	0.01	0.06	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	8.8	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization			25.3%		ICU Level of Service	A
Analysis Period (min)			15			



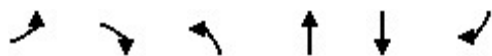
576 Ridge Road TIS  
7: Ridge Road N & Block 51 Access

Future (2023) Total Traffic Volumes  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	11	88	1	16	137
Future Volume (Veh/h)	0	11	88	1	16	137
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)	0	12	96	1	17	149
<b>Pedestrians</b>						
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	280	96			97	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	280	96			97	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	702	960			1496	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	12	97	166			
Volume Left	0	0	17			
Volume Right	12	1	0			
cSH	960	1700	1496			
Volume to Capacity	0.01	0.06	0.01			
Queue Length 95th (m)	0.3	0.0	0.3			
Control Delay (s)	8.8	0.0	0.8			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.8			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.9			
Intersection Capacity Utilization		24.8%		ICU Level of Service		A
Analysis Period (min)			15			

576 Ridge Road TIS  
8: Prospect Point Road & Street 'A' North

Future (2023) Total Traffic Volumes  
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	0	38	40	9
Future Volume (Veh/h)	5	0	0	38	40	9
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)	5	0	0	41	43	10
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	89	48	53			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	89	48	53			
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)	912	1021	1553			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	5	41	53			
Volume Left	5	0	0			
Volume Right	0	0	10			
cSH	912	1553	1700			
Volume to Capacity	0.01	0.00	0.03			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.5			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

576 Ridge Road TIS  
9: Prospect Point Road & Street 'A' South

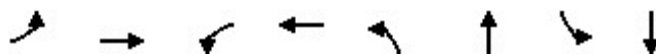
Future (2023) Total Traffic Volumes  
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	1	30	27	9
Future Volume (Veh/h)	5	0	1	30	27	9
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)	5	0	1	33	29	10
<b>Pedestrians</b>						
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	69	34	39			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	69	34	39			
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)	935	1039	1571			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	5	34	39			
Volume Left	5	1	0			
Volume Right	0	0	10			
cSH	935	1571	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	8.9	0.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.2	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road





















Future (2028) Background Traffic Volumes  
 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	334	48	304	22	89	11	24
v/c Ratio	0.03	0.47	0.23	0.42	0.04	0.12	0.02	0.03
Control Delay	13.5	16.5	17.0	14.8	7.4	3.6	7.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	16.5	17.0	14.8	7.4	3.6	7.3	6.9
Queue Length 50th (m)	0.4	11.6	3.2	9.7	0.9	0.7	0.4	0.8
Queue Length 95th (m)	2.7	20.6	9.7	18.0	3.8	6.4	2.4	3.8
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	973	3234	944	3201	585	732	551	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.10	0.05	0.09	0.04	0.12	0.02	0.03
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2028) Background Traffic Volumes  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	291	17	44	246	34	20	16	66	10	19	3
Future Volume (vph)	6	291	17	44	246	34	20	16	66	10	19	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3233		1630	3200		1630	1507		1630	1684	
Flt Permitted	0.57	1.00		0.55	1.00		0.74	1.00		0.70	1.00	
Satd. Flow (perm)	972	3233		944	3200		1272	1507		1200	1684	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	316	18	48	267	37	22	17	72	11	21	3
RTOR Reduction (vph)	0	9	0	0	25	0	0	39	0	0	2	0
Lane Group Flow (vph)	7	325	0	48	279	0	22	50	0	11	22	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5		20.0	20.0		20.0	20.0	
Effective Green, g (s)	9.5	9.5		9.5	9.5		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.46	0.46		0.46	0.46	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	706		206	698		584	692		551	774	
v/s Ratio Prot		c0.10			0.09			c0.03			0.01	
v/s Ratio Perm	0.01			0.05			0.02			0.01		
v/c Ratio	0.03	0.46		0.23	0.40		0.04	0.07		0.02	0.03	
Uniform Delay, d1	13.4	14.8		14.0	14.6		6.5	6.6		6.4	6.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.6	0.4		0.1	0.2		0.1	0.1	
Delay (s)	13.4	15.2		14.6	14.9		6.6	6.8		6.5	6.5	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.2			14.9			6.7			6.5	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			13.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.20									
Actuated Cycle Length (s)			43.5			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			38.9%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2028) Background Traffic Volumes  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	9	19	3	8	12	25	365	3	7	217	3
Future Volume (Veh/h)	2	9	19	3	8	12	25	365	3	7	217	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	10	21	3	9	13	27	397	3	8	236	3
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	724	708	238	732	708	398	239			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	724	708	238	732	708	398	239			400		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	97	99	97	98	98			99		
cM capacity (veh/h)	321	350	801	314	350	651	1328			1159		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	33	25	427	247								
Volume Left	2	3	27	8								
Volume Right	21	13	3	3								
cSH	541	453	1328	1159								
Volume to Capacity	0.06	0.06	0.02	0.01								
Queue Length 95th (m)	1.6	1.4	0.5	0.2								
Control Delay (s)	12.1	13.4	0.7	0.3								
Lane LOS	B	B	A	A								
Approach Delay (s)	12.1	13.4	0.7	0.3								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			40.4%		ICU Level of Service					A		
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2028) Background Traffic Volumes  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

