

**TRAFFIC ASSESSMENT
MARONDA HOMES LLC
ALEXANDRIA RESIDENTIAL DEVELOPMENT**

EXHIBIT E

PROJECT DESCRIPTION

Maronda Homes LLC (Maronda) is proposing a residential development with 98 single family homes. The site is located in Campbell County, Kentucky approximately 1 mile south of the Campbell County High School. The 46.51 acre site will have a two access points. The western entrance will intersect with South Licking Pike approximately 800 feet south of Losey Road. The eastern entrance intersects with Alexandria Pike opposite of Wellington Drive and is located approximately 1,500 feet south of Bud Pogue Way and approximately 2,100 feet north of Cooper Baine Road. Refer to Figure One for a Location Map and Figure Two for a Concept Plan.

ROADWAY NETWORK

South Licking Pike is a County owned, two-lane bituminous concrete roadway which is oriented north to south and is classified as a Local Urban Roadway. It appears to be about 20' wide with no shoulders and is posted with a 45-mph speed limit. South Licking Pike provides a back way between the western entrance and the Campbell County High School (north of the proposed development). South Licking Pike continues for approximately 1 ¼ miles to the south where it eventually intersects with U.S. Route 27.

Alexandria Pike is a County owned two-lane bituminous concrete roadway, oriented north to south. It is also classified as a Local Urban Roadway. However, it appears to be about 24' with a 2' to 3' wide paved berm. It is also posted with a 45-mph speed limit. Alexandria Pike parallels U.S. 27 for approximately 2 ¾ miles and acts as a service road with four connector roadways providing access to the four-lane U.S. 27. U.S. 27 provides access north to I-471 and into Cincinnati. U.S. 27 provides access south through Kentucky terminating at U.S. 68, northeast of Lexington.

All intersections in the immediate vicinity of the development are unsignalized. The nearest signalize intersection is located approximately nearly one mile north of the eastern entrance at Camel Crossing Road with U.S. 27 near the Campbell County High School.

ANTICIPATED TRIP GENERATION

Lennon. Smith, Souleret Engineering, Inc. (LSSE) used the Institute of Traffic Engineers (ITE) Trip Generation Manual Tenth Edition, to develop anticipated weekday trips, AM peak-hour trips, and PM peak-hour trips for the proposed development. The calculated trips anticipated to be developed by the proposed residential development are identified below.

- Weekday, 1020 Trips, 510 Entering, 510 Exiting.
- Weekday AM commuter peak hour, 74 Peak-Hour Trips, 18 Entering, 56 Exiting.
- Weekday PM commuter peak hour, 99 Peak-Hour Trips, 62 Entering, 37 Exiting.

Campbell County has adopted the Kentucky Traffic Cabinet standards for Traffic Impact Study Requirements which indicate a traffic impact study shall be submitted when a new development generates greater than 100 trip ends during the peak hour of the roadway. According to the ITE Trip Generation Manual we should expect this development to generate less than 100 trips needed to require a study and therefore the traffic impacts should be considered negligible.

INTERNAL SITE CIRCULATION

The conceptual site plan (Figure Two) depicts a roadway network with circular pathways thereby eliminating the need for roadway dead ends or cul-de-sacs. This type of plan permits easier maneuvering of larger vehicles which typically access local neighborhoods such as emergency service vehicles, school buses, and waste removal vehicles. Eliminating roadway dead ends results in a roadway plan that is safer, and quieter for residents living alongside the roadway and for pedestrians walking through the neighborhood.

Since the proposed development has two entrances instead of one, the impacts of the generated traffic will be minimized. For instance, during the heaviest period of activity (the PM Peak Hour), the development will generate 62 vehicles entering and 37 exiting. We would estimate at least 20 percent or a dozen vehicles will enter the development via South Licking Pike. This results in less than 50 vehicles entering the development from Alexandria Pike. Of these 50 vehicles we can conservatively assume 80%, or about 40 vehicles will be entering the development from the north. That is less than 4 vehicles every five minutes. This should result in minimal impacts to the existing roadways.

