

March 15, 2021

Steve Lennox  
3060 Concession Road 7  
Pickering, ON L1Y 1C4

Dear Mr. Lennox,

**Re: Engineering Services for Traffic Brief (Letter),  
Proposed Commercial Cabins  
16 Fire Route 94A, Municipality of Trent Lakes, Peterborough County  
D.M. Wills Project No. 20-85099**

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D.M. Wills Associates Limited (Wills) is pleased to submit the following Traffic Brief in support of an application for a Zoning bylaw Amendment (ZBA) for the property located at 16 Fire Route 94A, Municipality of Trent Lakes (the Subject Property). The Subject Property is designated as Commercial within the Municipality's Official Plan, and zoned as Shoreline Residential Private Access (SR-PA). The owner is seeking a ZBA to permit the construction of a private residence, as well as five (5) other buildings to be rented out to the public.

### **Roadway and Existing Site Conditions**

The Subject Property is located on a private road, Fire Route 94A, in the Municipality of Trent Lakes in Peterborough County. The lot where the Subject Property is on a peninsula with about 300 meters of shoreline frontage. Fire Route 94A is a dead-end fire route that ends within the Subject Property. The Subject Property is located about 4 km to the south of Peterborough County Road 36 and on the northeast corner of Pigeon Lake. The speed limit on this private road is 50 km/hr.

The Subject Property has multiple cabins, which appear to have been vacant for some time. The land uses surrounding the Subject Property have a mix of commercial and/or residential uses (mainly cottages). A location plan and a site plan for the property and the proposed cottages are included in Appendix A.

### **Trip Generation**

Estimation of trips generated by the proposed development is derived from the Trip Generation Manual, 8th Edition<sup>1</sup>, published by the Institute of Transportation Engineers (ITE).

The ITE codes of the land use, which closely describe the proposed commercial cottages, are presented in Table 1 and Table 2. Also, Table 1 and Table 2 show the average trip generation rates for the land use for both the AM and the PM

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<sup>1</sup> Trip Generation Manual, Vol. 1, 2, and 3, 8th ed. ITE, Washington, D.C., 2008.

peaks of the adjacent street and of the generator (i.e. the proposed cottages) and the percentages of entering and exiting vehicles.

The land use that best describes the proposed commercial cottages is "Recreational Homes", as shown in Table 1 and Table 2. Since the owner is proposing to construct a residential home, the land use for "Single-Family Detached Housing has also been considered. It is acknowledged that the proposed development includes a planned dry-slip boathouse, however, it is also understood that the boathouse is to provide water access to the owner only and not intended for commercial use (i.e. attracting boat traffic or potential transients wanting to launch boats on a daily basis). Accordingly, the boathouse has not been considered as a road traffic generator for the purposes of this study.

**Table 1 - Trip Generation Rates during the Peak Hours of the Adjacent Street Traffic**

Land Use	ITE Code	Units	AM Peak			PM Peak		
			Avg. Rate	Entering	Exiting	Avg. Rate	Entering	Exiting
Recreational Homes	260	Dwelling Unit	0.16	67%	33%	0.26	41%	59%
Single Detached Home	210	Dwelling Unit	0.75	25%	75%	1.01	63%	37%

**Table 2 - Trip Generation Rates during the Peak Hours of the Generator**

Land Use	ITE Code	Units	AM Peak			PM Peak		
			Avg. Rate	Entering	Exiting	Avg. Rate	Entering	Exiting
Recreational Homes	260	Dwelling Unit	0.30	49%	51%	0.31	44%	56%
Single Detached Home	210	Dwelling Unit	0.77	26%	74%	1.02	64%	36%

The results summary of the new trips generated is presented in Table 3 and Table 4 during the peak hours of the adjacent street and the generator (i.e. the proposed commercial cottages and residence). The trips were estimated based on the number of dwelling units. It is assumed that the AM and PM peak hours of generators for both land uses (i.e. recreational homes and single-family detached housing) will occur simultaneously to reach the worst-case scenario, which is defined here as the maximum trips that could be generated from the Subject Property during the peak hour. Also, it is worth mentioning that the generated trips were rounded up to reach that goal.

For future scenarios, no future expansion has been indicated for the Subject Property, and hence, the trip generated from the proposed development will remain the same in the future.

