

RVA 226344

August 3, 2023

Upper Canada Planning & Engineering Ltd.
30 Hannover, Unit #3
St. Catharines, ON L2W 1A3

Attention: William Heikoop, B.U.R.P.I., RPP, MCIP

Dear William:

Re: 576 Ridge Road TIS Addendum Letter – Lot 1-49 & Block 50 Traffic Analysis

Introduction

This letter has been prepared as an addendum to the previously completed Traffic Impact Study (TIS) for 576 Ridge Road (dated September 23rd, 2023) in the Town of Fort Erie, Ontario. This original TIS considered 49 single family detached units (Lots 1-49), 70 townhome units (Block 50), and 76 apartment units (formerly Block 51). However, through discussions with the Town after completion of the TIS, the apartment portion of the development located within Block 51 is being excluded as part of latest development application. As a result, the Town has requested a letter to present the traffic impacts associated with the detached dwellings and townhomes only, with no consideration for the apartment building. The most recent Draft Plan of Subdivision, reflective of the foregoing changes and dated July 19th, 2023, can be found in **Appendix 1**.

Therefore, the contents included in this letter present the trip generation and assignment for the detached dwellings and townhomes only, analyzing future total (2028) traffic operations for the study area intersections as completed in the original TIS.

Traffic Generation

Horizon Year

An ultimate horizon year of 2028 has been adopted for the analysis, as consistent with the terms of reference (TOR) that was previously established with the Town of Fort Erie.

Future Background Growth

Barring any changes from the previously established TOR, there are no approved developments or road improvements within the study area that are scheduled for completion by the final 2028 horizon year. As a result, the future background traffic volumes have been derived by applying an annualized growth rate of 2% to the existing (2022) traffic volumes. The existing (2022) traffic volumes and future background (2028) traffic volumes have been extracted from the full TIS and can be seen in **Appendix 2**.

Trip Generation

Adjacent roadway site generated traffic has been estimated for the peak hours using the *Institute of Transportation Engineer's (ITE) Trip Generation Manual (11th Edition)* methodology, referencing ITE land use codes (LUC) for Single Family Detached (LUC 210) and Single Family Attached (LUC 215) land uses.

As presented in **Table 2.1**, the estimated vehicular trip generation for the subject site is approximately 20 inbound and 50 outbound for the weekday a.m. peak hour, and 54 inbound and 35 outbound in the weekday p.m. peak hour.

Table 0.1 – Site 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 |

Trip Distribution

Given that all land uses within the subject site are residential, the trip distribution has been estimated using the 2016 Transportation Tomorrow Survey (TTS) to capture commuter trips in the weekday a.m. and weekday p.m. peak hours.

Table 2.2 presents the estimated trip distribution assumptions for the site generated trips, which is based on analyzed TTS data.

Table 2.2 – Trip Distribution Assumptions

| Roadway (Direction) | Distribution |
|----------------------------|---------------------|
| Gorham Road (North) | 38% |
| Ridge Road (South) | 3% |
| Nigh Road (West) | 7% |
| Ridge Road North (East) | 52% |
| Total | 100% |

Trip Assignment

Based on the foregoing trip generation and distribution assumptions, the site generated traffic has been assigned to the surrounding road network. The site trip assignment can be seen in **Figure 2.1** below.

