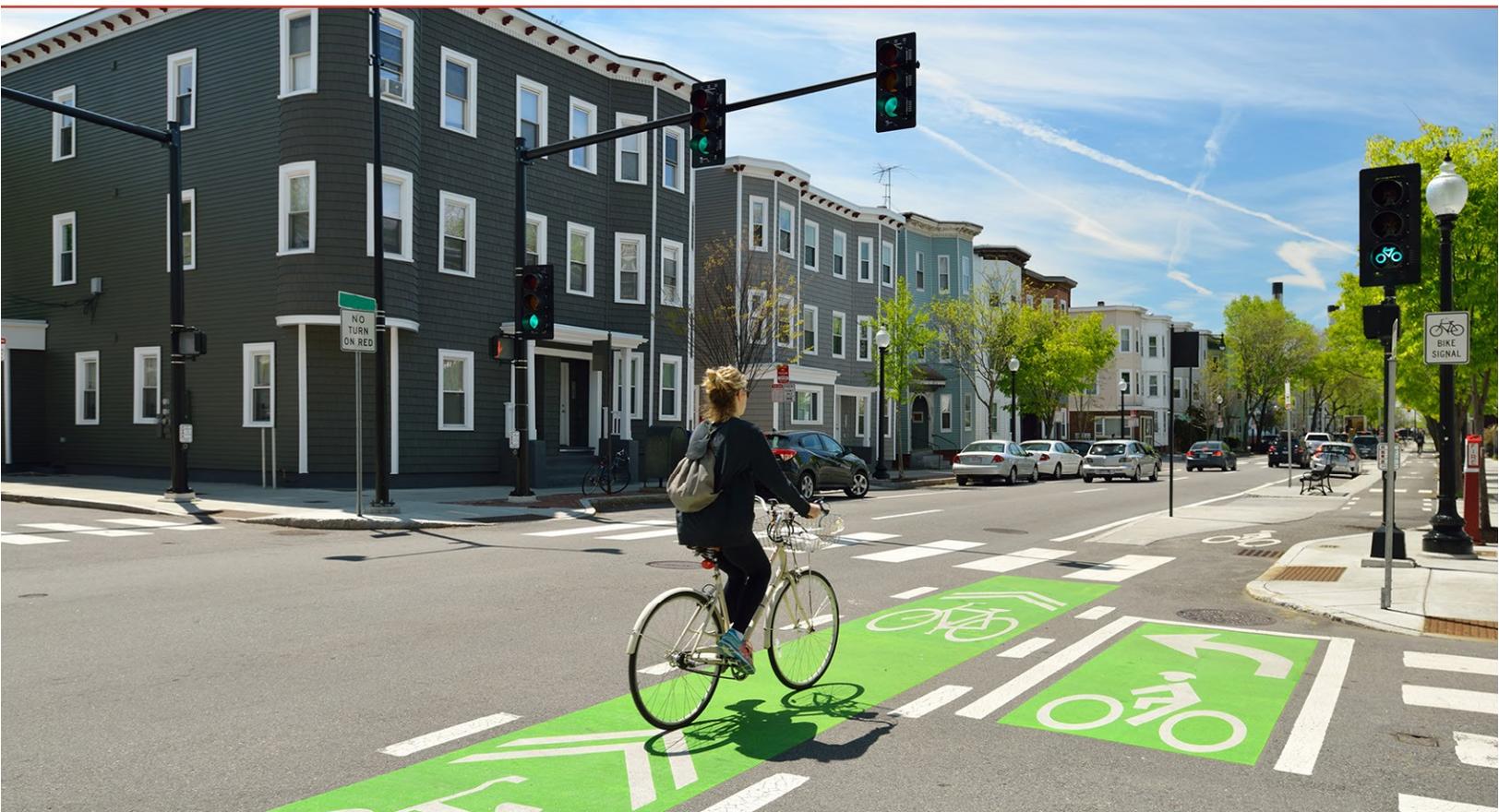


# 13286 NUNNVILLE ROAD TOWNHOUSE DEVELOPMENT

Town of Caledon (Bolton)  
Zoning Bylaw Amendment (ZBA) Application



Prepared For: Landowner, c/o Innovative Planning Solutions (IPS)

November 2025



**BA Group**

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**Kitchener**

40 Weber Street, Suite 60  
Kitchener, ON N2H 6R3

**Ottawa**

135 Laurier Avenue West, Suite 208  
Ottawa, ON K1P 5J2

**Toronto**

95 St. Clair Avenue West, Suite 1000  
Toronto, ON M4V 1N6

[www.bagroup.com](http://www.bagroup.com)

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## **AUTHORSHIP**

### **PREPARED BY**

Amy Jiang, M.Eng., P.Eng.  
Principal

### **Other Contributors**

Htet Htet Zaw, Transportation Analyst



# TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b> .....	<b>1</b>
<b>2.0</b>	<b>SUMMARY AND CONCLUSIONS</b> .....	<b>3</b>
<b>3.0</b>	<b>PROPOSED DEVELOPMENT</b> .....	<b>5</b>
<b>4.0</b>	<b>AREA STREET NETWORK</b> .....	<b>5</b>
<b>5.0</b>	<b>PARKING</b> .....	<b>6</b>
5.1	Resident Parking Supply .....	6
5.2	Visitor Parking Supply .....	6
<b>6.0</b>	<b>LOADING AND REFUSE COLLECTION</b> .....	<b>7</b>
<b>7.0</b>	<b>PEDESTRIAN AND BICYCLE ARRANGEMENTS</b> .....	<b>7</b>
<b>8.0</b>	<b>SAFETY ASSESSMENT</b> .....	<b>7</b>
8.1	Sight Distance Assessment .....	7
8.2	Collision History Review.....	8
8.3	Potential Safety Improvements .....	9
<b>9.0</b>	<b>TRAFFIC OPERATIONS ANALYSIS</b> .....	<b>10</b>
9.1	Study Area.....	10
9.2	Analysis Periods .....	10
9.3	Existing Traffic Volumes.....	10
9.4	Background Traffic Volumes.....	13
9.5	Future Background Traffic Volumes.....	13
9.6	Site Traffic Volumes.....	16
9.7	Site Traffic Distribution.....	16
9.8	Future Total Traffic Volumes .....	16
<b>10.0</b>	<b>TRAFFIC OPERATIONS ANALYSIS</b> .....	<b>19</b>
10.1	Analysis Methodology .....	19
10.2	Modelling Input Parameters.....	19
10.3	Intersection Analysis .....	20



## LIST OF TABLES

Table 1	List of Background Developments .....	13
Table 2	ITE Residential Vehicle Trip Generation (11 <sup>th</sup> Edition) .....	16
Table 3	Residential Site Traffic Distribution .....	16
Table 4	Albion Vaughan Road / Nunnville Road – Capacity Analysis .....	20
Table 5	Albion Vaughan Road / Nunnville Road - Queue Analysis .....	20

## LIST OF FIGURES

Figure 1	Site Location .....	2
Figure 2	Existing Lane Configuration and Traffic Control .....	11
Figure 3	Existing Traffic Volumes.....	12
Figure 4:	Corridor Growth Traffic Volumes .....	14
Figure 5:	Background Development Traffic Volumes.....	15
Figure 6:	Site Traffic Volumes .....	17
Figure 7:	Future Total Traffic Volumes.....	18

## TABLE OF APPENDICES

Appendix A:	Reduced Scale Architectural Site Plans
Appendix B:	On-Street Parking Demand Study (Nunnville Road)
Appendix C:	Vehicle Manoeuvring Diagrams (VMD's)
Appendix D:	Sight Distance Review
Appendix E:	Turning Movement Counts
Appendix F:	Background Development Trip Generation
Appendix G:	Trip Distribution TTS Queries
Appendix H:	Synchro Worksheets



## 1.0 INTRODUCTION

BA Group is retained by the landowner c/o Innovative Planning Solutions (IPS) to provide transportation consulting services for a proposed townhouse development at 13286 Nunnville Road in the Town of Caledon (Bolton), Peel Region.

Nunnville Road is an existing road that connects to Albion Vaughan Road at its south end and terminates in a cul-de-sac at its north end. The property (“**the site**”) is a roughly rectangular property located at the north end of Nunnville Road, on the west side of the cul-de-sac. The site is currently occupied by a two-storey single-family home, with one driveway connection to the cul-de-sac on Nunnville Road.

The development proposal is for a total of 22 townhouse units, accessed via one driveway connection to the cul-de-sac on Nunnville Road. Parking is provided in front of each unit, accessed via the central driveway into the site.

The site location is illustrated in **Figure 1**.

A Zoning Bylaw Amendment (ZBA) application is being made to the Town of Caledon for the proposed development.

This study reviews the transportation aspects of the proposal including:

- Site access and circulation;
- Parking arrangements;
- Loading access and circulation, including the manoeuvring requirements of Peel Region waste collection vehicles;
- Pedestrian and bicycle provisions;
- Traffic operations analysis of the local road network; and
- Sight distance assessment and collision history for the intersection of Albion Vaughan Road / Nunnville Road.





Untitled-1

Aerial maps provided courtesy of Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

**FIGURE 1 SITE LOCATION**

## 2.0 SUMMARY AND CONCLUSIONS

BA Group is retained by the landowner c/o Innovative Planning Solutions (IPS) to provide transportation consulting services for a proposed townhouse development at 13286 Nunnville Road in the Town of Caledon (Bolton), Peel Region.

Nunnville Road is an existing road that connects to Albion Vaughan Road at its south end and terminates in a cul-de-sac at its north end. The property (“**the site**”) is a roughly rectangular property located at the north end of Nunnville Road, on the west side of the cul-de-sac. The site is currently occupied by a two-storey single-family home, with one driveway connection to the cul-de-sac on Nunnville Road.

### Proposed Development

1. The development proposal is for a total of 22 townhouse units, arranged around a T-shaped internal driveway system that connects to the cul-de-sac on Nunnville Road to the east. The east-west portion of the internal driveway is 7.5m wide, while the north-south portion of the internal driveway is 6m wide.

### Parking

2. Application of the Town of Caledon Comprehensive Zoning By-law 2006-50 minimum parking requirements for townhouse dwellings would require the provision of:
  - 2 parking spaces per unit for residents, and
  - 0.25 parking spaces per unit for visitors – for a total of 6 visitor spaces.
3. The provision of two parking spaces for each unit within an enclosed garage and on the private driveway for each unit meets the minimum resident requirements of the bylaw.
4. Visitor parking demand is proposed to be met on-street on Nunnville Road to the south of the site. No additional dedicated visitor parking spaces are proposed within the site.
5. To better understand existing on-street parking demand, BA Group undertook a study of on-street parking demand on Nunnville Road. Based on the findings of the study, visitor parking demand can be appropriately met on-street on Nunnville Road. No additional dedicated visitor parking spaces are required on the site.

### Sight Distance Review

6. As requested by Town staff, BA Group has undertaken a safety review at the intersection of Albion Vaughan Road / Nunnville Road including sight distance assessment and collision history.
7. A field sight distance measurement was undertaken to assess the available sight distance for drivers turning left from Nunnville Road onto Albion Vaughan Road. Based on this assessment, the available sight distance is sufficient for the current design speed on Albion Vaughan Road.

### Vehicle Trip Generation

8. The site is forecasted to generate a total of 15 two-way vehicle trips during both the weekday morning and afternoon peak hours.



### **Traffic Operations Analysis**

9. The Albion Vaughan Road / Nunnville Road intersection operates as an unsignalized intersection with STOP control on Nunnville Road.
10. The Albion Vaughan Road / Nunnville Road intersection is expected to operate acceptably at LOS D or better under all scenarios.
11. The addition of site traffic is anticipated to have a negligible impact on operations at the Albion Vaughan Road / Nunnville Road intersection compared to future background conditions. The projected 95th percentile queue is also expected to be accommodated within the available storage under all scenarios.
12. Based on the foregoing, site traffic can be appropriately accommodated on the local area road network



### 3.0 PROPOSED DEVELOPMENT

The development proposal is for a total of 22 townhouse units, arranged around a T-shaped internal driveway system that connects to the cul-de-sac on Nunnville Road to the east. The east-west portion of the internal driveway is 7.5m wide, while the north-south portion of the internal driveway is 6m wide.

Parking is provided in front of each unit, accessed via the central driveway into the site. Two resident parking spaces are provided for each unit – including one space within an enclosed garage for each unit and another space on the driveway to each garage.

Visitor parking demand is proposed to be met on-street on Nunnville Road to the south of the site. Section 5.2 reviews visitor parking requirements and the availability of on-street parking on Nunnville Road.

Reduced scale architectural site plans are attached in **Appendix A**.

### 4.0 AREA STREET NETWORK

**Nunnville Road** is a north-south local road under the jurisdiction of the Town of Caledon. It connects to Albion Vaughan Road at its south end and terminates in a cul-de-sac at its north end. Nunnville Road has a two-lane cross-section and an approximately 8.5m pavement width, with a sidewalk on the west side. It has a posted speed limit of 40km/h.