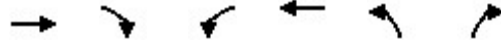
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	15	8	10	29	20	2	81	3	10	64	3
Future Vol, veh/h	5	15	8	10	29	20	2	81	3	10	64	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	16	9	11	32	22	2	88	3	11	70	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.5	7.7	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	18%	17%	13%
Vol Thru, %	94%	54%	49%	83%
Vol Right, %	3%	29%	34%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	28	59	77
LT Vol	2	5	10	10
Through Vol	81	15	29	64
RT Vol	3	8	20	3
Lane Flow Rate	93	30	64	84
Geometry Grp	1	1	1	1
Degree of Util (X)	0.108	0.036	0.075	0.097
Departure Headway (Hd)	4.146	4.26	4.192	4.172
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	854	845	860	849
Service Time	2.219	2.262	2.192	2.248
HCM Lane V/C Ratio	0.109	0.036	0.074	0.099
HCM Control Delay	7.7	7.4	7.5	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.2	0.3

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road

Future (2028) Background Traffic Volumes  
AM Peak Hour

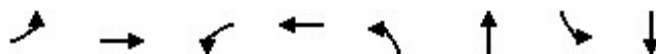


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	12	16	7	32	29	11
Future Volume (Veh/h)	12	16	7	32	29	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	17	8	35	32	12
<b>Pedestrians</b>						
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			30		72	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			30		72	22
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		97	99
cM capacity (veh/h)			1583		927	1056
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	30	43	44			
Volume Left	0	8	32			
Volume Right	17	0	12			
cSH	1700	1583	959			
Volume to Capacity	0.02	0.01	0.05			
Queue Length 95th (m)	0.0	0.1	1.2			
Control Delay (s)	0.0	1.4	8.9			
Lane LOS			A			
Approach Delay (s)	0.0	1.4	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.9			
Intersection Capacity Utilization			17.7%	ICU Level of Service	A	
Analysis Period (min)			15			



