Review of Low Density Residential Trip Generation Rates Sudbury

DRAFT

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September 2023

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1. Introduction

Dalron has experienced a growing market demand for more compact residential units with fewer bedrooms than the standard R1 single family homes. These units also tend to have only a single car garage. Examples of these more compact units are the townhouses/semis of Algonquin Green, the Radcliff Street semis and Mallards Green townhouses. It was felt that these units may generate less traffic than the typical R1 single family homes and, if true, future Traffic Impact Studies for the more compact unit developments should reflect the reduced traffic flows.

In order to determine if these more compact units generate less traffic, special surveys were carried out at the three noted Dalron developments, along with surveys of two typical R1 single family residential areas. The results were compared to the ITE Trip Generation Manual rates for low density residential units.

2. Methodology

All vehicular traffic entering and leaving the following three sites was recorded 6:30 am to 9:00 am and 3:00pm to 6:00 pm in mid-September:

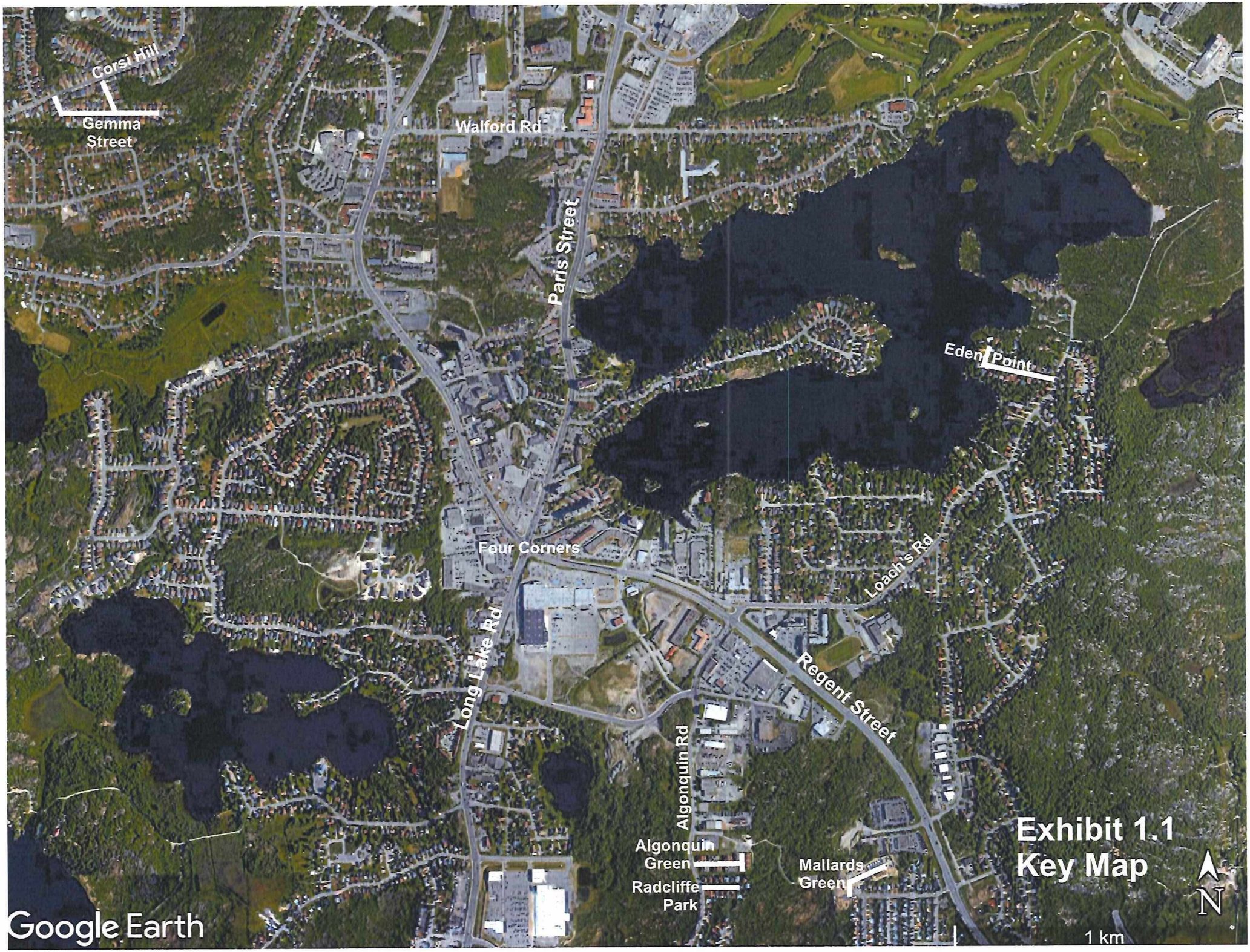
i) Algonquin Green (35 units)
ii) Radcliffe Park (30 units)
iii) Mallards Green (20 units)