**Albion-Vaughan Road** is a north-south arterial road that forms the boundary between the Town of Caledon and the City of Vaughan. In the vicinity of the site, Albion-Vaughan Road is under the jurisdiction of the Town of Caledon. At Nunnville Road, it has a two-lane cross-section with a dedicated northbound left turn lane and a dedicated southbound right turn lane. It also has a dedicated southbound acceleration lane for vehicles turning right from Nunnville Road onto Albion-Vaughan Road. Albion-Vaughan Road has a posted speed limit of 60 km/h.



## 5.0 PARKING

Application of the Town of Caledon Comprehensive Zoning By-law 2006-50 minimum parking requirements for townhouse dwellings would require the provision of:

- 2 parking spaces per unit for residents, and
- 0.25 parking spaces per unit for visitors – for a total of 6 visitor spaces.

### 5.1 Resident Parking Supply

The provision of two parking spaces for each unit within an enclosed garage and on the private driveway for each unit meets the minimum resident requirements of the bylaw.

### 5.2 Visitor Parking Supply

Visitor parking demand is proposed to be met on-street on Nunnville Road to the south of the site. No additional dedicated visitor parking spaces are proposed within the site.

Nunnville Road has a consistent pavement width of 8.5 metres, which is sufficient to accommodate two-way traffic flow as well as on-street parking, which is permitted along the entire length of the street. There are few houses with direct frontage onto Nunnville Road – approximately 12 houses over the approximately 500 metre stretch of Nunnville Road from the cul-de-sac to the bend in the road before it connects to Albion-Vaughan Road. This results in relatively low visitor parking demand from other existing uses.

Furthermore, we note that the Town of Caledon’s zoning bylaw does not require visitor parking spaces for *detached* or *semi-detached* houses, with the assumption that visitor parking demand for those uses could be met on the public streets. Thus, there is precedent within the zoning bylaw for visitor parking to be provided on-street.

To better understand existing on-street parking demand, BA Group undertook a study of on-street parking demand on Nunnville Road on Friday November 14, 2025 (4-9pm) and Saturday November 15, 2025 (2-9pm). These represent the busiest periods for on-street parking demand. Key study findings are summarized below:

- Nunnville Road can accommodate in the order of 100-110 on-street parked vehicles along its entirety.
- The northernmost section of Nunnville Road (adjacent to the site), between the cul-de-sac and Clover Bend Terrace, can accommodate in the order of 16 on-street parked vehicles.
- Peak observed on-street parking demand on Nunnville Road was 5 parked vehicles along its entirety (out of a potential supply of 110-110 spaces).
- On the northernmost section (adjacent to the site), between the cul-de-sac and Clover Bend Terrace, peak observed on-street parking demand was 2 vehicles (out of a potential supply of 16 spaces).
- Based on the foregoing, there is sufficient on-street parking to accommodate site related visitor parking demand, including the 6 visitor spaces that would otherwise be required by the bylaw.

Detailed study findings are attached in **Appendix B**.



Based on the foregoing, visitor parking demand can be appropriately met on-street on Nunnville Road. No additional dedicated visitor parking spaces are required on the site.

## 6.0 LOADING AND REFUSE COLLECTION

Residential refuse collection in the Town of Caledon is provided by the Region of Peel. Refuse collection will take place on-street. Loading, pick-up / drop-off and other delivery activity will also take place on-street.

Vehicle Manoeuvring Diagrams (VMD's) illustrating the on-site manoeuvring of a Peel Region residential waste collection vehicle and a Single Unit (SU) truck is attached in **Appendix C**.

## 7.0 PEDESTRIAN AND BICYCLE ARRANGEMENTS

The T-shaped internal driveway connects to the existing sidewalk on the west side of the Nunnville Road cul-de-sac. Given the low volume of vehicular traffic, the driveway will function as a shared street – i.e. it will provide shared internal access and circulation for pedestrians, cyclists and vehicles.

Town of Caledon staff requested consideration for a pedestrian connection between the subject site and the adjacent townhouse proposal to the north of the site (being proposed by others). The north-south portion of the internal driveway would allow for this future connection.

## 8.0 SAFETY ASSESSMENT

As requested by Town staff, BA Group has undertaken a safety review at the intersection of Albion Vaughan Road / Nunnville Road including sight distance assessment and collision history.

### 8.1 Sight Distance Assessment

A field sight distance measurement was undertaken to assess the available sight distance for drivers turning left from Nunnville Road onto Albion Vaughan Road. The assessment was undertaken using the methodology outlined in the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*.

The sight distance review diagram is attached in **Appendix D**.

Based on this review, the available sight distance for left turning drivers to see oncoming southbound traffic on Albion Vaughan Road is approximately 190 metres. This corresponds to a design speed of 90 km/h.

In comparison, Albion-Vaughan Road has a posted speed limit of 60 km/h, and therefore a design speed of 70-80 km/h. Thus, the available sight distance exceeds the required sight distance based on the current design speed.

Based on the foregoing, the available sight distance is sufficient for the current design speed on Albion Vaughan Road.



## 8.2 Collision History Review

BA Group has reviewed 10 years of collision data provided by the Town of Caledon for the intersection of Albion Vaughan Road / Nunnville Road. Nunnville Road is STOP controlled at Albion Vaughan Road. Diagrams for the following collisions were provided for the period between 2015-2025:

- 2018 – Rear-end collision at the eastbound STOP bar on Nunnville Road – rear vehicle (Driver 1) collided into front vehicle (Driver 2), and
- 2023 – 10am – Front end collision between an eastbound left turning vehicle (Driver 1) and a southbound through vehicle (Driver 2) – Driver 1 failed to yield to Driver 2.

For purposes of comparison, the Town of Caledon provided 10 years of collision data for the intersection of Albion Vaughan Road / King Vaughan Road / Dovaston Gate approximately 1km south of Nunnville Road. Note, however, that this intersection differs from Albion Vaughan Road / Nunnville Road in that it is a 4-legged intersection (instead of 3-legged) and King Vaughan Road is an arterial road (compared to Nunnville Road which is a local road) and carries higher traffic volumes than Nunnville Road. King Vaughan Road and Dovaston Gate are STOP controlled at Albion Vaughan Road. Diagrams for the following collisions were provided for the period between 2015-2025:

- 2015 – T-bone collision between westbound through vehicle (Driver 1) and southbound through vehicle (Driver 2) – Driver 1 collided into Driver 2,
- 2016 – T-bone collision between eastbound through vehicle (Driver 1) and northbound through vehicle (Driver 2) – Driver 1 collided into Driver 2,
- 2018 – Multi-vehicle collision between southbound through vehicle (Driver 1) and two eastbound vehicles (Drivers 2 and 3) – Driver 1 collided into Drivers 2 and 3,
- 2018 – Rear-end collision at the westbound STOP bar on King Vaughan Road – rear vehicle (Driver 1) collided into front vehicle (Driver 2), and
- 2019 – T-bone collision between eastbound through or left turning vehicle (Driver 1) and northbound through or left turning vehicle (Driver 2) – Driver 1 collided into Driver 2,
- 2019 – T-bone collision between southbound left turning vehicle (Driver 1) and northbound through vehicle (Driver 2) – Driver 1 collided into Driver 2,
- 2020 – T-bone collision between eastbound through vehicle (Driver 1) and southbound through vehicle (Driver 2) – Driver 1 collided into Driver 2, and
- 2023 – T-bone collision between northbound through vehicle (Driver 2) and eastbound through vehicle (Driver 1) – Driver 2 collided into Driver 1.

The 3-legged intersection of Albion Vaughan Road / Nunnville Road had fewer recorded collisions (i.e. 2) compared to the 4-legged, busier intersection of Albion Vaughan Road / King Vaughan Road / Dovaston Gate (i.e. 8).



One recorded collision at Albion Vaughan Road / Nunnville Road was a result of the driver on Nunnville Road not yielding to through traffic on Albion Vaughan Road. The other collision was a result of a driver on Nunnville Road rear-ending another driver at the STOP bar on Nunnville Road. In both cases, awareness of other traffic (either oncoming traffic or traffic ahead) appear to have been issues.

### 8.3 Potential Safety Improvements

Based on a review of site conditions and the local area road network, potential additional safety measures that could be implemented by the Town include:

- Warning signage on southbound Albion Vaughan Road upstream of Nunnville Road – to indicate that drivers on the side road at the intersection ahead do not have a clear view of traffic. (Note, however, that based on the intersection sight distance review in Section 8.1, there is in fact sufficient sight distance on the side road.)
- Introduce a reduced advisory speed limit on Nunnville Road on the approach to Albion Vaughan Road to slow vehicles as they travel around the bend on Nunnville Road.



Note that on Albion Vaughan Road, facing Nunnville Road, there is already a warning checkerboard sign that warns oncoming motorists to slow down and be careful.



## 9.0 TRAFFIC OPERATIONS ANALYSIS

### 9.1 Study Area

As requested by Town staff, a traffic operations analysis was undertaken for the intersection Albion Vaughan Road / Nunnville Road.

### 9.2 Analysis Periods

The following analysis scenarios were analyzed for the weekday morning and afternoon peak hours:

- Existing traffic conditions;
- Future background traffic conditions (5-year horizon); and
- Future total conditions with full site buildout (5-year horizon).

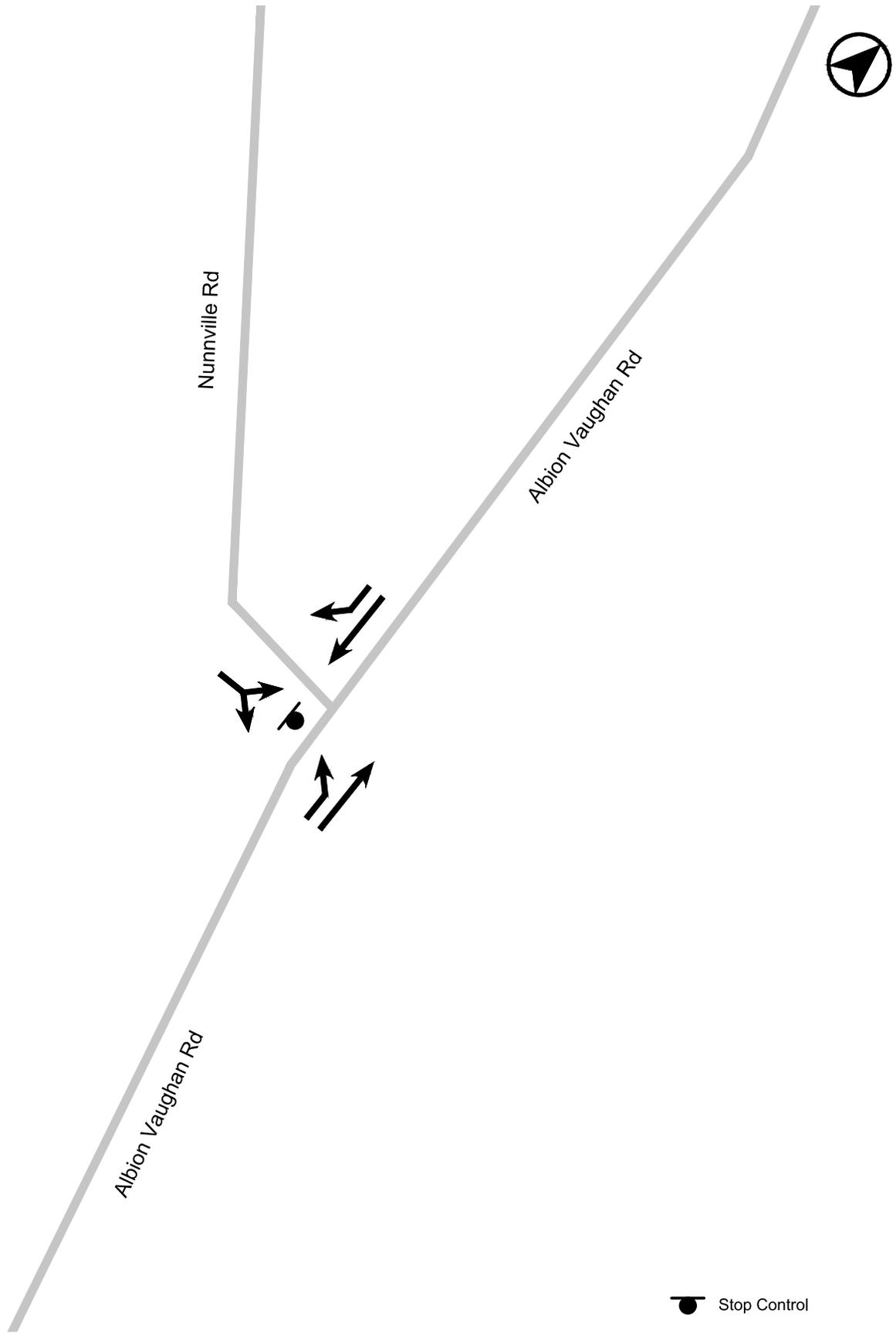
### 9.3 Existing Traffic Volumes

Turning movement counts (TMC) at Albion Vaughan Road / Nunnville Road, collected on November 6, 2024, were provided by the Town of Caledon and are attached in **Appendix E**.

The existing lane configuration and traffic control are illustrated in **Figure 2**, and the existing traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 3**.



