

SEPTEMBER 22, 2021

SENT BY E-MAIL:

JUSTIN.MACDONALD@BARRIE.CA

City of Barrie
70 Collier Street,
Barrie, Ontario L4M 0A1

Attention: Justin MacDonald
Senior Transportation Operations Tech

RE: TRAFFIC IMPACT BRIEF
90 MAPLEVIEW DRIVE
CITY OF BARRIE, COUNTY OF SIMCOE

Dear Justin,

C.F. Crozier & Associates Inc. (Crozier) was retained by A.R.G. Group of Companies, to support the Site Plan Application for the proposed industrial development located at 90 Maplevue Drive West in the City of Barrie, County of Simcoe.

According to Section 4.2 of the City of Barrie Transportation Impact Study Guidelines, a Traffic Brief is acceptable when criteria is not met for a full Traffic Impact study. Traffic Briefs generally focus on the traffic operations and geometrics of the proposed development site access, parking requirements, and the need for widening along the corridor.

As noted in the subsequent section, the proposed industrial development is anticipated to generate 54 and 56 two-way trips in the weekday a.m. and p.m. peak hours, respectively. While this exceeds the threshold for a Traffic Impact Study of 50 peak hour trips, this represents an excess of 4 and 6 trips in the a.m. and p.m. peak hour, respectively. When considering 2019 traffic volumes for Maplevue Drive at the Canadian Tire Entrance provided by City staff, the total volume of vehicles on Maplevue Drive during the p.m. peak hour was recorded to be 2,719 in both the east and westbound directions combined. The forecasted 56 trips represent 1.8% of the existing traffic volumes, less than the 5% threshold to warrant a TIS.

Furthermore, the proposed development is consistent with the uses permitted within the zoning of the site and conforms with the Official Plan designation. Based on the above rationale, the preparation of a Traffic Brief is considered appropriate.

This Brief has been divided into the following sections:

- Background
- Development Proposal
- Parking Requirements
- Boundary Road Network
- Trip Generation
- Access Geometrics
- Conclusions

Background

The site covers an area of 4.47 ha and is located in a mixed-use industrial and commercial neighbourhood. The property falls within Ward 7 from the City's Official Plan (2018) and, according to the Town's Zoning By-Law 2009-141, this area is zoned as 'Light Industrial'.

The site is bounded by Mapleview Drive to the south and existing industrial/commercial properties to the north, east and west. The site at 120 Mapleview Drive West is under the same ownership as 90 Mapleview Drive West.

Development Proposal

Per the Site Plan prepared by Nestico Architect inc. (dated September 15, 2021), the development proposal consists of an industrial warehouse building with a total gross floor area (GFA) of 21,984.28 m². The warehouse portion of the building is proposed to have a GFA of 20,954.65 m², while the ancillary office use and 1,029.63 m² GFA for office use. The Site Plan also identifies a future mezzanine office use with a GFA of 1,029.63 m².

The proposed development will include 175 surface parking spaces (including 4 accessible parking space), 41 loading spaces (3.66 m x 15.0 m), and 4 bicycle parking spaces.

Access to the site is proposed through the addition of a fourth leg of the existing intersection of Mapleview Drive and the Canadian Tire Entrance. The proposed development will also include a connection to the neighbouring property at 120 Mapleview Drive, which has its own signalized access to Mapleview Drive. Truck access will be provided through 120 Mapleview Drive.

The Site Plan (Nestico Architect Inc., September 15, 2021) has been included as **Attachment A**

Parking Requirements

The development proposes a parking supply of 175 spaces, including 4 barrier-free spaces, and 41 loading spaces. The City of Barrie Zoning By-Law 2009-141 Table 4.6 outlines the minimum parking requirements, Table 4.6.4 outlines the minimum barrier-free parking requirements, and Table 4.7.1 outlines the minimum loading space requirements. The minimum requirements and proposed supply are presented in **Table 1**.

Table 1: Parking Requirements

Land Use	"X" variable	Required Parking Rate	Parking Requirements	Parking Supply
Office	1,029.63 m ²	1 space per 30 m ² of gross floor area	35	55
Future office use (Mezzanine)	1,029.63 m ²	1 space per 30 m ² of gross floor area	35	55
Warehouse	20,954.65 m ²	1 space per 1000 m ² of gross floor area	21	65
Loading spaces	20,954.65 m ²	14,000-19,999 m ² - 4 spaces + 1 space per additional 10,000 m ²	5	41
Barrier-Free Parking Requirements			2 Type A 2 Type B	2 Type A 2 Type B

As outlined above, the proposed parking and loading space supply meets the minimum Zoning By-Law requirements.

