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2024-03-27
Project: (230197)

Devon Posthumus
Planner
Sifton Properties Limited
1295 Riverbend Road, Suite 300
London, ON N6K 0G2

Dear Mr. Posthumus:

RE: MOUNT BRYDGES RESIDENTIAL SUBDIVISION, PARKHOUSE DRIVE AND ROUGHAM ROAD, MOUNT BRYDGES, TRIP GENERATION LETTER

Introduction

In March 2019, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Assessment[1] (TIA) for a proposed residential subdivision on the northeast corner of Parkhouse Drive and Rougham Road in the community of Mount Brydges, Ontario. **Figure 1** (attached) illustrates the location of the site.

Since then, there have been changes to the proposed plan of subdivision. The purpose of this letter is to review the changes in trip generation based on the updated plan of subdivision and identify the potential implications to the findings, conclusions, and recommendations of the March 2019 TIA.

Site Description and Development Concept

The March 2019 TIA reflected a development concept comprising:

- 106 single detached residential dwellings fronting onto Street A, Street B, Street C and Street D
- Eight single detached dwellings on a 0.63 hectare (1.57 acre) multi-unit residential block known as Block 108 (now known as Block 98); and
- 50 townhouse units on a 1.51 hectare (3.73 acre) multi-unit residential block, known as Block 107 (now known as Block 97).

[1] Paradigm Transportation Solutions Limited, Mount Brydges Residential Subdivision Transportation Impact Assessment, (Cambridge: PTSL, 2019).

Vehicle access to the lands was proposed via three new street connections:

- Street A: Full-moves street connection to Rougham Road, approximately 135 metres north of Parkhouse Drive;
- Street B: Full-moves street connection to Parkhouse Drive, approximately 115 metres east of Rougham Road; and
- Street D: Full-moves street connection to Rougham Road, approximately 320 metres north of Street A.

The plan of subdivision also included an internal road connection, connecting Block 107 (now known as Block 97) to Street A.

The updated plan of subdivision proposes 96 single detached residential dwellings, and 149 townhouse units (12 units on Block 97, 15 units on Block 98, 54 units on Block 99, 16 units on Block 100, and 52 units on Block 101). **Figure 2** (attached) illustrates the updated conceptual plan of subdivision. There are no changes to the location or configuration of the intersecting streets; however, Street D is now referred to as Street C. Internal connections from Block 99 (formerly Block 107) to Street B, and Block 100 (formerly Block 108) to Street A remain. An internal connection is also proposed from Block 101 to Street A.

Estimated Trip Generation

Former Plan of Subdivision

Table 1 summarizes the trip generation estimates based on the land uses in the March 2019 TIA. These estimates refer to land use codes (LUCs) 210 (Single Family Detached Housing) and 220 (Multifamily Housing (Low-Rise)) published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th edition)*.[2]

The estimates in **Table 1** include a correction to the total AM peak hour trip generation for LUC 220, which was incorrectly calculated as 41 trips in the March 2019 TIA. The former plan of subdivision was estimated to generate 111 trips in the weekday AM peak hour and 147 trips in the weekday PM peak hour.

Revised Plan of Subdivision

Table 2 summarizes the trip generation estimates based on the revised plan of subdivision. The estimates also reference LUC 210 and LUC 220 from the ITE *Trip Generation Manual (10th edition)*. Although ITE published a newer edition of the *Trip Generation Manual* in September 2021, use of the 10th edition enables a direct comparison to the trip generation estimates summarized in **Table 1**. The revised plan of subdivision is estimated to generate 143 trips in the weekday AM peak hour and 182 trips in the weekday PM peak hour.

[2] Institute of Transportation Engineers, *Trip Generation Manual*, 10th ed., (Washington, DC: ITE, 2017).

TABLE 1: ESTIMATED TRIP GENERATION - MARCH 2019 TIA

LUC[1]	Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
210	114	Eqn.[2]	22	64	86	Eqn.[3]	72	43	115
220	50	Eqn.[4]	6	19	25[6]	Eqn.[5]	20	12	32
Total Trip Generation			**28**	**83**	**111**		**92**	**55**	**147**

Source: Institute of Transportation Engineers, Trip Generation Manual, 10th ed., (Washington, DC: ITE, 2017).