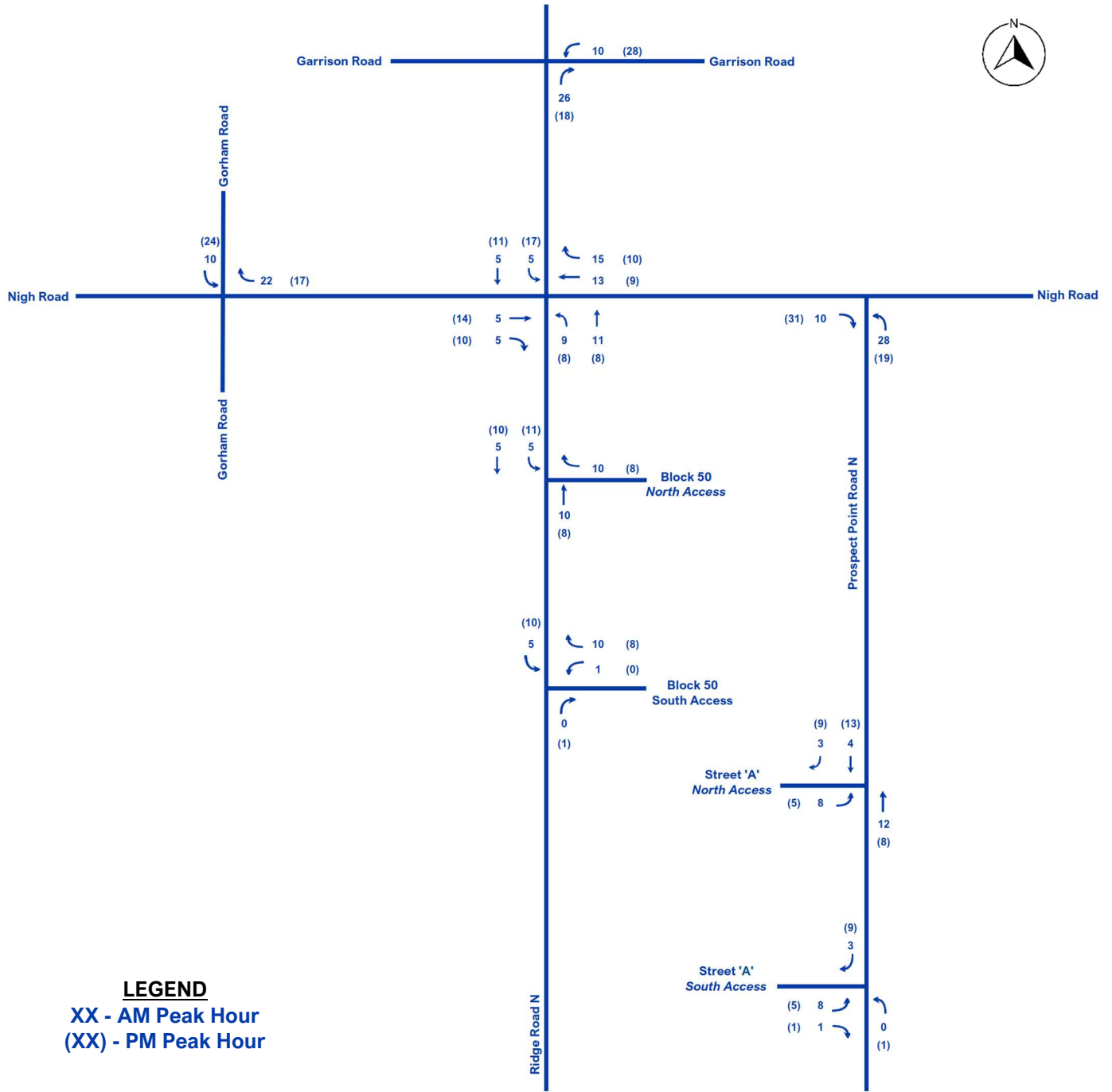


Figure 0.1 – Site Trip Assignment

Future Total (2028) Traffic Volumes

The future total intersections volumes for the 2028 horizon year were projected by combining the estimated site generated traffic and the future background traffic volumes. The resulting total intersection volumes for the weekday a.m. and p.m. peak hours are shown in **Figure 2.2**.

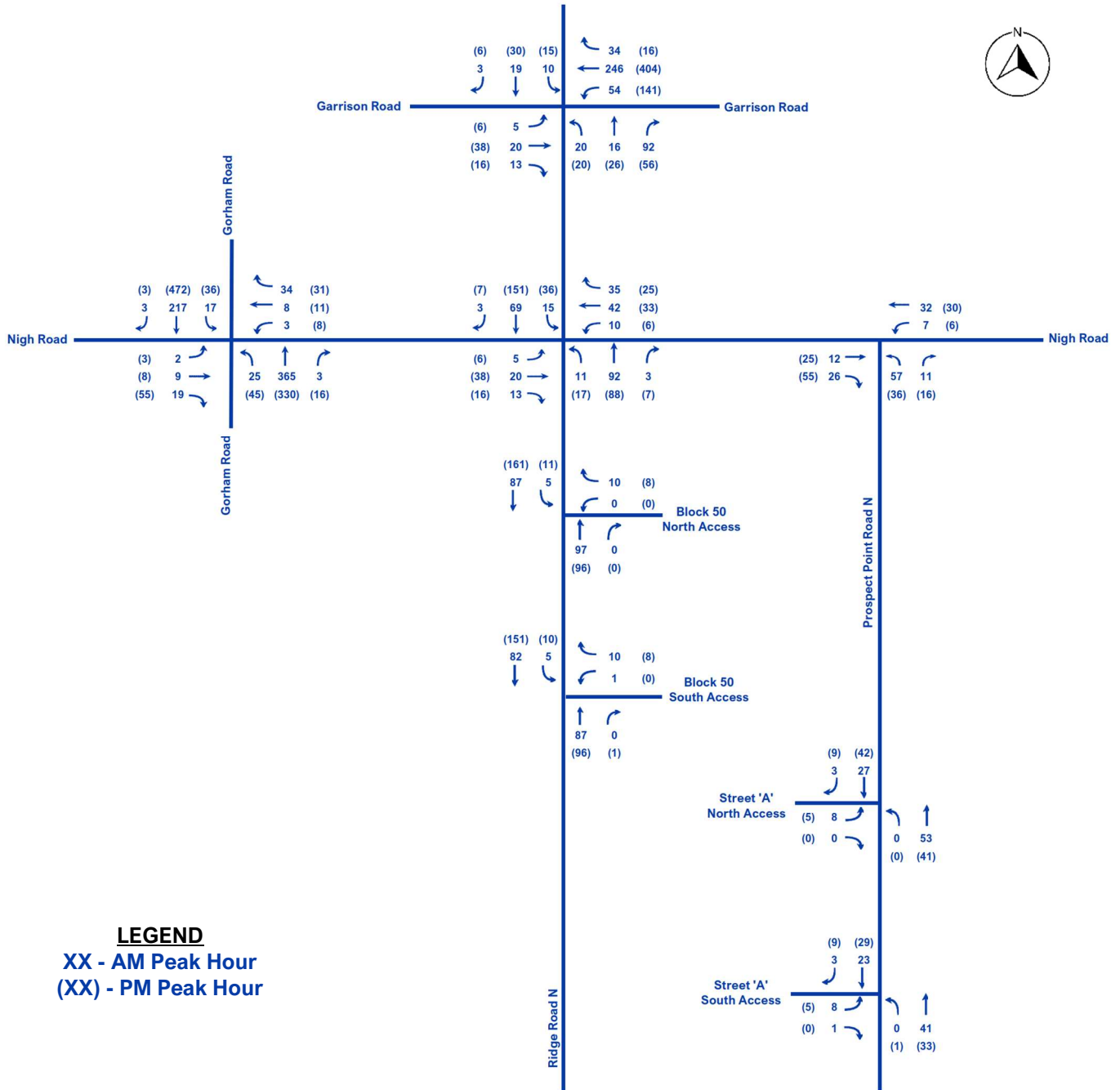


Figure 0.2 – Future (2028) Total Traffic Volumes

Operational Analysis

Methodology

The industry standard Synchro macroscopic traffic analysis software was utilized to analyze the study area intersections, as per the latest edition of the Niagara Region Traffic Impact Study Guidelines. Key performance measures such as Level of Service (LOS), volume-to-capacity ratio (v/c ratio), and 95th percentile queuing was 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 is utilized by a defined lane group.
- **95th 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 based on estimated peak hour 95th percentile queuing.