**Table 3 - The Estimated Number of Trips during the Peak Hours of the Adjacent Street Traffic**

Land Use	Unit		AM Peak			PM Peak		
			Avg. Rate	Entering	Exiting	Avg. Rate	Entering	Exiting
Recreational Homes	5	Dwelling Unit	1	1	0	2	1	1
Single Detached Home	1	Dwelling Unit	1	0	1	2	1	1
<b>Total</b>			2	1	1	4	2	2

**Table 4 - The Estimated Number of Trips during the Peak Hours of the Generator**

Land Use	Unit		AM Peak			PM Peak		
			Avg. Rate	Entering	Exiting	Avg. Rate	Entering	Exiting
Recreational Homes	1	Dwelling Unit	2	1	1	2	1	1
Single Detached Home	1	Dwelling Unit	1	0	1	2	1	1
<b>Total</b>			3	1	2	4	2	2

### Assessment of the Traffic Operation with the Development Consideration

As discussed before, the private road that provides access to the Subject Property ends within the property itself. Therefore, it is anticipated that all the generated trips including exiting and entering trips will utilize this private road (i.e. Fire Route 94A). Also, based on the trip generation calculations discussed before, the maximum number of trips to be generated from the property is four (4) trips per hour. Assuming a single group of cabin occupants per vehicle, then a maximum of four (4) vehicles (including entering and exiting vehicles) will be using the property during the PM peak. This substantially low traffic volume will have a negligible impact on the traffic operation of Fire Route 94A or the adjacent road network under the above assumptions.

Given the nature of the surrounding road network (i.e. 'cottage' roads) and the anticipated very low operating speeds in such an environment, adequacy of sightlines and geometry of the existing entrance (i.e. intersection of FR 94 and FR 94A) was not undertaken.

Traffic generated or attracted by the new development is assumed to fully utilize Nichols Cove Road to access the property, and it is assumed that Oakridge Road will not affect traffic operations (worst-case scenario). Accordingly, the major intersection in question from both a Municipal and County perspective would be Nichols Cove Road and County Road 36. Given the substantially low traffic volumes anticipated as a result of the development, a turn lane warrant was not undertaken as the development itself would not trigger such a warrant irrespective of any existing conditions which may warrant such. We note the existence of an existing substandard right turn taper at the intersection, however, its adequacy or warrant was not assessed. At the above-noted

intersection, there is in excess of 200 m of visibility in either direction east and west of Nicholls Cove Road. The intersection is also located within a tangent section of County Road 36. The stopping sight distance on level roadways for automobiles assuming a 100 km/h design speed (County Road 36 is posted 80 km/h at this location) is only 185 m according to the 2017 Transportation Association of Canada Geometric Design Standards for Canadian Roads and according to the County of Peterborough By-Law 2012-26 visibility requirements. Accordingly, visibility is considered adequate at this intersection.

### Conclusions and Recommendations

This Traffic Impact Brief examined the overall impact that the proposed residential and commercial cottages located at 16 Fire Route 94A could have on traffic operations along Fire Route 94A and the adjacent road network.

The additional trips generated by the proposed development after the proposed ZBA will be minimal (i.e. only four (4) vehicles during the peak hour including the exiting and entering vehicles). Hence, the Subject Property is not anticipated to have any significant impact on the normal traffic operations of Fire Route 94A for the current or future worst-case scenario based on the assumptions discussed.

The anticipated minimal additional traffic generated by the development will utilize Nichols Cove Road, with access off of Peterborough County Road 36. A left turn lane warrant analysis was not carried out for the intersection of County Road 36 and Nichols Cove Road, however, given the substantially low traffic volumes anticipated from the development as discussed above, the operation of the above establishment itself would not cause such a need irrespective of any existing conditions.

Sightlines at the intersection of Nichols Cove Road and County Road 36 are deemed to be adequate given that the intersection is located on a tangent section of County Road 36. Given the nature of the subsequent road network (i.e. 'cottage roads') adequacy of the sightlines or geometry of said roads and entrances was not undertaken.

Sincerely,



Mostafa H Tawfeek, Ph.D.  
Transportation/Traffic EIT  
D.M. Wills Associates Limited

