

*TRAFFIC ANALYSIS REPORT*

Western Grove WG-5A Parcel  
Port St. Lucie, FL

*Prepared for:*  
Mattamy Homes

*Prepared by:*



Engineering & Planning, Inc.

1172 SW 30<sup>th</sup> Street, Suite 500  
Palm City, FL 34990  
(772) 286-8030

140009  
November 2020  
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CA 29013

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Shaun G. MacKenzie P.E.  
Florida License # 61751

City of Port St. Lucie Project No.

## ***EXECUTIVE SUMMARY***

MacKenzie Engineering and Planning, Inc. performed an analysis of the traffic impacts resulting from the proposed Western Grove WG-5A Parcel. The project is located at the northwest corner of Tradition Parkway & N/S Road A, Port St. Lucie, Florida. The applicant proposes 440 single family dwelling units (DU).

The proposed project is expected to generate the following net new external trips and driveway trips:

- 4,064 daily, 317 AM peak hour (79 in/238 out), and 421 PM peak hour (265 in/156 out)

No turn-lanes into the projected are needed at this time because Tradition Parkway will end at the roundabout. The entrance at the roundabout will accommodate the projected right-turn volume into the project.

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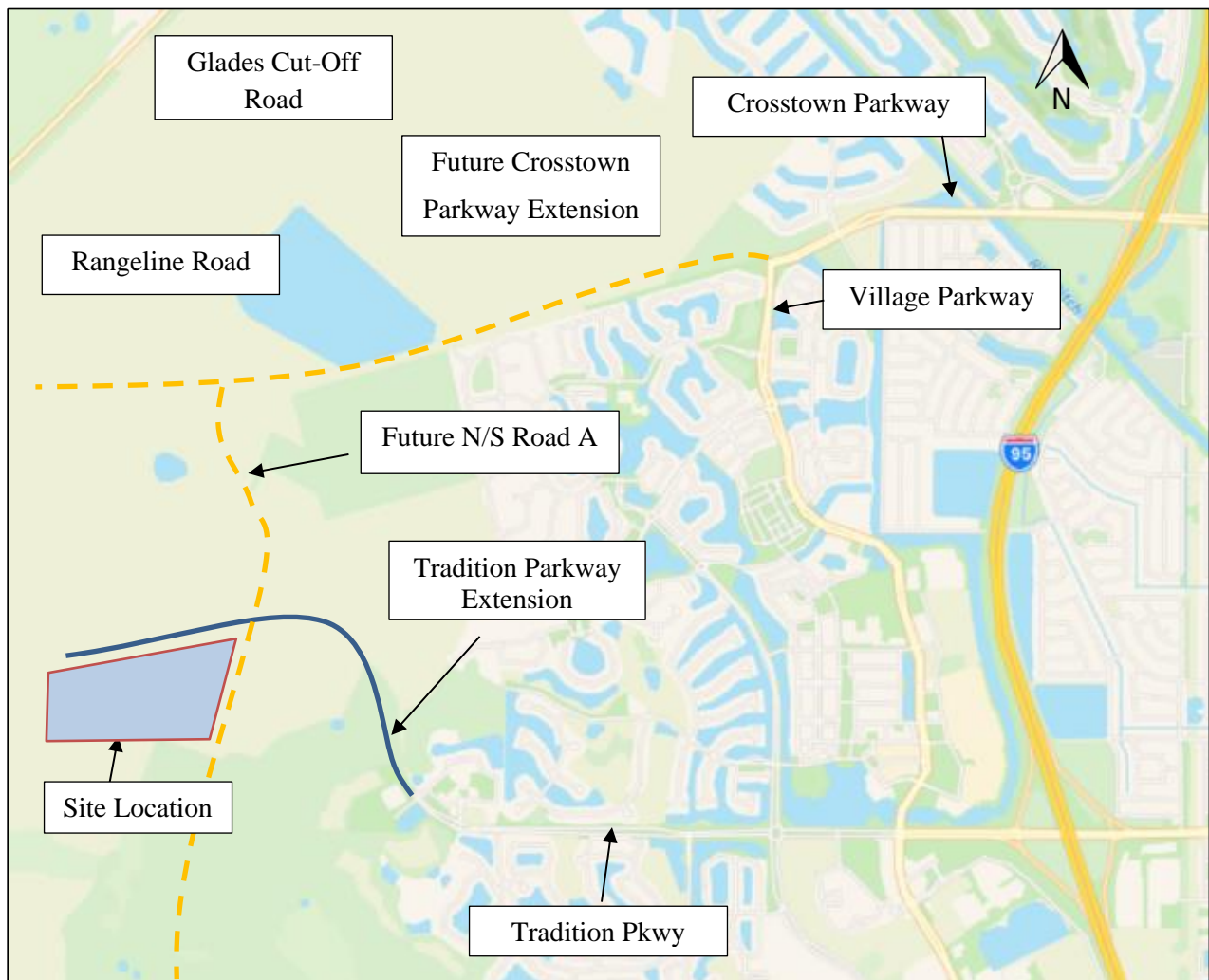
Exhibit 1. Trip Generation