Table 3.1 identifies the control delay thresholds (seconds of delay per vehicle) for each LOS based on Highway Capacity Manual (HCM 2000) methodology.

Table 0.1 – Characteristics of Level of Service at Intersections (HCM 2000)

| Level of Service (LOS) | Control Delay (seconds/vehicle) | |
|------------------------|---------------------------------|-------------------------|
| | Unsignalized Intersection | Signalized Intersection |
| A | ≤ 10 | ≤ 10 |
| B | > 10 to 15 | > 10 to 20 |
| C | > 15 to 25 | > 20 to 35 |
| D | > 25 to 35 | > 35 to 55 |
| E | > 35 to 50 | > 55 to 80 |
| F | > 50 | > 80 |

Future (2028) Total Operational Analysis Results

Table 3.2 presents the results of the intersection operational analysis completed under Future (2028) Total traffic conditions for the weekday a.m. and weekday p.m. peak hours. The Synchro HCM analysis outputs are provided in Appendix 3.

Table 0.2 – Future (2028) Total Traffic Conditions – Intersection Operational Analysis Results

| Intersection (Traffic control) | Movement | Peak Hour | | | | | | | | Existing Storage Length (m) |
|--|----------------|-------------|----------|-------------|----------------------------------|-------------|----------|-------------|----------------------------------|--------------------------------------|
| | | Weekday AM | | | | Weekday PM | | | | |
| | | V/C | LOS | Delay (s) | 95% ^{file} Queue (m) | V/C | LOS | Delay (s) | 95% ^{file} Queue (m) | |
| Ridge Road North & Garrison Road (Signalized) | EBL | 0.03 | B | 13 | 3 | 0.06 | B | 12 | 4 | 60 |
| | EBTTR | 0.46 | B | 15 | 21 | 0.45 | B | 14 | 26 | - |
| | WBL | 0.29 | B | 15 | 11 | 0.61 | B | 19 | 27 | 73 |
| | WBTTR | 0.40 | B | 15 | 18 | 0.47 | B | 14 | 27 | - |
| | NBL | 0.04 | A | 7 | 4 | 0.04 | A | 9 | 5 | 20 |
| | NBTR | 0.09 | A | 7 | 7 | 0.08 | A | 9 | 10 | - |
| | SBL | 0.02 | A | 7 | 2 | 0.03 | A | 8 | 4 | 25 |
| | SBTR | 0.03 | A | 7 | 4 | 0.05 | A | 9 | 7 | - |
| | Overall | 0.21 | B | 13.4 | - | 0.30 | B | 14.1 | - | - |
| Gorham Road (RR116) & Nigh Road (TWSC) | EBLTR | 0.06 | B | 12 | 2 | 0.17 | C | 15 | 5 | - |
| | WBLTR | 0.09 | B | 13 | 3 | 0.17 | C | 18 | 5 | - |
| | NBLTR | 0.02 | A | 1 | 1 | 0.05 | A | 1 | 1 | - |
| | SBLTR | 0.02 | A | 1 | 0 | 0.03 | A | 1 | 1 | - |
| | Overall | - | A | 2 | - | - | A | 3 | - | - |
| Ridge Road North & Nigh Road (AWS) | EBLTR | - | A | 8 | - | - | A | 8 | - | - |
| | WBLTR | - | A | 8 | - | - | A | 8 | - | - |
| | NBLTR | - | A | 8 | - | - | A | 8 | - | - |
| | SBLTR | - | A | 8 | - | - | A | 9 | - | - |
| | Overall | - | A | 8 | - | - | A | 9 | - | - |
| Prospect Point Road North & Nigh Road (TWSC) | EBTR | 0.02 | A | 0 | 0 | 0.05 | A | 0 | 0 | - |
| | WBTL | 0.01 | A | 1 | 0 | 0.00 | A | 1 | 0 | - |
| | NBLR | 0.08 | A | 9 | 2 | 0.06 | A | 9 | 2 | - |
| | Overall | - | A | 4.7 | - | - | A | 3 | - | - |
| Ridge Road North & Block 50 North Access (TWSC) | WBLR | 0.01 | A | 9 | 0 | 0.01 | A | 9 | 0 | - |
| | NBTR | 0.06 | A | 0 | 0 | 0.06 | A | 0 | 0 | - |
| | SBTL | 0.00 | A | 0 | 0 | 0.01 | A | 1 | 0 | - |
| | Overall | - | A | 1 | - | - | A | 1 | - | - |
| | WBLR | 0.01 | A | 9 | 0 | 0.01 | A | 9 | 0 | - |

| Intersection (Traffic control) | Movement | Peak Hour | | | | | | | | Existing Storage Length (m) |
|--|----------------|------------|----------|------------|-------------------------------|------------|----------|-----------|-------------------------------|-----------------------------|
| | | Weekday AM | | | | Weekday PM | | | | |
| | | V/C | LOS | Delay (s) | 95% ^{tile} Queue (m) | V/C | LOS | Delay (s) | 95% ^{tile} Queue (m) | |
| Ridge Road North & Block 50 South Access (TWSC) | NBTR | 0.06 | A | 0 | 0 | 0.06 | A | 0 | 0 | - |
| | SBTL | 0.00 | A | 1 | 0 | 0.01 | A | 1 | 0 | - |
| | Overall | - | A | 0.7 | - | - | A | 1 | - | - |
| Prospect Point Road North & Street 'A' North Access (TWSC) | EBLR | 0.01 | A | 9 | 0 | 0.01 | A | 9 | 0 | - |
| | NBTL | 0.00 | A | 0 | 0 | 0.00 | A | 0 | 0 | - |
| | SBTR | 0.02 | A | 0 | 0 | 0.03 | A | 0 | 0 | - |
| | Overall | - | A | 1 | - | - | A | 0 | - | - |
| Prospect Point Road North & Street 'A' South Access (TWSC) | EBLR | 0.01 | A | 9 | 0 | 0.01 | A | 9 | 0 | - |
| | NBTL | 0.00 | A | 0 | 0 | 0.00 | A | 0 | 0 | - |
| | SBTR | 0.02 | A | 0 | 0 | 0.03 | A | 0 | 0 | - |
| | Overall | - | A | 1 | - | - | A | 0 | - | - |

