786 William Street
Town of Midland

Traffic Brief for
786 William Street Inc.

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John Northcote, P.Eng.
Professional License #: 100124071

ENGINEERING

JD Northcote Engineering Inc.
86 Cumberland Street
Barrie, ON
705.725.4035
www.JDEngineering.ca

Legal Notification

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1 Introduction

1.1 Background

786 William Street Inc. [The Developer] is proposing a residential development on the site municipally known as 786 William Street, located on the southwest corner of the Birchwood Drive / William Street intersection in the Town of Midland [Town]. The proposed development consists of two apartment buildings with a total of 80 apartment units.

The proposed development will essentially maintain the existing full-movement access driveway onto William Street, with a slight (three metre) realignment north [Primary Access]. This existing access, which has been in place for over 40 years, is paved with one-way stop control for westbound movements. The proposed development will also have a secondary access via the extension of the existing condominium road at the northwest corner of the subject site [Secondary Access], which provides access onto Galloway Boulevard through the property to the north.

The Developer has retained **JD Northcote Engineering Inc.** [JD Engineering] to prepare this traffic brief in support of the proposed development's site plan application and rezoning application to 80 apartment units from the currently approved 43 units.

1.2 Study Area

Figure 1 illustrates the location of the subject site and study area intersections, in relation to the surrounding area. The Site Plan by The Gonneau Building Group is provided in **Appendix A**.

The subject site is bound by residential lands to the north, undeveloped lands to the west, a self-storage facility to the south and William Street to the east.

Based on our review of the minutes from the pre-consultation meeting for this project, the following intersections are included in the traffic brief:

- William Street / Primary Access.

1.3 Study Scope and Objectives

The purpose of this study is to identify the potential impacts to traffic flow at the site access and on the surrounding roadway network. The study analysis includes the following tasks:

- Consult with the Town to address any traffic-related issues or concerns they have with the proposed development;
- Determine existing traffic volumes and circulation patterns;
- Estimate future traffic volumes if the proposed development was not constructed, including the impact of additional proposed developments in the area;
- Estimate the amount of traffic that would be generated by the proposed development and assign to the roadway network;
- Identify improvement options to address operational deficiencies;
- Review the available sight distance at the proposed site access driveway;
- Review and comment on the need for a secondary access to the north via the existing condominium road; and
- Document findings and recommendations in a final report.

Figure 1 – Proposed Site Location and Study Area

1.4 Horizon Year and Analysis Periods

Traffic scenarios for the buildout year (2018) was selected for analysis of traffic operations in the study area. The weekday morning [AM] and weekday afternoon [PM] peak hours have been selected as the analysis periods for this study.

2 Information Gathering

2.1 Street and Intersection Characteristics

William Street is a three-lane arterial road with a posted speed limit of 50km/h within the study area. William Street has a rural cross-section with a sidewalk on the east side of the road. William Street is under the jurisdiction of the Town.

The existing lane configuration within the study area is illustrated in **Figure 2**.

2.2 Local Transportation Infrastructure Improvements

Based on a review of the Town's Transportation Master Plan [Town TMP], the following infrastructure improvements are anticipated to be completed within the study area. The timeline of the improvement noted below is currently unknown.

- William Street (within study area)
    - Conversion of three-lane cross section to include one lane in each direction and a twin two-way left turn lane

2.3 Transit Access

The Midland South bus route provides bus service to various points of interest within the Town travelling along Birchwood Drive, Galloway Boulevard, and William Street, adjacent the study area.

This bus operates between 07:15 – 17:15 on weekdays and 09:15 – 16:15 on Saturdays with service every 60 minutes. There is no bus service on Sundays or Holidays. This bus route provides a "flag on" service where passengers are not required to be at a bus stop and can flag down the bus along its route to get on the bus.

2.4 Other Developments within the Study Area

Through our discussions with the Town planning staff, there are various developments located nearby the subject site that are currently moving through the development process, specifically:

- Tiffin By The Lake;
- Captain's Cove; and
- Pratt Homes.

Figure 3 shows the location of the above noted adjacent developments in relation to the subject site. A summary of the proposed developments' statistics are provided in **Table 1**.

Table 1 – Local Development Statistics

Development	Residential Units	Current Status
Tiffin By The Lake	47	Construction near completion
Captain's Cove	61	Construction near completion
Pratt Homes	202	In Process of Draft Plan Approval