Notes:
1. The independent variable (X) in the regression equations is equal to the number of units.
2. LUC 210 (AM): T = 0.71(X) + 4.80 (25% entering, 75% exiting)
3. LUC 210 (PM): Ln(T) = 0.96Ln(X) + 0.20 (63% entering, 37% exiting)
4. LUC 220 (AM): Ln(T) = 0.95Ln(X) – 0.51 (23% entering, 77% exiting)
5. LUC 220 (PM): Ln(T) = 0.89Ln(X) – 0.02 (63% entering, 37% exiting)
6. **Table 3.1** of the March 2019 TIA incorrectly stated an AM peak hour trip generation of 41 trips for LUC 220.

TABLE 2: ESTIMATED TRIP GENERATION - REVISED SITE CONCEPT

LUC[1]	Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
210	96	Eqn.[2]	18	55	73	Eqn.[3]	62	36	98
220	149	Eqn.[4]	16	54	70	Eqn.[5]	53	31	84
Total Trip Generation			**34**	**109**	**143**		**115**	**67**	**182**

Source: Institute of Transportation Engineers, Trip Generation Manual, 10th ed., (Washington, DC: ITE, 2017).

Notes:
1. The independent variable (X) in the regression equations is equal to the number of units.
2. LUC 210 (AM): T = 0.71(X) + 4.80 (25% entering, 75% exiting)
3. LUC 210 (PM): Ln(T) = 0.96Ln(X) + 0.20 (63% entering, 37% exiting)
4. LUC 220 (AM): Ln(T) = 0.95Ln(X) – 0.51 (23% entering, 77% exiting)
5. LUC 220 (PM): Ln(T) = 0.89Ln(X) – 0.02 (63% entering, 37% exiting)

Impacts to Findings of March 2019 TIA

The findings and conclusions of the March 2019 TIA indicated all study intersections were forecast to operate at acceptable levels of service and within capacity.[3] No critical movements were forecast at any of the study intersections, and the subject site was forecast to "have a negligible impact on traffic operations in the study area."[4]

The revised site plan is estimated to generate 32 additional trips in the weekday AM peak hour and 35 additional trips in the weekday PM peak hour. Once distributed through the study area a net increase of 32 to 35 trips in each peak hour is forecast to have a negligible impact on forecast traffic operations at the three proposed street connections, and the intersections analyzed in the March 2019 TIA. The conclusions and recommendations of the March 2019 TIA remain unchanged.

Findings, Conclusions and Recommendations

The findings of this Trip Generation Letter are as follows:

- As compared to the plan of subdivision reviewed in the March 2019 TIA:
  - The revised plan of subdivision represents a net decrease of 18 single detached residential dwellings and a net increase of 99 townhouse units; and
  - The revised plan of subdivision is estimated to generate 32 additional vehicle trips in the weekday AM peak hour and 35 additional vehicle trips in the weekday PM peak hour.

The net increase in vehicle trips is forecast to have a negligible impact on traffic operations at the three proposed street connections, and the intersections analyzed in the March 2019 TIA. The conclusions and recommendations of the March 2019 TIA remain unchanged, and it is recommended that the development (based on the revised plan of subdivision) be considered for approval with no requirements for off-site transportation network improvements.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