As presented in **Table 3.2**, all of the study area intersections are forecast to operate with ample reserve capacity, nominal delays, and no queuing concerns. The peak delays in the study area take place at the signalized intersection of Ridge Road North and Garrison Road, with the busiest hour of the day exhibiting delays less than twenty seconds.

Therefore, it can be concluded that substantial reserve capacity exists in the study area intersections, and that no mitigation measures will be necessary through to the ultimate 2028 horizon year.

Conclusions

The revised traffic analysis for 576 Ridge Road, inclusive of the site generated traffic associated with Lots 1-49 and Block 50, shows that the study area road network is forecast to operate with significant reserve capacity, nominal delays, and no queuing concerns. Therefore, it is anticipated that the existing study area road network can accommodate the demands associated with the background corridor growth and proposed development site trips.

Closing

If you have any questions requiring clarification, please feel free to contact Matthew Di Maria at 905-685-5049 ext.4237 or by email at mdimaria@rvanderson.com.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED



Michael Kong
Transportation Planner



Matthew Di Maria, C.E.T., RSP₁, CAPM
Project Manager

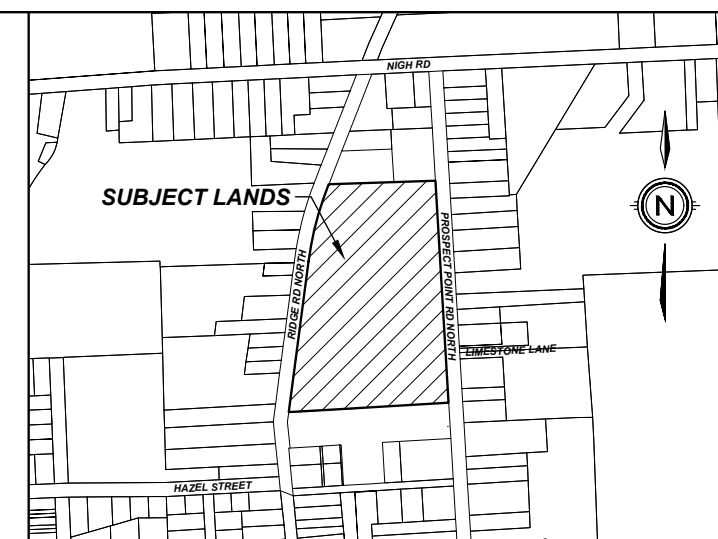
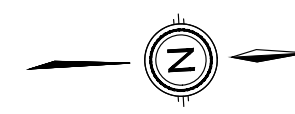
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APPENDIX 1

Draft Plan of Subdivision



576 RIDGE ROAD NORTH TOWN OF FORT ERIE



KEY PLAN
N.T.S.

DRAFT PLAN OF SUBDIVISION

LEGAL DESCRIPTION

PART OF LOT 23, CONCESSION 2 LAKE ERIE,
GEOGRAPHIC TOWNSHIP OF BERTIE, NOW IN
THE TOWN OF FORT ERIE
REGIONAL MUNICIPALITY OF NIAGARA

OWNER'S CERTIFICATE

BEING THE REGISTERED OWNER, I HEREBY
AUTHORIZE UPPER CANADA CONSULTANTS TO
PREPARE AND SUBMIT THIS DRAFT PLAN OF
SUBDIVISION

2846300 ONTARIO INC. MARCH 20, 2023
DATE

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF
THE LANDS TO BE SUBDIVIDED ARE
CORRECTLY SHOWN.

J.D. BARNES LIMITED JULY 20, 2023
DASHA PAGE, PLS 20-16-087-01 DATE

REQUIREMENTS OF SECTION 51(17) OF THE PLANNING ACT

- a) SEE PLAN
- b) SEE PLAN
- c) SEE PLAN
- d) SEE PLAN
- e) SEE PLAN
- f) SEE PLAN
- g) SEE PLAN
- h) MUNICIPAL WATER
- i) SILTY SAND
- j) SEE PLAN
- k) FULL SERVICE
- l) SEE PLAN

LAND USE SCHEDULE

| LAND USE | LOT/BLOCK | # OF UNITS | AREA(ha) | AREA(%) |
|-----------------------------|-----------|------------|--------------|---------------|
| SINGLE FAMILY RESIDENTIAL | LOT 1-49 | 49 | 1.976 | 38.06 |
| MULTIPLE FAMILY RESIDENTIAL | BLOCK 50 | 70 | 2.065 | 39.77 |
| SWM POND / PARK | BLOCK 51 | | 0.634 | 12.21 |
| 3.0m WIDE TRAIL | BLOCK 52 | | 0.022 | 0.42 |
| 6.0m WIDE ACCESSWAY | BLOCK 53 | | 0.020 | 0.38 |
| ROADWAY | | | 0.475 | 9.16 |
| TOTAL | 54 | 119 | 5.192 | 100.00 |