Figure 2 – Existing (2018) Lane Configuration within study area

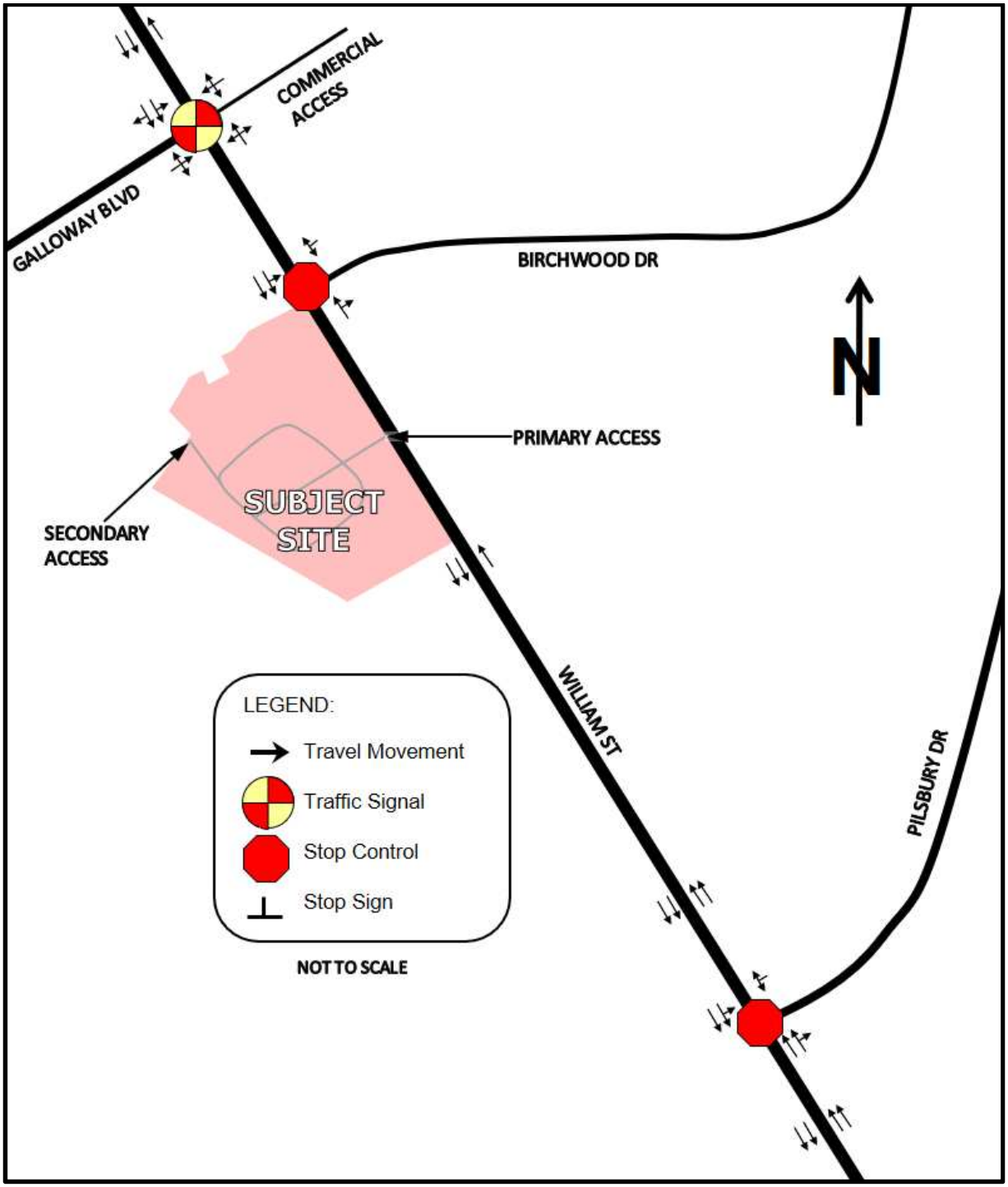
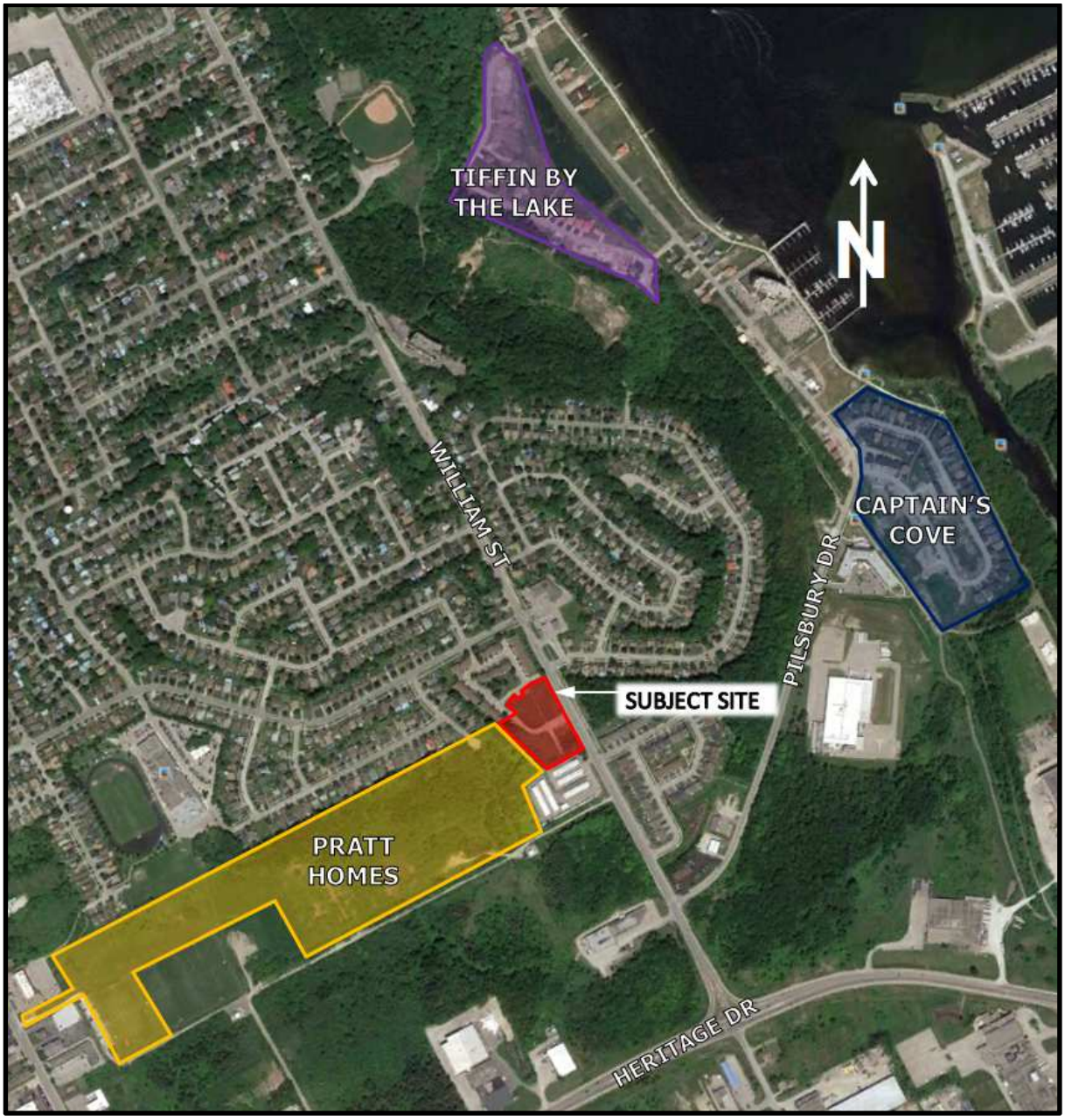


