



March 6th, 2023

JDE Project 22057

Mr. Nick Matassini

**RE: Traffic Letter
159 Huronia Road, City of Barrie**

JD Northcote Engineering Inc. [JD Engineering] is pleased to submit the following traffic letter in support of the proposed townhouse development at 159 Huronia Road in the City of Barrie [City].

1.0 BACKGROUND

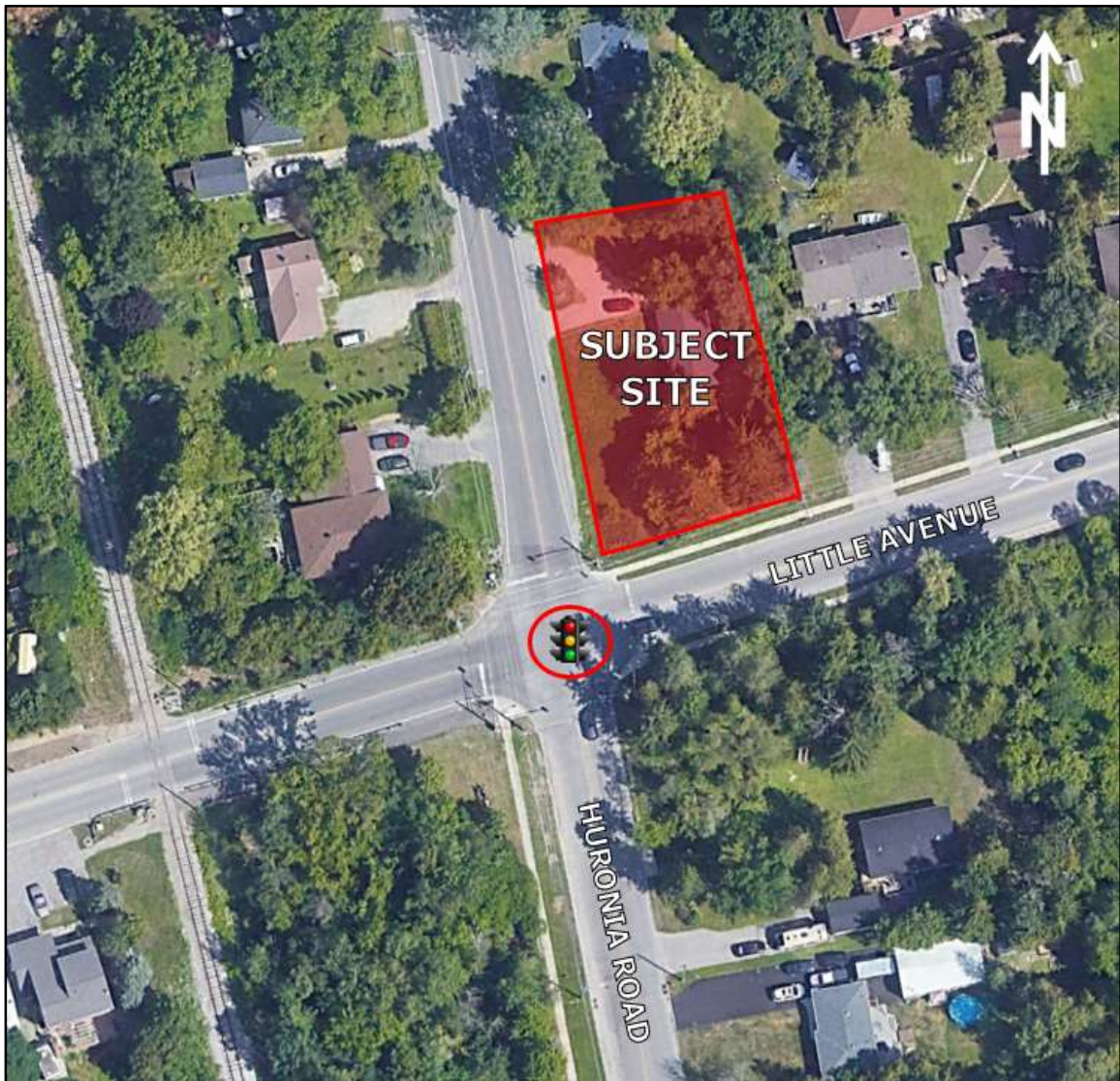
The subject site is located on the northeast corner of the Huronia Road / Little Avenue in the City. The existing property includes a single-detached dwelling with gravel driveway onto Huronia Road. The proposed development will include 4 townhouse units with driveways onto Huronia Road. The Site Plan is shown in the **Appendix**.