576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2028) Background Traffic Volumes  
 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	436	123	456	22	69	16	40
v/c Ratio	0.07	0.49	0.53	0.52	0.04	0.10	0.03	0.06
Control Delay	12.6	15.7	23.4	16.2	9.8	6.0	9.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	15.7	23.4	16.2	9.8	6.0	9.7	8.5
Queue Length 50th (m)	1.0	16.0	9.0	17.0	1.0	1.3	0.7	1.5
Queue Length 95th (m)	4.1	25.9	21.6	27.3	4.9	7.9	4.0	6.8
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	830	3200	847	3206	538	694	524	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.15	0.14	0.04	0.10	0.03	0.06
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2028) Background Traffic Volumes  
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	380	21	113	404	16	20	26	38	15	30	6
Future Volume (vph)	14	380	21	113	404	16	20	26	38	15	30	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.91		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3234		1630	3242		1630	1563		1630	1671	
Flt Permitted	0.49	1.00		0.50	1.00		0.73	1.00		0.71	1.00	
Satd. Flow (perm)	839	3234		856	3242		1254	1563		1222	1671	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	413	23	123	439	17	22	28	41	16	33	7
RTOR Reduction (vph)	0	9	0	0	6	0	0	23	0	0	4	0
Lane Group Flow (vph)	15	427	0	123	450	0	22	46	0	16	36	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.7	12.7		12.7	12.7		20.1	20.1		20.1	20.1	
Effective Green, g (s)	12.7	12.7		12.7	12.7		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.43	0.43		0.43	0.43	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	227	877		232	879		538	671		524	717	
v/s Ratio Prot		0.13			0.14			c0.03			0.02	
v/s Ratio Perm	0.02			c0.14			0.02			0.01		
v/c Ratio	0.07	0.49		0.53	0.51		0.04	0.07		0.03	0.05	
Uniform Delay, d1	12.7	14.3		14.5	14.4		7.8	7.8		7.7	7.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.4		2.3	0.5		0.1	0.2		0.1	0.1	
Delay (s)	12.8	14.7		16.8	14.9		7.9	8.0		7.8	7.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.7			15.3			8.0			7.9	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			46.8			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			44.4%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2028) Background Traffic Volumes  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	8	55	8	11	14	45	330	16	12	472	3
Future Volume (Veh/h)	3	8	55	8	11	14	45	330	16	12	472	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	9	60	9	12	15	49	359	17	13	513	3
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	1027	1014	514	1070	1008	368	516			376		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1027	1014	514	1070	1008	368	516			376		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	96	89	95	95	98	95			99		
cM capacity (veh/h)	191	225	560	164	227	678	1050			1182		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	36	425	529								
Volume Left	3	9	49	13								
Volume Right	60	15	17	3								
cSH	442	277	1050	1182								
Volume to Capacity	0.16	0.13	0.05	0.01								
Queue Length 95th (m)	4.6	3.5	1.2	0.3								
Control Delay (s)	14.7	19.9	1.4	0.3								
Lane LOS	B	C	A	A								
Approach Delay (s)	14.7	19.9	1.4	0.3								
Approach LOS	B	C										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			52.9%		ICU Level of Service				A			
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2028) Background Traffic Volumes  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	24	6	6	24	15	9	80	7	19	140	7
Future Vol, veh/h	6	24	6	6	24	15	9	80	7	19	140	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	26	7	7	26	16	10	87	8	21	152	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.7	7.9	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	17%	13%	11%
Vol Thru, %	83%	67%	53%	84%
Vol Right, %	7%	17%	33%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	36	45	166
LT Vol	9	6	6	19
Through Vol	80	24	24	140
RT Vol	7	6	15	7
Lane Flow Rate	104	39	49	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.05	0.06	0.209
Departure Headway (Hd)	4.307	4.556	4.439	4.164
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	838	789	810	848
Service Time	2.307	2.564	2.447	2.256
HCM Lane V/C Ratio	0.124	0.049	0.06	0.212
HCM Control Delay	7.9	7.8	7.7	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.2	0.2	0.8

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road

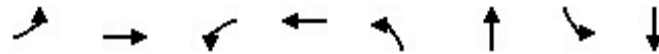
Future (2028) Background Traffic Volumes  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	25	24	6	30	17	16
Future Volume (Veh/h)	25	24	6	30	17	16
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)	27	26	7	33	18	17
<b>Pedestrians</b>						
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			53		87	40
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		87	40
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	98
cM capacity (veh/h)			1553		910	1031
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	53	40	35			
Volume Left	0	7	18			
Volume Right	26	0	17			
cSH	1700	1553	965			
Volume to Capacity	0.03	0.00	0.04			
Queue Length 95th (m)	0.0	0.1	0.9			
Control Delay (s)	0.0	1.3	8.9			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.3	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.8			
Intersection Capacity Utilization			16.7%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2028) Total Traffic Volumes  
 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	334	61	304	22	126	11	24
v/c Ratio	0.03	0.47	0.30	0.42	0.04	0.17	0.02	0.03
Control Delay	13.5	16.5	18.2	14.8	7.4	3.3	7.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	16.5	18.2	14.8	7.4	3.3	7.3	6.9
Queue Length 50th (m)	0.4	11.6	4.1	9.7	0.9	0.7	0.4	0.8
Queue Length 95th (m)	2.7	20.6	11.8	18.0	3.8	7.5	2.4	3.8
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	973	3234	944	3201	585	745	533	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.10	0.06	0.09	0.04	0.17	0.02	0.03
<b>Intersection Summary</b>								