Figure 3 –Adjacent Developments



2.5 Traffic Counts

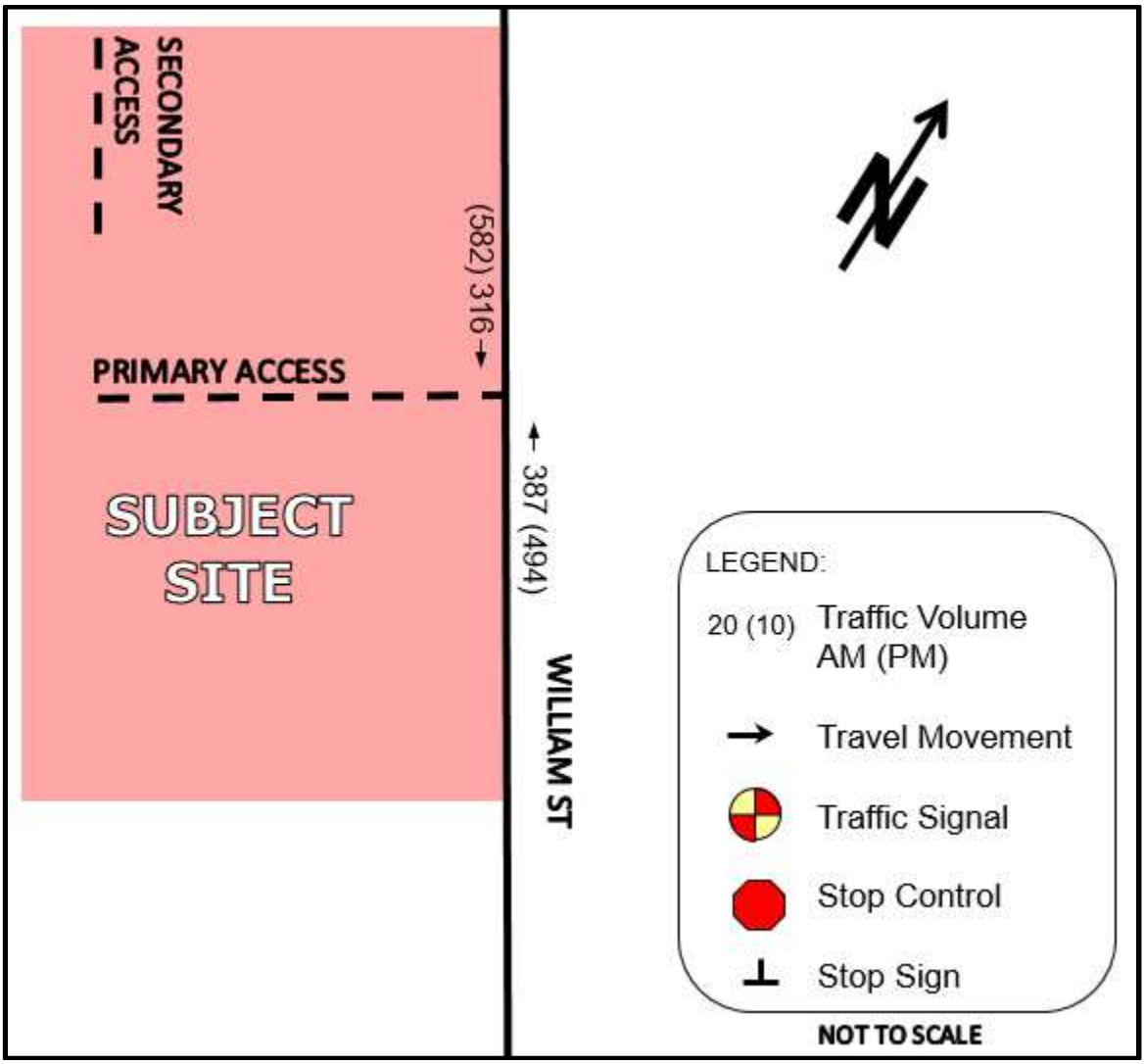
AM and PM peak hour traffic volumes from the 2010 year at the William Street / Pillsbury Drive intersection are provided in the Town TMP. We have assumed that the traffic volumes at the north leg of this intersection would be similar to the traffic volumes on William Street adjacent to the subject site. An excerpt from the Town TMP showing these traffic volumes is provided in **Appendix B**.

2.6 Horizon Year Traffic Volumes

A background traffic growth rate of 2%, consistent with the Town TMP, has been applied to the traffic count data to estimate the existing (2018) horizon year traffic volumes.

Figure 4 illustrates the existing (2018) horizon year AM and PM peak hour traffic volumes in the study area.