DEVELOPABLE AREA = 5.192 ha
DEVELOPABLE DENSITY = 22.92 units/ha

| # | ISSUED FOR APPROVAL | 2023-07-19 | TA |
|---|---------------------|------------|------|
| 0 | | | |
| # | REVISION | DATE | INIT |



| | | |
|--------------------------------------|----------|---------------|
| DRAWING TITLE | DRAFTING | TA |
| DRAFT PLAN OF SUBDIVISION | DATE | JULY 19, 2023 |
| | PRINTED | JULY 20, 2023 |
| | SCALE | 1:500 |
| | DWG. No. | 2152-DP |
| | REV | 0 |

APPENDIX 2

Existing (2022) Traffic Volumes & Future (2028) Traffic Volumes



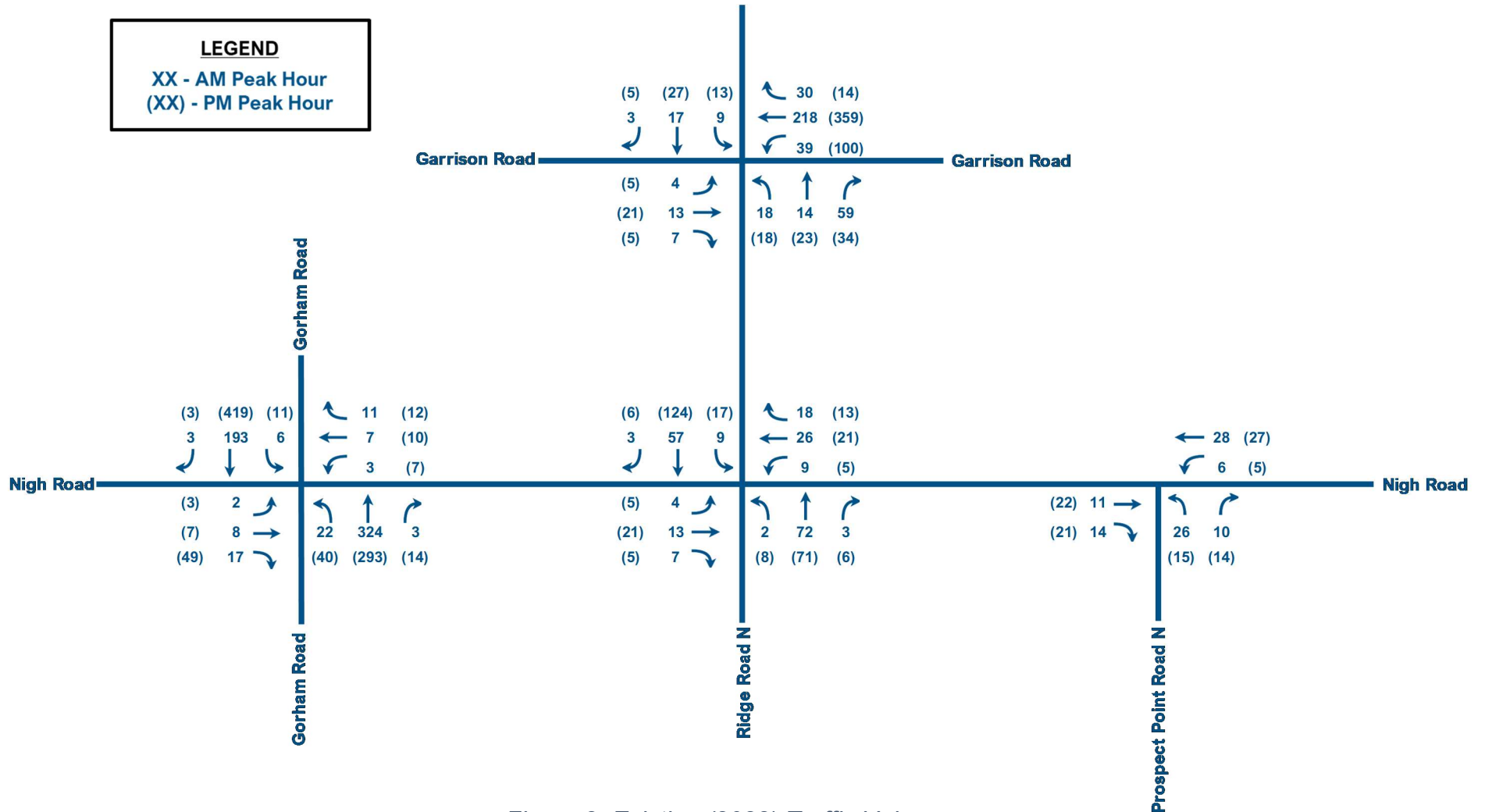


Figure 2: Existing (2022) Traffic Volumes



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

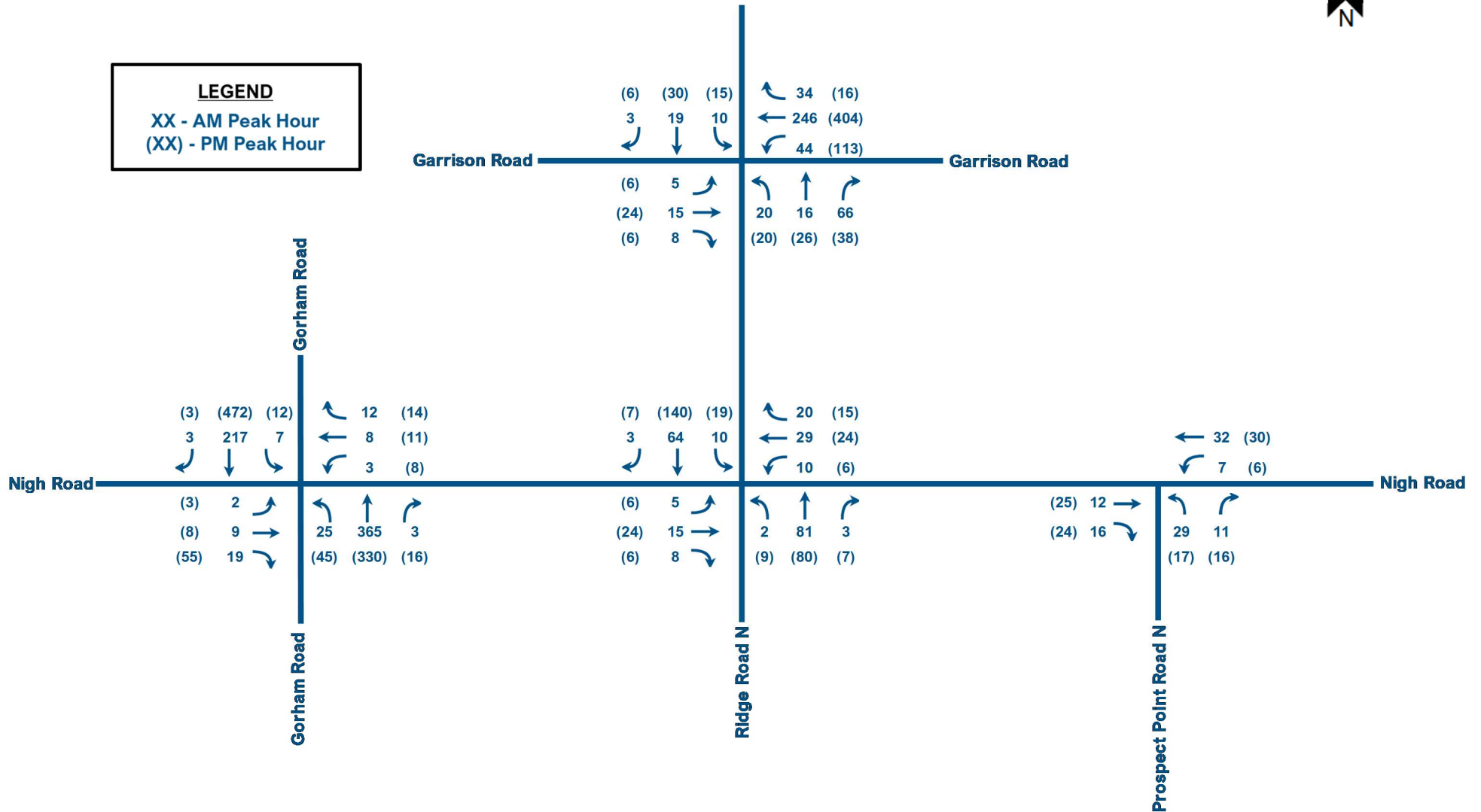


Figure 4: Future (2028) Background Traffic Volumes

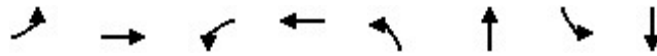
APPENDIX 3

HCM 2000 Output Reports



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 | 59 | 304 | 22 | 117 | 11 | 24 |
| v/c Ratio | 0.03 | 0.47 | 0.29 | 0.42 | 0.04 | 0.16 | 0.02 | 0.03 |
| Control Delay | 13.5 | 16.5 | 18.1 | 14.8 | 7.4 | 3.4 | 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 | 18.1 | 14.8 | 7.4 | 3.4 | 7.3 | 6.9 |
| Queue Length 50th (m) | 0.4 | 11.6 | 3.9 | 9.7 | 0.9 | 0.7 | 0.4 | 0.8 |
| Queue Length 95th (m) | 2.7 | 20.6 | 11.4 | 18.0 | 3.8 | 7.2 | 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 | 741 | 537 | 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 | 0.16 | 0.02 | 0.03 |
| Intersection Summary | | | | | | | | |

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 | 54 | 246 | 34 | 20 | 16 | 92 | 10 | 19 | 3 |
| Future Volume (vph) | 6 | 291 | 17 | 54 | 246 | 34 | 20 | 16 | 92 | 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 | 1496 | | 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 | 1496 | | 1170 | 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 | 59 | 267 | 37 | 22 | 17 | 100 | 11 | 21 | 3 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 25 | 0 | 0 | 54 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 7 | 325 | 0 | 59 | 279 | 0 | 22 | 63 | 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 | 687 | | 537 | 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 | | 0.29 | 0.40 | | 0.04 | 0.09 | | 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 | | 14.9 | 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 | | | 6.8 | | | 6.5 | |
| Approach LOS | | B | | | B | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| 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 | 34 | 25 | 365 | 3 | 17 | 217 | 3 |
| Future Volume (Veh/h) | 2 | 9 | 19 | 3 | 8 | 34 | 25 | 365 | 3 | 17 | 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 | 37 | 27 | 397 | 3 | 18 | 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 | 768 | 728 | 238 | 752 | 728 | 398 | 239 | | | 400 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 768 | 728 | 238 | 752 | 728 | 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 | 94 | 98 | | | 98 | | |
| cM capacity (veh/h) | 287 | 338 | 801 | 302 | 338 | 651 | 1328 | | | 1159 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 33 | 49 | 427 | 257 | | | | | | | | |
| Volume Left | 2 | 3 | 27 | 18 | | | | | | | | |
| Volume Right | 21 | 37 | 3 | 3 | | | | | | | | |
| cSH | 526 | 525 | 1328 | 1159 | | | | | | | | |
| Volume to Capacity | 0.06 | 0.09 | 0.02 | 0.02 | | | | | | | | |
| Queue Length 95th (m) | 1.6 | 2.5 | 0.5 | 0.4 | | | | | | | | |
| Control Delay (s) | 12.3 | 12.6 | 0.7 | 0.7 | | | | | | | | |
| Lane LOS | B | B | A | A | | | | | | | | |
| Approach Delay (s) | 12.3 | 12.6 | 0.7 | 0.7 | | | | | | | | |
| Approach LOS | B | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 2.0 | | | | | | | | | |
| Intersection Capacity Utilization | | | 36.4% | | 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