<< Original Signed By >>

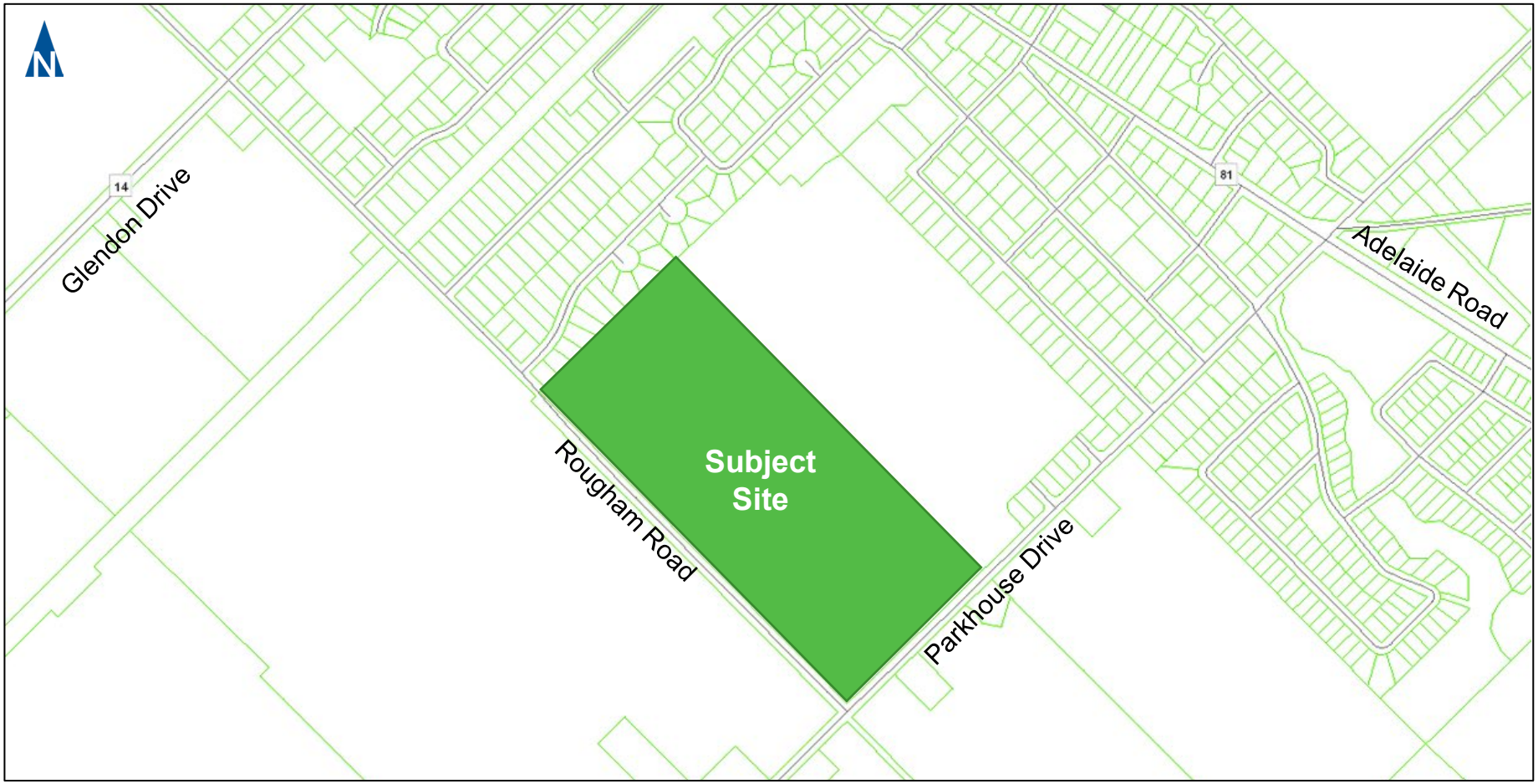
Andrew Steinsky
P.Eng., PTP
Project Manager, Associate

<< Original Signed By >>

Jim Mallett
M.A.Sc., P.Eng., PTOE
President and CEO, Principal

[3] The March 2019 TIA analyzed three intersections and the three new street connections: Adelaide Road and Parkhouse Drive, Parkhouse Drive and Rougham Road, Glendon Road and Rougham Road, Rougham Road and Street A, Parkhouse Drive and Street B, and Rougham Road and Street D.
[4] Paradigm Transportation Solutions Limited, *Mount Brydges Residential Subdivision Transportation Impact Assessment*, (Cambridge: PTSL, 2019), 21.