CONCLUSIONS

The proposed development will generate fewer trips than the minimum number of trips required to conduct a traffic impact study. The new trips generated by the development should be easily absorbed by the existing roadway network.

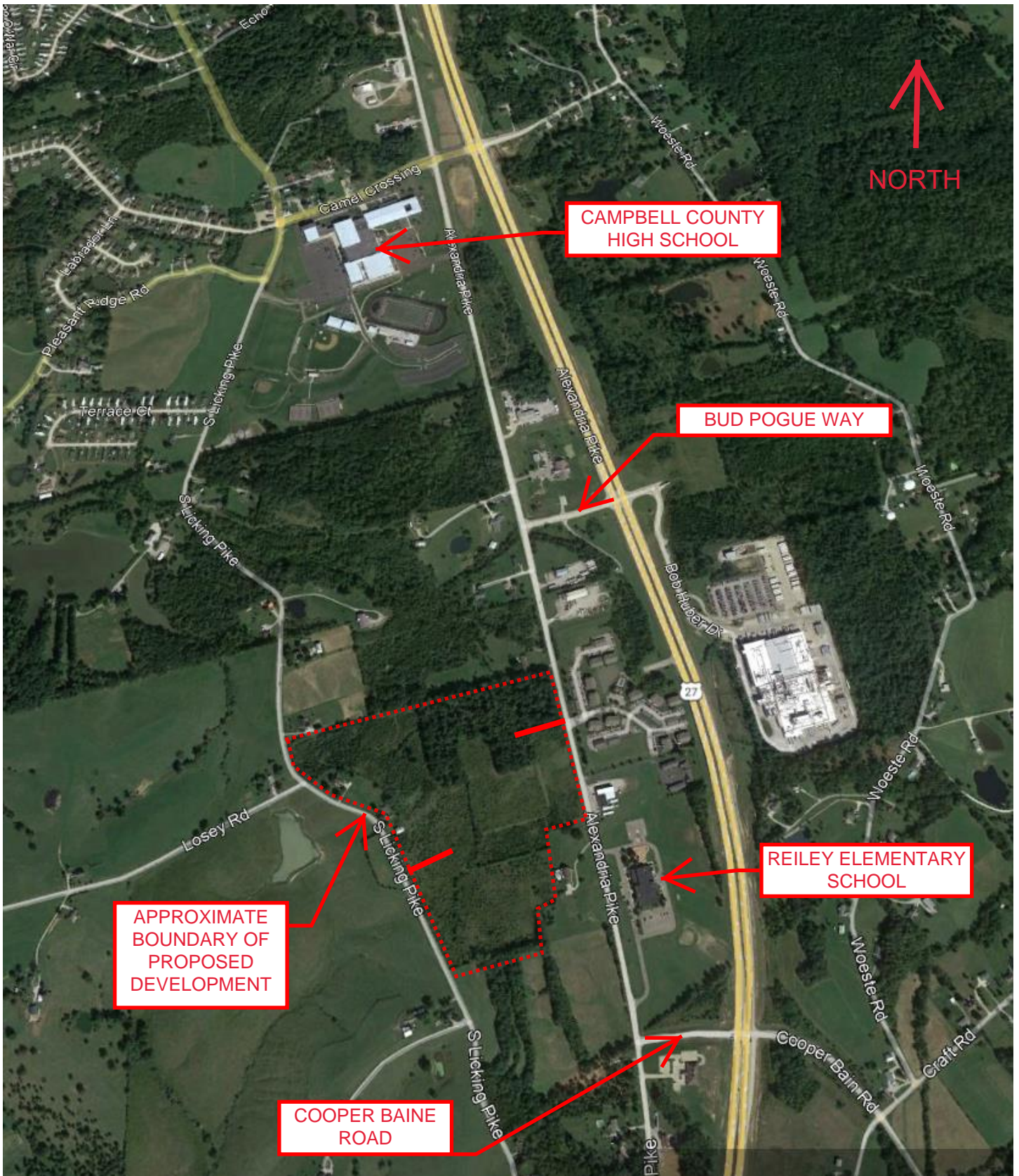
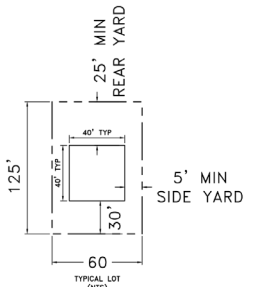
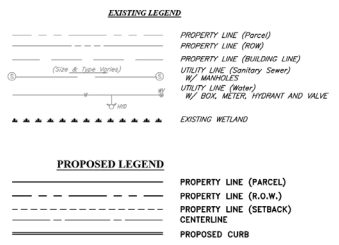


