



MEMORANDUM

Date: December 14, 2023
 To: Ms. Tracy Straub, PE
 Assistant County Administrator
 Marion County
 412 SE 25th Avenue
 Ocala, FL 34471
 CC: Jon Harvey (Tillman)
 From: Kok Wan Mah, PE
 Project: Sabanna Farms
 Subject: Revised Traffic Impact Assessment

Project #: 29906

Introduction and Purpose

The purpose of this memorandum is to provide an updated traffic assessment to support a zoning change for the proposed Sabanna Farms project. The current land use is High Residential (HR) with PUD zoning for up to 270 rental townhomes. This was supported by a traffic assessment dated February 24, 2022 from VHB. The proposed zoning will maintain the PUD zoning, but will change from a maximum of 270 rental townhomes to 205 single family residential units. The project is located north of US 27 and west of I-75 on the west side of NW 44th Avenue in Marion County, FL. The property is approximately 74 acres, and the project site being rezoned utilizes 47 of those acres. The site plan is attached.

Trip Generation Comparison, Current and Proposed Zoning

The current approved zoning includes up to 270 rental townhomes. The memo from February 24, 2022 includes trip generation using LUC 215, generating 2,007 daily trips, 135 AM peak-hour trips, and 158 PM peak hour trips. The PUD is proposed to be amended to include up to 205 single family residential units (LUC 210). This results in 1,953 daily trips, 143 AM peak-hour trips, and 195 PM peak-hour trips. A comparison of the current and proposed land use with intensities is shown in **Table 1**.

Table 1 – Comparison of Trip Generation

Land Use	ITE Code	Intensity	Daily Trip Ends	AM Peak Period			PM Peak Period						
				%	Trips	Total	%	Trips	Total				
Single-Family (Attached)	215	270 DU	2,007	31%	42	69%	93	135	57%	90	43%	68	158
Single Family	210	205 DU	1,953	26%	37	74%	106	143	63%	123	37%	72	195
Trip Difference			-54		-5		13	8		33		4	37

Source: ITE Trip Generation, 11th Edition

The number of trips from the current PUD zoning of 270 townhome units to the proposed PUD zoning of 205 single family units results in a decrease of 54 daily trips, an increase of 8 AM peak-hour trips, and an increase of 37 PM peak-hour trips.

Roadway Capacity Assessment

An updated roadway analysis is conducted for existing and future conditions to evaluate the adjacent roadway to the project and determine if the facility has capacity to accommodate the project. Daily and PM peak-hour traffic counts and roadway data was acquired from the Ocala Marion TPO CMP Database 2023. Growth rates for the listed segments were reported as 2.7% based on the *Marion County Traffic Counts Report 2023*. This growth along with project trip impacts were added to the existing traffic to determine the total build-out future condition for Year 2027. The project trip distribution was based on the surrounding roadway characteristics and local attraction and production uses, analyzed using the 2030 Central Florida Regional Planning Model 7. **Table 2** presents the existing conditions and **Table 3** presents the future conditions with project traffic. As shown in **Table 3**, NW 44th Avenue has adequate capacity to accommodate project traffic at the buildout year.

Table 2 – Existing Roadway Capacity Analysis

PM Peak Hour		2023 Roadway Conditions									
ID	Roadway / Segment	# of Lanes	Adopted LOS	Growth Rate	2023 AADT	PHPD Capacity	PHPD Volume	PHPD v/c Ratio	Remaining Capacity	Over Capacity?	
NW 44th Avenue											
3470.1	US 27 to NW 63rd Street	4	E	2.7%	9,900	3,357	491	0.15	2,866	No	
3470.4	NW 63rd Street to SR 326	2	E	2.7%	9,900	1,449	491	0.34	958	No	

K factor of 0.09 and D factor of 0.551 is used based on values from FDOT Count Station 368029 on NW 44th Ave, north of US 27
Growth Rates taken from Marion County Traffic Counts Report 2023