Figure 1 illustrates the location of the subject site in relation to the surrounding area.



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Figure 1 – Proposed Site Location and Study Area



2.0 INFORMATION GATHERING

Huronia Road is a two-lane arterial road under the jurisdiction of the City, with a posted speed limit of 50 km/h through the study area. North of Little Avenue, Huronia Road has a semi-urban cross-section (asphalt platform and grassed ditches) on both sides of the road. South of Little Avenue, Huronia Road has an urban cross-section (asphalt platform, curb & sewers) and a sidewalk on the west side of the road.

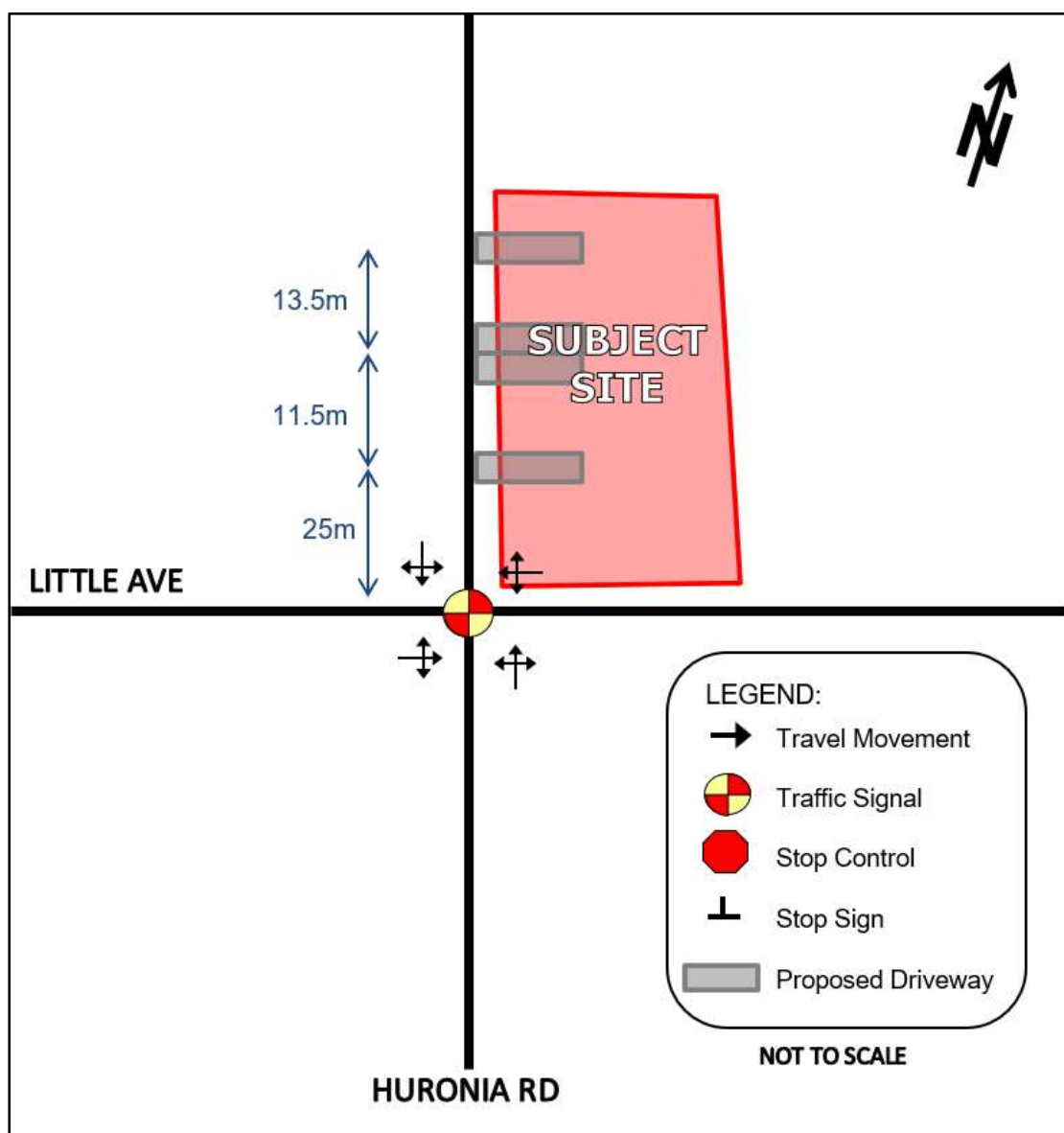
Little Avenue is a two-lane arterial road under the jurisdiction of the City, with a posted speed limit of 50 km/h through the study area. East of Huronia Road, Little Avenue has an urban cross-section (asphalt platform, curb & sewers) and sidewalk on both sides of the road. West of Huronia Road,

east of the railway tracks, Little Avenue has a semi-urban cross-section with a multi-use trail on the south side of the road. West of the railway tracks, Little Avenue has an urban cross-section (asphalt platform, curb & sewers) and sidewalk on both sides of the road.

