

**Owner's Traffic Consultant Site Generated Traffic Comparison Letter, May 2021**

RC SPENCER ASSOCIATES INC.
Consulting Engineers

10 May 2021
File No.: 21-1117X

**Town of Tecumseh
917 Lesperance Road
Tecumseh, ON N8N 1W9**

Attention: Mr. John Henderson

**Re: Victoria Residential Development, 12433 Dillon Drive, Town of Tecumseh
Site Generated Traffic Comparison**

Dear Mr. Henderson:

A residential development has been proposed for lands situated at 12433 Dillon Drive in the Town of Tecumseh. A traffic impact study was completed by RC Spencer Associates Inc. in March of 2021. A follow-up request has been made for a comparison of estimated traffic generated by the proposed residential development and the estimated traffic generated by the former Victoria Public School, which previously occupied the site and had an enrollment of approximately 150 students.

Trip generation for the proposed residential development was estimated from the Institute of Transportation Engineers Trip Generation Manual (10th Edition). ITE Land Use Code 220 (Low-Rise Multifamily Housing) is the most appropriate code for this use. Land Use Code 220 provides average generation rates of 0.46 trips per unit in the AM peak hour, with 23% entering and 77% exiting, and 0.56 trips per unit in the PM peak hour, with 63% entering and 37% exiting.

The details of the trip generation analysis are contained in Appendix A, noting that separate estimates were developed for AM and PM peak hours. The total trips generated by the proposed development are estimated to be 7 entering and 22 exiting during the AM peak hour, and 22 entering and 13 exiting during the PM peak hour. The dataset's average rate was used instead of the fitted curve because the value of the independent variables is in the lower range of the dataset, and the fitted curve equation does not pass through the origin.

For comparative purposes, trip generation for the previous development was also estimated from the Institute of Transportation Engineers Trip Generation Manual (10th Edition). ITE Land Use Code 520 (Elementary School) is the most appropriate code for the prior use. Land Use Code 520 provides average generation rates of 6.97 trips per 1000 sq. ft. in the AM peak hour, with 55% entering and 45% exiting, and 1.37 trips per 1000 sq. ft. in the PM peak hour, with 45% entering and 55% exiting.

The details of the trip generation analysis are contained in Appendix B, noting that separate estimates were developed for AM and PM peak hours. The total trips generated by the prior elementary school development are estimated to be 115 entering and 94 exiting during the AM peak hour, and 18 entering

Leamington: 18 Talbot St. W. – Leamington, ON N8H 1M4

Windsor: 800 University Ave. W. – Windsor, ON N9A 5R9

Chatham-Kent: 49 Raleigh St. – Chatham, ON N7M 2M6



**Professional Engineers
Ontario**

and 23 exiting during the PM peak hour. The dataset's average rate was used instead of the fitted curve because the value of the independent variables is in the lower range of the dataset, and the fitted curve equation does not pass through the origin.

The anticipated trips generated by the school are significantly lower in the PM peak hour than the AM peak hour because the trip generation rate is representative of peak hour traffic on the adjacent street. Generally, school dismissal is earlier than the on-street peak hour (i.e. between 2:00pm to 3:30pm for the school's PM peak hour versus 4:00pm to 6:00pm for the adjacent street's PM peak hour). Furthermore, schools tend to exhibit more staggered trips to and from the site in the PM peak hour; this is largely because of after-school programs that spread out the release of students. On the contrary, in the AM peak hour, maximum site generated traffic tends to directly coincide with the adjacent street's peak hour traffic. Therefore, even though the former Victoria Public School is no longer operational, it is the engineers' opinion that the prior enrollment of 150 students (with accompanying staff) could have reasonably generated approximately 115 inbound trips and 94 outbound trips during the adjacent street's AM peak hour and 18 inbound trips and 23 outbound trips during the adjacent street's PM peak hour.

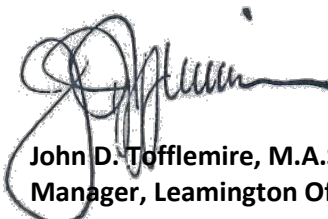
As a result, when compared to the prior elementary school land use, it can be concluded that the proposed residential development will generate approximately 108 fewer trips entering and 72 fewer trips exiting the site during the AM peak hour and 4 more trips entering and 10 fewer trips exiting the site during the PM peak hour.