Figure 4 – Existing (2018) Traffic Volumes



3 Proposed Development Traffic Generation and Assignment

3.1 Traffic Generation

The traffic generation for these proposed development has been calculated based on the data provided in the Institute of Transportation Engineers [ITE] *Trip Generation Manual* (10th Edition) [ITE Trip Generation Manual]. The following ITE land use has been applied to estimate the traffic from the proposed development:

- ITE land use 221 (Multifamily Housing (Mid-Rise)) – General Urban / Suburban Setting

The estimated trip generation of the proposed development is illustrated below in **Table 2**. The AM and PM peak traffic generation for the proposed development does not exactly align with the AM and PM peak hour in the traffic counts; consequently, we have applied the peak hour of adjacent street traffic values provided in the ITE Trip Generation Manual.

Table 2 – Estimated Traffic Generation of Proposed Development

Land Use	Size	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Multifamily Housing (Mid-Rise) ITE Land Use: 221	80 units	7	21	28	22	14	36

No transportation modal split has been applied to the above-noted traffic generation calculation.

3.2 Traffic Assignment

For the purposes of this study, it has been assumed that all traffic generated by the proposed development will be new traffic and would not be in the study area if the development was not constructed.

The ITE data provides the anticipated percentage of new traffic entering and exiting during the peak hour. The distribution of traffic has been calculated based on the 2011 TTS data for traffic zone 8576, retrieved using the TTS IDRS (output attached as **Appendix C**). TTS data provides historical origin and destination work trip percentages for specific areas within the Town and the GTHA.

Traffic distribution for the trips generated by the subject site during the AM and PM peak hour is expected to generally follow commuter travel patterns. Our analysis is based on egress traffic during the AM peak hour. Logically, the distribution of ingress traffic will follow the inverse of the exiting traffic distribution. For each of the individual areas identified in the TTS data, we have selected the probable route of travel, assuming that people will select their route primarily based on travel time.

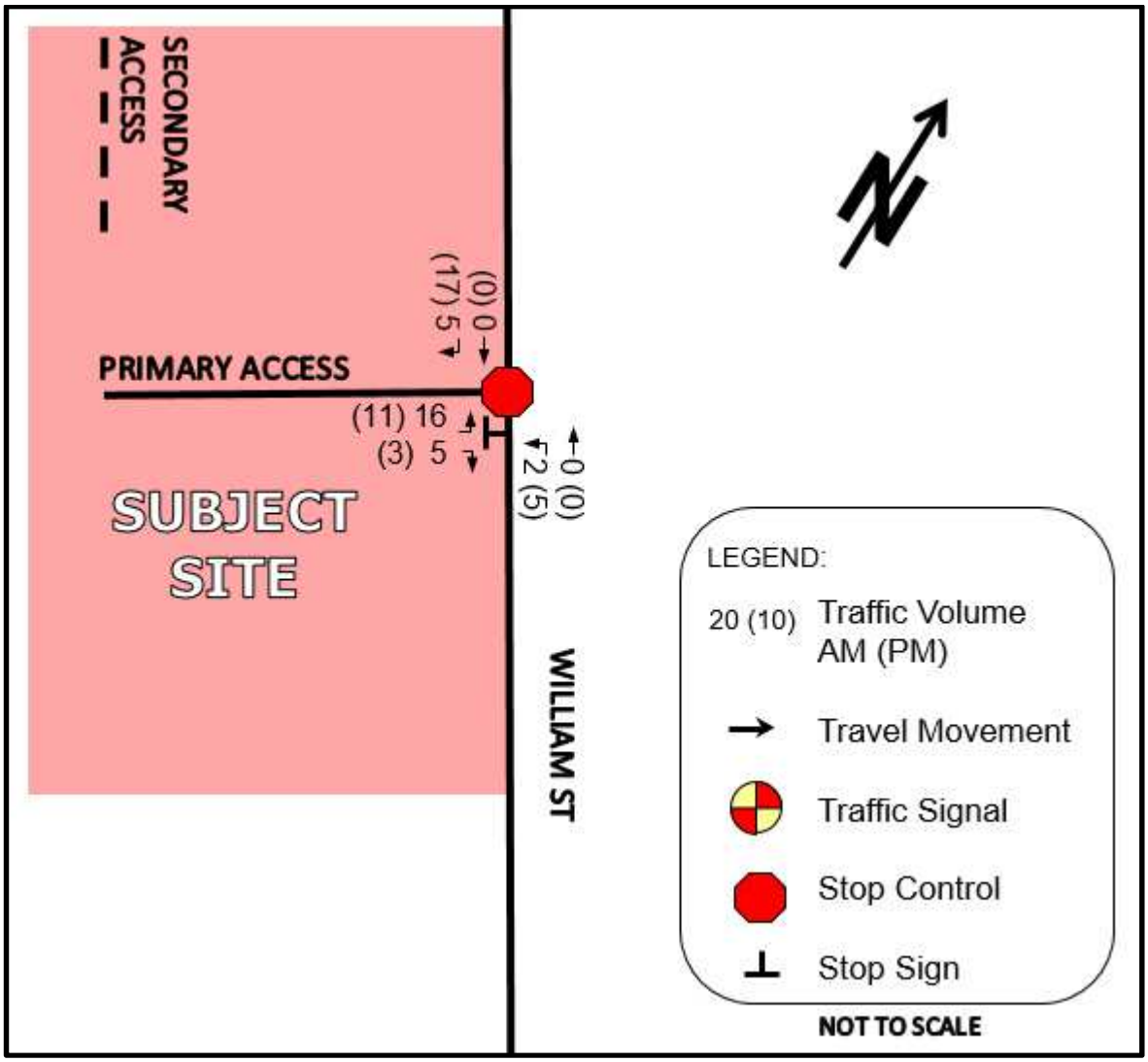
The distribution of trips is illustrated in **Table 3**, using the methodology outlined above. In order to be conservative, it has been assumed that all traffic generated by the proposed development will use the William Street / Primary Access intersection.