As noted in the *City's Transportation Master Plan*, both Huronia Road and Little Avenue are scheduled for improvement to three-lane roadways (one lane per direction and a two-way, left turn lane). The improvements are expected between 2026 and 2031.

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

Figure 2 – Proposed Site Location and Study Area



3.0 TRAFFIC GENERATION

As previously mentioned, the existing property includes a single-detached dwelling. The proposed development will include 4 townhouse units.

The trip generation associated with the proposed townhouse units has been estimated based on the type of land use, development size and data provided in the Institute of Transportation Engineers [ITE] Trip generation Manual (11th Edition) [ITE Trip Generation Manual]. The following ITE land use has been applied to estimate the existing and proposed development traffic:

- ITE land use 215 – Single-Family Attached Housing.

Table 1 summarizes the utilized traffic rates and estimated trip generation for the proposed development.

Table 1 – ITE Traffic Generation Trip Rates

Land Use	Size / Trip Basis	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Attached Housing ITE Land Use: 215	units	0.15	0.33	0.48	0.33	0.24	0.57
Subject Site	4 units	1	1	2	1	1	2
Total		1	1	2	1	1	2

As shown, the proposed townhouse units will generate 3 trips during both the AM and PM peak hours.

4.0 TRAFFIC ASSIGNMENT

The distribution of traffic through the study area has been assumed based the traffic volume distribution observed in the City's EMME models.

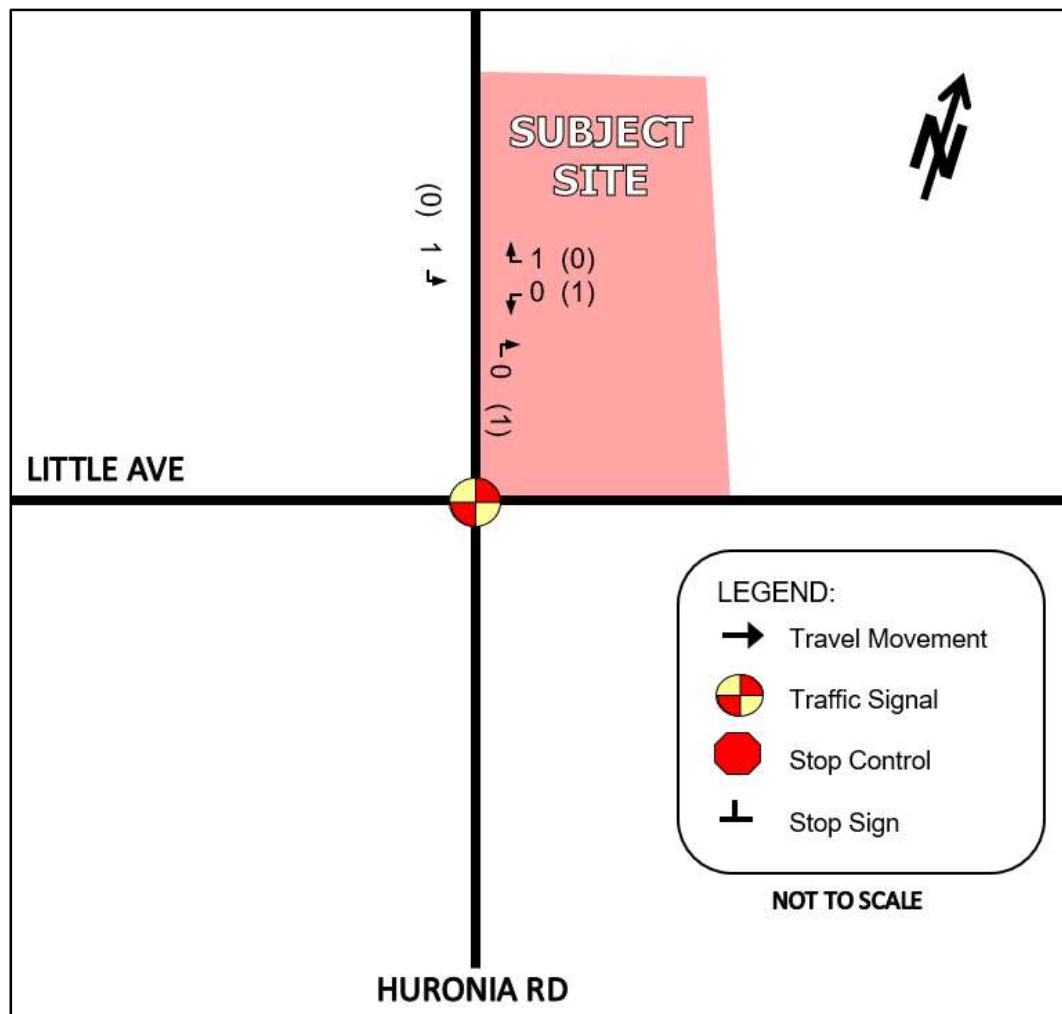
Table 2 summarizes the assumed trip distribution for the proposed development.