Boundary Road Network

The boundary road network is described in **Table 2**.

Table 2: Boundary Road Network

Roadway	Maplevue Drive
Direction	East-West
Classification	Arterial
Jurisdiction	City of Barrie
Posted Speed Limit (km/h)	60 km/h
Total Number of Lanes Per Direction	3 (with a center two-way left-turn lane)
Pedestrian Facilities	1.5 m sidewalk with 2.5 m grass boulevard on north and south sides of roadway
Cycling Facilities	None

Trip Generation

The trip generation of the proposed development was forecasted using the fitted curve equations for Land Use Code 150: "Warehouse" provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

Relevant excerpts from the ITE Trip Generation Manual have been included as **Attachment B** for reference. The forecasted trip generation for the newly Proposed development is summarized in **Table 3**.

Table 3: Trip Generation

Land Use	Peak Hour	Trips Generated		
		Inbound	Outbound	Total
LUC 150: Warehouse (236,636.82 ft ²)	Weekday A.M.	41	13	54
	Weekday P.M.	15	41	56

In summary, the proposed development is forecasted to generate 54 and 56 two-way trips in the weekday a.m. and p.m. peak hours, respectively. It is noted that the future mezzanine office space area is only forecasted to generate an additional 1 and 2 trips in the a.m. and p.m. peak hour, respectively. This volume of traffic will not have a negative impact on the road network boundary considering the signalization of the proposed entrance.

As noted above, Maplevue Drive is classified as an arterial road. According to Section 7.1 of the City of Barrie Transportation Impact Study Guidelines, arterial roads have a lane auto capacity of 750 vehicles per hour per lane. With six lanes of traffic and a center two-way left-turn lane, the trips generated represent 1.2% of the roadway capacity and are not expected to result in operational issues.

Access Geometrics

The proposed entrance is 9 m wide and flares out to 24.12 m at the curb. The east and west curb radii are proposed to be 12 metres. The entrance approach consists of one 3 m shared through/right-turn lane, one 3 m left-turn lane, and one 3 m inbound lane. The proposed entrance will be directly aligned with the existing entrance to Canadian tire on the south side, creating the fourth leg of the signalized intersection. The proposed entrance width and curb radii are consistent with the suggested dimensions for both light and heavy industrial developments, as outlined on the Ontario Provincial Standard Drawing 350.010 "Urban Industrial, Commercial, and Apartment Entrances", included as **Attachment C**.

Conclusions

The proposed development is expected to generate 54 and 56 two-way trips in the weekday a.m. and p.m. peak hours. This represents 1.2% of the capacity of Mapleview Drive. Furthermore, the entrance to the site is proposed to align opposite the existing Canadian Tire Entrance, forming the fourth leg of the signalized intersection. This level of traffic is not expected to result in operational issues at the site access or on the boundary road network.

The proposed Site Plan Application can be supported from a transportation perspective. The analysis was conducted using the most recent Site Plan prepared by Nestico Architect Inc. (dated September 15, 2021). Any minor changes to the Plan will not materially affect the conclusions contained within this Brief.

We trust that this Traffic Impact Brief addresses the City's concerns. Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Yours truly,

C.F. CROZIER & ASSOCIATES INC.



Madeleine Ferguson, P.Eng
Manager of Transportation
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Encl.

Attachment A: Site Plan
Attachment B: ITE Generation Excerpts
Attachment C: OPSD 350.010