Upon completion of the trip generation comparison, it is the engineers' opinion that the proposed development will generate substantially fewer trip than the previous elementary school, and as such, it is expected to have less of an impact on area traffic operations.

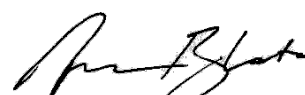
All of which is respectfully submitted,

RC Spencer Associates Inc.




John D. Tofflemire, M.A.Sc., P.Eng.
Manager, Leamington Office




Aaron D. Blata, M.Eng., P.Eng., PTOE
Associate / Traffic Operations Engineer

Appendix A

ITE TRIP GENERATION MANUAL – 10TH EDITION REFERENCES

Proposed Residential Development

Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

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: 42

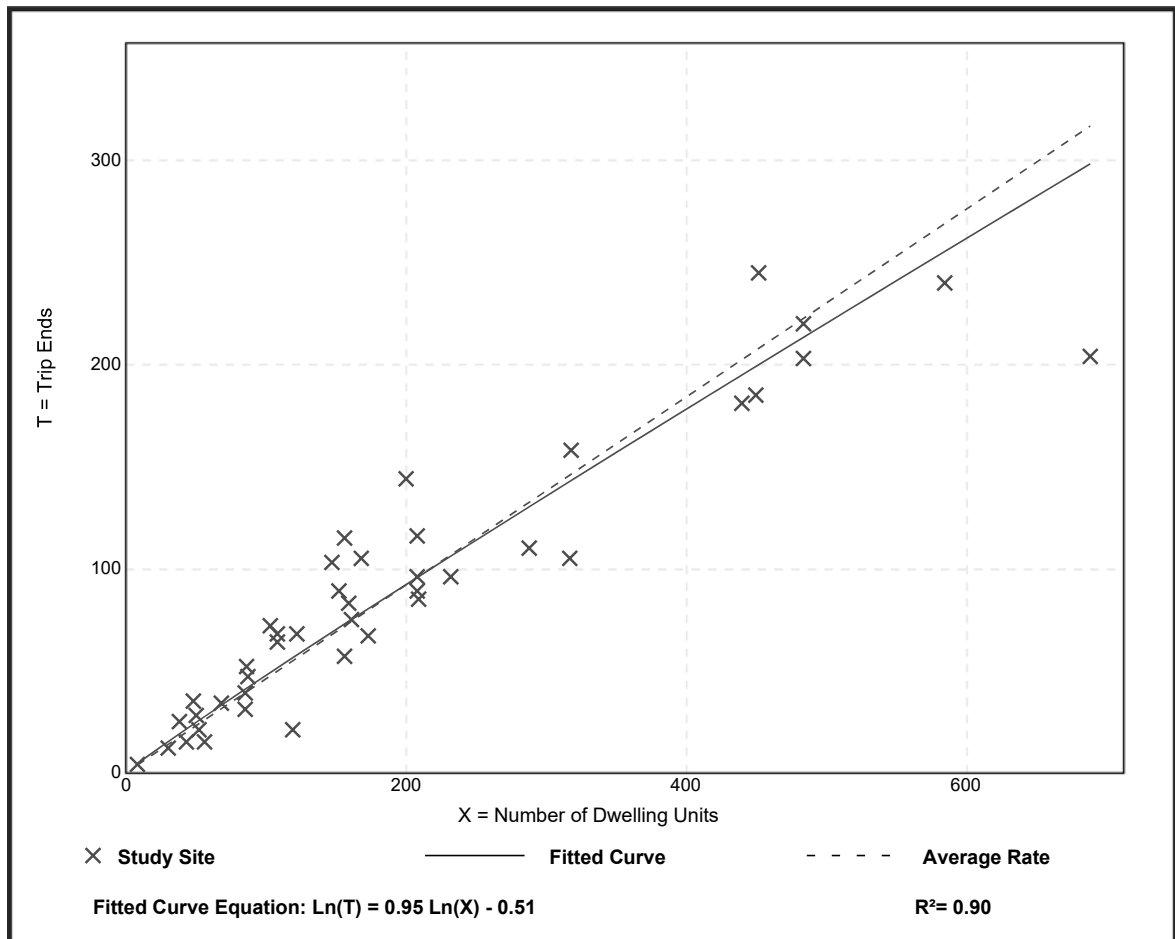
Avg. Num. of Dwelling Units: 199