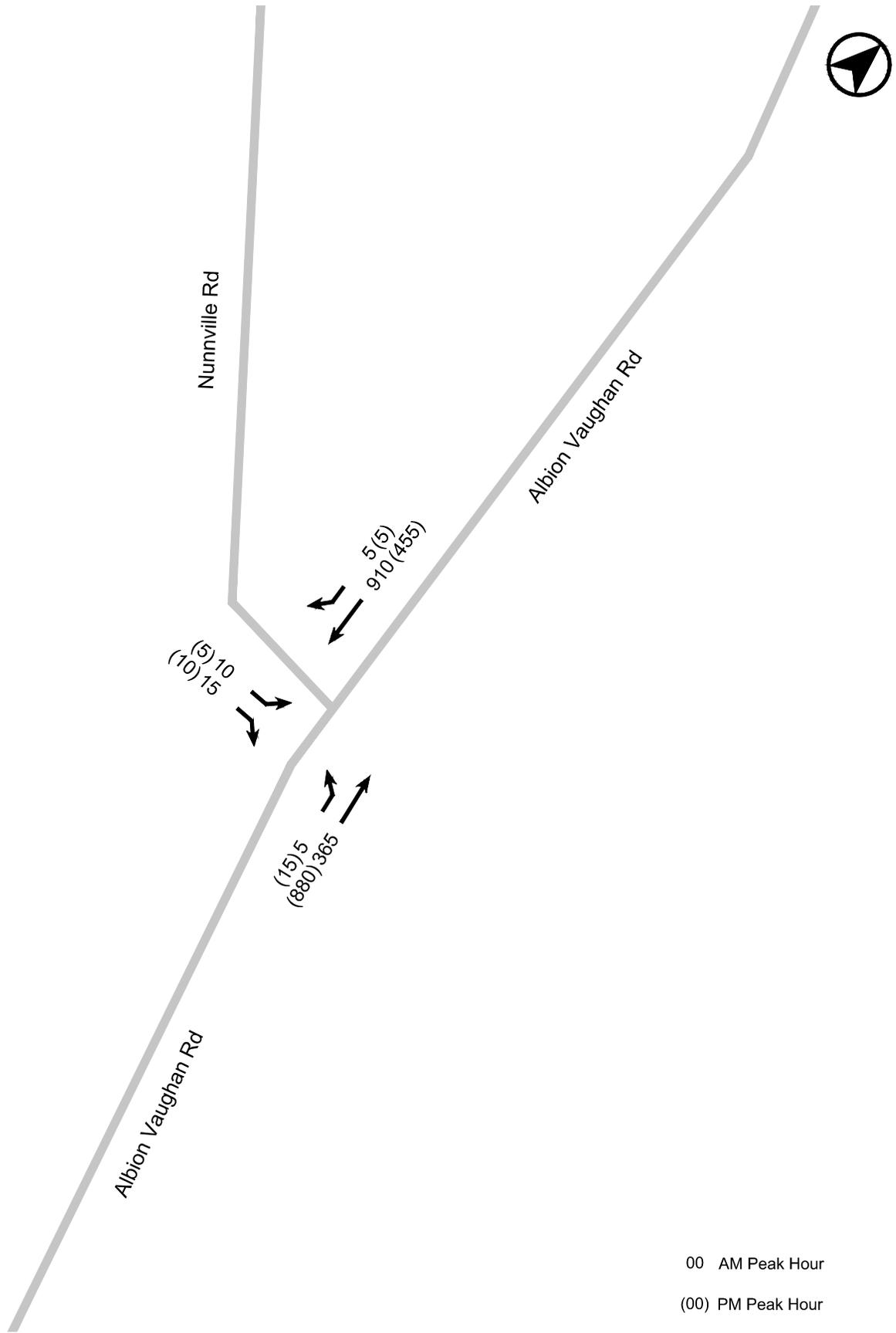
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● Stop Control

**FIGURE 2 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL**

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00 AM Peak Hour

(00) PM Peak Hour

**FIGURE 3 EXISTING TRAFFIC VOLUMES**

## 9.4 Background Traffic Volumes

Traffic growth at the study area intersections has been incorporated by analyzing traffic changes including:

- General corridor growth on Albion Vaughan Road; and
- Background development traffic.

### 9.4.1 General Corridor Growth

A compounded annual growth rate of 2% from the existing year to five years after has been applied to through movements along Albion Vaughan Road, based on consultation with the Town of Caledon.

### 9.4.2 Background Developments

Background development traffic allowances have been considered for developments in the area that are approved but not yet built or are currently in the approval process with the Town of Caledon. These developments are expected to generate additional traffic to the study area network.

Three development proposals were incorporated, which includes a total of 173 residential units.

**Table 1 List of Background Developments**

Development Address	Development Statistics	Source
13290 Nunnville Road	15 residential units	C.F. Crozier & Associates Inc., April 2022
13247 & 13233 Nunnville Road	29 residential units	C.F. Crozier & Associates Inc., January 2022
13540 Caledon King Townline <sup>1</sup>	129 residential units	Not available
<b>Total</b>	<b>173 residential units</b>	

Notes:

1. TIS for the background development is not available. Background development site traffic was analyzed using comparable ITE trip generation assumptions, and trip distribution consistent with the site.

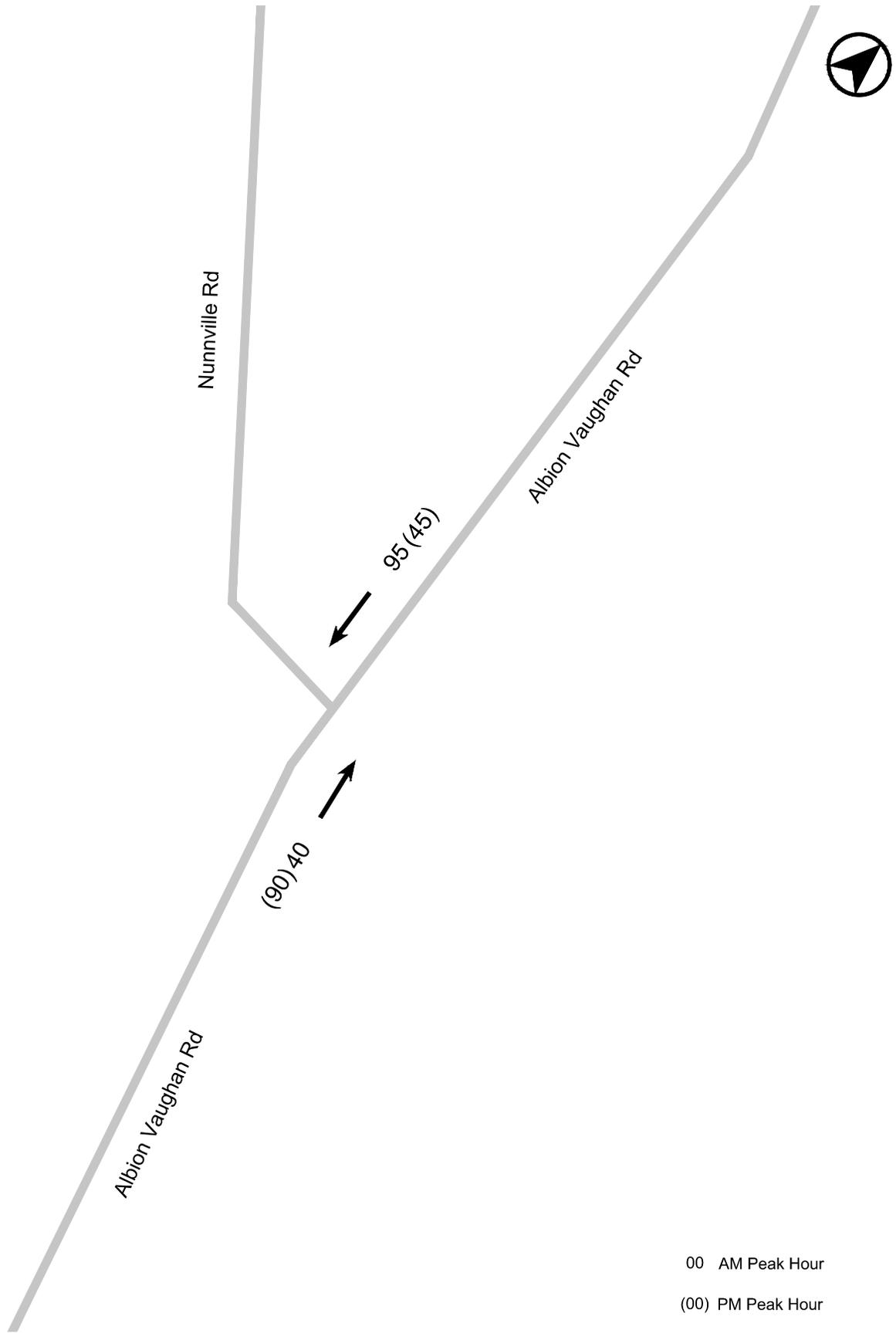
Trip generation assumptions for the background development at 13540 Caledon King Townline are attached in **Appendix F**.

## 9.5 Future Background Traffic Volumes

Future background traffic volumes represent the sum of existing and background traffic, including both corridor growth and background development traffic. Corridor growth traffic volumes are illustrated in **Figure 4** and background development traffic volumes are illustrated in **Figure 5**.



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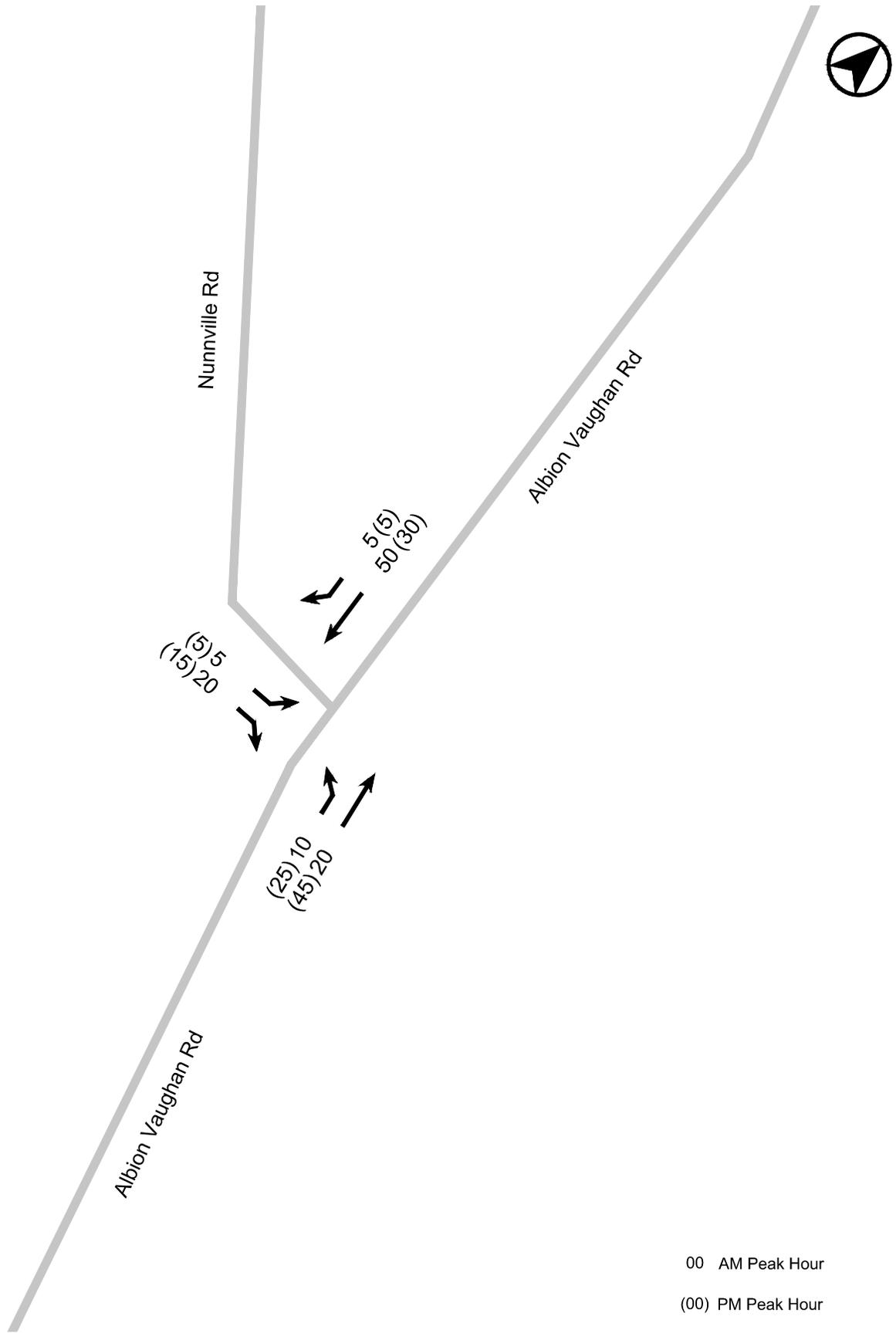


00 AM Peak Hour

(90) PM Peak Hour

**FIGURE 4 CORRIDOR GROWTH TRAFFIC VOLUMES**

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**FIGURE 5 BACKGROUND DEVELOPMENT TRAFFIC VOLUMES**

## 9.6 Site Traffic Volumes

The residential trip generation for the site was forecast using the ITE Trip Generation Manual (11<sup>th</sup> Edition), Land Use Code (LUC) 215 (Single-Family Attached Housing). The average trip rates and the resulting total vehicle trips for the site are summarized in **Table 2**.