Table 3 – Proposed Development Traffic Distribution

Travel Direction (to / from)	Percentage of Total Traffic Generation
North via William Street	75%
South via William Street	25%
TOTAL	**100%**

Using the traffic distribution pattern noted above, the site traffic assignment for the proposed development was calculated for the AM and PM peak hour and is illustrated in **Figure 5**.

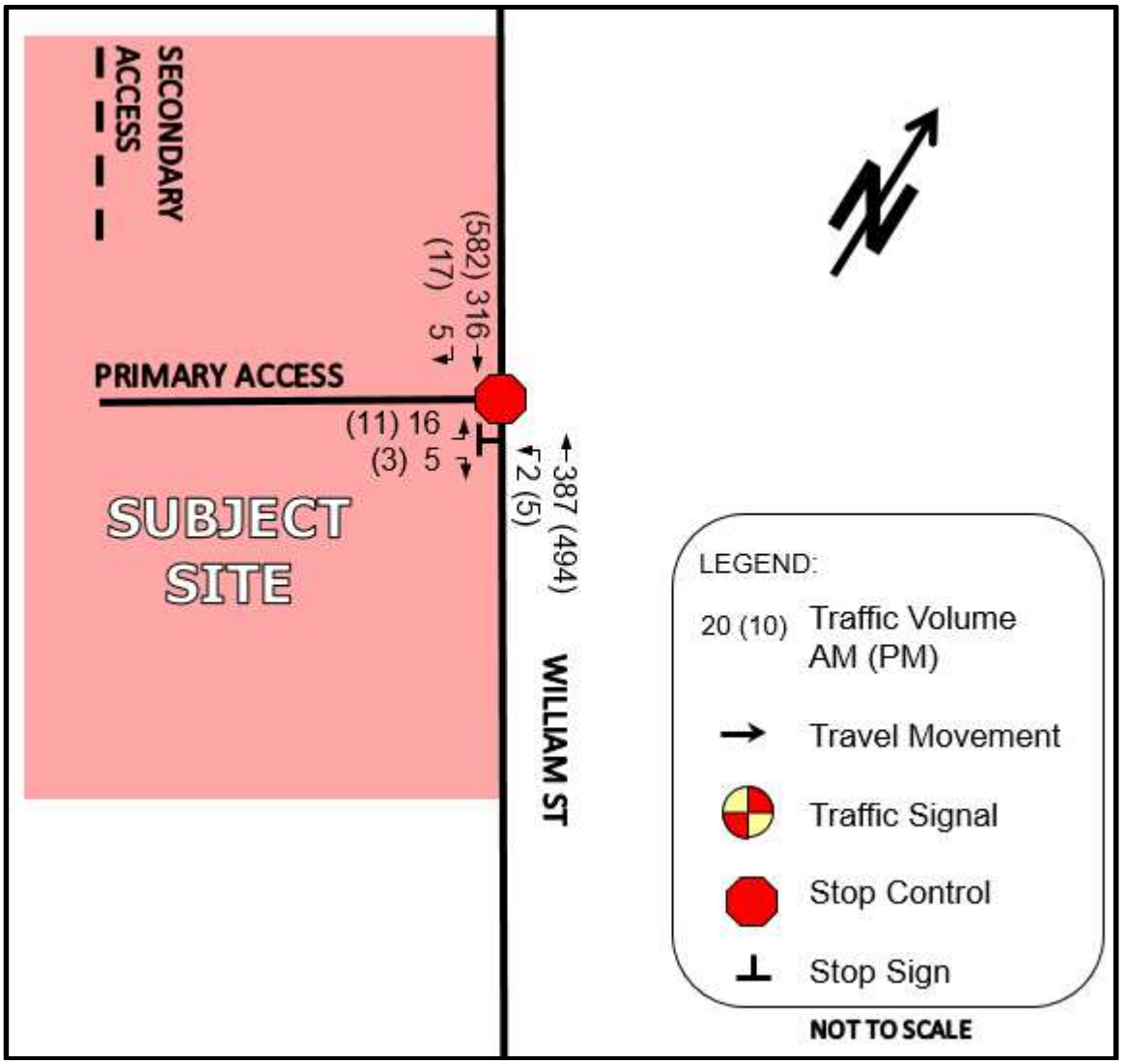
Figure 5 – Site Traffic Assignment



3.3 Total Horizon Year Traffic Volumes with the Proposed Development

For the total (2018) horizon year traffic volumes, the proposed development traffic was added to the existing (2018) traffic volumes. The resulting total (2018) horizon year traffic volume for the AM and PM peak hour are illustrated in **Figure 6**.

Figure 6 – Total (2018) Traffic Volumes



4 Intersection Operation with Proposed Development

4.1 Traffic Impact Analysis

The proposed development is estimated to generate a total of 28 AM and 36 PM peak hour trips. A preliminary analysis of the traffic operations within the study area was completed for the total (2018) traffic volumes with the existing road configuration and traffic control using the traffic analysis software, Synchro 9, which resulted in a good level of service for the William Street / Primary Access intersection. Based on the low number of trips generated by the subject site, no impact to William Street is anticipated.

Based on our review of the existing traffic volumes and existing development on William Street there is considerable excess capacity available. The minor additional traffic generated by the proposed development will not adversely affect the capacity or result in any traffic safety issues on William Street or at the intersection of William Street / Primary Access.

4.2 Site Access

The Primary Access will operate efficiently as a full-movement access, with one-way stop control for the eastbound movements. No lane improvements are recommended on William Street at the Primary Access. A single eastbound and westbound lane at the Primary Access driveway will provide the necessary capacity to service the proposed development.

