



TMS Engineers, Inc.

Transportation Management Services

2112 Case Parkway South, #7 • Twinsburg, Ohio 44087
www.TMSEngineers.com

September 29, 2023

Mr. Chris Brown
Prestige Builder Group
778 McCauley Road
Suite 140
Stow, Ohio 44224

**Re: Proposed Residential Development
City of Hudson, Ohio
Trip Generation Analysis**

Dear Mr. Brown,

TMS Engineers, Inc. has performed the following trip generation analysis for the proposed residential development which will be located northwest of the Stow Road & Ravenna Road intersection in the City of Hudson, Ohio (see **Location Map, Figure 1**). The purpose of this trip generation analysis is to estimate the traffic that will be generated by the proposed residences. The site plan can be seen in **Figure 2**. The following are the results of our trip generation analysis.

Trip Generation

The calculation of future traffic requires an estimate of traffic the development will generate after construction. The most widely accepted method of determining the amount of traffic that a proposed development will generate is to compare the proposed site with existing facilities of the same use. This estimate is typically expressed as a trip rate. In order to estimate traffic for the proposed residences, a trip rate was calculated using data and procedures found in the Institute of Transportation Engineers (ITE) **"Trip Generation" Manual, Eleventh Edition**.

All trip generation analyses utilized the Single Family Detached Housing land use (ITE Code 210) information. A copy of the trip generation worksheet for the homes can be seen in the attached **Figures 3 and 4**.

Proposed Trip Generation Calculations

Based on the trip generation analysis described above, the table on the next page shows the estimated generated traffic during the AM and PM peak hour for the proposed residential development based upon the national averages considering the number of dwelling units.

ITE TRIP GENERATION		Dwelling Units	TRIP ENDS			
ITE Code	Description		Weekday Peak Hour Between 7-9 AM		Weekday Peak Hour Between 4-6 PM	
			Enter	Exit	Enter	Exit
210	Single Family Detached Homes	34	7	21	23	13
New Generated Trips			28		36	

The previous table shows that the proposed residential development is expected to generate a total of 28 new trips in the AM peak hour and 36 new trips in the PM peak hour. It is our opinion that, when the anticipated changes in traffic volumes are at these levels, the traffic generated by the homes should not have an impact on the surrounding street network system.

This opinion is based upon the fact that traffic impact studies are recommended to be performed by the **Institute of Transportation Engineers** whenever an increase in trips in any peak hour is greater than 100 trips per hour. This recommendation is made because this is the point where a change in roadway capacity may be found and mitigation may or may not be needed. The anticipated generated volumes from this development are less than daily variations in the current volumes on the local roadway network and should not be perceived by the traveling public.

The Ohio Department of Transportation concedes that traffic studies are only necessary when the resulting trip increase is more than 60 trips in either of the peak hours. This is stated in their **State Highway Access Management Manual**. Since the proposed homes is expected to generate less than 60 trips, it is our professional opinion that the change in the amount of generated traffic will **not** have an impact on the surrounding roadway network nor require traffic analyses.

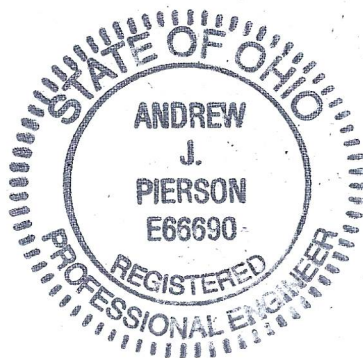
If you have any questions or need additional information, please do not hesitate to contact me.

Very truly yours,

TMS Engineers, Inc.



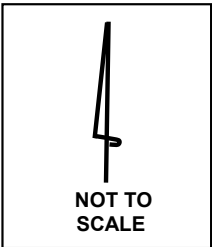
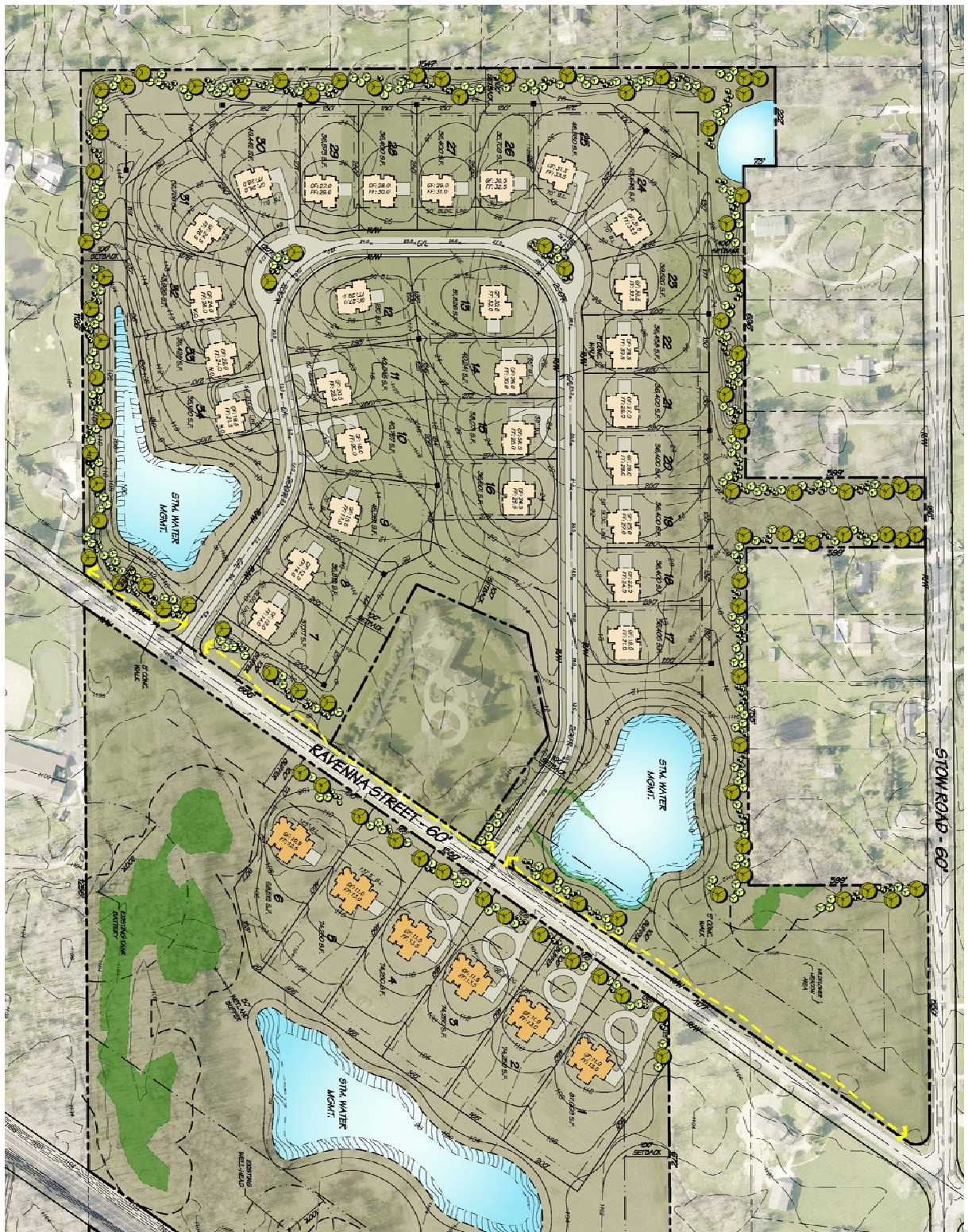
Andrew Pierson P.E.
Senior Traffic Engineer



Attachments

FIGURES





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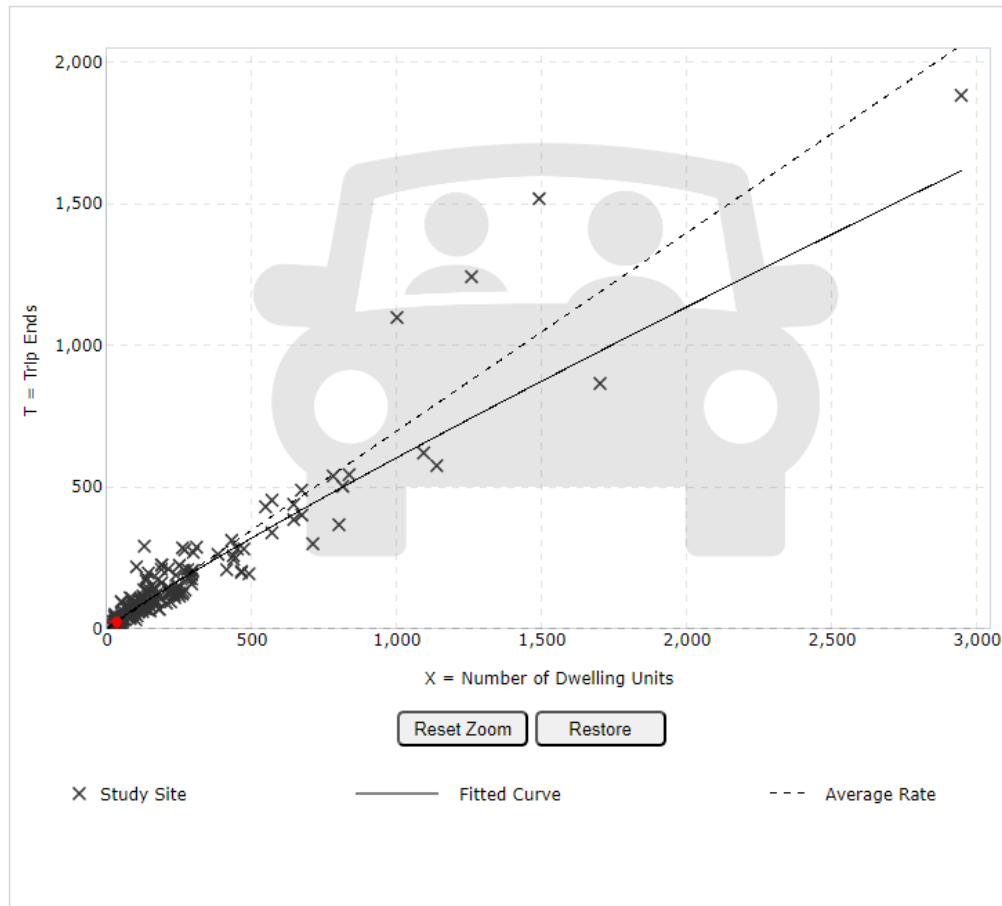
**Residential Development
Hudson, Ohio
Trip Generation Analysis**

Site Plan

Figure 2

Attachment

Data Plot and Equation



DATA STATISTICS

Land Use:

Single-Family Detached Housing (210) [Click for Description and Data Plots](#)

Independent Variable:

Dwelling Units

Time Period:

Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:

General Urban/Suburban

Trip Type:

Vehicle

Number of Studies:

192

Avg. Num. of Dwelling Units:

226

Average Rate:

0.70

Range of Rates:

0.27 - 2.27

Standard Deviation:

0.24

Fitted Curve Equation:

$\ln(T) = 0.91 \ln(X) + 0.12$

R²:

0.90

Directional Distribution:

25% entering, 75% exiting

Calculated Trip Ends:

Average Rate: 24 (Total), 6 (Entry), 18 (Exit)

Fitted Curve: 28 (Total), 7 (Entry), 21 (Exit)



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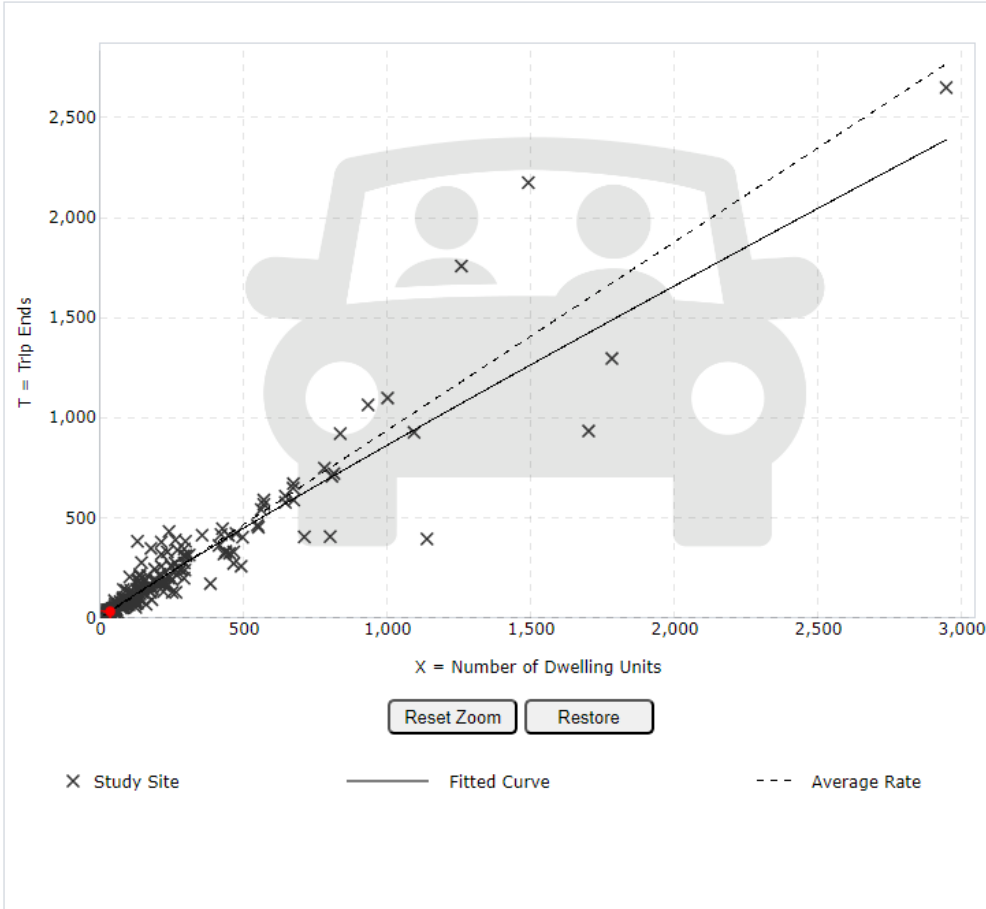
**Residential Development
Hudson, Ohio
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**Trip Generation
Calculations**

Figure 3

Attachment

Data Plot and Equation



DATA STATISTICS

Land Use:	Single-Family Detached Housing (210) Click for Description and Data Plots
Independent Variable:	Dwelling Units
Time Period:	Weekday Peak Hour of Adjacent Street Traffic One Hour Between 4 and 6 p.m.
Setting/Location:	General Urban/Suburban
Trip Type:	Vehicle
Number of Studies:	208
Avg. Num. of Dwelling Units:	248
Average Rate:	0.94
Range of Rates:	0.35 - 2.98
Standard Deviation:	0.31
Fitted Curve Equation:	$\ln(T) = 0.94 \ln(X) + 0.27$
R ² :	0.92
Directional Distribution:	63% entering, 37% exiting
Calculated Trip Ends:	Average Rate: 32 (Total), 20 (Entry), 12 (Exit) Fitted Curve: 36 (Total), 23 (Entry), 13 (Exit)