Attachment A

Site Plan



SP1

Attachment B

ITE Generation Excerpts

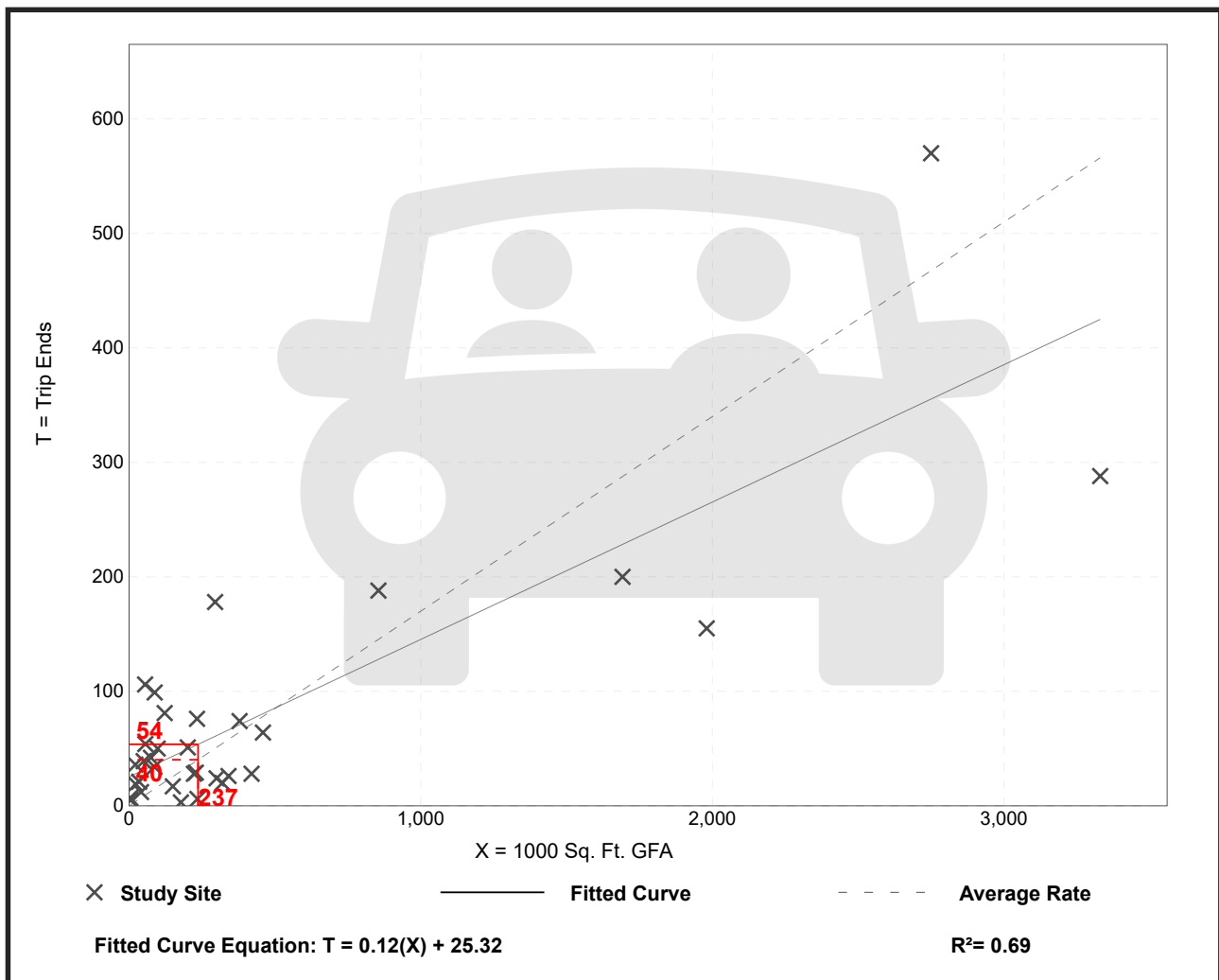
Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 34
 Avg. 1000 Sq. Ft. GFA: 451
 Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