FIGURE ONE, LOCATION MAP
CAMPBELL COUNTY, KY
MARONDA HOMES, ALEXANDRIA, SOUTH LICKING PIKE DEVELOPMENT



PROPOSED LOT

SITE DATA

JURISDICTION: CAMPBELL COUNTY
 CURRENT ZONING: R-1A, R-R(CP)
 PROPOSED ZONING: R-1C - RESIDENTIAL CLUSTER OVERLAY

TOTAL AREA: 46.51 ACRES
 TOTAL ROW: 5.11 ACRES
 TOTAL LOTS: 18.05 ACRES
 TOTAL OPEN SPACE: 23.35 ACRES
 TOTAL OPEN SPACE: 50.2%

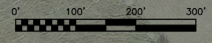
MIN. BUILDING HEIGHT: 35'

PROPOSED LOTS: 98 SINGLE FAMILY
 PROPOSED GROSS DENSITY: 2.1 DU/ACRE

PROPOSED INFRASTRUCTURE:

- SIDEWALK ALONG ROUTE 27
- INTERNAL STREETS, 50' ROW WITH SIDEWALKS
- DESIGNATED PLAYGROUNDS
- GREEN SPACE WALKING PATHS

- NOTES:**
1. LOCATION AND ALIGNMENT OF ROADS, ACCESS POINTS, PLAYGROUNDS, WALKING PATHS, AND STORMWATER MANAGEMENT AREAS, SMALL CELL TOWERS ARE CONCEPTUAL AND FINAL LAYOUT WILL BE DETERMINED PENDING FINAL GEOTECHNICAL INVESTIGATION ANALYSIS AND ENGINEERING RECOMMENDATIONS
 2. WETLAND RESOURCE PROTECTION AND CROSSINGS WILL BE IN COMPLIANCE WITH NPDES STANDARDS AND REQUIREMENTS.
 3. SANITARY CAPACITY RESERVATION APPLICATION HAS BEEN SUBMITTED.



No.	Date	Description	By	No.	Date	Description	By	No.	Date	Description	By
1	04/04/22	Per Campbell Co Planning Com. 03/08/22	JS								

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Filename: 308-337 CP17.dwg
 Date:

Maronda Homes LLC
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Alexandria - Reiley School
 Residential Development
 10743 S. LICKING PIKE
 Sheet #
 Campbell County, Kentucky

Sheet Title: **PRELIMINARY DEVELOPMENT PLAN**

Sheet No.: 308-337-01

Drawn By: []
 Checked By: []
 Approved By: []

Land Use: 210

Single-Family Detached Housing

Description

Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

Additional Data

The number of vehicles and residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it was usually readily available, easy to project, and had a high correlation with average weekday vehicle trip ends.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Single-family detached units had the highest trip generation rate per dwelling unit of all residential uses because they were the largest units in size and had more residents and more vehicles per unit than other residential land uses; they were generally located farther away from shopping centers, employment areas, and other trip attractors than other residential land uses; and they generally had fewer alternative modes of transportation available because they were typically not as concentrated as other residential land uses.

Time-of-day distribution data for this land use are presented in Appendix A. For the six general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:00 and 5:00 p.m., respectively. For the two sites with Saturday data, the overall highest vehicle volume was counted between 3:00 and 4:00 p.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 10:15 and 11:15 a.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Delaware, Illinois, Indiana, Maryland, Minnesota, Montana, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, and Virginia.

Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 903, 925, 936

Single-Family Detached Housing (210)

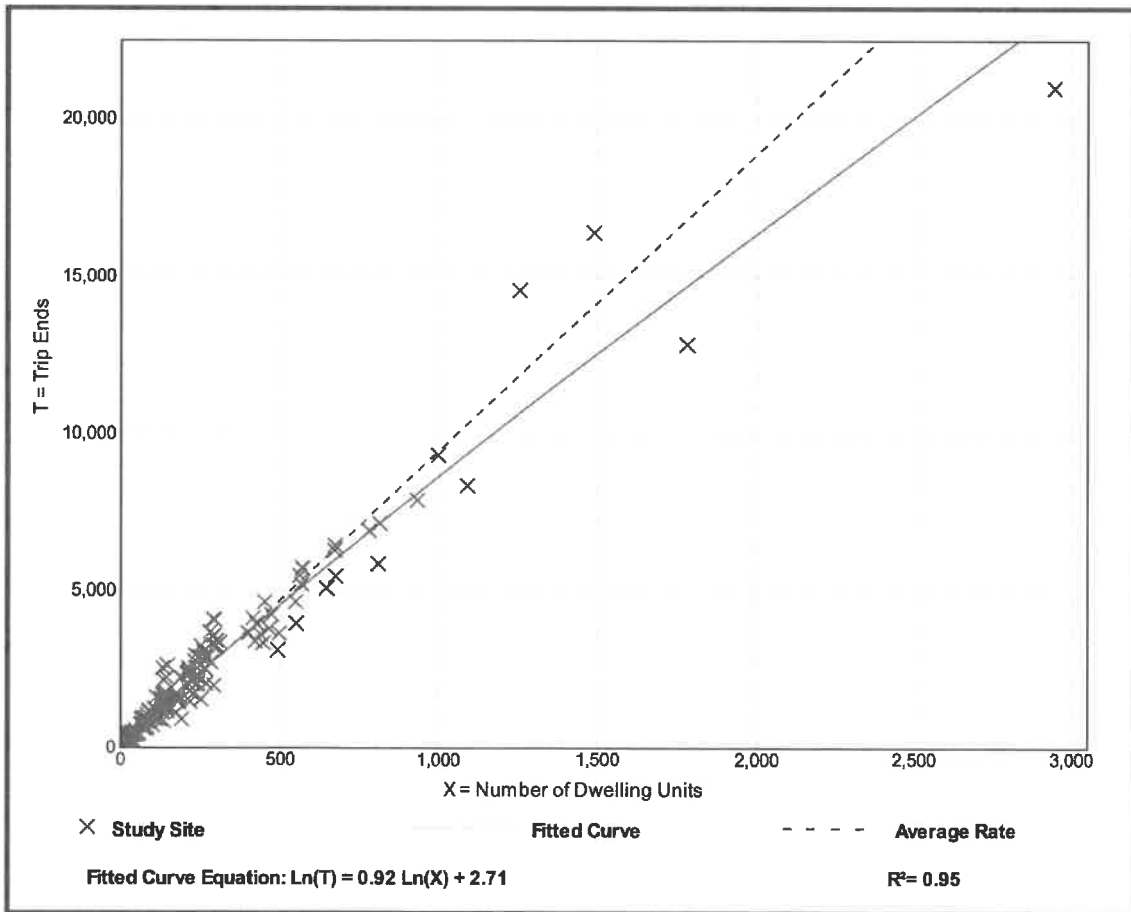
Vehicle Trip Ends vs: Dwelling Units
On a: **Weekday**

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



x = 98 Dwelling Units
T = weekday Trips
 $\ln(T) = 0.92 \ln(98) + 2.71$
 $\ln(T) = 6.9282$
T = 1020 Daily Trips

Vehicles per Day
 $(1020)(0.50) = 510 \text{ Entering}$
 $(1020)(0.50) = 510 \text{ Exiting}$

Single-Family Detached Housing (210)

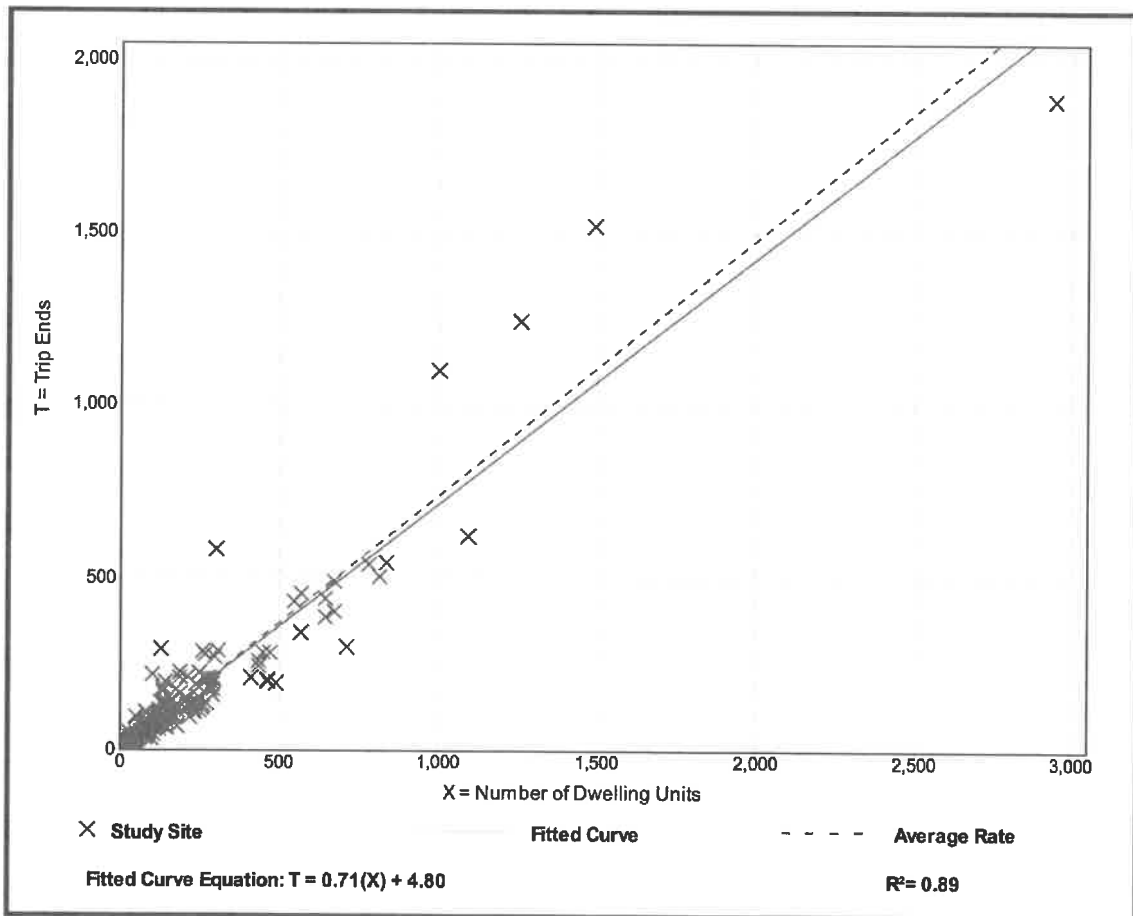
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

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



x = 98 Dwelling Units
T = Peak Hour Trips AM
 $T = 0.71(98) + 4.80$
T = 74 Peak Hour Trips

Vehicles during the AM Peak Hour
 $(74)(0.25) = 18$ Entering
 $(74)(0.75) = 56$ Exiting

Single-Family Detached Housing (210)

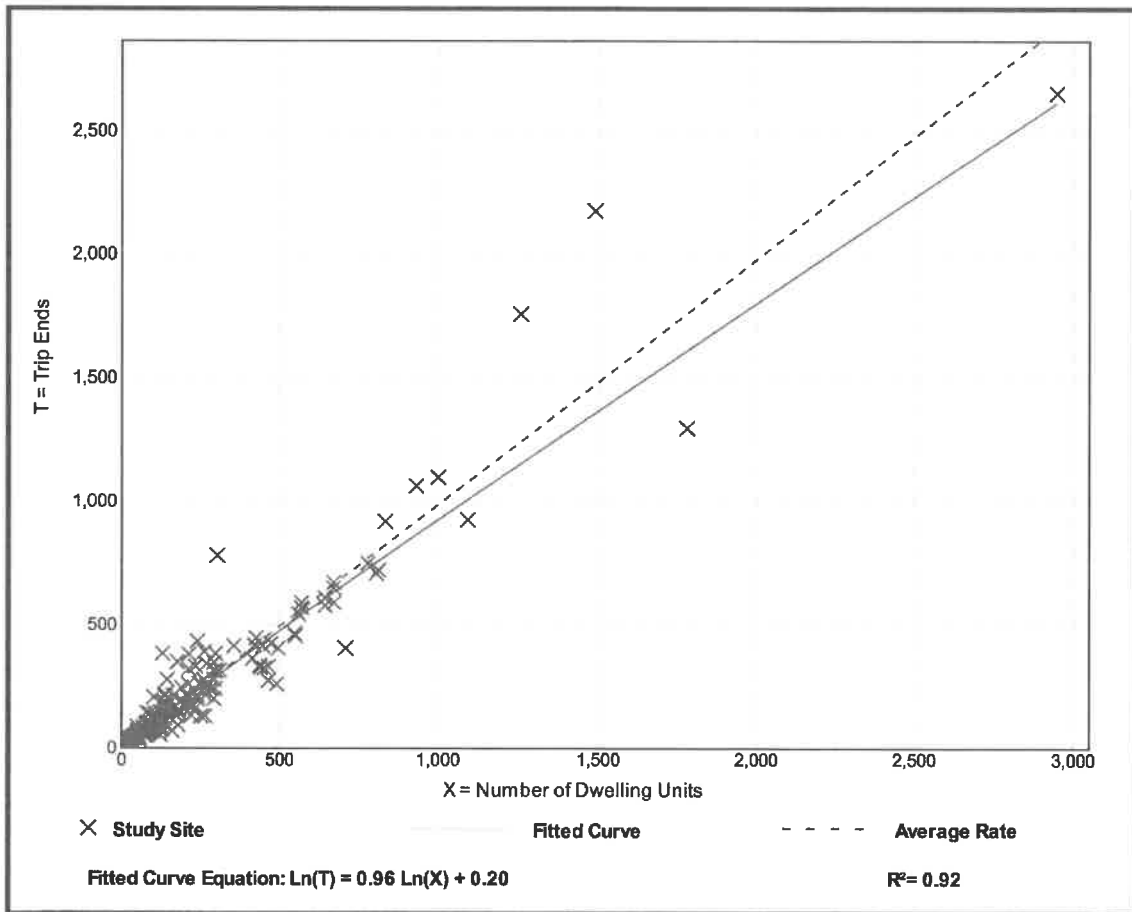
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

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



X = 98 Dwelling Units
T = Peak Hour Trips PM
 $\text{Ln}(T) = 0.96 \text{Ln}(98) + 0.20$
 $\text{Ln}(T) = 4.6016$
 $T = 99$

Vehicles during the PM Peak Hour
 $(99)(0.63) = 62$ Entering
 $(99)(0.37) = 37$ Exiting