The proposed spacing between the Primary Access and Birchwood Drive to the north and between the Primary Access and Southwinds Crescent/Public Storage Access to the south (measured edge of driveway to edge of road) is significantly greater than the suggested minimum driveway spacing requirements (15 metres for unsignalized intersections) as identified in the the Transportation Association of Canada *Design Guide for Canadian Roads* (2011) [TAC Guidelines] – Figure 8.8.2 (Suggested Minimum Corner Clearances to Accesses or Public Lanes at Major Intersections).

4.3 Sight Distance Review

A review of the available sight distance for the proposed Primary Access was completed as part of this analysis.

The sight distance north and south of the Primary Access is greater than the minimum stopping sight distance requirements as identified in the TAC Guidelines for a design speed of 60km/h (85 meters). It is noted that the William Street / Birchwood Drive intersection is approximately 75 metres north of the Primary Access; however, there are no concerns with the sight distance as vehicles turning onto William Street from Birchwood Drive will be turning at much slower speeds.

Consequently, there are no issues with the sight distance available for the proposed Primary Access.

4.4 Need for Secondary Access

As demonstrated by the good LOS from the preliminary analysis of the traffic operations within the study area for the total (2018) scenario, there is no need for the Secondary Access in order to accommodate the proposed development traffic volumes. However, it is noted that the Secondary Access will provide an alternative route for emergency vehicles, in the event that the primary access is blocked.

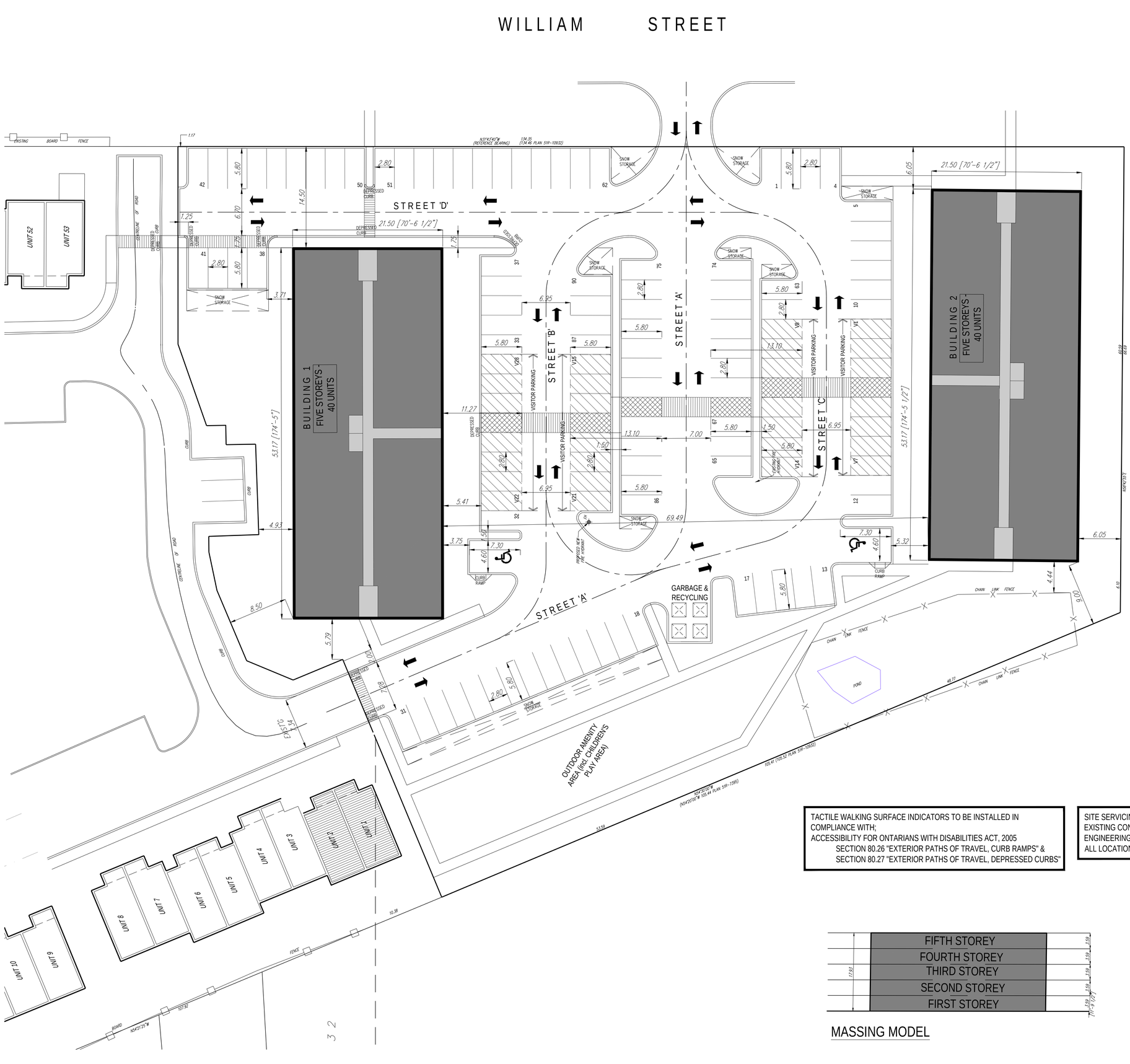
5 Summary

786 William Street Inc. retained **JD Engineering** to prepare this traffic brief in support of the proposed development in the Town of Midland. The proposed Site Plan is shown in **Appendix A**. This chapter summarizes the conclusions and recommendations from the study.

The proposed development is anticipated to consist of two apartment buildings with a total of 80 apartment units. The subject site has already been approved for 43 units.