576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2028) Total Traffic Volumes  
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	291	17	56	246	34	20	16	100	10	19	3
Future Volume (vph)	6	291	17	56	246	34	20	16	100	10	19	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.87		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3233		1630	3200		1630	1493		1630	1684	
Flt Permitted	0.57	1.00		0.55	1.00		0.74	1.00		0.68	1.00	
Satd. Flow (perm)	972	3233		944	3200		1272	1493		1160	1684	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	316	18	61	267	37	22	17	109	11	21	3
RTOR Reduction (vph)	0	9	0	0	25	0	0	59	0	0	2	0
Lane Group Flow (vph)	7	325	0	61	279	0	22	67	0	11	22	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.5	9.5		9.5	9.5		20.0	20.0		20.0	20.0	
Effective Green, g (s)	9.5	9.5		9.5	9.5		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.46	0.46		0.46	0.46	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	212	706		206	698		584	686		533	774	
v/s Ratio Prot		c0.10			0.09			c0.04			0.01	
v/s Ratio Perm	0.01			0.06			0.02			0.01		
v/c Ratio	0.03	0.46		0.30	0.40		0.04	0.10		0.02	0.03	
Uniform Delay, d1	13.4	14.8		14.2	14.6		6.5	6.6		6.4	6.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.8	0.4		0.1	0.3		0.1	0.1	
Delay (s)	13.4	15.2		15.0	14.9		6.6	6.9		6.5	6.5	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		15.2			14.9			6.9			6.5	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			13.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.21									
Actuated Cycle Length (s)			43.5			Sum of lost time (s)				14.0		
Intersection Capacity Utilization			38.9%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2028) Total Traffic Volumes  
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	9	19	3	8	41	25	365	3	19	217	3
Future Volume (Veh/h)	2	9	19	3	8	41	25	365	3	19	217	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	10	21	3	9	45	27	397	3	21	236	3
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	782	734	238	758	734	398	239			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	782	734	238	758	734	398	239			400		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	97	99	97	93	98			98		
cM capacity (veh/h)	276	334	801	299	334	651	1328			1159		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	33	57	427	260								
Volume Left	2	3	27	21								
Volume Right	21	45	3	3								
cSH	521	537	1328	1159								
Volume to Capacity	0.06	0.11	0.02	0.02								
Queue Length 95th (m)	1.6	2.8	0.5	0.4								
Control Delay (s)	12.4	12.5	0.7	0.8								
Lane LOS	B	B	A	A								
Approach Delay (s)	12.4	12.5	0.7	0.8								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			36.3%		ICU Level of Service				A			
Analysis Period (min)			15									



576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2028) Total Traffic Volumes  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

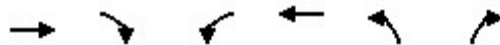
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	20	15	10	42	35	18	100	3	15	71	3
Future Vol, veh/h	5	20	15	10	42	35	18	100	3	15	71	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	22	16	11	46	38	20	109	3	16	77	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.8	8.2	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	12%	11%	17%
Vol Thru, %	83%	50%	48%	80%
Vol Right, %	2%	38%	40%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	40	87	89
LT Vol	18	5	10	15
Through Vol	100	20	42	71
RT Vol	3	15	35	3
Lane Flow Rate	132	43	95	97
Geometry Grp	1	1	1	1
Degree of Util (X)	0.16	0.053	0.113	0.118
Departure Headway (Hd)	4.378	4.357	4.283	4.399
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	825	823	839	816
Service Time	2.378	2.375	2.298	2.415
HCM Lane V/C Ratio	0.16	0.052	0.113	0.119
HCM Control Delay	8.2	7.6	7.8	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0.4	0.4