The Key Map shows the location of the sites and Appendix A has more details about the housing at the three sites.

For control purposes, surveys were also conducted 3:00pm to 6:00pm at the following two typical R1 single family sites during September (see Key Map for location):

i) Eden Point (31 single family R1 homes)
ii) Gemma Street (50 single family homes)

The results from the above surveys were then compared against the ITE Trip Generation Manual trip rates for low density residential homes (singles and semis).


Corsi Hill
Gemma Street
Walford Rd
Paris Street
Eden Point
Four Corners
Loach's Rd
Long Lake Rd
Regent Street
Algonquin Rd
Algonquin Green
Radcliffe Park
Mallards Green
Exhibit 1.1
Key Map
N
1 km
Google Earth

3. Survey Results

The attached Table 3.1 shows the results of the surveys and the comparable ITE trip rates. The afternoon peak hour trip rates for Algonquin Green, Radcliffe Park and Mallard Green are 0.60, 0.63 and 0.50 trips per dwelling unit respectively, for an average of 0.59 trips per dwelling unit for the three sites combined. The ITE Trip Generation Manual trip rate for singles and semis is 1.00 trips per dwelling unit. The trip generation from the three special residential developments is 40% lower than the ITE rate.

The two typical R1 single family sites (Eden Point and Gemma Street) generated 1.00 trips per dwelling unit during the afternoon peak hour (i.e. identical to the ITE trip rate). This confirms that typical R1 housing in Sudbury generates traffic at ITE trip rate levels.

4. Conclusion

The more compact housing in developments such as Algonquin Green, Radcliffe Park and Mallards Green generate 40% less traffic during the critical afternoon peak hour than the rate specified in the ITE Trip Generation Manual. It is proposed that future Traffic Impact Studies for similar more compact developments be prepared using the reduced trip rates.

Table 3.1
Vehicle Trips per Dwelling Unit
Sudbury Sites vs ITE Trip Generation Manual

Survey Site	No. of Units	PM Peak Hour Vehicle Trips / Unit			AM Peak Hour Vehicle Trips / Unit		
		Total	In	Out	Total	In	Out
Algonquin Green	35	0.60	0.40	0.20	0.49	0.14	0.35
Radcliffe Park	30	0.63	0.43	0.20	0.63	0.20	0.43
Mallard Green	20	0.50	0.25	0.25	0.25	0.10	0.15
Total (3 Sudbury sites)	**85**	**0.59**	**0.38**	**0.21**	**0.48**	**0.15**	**0.33**
ITE Trip Generation Manual*		**1.00**	**0.63**	**0.37**	**0.75**	**0.19**	**0.56**
Eden Point	31	0.94	0.65	0.29			
Gemma St	50	1.04	0.70	0.34			
Total (2 control sites)	**81**	**1.00**	**0.68**	**0.32**			

* ITE Trip Generation Manual 11th Edition

APPENDIX A

Information about Survey Areas

i) Algonquin Green
ii) Radcliffe Park
iii) Mallards Green
iv) Eden Point
v) Gemma Street

Description of Housing in Survey Areas

1. Algonquin Green

35 dwelling units
12 units of two-story with 3 bedrooms
11 units of *bungalofts* 2 bedroom bungalows with one loft bedroom
12 units of 2 bedroom bungalows with one bedroom in basement
Single car garages.