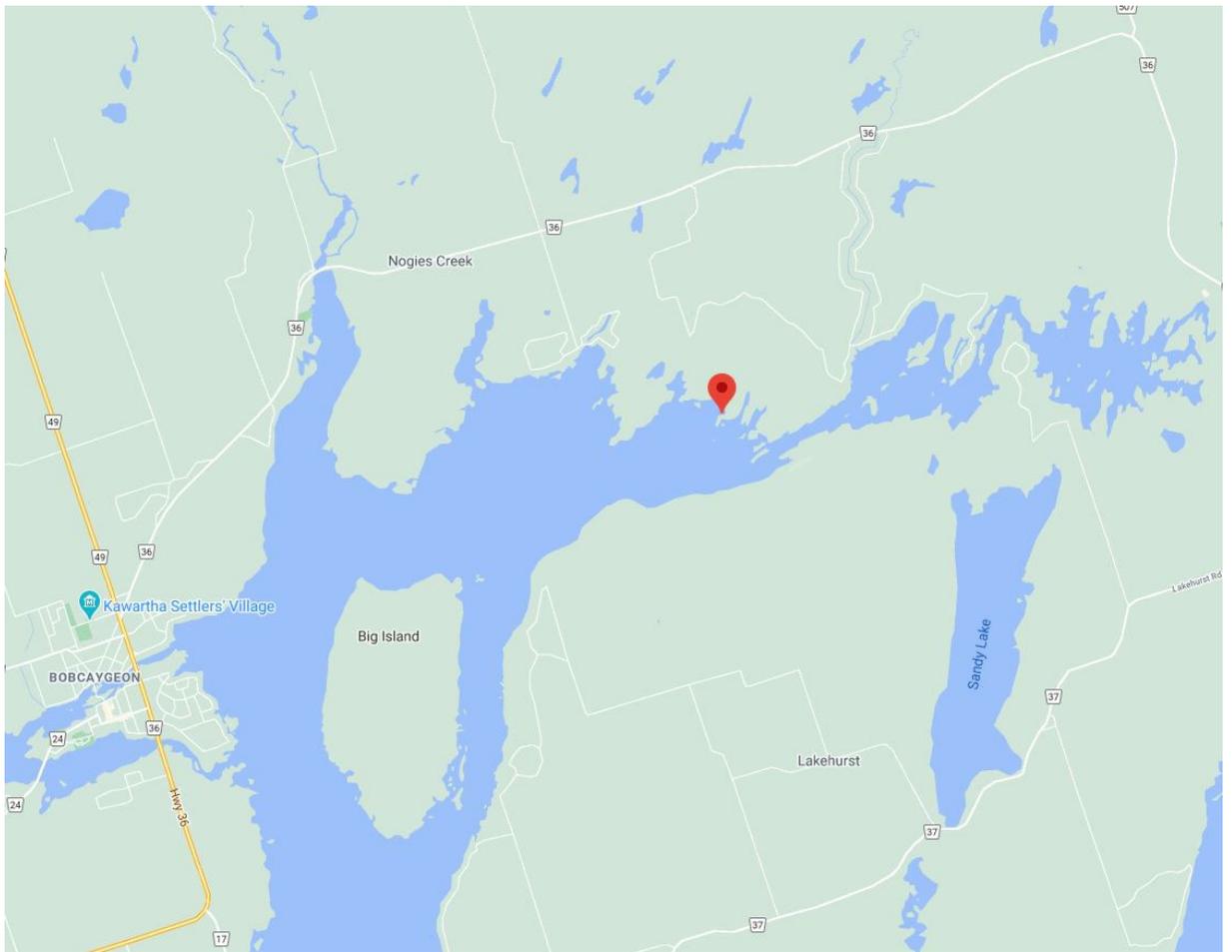


Wes Kingdon, P.Eng.  
Project Engineer  
D.M. Wills Associates Limited

# **Appendix A**

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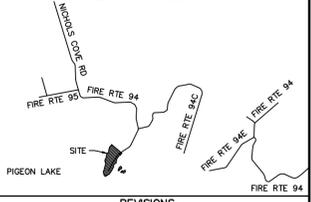
Location and Site Plan





TRUE NORTH

KEY PLAN



REVISIONS		
No.	Description	Date
1	CLIENT REVIEW	01/10/20

**METRIC** Dimensions are in METRES and/or MILLIMETRES unless otherwise shown  
**LEGEND** TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES




D.M. Wills Associates Limited  
 150 Jameson Drive  
 Peterborough, Ontario  
 Canada K9J 0B9  
 P. 705.742.2297  
 F. 705.748.9944  
 E. wills@dmwills.com

Project Name/Location  
**PIGEON LAKE COMMERCIAL CABINS**  
 16 FIRE ROUTE 94A, TRENT LAKES

Drawing Title  
**SITE PLAN**

Drawn By: M.B.	SCALE: Horz: 1:300	Vert: -
Designed By: M.B.	Plot Date: JANUARY 25, 2021	
Checked By: M.S.	Project No.: 85099	Sht. No.:
Engineer: ---	Dwg File No.: 85099 - SP	-

Printed By: mbeil Printed On: January 25, 2021  
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