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 5 | 20 | 13 | 10 | 42 | 35 | 11 | 92 | 3 | 15 | 69 | 3 |
| Future Volume (vph) | 5 | 20 | 13 | 10 | 42 | 35 | 11 | 92 | 3 | 15 | 69 | 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 |
| Hourly flow rate (vph) | 5 | 22 | 14 | 11 | 46 | 38 | 12 | 100 | 3 | 16 | 75 | 3 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total (vph) | 41 | 95 | 115 | 94 | | | | | | | | |
| Volume Left (vph) | 5 | 11 | 12 | 16 | | | | | | | | |
| Volume Right (vph) | 14 | 38 | 3 | 3 | | | | | | | | |
| Hadj (s) | -0.15 | -0.18 | 0.04 | 0.05 | | | | | | | | |
| Departure Headway (s) | 4.3 | 4.2 | 4.4 | 4.4 | | | | | | | | |
| Degree Utilization, x | 0.05 | 0.11 | 0.14 | 0.11 | | | | | | | | |
| Capacity (veh/h) | 783 | 797 | 793 | 781 | | | | | | | | |
| Control Delay (s) | 7.6 | 7.8 | 8.1 | 7.9 | | | | | | | | |
| Approach Delay (s) | 7.6 | 7.8 | 8.1 | 7.9 | | | | | | | | |
| Approach LOS | A | A | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Delay | | | 7.9 | | | | | | | | | |
| Level of Service | | | A | | | | | | | | | |
| Intersection Capacity Utilization | | | 20.3% | ICU Level of Service | | | | | | | | A |
| Analysis Period (min) | | | 15 | | | | | | | | | |

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 |
| 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 | | | 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 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| 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 | | | |
| Intersection Summary | | | | | | |
| 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 | 97 | 0 | 5 | 87 |
| Future Volume (Veh/h) | 0 | 10 | 97 | 0 | 5 | 87 |
| 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 | 105 | 0 | 5 | 95 |
| 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 | 210 | 105 | | | 105 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 210 | 105 | | | 105 | |
| 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) | 776 | 949 | | | 1486 | |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total | 11 | 105 | 100 | | | |
| Volume Left | 0 | 0 | 5 | | | |
| Volume Right | 11 | 0 | 0 | | | |
| cSH | 949 | 1700 | 1486 | | | |
| 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 | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.6 | | | |
| Intersection Capacity Utilization | | | 18.7% | | 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) | 1 | 10 | 87 | 0 | 5 | 82 |
| Future Volume (Veh/h) | 1 | 10 | 87 | 0 | 5 | 82 |
| 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) | 1 | 11 | 95 | 0 | 5 | 89 |
| 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 | 194 | 95 | | | 95 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 194 | 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 | 99 | | | 100 | |
| cM capacity (veh/h) | 792 | 962 | | | 1499 | |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total | 12 | 95 | 94 | | | |
| Volume Left | 1 | 0 | 5 | | | |
| Volume Right | 11 | 0 | 0 | | | |
| cSH | 945 | 1700 | 1499 | | | |
| Volume to Capacity | 0.01 | 0.06 | 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 | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | 18.4% | | 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 |
| 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 | 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 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| 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 | | | | | |
| Intersection Summary | | | | | | |
| 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

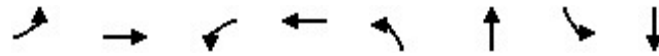
Future (2028) Total Traffic Volumes
 AM Peak Hour



| 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 |
| 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 | 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 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| 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 | | | | | |
| Intersection Summary | | | | | | |
| 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 | 153 | 456 | 22 | 89 | 16 | 40 |
| v/c Ratio | 0.06 | 0.46 | 0.61 | 0.48 | 0.04 | 0.13 | 0.03 | 0.06 |
| Control Delay | 11.9 | 14.8 | 25.7 | 15.2 | 11.0 | 6.0 | 10.9 | 9.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.9 | 14.8 | 25.7 | 15.2 | 11.0 | 6.0 | 10.9 | 9.6 |
| Queue Length 50th (m) | 1.0 | 16.0 | 11.6 | 17.0 | 1.1 | 1.4 | 0.8 | 1.6 |
| Queue Length 95th (m) | 4.0 | 25.5 | 26.5 | 26.9 | 5.4 | 9.6 | 4.4 | 7.4 |
| 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) | 816 | 3147 | 833 | 3153 | 522 | 676 | 499 | 699 |
| 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 | 0.18 | 0.14 | 0.04 | 0.13 | 0.03 | 0.06 |
| Intersection Summary | | | | | | | | |