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road










Future (2028) Total Traffic Volumes  
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↶	↷
Traffic Volume (veh/h)	12	26	7	32	57	11
Future Volume (Veh/h)	12	26	7	32	57	11
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)	13	28	8	35	62	12
<b>Pedestrians</b>						
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			41		78	27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			41		78	27
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		93	99
cM capacity (veh/h)			1568		920	1048
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	41	43	74			
Volume Left	0	8	62			
Volume Right	28	0	12			
cSH	1700	1568	939			
Volume to Capacity	0.02	0.01	0.08			
Queue Length 95th (m)	0.0	0.1	2.0			
Control Delay (s)	0.0	1.4	9.2			
Lane LOS			A			
Approach Delay (s)	0.0	1.4	9.2			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			4.7			
Intersection Capacity Utilization			18.2%	ICU Level of Service	A	
Analysis Period (min)			15			










576 Ridge Road TIS  
 5: Ridge Road N & Block 50 North Access

Future (2028) Total Traffic Volumes  
 AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	10	112	0	5	91
Future Volume (Veh/h)	0	10	112	0	5	91
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)	0	11	122	0	5	99
<b>Pedestrians</b>						
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	231	122			122	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	122			122	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	755	929			1465	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	11	122	104			
Volume Left	0	0	5			
Volume Right	11	0	0			
cSH	929	1700	1465			
Volume to Capacity	0.01	0.07	0.00			
Queue Length 95th (m)	0.3	0.0	0.1			
Control Delay (s)	8.9	0.0	0.4			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	0.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization			18.9%	ICU Level of Service		A
Analysis Period (min)			15			










576 Ridge Road TIS  
6: Ridge Road N & Block 50 South Access

Future (2028) Total Traffic Volumes  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	10	102	0	5	86
Future Volume (Veh/h)	0	10	102	0	5	86
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)	0	11	111	0	5	93
<b>Pedestrians</b>						
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	214	111			111	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	214	111			111	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	772	942			1479	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	11	111	98			
Volume Left	0	0	5			
Volume Right	11	0	0			
cSH	942	1700	1479			
Volume to Capacity	0.01	0.07	0.00			
Queue Length 95th (m)	0.3	0.0	0.1			
Control Delay (s)	8.9	0.0	0.4			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	0.4			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization			18.6%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
7: Ridge Road N & Block 51 Access

Future (2028) Total Traffic Volumes  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	15	87	0	4	83
Future Volume (Veh/h)	0	15	87	0	4	83
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)	0	16	95	0	4	90
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	193	95			95	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193	95			95	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	794	962			1499	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	95	94			
Volume Left	0	0	4			
Volume Right	16	0	0			
cSH	962	1700	1499			
Volume to Capacity	0.02	0.06	0.00			
Queue Length 95th (m)	0.4	0.0	0.1			
Control Delay (s)	8.8	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			17.6%		ICU Level of Service	A
Analysis Period (min)			15			

576 Ridge Road TIS  
 8: Prospect Point Road & Street 'A' North

Future (2028) Total Traffic Volumes  
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	0	0	53	27	3
Future Volume (Veh/h)	8	0	0	53	27	3
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)	9	0	0	58	29	3
<b>Pedestrians</b>						
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	88	30	32			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	88	30	32			
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)	912	1044	1580			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	9	58	32			
Volume Left	9	0	0			
Volume Right	0	0	3			
cSH	912	1580	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay	0.8					
Intersection Capacity Utilization	13.3%			ICU Level of Service	A	
Analysis Period (min)	15					

576 Ridge Road TIS  
 9: Prospect Point Road & Street 'A' South

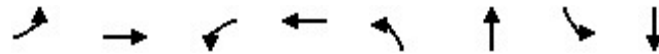
Future (2028) Total Traffic Volumes  
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	1	0	41	23	3
Future Volume (Veh/h)	8	1	0	41	23	3
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)	9	1	0	45	25	3
<b>Pedestrians</b>						
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	72	26	28			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	26	28			
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)	933	1049	1585			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	10	45	28			
Volume Left	9	0	0			
Volume Right	1	0	3			
cSH	943	1585	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.3	0.0	0.0			
Control Delay (s)	8.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.9	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			1.1			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