The site is projected to generate approximately 15 two-way vehicle trips during the weekday morning and afternoon peak hours.

**Table 2 ITE Residential Vehicle Trip Generation (11<sup>th</sup> Edition)**

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
<b>LUC 215, Single-Family Attached Housing (22 units)</b>						
Directional Split (%)	25%	75%	100%	59%	41%	100%
Vehicle Trip Rate (trips / unit)	0.12	0.36	0.48	0.34	0.23	0.57
<b>Total Vehicle Trips (22 units)</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>10</b>	<b>5</b>	<b>15</b>

Notes:

1. Trips have been rounded to the nearest 5.

## 9.7 Site Traffic Distribution

The forecasted residential site trips are distributed across the study area road network based on observed home-based travel patterns near the site area, as provided by the 2022 Transportation Tomorrow Survey (TTS). Site trip distribution was established using the 2022 TTS zone 4063, which covers the site's vicinity. A summary of site traffic distribution is provided in **Table 3**, and the detailed TTS query outputs are provided in **Appendix G**.

The residential site traffic volumes on the study area road network are illustrated in **Figure 6**.

**Table 3 Residential Site Traffic Distribution**

Direction	Street	Inbound <sup>2</sup>	Outbound <sup>3</sup>
North	Albion Vaughan Road	21%	29%
South	Albion Vaughan Road	79%	71%
<b>Total</b>		<b>100%</b>	<b>100%</b>

Notes:

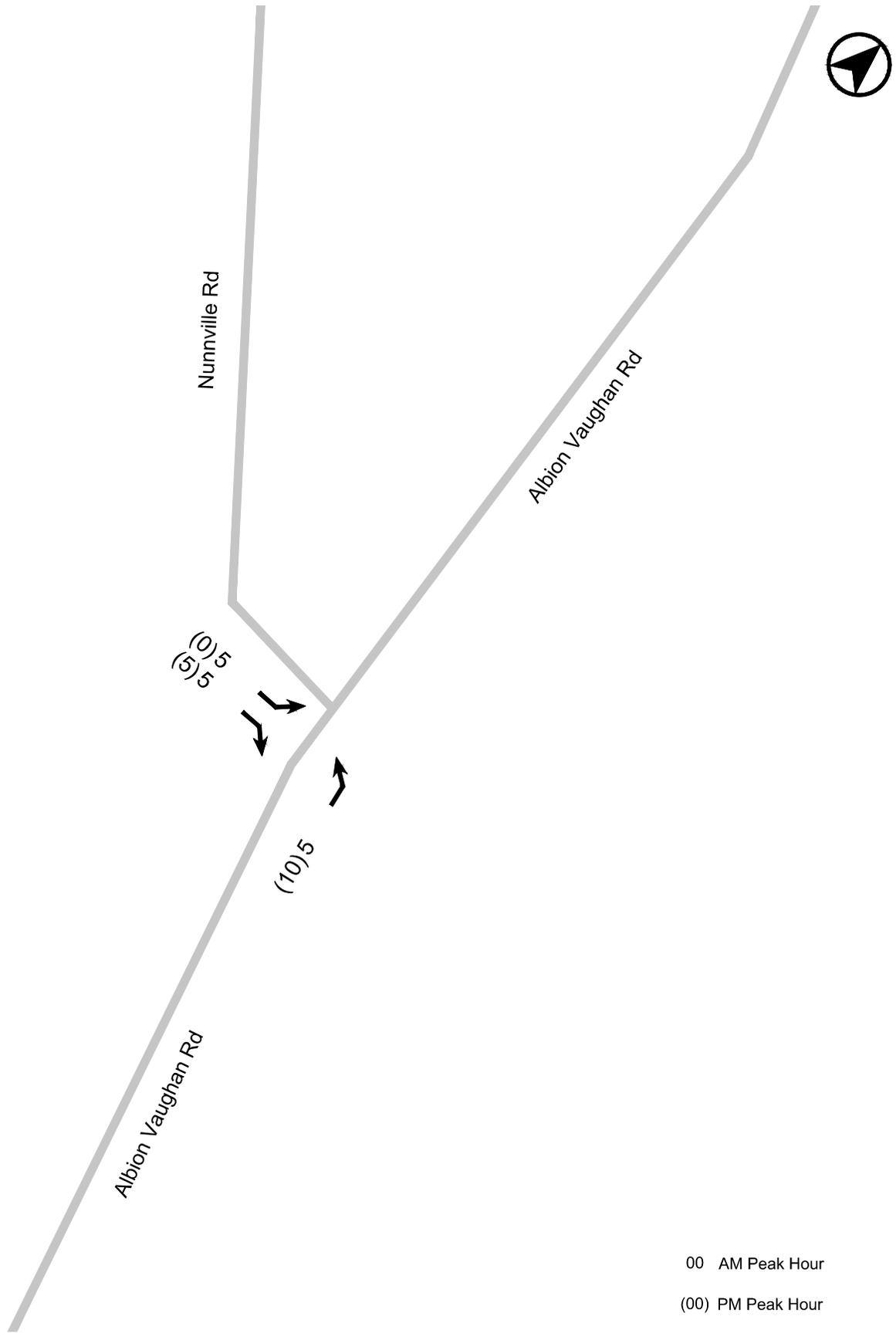
1. Based on 2022 TTS Zone 4063 for morning (6:00-8:49) and afternoon (15:00-17:59) peak periods.
2. Based on the afternoon peak period residential inbound trips.
3. Based on the morning peak period residential outbound trips.

## 9.8 Future Total Traffic Volumes

Future total traffic volumes represent the sum of future background and site traffic volumes. Future total traffic volumes are illustrated in **Figure 7**.



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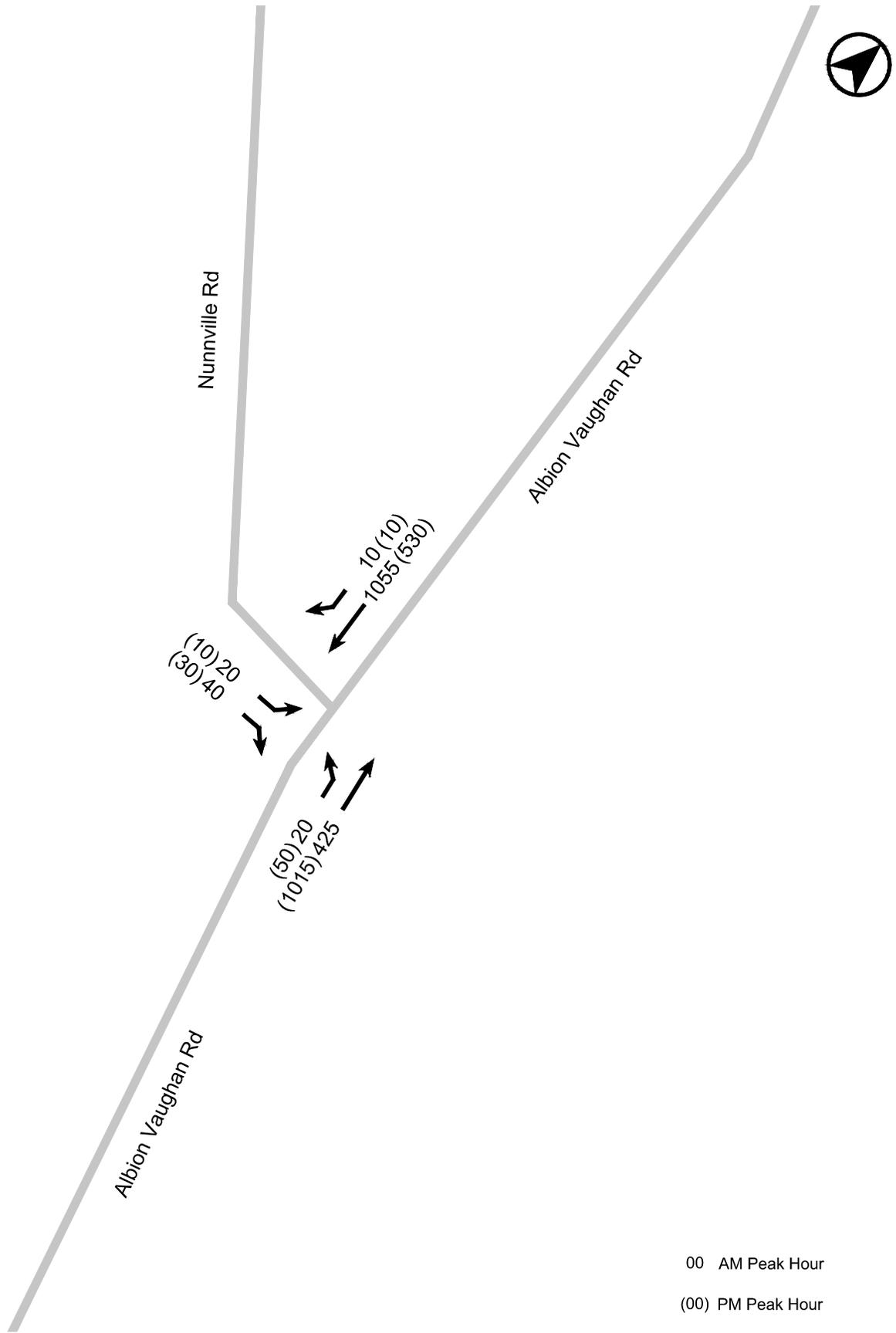


00 AM Peak Hour

(00) PM Peak Hour

**FIGURE 6 SITE TRAFFIC VOLUMES**

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00 AM Peak Hour

(00) PM Peak Hour

**FIGURE 7 FUTURE TOTAL TRAFFIC VOLUMES**

## 10.0 TRAFFIC OPERATIONS ANALYSIS

### 10.1 Analysis Methodology

Intersection capacity analysis was undertaken using Synchro Version 11.0 following the Highway Capacity Manual 2000 (“HCM 2000”) methodology and the Region of Peel Guidelines for Using Synchro, Version 7.73 Rev 8, dated December 2010 (“the Region of Peel’s Synchro Guidelines”). Synchro worksheets are attached in **Appendix H**.

#### Unsignalized Intersections

For unsignalized intersections, the level of service (LOS) characterizes operational conditions for key movements in terms of delay within the traffic stream. LOS A represents a good level of service with short delays. LOS F represents a poor level of service with long delays. The HCM level of service criteria for unsignalized intersections are as follows:

- LOS A: Control Delay  $\leq$  10 seconds
- LOS B: 10 seconds  $<$  Control Delay  $\leq$  15 seconds
- LOS C: 15 seconds  $<$  Control Delay  $\leq$  25 seconds
- LOS D: 25 seconds  $<$  Control Delay  $\leq$  35 seconds
- LOS E: 35 seconds  $<$  Control Delay  $\leq$  50 seconds
- LOS F: Control Delay  $>$  50 seconds

### 10.2 Modelling Input Parameters

#### Road Network Configuration

The existing lane configuration was adopted to analyze existing and future traffic conditions, as the lane configuration at the Albion Vaughan Road / Nunnville Road intersection will remain unchanged within the future study horizon.

#### Ideal Saturation Flow Assumptions

The Region of Peel’s Synchro Guidelines specifies a base saturation flow rate of 1,900 passenger cars per hour of green per lane (pcphgpl) for all movements. This standard rate was adopted for all movements at the intersection.

#### Peak Hour Factors

The Region of Peel’s Synchro Guidelines state that a peak hour factor of 1.00 should be applied for all intersection movements. This standard value was adopted for all movements of the intersection.



### Lane Utilization Factors

The lane utilization factor takes into consideration the distribution of individual lane usage within each movement group. Synchro's default lane utilization factors were adopted for all movements of the intersection.

### Heavy Vehicle Assumptions

Heavy vehicle percentages were incorporated into the analysis based on information provided in the intersection turning movement count.

### Pedestrian and Bicycle Volumes

Pedestrian and bicycle volumes were incorporated into the analysis based on information provided in the intersection turning movement count.

### Other Parameters

Synchro defaults have been adopted for all other parameters.

## 10.3 Intersection Analysis

The Albion Vaughan Road / Nunnville Road intersection operates as an unsignalized intersection with STOP control on Nunnville Road. The capacity and queue analysis results for the intersection are summarized in **Table 4** and **Table 5**, respectively.