Attachments



Not to Scale

Image Source: Middlesex County Interactive Map (County of Middlesex | County of Middlesex | LIO, County of Middlesex | Middlesex County, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA, AAFC, NRCan)

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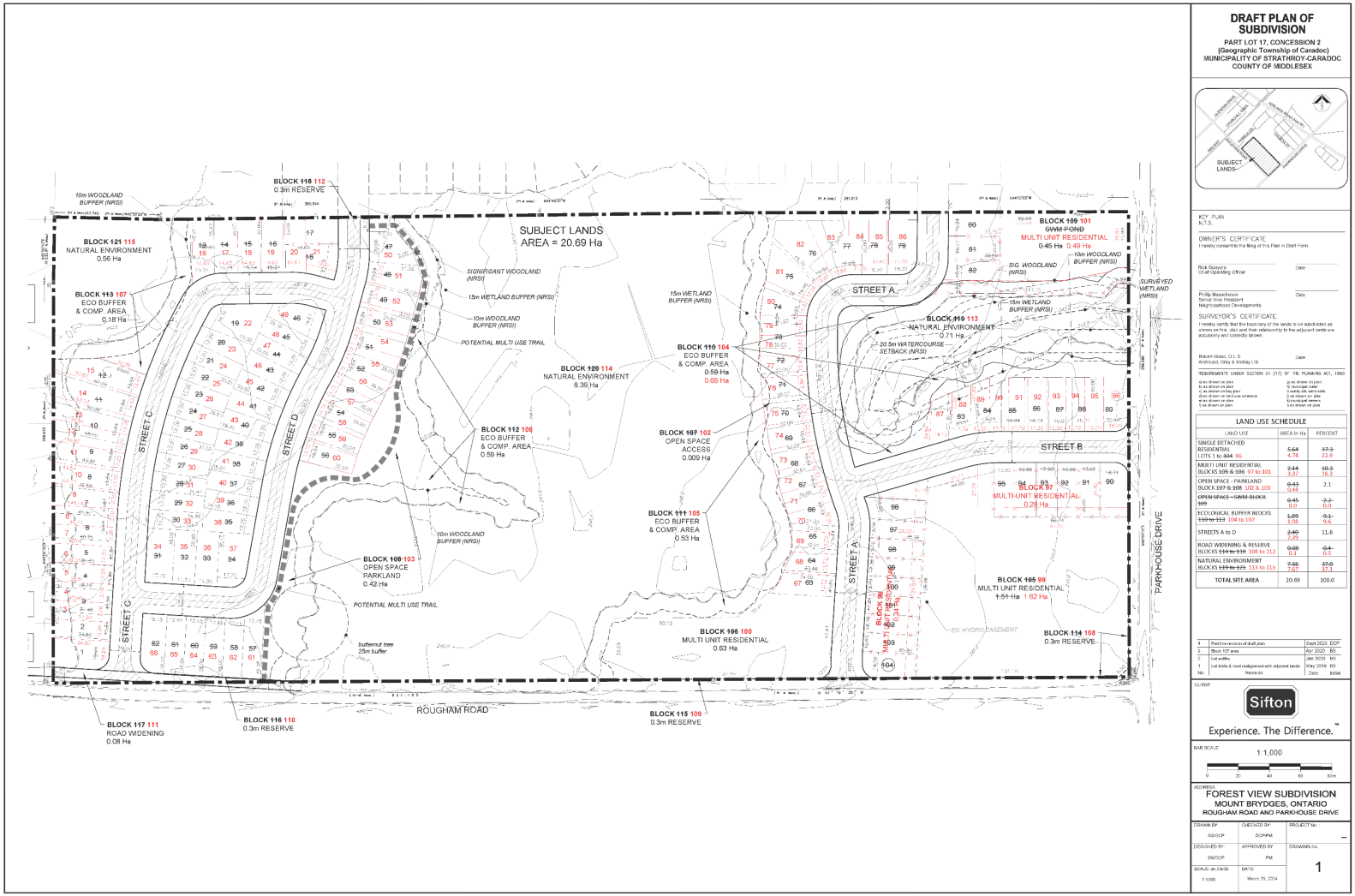
Location of Subject



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Updated Conceptual Plan of Subdivision