Table 3 – Year 2028 Future Roadway Capacity Analysis

PM Peak Hour		2027 Background										2027 Total			
ID	Roadway / Segment	# of Lanes	Adopted LOS	2023 PHPD Capacity	2023 PHPD Volume	Growth Rate	2027 PHPD Vol.	2027 v/c	2027 Deficient?	Proj. Dist.	Proj. Vol.	Total Volume	Total v/c	Remaining Capacity	Deficient?
NW 44th Avenue															
3470	US 27 to NW 63rd Street	4	E	3,357	491	2.7%	544	0.16	No	80.11%	99	642	0.19	2,715	No
3470	NW 63rd Street to SR 326	2	E	1,449	491	2.7%	544	0.38	No	1.10%	1	545	0.38	904	No

K factor of 0.09 and D factor of 0.551 is used based on values from FDOT Count Station 368029 on NW 44th Ave, north of US 27
Growth Rates taken from Marion County Traffic Counts Report 2023

Driveway Access Assessment

Access to the proposed development will utilize the existing full-access two-way-stop-controlled intersection of NW 35th Ln Road and NW 44th Avenue. All of the development traffic will utilize this access.

Turn Lane Need

The speed limit on this segment of NW 44th Ave is 45 mph. There is an existing 175 ft northbound left turn lane at the access intersection. A turn lane need analysis will be conducted during the traffic impact analysis phase. The National Cooperative Highway Research Program (NCHRP) Reports 457 will be utilized as documentation to determine if any additional turn lane recommendations are warranted.

Driveway Analysis

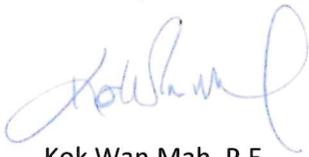
Synchro analysis depicting the operation at the project entrance on NW 44th Avenue will be provided in the formal traffic impact analysis during site plan approval.

Conclusion and Recommendations

Based on the traffic assessment, there is adequate capacity to support the zoning change request for Sabanna Farms from a maximum of 270 townhomes to 205 single family units. Specific impacts by the project will be determined by a full traffic study during the site plan review.

We appreciate the opportunity to provide this assessment to Marion County. Please do not hesitate to contact us with any questions or comments.

Sincerely,



Kok Wan Mah, P.E.
Associate Transportation Engineer
Kittelson and Associates Inc.
kmah@kittelson.com

Attachments

- 1- Site plan
- 2- ITE Trip Generation Summary Sheets
- 3- 2023 Ocala Marion CMP Database

Single-Family Detached Housing (210)

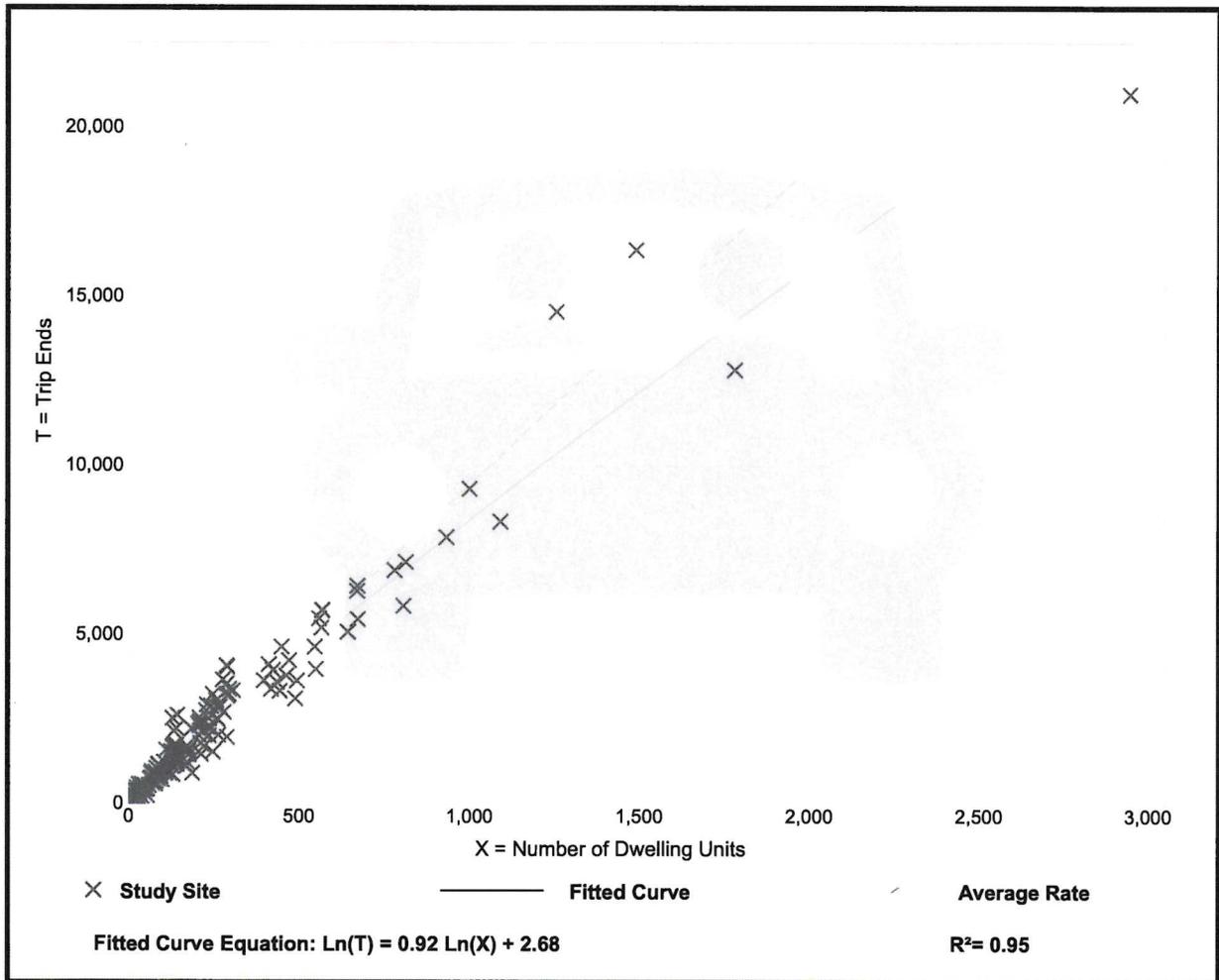
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Single-Family Detached Housing (210)

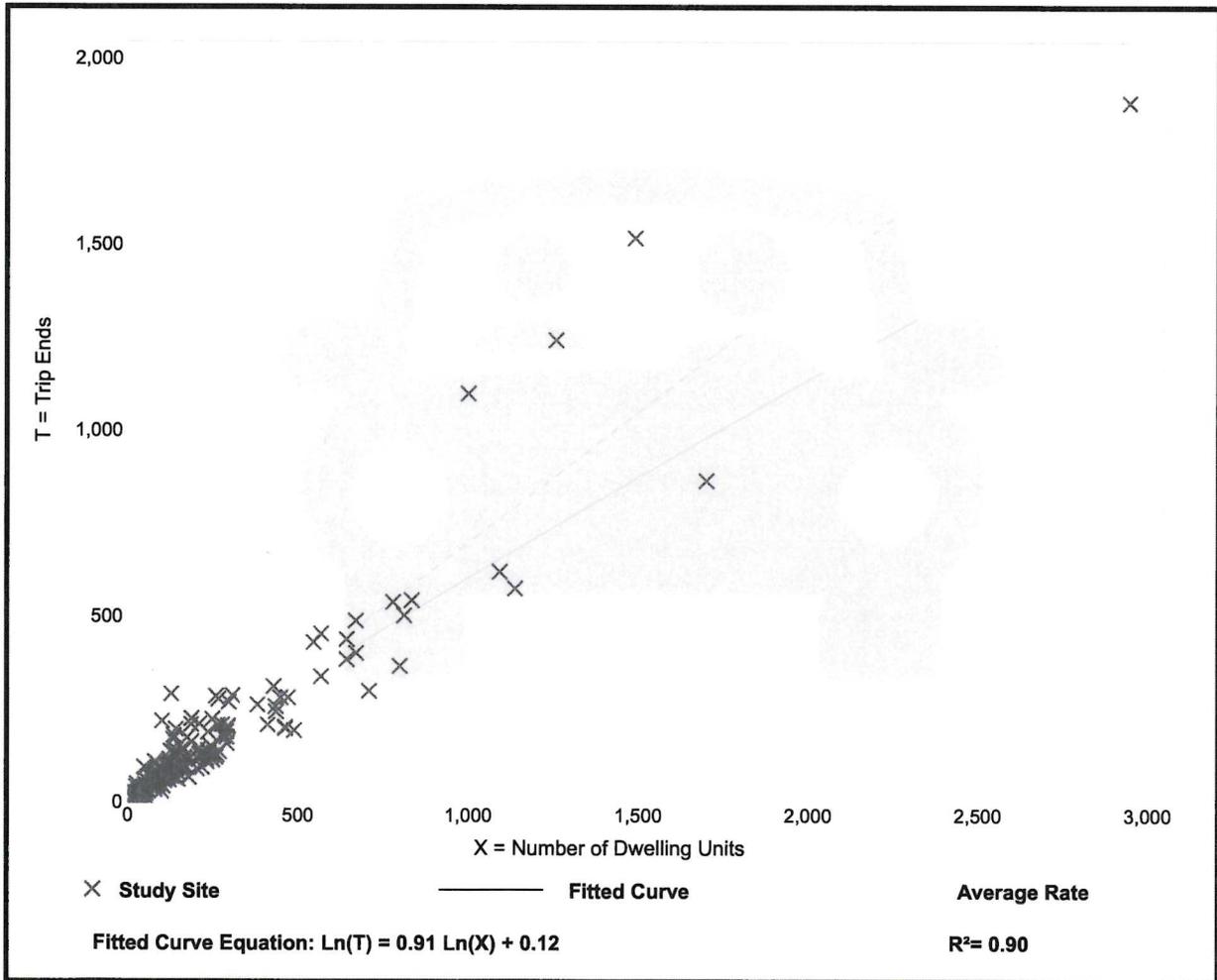
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 192
 Avg. Num. of Dwelling Units: 226
 Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

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: 208

Avg. Num. of Dwelling Units: 248

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

Range of Rates

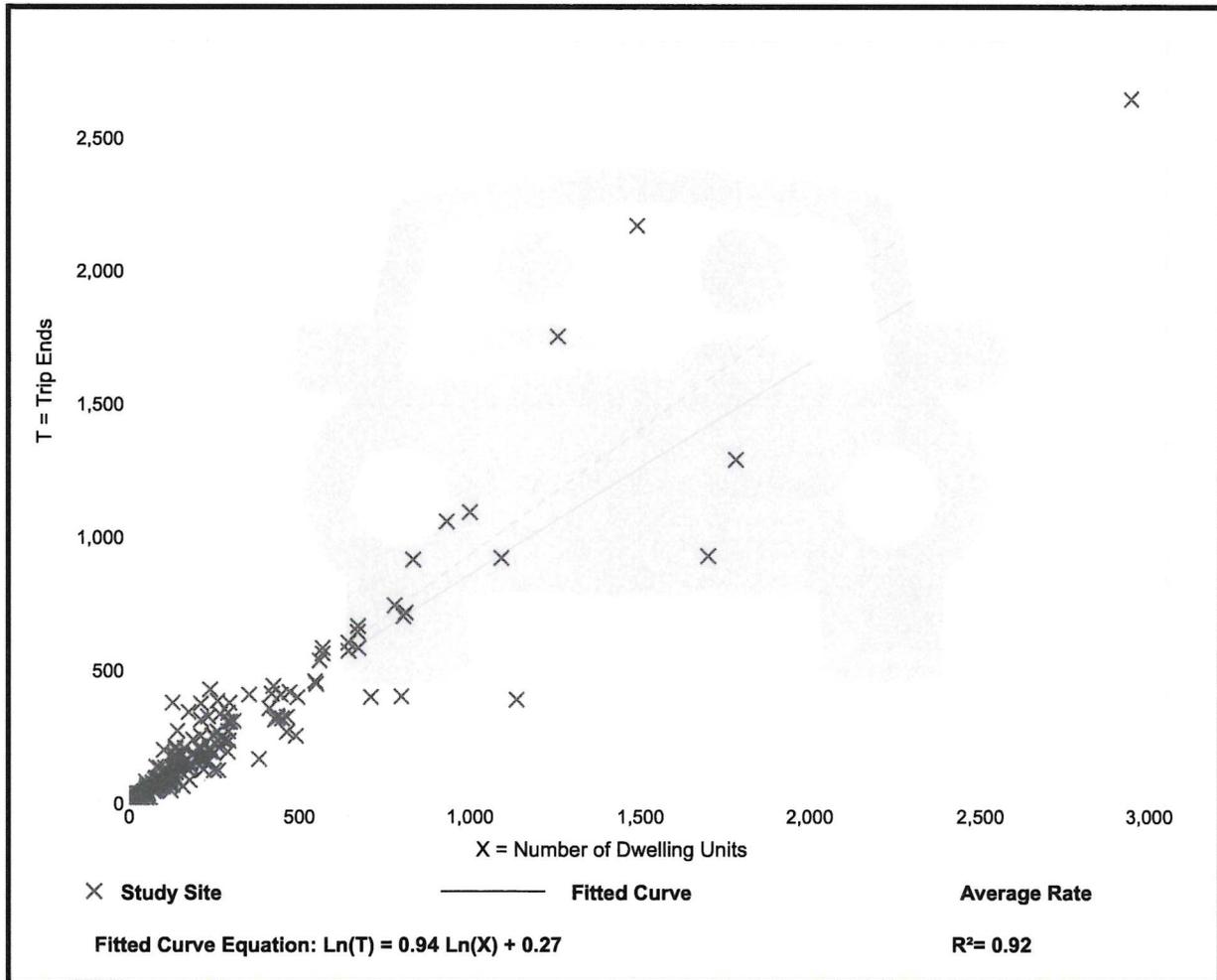
Standard Deviation

0.94

0.35 - 2.98

0.31

Data Plot and Equation



Single-Family Attached Housing (215)

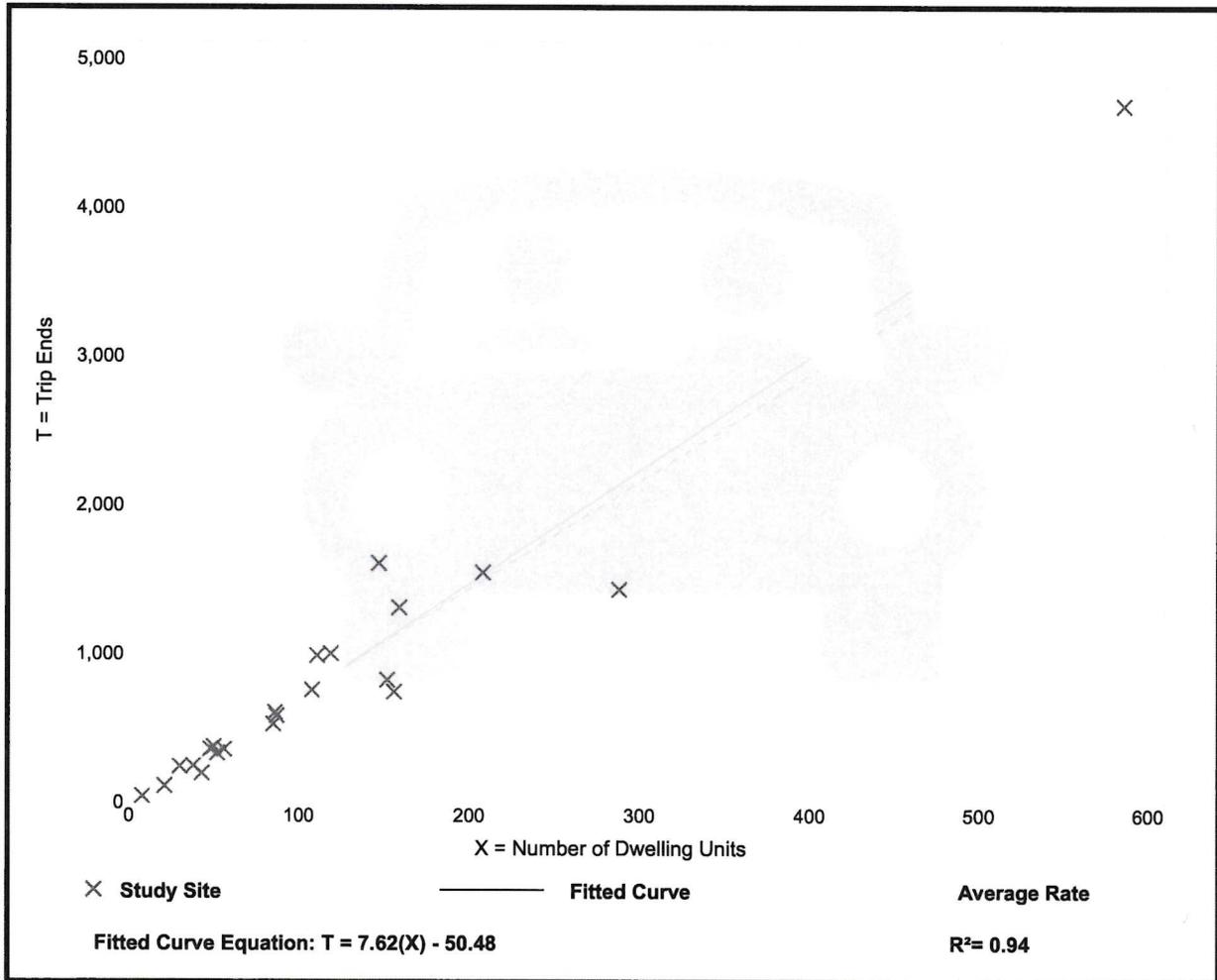
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Single-Family Attached Housing (215)

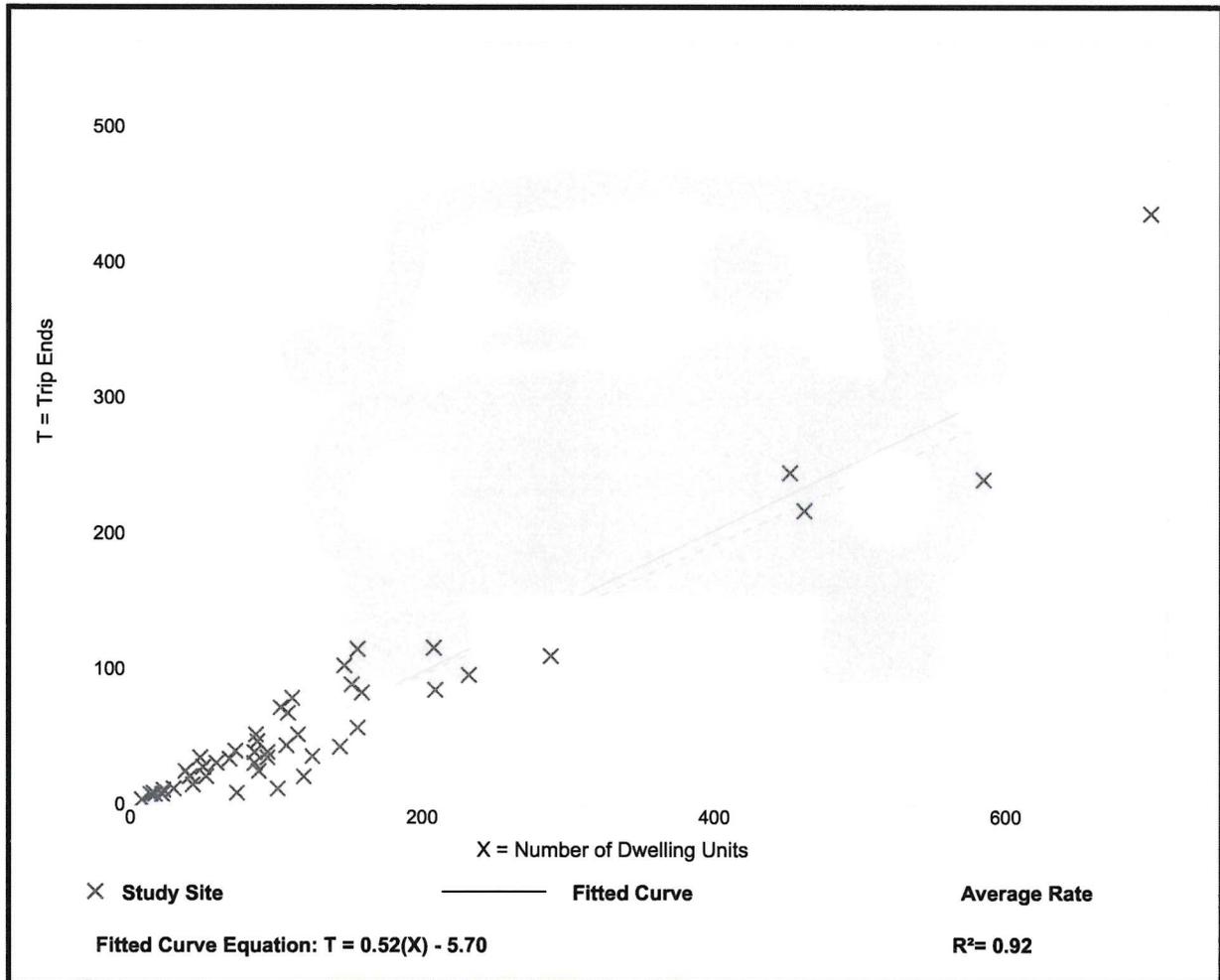
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 46
 Avg. Num. of Dwelling Units: 135
 Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Single-Family Attached Housing (215)

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

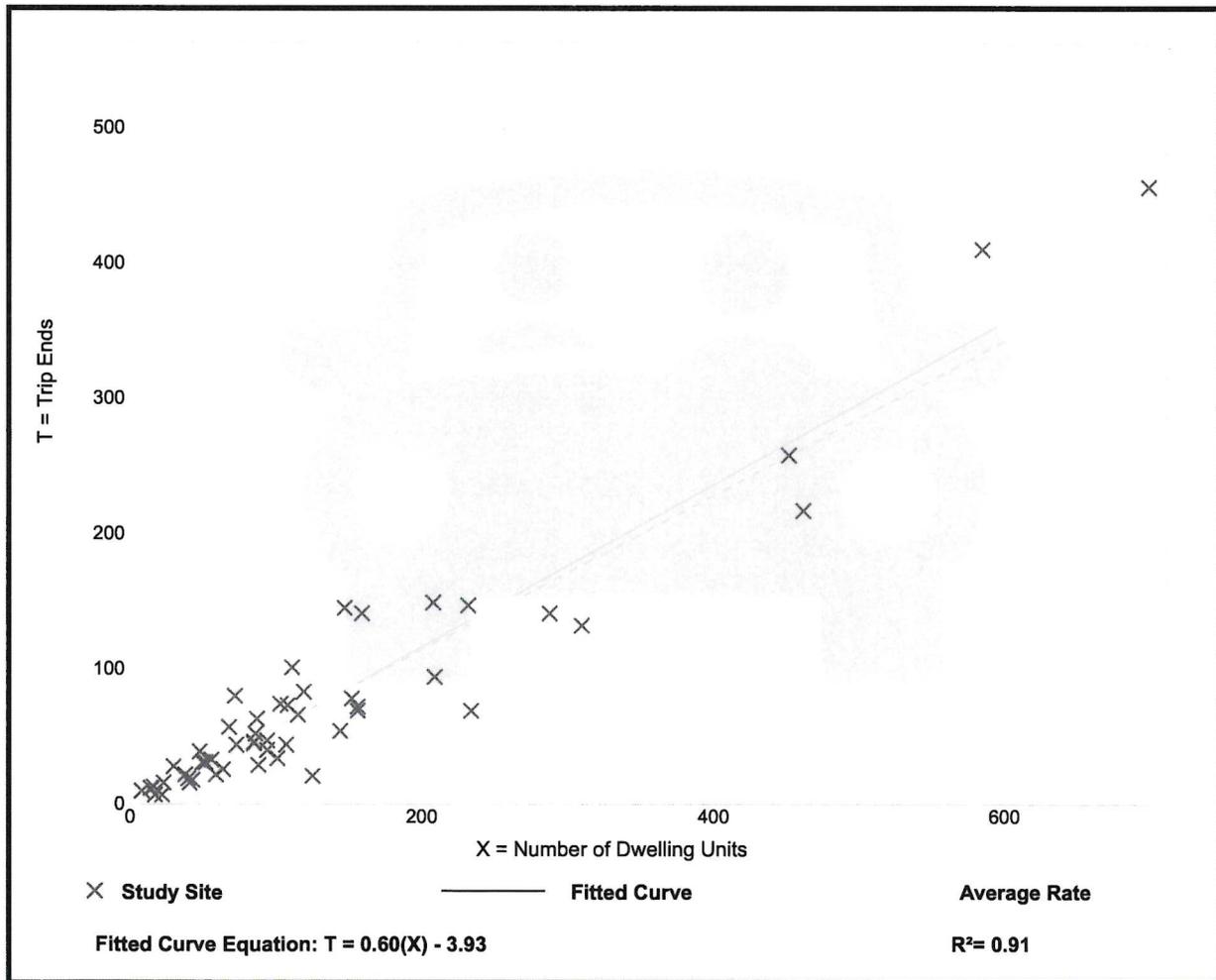
Setting/Location: General Urban/Suburban

Number of Studies: 51
 Avg. Num. of Dwelling Units: 136
 Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Ocala Marion TPO CMP Database - August 2023

SEGMENT ID	ROAD NAME	FROM	TO	LANES (2023)	FUNCTIONAL CLASSIFICATION	FLOW	DAILY SERVICE VOLUME (2023)	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2023)	LANES (2028)	DAILY SERVICE VOLUME (2028)	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2028)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	ADOPTED LOS STANDARD	2023 AADT	2023 DAILY V/MSV	2023 DAILY LOS	GROWTH RATE	2028 AADT	2028 DAILY V/MSV	2028 DAILY LOS
3470.1	NW 44 AV	US 27	NW 63RD ST	4	COLLECTOR	UNINTERRUPTED	67,770	3,357	4	67,770	3,357	Urban	D	CITY OF OCALA	E	9,900	0.15	B	1.74%	10,800	0.16	B
3470.2	NW 44TH AVE	US 27	1 MI SOUTH OF US 27	4	COLLECTOR	UNINTERRUPTED	67,770	3,357	4	67,770	3,357	Urban	D	COUNTY	E	9,900	0.15	B	1.74%	10,800	0.16	B