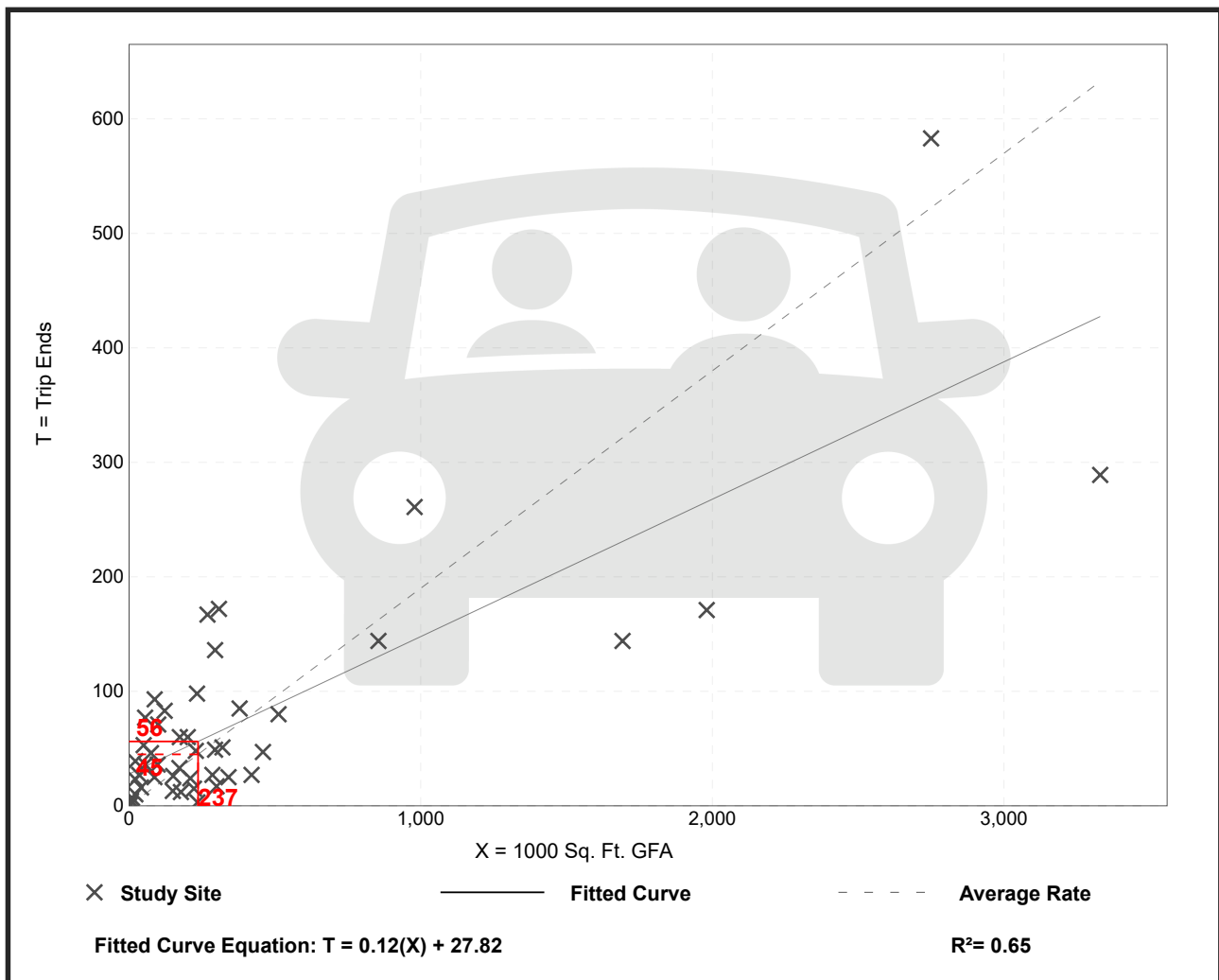
Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 47
 Avg. 1000 Sq. Ft. GFA: 400
 Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

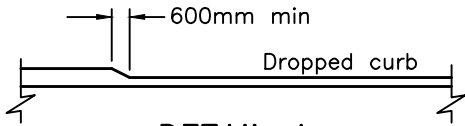
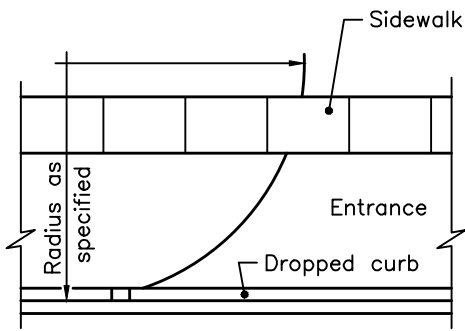
Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation

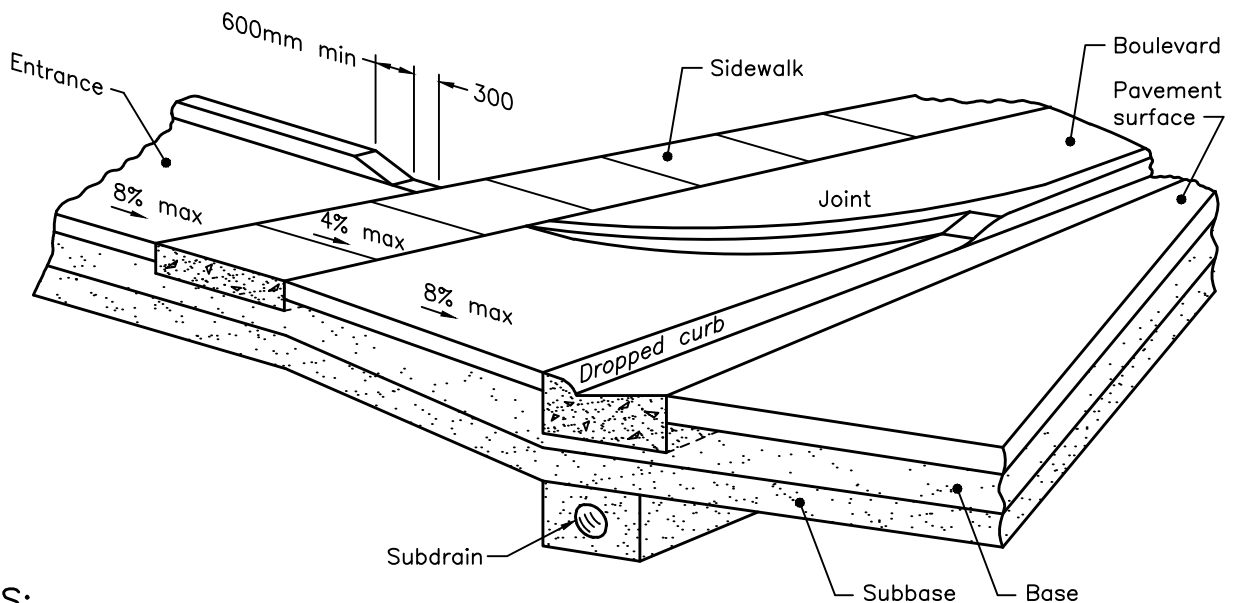
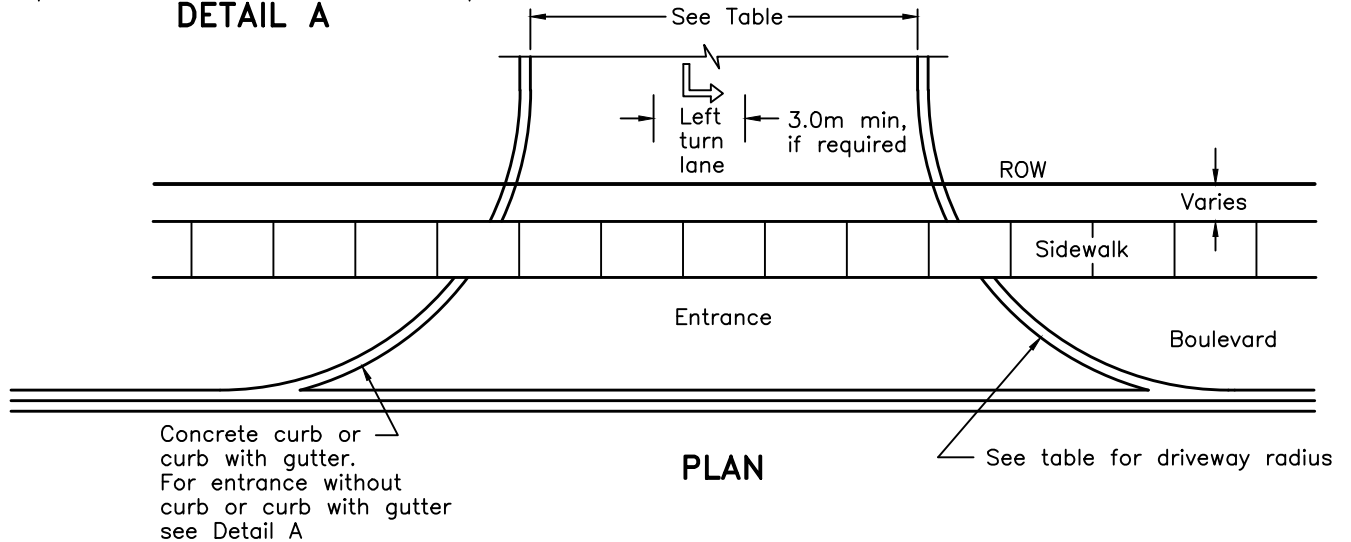


Attachment C

OPSD 350.010



DRIVEWAY DIMENSIONS						
LAND USE	WIDTH m				RADIUS m	
	One-Way		Two-Way			
	min	max	min	max	min	max
Light Industrial, Commercial, and Apartment	4.5	7.5	7.2	12.0	4.5	12.0
Heavy Industrial	5.0	9.0	9.0	15.0	9.0	15.0



NOTES:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2018

Rev 2

URBAN
INDUSTRIAL, COMMERCIAL, AND
APARTMENT ENTRANCES

OPSD 350.010