576 Ridge Road TIS  
 1: Ridge Road N & Garrison Road

Future (2028) Total Traffic Volumes  
 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	436	162	456	22	95	16	40
v/c Ratio	0.06	0.45	0.63	0.47	0.04	0.14	0.03	0.06
Control Delay	11.7	14.5	26.3	14.9	11.4	6.0	11.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	14.5	26.3	14.9	11.4	6.0	11.3	9.9
Queue Length 50th (m)	1.0	16.0	12.4	17.0	1.1	1.4	0.8	1.7
Queue Length 95th (m)	4.0	25.4	28.0	26.8	5.5	10.1	4.5	7.7
Internal Link Dist (m)		154.8		137.4		82.5		83.7
Turn Bay Length (m)	60.0		74.0		20.0		25.0	
Base Capacity (vph)	811	3128	828	3134	516	671	491	692
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.20	0.15	0.04	0.14	0.03	0.06
<b>Intersection Summary</b>								



576 Ridge Road TIS  
1: Ridge Road N & Garrison Road

















Future (2028) Total Traffic Volumes  
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	380	21	149	404	16	20	26	62	15	30	6
Future Volume (vph)	14	380	21	149	404	16	20	26	62	15	30	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3234		1630	3242		1630	1534		1630	1671	
Flt Permitted	0.49	1.00		0.50	1.00		0.73	1.00		0.70	1.00	
Satd. Flow (perm)	839	3234		856	3242		1254	1534		1193	1671	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	413	23	162	439	17	22	28	67	16	33	7
RTOR Reduction (vph)	0	8	0	0	6	0	0	39	0	0	4	0
Lane Group Flow (vph)	15	428	0	162	450	0	22	56	0	16	36	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.7	14.7		14.7	14.7		20.2	20.2		20.2	20.2	
Effective Green, g (s)	14.7	14.7		14.7	14.7		20.2	20.2		20.2	20.2	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.41	0.41		0.41	0.41	
Clearance Time (s)	7.1	7.1		7.1	7.1		6.9	6.9		6.9	6.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	252	972		257	974		518	633		492	690	
v/s Ratio Prot		0.13			0.14			c0.04			0.02	
v/s Ratio Perm	0.02			c0.19			0.02			0.01		
v/c Ratio	0.06	0.44		0.63	0.46		0.04	0.09		0.03	0.05	
Uniform Delay, d1	12.2	13.8		14.8	13.9		8.6	8.7		8.5	8.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3		5.0	0.3		0.2	0.3		0.1	0.1	
Delay (s)	12.3	14.1		19.7	14.2		8.7	9.0		8.7	8.8	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		14.0			15.7			9.0			8.7	
Approach LOS		B			B			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			48.9			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			46.5%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

576 Ridge Road TIS  
2: Gorham Road & Nigh Road

Future (2028) Total Traffic Volumes  
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	8	55	8	11	36	45	330	16	44	472	3
Future Volume (Veh/h)	3	8	55	8	11	36	45	330	16	44	472	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	9	60	9	12	39	49	359	17	48	513	3
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	1121	1084	514	1140	1078	368	516			376		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1121	1084	514	1140	1078	368	516			376		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	95	89	94	94	94	95			96		
cM capacity (veh/h)	154	198	560	143	200	678	1050			1182		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	60	425	564								
Volume Left	3	9	49	48								
Volume Right	60	39	17	3								
cSH	419	333	1050	1182								
Volume to Capacity	0.17	0.18	0.05	0.04								
Queue Length 95th (m)	4.9	5.2	1.2	1.0								
Control Delay (s)	15.4	18.2	1.4	1.1								
Lane LOS	C	C	A	A								
Approach Delay (s)	15.4	18.2	1.4	1.1								
Approach LOS	C	C										
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			46.7%		ICU Level of Service					A		
Analysis Period (min)			15									

576 Ridge Road TIS  
3: Ridge Road N & Nigh Road

Future (2028) Total Traffic Volumes  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

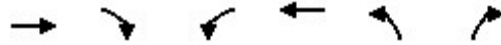
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	38	24	6	33	25	22	94	7	36	159	7
Future Vol, veh/h	6	38	24	6	33	25	22	94	7	36	159	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	41	26	7	36	27	24	102	8	39	173	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.1	8.5	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	9%	9%	18%
Vol Thru, %	76%	56%	52%	79%
Vol Right, %	6%	35%	39%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	123	68	64	202
LT Vol	22	6	6	36
Through Vol	94	38	33	159
RT Vol	7	24	25	7
Lane Flow Rate	134	74	70	220
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.095	0.089	0.27
Departure Headway (Hd)	4.514	4.63	4.614	4.435
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	773	776	810
Service Time	2.539	2.661	2.645	2.459
HCM Lane V/C Ratio	0.169	0.096	0.09	0.272
HCM Control Delay	8.5	8.1	8.1	9.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.3	1.1