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 | 141 | 404 | 16 | 20 | 26 | 56 | 15 | 30 | 6 |
| Future Volume (vph) | 14 | 380 | 21 | 141 | 404 | 16 | 20 | 26 | 56 | 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 | 0.90 | | 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 | 1539 | | 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 | 1539 | | 1200 | 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 | 153 | 439 | 17 | 22 | 28 | 61 | 16 | 33 | 7 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 6 | 0 | 0 | 36 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 15 | 428 | 0 | 153 | 450 | 0 | 22 | 53 | 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) | 14.2 | 14.2 | | 14.2 | 14.2 | | 20.2 | 20.2 | | 20.2 | 20.2 | |
| Effective Green, g (s) | 14.2 | 14.2 | | 14.2 | 14.2 | | 20.2 | 20.2 | | 20.2 | 20.2 | |
| Actuated g/C Ratio | 0.29 | 0.29 | | 0.29 | 0.29 | | 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) | 246 | 948 | | 251 | 951 | | 523 | 642 | | 500 | 697 | |
| v/s Ratio Prot | | 0.13 | | | 0.14 | | | c0.03 | | | 0.02 | |
| v/s Ratio Perm | 0.02 | | | c0.18 | | | 0.02 | | | 0.01 | | |
| v/c Ratio | 0.06 | 0.45 | | 0.61 | 0.47 | | 0.04 | 0.08 | | 0.03 | 0.05 | |
| Uniform Delay, d1 | 12.3 | 13.9 | | 14.7 | 14.0 | | 8.4 | 8.5 | | 8.3 | 8.4 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.1 | 0.3 | | 4.2 | 0.4 | | 0.2 | 0.3 | | 0.1 | 0.1 | |
| Delay (s) | 12.4 | 14.3 | | 18.9 | 14.4 | | 8.5 | 8.8 | | 8.4 | 8.5 | |
| Level of Service | B | B | | B | B | | A | A | | A | A | |
| Approach Delay (s) | | 14.2 | | | 15.5 | | | 8.7 | | | 8.5 | |
| Approach LOS | | B | | | B | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.1 | | | | HCM 2000 Level of Service | | | B | | |
| HCM 2000 Volume to Capacity ratio | | | 0.30 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 48.4 | | | Sum of lost time (s) | | | 14.0 | | | |
| Intersection Capacity Utilization | | | 46.1% | | | 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 | 31 | 45 | 330 | 16 | 36 | 472 | 3 |
| Future Volume (Veh/h) | 3 | 8 | 55 | 8 | 11 | 31 | 45 | 330 | 16 | 36 | 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 | 34 | 49 | 359 | 17 | 39 | 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 | 1098 | 1066 | 514 | 1122 | 1060 | 368 | 516 | | | 376 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1098 | 1066 | 514 | 1122 | 1060 | 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 | 94 | 94 | 95 | 95 | | | 97 | | |
| cM capacity (veh/h) | 162 | 205 | 560 | 149 | 207 | 678 | 1050 | | | 1182 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 72 | 55 | 425 | 555 | | | | | | | | |
| Volume Left | 3 | 9 | 49 | 39 | | | | | | | | |
| Volume Right | 60 | 34 | 17 | 3 | | | | | | | | |
| cSH | 425 | 326 | 1050 | 1182 | | | | | | | | |
| Volume to Capacity | 0.17 | 0.17 | 0.05 | 0.03 | | | | | | | | |
| Queue Length 95th (m) | 4.8 | 4.8 | 1.2 | 0.8 | | | | | | | | |
| Control Delay (s) | 15.2 | 18.3 | 1.4 | 0.9 | | | | | | | | |
| Lane LOS | C | C | A | A | | | | | | | | |
| Approach Delay (s) | 15.2 | 18.3 | 1.4 | 0.9 | | | | | | | | |
| Approach LOS | C | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 2.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 44.7% | | 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

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 6 | 38 | 16 | 6 | 33 | 25 | 17 | 88 | 7 | 36 | 151 | 7 |
| Future Volume (vph) | 6 | 38 | 16 | 6 | 33 | 25 | 17 | 88 | 7 | 36 | 151 | 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 |
| Hourly flow rate (vph) | 7 | 41 | 17 | 7 | 36 | 27 | 18 | 96 | 8 | 39 | 164 | 8 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total (vph) | 65 | 70 | 122 | 211 | | | | | | | | |
| Volume Left (vph) | 7 | 7 | 18 | 39 | | | | | | | | |
| Volume Right (vph) | 17 | 27 | 8 | 8 | | | | | | | | |
| Hadj (s) | -0.10 | -0.18 | 0.02 | 0.05 | | | | | | | | |
| Departure Headway (s) | 4.7 | 4.6 | 4.5 | 4.4 | | | | | | | | |
| Degree Utilization, x | 0.08 | 0.09 | 0.15 | 0.26 | | | | | | | | |
| Capacity (veh/h) | 709 | 722 | 766 | 781 | | | | | | | | |
| Control Delay (s) | 8.1 | 8.0 | 8.3 | 8.9 | | | | | | | | |
| Approach Delay (s) | 8.1 | 8.0 | 8.3 | 8.9 | | | | | | | | |
| Approach LOS | A | A | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Delay | | | 8.5 | | | | | | | | | |
| Level of Service | | | A | | | | | | | | | |
| Intersection Capacity Utilization | | | 26.2% | ICU Level of Service | A | | | | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

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 |
| 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 | | | 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 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| 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 | | | |
| Intersection Summary | | | | | | |
| 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 | 96 | 0 | 11 | 161 |
| Future Volume (Veh/h) | 0 | 8 | 96 | 0 | 11 | 161 |
| 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 | 104 | 0 | 12 | 175 |
| 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 | 303 | 104 | | | 104 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 303 | 104 | | | 104 | |
| 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) | 683 | 951 | | | 1488 | |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total | 9 | 104 | 187 | | | |
| Volume Left | 0 | 0 | 12 | | | |
| Volume Right | 9 | 0 | 0 | | | |
| cSH | 951 | 1700 | 1488 | | | |
| 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 | | | 25.7% | 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 | 96 | 1 | 10 | 151 |
| Future Volume (Veh/h) | 0 | 8 | 96 | 1 | 10 | 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 | 9 | 104 | 1 | 11 | 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 | 290 | 104 | | | 105 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 290 | 104 | | | 105 | |
| 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) | 695 | 950 | | | 1486 | |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total | 9 | 105 | 175 | | | |
| Volume Left | 0 | 0 | 11 | | | |
| Volume Right | 9 | 1 | 0 | | | |
| cSH | 950 | 1700 | 1486 | | | |
| 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 | | | 25.2% | 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 |
| 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 | 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 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| 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 | | | | | |
| Intersection Summary | | | | | | |
| 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 |
| 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 | 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 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| 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 | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.6 | | | |
| Intersection Capacity Utilization | | | 13.3% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |