



July 16, 2020

Shawn Caton, AIA  
Caton Architectural Design  
6320 Marion Avenue  
Kansas City, MO 64133

SUBJECT      Trip Generation Summary  
                 Kentucky Hills Development  
                 Independence, Missouri

Dear Mr. Caton:

Merge Midwest Engineering LLC has completed a trip generation estimate for the addition of eleven duplexes in the Kentucky Hills Development located in Independence, Missouri.

Trip-generation estimates were calculated for the proposed development based upon the 10<sup>th</sup> edition + Supplement of the Institute of Transportation Engineers (ITE) *"Trip Generation Handbook"*. The handbook no longer provides a specific land-use code for duplexes. The available applicable residential land-uses are:

- 210 - Single-Family Detached Housing
- 220 - Multifamily Housing (Low-Rise)

The description of low-rise multifamily states that it must have at least three other dwelling units. For purposes of trip generation, the land use code of single-family detached housing is the most appropriate for estimating duplex traffic for this development.

Table 1 – Trip Generation										
					AM Peak Hour (VPH)			PM Peak Hour (VPH)		
Land Use		Qty	Unit	ADT (VPD)	Total	In	Out	Total	In	Out
210	Single-Family Detached Housing	22	DU	258	20	5	15	24	15	9
TOTALS				258	20	5	15	24	15	9



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As shown in the table, a total of 20 vehicles per hour (vph) would be expected to be generated from the proposed development during the A.M. peak hour (5 inbound and 15 outbound), and 24 vph during the P.M. peak hour (15 inbound and 9 outbound). Therefore, the proposed impact of the 11 two-home duplexes would be expected to be minimal, even when estimated as single-family homes. The trip generation calculations are attached to this letter.

Please do not hesitate to contact me should you have any questions or need additional information.

Sincerely,  
**Merge Midwest Engineering, LLC**

A handwritten signature in blue ink that reads "Janelle M. Clayton". The signature is written in a cursive, flowing style.

Janelle M. Clayton, P.E., PTOE  
Manager / Co-Owner

# Single-Family Detached Housing (210)

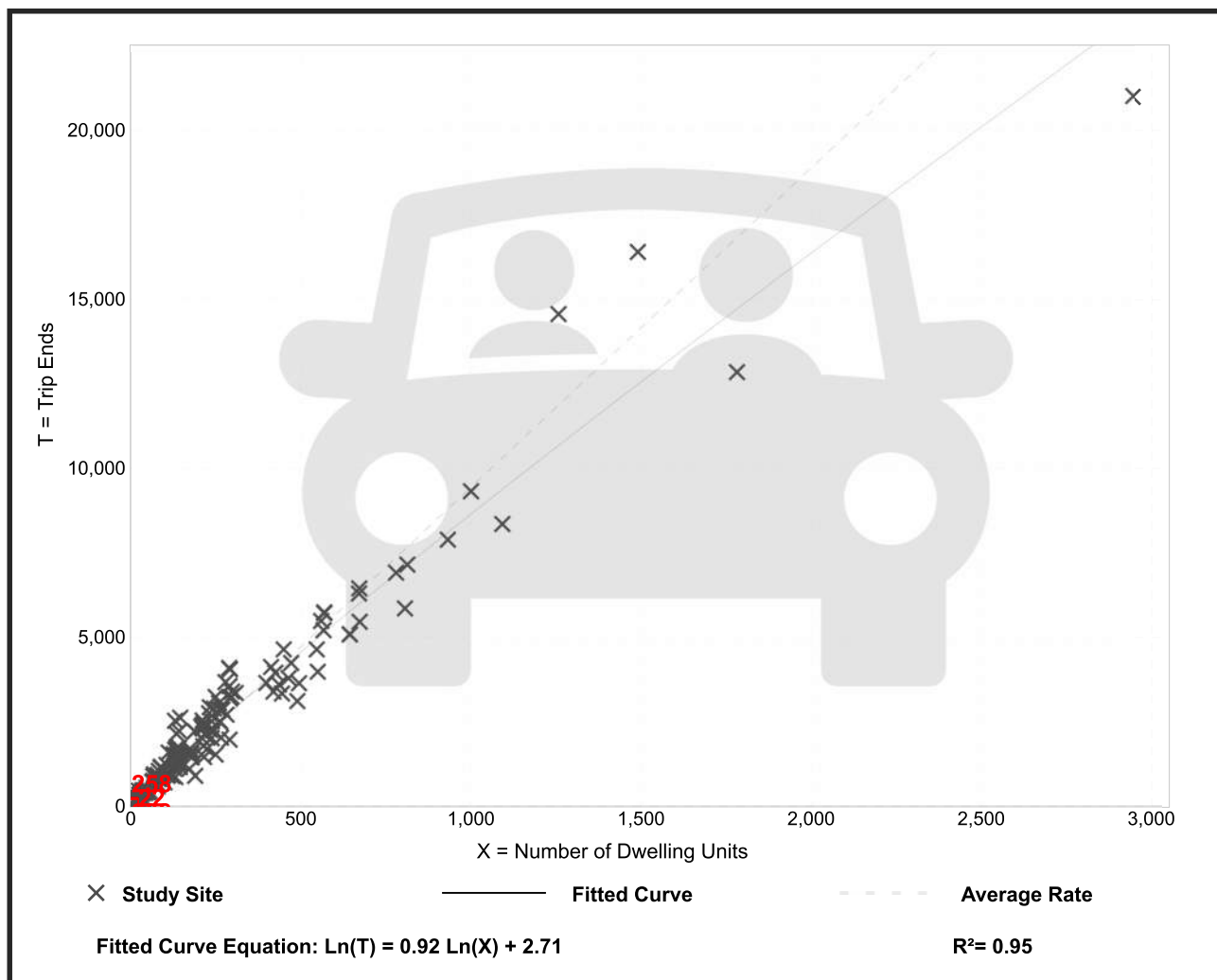
Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 159  
Avg. Num. of Dwelling Units: 264  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

## Data Plot and Equation



# Single-Family Detached Housing (210)

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: 173

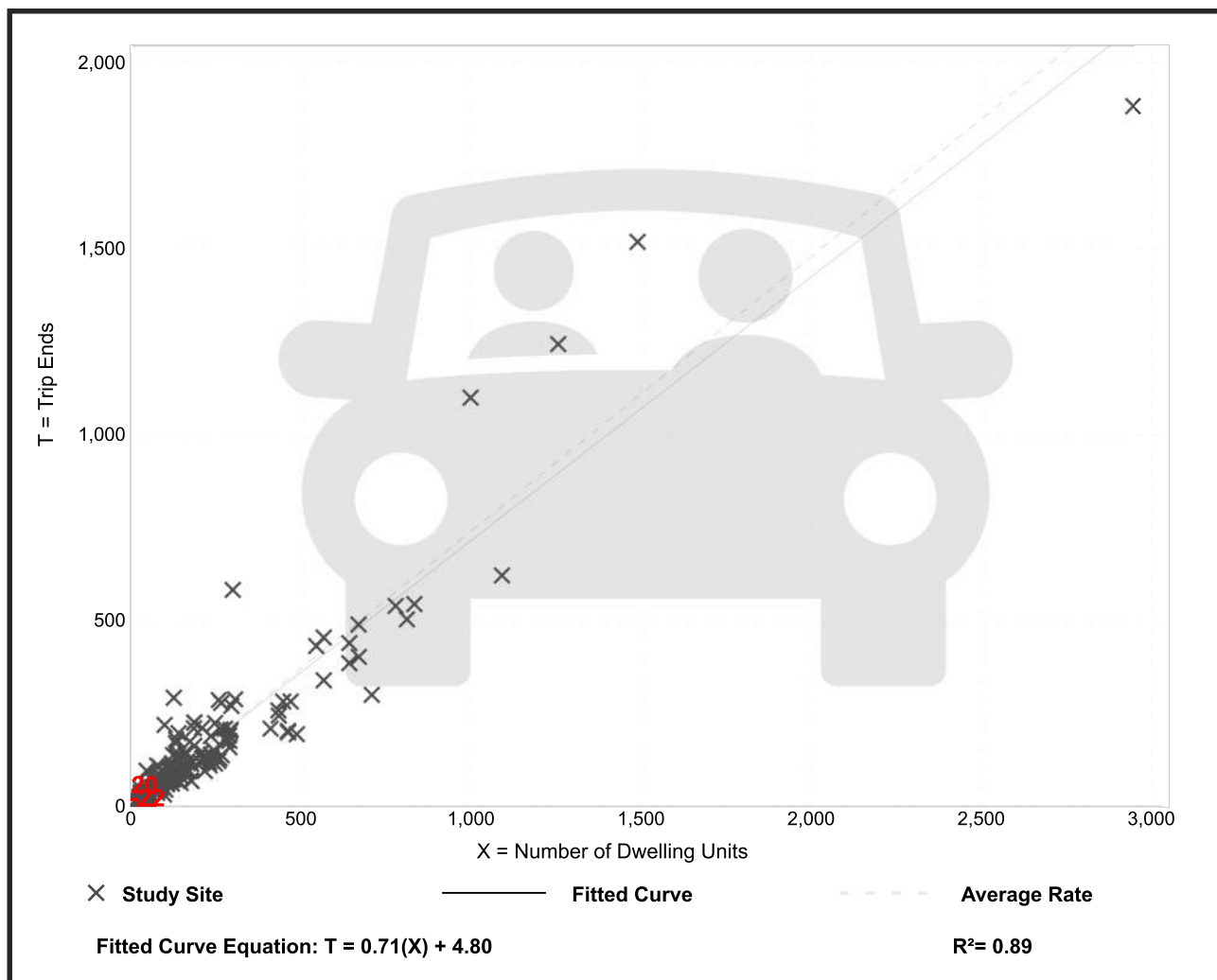
Avg. Num. of Dwelling Units: 219

Directional Distribution: 25% entering, 75% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

## Data Plot and Equation



# Single-Family Detached Housing (210)

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: 190

Avg. Num. of Dwelling Units: 242

Directional Distribution: 63% entering, 37% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

## Data Plot and Equation