**Table 4 Albion Vaughan Road / Nunnville Road – Capacity Analysis**

Movement	Existing		Future Background		Future Total	
	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
EBLR	22.1 (16.9)	C (C)	30.1 (21.3)	D (C)	30.1 (20.8)	D (C)
NBL	12.9 (8.3)	B (A)	14.5 (8.6)	B (A)	14.5 (8.6)	B (A)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

**Table 5 Albion Vaughan Road / Nunnville Road - Queue Analysis**

Movement	Storage Length (m)	Existing	Future Background	Future Total
		95 <sup>th</sup> Percentile Queue	95 <sup>th</sup> Percentile Queue	95 <sup>th</sup> Percentile Queue
EBLR	450	2.8 (1.2)	8.0 (3.7)	8.7 (4.1)
NBL	110	0.3 (0.3)	1.0 (1.0)	1.0 (1.2)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. The taper length is measured to the point where the minimum width of the lane is 2.5 meters wide.



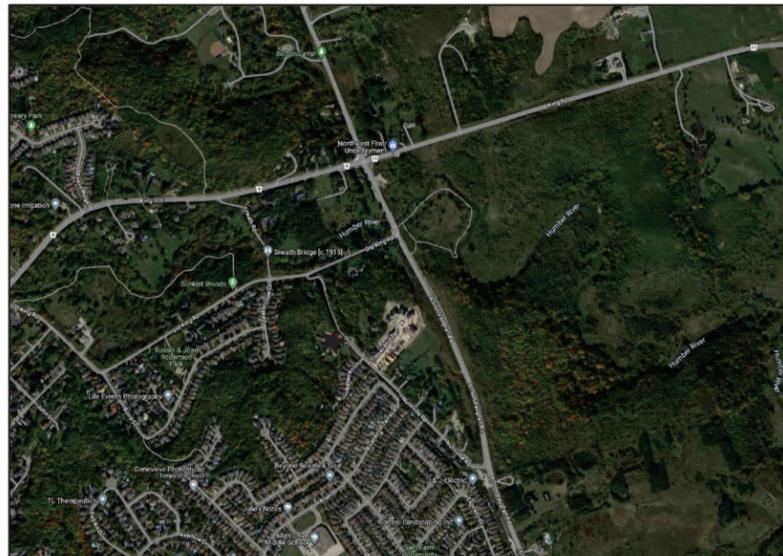
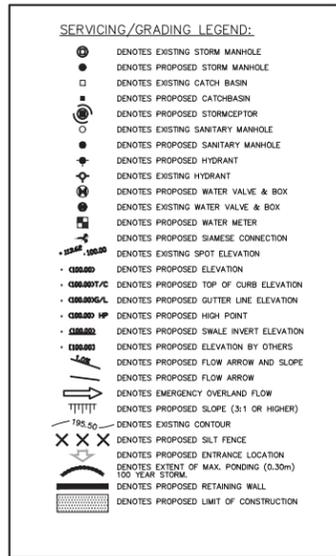
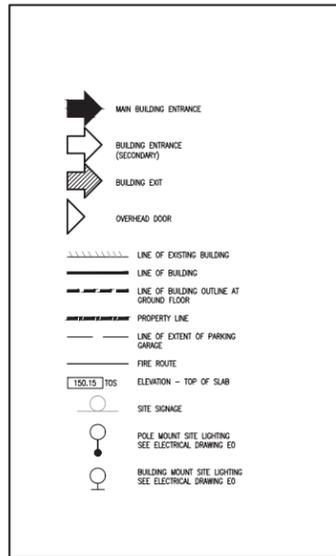
Under all scenarios, the Albion Vaughan Road / Nunnville Road intersection is expected to operate acceptably at LOS D or better. Future total traffic conditions are expected to maintain a similar level of operations as the future background traffic conditions. In this regard, the site is anticipated to have a negligible impact on the intersection, with the projected 95<sup>th</sup> percentile queues also remaining within the available storage under all scenarios.

Based on the foregoing, site traffic can be appropriately accommodated on the local area road network



## **Appendix A: Reduced Scale Architectural Site Plans**





BUILDING 1					
LOT NO.	LOT AREA (SQ. M)	BUILD G.F.A. (SQ. M)	LOT COVERAGE (%)	FRESH FLOOR ELEVATION	
1	245.45	158.76	77.76	31.68	246.55
2	173.00	158.76	77.76	44.95	246.55
3	173.00	158.76	77.76	44.95	247.00
4	173.00	158.76	77.76	44.95	247.00
5	173.00	158.76	77.76	44.95	247.65
6	173.00	158.76	77.76	44.95	247.65
7	205.16	158.76	77.76	37.90	247.65
TOTAL	1,315.61	1,111.32	844.32	41.37	

BUILDING 2					
LOT NO.	LOT AREA (SQ. M)	BUILD G.F.A. (SQ. M)	LOT COVERAGE (%)	LOT COVERAGE (%)	
8	228.86	158.00	78.00	34.08	248.45
9	200.00	158.00	78.00	39.00	248.45
10	200.34	158.00	78.00	37.44	248.45
11	200.00	158.00	78.00	37.50	248.45
12	233.21	158.00	78.00	33.45	248.45
TOTAL	1,076.46	796.00	390.00	36.23	

BUILDING 3					
LOT NO.	LOT AREA (SQ. M)	BUILD G.F.A. (SQ. M)	LOT COVERAGE (%)	LOT COVERAGE (%)	
13	216.91	158.00	78.00	35.96	248.45
14	172.07	158.00	78.00	45.33	248.45
15	173.00	168.00	81.50	46.87	248.55
16	218.39	168.00	81.50	37.32	248.55
TOTAL	781.26	652.00	319.00	40.83	

BUILDING 4					
LOT NO.	LOT AREA (SQ. M)	BUILD G.F.A. (SQ. M)	LOT COVERAGE (%)	LOT COVERAGE (%)	
17	205.52	171.84	84.55	41.14	249.00
18	178.63	171.84	84.55	47.33	249.00
19	181.90	171.84	84.55	46.48	248.20
20	185.16	171.84	84.55	45.68	248.20
21	188.42	171.84	84.55	44.87	247.85
22	191.69	171.84	84.55	44.11	247.85
TOTAL	1,131.32	1,031.04	507.30	44.84	

OVERALL SITE STATISTICS	
SITE AREA	14,304.41 SQ. M (1.41 ha)
MIN. LOT AREA	172.07 SQ. M
TOTAL BUILDING AREA	3,587.36 SQ. M
MAX. LOT COVERAGE	46.87%
MIN. LOT WIDTH	6.00 M
MIN. LOT DEPTH	25.87 M
PARKING	44 RESIDENCE PARKING (1 INTERNAL & 1 EXTERNAL) VISITOR PARKING (ON-SITE)

5 Legend  
A101 SCALE: N.T.S.

4 Survey Information  
A101 SCALE: N.T.S.

3 Context Plan  
A101 SCALE: N.T.S.

2 Statistics  
A101 SCALE: N.T.S.



1 Site Plan  
A101 SCALE: 1:400

REVISION RECORD

2025-12-15 ISSUED FOR RE-ZONING

ISSUE RECORD



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GRAND JADANI  
LICENSEE  
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(t) 416 230 9130  
(e) info@architects.ca

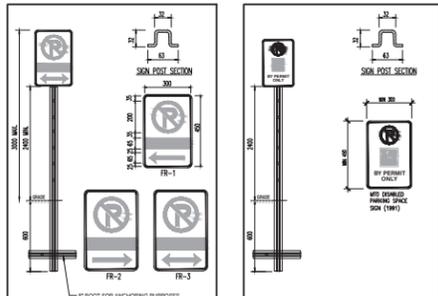
PROPOSED RE-ZONING AT  
13286 NUNNVILLE ROAD  
BOLTON, ON

23004 As Noted OY  
PROJECT SCALE DRAWN REVIEWED

SITE PLAN

**A101**

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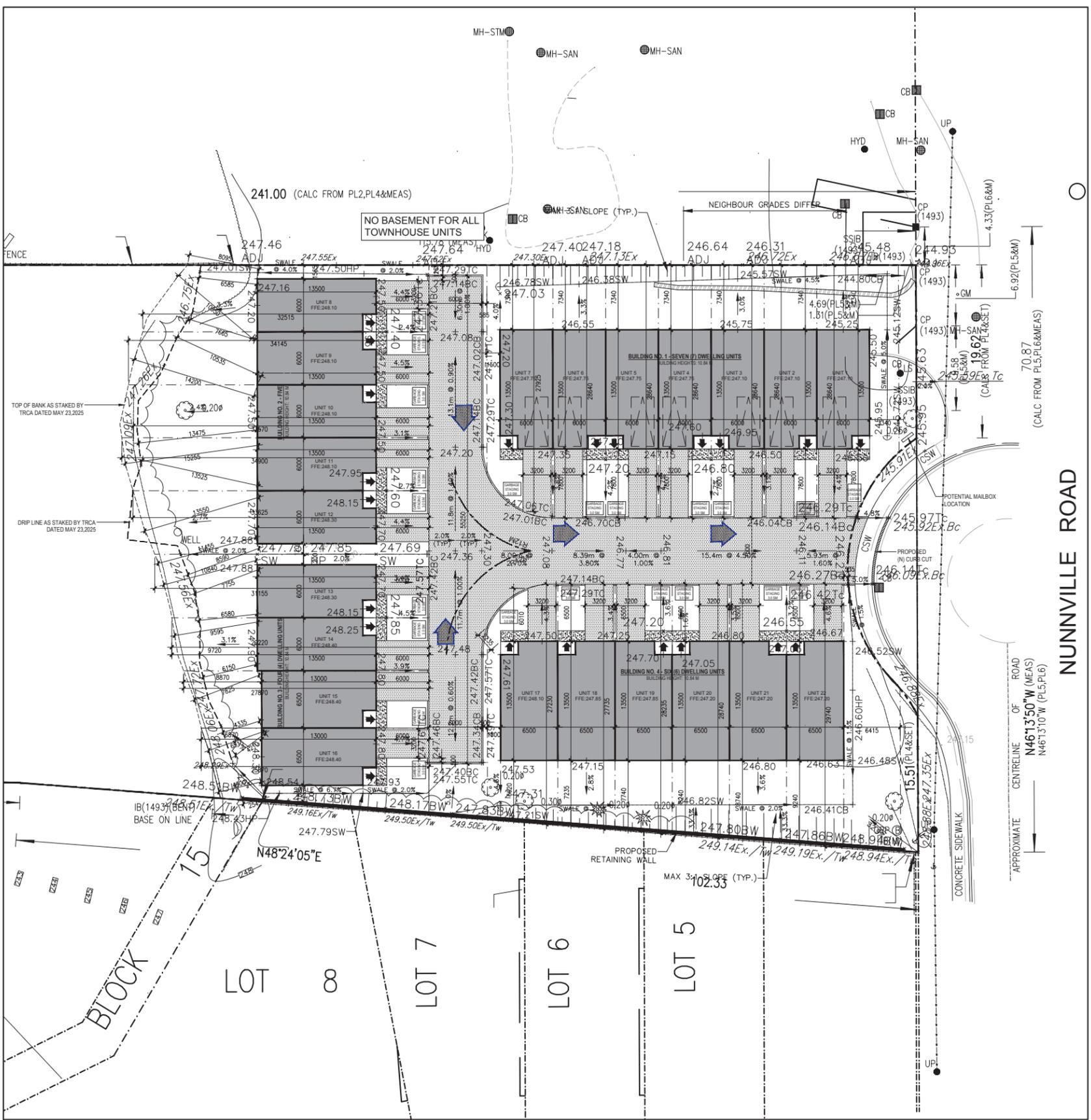
**NOTES:**  
 SIGN MATERIAL:  
 - ALUMINUM  
 SIGN COLOURS:  
 - BACKGROUND - REFLECTIVE SILVER  
 - "FIRE ROUTE" - REFLECTIVE SILVER  
 - GRAPHICS - BORDERS - RED  
 - FIRE ROUTE SIGNS TO BE LOCATED ALONG THE FIRE ROUTE NO MORE THAN 30m BETWEEN SIGNS.  
 - ALL DIMENSIONS IN MILLIMETERS  
 - SIGNAGE IS NOT TO BE MOUNTED ON BUILDINGS

**FIRE ROUTE SIGNS**  
 N.T.A.

**NOTES:**  
 SIGN MATERIAL:  
 - ALUMINUM  
 SIGN COLOURS:  
 - BACKGROUND - REFLECTIVE SILVER  
 - "RESERVED PARKING" - REFLECTIVE BLUE  
 - GRAPHICS - BORDERS - REFLECTIVE BLUE  
 - ALL DIMENSIONS IN MILLIMETERS  
 - SIGNAGE IS NOT TO BE MOUNTED ON BUILDINGS