1. The proposed development is expected to generate a total of 28 AM peak hour trip and 36 PM peak hour trips.
2. Traffic Volumes were obtained from the Town Transportation Master Plan for the north leg of the William Street / Pillsbury Drive intersection and used to estimate the traffic volumes on William Street adjacent to the subject site.
3. An estimate of the amount of traffic that would be generated by the Subject Site was prepared and assigned to the study area streets and intersections.
4. No infrastructure improvements are recommended on William Street as a result of the proposed development.
5. The additional traffic generated by the proposed development is expected to have a negligible impact on the existing traffic operations in the study area.
6. The proposed Primary Access will operate efficiently with one-way stop control for eastbound traffic. A single lane for ingress and egress movements will provide the necessary capacity to convey the traffic volume generated by the proposed development.
7. The sight distance available for the proposed Primary Access driveway meets the minimum stopping sight distance requirements.
8. In summary, the proposed development will not cause any operational issues and will not add significant delay or congestion to the local roadway network.

Appendix A –
Site Plan



MASSING MODEL

GENERAL COMMENTS:

–

ZONING BYLAW COMPLIANCE CHART:

ZONE DESIGNATION:		
PARENT BYLAW:	CURRENT: RESIDENTIAL TOWNHOUSE - RT PROPOSED: *RESIDENTIAL APARTMENT - RA**	
SITE SPECIFIC BYLAW:	CURRENT: RT-19 (786 WILLIAM ST) PROPOSED: *RA - D80.BH18* (TO BE CONFIRMED)*	
ZONE REQUIREMENTS:		
	REQUIRED	PROPOSED
MINIMUM LOT AREA	100 m2/DU	11217.71 m2 / 80 = 140m2/DU
MINIMUM LOT FRONTAGE	40.0 m	135.5 m
MAXIMUM LOT COVERAGE	40.0%	SEE SITE CALCULATIONS
MINIMUM YARD SETBACKS		BUILDING 1 / BUILDING 2
FRONT YARD	12.0 m	14.50 m / *6.05 m**
REAR YARD (GREATER OF)	1/2 BLDG HGT OR 7.5m	*5.79 m** / 9.00 m
INTERIOR SIDE YARD (GREATER OF)	1/2 BLDG HGT OR 6.0m	N/A / *6.05 m**
EXTERIOR SIDE YARD	6.0 m	*4.93 m** / N/A
MAXIMUM BUILDING HEIGHT	11.0 m	*18.0 m** / *18.0 m**
MINIMUM BUILDING SEPARATION	NOT LESS THAN HGT. OF TALLEST BLDG	69.49 m
PARKING REQUIREMENTS:		
	REQUIRED	PROPOSED
MINIMUM NUMBER OF PARKING SPACES	1.5 per DU	120 SPACES - 90 RESIDENT 30 VISITOR (SEE BELOW)
MINIMUM PARKING SPACE DIMENSIONS	2.80 m X 5.80 m	2.80 m X 5.80 m
MIN. DRIVE AISLE WIDTH TWO WAY TRAFFIC ONE WAY TRAFFIC	 6.70 m 3.60 m	 6.70 m N/A
VISITOR PARKING No. OF SPACES	25% OF REQUIRED No OF PARKING	80 UNITS X 1.5 = 120 *120 X 23.34% = 28 VISITOR**
BARRIER FREE PARKING No. OF SPACES	30 PUBLIC PARKING 1 PER TABLE 4.2	1 BARRIER FREE SPACE
BARRIER FREE PARKING MIN. SPACE DIMENSIONS	4.60 m X 7.30m	4.60 m X 7.30m

SITE CALCULATIONS:

LOT COVERAGE:		
LOT AREA	11217.71 m2 [120,746.43 s.f.]	
BUILDING AREA	2286.22 m2 [24,608.67 s.f.]	
COVERAGE PERCENTAGE		20.38 %
SITE FEATURE AREA TOTALS:		
ROADWAYS (incl. curbs)	2491.48 m2 [26,818.07 s.f.]	
DRIVEWAYS	N/A N/A	
SIDEWALKS	475.50 m2 [5,118.24 s.f.]	
PARKING SPACES (incl. curbs)	2150.84 m2 [23,151.45 s.f.]	
STORMWATER POND	440.45 m2 [4,740.98 s.f.]	
LANDSCAPED AREA (without sidewalks) LANDSCAPE PERCENTAGE	3373.22 m2 [36,309.04 s.f.]	 30.07 %
LANDSCAPED AREA (with sidewalks) LANDSCAPE PERCENTAGE	3848.72 m2 [41,427.28 s.f.]	 34.31 %
SNOW STORAGE	218.35 m2 [2,350.30 s.f.]	4.72 % OF ROADWAY + PARKING

NOTE: ITEMS IDENTIFIED WITH *OBLIQUE TEXT** REPRESENT DEFICIENCIES AS RELATED TO THE TOWN OF MIDLAND ZONING BYLAW 2004-90

TACTILE WALKING SURFACE INDICATORS TO BE INSTALLED IN COMPLIANCE WITH;
ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT, 2005
SECTION 80.26 "EXTERIOR PATHS OF TRAVEL, CURB RAMPS" &
SECTION 80.27 "EXTERIOR PATHS OF TRAVEL, DEPRESSED CURBS"

SITE SERVICING INFORMATION SHOWN ON THIS PLAN REPRESENTS EXISTING CONDITIONS AS LOCATED VIA TOWN OF MIDLAND, ENGINEERING DEPARTMENT MAP OF 786 WILLIAM ST.
ALL LOCATIONS AND SPOT ELEVATIONS TO BE CONFIRMED.