## ***INTRODUCTION***

MacKenzie Engineering & Planning, Inc. was retained to prepare a traffic impact analysis for the Western Grove WG-5A Parcel. This document presents the methodology used and the findings of the traffic impact analysis. The analysis was conducted in accordance with the requirements of the City of Port St. Lucie.

This analysis has been prepared to evaluate traffic impacts resulting from 440 single family homes. The project is located at the northwest corner of N/S Road A and Tradition Parkway in Port St. Lucie, Florida. Figure 1 illustrates the site location.

**Figure 1. Site Location Map**



## ***INVENTORY AND PLANNING DATA***

The traffic data used in this analysis includes:

- Roadway geometrics

Kimley-Horn & Associates provided site information.

## ***PROJECT TRAFFIC***

### ***Trip Generation***

The study uses trip generation rates for Single Family Detached (ITE Land Use 210) published in the Institute of Traffic Engineers' (ITE) report, *Trip Generation (10<sup>th</sup> Edition)*.

The applicant proposes 440 single family DUs.

The proposed project is expected to generate the following net new external trips and driveway trips:

- 4,064 daily, 317 AM peak hour (79 in/238 out), and 421 PM peak hour (265 in/156 out)

### ***Internal Capture***

The site contains no internal capture.

### ***Pass-by Trip Capture***

The proposed pass-by capture is 0 percent.

Table 1. Trip Generation

Land Use				Intensity	Daily Trips	AM Peak Hour			PM Peak Hour			
						Total	In	Out	Total	In	Out	
<b>Proposed Site Traffic</b>												
Single Family Detached				440 DU	4,064	317	79	238	421	265	156	
Note: Trip generation was calculated using the following data:												
					Pass-by Rate	AM Peak Hour			PM Peak Hour			
Land Use	ITE Code	Unit	Daily Rate			in/out	Rate	in/out	Equation			
Single Family Detached	210	DU	$\ln(T) = 0.92 \ln(X) + 2.71$		0%	25/75	$T = 0.71 (X) + 4.8$	63/37	$\ln(T) = 0.96 \ln(X) + 0.2$			

## ***ROADWAY ANALYSIS***

Tradition Parkway will need to be extended west of N/S Road A from its current terminus.