**HANDICAP PARKING**  
 N.T.A.

**25 Signage**  
 A101 SCALE: N.T.S.



**1 Site Plan**  
 A102 SCALE: 1:250

**REVISION RECORD**

NO.	DATE	DESCRIPTION
1	2025-12-15	ISSUED FOR RE-ZONING

**ISSUE RECORD**



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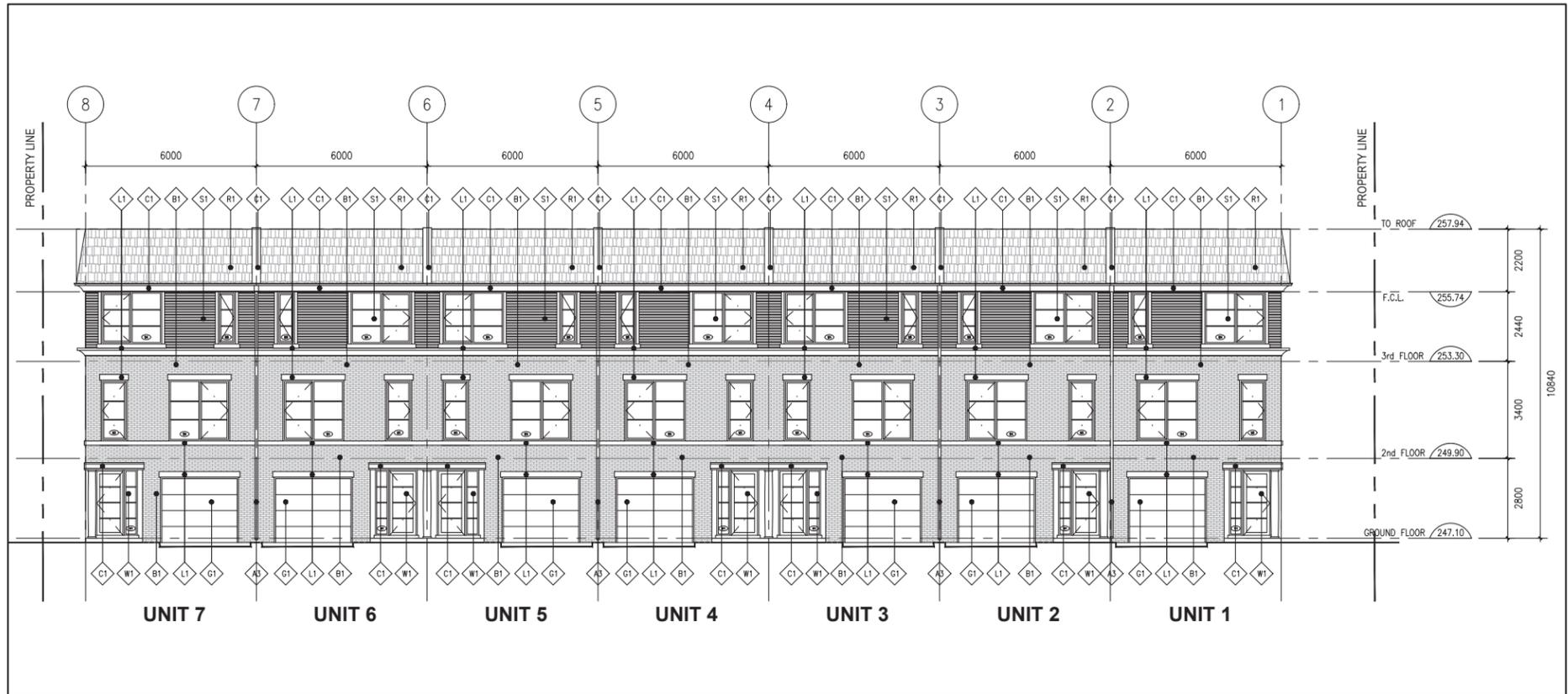
**PROPOSED RE-ZONING AT**  
 13286 NUNNVILLE ROAD  
 BOLTON, ON

23004 As Noted OY  
 PROJECT SCALE DRAWN REVIEWED

**SITE PLAN**

**A102**

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- ELEVATION FINISHES**
- ◇ B1 - BRICK FINISH (TYPE 1)  
LEGACY SERIES (COLOUR: CRIMSON)  
BY BRAMPTON BRICKS
  - ◇ S1 - HARDIEPLANK LAP SIDING (DARK GREY)  
BY JAMES HARDIE
  - ◇ L1 - LIMESTONE SILLS/HEADERS
  - ◇ A1 - ALUMINUM FLASHING (COLOUR: BLACK)
  - ◇ C1 - COMPOSITE METAL PANEL CANOPY  
(COLOUR:)
  - ◇ A2 - ALUMINUM CAPPING (COLOUR:BLACK)
  - ◇ A3 - ALUMINUM DOWNSPOUT ( COLOUR: BLACK)
  - ◇ W1 - ALUMINUM WINDOWS (COLOUR: BLACK)
  - ◇ G1 - BLACK ALUMINUM GARGE DOOR
  - ◇ BX1 - EXHAUST WALL BOXES  
(CONFIRM LOCATION W/ M&E DRWGS.)
  - ◇ R1 - ASPHALT ROOF SHINGLES (COLOUR: BLACK)

**REVISION RECORD**

2025-12-15 ISSUED FOR RE-ZONING

**ISSUE RECORD**



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**PROPOSED RE-ZONING AT  
13286 NUNNVILLE ROAD  
BOLTON, ON**

23004 As Noted OY  
PROJECT SCALE DRAWN REVIEWED

TYPICAL ELEVATIONS

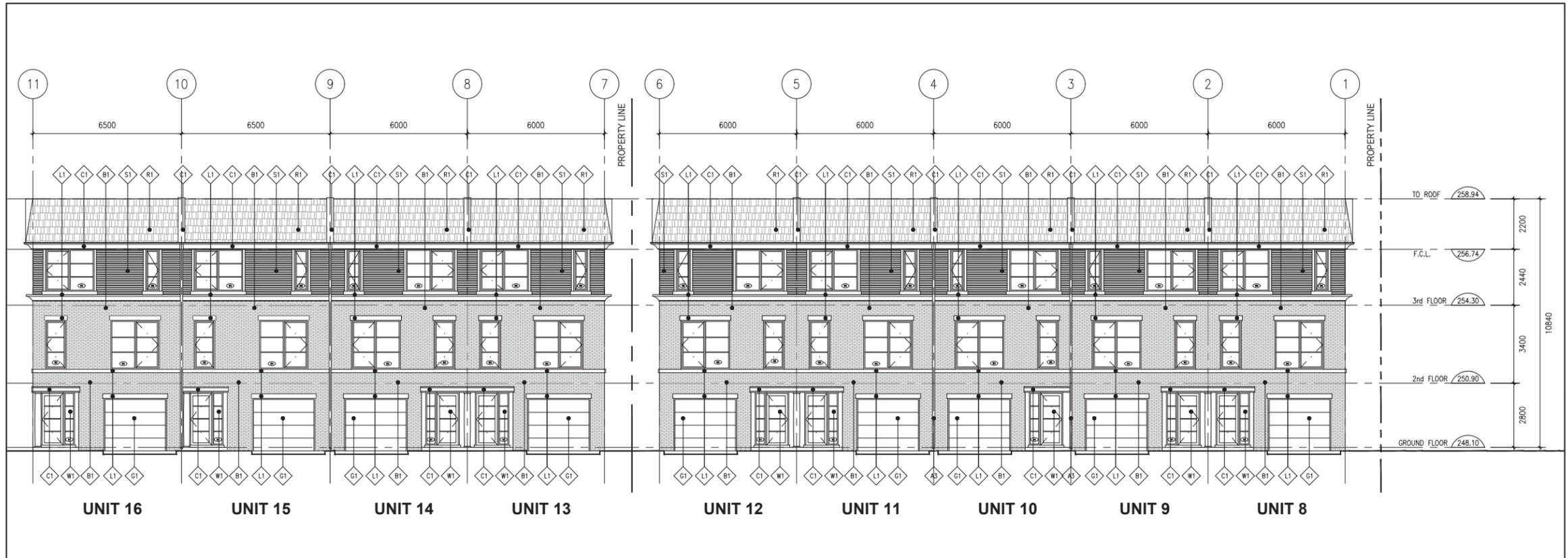
**A401**

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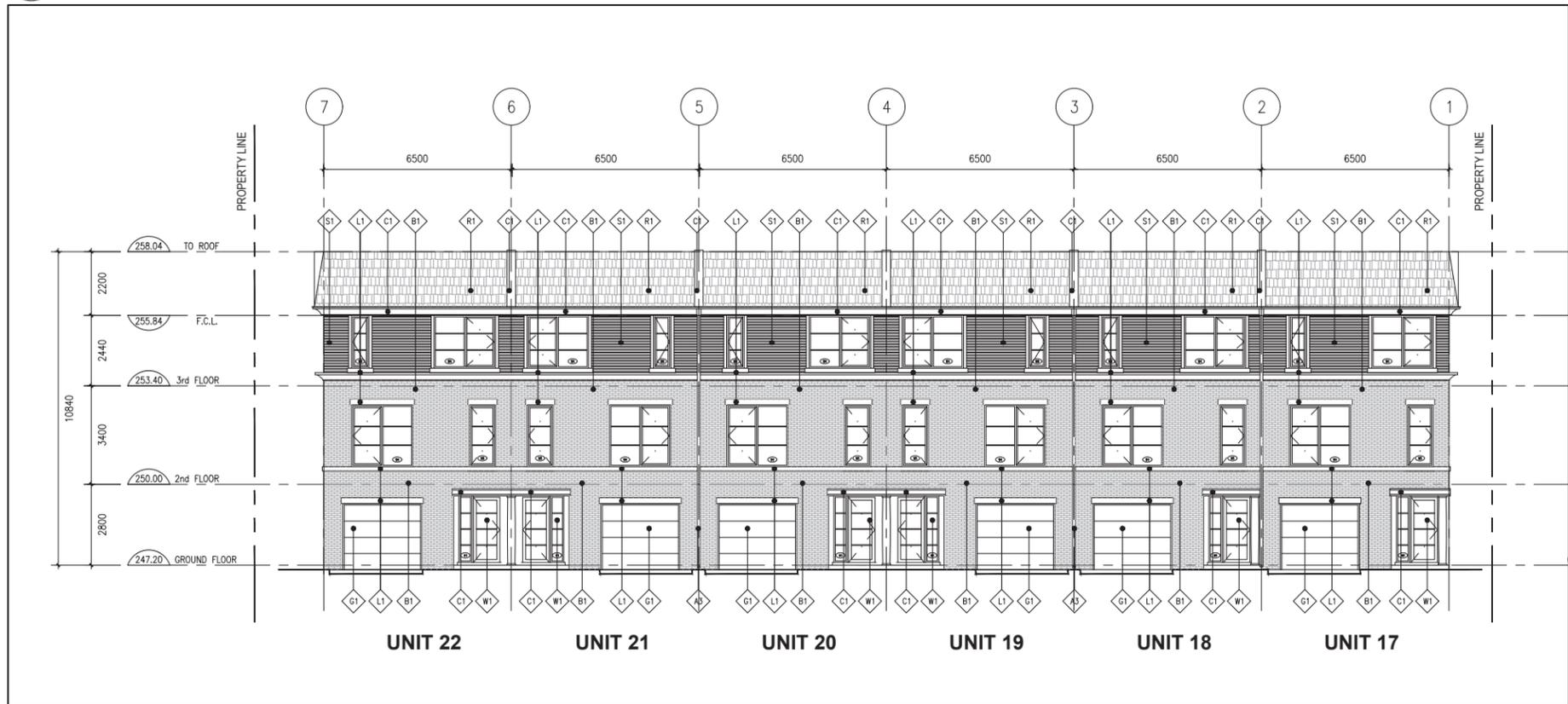
**2 Building 1 Front Elevation**  
A401 SCALE: 1:100



**1 Building 1 & 4 Side Elevations from Nunnville**  
A401 SCALE: 1:100



2 Buildings 2 & 3 Front Elevation  
A402 SCALE: 1:100



1 Building 4 Front Elevation  
A402 SCALE: 1:100

- ELEVATION FINISHES**
- ◇ B1 - BRICK FINISH (TYPE 1)  
LEGACY SERIES (COLOUR: CRIMSON)  
BY BRAMPTON BRICKS
  - ◇ S1 - HARDIEPLANK LAP SIDING (DARK GREY)  
BY JAMES HARDIE
  - ◇ L1 - LIMESTONE SILLS/HEADERS
  - ◇ A1 - ALUMINUM FLASHING (COLOUR: BLACK)
  - ◇ C1 - COMPOSITE METAL PANEL CANOPY  
(COLOUR:)
  - ◇ A2 - ALUMINUM CAPPING (COLOUR:BLACK)
  - ◇ A3 - ALUMINUM DOWNSPOUT ( COLOUR: BLACK)
  - ◇ W1 - ALUMINUM WINDOWS (COLOUR: BLACK)
  - ◇ G1 - BLACK ALUMINUM GARGE DOOR
  - ◇ BX1 - EXHAUST WALL BOXES  
(CONFIRM LOCATION W/ M&E DRWGS.)
  - ◇ R1 - ASPHALT ROOF SHINGLES (COLOUR: BLACK)

**REVISION RECORD**

2025-12-15 ISSUED FOR RE-ZONING

**ISSUE RECORD**



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PROPOSED RE-ZONING AT  
13286 NUNNVILLE ROAD  
BOLTON, ON

23004 As Noted OY  
PROJECT SCALE DRAWN REVIEWED

TYPICAL ELEVATIONS

**A402**

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**Appendix B:  
On-Street Parking Demand Study (Nunnville Road)**