2. Radcliffe Park

30 dwelling units
26 units of semi-detached homes with 3 bedrooms
4 single family homes with 3 bedrooms
Single car garages.

3. Mallards Green Condos

20 dwelling units
All units with 2+1 bedrooms
Single car garages

4. Eden Point

31 dwelling units
R1 single family detached houses
Mix of single and two car garages.

5. Gemma Street

50 dwelling units
R1 single family detached houses
Mostly two car garages

APPENDIX B

Trip Generation Count Data

i) Algonquin Green

ii) Radcliffe Park

iii) Mallards Green

iv) Eden Point

v) Gemma Street

Trip Generation Survey Counts
Date: September 14-27, 2023

All vehicles
Taken by:

TIME	Algonquin Green				Radcliffe Park				Mallards Green				Eden Point				Gemma Street			
	IN	OUT	Total 15 min	Total 60 min	IN	OUT	Total 15 min	Total 60 min	IN	OUT	Total 15 min	Total 60 min	IN	OUT	Total 15 min	Total 60 min	IN	OUT	Total 15 min	Total 60 min
6:30 - 6:45	0	0	0		0	1	1		0	0	0									
6:45 - 7:00	1	2	3		0	3	3		0	0	0									
7:00 - 7:15	0	0	0		0	1	1		0	2	2									
7:15 - 7:30	1	0	1	4	0	1	1	6	1	0	1	3								
7:30 - 7:45	0	0	0	4	3	2	5	10	1	1	2	5								
7:45 - 8:00	2	4	6	7	2	6	8	15	0	0	0	5								
8:00 - 8:15	1	2	3	10	1	1	2	16	0	1	1	4								
8:15 - 8:30	2	2	4	13	2	2	4	19	0	1	1	4								
8:30 - 8:45	0	4	4	17	1	4	5	19	0	0	0	2								
8:45 - 9:00	1	3	4	15	1	2	3	14	2	0	2	4								
AM Pk Hr	**5**	**12**	**7:45-8:45 am**		**6**	**13**	**7:45-8:45 am**		**2**	**3**	**7:00-8:00 am**									
2:30 - 2:45	1	0	1		1	4	5													
2:45 - 3:00	0	1	1		1	1	2													
3:00 - 3:15	3	2	5		4	2	6		0	0	0									
3:15 - 3:30	0	1	1	8	3	2	5	18	1	1	2		3	1	4		3	3	6	
3:30 - 3:45	3	1	4	11	1	1	2	15	1	1	2		1	0	1		5	4	9	
3:45 - 4:00	2	1	3	13	0	2	2	15	0	0	0	4	1	2	3		4	5	9	
4:00 - 4:15	3	2	5	13	2	5	7	16	1	1	2	6	2	4	6	14	4	6	10	34
4:15 - 4:30	3	1	4	16	3	1	4	15	1	3	4	8	3	4	7	17	14	2	16	44
4:30 - 4:45	3	3	6	18	1	1	2	15	1	0	1	7	0	2	2	18	3	3	6	41
4:45 - 5:00	5	1	6	21	3	1	4	17	2	1	3	10	7	3	10	25	8	8	16	48
5:00 - 5:15	2	2	4	20	4	3	7	17	1	0	1	9	2	0	2	21	10	4	14	52
5:15 - 5:30	1	1	2	18	3	1	4	17	0	0	0	5	6	6	12	26	3	0	3	39
5:30 - 5:45	1	2	3	15	2	1	3	18	1	0	1	5	5	0	5	29				
5:45 - 6:00	0	1	1	10	4	1	5	19	0	1	1	3								
PM Pk Hr	**14**	**7**	**4:00-5:00 pm**		**13**	**6**	**5:00-6:00 pm**		**5**	**5**	**4:00-5:00 pm**		**20**	**9**	**4:45-5:45 pm**		**35**	**17**	**4:15-5:15 pm**	