## ***TRAFFIC DISTRIBUTION***

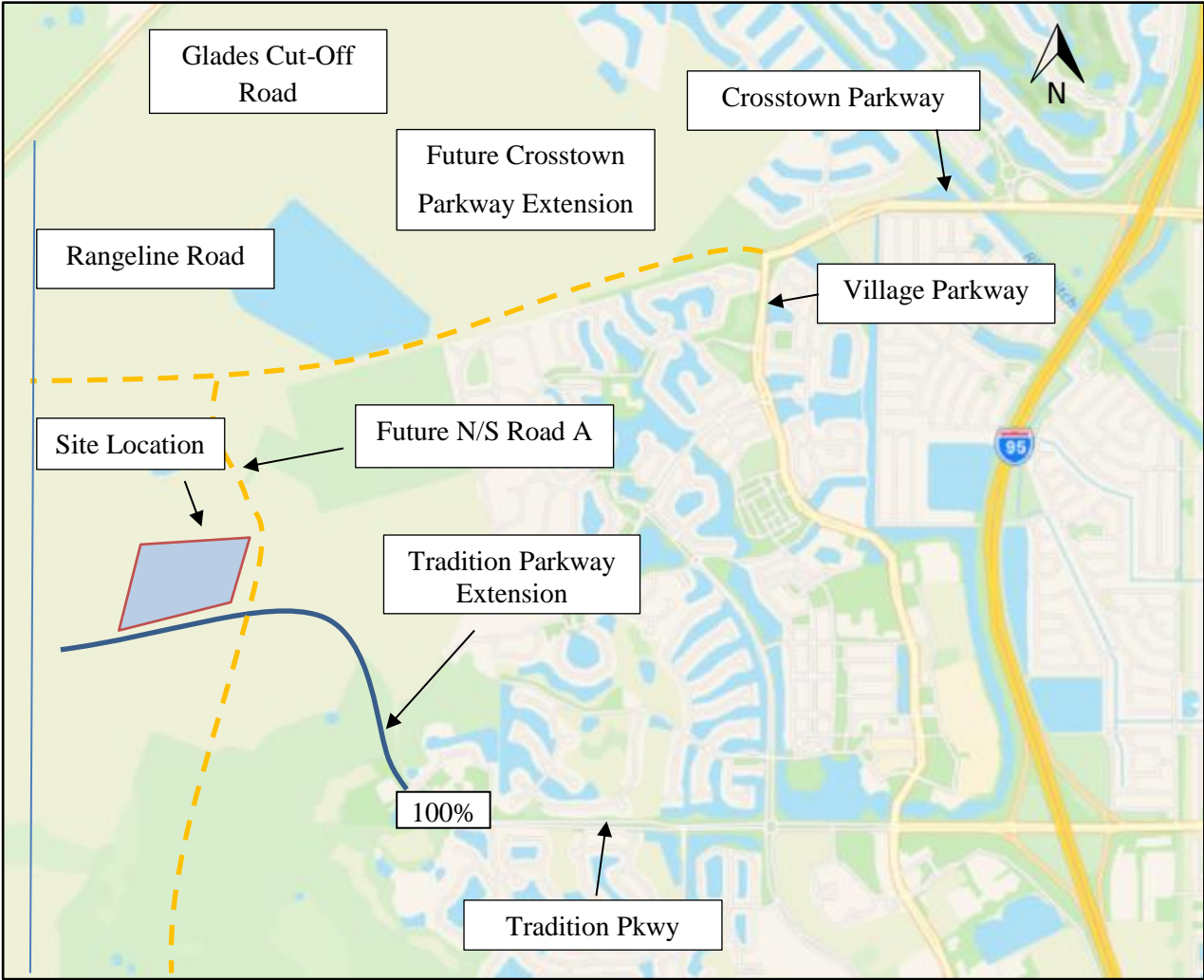
Traffic distribution and assignment was determined using engineering judgment, trip lengths, surrounding uses and review of the roadway network. The overall distribution is summarized by general directions and is depicted below:

EAST                      -                      100 percent

## ***TRAFFIC ASSIGNMENT***

The distributed external trips for the project were assigned to the roadway network within the radius of influence. The project assignment is shown in Figure 2.

**Figure 2. Traffic Assignment**





## ***DRIVEWAYS***

### ***Driveway Access***

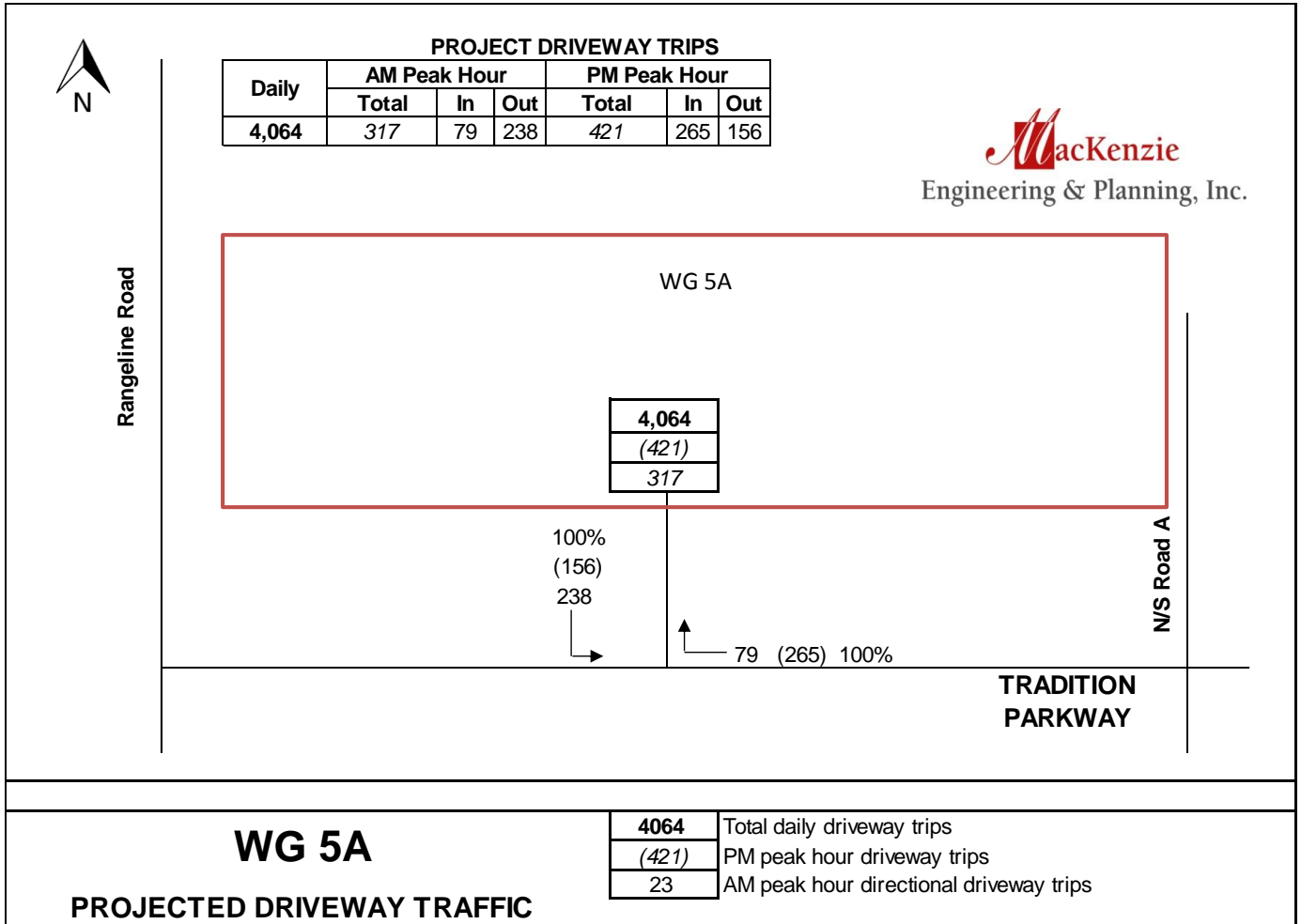
The proposed site has one initial points of access:

- D/W 1 –Tradition Parkway - Roundabout– Full opening

Future phases of the development will provide additional access.

The projected peak hour right-turn volume is 265. Left-turn volume into the project will remain at 0 until Tradition Parkway is extended west to Rangeline Road. Even after the road is extended, few trips are expected to travel to the west. The right-turns can be accommodated from the roundabout intersection.

**Figure 3. Proposed Driveway Volumes**



## ***CONCLUSION***

MacKenzie Engineering and Planning, Inc. performed an analysis of the traffic impacts resulting from the proposed Western Grove WG-5A Parcel. The project is located at the northwest corner of N/S Road A and Tradition Parkway, Port St. Lucie, Florida. The applicant proposes 440 single family dwelling units (DU).

The proposed project is expected to generate the following net new external trips and driveway trips:

- 4,064 daily, 317 AM peak hour (79 in/238 out), and 421 PM peak hour (265 in/156 out)

No turn-lanes into the projected are needed at this time. The entrance at the roundabout will accommodate the projected right-turn volume into the project.

## ***APPENDICES***

A- ITE Trip Generation 10<sup>th</sup> Ed.: Single Family Detached (Land Use 210)

B- Site Plan

## Single-Family Detached Housing (210)

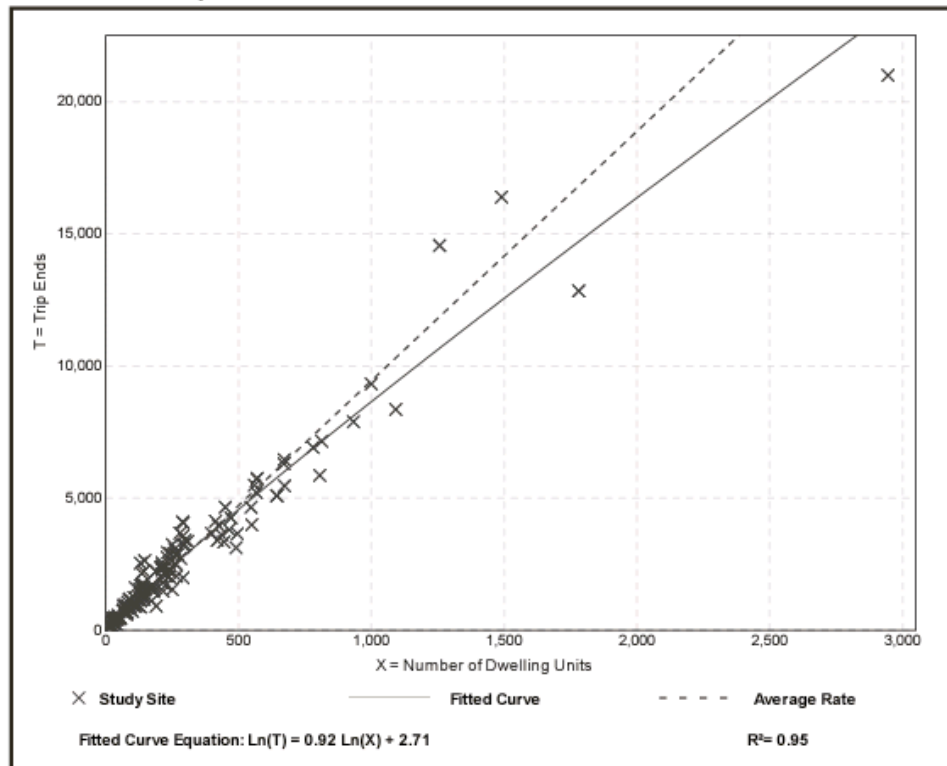
**Vehicle Trip Ends vs: Dwelling Units**  
**On a: Weekday**

**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



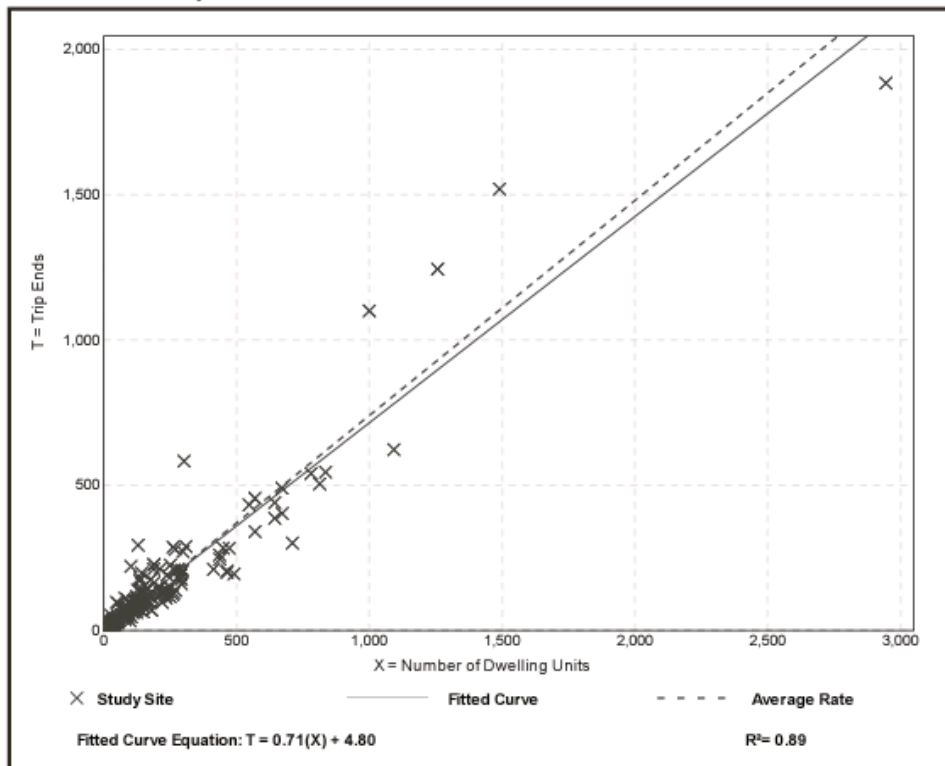
## Single-Family Detached Housing (210)

**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



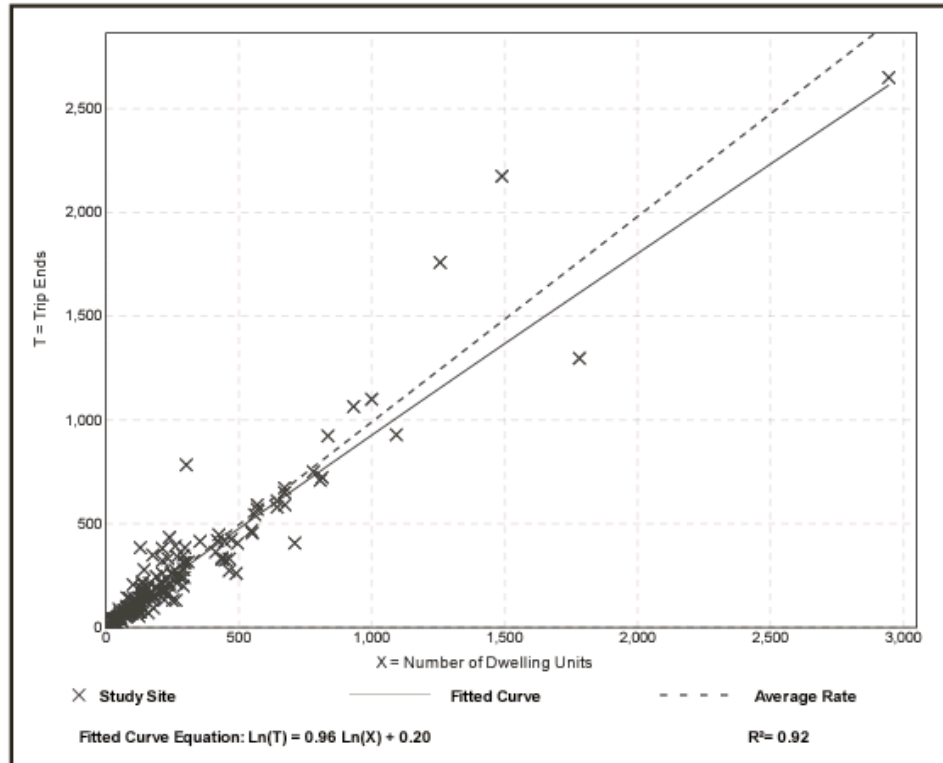
## Single-Family Detached Housing (210)

**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



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