Project: 13286 Nunnville Rd Bolton  
 Project No: 8285-01  
 Location: 13286 Nunnville Rd Bolton  
 Date: Friday November 14, 2025

**On Street Parking Summary**

Area	Nunnville Road								Total	Side Streets			
	Blue		Yellow		Green		Purple			Red		Orange	
Side	East	West	East	West	East	West	East	West	North	South	North	South	
Supply	8	8	15	18	10	10	20	20	109	0	4	11	10
16:00	2	0	3	0	0	0	0	0	5	0	0	1	2
17:00	1	0	2	0	0	0	0	0	3	0	0	2	4
18:00	1	0	2	0	0	0	0	0	3	0	0	3	2
19:00	1	0	2	0	0	0	0	0	3	0	0	2	2
20:00	1	0	2	0	0	0	0	0	3	0	0	2	1
21:00	1	0	1	0	0	0	0	0	2	0	0	2	1

Supply is Approximate

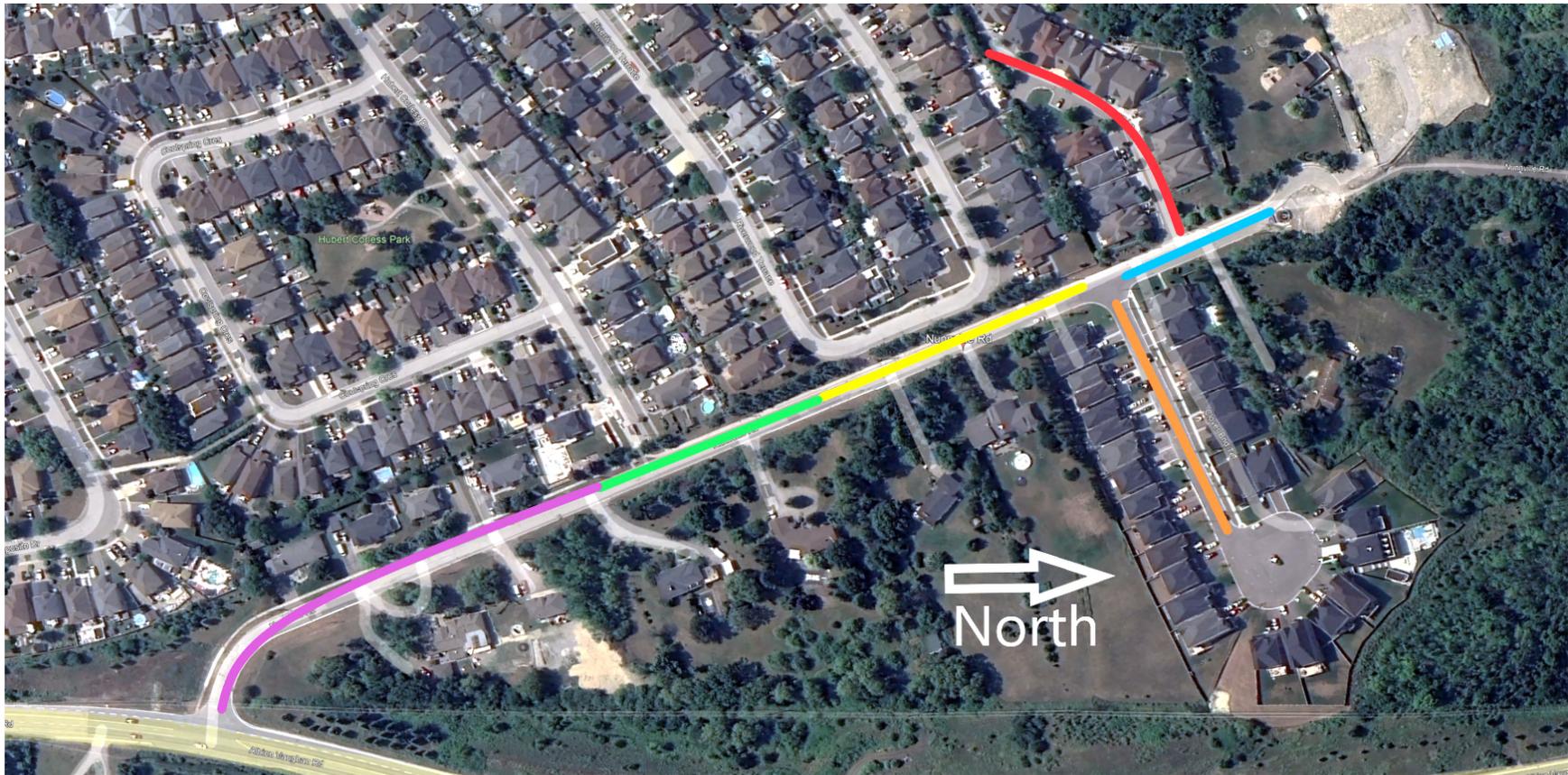
Project: 13286 Nunnville Rd Bolton  
 Project No: 8285-01  
 Location: 13286 Nunnville Rd Bolton  
 Date: Saturday November 15, 2025

**On Street Parking Summary**

Area	Nunnville Road								Total	Side Streets			
	Blue		Yellow		Green		Purple			Red		Orange	
Side	East	West	East	West	East	West	East	West	North	South	North	South	
Supply	8	8	15	18	10	10	20	20	109	0	4	11	10
14:00	0	0	0	0	1	0	0	0	1	0	1	4	1
15:00	0	0	2	0	0	0	0	0	2	0	0	4	2
16:00	2	0	2	0	0	0	0	0	4	0	0	4	3
17:00	0	0	0	0	0	0	0	0	0	0	0	5	3
18:00	0	0	0	0	0	0	0	0	0	0	1	6	1
19:00	1	0	0	0	0	0	0	0	1	0	3	6	0
20:00	1	0	0	0	0	0	0	0	1	0	2	3	0
21:00	1	0	0	0	0	0	0	0	1	0	2	1	0

Supply is Approximate

Project: 13286 Nunnville Rd Bolton  
Project No 8285-01  
Location: 13286 Nunnville Rd Bolton  
Date: Friday November 14, 2025



## **Appendix C: Vehicle Manoeuvring Diagrams (VMD's)**





# INBOUND

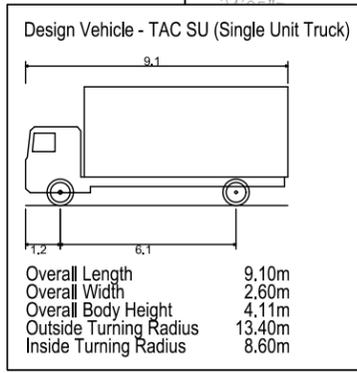


# OUTBOUND



NUNNVILLE ROAD

NUNNVILLE ROAD



## 13286 NUNNVILLE ROAD VEHICLE MANOEUVRING DIGRAM TAC SINGLE UNIT (SU) TRUCK



Project: 13286 NUNNVILLE  
Project No. 8251-01  
Date: DECEMBER 3, 2025  
Revised: -

Scale 1:500

Drawing No. **VMD-02**

Date Plotted: December 3, 2025 File Name: J:\8285-01\BA\Site Plan Review\R00-DEC3-25\BA-13286 Nunnville-SPR-DEC3-25-R00-8285-01.dwg

## **Appendix D: Sight Distance Review**





**Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn From Stop**

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	150	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

Furthest Visible Extent of Sightline Observed in Field Measurement ±190 metres of Available Sight Distance

190.00

ALBION VAUGHAN ROAD

NUNNVILLE ROAD

Driver's Eye Location  
5.0m Setback from  
Edge of Travelled Way

5.00



1:1,000  
Scale

Date Plotted: October 8, 2025  
Filename: J:\8285-01\BA\Sight Distance\01\_2025-10-08\BA - Sight Distance Assessment - 13286 Nunnville Road - R01 - 8285-01 - 2025-10-08.dwg

	<b>13286 Nunnville Road</b> Sight Distance Assessment Available Sight Distance Looking North	Project: 13286 NUNNVILLE
		Project No. 8285-01
		Date: October 08, 2025
		Revised: October 8, 2025
		Drawing No. <b>SD-01</b>

## **Appendix E: Turning Movement Counts**







## **Appendix F: Background Development Trip Generation**



ITE Weekday Vehicle Trips							Notes
ITE	AM			PM			
	IN	OUT	2-Way	IN	OUT	2-Way	
<b>LUC 215, Single-Family Attached Housing Trip Rate</b>	15	45	60	42	30	72	Average Trip Rate and Trips
Rounded to 5 Trips	15	45	60	40	30	70	
Trip Rate (trips / residential unit)	<b>0.12</b>	<b>0.36</b>	<b>0.48</b>	<b>0.34</b>	<b>0.23</b>	<b>0.57</b>	
<b>LUC 210, Single-Family Attached Housing Trip Rate</b>	1	1	2	2	1	3	Average Trip Rate and Trips
Rounded to 5 Trips	0	0	0	5	0	5	
Trip Rate (trips / residential unit)	<b>0.18</b>	<b>0.52</b>	<b>0.70</b>	<b>0.59</b>	<b>0.35</b>	<b>0.94</b>	
<b>Total</b>	<b>15</b>	<b>45</b>	<b>60</b>	<b>45</b>	<b>30</b>	<b>75</b>	

Total condo townhouses: 126  
Total single-family dwellings: 3

## **Appendix G: Trip Distribution TTS Queries**



**Residential Trip Distribution - Weekday Morning Peak Period**

Fri Nov 07 2025 15:31:49 GMT-0500 (Eastern Standard Time) - Run Time: 2969ms

Fri Nov 07 2025 15:35:32 GMT-0500 (Eastern Standard Time) - Run Time: 3164ms

Fri Nov 07 2025 16:52:38 GMT-0500 (Eastern Standard Time) - Run Time: 3104ms

Cross Tabulation Query Form - Trip - 2022

Cross Tabulation Query Form - Trip - 2022

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of destination - pd\_dest  
Column: 2022 TTS zone of origin - tts22\_orig

Row: 2022 TTS zone of destination - tts22\_dest  
Column: 2022 TTS zone of origin - tts22\_orig

Row: 2022 TTS zone of destination - tts22\_dest  
Column: 2022 TTS zone of origin - tts22\_orig

Filters:

Start time of trip - start\_time In 600-859  
and  
Primary travel mode of trip - mode\_prime In D, M, P, T, U,  
and  
2022 Trip Purpose of Origin - purp\_orig2022 In 80,  
and  
2022 TTS zone of origin - tts22\_orig In 4063,

Filters:

Start time of trip - start\_time In 600-859  
and  
Primary travel mode of trip - mode\_prime In D M P T U  
and  
2022 Trip Purpose of Origin - purp\_orig2022 In 80  
and  
2022 TTS zone of origin - tts22\_orig In 4063  
and  
Planning district of destination - pd\_dest In 34

Filters:

Start time of trip - start\_time In 600-859  
and  
Primary travel mode of trip - mode\_prime In D M P T U  
and  
2022 Trip Purpose of Origin - purp\_orig2022 In 80  
and  
2022 TTS zone of origin - tts22\_orig In 4063  
and  
Planning district of destination - pd\_dest In 33

Trip 2022

Table:

	,4063
PD 1 of Toronto	36
PD 3 of Toronto	56
PD 4 of Toronto	33
PD 5 of Toronto	10
PD 7 of Toronto	18
PD 8 of Toronto	61
PD 9 of Toronto	61
PD 10 of Toronto	88
PD 11 of Toronto	43
Aurora	50
Richmond Hill	54
King	73
Vaughan	276
Caledon	1357
Brampton	239
Mississauga	472
Milton	34
Oakville	35
Burlington	35
Hatiburton	10
Mono	5
External	126

Trip 2022

Table:

	4063
	4066 64
	4009 18
	4010 18
	4032 27
	4037 55
	4041 102
	4042 51
	4061 20
	4062 114
	4063 554
	4064 123
	4072 203
	4073 11

Trip 2022

Table:

	4063
	3020 30
	3029 27
	3039 11
	3042 34
	3062 45
	3063 50
	3082 14
	3106 25
	3166 39

**Residential Trip Distribution - Weekday Afternoon Peak Period**

Fri Nov 07 2025 15:37:00 GMT-0500 (Eastern Standard Time) - Run Time: 3164ms

Fri Nov 07 2025 15:39:41 GMT-0500 (Eastern Standard Time) - Run Time: 3149ms

Fri Nov 07 2025 16:49:00 GMT-0500 (Eastern Standard Time) - Run Time: 3630ms

Cross Tabulation Query Form - Trip - 2022

Cross Tabulation Query Form - Trip - 2022

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of origin - pd\_orig  
Column: 2022 TTS zone of destination - tts22\_dest

Row: 2022 TTS zone of origin - tts22\_orig  
Column: 2022 TTS zone of destination - tts22\_dest

Row: 2022 TTS zone of origin - tts22\_orig  
Column: 2022 TTS zone of destination - tts22\_dest

Filters:

Start time of trip - start\_time In 1500-1759  
and  
Primary travel mode of trip - mode\_prime In D M P T U  
and  
2022 Trip purpose of destination - purp\_dest2022 In 80  
and  
2022 TTS zone of destination - tts22\_dest In 4063

Filters:

Start time of trip - start\_time In 1500-1759  
and  
Primary travel mode of trip - mode\_prime In D M P T U  
and  
2022 Trip purpose of destination - purp\_dest2022 In 80  
and  
2022 TTS zone of destination - tts22\_dest In 4063  
and  
Planning district of origin - pd\_orig In 34

Filters:

Start time of trip - start\_time In 1500-1759  
and  
Primary travel mode of trip - mode\_prime In D M P T U  
and  
2022 Trip purpose of destination - purp\_dest2022 In 80  
and  
2022 TTS zone of destination - tts22\_dest In 4063  
and  
Planning district of origin - pd\_orig In 33

Trip 2022

Table:

	4063
PD 1 of Toronto	45
PD 3 of Toronto	88
PD 5 of Toronto	18
PD 8 of Toronto	112
PD 9 of Toronto	119
PD 10 of Toronto	151
PD 11 of Toronto	43
Aurora	40
Richmond Hill	54
King	59
Vaughan	457
Caledon	1048
Brampton	265
Mississauga	415
Milton	34
Burlington	68
Barrie	31
Mono	9

Trip 2022

Table:

	4063	4063
	4006	18
	4009	18
	4010	18
	4032	27
	4061	131
	4062	137
	4063	443
	4064	92
	4072	166

Trip 2022

Table:

	4063	4063
	3004	18
	3035	20
	3042	34
	3055	10
	3062	45
	3063	50
	3082	14
	3084	11
	3091	39
	3095	73
	3106	25
	3112	19
	3150	48
	3166	39
	3170	10

**Residential Site Trip Distribution (AM Peak Hour)**

**Outbound**

Traffic Volume Allocation						Route Split		
Zone	Trips	%	North	South	Total	North	South	Total
			Albion Vaughan Road	Albion Vaughan Road		Albion Vaughan Road	Albion Vaughan Road	
			PD 1 of Toronto	36		1%		
PD 3 of Toronto	56	2%	20%	80%	100%	0%	1%	2%
PD 4 of Toronto	33	1%	20%	80%	100%	0%	1%	1%
PD 5 of Toronto	10	0%		100%	100%	0%	0%	0%
PD 7 of Toronto	18	1%		100%	100%	0%	1%	1%
PD 8 of Toronto	61	2%		100%	100%	0%	2%	2%
PD 9 of Toronto	61	2%		100%	100%	0%	2%	2%
PD 10 of Toronto	88	3%		100%	100%	0%	3%	3%
PD 11 of Toronto	43	1%		100%	100%	0%	1%	1%
Aurora	50	2%	100%		100%	2%	0%	2%
Richmond Hill	54	2%	70%	30%	100%	1%	1%	2%
King	73	2%	100%		100%	2%	0%	2%
Vaughan								
	3020	30		100%	100%	0%	1%	1%
	3029	27		100%	100%	0%	1%	1%
	3039	11		100%	100%	0%	0%	0%
	3042	34		100%	100%	0%	1%	1%
	3062	45		100%	100%	0%	1%	1%
	3063	50		100%	100%	0%	2%	2%
	3082	14		100%	100%	0%	0%	0%
	3106	25	90%	10%	100%	1%	0%	1%
	3166	39		100%	100%	0%	1%	1%
Caledon								
	4006	64	50%	50%	100%	1%	1%	2%
	4009	18	50%	50%	100%	0%	0%	1%
	4010	18	50%	50%	100%	0%	0%	1%
	4032	27	50%	50%	100%	0%	0%	1%
	4037	55	50%	50%	100%	1%	1%	2%
	4041	102	100%		100%	3%	0%	3%
	4042	51	100%		100%	2%	0%	2%
	4061	20		100%	100%	0%	1%	1%
	4062	114	50%	50%	100%	2%	2%	4%
	4063	554	30%	70%	100%	5%	13%	18%
	4064	123		100%	100%	0%	4%	4%
	4072	203	100%		100%	7%	0%	7%
	4073	11	100%		100%	0%	0%	0%
Brampton		239		100%	100%	0%	8%	8%
Mississauga		472		100%	100%	0%	15%	15%
Milton		34		100%	100%	0%	1%	1%
Oakville		35		100%	100%	0%	1%	1%
Burlington		35		100%	100%	0%	1%	1%
Haliburton		10	100%		100%	0%	0%	0%
Mono		5	100%		100%	0%	0%	0%
<b>Total Trips</b>	<b>3048</b>	<b>100%</b>				<b>29.4%</b>	<b>70.6%</b>	<b>100%</b>

Rounded	29%	71%	100%
<b>Assumed Split</b>	<b>29%</b>	<b>71%</b>	<b>100%</b>

**Residential Site Trip Distribution (PM Peak Hour)**

**Inbound**

Traffic Volume Allocation					Route Split			
Zone	Trips	%	North	South	Total	North	South	Total
			Albion Vaughan Road	Albion Vaughan Road		Albion Vaughan Road	Albion Vaughan Road	
PD 1 of Toronto	45	1%		100%	100%	0%	1%	1%
PD 3 of Toronto	88	3%	20%	80%	100%	1%	2%	3%
PD 5 of Toronto	18	1%		100%	100%	0%	1%	1%
PD 8 of Toronto	112	4%		100%	100%	0%	4%	4%
PD 9 of Toronto	119	4%		100%	100%	0%	4%	4%
PD 10 of Toronto	151	5%		100%	100%	0%	5%	5%
PD 11 of Toronto	43	1%		100%	100%	0%	1%	1%
Aurora	40	1%	100%		100%	1%	0%	1%
Richmond Hill	54	2%	70%	30%	100%	1%	1%	2%
King	59	2%	100%		100%	2%	0%	2%
Vaughan								
3004	18	1%		100%	100%	0%	1%	1%
3035	20	1%		100%	100%	0%	1%	1%
3042	34	1%		100%	100%	0%	1%	1%
3055	10	0%	80%	20%	100%	0%	0%	0%
3062	45	1%		100%	100%	0%	1%	1%
3063	50	2%		100%	100%	0%	2%	2%
3082	14	0%		100%	100%	0%	0%	0%
3084	11	0%		100%	100%	0%	0%	0%
3091	39	1%		100%	100%	0%	1%	1%
3095	73	2%		100%	100%	0%	2%	2%
3106	25	1%	90%	10%	100%	1%	0%	1%
3112	19	1%		100%	100%	0%	1%	1%
3150	48	2%	20%	80%	100%	0%	1%	2%
3166	39	1%		100%	100%	0%	1%	1%
3170	10	0%	80%	20%	100%	0%	0%	0%
Caledon								
4006	18	1%	50%	50%	100%	0%	0%	1%
4009	18	1%	50%	50%	100%	0%	0%	1%
4010	18	1%	50%	50%	100%	0%	0%	1%
4032	27	1%	50%	50%	100%	0%	0%	1%
4061	131	4%		100%	100%	0%	4%	4%
4062	137	4%	50%	50%	100%	2%	2%	4%
4063	443	14%	30%	70%	100%	4%	10%	14%
4064	92	3%		100%	100%	0%	3%	3%
4072	166	5%	100%		100%	5%	0%	5%
Brampton	265	9%		100%	100%	0%	9%	9%
Mississauga	415	14%		100%	100%	0%	14%	14%
Milton	34	1%		100%	100%	0%	1%	1%
Burlington	68	2%		100%	100%	0%	2%	2%
Barrie	31	1%	100%		100%	1%	0%	1%
Mono	9	0%	100%		100%	0%	0%	0%
<b>Total Trips</b>	<b>3056</b>	<b>100%</b>				<b>21.3%</b>	<b>78.7%</b>	<b>100%</b>

Rounded	21%	79%	100%
<b>Assumed Split</b>	<b>21%</b>	<b>79%</b>	<b>100%</b>

## **Appendix H: Synchro Worksheets**



HCM Unsignalized Intersection Capacity Analysis  
1: Albion Vaughan Road & Nunnville Road

Existing PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	10	15	880	455	5
Future Volume (Veh/h)	5	10	15	880	455	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	10	15	880	455	5
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	1365	455	460			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1365	455	460			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	99			
cM capacity (veh/h)	162	609	1112			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	15	15	880	455	5	
Volume Left	5	15	0	0	0	
Volume Right	10	0	0	0	5	
eSH	317	1112	1700	1700	1700	
Volume to Capacity	0.05	0.01	0.52	0.27	0.00	
Queue Length 95th (m)	1.2	0.3	0.0	0.0	0.0	
Control Delay (s)	16.9	8.3	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	16.9	0.1		0.0		
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay			0.3			
Intersection Capacity Utilization			56.3%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
1: Albion Vaughan Road & Nunnville Road

Existing AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	15	5	365	910	5
Future Volume (Veh/h)	10	15	5	365	910	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	15	5	365	910	5
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	1285	910	915			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1285	910	915			
tC, single (s)	6.5	6.3	5.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	3.1			
p0 queue free %	94	95	99			
cM capacity (veh/h)	170	316	459			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>	<b>SB 2</b>	
Volume Total	25	5	365	910	5	
Volume Left	10	5	0	0	0	
Volume Right	15	0	0	0	5	
eSH	236	459	1700	1700	1700	
Volume to Capacity	0.11	0.01	0.21	0.54	0.00	
Queue Length 95th (m)	2.8	0.3	0.0	0.0	0.0	
Control Delay (s)	22.1	12.9	0.0	0.0	0.0	
Lane LOS	C	B				
Approach Delay (s)	22.1	0.2		0.0		
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay			0.5			
Intersection Capacity Utilization			57.9%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
1: Albion Vaughan Road & Nunnville Road

Future Background PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↘	↙	↑	↑	↗
Traffic Volume (veh/h)	10	25	40	1015	530	10
Future Volume (Veh/h)	10	25	40	1015	530	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	25	40	1015	530	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	1625	530	540			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1625	530	540			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	95	96			
cM capacity (veh/h)	109	553	1039			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	35	40	1015	530	10	
Volume Left	10	40	0	0	0	
Volume Right	25	0	0	0	10	
eSH	256	1039	1700	1700	1700	
Volume to Capacity	0.14	0.04	0.60	0.31	0.01	
Queue Length 95th (m)	3.7	1.0	0.0	0.0	0.0	
Control Delay (s)	21.3	8.6	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	21.3	0.3		0.0		
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			63.4%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
1: Albion Vaughan Road & Nunnville Road

Future Background AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↘	↙	↑	↑	↗
Traffic Volume (veh/h)	15	35	15	425	1055	10
Future Volume (Veh/h)	15	35	15	425	1055	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	35	15	425	1055	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	1510	1055	1065			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1510	1055	1065			
tC, single (s)	6.5	6.3	5.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	3.1			
p0 queue free %	88	87	96			
cM capacity (veh/h)	120	260	392			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	50	15	425	1055	10	
Volume Left	15	15	0	0	0	
Volume Right	35	0	0	0	10	
eSH	193	392	1700	1700	1700	
Volume to Capacity	0.26	0.04	0.25	0.62	0.01	
Queue Length 95th (m)	8.0	1.0	0.0	0.0	0.0	
Control Delay (s)	30.1	14.5	0.0	0.0	0.0	
Lane LOS	D	B				
Approach Delay (s)	30.1	0.5		0.0		
Approach LOS	D					
<b>Intersection Summary</b>						
Average Delay			1.1			
Intersection Capacity Utilization			65.5%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
1: Albion Vaughan Road & Nunnville Road

Future Total PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	30	50	1015	530	10
Future Volume (Veh/h)	10	30	50	1015	530	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	30	50	1015	530	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	1645	530	540			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1645	530	540			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	95	95			
cM capacity (veh/h)	105	553	1039			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	40	50	1015	530	10	
Volume Left	10	50	0	0	0	
Volume Right	30	0	0	0	10	
eSH	268	1039	1700	1700	1700	
Volume to Capacity	0.15	0.05	0.60	0.31	0.01	
Queue Length 95th (m)	4.1	1.2	0.0	0.0	0.0	
Control Delay (s)	20.8	8.6	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	20.8	0.4		0.0		
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay			0.8			
Intersection Capacity Utilization			63.4%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
1: Albion Vaughan Road & Nunnville Road

Future Total AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	40	15	425	1055	10
Future Volume (Veh/h)	15	40	15	425	1055	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	40	15	425	1055	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	1510	1055	1065			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1510	1055	1065			
tC, single (s)	6.5	6.3	5.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	3.1			
p0 queue free %	88	85	96			
cM capacity (veh/h)	120	260	392			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	55	15	425	1055	10	
Volume Left	15	15	0	0	0	
Volume Right	40	0	0	0	10	
eSH	197	392	1700	1700	1700	
Volume to Capacity	0.28	0.04	0.25	0.62	0.01	
Queue Length 95th (m)	8.7	1.0	0.0	0.0	0.0	
Control Delay (s)	30.1	14.5	0.0	0.0	0.0	
Lane LOS	D	B				
Approach Delay (s)	30.1	0.5		0.0		
Approach LOS	D					
<b>Intersection Summary</b>						
Average Delay			1.2			
Intersection Capacity Utilization			65.5%	ICU Level of Service	C	
Analysis Period (min)			15			