576 Ridge Road TIS  
4: Prospect Point Road & Nigh Road










Future (2028) Total Traffic Volumes  
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	25	55	6	30	36	16
Future Volume (Veh/h)	25	55	6	30	36	16
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)	27	60	7	33	39	17
<b>Pedestrians</b>						
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			87		104	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			87		104	57
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	98
cM capacity (veh/h)			1509		890	1009
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	87	40	56			
Volume Left	0	7	39			
Volume Right	60	0	17			
cSH	1700	1509	923			
Volume to Capacity	0.05	0.00	0.06			
Queue Length 95th (m)	0.0	0.1	1.5			
Control Delay (s)	0.0	1.3	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.3	9.2			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			3.1			
Intersection Capacity Utilization			16.7%	ICU Level of Service	A	
Analysis Period (min)			15			










576 Ridge Road TIS  
5: Ridge Road N & Block 50 North Access

Future (2028) Total Traffic Volumes  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	8	107	0	11	177
Future Volume (Veh/h)	0	8	107	0	11	177
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)	0	9	116	0	12	192
<b>Pedestrians</b>						
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	332	116			116	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	332	116			116	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	657	936			1473	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	9	116	204			
Volume Left	0	0	12			
Volume Right	9	0	0			
cSH	936	1700	1473			
Volume to Capacity	0.01	0.07	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	8.9	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	0.5			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization		26.6%		ICU Level of Service		A
Analysis Period (min)			15			










576 Ridge Road TIS  
6: Ridge Road N & Block 50 South Access

Future (2028) Total Traffic Volumes  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	8	107	1	10	167
Future Volume (Veh/h)	0	8	107	1	10	167
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)	0	9	116	1	11	182
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	320	116			117	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320	116			117	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	668	936			1471	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	9	117	193			
Volume Left	0	0	11			
Volume Right	9	1	0			
cSH	936	1700	1471			
Volume to Capacity	0.01	0.07	0.01			
Queue Length 95th (m)	0.2	0.0	0.2			
Control Delay (s)	8.9	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	0.5			
Approach LOS	A					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			26.0%		ICU Level of Service	A
Analysis Period (min)			15			

576 Ridge Road TIS  
7: Ridge Road N & Block 51 Access

Future (2028) Total Traffic Volumes  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	11	97	1	16	151
Future Volume (Veh/h)	0	11	97	1	16	151
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)	0	12	105	1	17	164
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	304	106			106	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304	106			106	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	680	949			1485	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	12	106	181			
Volume Left	0	0	17			
Volume Right	12	1	0			
cSH	949	1700	1485			
Volume to Capacity	0.01	0.06	0.01			
Queue Length 95th (m)	0.3	0.0	0.3			
Control Delay (s)	8.8	0.0	0.8			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	0.8			
Approach LOS	A					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		25.5%		ICU Level of Service		A
Analysis Period (min)			15			

576 Ridge Road TIS  
8: Prospect Point Road & Street 'A' North

Future (2028) Total Traffic Volumes  
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	0	41	42	9
Future Volume (Veh/h)	5	0	0	41	42	9
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)	5	0	0	45	46	10
<b>Pedestrians</b>						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	96	51	56			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96	51	56			
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)	903	1017	1549			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	5	45	56			
Volume Left	5	0	0			
Volume Right	0	0	10			
cSH	903	1549	1700			
Volume to Capacity	0.01	0.00	0.03			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.4			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			



576 Ridge Road TIS  
 9: Prospect Point Road & Street 'A' South

Future (2028) Total Traffic Volumes  
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	0	1	33	29	9
Future Volume (Veh/h)	5	0	1	33	29	9
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)	5	0	1	36	32	10
<b>Pedestrians</b>						
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	75	37	42			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75	37	42			
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)	928	1035	1567			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	5	37	42			
Volume Left	5	1	0			
Volume Right	0	0	10			
cSH	928	1567	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	8.9	0.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.2	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			