Table 2 – Estimated Traffic Generation of Proposed Development

Travel Direction (to/from)	Percent of Total Traffic Generation	
	AM Peak Hour	PM Peak Hour
North via Huronia Road	64%	44%
South via Huronia Road	36%	56%
Total	100%	100%

Figure 3 illustrates the traffic assignment for the proposed development.

Figure 3 – Traffic Assignment for Proposed Development



5.0 TRAFFIC OPERATIONS

In consideration of the minor volume of trips to be generated by the development, the site driveways are expected to provide satisfactory operations with minor delays. The anticipated traffic generation of 2 AM and PM peak hour trips is considered negligible. The development traffic will have minimal impact to the existing traffic operations on the study area road network.

6.0 SIGHT DISTANCE

A review of the available sight distances on Huronia Road at the Subject Site proposed driveways was completed as part of this analysis.

The sight distances were evaluated based on minimum sight distance requirements set out in the *TAC Guidelines*. With a posted speed of 50km/h a design speed of 60km/h (posted speed + 10km/h for lower speed roads) was utilized.

Table 3 summarizes the sight distance analysis for Huronia Road at the Subject Site.

Table 3 – Sight Distance Analysis – Huronia Road at Subject Site

Sight Distance Requirement	TAC Guidelines (60km/h design speed)	Available Sight Distance	
		North	South
Minimum Stopping Sight Distance	85m	200m+	200m+
Minimum Intersection Sight Distance	130m		

The sight distance to the north and south on Huronia Road from the Subject Site is greater than 200 metres, exceeding the both the minimum stopping sight distance and intersection distance requirements as identified in the TAC Guidelines for a design speed of 60km/h.

As illustrated on the Site Plan, the daylight 10m x 10m daylight triangle will meet City requirements and provide the necessary sight lines for turning traffic on Little Avenue, for both the existing and future improved road network.

7.0 DRIVEWAY SPACING

The Subject Site driveways will operate efficiently as a full-movement paired private driveways.

As illustrated in **Figure 4**, the proposed spacing between the southmost driveway (critical location) and Little Avenue to the south (25 metres) fall slightly below the minimum intersection spacing requirements as identified in the City's *Urban Design Manual* – 30 metres for driveways on Arterial roads. However, the proposed driveway spacing meets the criteria for a major collector road (20 metre spacing). As outlined in Section 2.0, Huronia Road is currently a two-lane road and will ultimately be reconstructed as a three-lane road. For the current two-lane configuration of Huronia Road, the proposed driveway spacing is appropriate, as Huronia Road functions similar to a major collector road.

For the three-lane reconstruction of Huronia Road, it is recommended that the City include a centre median along the entire frontage of the subject site (approximately 60 metres). This will limit the driveway movements to right-in / right-out movements.

8.0 CONCLUSION AND RECOMMENDATIONS

This chapter summarizes the conclusions and recommendations from the study.

- 1) No infrastructure improvements are recommended for the current configuration of Huronia Road as a result of the proposed development.

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- 2) For the three-lane reconstruction of Huronia Road, it is recommended that the City include a centre median on Huronia Road, along the entire frontage of the subject site (approximately 60 metres).

We trust that you find this proposal satisfies your requirements.

Yours truly,
JD Northcote Engineering Inc.



John Northcote, P.Eng.
President

APPENDIX