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

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: 50

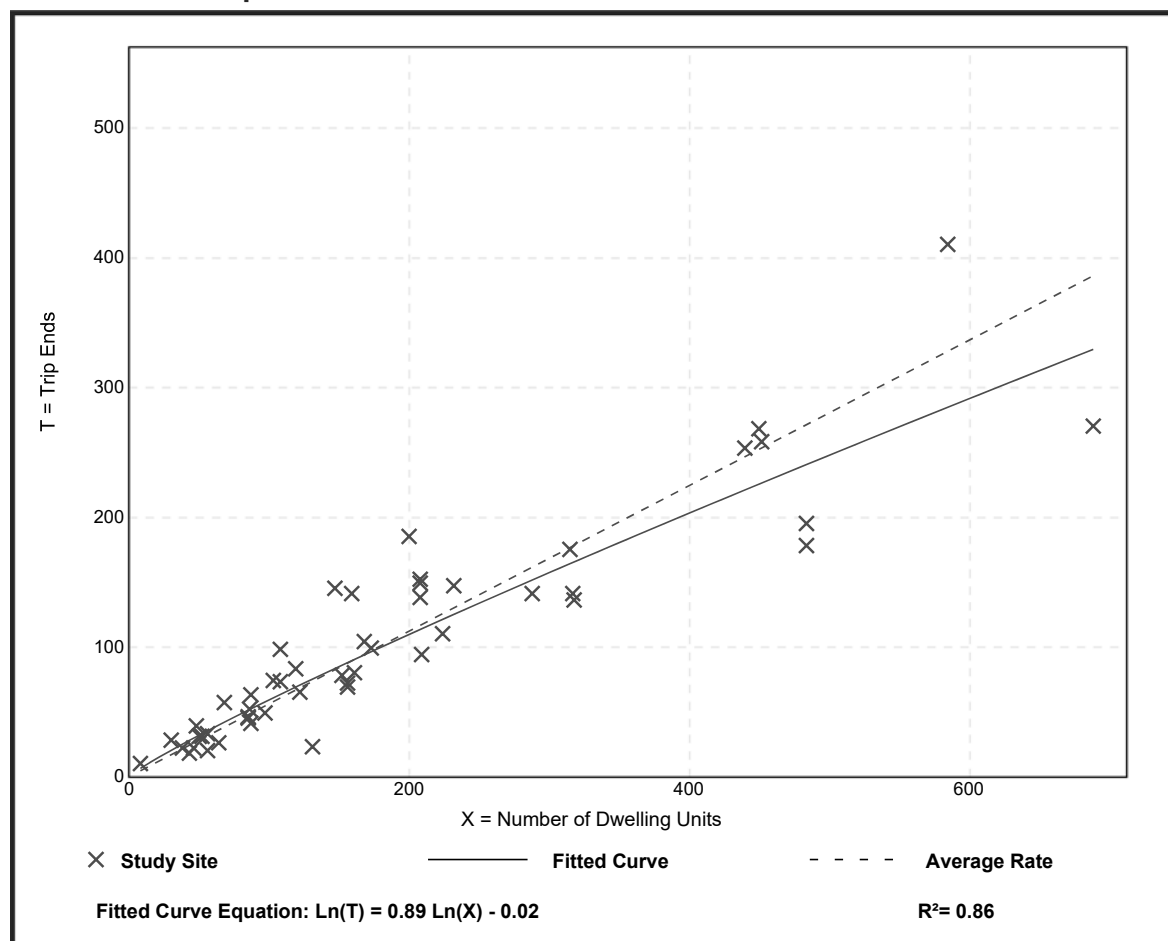
Avg. Num. of Dwelling Units: 187

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



Proposed Site Development Trip Generation and Distribution

Project: Victoria Development

Site: 12433 Dillon Drive, Tecumseh, Ontario

Assumed Land Use (1): Multifamily Housing (Low-Rise) - ITE No. 220

Average Vehicle Trip Ends vs.: Dwelling Units

ITE Trip Generation Data collected on a: Weekday

AM Peak Hour:

0.46

 = Average Rate

23
77

 % Entering
% Exiting

PM Peak Hour:

0.56

 = Average Rate

63
37

 % Entering
% Exiting

Assumed Land Use (1): Multifamily Housing (Low-Rise) - ITE No. 220				
	No. of Units	Trips Generated	Trips Entering	Trips Exiting
AM Peak	63	29	7	22
PM Peak	63	35	22	13

Total Trips		
	Trips Entering	Trips Exiting
AM Peak	7	22
PM Peak	22	13

Appendix B

ITE TRIP GENERATION MANUAL – 10TH EDITION REFERENCES

Previous Victoria Public School Development

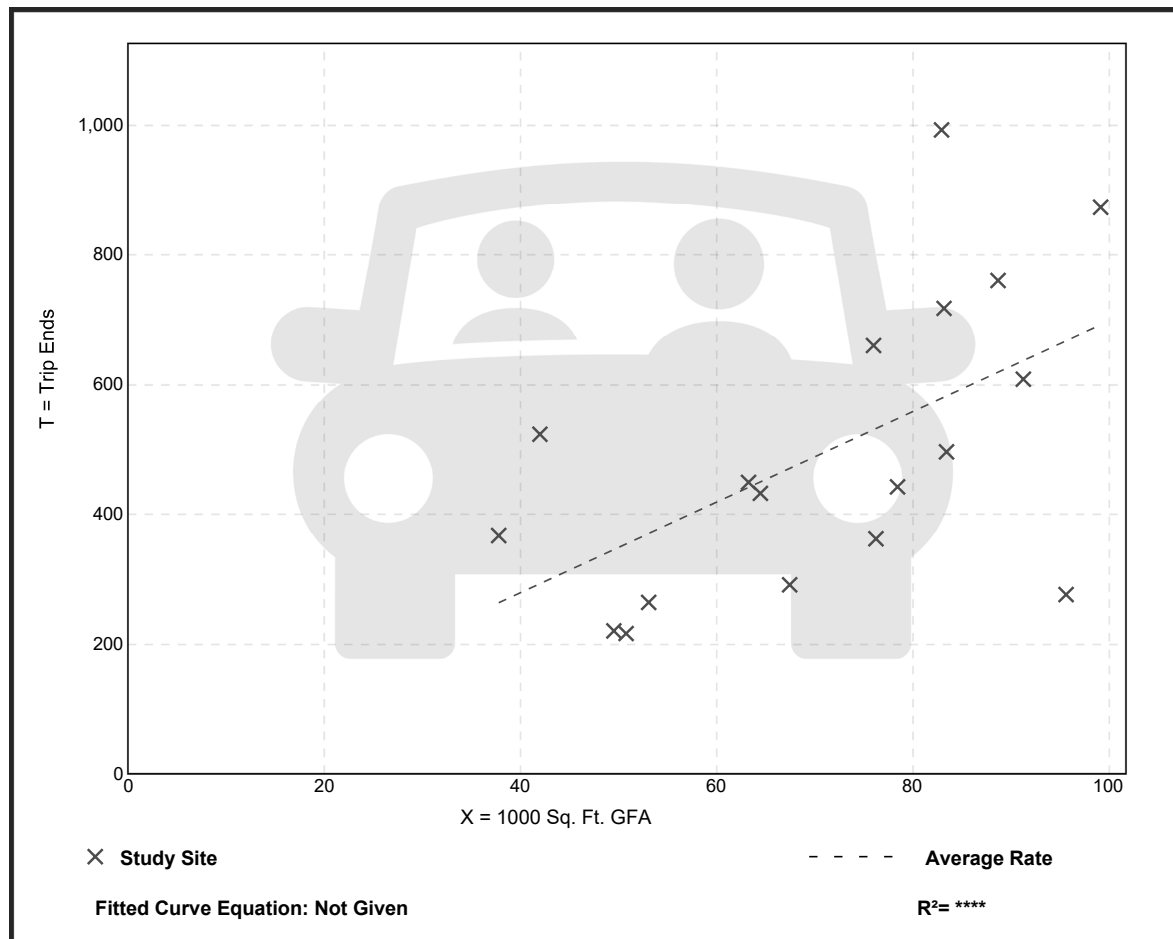
Elementary School (520)

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: 18
 Avg. 1000 Sq. Ft. GFA: 71
 Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
6.97	2.88 - 12.45	2.60

Data Plot and Equation



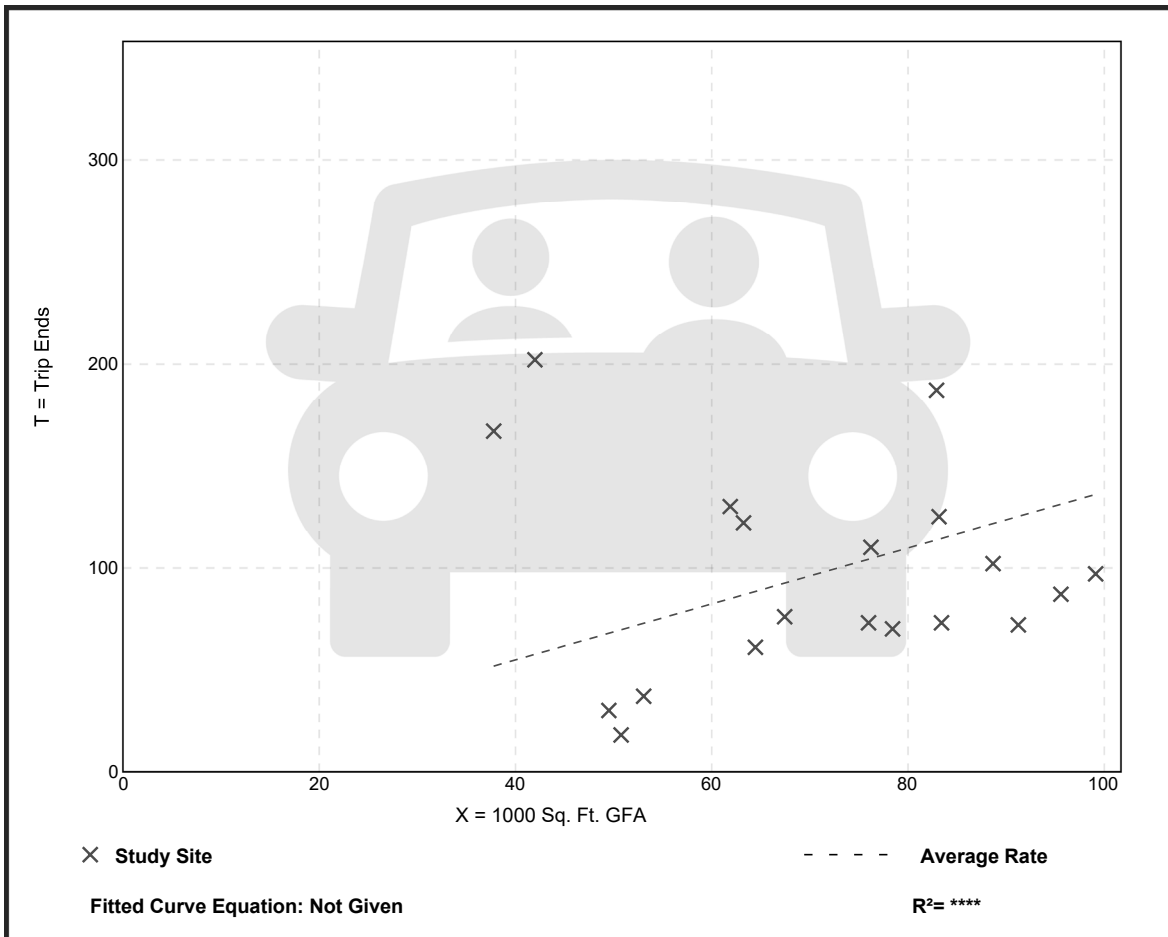
Elementary School (520)

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: 19
 Avg. 1000 Sq. Ft. GFA: 71
 Directional Distribution: 45% entering, 55% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.37	0.35 - 4.81	0.97

Data Plot and Equation



Previous Site Development Trip Generation and Distribution

Project: Victoria Development

Site: 12433 Dillon Drive, Tecumseh, Ontario

Assumed Land Use (1): Elementary School - ITE No. 520

Average Vehicle Trip Ends vs.: 1000 sq. ft. GFA

ITE Trip Generation Data collected on a: Weekday

AM Peak Hour:

6.97

 = Average Rate

55
45

 % Entering
% Exiting

PM Peak Hour:

1.37

 = Average Rate

45
55

 % Entering
% Exiting

Assumed Land Use (1): Elementary School - ITE No. 520				
	1000 sq. ft. GFA	Trips Generated	Trips Entering	Trips Exiting
AM Peak	30	209	115	94
PM Peak	30	41	18	23

Total Trips		
	Trips Entering	Trips Exiting
AM Peak	115	94
PM Peak	18	23