786 WILLIAM ST, MIDLAND ON
PROPOSED RESIDENTIAL DEVELOPMENT
OPTION C (80 UNITS)

seal:

north:

model: 786 WILLIAM ST
drawing: OPTION C
scale: 1:250
page no. 1 OF 1

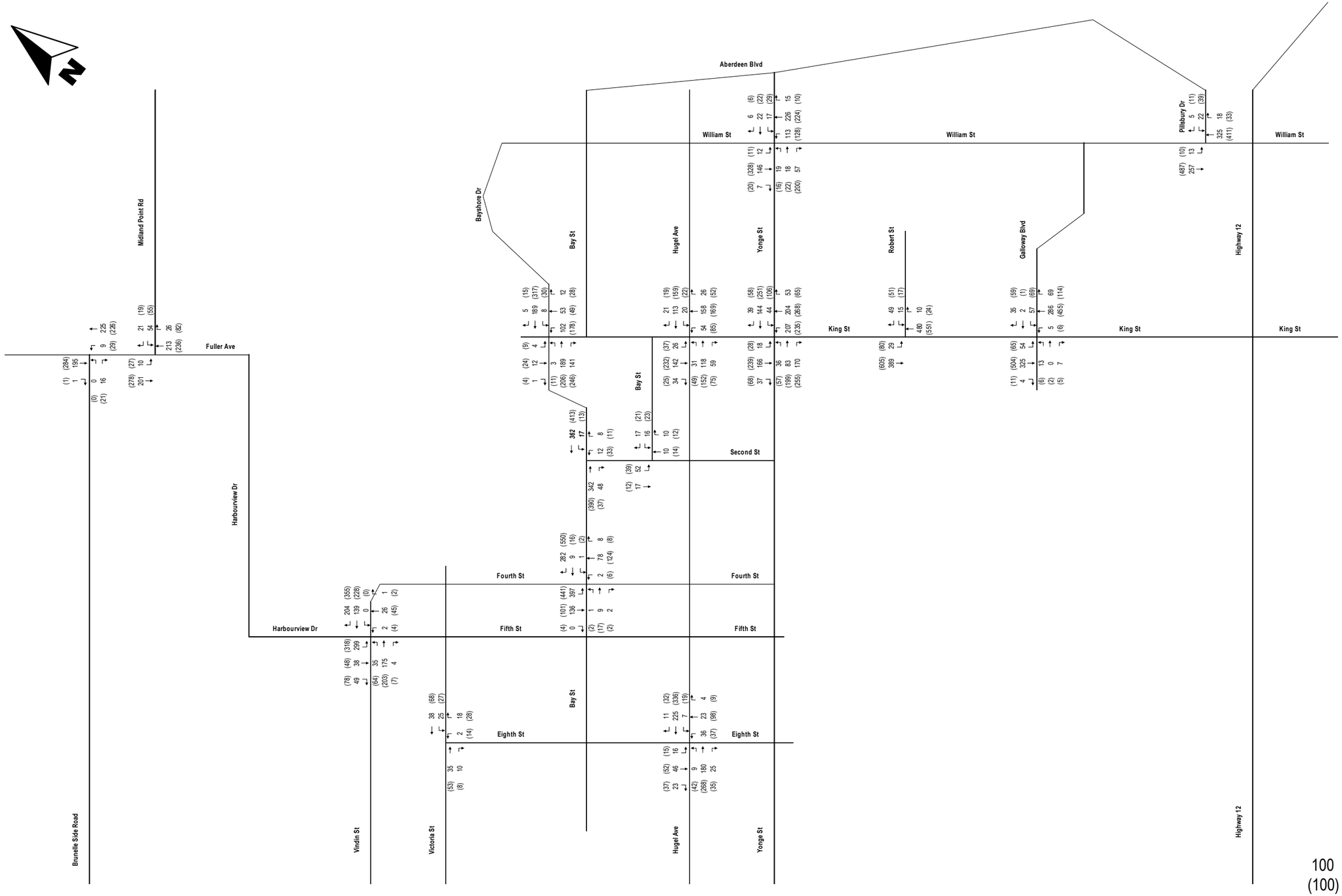
comments:

1	REVISED PER CLIENT COMMENT	02/04/18 SM

client: MIDLAND PROJECT
project: PROPOSED DEVELOPMENT
MIDLAND, ONTARIO
date: OCT 2017
chk. by: SM
drawn by: SM
job no. ---

THE GONNEAU BUILDING GROUP
Imagine It, Design It, Build It, Live It!

Appendix B –
Traffic Count Data



C.C.Tatham & Associates Ltd.
Consulting Engineers

Town of Midland Transportation Master Plan

2010 Traffic Volumes

Figure

6

Appendix C –
Transportation Tomorrow Survey – Excerpt

datamanagementgroup

Hello John Northcote

Database Index | DMG | TTS | CCP | Contact | Logout

TTS Cross Tabulation

Cross Tabulation Query Form - Trip - 2011

Filter Variables

2006 GTA zone of desti... × | 2006 GTA zone of hous... × | (Optional) Table Attribute

Group Attributes

Row Grouping | Column Grouping | Table Grouping

Grouping file: Choose File No file chosen

Filter Selection +

☑	Trip purpose of destination	In	W
	And		
☑	2006 GTA zone of household	In	8576
	And		
☑	Start time of trip	In	700-900

Add Delete

Output

◉ Comma-delimited table ○ Column format Expansion Factor On Click to Select Load Load

Execute Query Select All Save As

```
Thu Feb 08 2018 11:42:39 GMT-0500 (Eastern Standard Time) - Run Time: 3205ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of household - gta06_hhld


Filters:
(Trip purpose of destination - purp_dest In W
and
2006 GTA zone of household - gta06_hhld In 8576
and
Start time of trip - start_time In 700-900)

Trip 2011
Table:

,8576
8521,32
8527,20
8576,103
8577,152
8578,83
8579,24
8603,20
8665,40
```